



Western Connecticut Council of Governments Multi-Jurisdiction Hazard Mitigation Plan Update 2021 – 2026

Municipal Annex for **New Milford**

10 Main Street
New Milford, CT
August 2021

Prepared for:
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ENGINEERING | PLANNING | LANDSCAPE ARCHITECTURE | ENVIRONMENTAL SCIENCE

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1.0 INTRODUCTION

1.1 Purpose of Annex

The purpose of this Hazard Mitigation Plan (HMP) annex is to provide a community-specific hazard risk assessment, capability analysis, and evaluation and prioritization of hazard mitigation measures and projects. Background information and the regional effects of pertinent natural hazards are discussed in the main body of the Western Connecticut Council of Governments (WestCOG) Multi-Jurisdictional Hazard Mitigation Plan. This annex is designed to supplement the information presented in the Multi-Jurisdictional HMP with more specific detail for the Town of New Milford and is not to be considered a standalone document.

The primary goal of this HMP, including this Municipal Annex, is to identify natural hazard risks and mitigation opportunities in order to reduce the loss of or damage to life, property, infrastructure, and natural, cultural, and economic resources. This includes the reduction of public and private damage costs. Limiting losses of and damage to life and property will also reduce the social, emotional, and economic disruption associated with a natural disaster.

2.0 COMMUNITY PROFILE

2.1 Geography

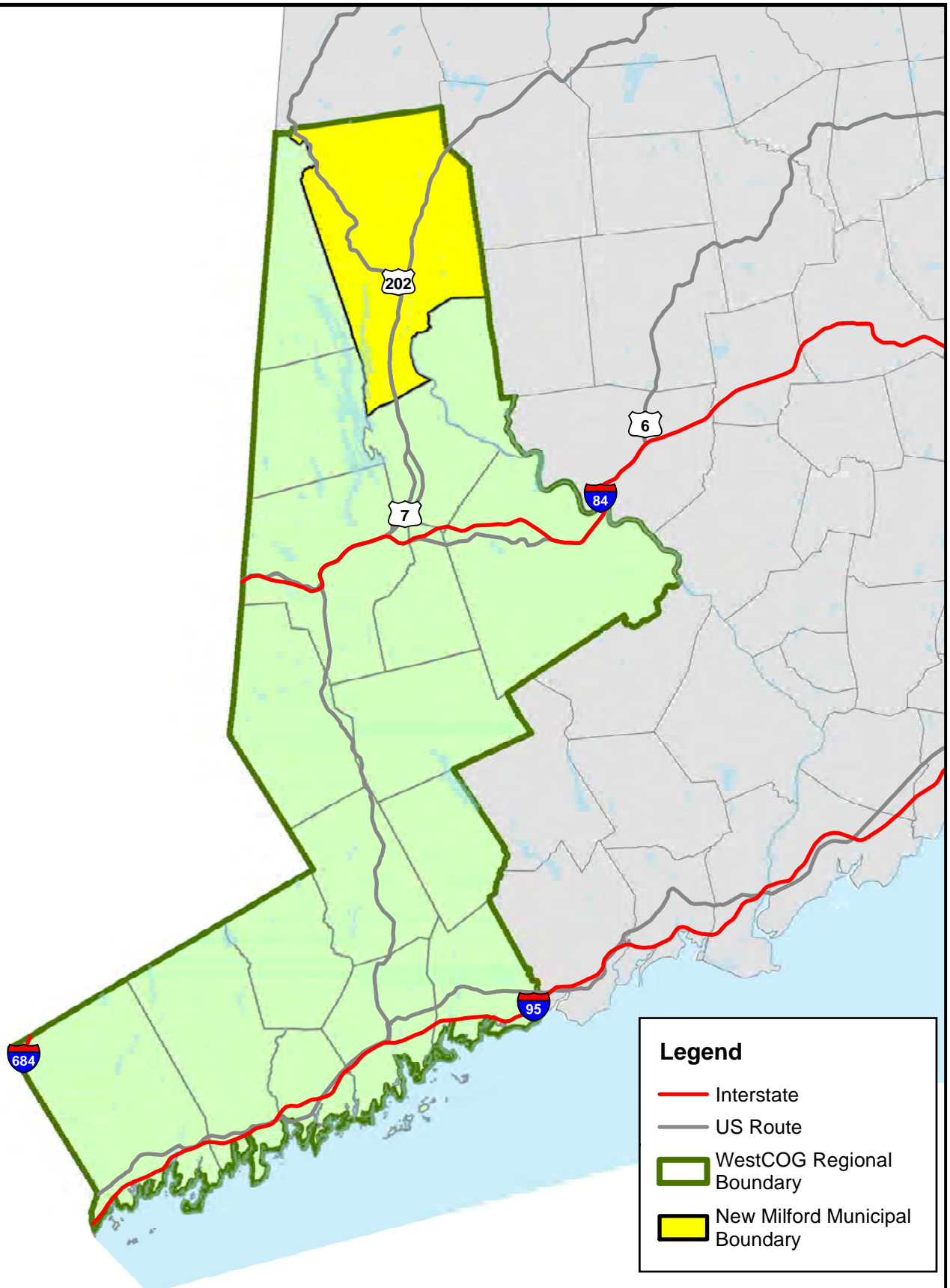
2.1.1 Physical Setting

Settled in 1707 and incorporated in 1712, the Town of New Milford is located in southwestern Litchfield County. New Milford is bordered by the municipalities of Kent to the north, Washington and Roxbury to the east, Bridgewater and Brookfield to the south, and New Fairfield and Sherman to the west. The town is the northernmost community in the WestCOG region. Refer to Figure 2-1 for a map showing the location of New Milford within the current planning region. The varying terrain and land-uses in New Milford makes the town vulnerable to an array of natural hazards.

The Center for Land Use Education and Research (CLEAR) has developed a land cover dataset derived from 2016 satellite imagery to depict statewide land cover. The land cover by percent of total land can be found in Table 2-1.

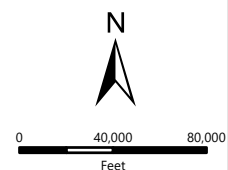
Table 2-1: Land Cover by Area

Land Cover Class	Percent of Total Land
Developed	15.0%
Turf & Grass	9.2%
Other Grasses	2.8%
Agricultural Field	9.4%
Deciduous Forest	48.4%
Coniferous Forest	7.8%
Water	4.3%
Non-Forested Wetland	0.3%
Forested Wetland	1.6%
Tidal Wetland	0.0%
Barren Land	0.6%
Utility Corridor	0.6%



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Regional Location of New Milford
 WestCOG Hazard Mitigation Plan
 Town of New Milford



SCALE 1" = 82,167'
 DATE 11/12/2020
 3101-22
 PROJ. NO.

FIG. 2-1

2.1.2 Land Use

The area of New Milford is approximately 63.9 square miles, making New Milford the largest municipality in the state in terms of area. New Milford is considered a suburb of the City of Danbury, with significant residential zoning and a significant commercial and industrial corridor along Route 7 and Route 202. The most concentrated development is near the Downtown area in the vicinity of the intersection of Route 202 and Route 67. Outlying areas contain a mix of single family residential, protected and unprotected open space, and vacant (developable) lands. Access to major highways is provided via Route 7 / Route 202 south into Brookfield, where the limited-access "Super 7" provides a connection to Interstate 84 in Danbury. State parks in New Milford include the Lovers Leap State Park and Scenic Reserve at the upstream end of Lake Lillinonah. Other protected lands in New Milford include the many Town parks and the Mine Hill Preserve on the eastern end of town owned by the Roxbury Land Trust.

According to the 2010 New Milford *Plan of Conservation and Development* (POCD), approximately 60% of the land in New Milford is either developed for a specific use (residential, commercial, industrial, municipal, or institutional) or committed to a specific use such as recreation, roads, or open space. The remaining 40% of the land in New Milford is considered to be vacant, meaning that it may be developed. Approximately 9,800 acres are committed to residential use (24% of the total land area). Open space, including state forest lands, municipal recreation areas, and land trust lands, occupy approximately 24% of the town's land area. Table 2-2 provides land use by area percentages for New Milford.

From the 2010 New Milford POCD:

The vast majority (85%) of New Milford's land is zoned residential.

The seven business zones (commercial and industrial) comprise a total of 8% of the town. The remaining areas are either specialty zones or not zoned.

The vast majority of the town is zoned as residential, with the highest density zones including a combination of residential, commercial, and industrial zoning and land uses near the Downtown area. New Milford has 12 residential zones, seven commercial and industrial zones, and four specialty zones (airport, village center, junkyard, and landmark).

Table 2-2 Land Use 2008

Land Use	Area (acres)	Percent of Total Land Area
Residential	9,757	24%
Single Family Residential	9,033	
Multi-Family Residential	724	
Commercial & Industrial	1,355	3%
Commercial	515	
Industrial	478	
Extraction	362	
Open Space	9,797	24%
Protected Open Space	6,344	
Unprotected Open Space	3,453	
Institutional & Community Facility	757	2%
Community Facility	434	
Institutional	312	

Land Use	Area (acres)	Percent of Total Land Area
Other	2,358	6%
Right of Way, Transportation, Utility	1,959	
Water Features	426	
Total Developed & Committed Land	23,856	58%
Vacant	6,902	41%
Total	40,953	100%

2.1.3 Climate and Climate Change

Current Conditions

Over the course of the year, the temperature in New Milford typically varies from 18°F to 82°F and is rarely below 3°F or above 89°F. The warm season lasts from May 29 to September 15, with an average daily high temperature above 72°F. The hottest day of the year is July 20, with an average high of 82°F and low of 63°F. The cold season lasts from December 1 to March 10, with an average daily high temperature below 44°F. The coldest day of the year is January 29, with an average low of 18°F and high of 34°F.

Precipitation falls throughout the year in New Milford. The wetter season lasts from April 9 to August 20, with a greater than 30% chance of a given day being a wet day. The chance of a wet day peaks at 37% on May 29. The smallest chance of a wet day is 22% on January 29.

The most rain falls during the 31 days centered around June 4, with an average total accumulation of 4.0 inches. The least rain falls around January 24, with an average total accumulation of 1.6 inches.

The snowy period of the year lasts from October 30 to April 14, with a sliding 31-day liquid-equivalent snowfall of at least 0.1 inches. The most snow falls during the 31 days centered around January 25, with an average total liquid-equivalent accumulation of 1.1 inches.

Climate data was sourced from Weather Spark based on analysis of the years 1980 to 2016.

Climate Change

Climate change projections for Connecticut were sourced from the 2019 Connecticut Physical Climate Science Assessment Report, which was developed by the University of Connecticut (UConn) Atmospheric Sciences Group, commissioned by the Connecticut Institute for Resilience and Climate Adaptation (CIRCA) with funding from the Department of Energy and Environmental Protection (DEEP). All projections are based on the IPCC high CO₂ emission scenario (RCP8.5).

Temperature

Annual temperatures have been increasing throughout Connecticut and is projected to continue to do so in the future. By mid-century, average annual temperature is projected to increase by 5°F. Seasonal average temperatures are also expected to rise, with the greatest increase (6°F) experienced in summer (June to August). The number of nights over which temperature remains above 68°F will quadruple from 10 days per year to more than 40 days, and the number of extremely hot days will increase from above 4 a year to 48 per year.

Precipitation

Rainfall data in "Technical Paper No. 40" by the U.S. Weather Bureau (now the National Weather Service) (Hershfield, 1961) dates from the years 1938 through 1958. According to these data, the 24-hour rainfall amount for a 50% annual-chance storm in Litchfield County is 3.2 inches.

The continued increase in precipitation only heightens the need for hazard mitigation planning as the occurrence of floods may change in accordance with the greater precipitation.

The Northeast Regional Climate Center (NRCC) has partnered with the Natural Resources Conservation Service (NRCS) to provide a consistent, current regional analysis of rainfall extremes (<http://precip.eas.cornell.edu/>). In 2020 this dataset listed the 24-hour rainfall amount for a 50% annual-chance storm in New Milford as 3.30 inches.

The NOAA Atlas 14, released on September 30, 2015 puts the 24-hour rainfall amount for a 50% annual-chance annual storm in New Milford at 3.46 inches.

These precipitation amounts, and more details, are summarized in Table 2-2, below.

Table 2-2: 24-Hour Rainfall Amounts by Annual-Chance Occurrence

Source	24-Hour Rainfall Amount (inches) by Annual-Chance Occurrence		
	50%	4%	1%
Technical Paper No. 40	3.2	5.5	7.0
NRCC	3.30	6.15	8.68
NOAA Atlas 14	3.43	6.70	8.64

Annual precipitation has been increasing statewide and is projected to continue to increase. By mid-century, annual precipitation is projected to increase by 8.5%, with the greatest increase (13.4%) occurring in the winter months. Extreme precipitation events are projected to increase in both frequency and magnitude. Based on this increase and the precipitation figures above, by 2050 New Milford can expect the 24-hour rainfall amount for a 50% annual-chance storm to be around 3.6 to 3.7 inches or greater.

Impervious surfaces and infrastructure in town have increased over time as well, leading to increasing runoff and peak discharge values.

Despite overall increases in precipitation, drought risk is projected to increase, especially during summer, due to changing precipitation patterns and projected increases in potential evapotranspiration (plants taking up more water in hotter temperatures and longer growing seasons).

2.1.4 Drainage Basins and Hydrology

New Milford is located in the central portion of the Housatonic River valley. The topography of New Milford is characterized by higher elevations that gently to steeply slope into tributaries of the Housatonic River. Peaks in the northern and eastern sections of New Milford rise well above 1,000 feet above sea level, while peaks in the southern section of New Milford rise to 700 to 800 feet. Much of the Downtown area is located below 400 feet in elevation.

New Milford is divided among nine sub-regional watersheds. The associated watercourses are summarized below and described in the following sections. All of the water that passes through New Milford eventually drains to the Housatonic River and empties into Long Island Sound.

- The lower reaches of Womenshenuk Brook, Morrissey Brook, Candlewood Lake, the West Aspetuck River, and the Still River each lie within New Milford and empty into the Housatonic River. The Housatonic River is impounded at Lake Lillinonah. Conditions on these tributary streams typically only exacerbate flooding in New Milford, although backwater conditions on the Still River can exacerbate flooding upstream in Brookfield, Danbury, and Bethel.
- The lower reaches of Merryall Brook and the East Aspetuck River drain into the lower reach of the West Aspetuck River just north of Downtown.
- The headwaters of small tributary streams to the Shepaug River drain east from New Milford into Washington and Roxbury. As such, conditions on these tributary streams can potentially impact downstream communities.

Candlewood Lake

The Candlewood Lake watershed covers a total area of 4.04 square miles in New Milford. Candlewood Lake is the country's first pump-storage reservoir and at 5,400 acres is the largest lake in Connecticut. The reservoir was constructed to support power generation at the Rocky River power station on Route 7 in New Milford. Since 1926, water has been diverted from the Housatonic River and pumped uphill into the Lake. During low-flow conditions on the Housatonic River, water is released from Lake Candlewood to run the generation turbines and discharged back to the Housatonic River.

The Lake Candlewood watershed comprises 6.3% of the town's land area. There is a delineated 1% annual chance floodplain surrounding the lake without elevations defined. Larger tributaries to the lake include Sawmill Brook and Glen Brook in Sherman and Ball Pond Brook in New Fairfield. The lake is impounded once in Danbury and in four separate areas in New Milford:

- By Candlewood Lake Dam #2 (Class B) off Candlewood Lake Road South on the eastern side of the lake
- By the Middle Lanesville Dam (Class C) upstream of Sullivan Farm
- By the North Lanesville Dam (Class C) upstream of Sherry Lane
- By the Candlewood Lake North Dam upstream of Route 7. This dam includes infrastructure to provide flow to the Rocky River power station.

In total, Candlewood Lake drains a total area of 42.19 square miles in Brookfield, Danbury, New Fairfield, New Milford, Sherman, and portions of New York State.

East Aspetuck River

The East Aspetuck River watershed is the third-largest watershed in New Milford, covering a total area of 7.05 square miles. The river has its headwaters in the New Preston area of northwestern

Washington as the outflow from Lake Waramaug. The river flows generally southwest into New Milford parallel to Route 202 and is conveyed beneath several minor roads, Route 202, Paper Mill Road, and Wellsville Avenue prior to reaching the confluence with the West Aspetuck River downstream of Wells Road. The East Aspetuck River drains a total area of 25.26 square miles in Kent, New Milford, Warren, and Washington.

Housatonic River

The Housatonic River drains an area of 1,948 square miles from Pittsfield, Massachusetts to Milford, Connecticut where it flows into Long Island Sound. The river flows a total of 134 miles from its upper reach to the sound with 1,234 square miles of the total drainage area existing in Connecticut. All of the land in New Milford eventually drains to the Housatonic River.

Land draining directly to the Housatonic River represents the largest sub-regional watershed in New Milford, covering a total area of 22.57 square miles. The river flows generally southeast across the town, with major crossings being located on Route 7 just north of Route 55, at Boardman Road just south of the intersection of Route 7 and Route 37, the Route 67 crossing in the Downtown area, the railroad bridge crossing west of Grove Street, and at Pumpkin Hill Road near Lovers Leap State Park. The river is impounded in New Milford by the Bleachery Dam, a low-hazard dam off the southern terminus of West Street, and by the Shepaug Dam in Southbury which creates Lake Lillinonah, an impounded area of the river that stretches upstream to Lovers Leap State Park.

Merryall Brook

The Merryall Brook watershed covers a total area of 4.49 square miles in New Milford. The brook has its headwaters in a small pond in southern Kent upstream of Treasure Hill Road. The brook flows generally southwest through the Iron Mountain Preserve in southern Kent into New Milford where it is conveyed beneath West Meetinghouse Road. The brook turns south to generally parallel West Meeting House Road and is conveyed beneath several minor roads and Aspetuck Ridge Road prior to reaching the confluence with the West Aspetuck River downstream of Chinmoy Lane. The East Aspetuck River drains a total area of 5.88 square miles in Kent and New Milford.

Morrissey Brook

The Morrissey Brook watershed covers a total area of 1.85 square miles in New Milford. The brook has its headwaters in a small pond in Quaker Hill, New York upstream of Route 66. The brook flows generally southeast into Sherman before turning north to flow into New Milford. The brook flows generally parallel to Gaylord Road and is conveyed beneath that road twice and is also conveyed beneath Cedar Hill Road prior to reaching the confluence with the Housatonic River downstream of Route 7. Morrissey Brook drains a total area of 7.26 square miles in New York State, New Milford, and Sherman.

Shepaug River

The Shepaug River watershed covers a total area of 5.56 square miles in New Milford. The river flows through Warren, Washington, Roxbury, and Bridgewater prior to reaching its confluence with the Housatonic River in Lake Lillinonah, and drains a total area of 155.44 square miles. The

land within the watershed in New Milford drains to minor tributaries to this river, such as Walker Brook, Second Hill Brook, and several unnamed tributaries.

Still River

The Still River has its headwaters western Danbury near Mill Plain where it forms from the outflow from Sanfords Pond. The river flows generally southeast through Danbury to Mill Plain Swamp before turning generally northeast through the city center and then into Brookfield. The Still River then flows generally northward through Brookfield into New Milford.

The Still River watershed covers a total area of 5.54 square miles in New Milford. The river flow generally north parallel to Route 202. The channel is very flat, resulting in numerous meanders from the town line to the Candlewood Valley Country Club. The river then turns generally northeast and is conveyed beneath Still River Drive prior to its confluence with the Housatonic River just downstream of the railroad crossing. The total area of the Still River watershed is approximately 71 square miles within Putnam County, New York and Bethel, Brookfield, Danbury, New Fairfield, Newtown, Redding, and Ridgefield, Connecticut.

West Aspetuck River

The West Aspetuck River watershed is the second-largest watershed in New Milford, covering a total area of 10.32 square miles. The river has its headwaters in the South Kent area of eastern Kent as the outflow from North Spectacle Lake. The river flows generally south into New Milford and is conveyed beneath Cherniske Road, Squire Hill Road, and Merryall Road (twice), prior to reaching the confluence with Merryall Brook.

The river continues to flow south beneath several minor roads and Aspetuck Ridge Road (twice) prior to reaching the confluence with the East Aspetuck River downstream of Aspetuck Ridge Road. After this confluence, the river continues south and is conveyed beneath the railroad tracks and Housatonic Avenue prior to its confluence with the Housatonic River. In total, the West Aspetuck River drains a total area of 19.60 square miles in Kent, New Milford, Warren, and Washington. The total drainage area at the Housatonic River, including the sub-regional basins of Merryall Brook and the East Aspetuck River, is 41.46 square miles.

Womenshenuk Brook

The Womenshenuk Brook watershed covers a total area of 2.57 square miles in New Milford. The brook has its headwaters in a small pond in southern Kent as the outflow from Leonard Pond. The brook flows generally south into New Milford where it generally parallels South Kent Road. The brook is conveyed beneath Browns Forge Road and Waller Road prior to reaching the confluence with the Housatonic River downstream of Riverview Road. In total, Womenshenuk Brook drains a total area of 9.36 square miles in Kent and New Milford.

2.2 Society, Culture, and Government

2.2.1 Population and Demographic Setting

According to the 2000 U.S. Census, the town of New Milford had a population of 27,121. New Milford had a population of 28,142 in 2010 according to the U.S. Census, an increase of 3.7%. The overall population density of New Milford is 446 persons per square mile. The Connecticut State

Data Center projections from 2012 predict that the population of New Milford would hold generally steady through 2020 and slightly decrease to 27,703 by 2025.

The town of New Milford has significant populations of people who are linguistically isolated, elderly, and/or disabled. According to data collected by the U.S. Census Bureau for the period around 2010-2012, 11.8% of the population is aged 65 or over, 6.7% speak English "less than very well", and 7.0% have a disability.

One important aspect of natural hazard mitigation planning is to identify a community's demographic trends in relation to natural hazards. The Center for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI) is used to identify vulnerable populations in New Milford. The SVI uses census data to identify populations within the town that may be more vulnerable to natural hazards. As a result of this analysis, the town is identified to have a certain level of overall social vulnerability with a rank of 0 to 1; 1 being the most vulnerable and 0 being the least.

To determine social vulnerability, the CDC incorporates 15 factors into the overall SVI calculation under four categories, or themes: socioeconomic status, household composition and disability, minority status and language, and housing type and transportation. Figure 2-2 represents the breakdown of the SVI process. These themes and their ranking are based on census statistics. By evaluating these factors and determining a level of social vulnerability, a community can identify specific needs for before, during, and after an event. Such needs may include sheltering capacity, evacuation routes, or to decide how many emergency personnel may be required to respond after an event.

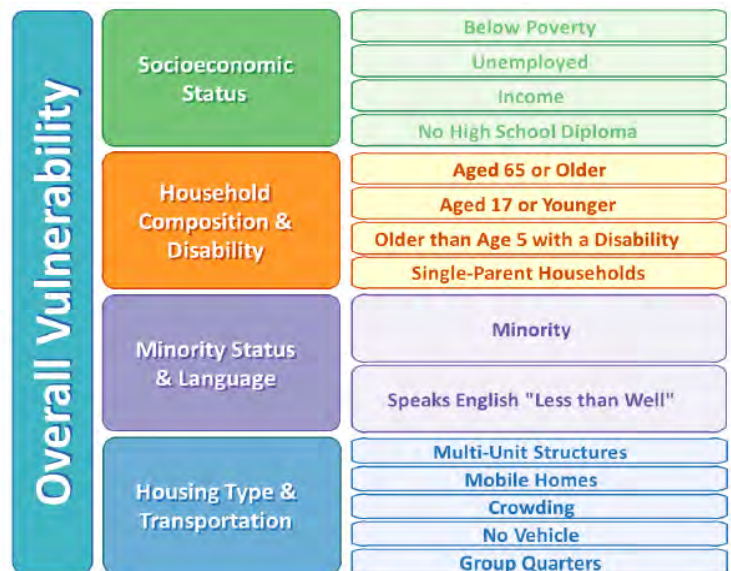


Figure 2-2: The CDC SVI Index Factors.
Graphic: svi.cdc.com

The Town of New Milford is considered to have a low to moderate level of vulnerability, with their most vulnerable social aspect being the socioeconomic status of certain populations, along with high density housing and lack of transportation. There are also minority populations in town, along with those that speak English "less than well". These populations are primarily located in the southeastern half of town, with the most vulnerable populations settled along Route 7 from Rooster Tail Hollow south to the Route 7 and Lanesville Road intersection. Appendix B explores the SVI for New Milford in more depth, including maps showing overall vulnerability, and theme vulnerability.

2.2.2 Development Trends

According to the 2010 POCD, development in New Milford has been historically centered on the Downtown area near the confluence of the West Aspetuck River and the Housatonic River, and in Gaylordsville in the northwestern corner of town.

Today, New Milford is significantly more developed than its neighbors. Residents of surrounding communities utilize commercial zones in New Milford for hospital services, dining, retail, and other needs. Most development in New Milford has occurred along the major arterial roadways of Route 7, Route 44, Route 202, Route 37, Route 55, Route 109, and Route 67, as well as along their associated collector roads. The completion of “Super 7” – the limited-access highway portion of Route 7 into northern Brookfield – has made commercial development more attractive in New Milford as residents from surrounding communities commute through.

The vast majority of homes in New Milford are detached single-family homes (accounting for approximately 74% of all residential structures). The majority of homes in New Milford (58%) were built between 1950 and 1990, with 19% built before 1950 and 23% built after 1990. Newer buildings are constructed to more recent building codes and are considered to be less vulnerable to natural hazards than older buildings.

New Milford had 10,710 total housing units in 2000 which increased to 11,731 in 2010. Housing permits averaged approximately 40 per year from 1990 to 2000, and peaked at over 80 per year in 2001. The number of housing permits being issued declined from 2004 through 2007, but began recovering in 2008. The number of new housing permits issued for the years 2011 through 2013 were 11, 18, and 18 (all for single family homes). Four homes were constructed in 2013, and ten permits for single family homes were issued in just January of 2014.

Compared to surrounding communities, New Milford has a higher concentration of manufacturing and retail jobs. However, the types of jobs in New Milford are varied. Approximately 18% of jobs in New Milford are in the manufacturing sector, with 18% being in educational, health, and social services; 13% in retail trades; 10% in professional, scientific, management, administrative, or waste management services; 8% in construction; and 8% finance, real estate, rental, and leasing. The remaining job categories include the arts, entertainment, recreation, accommodation and food services (6%); other services (except public administration) (5%); transportation, warehousing, and utilities (4%); information (4%); wholesale trade (3%); public administration (2%); and agriculture, forestry, fishing, hunting, and mining (1%).

In general, the Town of New Milford encourages future residential and non-residential development that can be supported by existing infrastructure and that is consistent with the Town’s POCD. The first POCD was enacted in 1959 such that this type of planning has long been a fixture in New Milford. The 2010 POCD calls for future development to be consistent with and enhance the existing character of the town while avoiding adverse impacts to the environment (particularly in sensitive areas). The POCD encourages the extension of sewer in economic development areas, but discourages expansion of sewer service outside of the sewer area unless there are public health concerns that must be addressed.

Should new or expanded infrastructure be required to serve a new development, such expansion is to be paid by the developer whenever possible. The Subdivision Regulations require that all new utilities must be located underground, and the Zoning Regulations require that all utilities must be placed underground in new developments in Planned Residential Development zones and in Cluster Conservation Subdivision Districts.

Land zoned as commercial and industrial has primarily been built out although some land is still available for development. The presence of public water and sewer services in New Milford located in areas zoned for commercial and industrial use enhances the potential for development and redevelopment. No significant commercial or industrial developments are currently planned. Route 202 has had recent commercial development, and a substantial retail development was recently proposed along Route 202 but was not in conformance with the Zoning Regulations.

The Bleachery, a renovated historic mill on Lake Lillinonah, has over 100 commercial units and is considered one of the most successful and active developments located within the floodplain. A major residential project has been approved at the Bleachery property (previously, only commercial use had been located on the property). The parking garage is located on the first floor, with residential space elevated above. As part of the development of residential units on the site, a new emergency crossing was built across the railroad to allow access and egress if flooding blocks West Street.

Generally, residential developments in Town are either single family homes or on small subdivisions. The Town of New Milford indicates that most new building permits issued over the past five years have been for single family homes. A few residential properties have been developed in Gaylordsville, along Route 7. Similar to commercial and industrial development, Town staff indicate that there is significant potential for residential redevelopment. Transit-oriented developments could also be proposed over the next two decades if the Metro North expansion into New Milford is realized.

There has been no new development within FEMA-designated Special Flood Hazard Areas (SFHA) since adoption of the previous HMP. Most development is built outside the floodplain; construction within the floodplain is built with appropriate mitigation measures in place (for example, the first floor is uninhabited).

A build-out analysis in the 2010 POCD estimates a maximum town population of 43,281 based on zoning at the time and accounting for undevelopable areas. Approximately 5,500 potential new housing units could be developed. This new housing would be scattered around the Town in areas that are currently characterized by lower densities, as well as around Candlewood Lake. Town planners do not anticipate this level of development occurring for several decades. There is very little developable land near the town's core developed areas, namely Downtown and along the southern Route 7 corridor. Any new residential development is expected to increase the overall vulnerability of the community to natural hazards, although these projects are expected to be generally free from flooding.

The 2010 POCD did not identify development potential in commercial and industrial zones. While New Milford has traditionally attracted water-dependent industry along the Housatonic River,

those industries are generally in decline. The 2010 POCD suggests performing a market analysis and consider rezoning some business and industrial zones for Corporate Office Parks. Most commercially and industrially zoned areas in New Milford are located in areas with public water and sewer service such that this infrastructure will support future commercial and industrial development and redevelopment activities. In addition, much of the Route 7 corridor that is zoned commercial or industrial is coincident with the 1% annual chance floodplain; these properties would be developed in accordance with the Zoning Regulations.

In summary, new commercial or industrial development is expected to increase the overall exposure of the community to natural hazards. However, adherence to regulations and the State Building Code will reduce risks to new development and redevelopment.

2.2.3 Governmental Structure

The Town of New Milford is governed by a Mayor-Council form of government in which legislative responsibilities are performed by the Town Council. The Mayor serves as the chief executive.

In addition to the Town Council, there are boards, commissions and committees providing input and direction to Town administrators while Town departments provide municipal services and day-to-day administration. Many of these commissions and departments play a role in hazard mitigation, including the following (in alphabetical order):

- The Building Department reviews plans to ensure conformance with all applicable codes and inspects work for final approval.
- The Emergency Management Director coordinates emergency response activities and planning.
- The volunteer Fire Department is the primary responder to emergency situations caused by natural hazards.
- The Fire Marshal reviews zoning applications for fire protection safety concerns, and enforces the Connecticut Fire Safety Code for all applicable residences and facilities within the community. The Fire Marshall investigates all fires that occur in the town and inspects open burn areas prior to issuing open burning permits.
- The Inland Wetlands Commission is New Milford's Inland Wetlands Agency and reviews applications with wetland impacts.
- The Planning Commission reviews and approves subdivision applications and drafts regulation changes for approval.
- The Land Use Department staff is responsible for the administration and enforcement of the zoning, subdivision, and wetland regulations, and provides technical support to related commissions.
- The Police Department provides traffic control during emergencies and provides assistance staffing shelters.
- The Public Works Department provides response, rescue, recovery, and investigation assistance; cleanup and repair support following disasters; and is relied upon to barricade and/or provide access to areas during storm events. They also maintain and construct culverts, bridges, and roads on public land, and oversee all engineering aspects of new construction within the community.

- The Tree Warden identifies dangerous trees and hires contractors to perform trimming and removal.
- The Zoning Commission reviews and approves zoning applications and drafts regulation changes for approval.
- The Zoning Board of Appeals reviews requests for variances and handles appeals for rejected applications.

Complaints related to natural hazards are typically received by multiple departments. These complaints are usually received via phone, electronic or snail mail, or via personal communication. The complaints are distributed to the most applicable department and investigated and remediated as necessary or as the budget allows. For example, drainage complaints are directed to public works, while complaints about burning are directed to the Fire Marshall's office.

2.2.4 Historic and Cultural Resources

Historic and cultural resources include sites, structures, and objects that are significant in history, architecture, archaeology, engineering, and culture. Protection of these resources grows economies and enhances community character, and following a natural disaster they can help to reinforce neighborhood connections and reestablish a sense of community and normalcy. Consideration of these resources in this HMP is critical.

Historic preservation planning helps protect historic properties and cultural resources from demolition or alteration.

Hazard mitigation planning helps protect life and property from damage caused by natural and manmade hazards.

Integrating these two planning processes helps create safe and sustainable historic communities.

- Paraphrased from FEMA Report 386-6

Historic resources in New Milford include the Sherman Town Hall, Boardman's Bridge and Lover's Leap Bridge, Hine-Buckingham Farms, the Housatonic Railroad Station, and sites within the New Milford Center Historic District. Analysis of the State Historic Preservation Office (SHPO) database of historic resources shows that some of these resources are exposed to natural hazards, as shown in Table 2-3.

Table 2-3: Number of Historic Assets Exposed to Different Hazards in New Milford

Hazard	Count
Dam Failure	0
Earthquake	11
Flooding	
1% Annual	0
0.2% Annual	0
Storm Surge	
Category 1	0
Category 2	0
Category 3	0
Category 4	0
Hurricane/Tropical Storm	11
Sea Level Rise	
Thunderstorm	11
Tornado	11
Winter Storm	11
Wildfire	3

Historic buildings and structures may be particularly susceptible to natural hazards because they were built prior to the establishment of more recent construction standards. Additionally, some of the structural integrity of these resources may have been degraded over the decades or centuries since their original construction. Structural retrofits and hazard mitigation methods may be challenging or restricted in cases where alteration of a resource will also diminish its cultural or historical aesthetic and value. Finally, miscommunications or lack of knowledge may lead to historic resources being damaged during the disaster recovery process.

Steps to incorporate historical and cultural preservation into hazard mitigation planning include:

- Inventory and survey historic and cultural resources
- Implement appropriate mitigation measures for those resources
- Take steps to move portable resources, such as artwork or documents, to safe locations prior to the occurrence of a hazard, if possible
- Consider these resources in emergency operations plans to prevent accidental damages during recovery efforts

Specific actions to mitigate natural hazard risks to historic resources are listed at the end of this Annex.

2.3 Infrastructure

2.3.1 Transportation

New Milford is primarily accessible from the principal arterial Route 7 (Danbury Road / Kent Road) which runs generally parallel to the Housatonic River from Brookfield to Kent. Route 7 provides access to Interstate 84 in Danbury, and access to Route 44 far to the north in Canaan. Route 202 provides access from the Downtown area northeast to Torrington (and Route 8) via Washington and Litchfield. Other state roads include Route 37 and Route 55 which lead from western New Milford into Sherman, Route 109 which leads east into Washington, and Route 67 which leads southeast through Bridgewater, Roxbury, and Southbury to Interstate 84.

Similar to Route 7, a railroad line parallels the Housatonic River through New Milford. The Housatonic Railroad Company currently operates the railroad. The existing track structure can only accommodate freight service. Investigations are currently ongoing related to a proposal to electrify and extend the Danbury Branch of the Metro-North Railroad from Danbury to New Milford. This would allow the railroad to carry commuters to destinations in southern Fairfield County or New York City.

2.3.2 Utilities

New Milford receives electric and natural gas service from Eversource.

Public water supply is provided by the Aquarion Water Company along Route 7 and in the Downtown area to approximately 8,000 residents and approximately 700 commercial and industrial customers. Smaller community water systems also provide public water services to small developments.

Sewage is directed to the New Milford Water Pollution Control Facility for treatment, with treated effluent released to the Housatonic River.

According to geolSP (geolSP.com), access to Broadband Internet is available to most residents in New Milford. There are 2 DSL Providers (AT&T and Connecticut Education Network), 1 Cable Internet providers (Charter Spectrum), and 2 Fiber Internet providers (Fibertech Networks LLC and Connecticut Education Network). There are also 4 Mobile Broadband (cellular) providers with service available in New Milford.

2.4 Planning and Regulatory Capabilities

2.4.1 Review of Existing Local Plans

The Town of New Milford has a number of plans that are relevant to hazard mitigation. These are noted here:

- **Plan of Conservation and Development (POCD):** New Milford's most recent POCD was adopted in 2010; the Town was in the midst of developing its 2020 update as this Hazard Mitigation Plan was being developed. While the existing POCD does not address natural hazard concerns within the community, or includes strategies that will mitigate risks from those hazards as the community continues to develop, the Town is incorporating these features into the POCD update.
- **Stormwater Management:** New Milford maintains a Stormwater Management Plan, most recently updated in 2017. This document has been updated to comply with the requirements of the US EPA 2017 updated *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems* (MS4 General Permit).
- **Capital Improvement Plan (CIP):** New Milford maintains a CIP that is updated annually and lays out capital investments for a five-year period. The CIP often includes road, drainage, and other infrastructure improvement projects relevant to hazard mitigation.
- **Economic Development Plan:** New Milford is included within the Western Connecticut Economic Development Plan of 2017, developed by WestCOG. The plan aligns with the COG's other efforts to promote climate sustainability and resiliency in the region.
- **Emergency Operations Plan (EOP):** New Milford's EOP is reviewed annually and updated as needed. Dam failure Emergency Action Plans (EAPs) for dams with failure inundation zones that may impact New Milford, and for which EAPs are available, are on file locally.
- **Watershed Management Plan:** Watershed Management Plans have been developed for the Saugatuck-Aspetuck River Watershed and the Still River Watershed. The Saugatuck River Watershed Based Plan was developed by the former South Western Regional Planning Agency (SWRPA) in 2012, while the Still River Watershed Management Plan was developed by the Housatonic valley Association with support from the Still River Partners in 2019. These plans are focused on water quality, but can help the community mitigate inland flood risks by incorporating watershed management best practices into its planning efforts.
- **Open Space:** New Milford does not maintain a stand-alone Open Space Plan; instead, open space planning is incorporated into the community's POCD.

2.4.1 Review of Regulatory Structures

New Milford regulates development through a number of regulations, codes, and ordinances. These are summarized below. More detailed information about how these regulations relate to specific natural hazards are described in Section 3.

- **Building Code:** New Milford enforces the Connecticut State Building Code locally.
- **Zoning Regulations:** Most recently updated in June 2018.
- **Inland Wetlands and Watercourses Regulations:** Most recently updated in March 2010.
- **Subdivision Regulations:** Most recently updated in June 2001. Include provisions promoting control of stormwater runoff, installation of firefighting water sources, and burial of utilities.

2.5 Emergency Services, Critical Facilities, Sheltering, and Evacuation

The Town of New Milford has identified many critical facilities as listed below in Table 2-4 and Figure 2-3. Many critical facilities, such as police, fire, and governmental buildings as well as utilities are required to ensure that day-to-day management of the town continues. Other facilities such as nursing homes, schools, and emergency supply storage areas are also considered critical facilities since these contain populations that are more susceptible in an emergency or house important supplies. Not all municipal buildings are critical facilities.

Critical facilities that are particularly vulnerable to one or more natural hazards will be discussed as appropriate in this document. For example, the Public Works Garage is located in the 1% annual chance floodplain, and the access road to the Ambulance Facility (which houses the Emergency Operations Center, or EOC) can be cut off by flooding. As such, the Town of New Milford would like to relocate both the public works garage and the EOC to locations outside of the floodplain. One option for the EOC is to obtain a generator for the Town Hall and move the EOC into that facility.

Table 2-4: Critical Facilities

Facility	Address or Location	Type	Emergency Power	Shelter	SFHA
New Milford Community Ambulance Corporation	1 Scovill Street	EOC	✓		*
Police Department	49 Poplar Street	Emergency Response	✓		
Water Witch Hose Co. No. 1	16 Lanesville Road	Emergency Response			
Water Witch Hose Co. No. 2	8 Prospect Hill road	Emergency Response	✓		
Northville Fire Department	355 Litchfield Road	Emergency Response	✓		
Gaylordsville Fire Department	700 Kent Road	Emergency Response	✓		
Town Hall	10 Main Street	Municipal			
Public Works Garage	6 Youngs Field Road	Municipal	✓**		✓
Water Pollution Control Facility	123 West Street	Essential Service	✓		✓
Richmond Citizen Center	40 Main Street	Senior Center	✓	✓	
"The Maxx" New Milford Youth Agency	94 Railroad Street	Teen Center	✓	✓	
Sarah Noble School	25 Sunny Valley Road	Intermediate School	✓	✓	

* Access to the New Milford Community Ambulance Corporation requires traveling through a flood zone, creating a risk of isolation; the facility itself is not in a SFHA.

** Highway garage has generator, but a generator is needed for the mechanic shed.

LEGEND

Dams

- Unclassified
- AA
- A
- BB
- B
- C
- Dam Failure Inundation Area
- Municipal
- EOC
- Fire
- Shelter
- Utility

Flood Zones

- A
- AE
- 0.2% Annual Chance Flood Hazard

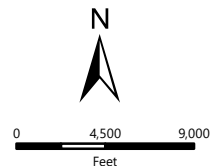
Flood Zones

- A

MILONE & MACBROOM
 99 REALTY DRIVE
 CHESHIRE, CT 06410
 203.271.1773
 WWW.MMINC.COM

Critical Facilities with Flood Zones and
 Dam Failure Inundation Areas
 WestCOG Hazard Mitigation Plan
 Town of New Milford

NPS: Cultural Resources CT DEEP: DFA FEMA: DFRIM & Q3



SCALE	1" = 9,737'
DATE	7/29/2021
PROJ. NO.	3101-22

FIG. 2-3

Shelter Capacity

The Sarah Noble School, the Teen Center, and the Senior Center are utilized as shelters. Each of these facilities has a generator (the emergency generator fuel tank at the Sarah Noble School was replaced in 2020). In case of a sustained power outage, it is anticipated that 10 to 20% of the population (2,800 to 5,600 people) would relocate, although not all of those relocating would necessarily utilize the shelter facilities. If overflow sheltering space is needed, other schools in town would be utilized although these are not equipped as shelters.

A new addition has been constructed for the Richmond Citizen Center (the Senior Center, and a shelter), expanding sheltering capacity. This addition has backup power along with the rest of the building.

The 2010 POCD indicates that all of the shelter facilities are located in the Downtown area, and not in outlying areas. If a larger Fire Station is built in Gaylordsville, the POCD suggests that this facility include shelter space.

Public Water Supply

The town of New Milford has public water supply provided by the Aquarion Water Company. The service area includes southern Route 7 and the vicinity of the Downtown area. Potable water is provided by a series of groundwater wells. Aquarion Water Company is in the process of raising well heads to be above the 1% annual chance floodplain and installing backup generators for its wellfields.

Emergency Response

Emergency response capabilities are overseen by the Emergency Management Director. The Town has an Emergency Operations Plan (EOP) that is updated annually. Evacuation routes are not defined for New Milford and instead would be activated based on the situation with coordination with State and regional entities. The Town does have typical detour routes that it utilizes during flooding and emergency conditions.

New Milford has police and fire facilities capable of assisting with hazard response and recovery. All of these facilities have emergency power. The Police Department emergency generator fuel tank was replaced in 2019.

The Town maintains communications towers for emergency communications. These facilities have backup generators. According to the 2010 POCD, emergency communications within the town could be improved, as there were many "dead" zones due to topography. The Town worked toward upgrading its emergency communications capabilities in 2012-2013 and this capability was improved.

The Town of New Milford utilizes the State of Connecticut "CT Alert" Emergency Notification System to provide emergency notifications to residents of New Milford. Emergency notification systems are extremely useful for natural hazard mitigation, as a community warning system that relies on radios and television is less effective at warning residents during the night when the majority of the community is asleep.

The CT Alert system is defaulted to listings of landline phone numbers. Residents are encouraged to sign up at <http://www.ctalert.gov/> to personalize how they receive emergency notifications (to cellular phones, via text message, electronic mail, etc.).

The Town of New Milford distributes public information regarding natural hazards and preparedness to residents via FEMA flyers being available in the municipal buildings and through information available on the Town website. Evaluation of emergency services, shelters, equipment, and supplies is performed at least annually (concurrent with the EOP review) or more often if necessary. Similarly, emergency training is conducted as appropriate and the Town of New Milford purchases new equipment when funding is available.

3.0 HAZARD ASSESSMENT

3.1 FLOODING (COASTAL, INLAND, AND ICE JAMS)

3.1.1 Setting

The potential for flooding is widespread across New Milford, with the majority of major flooding caused by the overflow of river systems into river corridors and floodplains. This flooding is generally limited to established Special Flood Hazard Areas (SFHA); FEMA delineates areas that have a 1% chance of flooding each year (1% annual-chance flood) as SFHA for the purposes of the National Flood Insurance Program (NFIP).

Flooding that occurs outside floodplains, and localized nuisance flooding along tributaries, are also common problems in the town. This type of flooding occurs particularly along roadways as a result of inadequate or obstructed drainageways and other factors.

The frequency of flooding in New Milford is considered likely for any given year, with flood damage potentially having significant effects during extreme events. The town of New Milford has experienced various degrees of flooding in every season of the year throughout its recorded history. Melting snow combined with early spring rains has caused frequent spring flooding. Numerous flood events have occurred in late summer to early autumn resulting from storms of tropical origin moving northeast along the Atlantic coast. Winter floods result from the occasional thaw, particularly during years of heavy snow or periods of rainfall on frozen ground. Other flood events have been caused by excessive rainfalls upon saturated soils, yielding greater than normal runoff.

Floodprone areas are addressed through a combination of floodplain management criteria, ordinances, and community assistance programs sponsored by the NFIP and individual municipalities.

3.1.2 Capabilities

The Town of New Milford has in place a number of measures to mitigate flood damage. These are categorized below.

Prevention

The Town of New Milford has consistently participated in the NFIP since April 15, 1980 and intends to continue participation in the NFIP. The FIRM (originally prepared April 15, 1980 and revised June 4, 1987) delineates areas within New Milford that are vulnerable to flooding. The hydrologic and hydraulic analyses from the FIS report dated 1980 were performed by Harris-Toups Associates for FEMA under Contract No. H-3987. That work, which was completed in July 1978, covered the significant flooding sources affecting New Milford. The hydrologic and hydraulic analysis were updated for portions of the Housatonic River, Town Farm Brook, and the West Aspetuck River for the June 4, 1987 FIS by Flaherty Giavara Associates for FEMA under Contract No. EMW-84-C-1594. That work was completed in August 1985. To date, areas along the Housatonic River, Town Farm Brook, the Still River, Great Brook, the East Aspetuck River, and the West Aspetuck River have been mapped as Zone AE, with the upper reaches of several of these watercourses and other smaller watercourses and water bodies mapped as Zone A.

Regulations that apply to flood hazard mitigation in conjunction with and in addition to NFIP regulations include:

Zoning Regulations

Adopted December 1971 and last amended June 20, 2018, the Town of New Milford Zoning Regulations have been enacted promote beneficial and convenient relationships among residential, commercial, industrial, and public areas within the town. Several sections are applicable to flood mitigation, including:

- **Chapter 15, Definitions**, defines “lot area” as not including any portion of the property classified as inland wetland, watercourse, natural slopes in excess of 25%, portions of the lot that are less than 25 feet wide, and the private right-of-way leading to a rear lot.
- **Chapter 95, Housatonic River District**, has been designed for the purpose of protecting with appropriate standards a carefully identified area of land along the Housatonic River. This district lies upstream of the Boardman bridge. Allowed uses include open space, game management, fishing, hunting, other recreational activities, farming, and golf courses that do not significantly alter the natural character of the corridor. Anyone proposing a different use must apply for a special permit, and special permits will not be issued if the proposal will increase erosion or sedimentation, create danger of flood damage, obstruct flood flow, among other restrictions.
- **Chapter 104, Candlewood Lake Watershed District**, has been designed to minimize the negative impact of stormwater runoff affecting Candlewood Lake. Proposals for new building construction, or any addition, alteration, or enlargement that results in an increase in impervious surfaces on a lot where the total impervious surface is 20% or greater must submit a Stormwater Management Plan for the project describing any risk or threat to Candlewood Lake or the water resources in its watershed, best management practices to be implemented by the applicant to reduce any such risk or threat, and supporting documentation to illustrate compliance with state stormwater management design guidelines.
- **Chapter 107, Cluster Conservation Subdivision District**, has been designed to provide an opportunity for greater flexibility in the design of subdivisions to allow greater tracts of undeveloped, dedicated, contiguous conservation open space. Open space associated with these subdivisions is to be maintained to conserve soils, wetlands, and marshes; protect natural drainage systems and ensure safety from flooding; and to protect other types of features.
- **Chapter 117, Major Planned Residential Development District No. 1**, provides an opportunity for flexible development of large parcels of land greater than 150 acres in size in western New Milford. No less than 60% of the total area shall be preserved as open space to protect soils, wetlands, marshes, and natural drainage systems and to ensure safety from flooding, among other requirements.

- **Chapter 119, Housatonic Riverfront Zone**, has been designed to encourage redevelopment and adaptive reuse of properties along the banks of the Housatonic River. A special permit is required. The regulations require a detailed stormwater management plan be provided to allow maximum protection of the water quality in the Housatonic River. Each application must include an emergency evacuation plan providing details regarding the flood zone classification, the proposed evacuation route and locations of directional signage, and the proposed method of notification of pending flood conditions.
- **Chapter 120, Floodplain Management Regulations**, are the local version of the NFIP regulations. The purpose and objective of these regulations is to promote the health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:
 - Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in flood heights or velocities;
 - Require that uses vulnerable to floods, including facilities which service such uses, be protected against flood damage at the time of initial construction;
 - Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
 - Control filling, grading, dredging, and other development which may increase erosion or flood damage;
 - Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters, or which may increase flood hazards to other lands;
 - Protect human life and public health;
 - Minimize expenditure of money for costly flood control projects;
 - Minimize the need for rescue and relief efforts associated with flooding that are generally undertaken at the expense of the general public;
 - Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone, and sewer lines; and streets and bridges located in SFHAs;
 - Maintain a stable tax base by providing for the sound use and development of SFHAs in such a manner as to minimize future flood blight areas; and
 - Ensure that potential buyers are notified that a property is in a SFHA.

Subsection 020: General Provisions specifically identifies the June 4, 1987 FIS and accompanying FIRM as adopted by reference into the Zoning Regulations. The Zoning Enforcement Officer is responsible for administering and implementing the provisions of the regulations and, by extension, the NFIP regulations. No structure may be constructed or substantially improved within SFHAs until a plan of the proposed construction has been approved by the Zoning Commission.

Subsection 030: Definitions defines the SFHA as the regulatory floodplain.

Subsection 040: Application Procedures presents the NFIP standards for new construction and substantial improvements including locating utilities to prevent flooding damage, use of anchoring to prevent floatation, and the requirement to maintain flood capacity when watercourses are altered. New construction or

substantial improvement (both residential and non-residential) must have the lowest floor, including basement, elevated to or above the base flood elevation.

Recreational vehicles placed on a site within the SFHA shall be allowed for no more than 180 consecutive days and must be fully ready for highway use. New and replacement water supply, sewage, and waste disposal systems must be located to minimize or eliminate infiltration of floodwaters into the systems. No encroachments, including fill, new construction, substantial improvements, or other developments are permitted in the floodway unless a certification is provided by a registered professional engineer that the encroachments will not result in an increase in flood levels during the base flood discharge.

Subsection 060: Enforcement Provisions provides the Zoning Enforcement Officer with enforcement powers, including obtaining and recording as-built elevations of the lowest floor, including basement, or all new or substantially improved structure; obtain and record the as-built elevation of any floodproofing measures; and assure that maintenance is provided when watercourses are altered or relocated such that the flood carrying capacity of the watercourse is not diminished.

- **Chapter 125, Erosion and Sediment Control Regulations**, provides the standards and procedures for erosion and sediment control when the disturbance is not for a single-family dwelling and the total disturbed area is cumulatively more than one-half acre. A sediment and erosion control plan must be submitted, approved, and adhered to by the applicant.
- **Chapter 160, Nonconforming Lots, Uses, Buildings, and/or Structures**, is designed to bring nonconforming uses, lots, buildings, and structures into conformity. Any building or structure containing a nonconforming use, which has been destroyed by fire, explosion, flood, or any act of God or public enemy may be restored to the same dimensions, floor area, and cubic volume lawfully existing immediately prior to such damage or destruction, provided the restoration is commenced within two years of the such damage or destruction. Failure to commence construction within such time frame is construed as an intention by the owner to abandon the nonconforming use.
- **Chapter 175, Site Plan Application**, includes provisions related to drainage. Stormwater management systems are required to be consistent with the 2004 Connecticut Stormwater Quality Manual, and proposed conditions cannot increase peak flows leaving a site. Stormwater management systems must be designed to pass the 25-year storm event, and adequately handle the 50-year and 100-year storm events such that flows from the site will not adversely affect downstream properties. Drainage pipes must be adequately sized to accommodate a 10-year storm event.

The Town requires Low Impact Development (LID) approaches in the Candlewood Lake Watershed District, and encourages them in the Housatonic Riverfront Zone, though the term "Low Impact Development" is not explicitly noted. Elsewhere, stormwater drainage systems are required to align with the 2004 Connecticut Stormwater Quality Manual, which includes but does not require LID options.

Subdivision Regulations

Effective June 2, 2001 and last amended March 7, 2002, the Town of New Milford Subdivision Regulations provide specific uniform controls for certain types of development. Section 1.2(2) indicates that the policy of the Planning Commission is that:

"...land to be subdivided shall be of such character that it can be used for building purposes without danger to health or the public safety, that proper provision shall be made for water, sewerage, and drainage, including the upgrading of any downstream ditch, culvert, or other drainage structure which, through the introduction of additional drainage due to such subdivision, becomes undersized and creates the potential for flooding on a state highway, and, in areas contiguous to brooks, rivers or other bodies of water subject to flooding, that proper provision shall be made for protective flood control measures..."

The regulations utilize the SFHA delineated by FEMA to determine floodprone areas. Section 2.2 indicates that any lot which cannot provide the necessary area for occupancy due to water or flooding conditions may be eliminated. Section 2.4 indicates that the discharge of all stormwater shall be into suitable streams or rivers or into Town drains with adequate capacity to carry the additional water. If Town drainage facilities are insufficient, the developer must upgrade them as part of the project. No land may be subdivided if the effect is to increase the likelihood of flood hazard or flood damage in a SFHA. Section 2.7 requires that electric power, telephone, and other cable systems shall be placed underground in all subdivisions except when the utility company decides that it is not feasible. Section 2.9 requires the creation of open space in subdivisions in part to avoid the potential for flooding, and that not less than 15% of the total area of the subdivision shall be so reserved.

Wetlands and Watercourse Regulations

Adopted October 13, 1988 and last amended March 6, 2010, the Inland Wetlands and Watercourses Regulations in New Milford require a permit for certain regulated activities which take place within 100 feet of a wetland or the ordinary high water line of a watercourse; within 200 feet of the ordinary high water line of Candlewood Lake, the east or west branch of the Aspetuck River, the Still River, the Housatonic River, or any watercourses within the West Aspetuck River watershed; or that may impact a wetland or watercourse. These regulations build on the preventative flood mitigation provided by the Zoning Regulations and Subdivision Regulations by preventing fill and sedimentation that could lead to increased flood stages.

As indicated above, the Zoning Enforcement Officer is the NFIP administrator for New Milford and oversees enforcement of NFIP regulations. The degree of flood protection established by the variety of regulations in New Milford meets the minimum reasonable for regulatory purposes under the NFIP. The Town of New Milford plans to remain compliant with the NFIP and will continue to participate in the NFIP. Given the relatively low number of structures impacted by flooding (see Section 3.3 and Section 3.5), the Town of New Milford is not currently considering enrollment in the Community Rating System program.

An additional level of preventative oversight is in effect over the northern portion of the Housatonic River upstream of Gaylordsville. Applicants who apply for a zoning or subdivision application along the Housatonic River must also submit an application to the Housatonic River

Commission. This commission is comprised of representatives from several towns upstream of New Milford and coordinates the local management and protection of the Housatonic River Valley in northwestern Connecticut. The Commission reviews and comments on developments within the river corridor.

The current regulations are believed to be generally effective at preventing flood damage to new development and substantial improvements. Town staff indicated that they strongly encourage one foot of freeboard, although this is not directly identified in the regulations. Most of the flooding issues in the community occur to buildings that pre-date New Milford joining the NFIP. In addition, in many areas entire parcels lie within the floodplain, so land use restrictions such as removing SFHAs from the buildable area of the lot are not feasible. As such, there is currently little political will to revise the floodplain regulations to further restrict development.

The New Milford *2010 Plan of Conservation and Development* is not scheduled for a comprehensive update until after 2020. Several of the goals of this plan are pertinent to hazard mitigation, including conservation goals such as protecting natural resources, addressing drainage issues, and preserving open space and greenways; and infrastructure goals such as addressing community facility and utility needs. The POCD identifies watercourses, wetlands, steep slopes greater than 25%, and the SFHA as resources to preserve and avoid to the extent possible. The 0.2% annual chance floodplain is identified as a resource for conservation. The goal in the POCD is for the Town to encourage future development away from sensitive natural resources and minimize potential impacts.

The 2010 POCD identifies drainage as a particular concern for New Milford. Review of drainage design and enforcement are fragmented, and the topography of the town exacerbates drainage issues. Suggestions from the POCD are listed below.

- a) Adopt a standardized drainage policy to ensure consistency between developments. Currently drainage requirements and standards are found in the Town Road Ordinance, the Subdivision Regulations, and in the Zoning Regulations;
- b) Consider adopting low-impact development standards into the zoning and subdivision regulations;
- c) Encourage town practices to employ measures to reduce stormwater flow; and
- d) Educate residents and property owners on ways that they can reduce stormwater runoff, and possibly adopt regulatory incentives over the long term.

Property Protection

Several property protection measures may be useful to prevent damage to individual properties from inland and nuisance flooding. Local officials are prepared to provide outreach and education in these areas where appropriate. These intermittent outreach efforts are considered to be generally effective, although additional staff and funding would be necessary to make them a regular, formalized occurrence.

Many property protection measures are costly and may require acquisition of grant funding to successfully complete. The Town of New Milford has experience in preparing grant applications such that this effort can be performed when applicable.

The source of flooding at the 15 repetitive loss properties (RLPs) located in New Milford is well-understood by Town of New Milford staff. Town staff indicated that the Town is not currently interested in contributing funding to perform acquisitions or elevations of RLPs or other floodprone properties within SFHAs. Many of the floodprone properties are commercial and it may not be feasible to relocate or elevate the buildings. The Town may be interested in assisting residential property owners with acquiring grant funding to assist with self-funded elevations, but there has not been any serious interest in the topic to date.

The Town enforces the Connecticut State Building code, which includes flood mitigation standards for new construction and substantial improvements; these include freeboard requirements.

Emergency Services

The Town of New Milford implements many emergency services mitigation measures such as maintaining an EOP. The Town of New Milford also utilizes the CT Alerts statewide emergency notification system to provide emergency notification to residents.

The Emergency Management Director is responsible for monitoring local flood warnings. The Town can access the National Weather Service website at <http://www.weather.gov/> to obtain the latest flood watches and warnings before and during precipitation events.

The Town receives regular weather updates through Division of Emergency Management and Homeland Security (DEMHS) Region 5 email alerts as well as watches and warnings through the National Weather Service. The National Weather Service issues a flood watch or a flash flood watch for an area when conditions in or near the area are favorable for a flood or flash flood, respectively. A flash flood watch or flood watch does not necessarily mean that flooding will occur. The National Weather Service issues a flood warning or a flash flood warning for an area when parts of the area are either currently flooding, highly likely to flood, or when flooding is imminent.

Flooding complaints from members of the public are directed to the Wetlands Enforcement Officer, or to Public Works if it is a roadway issue. The Wetlands Enforcement Officer has record information about many properties that have flooding problems.

Although the Aquarion Water Company operates wellfields that are in and adjacent to mapped floodplains, infrastructure related to water supply sources reportedly have not experienced significant flood damage. Wellheads are being elevated above the level of the 1% annual chance flood per state regulations. The utility performs regular maintenance around their wells to prevent exacerbation of potential flooding conditions near their infrastructure.

First Light Power Resources operates several dams along the Housatonic River and the Candlewood Lake Dams. First Light constantly monitors water levels in the Housatonic River and provides forewarning to the Town when flooding is predicted or imminent. First Light often lowers water levels behind its downstream dams in advance of a flood event. This helps to alleviate some of the flooding along the Housatonic River in New Milford.

Public Education and Awareness

The Town of New Milford makes a variety of information available for the public at its municipal buildings regarding mitigating flood hazards, including FEMA pamphlets on preparedness. The Emergency Management Director, Town Engineer, and the Zoning Enforcement Officer are local resources for guidance on preparedness and mitigation activities. The availability of these materials and resources is considered sufficient for the amount of flooding that occurs in the community.

The Town of New Milford is committed to working with its neighbors to resolve flooding concerns to a mutually acceptable level. The City of Danbury and the Town of Brookfield are the most suited to work with the Town of New Milford toward flood hazard mitigation because all three communities are affected by flooding along the Still River. The Town also works with the Town of Kent and other upstream communities regarding the Housatonic River (such as through the Housatonic River Commission). New Milford also regularly coordinates with Sherman, New Fairfield, Bridgewater, and Brookfield through regular WCCOG meetings.

Natural Resource Protection

Open space preservation is required for all subdivision projects as well for many other development projects within certain zones. Areas set aside for open space preservation must include a significant amount of land that would be considered "useable" and often contains floodplain areas. The set-aside requirement has been effective at informally maintaining stream buffers in the community.

The 2010 POCD encourages the Town to create an open space plan that develops Open Space System criteria that will prioritize future open space acquisition, move forward with planned trails and greenways, and continue to seek funding sources for open space. The POCD also identifies that the Parks and Recreation Department would like to provide more walking trails and additional playing fields. **Such recreational uses are appropriate in SFHAs and should be encouraged.**

Structural Projects

Major flood control projects do not exist within or upstream of New Milford. The USACE studied the potential for installing a flood protection project at Lovers Leap Gorge in southern New Milford on the Housatonic River. The Water Resources Commission also studied a local flood protection project to protect certain areas from flooding of the Housatonic River. According to the 1987 FIS, neither of these projects proceeded to construction due to unfavorable benefit-cost ratios.

Structural projects related to flood mitigation are instead aimed at drainage system installation and maintenance and increasing conveyance at culverts and bridges. The Connecticut Department of Transportation (DOT) is responsible for maintenance along state roadways, and the Town coordinates with the state when issues need to be addressed.

The Department of Public Works (DPW) is in charge of the maintenance of the town's drainage systems for all 184 miles of paved roads and 26 miles of gravel roads in New Milford, performs clearing of the 60 bridges, 4,600 catch basins, and 120 miles of drainage system piping, performs

beaver dam removal and management, and performs other maintenance as needed. As indicated in the 2010 POCD, DPW has developed a management system to track maintenance needs for town drainage infrastructure. This system is helping DPW target needed repairs and upgrades in a more efficient manner.

The Town of New Milford currently has an “as needed” schedule of drainage system maintenance, with regular inspections of drainage systems supplemented by problem areas and complaints received by the Town and routed to the DPW. Maintenance includes programs to clean out blockages caused by growth and debris. The current frequency of these inspection and maintenance programs is considered sufficient to meet the needs of the town of New Milford in most areas. Increasing the budget for these preventative activities would slightly improve the effectiveness of local drainage systems. The Town DPW also routinely performs minor culvert repair, replacement, and stabilization projects.

Actions Completed and New Capabilities

Several drainage projects have been recently completed New Milford. The Town replaced a bridge on Riverview Road, and has rehabilitated bridges on Aspetuck Ridge Road (2 bridges rehabilitated), Wellsville Road, and Mill Street. Portions of this work includes installing wingwalls and/or riprap protection to minimize scour. DPW has also replaced a bridge on Merryall Road. Culverts under Paper Mill Road were replaced with larger-diameters pipes to more appropriately control drainage.

The Town has numerous bridge reconstruction permits currently under review, or at other stages of the permitting and planning process:

- Mud Pond Road over Bull Mountain Brook
- A bridge in Gaylordsville
- Merryall Road over the West Aspetuck River
- Upland Road over the Aspetuck River
- Tamarack Drive

Tamarack Drive is undergoing a larger reconstruction project; reconstruction of the bridge, as well as other drainage upgrades, will be a part of that project.

Connecticut DOT completed a “Climate Change and Extreme Weather Pilot Project” in 2014 that included vulnerability assessments of culverts and bridges in Litchfield County. The assessment evaluated the existing storm event design standards, the recent 10-year historic actual rainfall intensity and frequency, and the hydraulic capacity of these structures using projected increases in rainfall. While no structures were evaluated in New Milford as part of the pilot study, the results of the study can be used to inform future analysis of appropriate sizing for culverts and bridges in the region.

The Housatonic Valley Association conducted Stream Habitat Continuity Surveys in 2014 and 2015, focused on improving areas where roads cross over streams. There is the potential to tie the results of these surveys into hazard mitigation planning activities.

New Milford is implementing new Connecticut MS4 General Permit stormwater requirements locally, reflecting increased efforts to minimize stormwater runoff.

The Town has established a local “New Milford Water Smart” group, which conducts public outreach and education about stormwater mitigation.

3.1.3 Vulnerabilities and Risk Assessment

SFHAs in New Milford are delineated on a Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS). Major watercourses in New Milford generally have SFHAs mapped as Zone AE, while smaller tributary streams are mapped as Zone A. Other small streams are mapped as Zone X500 representing the 0.2% annual chance floodplain. Refer to Figure 2-3 for the areas of New Milford susceptible to flooding based on FEMA SFHAs.

FEMA FIRMs have not been updated for Litchfield County since 1987, and no digital FIRM (DFIRM) is available for New Milford. Staff report that this situation (having older maps and no DFIRMs) makes enforcement of FEMA requirements more difficult locally than they expect it would be if they had updated, digital maps with flood elevations presented using the NAVD88 datum (such as in Fairfield county). There appears to be a perception among some members of the community that FEMA regulations are different in an area without up-to-date mapping.

Flooding due to poor drainage and other factors is also a persistent hazard in the town and can cause minor infrastructure damage, expedite maintenance, and create nuisance flooding of yards and basements.

Town staff report the following areas as being primary areas of concern with regards to flood risk:

- **The Bleachery**
- **West Street:** The road floods and becomes impassible. The Bleachery is located at the end of the street.
- **Public Works Garage**
- **EOC:** The facility itself is located outside a floodplain, but after a significant storm event, flooding cuts off all 3 roads to the site.
- **Water Pollution Control Facility**
- **Route 7 from Bridge to Sunny Valley:** This is the Town’s commercial corridor. It lies mostly within a SFHA.

Vulnerability Analysis of Private Property

According to the 1987 FEMA FIRM, approximately 3,726 acres of land is mapped within the 1% annual chance floodplain in New Milford, with an additional 2,093 acres of land mapped within the 0.2% annual chance floodplain. Town staff report that there are approximately 250 buildings located within a 1% annual chance floodplain in Town.

Based on correspondence with the State of Connecticut NFIP Coordinator at the Connecticut DEEP, a total of 15 repetitive loss properties (RLPs) are located in the town of New Milford. General details are summarized on Table 3-1.

Table 3-1: Repetitive Loss Properties

Type	Flooding Source	Mapped Floodplain
Residential	East Aspetuck River	1% Annual Chance
Residential	Great Brook	0.2% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Commercial	Housatonic River	1% Annual Chance
Residential	Housatonic River	1% Annual Chance
Residential	Housatonic River	1% Annual Chance
Residential	Housatonic River	1% Annual Chance
Residential	West Aspetuck River	1% Annual Chance

The Town reports that some of the RLPs in Town are rental properties; landlords have applied for permits to add additional residential rental units on the first floors of some of these properties, but the Town has not granted them.

The Zoning Enforcement Officer is required by local regulation to record the elevation of new or improved structures within the SFHA, as well as to record the elevation of floodproofing measures. **The FEMA Elevation Certificate is used to formally record elevations for compliance with Zoning Regulations.** Elevation certificates help to identify the relative magnitude of a flood event and provide information that is often necessary for federal grant applications. The 2012 Biggert-Waters Reform Act has restructured the NFIP such that insurance rates for pre-FIRM homes will no longer be subsidized. As such, elevation certificates will be critical to ensure that a property receives a proper insurance rating.

One of the best methods of property protection is for the homeowner to purchase flood insurance through the NFIP. While insurance does not prevent flooding, insurance payouts assist homeowners in restoring their properties more quickly than could be performed with savings alone. **Residents within the 1% annual chance floodplain are encouraged to purchase flood insurance through the NFIP and complete elevation certificates for their structures.**

The Town of New Milford Zoning Regulations require new developments or substantial improvements to be constructed such that the first floor is at or above the base flood elevation. A specific value of freeboard is not specified. Freeboard requirements provide an additional level of protection to floodprone properties by requiring new development or substantial improvement to be elevated to the base flood elevation plus an additional amount.

One particular area of concern for private property is the Bleachery, a renovated historic mill on the Housatonic River. This building is located in the 1% annual chance floodplain and has over 100 commercial units. The only mode of egress to this facility is via West Street, which is also

located in the 1% annual chance floodplain. Portions of West Street flood during 10- to 15-year storm events.

Another area of flooding concern for Town officials is the Pratt Nature Center, a 201-acre wildlife preserve and environmental education center, located on Paper Mill Road adjacent to the East Aspetuck River. One of the structures and a portion of the facility may be floodprone. This is a concern for emergency officials because a summer camp operates at this facility.

Vulnerability Analysis of Critical Facilities

The list of critical facilities provided by the Town of New Milford was used in combination with aerial photographs to accurately locate each critical facility. Several critical facilities lie within or near the SFHA, including the Public Works Garage, EOC, and Water Pollution Control Facility. Town staff indicate that these facilities become inaccessible during 10- to 15-year storm events.

The Public Works Garage lies within the SFHA of the Housatonic River, and access to the facility (Youngs Field Road) is also floodprone. Floodproofing is the initial preventative strategy, but **relocation is the long-term goal for the Public Works Garage.** According to the 2010 POCD, the DPW has been considering locations on Pickett District Road. Progress has not yet been made on the relocation of this facility.

The EOC is currently located in the Ambulance Facility on Scovill Street. While the building is located in the 0.2% annual chance floodplain, Scovill Street, Aspetuck Ridge Road, and Housatonic Avenue are all located in the 1% annual chance floodplain such that this facility may become inaccessible during severe flood events. As discussed in Section 2.9, the Town wishes to obtain a generator for the Town Hall and relocate the EOC to this facility, as the Town Hall is not susceptible to flooding. Progress has not yet been made on relocation of the EOC.

The Water Pollution Control Facility is located in the floodplain, but this is a water dependent use and the facility was designed with floodplain conditions in mind. However, West Street is within the 1% annual chance floodplain such that the facility may become inaccessible during flood events. **Town staff are considering elevating the level of one or more roads to the Ambulance facility and the Water Pollution Control Facility such that at least one mode of egress will be maintained during severe flood events.**

Although the Aquarion Water Company public water supply wellfield is in the SFHA, flooding is not a significant issue at this facility. Aquarion Water Company maintains an emergency contingency plan that details response procedures in case of flooding at the wellfield.

Flooding along the Housatonic River closes Route 7 between Bridge Street and Sunny Valley Road approximately seven to ten days per year. This closure impacts emergency vehicles, school transportation, and the general public. Police typically must remove people from flooded areas and flooded cars in this vicinity on six to seven days per year. Detours are set up via Fort Hill Road, but the road is narrow and not suited to carry the traffic load. Any solution to flooding in this area would be extremely complex and would need coordination with Connecticut DOT. **One option the Town may consider is to widen portions of the detour route to better accommodate the extra traffic.**

There are three bridge crossings of the Housatonic River in New Milford. The three bridges include the Boardman Road bridge, the Veterans Bridge that carries Route 67/Route 202 (Bridge Street), and the Marsh Bridge on Lower Grove Street near Lovers Leap State Park. Each of these bridges provide critical access between the east and west sides of town. There is concern that a severe flood event could damage or destroy these bridges, eliminating access to Route 7 from the east. Of the three, Bridge Street is considered to be most susceptible to flooding. **The Town is considering elevating one of these bridges above the 0.2% annual chance floodplain to ensure that access is maintained during a severe flood event.** Any project at Bridge Street would need to be implemented by Connecticut DOT as it is a state road.

Scouring and washouts have occurred along the railroad line that traverses New Milford. There is concern among Town staff about possible derailment of trains from settling tracks if the erosion is left unchecked. This could become an even bigger issue if passenger service to New Milford along Metro North is introduced in the next few years. New Milford staff will continue to encourage the railroad owner to repair erosion damage as it occurs along the railroad line.

The Iroquois gas pipeline and station is also a concern for Town staff. The meter station is located in the 1% annual chance floodplain, and gas pipelines also traverse through mapped floodplain areas. New Milford staff will continue to encourage the utility to utilize sound floodplain management principles to ensure this facility remains online during flooding.

The Town also has concerns about the types of materials and containment areas that are located in industrial portions of the SFHA. Town staff will continue to encourage these industries to exercise sound floodplain management principles to ensure that the materials in the floodplain are not compromised by flooding.

Vulnerability Analysis of Areas along Watercourses

The majority of overbank flooding issues in New Milford occur along the Housatonic River, the East and West Aspetuck Rivers, and the Still River. Other smaller brooks and streams are also floodprone, but flooding along these watercourses does not typically impact structures or infrastructure. Ice jams occur frequently at Lovers Leap Gorge on the Housatonic River, but only occasionally result in flooding. The majority of the flooding problems in New Milford are caused by heavy spring rains combined with normal spring thaws.

Housatonic River

The Housatonic River flows from the northwestern corner of town near Gaylordsville generally southeast across New Milford to the southeastern corner of town at Lake Lillinonah. Flooding typically occurs in stages along the Housatonic River in New Milford based on a variety of factors. The Bleachery Dam (see Section 8.0) is typically the water level control for the Housatonic River up to 10% annual chance flood elevation. This provides a relatively consistent gradient throughout New Milford under most conditions. When water levels exceed the 10% annual chance flood event, the Lovers Leap Gorge becomes the water level control. This constriction can create a backwater effect which travels upstream to the central and northern portions of the community as well as backwater conditions on the Still River. The backwater conditions exacerbate the impact of the peak flood wave as it moves downstream through the community.

Although the water level control provided by the Bleachery Dam may exacerbate flooding levels along the river, the dam is important for other reasons. First, the backwater condition provided by this dam helps to maintain water levels in the river that facilitate pumping of water up into Candlewood Lake. This water is used for recreation and to generate electricity. Second, the backwater condition helps to slow velocities along the Housatonic River, mitigating erosion of the riverbed that could cause the release of contaminated soil that is buried in the riverbed.

The USACE has had discussions with the town about replacing part or all of the spillway at the dam with inflatable flashboards. The flashboards would allow the Town to raise water levels in the summertime when flows are low, but lower the water levels in the winter and spring with flows are higher. The flashboards could also be lowered in advance of a major predicted flood event. **The Town should continue to evaluate this potential mitigation measure.** A hydraulic model could be utilized to determine the flood mitigation value of this project, which could make this project eligible for federal funding.



**Figure 3-1: Floodprone Area near Bridge Street / Route 7 Intersection
(Aerial from Microsoft)**

Emergency officials “chase” the peak flood wave along the Housatonic River during flood events. Road closures typically first occur near Bridge Street, which is a major intersection between Route 67 and Route 202 at Route 7 with many commercial properties in the area (Figure 3-1). Additional roads are closed and subsequently reopened as the flood wave moves downstream. The Police Department experiences many challenges redirecting traffic during these periods. One particular issue is that when the Housatonic River begins to flood, floodwaters back-water into drainage systems on Route 7, exacerbating flooding conditions along the roadway in areas that may not otherwise be under-water.

Town officials have been considering a variety of additional mitigation options to mitigate flooding along the Housatonic River. **The Town would like to perform a drainage study along the Housatonic River to identify drainage systems that should be outfitted with check valves / flap gates to prevent water coming back up through storm drains on Route 7.** The installation of strategically-placed flood barriers is another option to mitigate the overbank effects of the river.

Still River

The Still River flows north from Brookfield to its confluence with the Housatonic River just upstream of Lake Lillinonah. When flows begin to rise along the Housatonic River upstream of

Lovers Leap Gorge, backwater conditions typically begin to occur along the very flat lower reach of the Still River in New Milford. While some commercial and industrial properties in New Milford along Route 7 can be affected by flooding in the Still River, the backwater condition also exacerbates flooding conditions at properties and along tributary streams in upstream Brookfield, Danbury, and Bethel. The Town of New Milford endeavors to keep the channel clear as much as possible to minimize exacerbating the backwater condition, but its jurisdiction for direct efforts is limited by the fact that much of the river lies on private property. The Town will continue to conduct outreach to private property owners when impediments to streamflow are identified.

East and West Aspetuck Rivers

Although the land abutting these rivers has been historically floodprone, the impacts of flooding along these watercourses is less significant than the issues with the Housatonic River and the Still River. Some structures and properties are directly affected by overbank flooding, but most of the problematic flooding is caused by trees falling into the rivers. In many areas the banks are steep and the soils become unstable when wet, eventually causing trees to fall into the river channels. Route 202 is primarily affected by this issue, and clearing has had to be performed approximately four or five times over the past 15 years. Similar to the Still River, much of the river channel lies on private property such that the Town's jurisdiction is limited. The Town will continue to conduct outreach to private property owners when slope stability appears compromised, and will continue to perform tree removals as permitted.

Other Overbank Flooding

While beaver dams are not widespread in New Milford, there are areas that experience recurring minor flooding issues due to beaver dam activity. Such beaver dams are often located adjacent to Mud Pond Road at Mud Pond, off Tamarac Road near Denman Brook, off Fort Hill Road near Ferris Pond, and on Larson Road near an unnamed tributary to the Housatonic River. The greatest short-term concern is that the beaver activity is ruining the drainage infrastructure on Tamarac Road. In some areas, beaver activity can also exacerbate flooding along Route 7. Town DPW staff breach the dams when necessary.

Vulnerability of Other Areas

The town of New Milford has several areas that are subject to flooding away from defined watercourses. Many of these areas flood due to clogged or undersized drainage systems, or flooding is due to the complete lack of a drainage system. Such minor flood events can damage roads and cause ponding of nearby yards, basement flooding, and other damages. These events can usually be repaired by the Department of Public Works through cleaning, curb repair, and asphalt patching. More extreme events can require complete infrastructure replacement. As noted in Section 2.4, the frequency of damaging events is expected to increase in the future as the intensity and magnitude of rainfall continues to increase.

Given that rainfall intensity and magnitude has been increasing over the past few decades since the time that many local bridges and culverts were designed, the conveyance of each structure should be checked utilizing more recent rainfall data, and the structure redesigned if necessary. This could be done on a case-by-case basis, or as part of a larger watershed modeling and mitigation effort.

Several areas of New Milford are also prone to mudslides. The Town indicated that several areas along Route 7 are likely to experience such a slide in the near future. The slides in these areas will likely be caused by heavy rainfall falling on steep slopes comprised of poorly-draining soils.

The Grove Street area has long been a concern for mudslides (Figure 3-2). Grove Street is a major connector road between Route 67 and Route 7 that is located on the east side of the Housatonic River, and is the primary access to one of the three bridges that crosses the Housatonic River in New Milford. Heavy rain events routinely result in mudslides flowing over Grove Street south of Fordyce Road immediately downstream of a very steep slope. An engineering study was conducted in the early 1980's that resulted in a USACE stabilization project in 1983.

In recent years, increases in the magnitude and intensity of rainfall have coupled with land use changes upstream of the slope to result in more frequent mud slides. An engineering study of the area was conducted in 2012 concluded that land use changes (the most significant of which was legally conducted without Town oversight as certain types of land clearing is not regulated by local ordinances) have resulted in runoff increases of 35% for some areas of the upgradient watershed. The study recommended that the Town establish a regular maintenance schedule for maintaining the USACE-installed drop inlets, underdrain, and catch basins managing storm water on this embankment, redoubling outreach efforts with upstream landowners, and potentially pursuing an HMA grant to fund slope stabilization at the site.

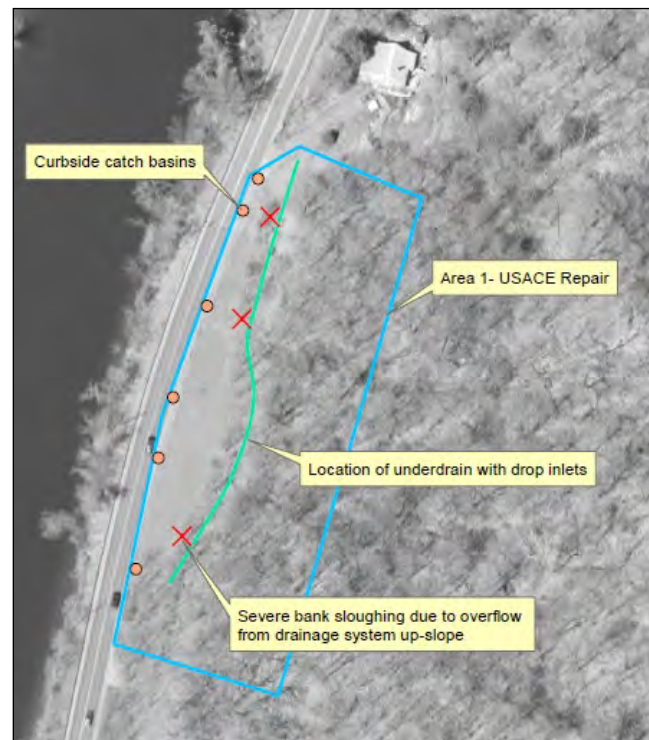


Figure 3-2: Grove Street Mudslide Area and 1983 USACE Repair (Aerial from CT DEEP)

3.2 DAM FAILURE

3.2.1 Setting

Dam failures can be triggered suddenly, with little or no warning, and often from other natural disasters such as floods and earthquakes. Dam failures often occur during flooding when the dam breaks under the additional force of floodwaters. In addition, a dam failure can cause a chain reaction where the sudden release of floodwaters causes the next dam downstream to fail. With numerous inventoried dams and potentially several other minor dams in the community, in addition to several significant dams located upstream in Kent, the effects of a dam failure could occur along almost any stream system in New Milford. While flooding from a dam failure generally has a moderate geographic extent, the effects are potentially catastrophic. A major dam failure is considered only a possible hazard event in New Milford in any given year.

3.2.2 Capabilities

The dam safety statutes are codified in Sections 22a-401 through 22a-411, inclusive, of the Connecticut General Statutes. Dam Inspection Regulations require that nearly 700 dams in Connecticut be inspected annually. The DEEP currently prioritizes inspections of those dams that pose the greatest potential threat to downstream persons and properties. Public Act No. 13-197, (passed June 2013) generally shifts regularly scheduled inspection and reporting requirements from the DEEP to the owners of dams. The Act also makes owners generally responsible for supervising and inspecting construction work and establishes new reporting requirements for owners when the work is completed.

The owner of any high or significant hazard dam (Class B and C) must develop and implement an Emergency Action Plan (EAP). The EAP must be updated every 2 years, and copies filed with DEEP and the chief executive officer of any municipality that would potentially be affected in the event of an emergency. EAPs include (1) standards for inundation studies and mapping; (2) procedures for monitoring the dam during periods of heavy rainfall; and (3) a formal notification system to alert local officials responsible for warning and evacuation of residents.

First Light Power Resources owns each of the dams that impound Candlewood Lake. The utility regularly monitors water levels at several locations in Candlewood Lake as well as on the Housatonic River. First Light Power Resources conducts a formal regulatory inspection of its high hazard dams a minimum of every two years in compliance with the Act, and also performs quarterly inspections at a minimum as required. The Town of New Milford and the Town of Washington perform formal regulatory inspections of their Class B dams every five years, and also perform quarterly inspections as required.

The Town of New Milford has drafted an EAP for the United New Milford Reservoir #4. First Light Power Resources maintains EAPs for its Candlewood Lake Dams. The Town of Washington maintains an EOP for the Lake Waramaug Dam.

The CT DEEP also administers the Flood and Erosion Control Board program, which can provide noncompetitive state funding for repair of municipality-owned dams. Funding is limited by the State Bond Commission. State statute Section 25-84 allows municipalities to form Flood and Erosion Control Boards, but municipalities must take action to create the board within the context of the local government such as by revising the municipal charter.

Dams permitted by the Connecticut DEEP must be designed to pass the 1% annual chance rainfall event with one foot of freeboard, a factor of safety against overtopping. Significant and high hazard dams are required to meet a design standard greater than the 1% annual chance rainfall event.

The Town of New Milford subscribes to the CT Alert emergency notification system to provide warnings to Town residents. Residents must sign up for notification through the CT Alert website. The dam failure inundation mapping discussed in the next section can be used to ensure that contact information is available in potentially affected areas if the failure of a major dam is imminent. The Town of New Milford also regularly conducts emergency drills related to dam failure in cooperation with First Light Power Resources. Most recently, an exercise was held simulating the failure of Candlewood Lake South Dam in Danbury.

Actions Completed and New Capabilities

Overall, the Town of New Milford's capability to mitigate for dam failure and prevent loss of life and property has improved in recent years as the result of the recent statewide legislative actions described above. Over the next few years, it is anticipated that dam safety programs will continue to strengthen in Connecticut.

3.2.3 Vulnerabilities and Risk Assessment

The Connecticut DEEP administers the statewide Dam Safety Program and designates a classification to each state-registered dam based on its potential hazard.

- *Class AA* – negligible hazard potential: failure would result in negligible damage and economic loss.
- *Class A* – low hazard potential: failure would result in minimal damage and economic loss.
- *Class BB* – moderate hazard potential: failure would result in minor damage and moderate economic loss.
- *Class B* – significant hazard potential: failure would result in possible loss of life, moderate damage to structures, and significant economic loss.
- *Class C* – high potential hazard dams: failure would result in loss of life, major damage to structures, and great economic loss.

As of October 1, 2013, there were 50 DEEP-inventoried dams within the town of New Milford. Three of these dams are Class C, and three are Class B. Two additional significant hazard dams that could affect New Milford are located upstream in Washington, and one high hazard dam that could affect New Milford is located upstream in Danbury. These dams could cause flooding conditions in New Milford if a failure occurred. Dams in New Milford are listed in Table 3-2 and shown on Figure 2-3.

Table 3-2: High and Significant Hazard Dams with Potential to Affect New Milford

Number	Name	Location	Class	Owner
3404	Candlewood Lake South Dam	Candlewood Lake, Danbury	C	First Light Power Resources
9602	Candlewood Lake North Dam	Candlewood Lake, New Milford	C	First Light Power Resources
9604	United New Milford Reservoir #4 Dam	Town Farm Brook, New Milford	B	Town of New Milford
9609	Cedar Hill Dam	Housatonic River, New Milford	B	First Light Power Resources
9634	Candlewood Lake Dam #2	Candlewood Lake, New Milford	B	First Light Power Resources
9639	North Lanesville Dam	Candlewood Lake, New Milford	C	First Light Power Resources
9640	Middle Lanesville Dam	Candlewood Lake, New Milford	C	First Light Power Resources
15008	Lake Waramaug Dam	Lake Waramaug, Washington	B	Town of Washington

In addition to the high and significant hazard dams with the potential to impact the town of New Milford identified in Table 3-2, the following dams were identified by the Town of New Milford of being of concern to the community. These dams are also discussed in this chapter:

- The United Water New Milford Reservoir #3 Dam in New Milford;
- The Bulls Bridge Dam in Kent; and
- The Bleachery Dam in New Milford.

The Town of New Milford believes that the town is vulnerable to dam failure with the potential for a large amount of damage particularly if one of the dams along Candlewood Lake were to fail. Fortunately, the dams maintained by First Light Power Resources are in good condition. In general, the Town believes that most of the dam failure concern lies with smaller public and private dams that may be poorly maintained.

Dam failure analyses have been prepared for many of the high hazard dams, and these are included in the EAPs. The inundation limits portrayed in the dam failure analysis maps represent *a highly unlikely, worst-case scenario (1,000-year) flood event and should be used for emergency action planning only*. As such, they are appropriate to identify properties from which contact information should be included in the Town's emergency notification database. These analyses should not be interpreted to imply that the dams evaluated are not stable, that the routine operation of the dams presents a safety concern to the public, or that any particular structure downstream of the dam is at imminent risk of being affected by a dam failure.

Candlewood Lake Dams

Five high and significant hazard dams are owned by First Light Power Resources on Candlewood Lake. Candlewood Lake is a seasonally pumped storage facility used to impound water for hydropower. Candlewood Lake has a maximum storage volume of 577,000 acre-feet and has a

surface area of 5,610 acres at normal maximum water levels. The powerhouse is located seven miles downstream of the Bulls Bridge Dam near the confluence of the Rocky River in New Milford.

Electronic monitors have been installed in the weirs downstream of all dams and dikes impounding Candlewood Lake which trigger audio and visual alarms in the event of a leak at any location. This information is continually relayed to the Rocky River Plant in New Milford, which is staffed 24 hours a day, 7-days a week. Thus, First Light Power Resources has the capability to immediately become aware of any potential problems at its dams and dikes on Lake Candlewood.

Candlewood Lake North Dam

The main dam (Candlewood Lake North Dam) impounds the lake upstream of the Rocky River approximately one mile upstream of the confluence of the Rocky River with the Housatonic River and impounds Candlewood Lake. This is the upper reservoir of the development with a contributing watershed of 40.4 square miles. The Candlewood Lake North Dam is an earth-filled structure with a 952-foot-long core wall. It has a maximum height of 107 feet.

A Dam Breach Analysis was prepared for the Danbury Dike in 1990. A breach model was prepared using the National Weather Service's DAMBREAK program, with the model extending downstream on the Housatonic River. A breach under "sunny day" non-flood conditions was performed. It was assumed that the breach would form within 60 minutes, and the simulation found that outflow from the breach would continue for several days. Inundation would reach the Shepaug Dam in approximately 72 minutes under either scenario.

Failure of the Main Dam would cause extensive flooding downstream in New Milford in areas adjacent to the Housatonic River and along the Still River. Water levels would begin to rise in the Housatonic River 18 minutes after failure occurred. All low-lying areas along the Housatonic River and the Still River would need to be evacuated, as water levels could rise nearly 28 feet near the Rocky River power station and nearly 17 feet near Lovers Leap Gorge. Fortunately, given the continuous monitoring of the dam by First Light staff, it is unlikely that a dam breach would take the town completely by surprise.

The Town of New Milford has concerns about the penstock that transfers water between Candlewood Lake and the Rocky River power station. Failure of the penstock could result in downstream flooding that could affect the downtown area in as few as 11 minutes. The wooden portion of the penstock reportedly has leaks in several places. First Light Power Resources has begun replacing sections of the penstock, so this problem should be alleviated within the next few years.

Middle Lanesville Dam

Three dikes were constructed in Lanesville at low points along the middle of the eastern shoreline of Candlewood Lake. The North Lanesville Dam (Class C) is a concrete structure 185 feet in length. The Candlewood Lake Dam #2 (Class B) is the southernmost structure and is a concrete gravity structure 520 feet in length. The Middle Lanesville Dam (Class C)

lies between the other two structures and is an earth fill structure 260 feet in length. The crest elevation of these structures is each approximately 437 to 438 feet NGVD.

A Dam Breach Analysis was prepared for the Middle Lanesville Dam in 1999. A breach model was prepared using the National Weather Service's DAMBREAK program, with the model extending downstream to the Shepaug Dam on the Housatonic River. Two analyses were performed, one under "sunny day" low flow conditions and another during the 1% annual chance flood on the Still River and the Housatonic River. It was assumed that the breach would form within 30 minutes, and models found that outflow from the breach would continue for several days under both scenarios. Inundation would reach the Shepaug Dam in approximately one hour under either scenario.

Failure of the Middle Lanesville Dam would cause extensive flooding downstream in New Milford. Portions of Skyview Drive, Sullivan Road, Larson Road, Route 7, Lanesville Road, Still River Drive, and Pumpkin Hill Road would likely be flooded with evacuations necessary, as some areas could experience an increase in water level of ten to 31 feet. Fortunately, given the continuous monitoring of the dam by First Light staff, it is unlikely that a dam breach would take the town completely by surprise. Based on the simulation, the breach wave will take less than 30 minutes to reach populated areas in New Milford.

Candlewood Lake South Dam

The Candlewood Lake South Dam (Class C) impounds the southern end of Candlewood Lake in Danbury upstream of Beaver Brook, a tributary to the Still River. The dam consists of two earth-fill sections (the Main Dike and the Wing Dike) divided by a rock outcrop. The overall length of the dike is about 1,000 feet with a crest elevation of 440 feet NGVD.

A Dam Breach Analysis was prepared for the Danbury Dike in 1999. A breach model was prepared using the National Weather Service's DAMBREAK program, with the model extending from the Danbury dike downstream to the Shepaug Dam on the Housatonic River. Two analyses were performed, one under "sunny day" low flow conditions and another during the 100-year flood on the Still River and the Housatonic River. It was assumed that the breach would form within 30 minutes, and models found that outflow from the breach would continue for several days under both scenarios. Inundation would reach the Shepaug Dam in four hours under the 1% annual chance flood scenario, and in five hours under the "sunny day" scenario.

Failure of the Candlewood Lake South Dam would cause extensive flooding along the Still River Corridor in New Milford. Portions of Route 7, Aldrich Road, Cross Road, Erickson Road, Lanesville Road, Still River Drive, Pickett District Road, and Pumpkin Hill Road would likely be flooded with evacuations necessary, as some areas could experience an increase in water level of six to 22 feet. Fortunately, given the continuous monitoring of the dam by First Light staff, it is unlikely that a dam breach would take the town completely by surprise. Based on the simulation, the breach wave will take approximately four hours to reach New Milford.

United New Milford Reservoir #4

The United New Milford Reservoir #4 Dam is a Class B dam is located at the western end of the reservoir and impounds a storage volume of 54 acre-feet from a contributing watershed of 0.78 square miles. It is owned by the Town of New Milford and used for recreation. The earthen dam was constructed in 1900 and is 17 feet in height and 325 feet in length. The dam discharges to Town Farm Brook, which flows in a westerly direction through a predominantly forested and undeveloped region. The brook is conveyed beneath McMahon Road and Halpine Road. Floodwaters resulting from dam failure could potentially affect these roadway crossings and two residences on the east side of McMahon Road. A draft EAP has been prepared for this dam.

Cedar Hill Dam

The Cedar Hill Dam (Class B) is located at the western end of the seven-acre Cedar Hill Pond and impounds a storage volume of 445 acre-feet from a contributing watershed of 993 square miles. It is owned by First Light Power Resources and used to impound a reservoir for hydropower. The earthen dam is 24 feet in height and 800 feet in length. Water is diverted at the Bulls Bridge Dam upstream on the Housatonic River into watercourse that flows nearly parallel to the Housatonic River on the east side of Kent Road that flows into the pond. The dam discharges to the Housatonic River through 400-foot long pipes that cross under Route 7 and through the power generating facility. Floodwaters from a structure failure would most likely inundate and damage a portion of Route 7. Floodwaters from a failure of the mountainside spillway would also likely inundate and damage a portion of Route 7.

Lake Waramaug Dam

The Lake Waramaug Dam (Class B) is located at the southern end of Lake Waramaug and impounds a 642-acre reservoir (the lake) from a contributing watershed of 14.4 square miles. It is owned by the Town of Washington and used for recreation. The masonry dam is three feet in height and 50 feet in length, and includes a spillway constructed of large cut stone blocks with stone training walls and gate house. The walls tie into West Shore Road embankments. Water passes under West Shore Road and travels 50 feet to the spillway crest, discharging to the East Aspetuck River. While buildings downstream of the dam in Washington along East Shore Road and its connectors are most likely to be impacted by flooding from failure of this dam, flooding conditions could also persist downstream along the East Aspetuck River into New Milford. Low-lying homes and roads are the most likely areas to be affected by flooding.

United New Milford Reservoir #3 Dam

The United New Milford Reservoir #3 Dam (Class BB) is located immediately upstream of Upper Reservoir Road and impounds an 8-acre pond from a contributing watershed of 0.59 square miles. It is owned privately owned and used for recreation. The earthen dam is 21 feet in height and 585 feet in length. Both the DEEP and Town personnel indicate that the dam is in poor condition, with the spillway butting up against the road. Failure of the dam would likely cause flooding of Upper Reservoir Road and Heacock-Crossbrook Road.

Bulls Bridge Dam

The Bulls Bridge Dam (Class BB) impounds the Housatonic River in the Bulls Bridge section of Kent. A portion of the impounded water is diverted downstream to produce hydropower at

Cedar Hill Dam. The dam is owned and operated by First Light Power Resources. The concrete dam is 24 feet high above bedrock and 225 feet in length, with a spillway width of 195 feet. The drainage area upstream of the dam is approximately 784 square miles. Failure of the Bulls Bridge Dam would likely cause flooding downstream along the Housatonic River into Gaylordsville, with areas along Route 7 most likely to be affected by flooding.

Bleachery Dam

The Bleachery Dam (Class A) impounds the Housatonic River near the southern terminus of West Street. The dam is a run-of-the-river dam that is owned by the Town of New Milford. While its original purpose was likely industrial, the dam is now classified as being used for recreation. The dam is 19 feet high (primarily underwater) and 800 feet in length. The drainage area upstream of the dam is approximately 993 square miles. As a low hazard dam, failure of the Bleachery Dam is unlikely to have a significant downstream flooding effect.

According to Town staff, the dam was scoured by the 1955 floods and was never repaired by the previous owner. As a result, the downstream face of the dam is now too steep. Since acquiring the dam, the Town has tried unsuccessfully many times over the years to secure funding to repair the dam.

The Town's primary concern regarding the dam is that the failure of the dam would lower water levels along the Housatonic River throughout most of Town to unacceptable levels during the summer. The low water levels could potentially allow for contaminants in the riverbed to be scoured. A proposal for repairing and modifying the dam to that will mitigate flooding is presented in Section 3.5.

3.3 HURRICANES AND TROPICAL STORMS

3.3.1 Setting

Several types of hazards may be associated with tropical storms and hurricanes including high winds, tornado winds, heavy rains, and flooding. While only some of the areas of New Milford are susceptible to flooding damage caused by hurricanes, wind damage can occur anywhere in the town. Hurricanes therefore have the potential to affect any area within the town of New Milford. A hurricane striking New Milford is considered a possible event each year and could cause critical damage to the town and its infrastructure.

Inland Connecticut is vulnerable to hurricanes despite moderate hurricane occurrences when compared with other areas within the Atlantic tropical cyclone basin. Since hurricanes tend to weaken within 12 hours of landfall, inland areas are relatively less susceptible to hurricane wind damages than coastal areas in Connecticut; however, the heaviest rainfall often occurs inland as was seen in Tropical Storm Irene in 2011. Therefore, inland areas are vulnerable to riverine and urban flooding during a hurricane.

3.3.2 Capabilities

Wind loading requirements are addressed through the state building code. The State Building Code has been amended several times in the past two decades. The 2005 Code was amended in 2009, 2011, and 2013. The code was then updated and amended in 2016, with the current code having been updated and effective as of October 1, 2018. The code specifies the design wind speed for construction in all the Connecticut municipalities. Effective October 1, 2018 the ultimate design wind speed for the Town of New Milford is 105 mph for a Category 1 event, 115 mph for a category 2, and 125 mph for a Category 3, 4 or 5 hurricane event. New Milford has adopted the Connecticut Building Code as its building code, and literature is available regarding design standards in the Building Department office.

Eversource Energy, the local electric utility, provides tree maintenance near its power lines. Town staff have indicated that they have a good relationship with the utility and that they have been more aggressive in its maintenance in recent years. The Town will continue working with the utility on preparedness measures, although staff are concerned that now that the Eversource Energy facility in town has been relocated out of New Milford that response times will be lengthened.

The Public Works Department has two certified tree wardens who encourage residents to cut trees that may be dangerous to power lines, and identify trees on town property and along rights of way that require trimming. New Milford focuses tree work on areas that have been hardest hit by previous events, under the assumption that these areas will be at the highest risk in the next event. Tree trimming and maintenance is performed by DPW, which has its own bucket truck. The DPW also has a contractor service that is regularly removing trees. The Town's annual budget for tree maintenance is around \$100,000. The proactive and aggressive approach to tree trimming has helped to considerably reduce the amount of power outages that have occurred along Route 7 in recent years.

All new utilities must be located underground in new subdivisions in order to mitigate storm-related damages. These regulations have been effective at reducing vulnerability for new

developments. Town staff also encourage new utility installations to be placed underground in other types of developments. The Town also implements projects to bury utility lines when it is appropriate to protect the infrastructure. For example, the Town buried utilities along Bank Street and Railroad Street to protect them from future storm damage.

During emergencies, the Town currently has three designated emergency shelters available for residents as discussed in Section 2.9. None of the facilities used as shelters are known to be specifically designed to resist the effects of wind.

The Town of New Milford utilizes radio, television, area newspapers, the internet, and the local and statewide CT Alert emergency notification systems to notify residents of oncoming storm danger and to announce the availability of shelters. Prior to severe storm events, the Town ensures that warning/notification systems and communication equipment are working properly and prepares for the possible evacuation of impacted areas. These protocols are considered effective preparation for storm events.

3.3.3 Vulnerabilities and Risk Assessment

NOAA estimates that the return period for a Category Two or Category Three storm to strike Fairfield County to be 39 years and 68 years, respectively. Tropical Storm Irene in 2011 and Superstorm Sandy in 2012 were the most severe tropical cyclone events to impact New Milford in recent years.

While most climate simulations agree that greenhouse warming enhances the frequency and intensity of tropical storms, models of the climate system are still limited by resolution and computational ability. Given the past history of major storms and the possibility of increased frequency and intensity of tropical storms due to climate change, it is prudent to expect that there will be hurricanes impacting Connecticut in the near future that may be of greater frequency and intensity than in the past.

Connecticut is located in FEMA Zone II regarding maximum expected wind speed. The maximum expected wind speed for a three-second gust is 160 mph. This wind speed could occur as a result of either a hurricane or a tornado in western Connecticut and southeastern New York. The American Society of Civil Engineers recommends that new buildings be designed to withstand this peak three-second gust.

Tropical Cyclone Vulnerability

The town of New Milford is vulnerable to hurricane damage from wind and flooding and from any tornadoes accompanying the storm. Fortunately, the town of New Milford is less vulnerable to hurricane damage than coastal towns in Connecticut because it does not need to deal with the effects of storm surge. Factors that influence vulnerability to tropical cyclones in the town include building codes currently in place, local zoning and development patterns, and the age and number of structures located in highly vulnerable areas of the community.

In general, as the residents and businesses of the state of Connecticut become more dependent on the internet and mobile communications, the impact of hurricanes on commerce will continue to increase. A major hurricane has the potential of causing complete disruption of power and

communications for up to several weeks, rendering electronic devices and those that rely on utility towers and lines inoperative.

Debris such as signs, roofing material, and small items left outside become flying missiles in hurricanes. Extensive damage to trees, towers, aboveground and underground utility lines (from uprooted trees or failed infrastructure), and fallen poles cause considerable disruption for residents. The vast majority of existing utilities are located above ground. Streets may be flooded or blocked by fallen branches, poles, or trees, preventing egress. Downed power lines from heavy winds can also start fires during hurricanes with limited rainfall.

Downed trees and limbs are a problem throughout Town. There are only a couple major state roads to travel through and out of Town, and both can be impacted by debris. The Town has more than 220 miles of road, mostly tree-lined, making management a challenge. Exacerbating this is the large number of dead Ash trees in Town. Town staff indicate that minor to moderate tree damage can occur during virtually all but the most minor storms.

Wind damage from hurricanes and tropical storms has the ability to affect all areas of New Milford while areas susceptible to flooding are even more vulnerable.

Town of New Milford staff are uncertain whether any Town-owned critical facilities have wind-mitigation measures installed to specifically reduce the effects of wind. Thus, it is believed that nearly all of the critical facilities in the town are as likely to be damaged by hurricane-force winds as any other. Many of the Town's older structures may not meet current building codes with respect to wind and therefore may be more susceptible to wind damage, and structures with older roofs may also be more susceptible to wind damage. Newer critical facilities are more likely to meet more stringent building code requirements and are therefore considered to be the most resistant to wind damage even if they are not specifically wind-resistant.

Some critical facilities are more susceptible than others to flooding damage associated with hurricane rainfall.

The town of New Milford's housing stock consists of historic buildings greater than 50 and sometimes 100 years old, relatively younger buildings built before 1990 when the building code changed to address wind damage, and relatively recent buildings that utilize the new code changes. Since most of the existing housing stock in the town predates the recent code changes, many structures are highly susceptible to roof and window damage from high winds. Hurricane-force winds can easily destroy poorly constructed buildings and mobile homes. There are a few mobile home parks and manufactured homes in the community that are susceptible to high winds.

As the town of New Milford is not affected by storm surge, hurricane sheltering needs have not been calculated by the U.S. Army Corps of Engineers for the town. The Town determines sheltering need based upon areas damaged or needing to be evacuated within the town. Under limited emergency conditions, a high percentage of evacuees will seek shelter with friends or relatives rather than go to established shelters. In the case of a major (Category Three or above)

hurricane, it is likely that the Town will depend on state and federal aid to assist sheltering displaced populations until normalcy is restored.

3.4 SUMMER STORMS AND TORNADOES

3.4.1 **Setting**

Summer storms and tornadoes have the potential to affect any area within the town of New Milford. Because these types of storms and the hazards that result (flash flooding, wind, hail, and lightning) might have limited geographic extent, it is possible for a summer storm to harm one area within the town without harming another.

It is considered highly likely that a summer storm that includes lightning will impact the town of New Milford each year, although lightning strikes have a limited effect. Strong winds and hail are considered likely to occur during such storms but also generally have limited effects. A tornado is considered a possible event in Litchfield County each year that could cause significant damage to a small area.

3.4.2 **Capabilities**

Warning is the primary method of existing mitigation for tornadoes and thunderstorm-related hazards. The NOAA National Weather Service issues watches and warnings when severe weather is likely to develop or has developed, respectively. The state has provided NOAA weather radios to all public schools as well as many local governments for use in public buildings. The general public continues to rely on mass media for knowledge of weather warnings, as supplemented by emergency notification system broadcasts.

The Connecticut State Building Code includes guidelines for the proper grounding of buildings and electrical boxes.

Municipal responsibilities relative to summer storm and tornado mitigation and preparedness include:

- Developing and disseminating emergency public information and instructions concerning tornado, thunderstorm wind, lightning, and hail safety, especially guidance regarding in-home protection and evacuation procedures and locations of public shelters;
- Designating appropriate shelter space in the community that could potentially withstand lightning and tornado impact;
- Periodically testing and exercising tornado response plans;
- Putting emergency personnel on standby at tornado "watch" stage; and
- Utilizing the Everbridge emergency notification system to send warnings into potentially affected areas.

These protocols are considered effective for mitigating wind and summer storm-related damage in the town of New Milford. While additional funding could be utilized to strengthen the current level of mitigation, such funding is not currently considered cost-effective for the current level of vulnerability.

Actions Completed and New Capabilities

New Milford continues to maintain and improve its capabilities for severe wind mitigation. Local implementation of the State Building Code is one of its primary tools in this effort.

3.4.3 Vulnerabilities and Risk Assessment

The town of New Milford has at least a moderate potential to experience tornado damage. NOAA states that climate change has the potential to increase the frequency and intensity of tornadoes, so it is possible that the pattern of occurrence in Connecticut could change in the future.

Thunderstorms are expected to impact New Milford at least 20 days each year. The majority of these events do not cause any measurable damage. The likelihood of lightning strikes in the New Milford area is very high during any given thunderstorm although no one area of the town is at higher risk of lightning strikes. The risk of at least one hailstorm occurring in New Milford is considered moderate in any given year.

Town personnel indicate that downbursts are the most common type of wind event that causes significant tree damage in New Milford. The risk of downbursts occurring during such storms and damaging the town of New Milford is believed to be likely for any given year. A severe downburst event struck New Milford and nearby Bridgewater on May 27, 2014. A 2018 microburst caused major damage throughout the southern end of New Milford. The High School roof was badly damaged and positive pressure blew out a wall of an industrial building, causing a collapse. Power was down for a week and a half in southern New Milford, and access was blocked to Pump Hill, the Candlewood Lake area, and between New Milford and Brookfield. The Town was not eligible for disaster funding because Litchfield County did not receive a disaster declaration (though adjacent Fairfield County did, as did New Haven County).

Most thunderstorm damage is caused by downbursts, or straight-line winds exceeding 100 mph.

Town of New Milford personnel indicate that there is a wind corridor between several hills that often experiences straight line winds, with the most vulnerable areas being along Candlewood Lake Road North, Pumpkin Hill Road, Carmen Hill Road, and Ridge Road.

All areas of the town are susceptible to damage from high winds although more building damage is expected in the more densely populated Downtown area. More tree damage is expected in the less densely populated areas in the northern and eastern portions of the town, with the most vulnerable areas being the many ridges and hills located throughout New Milford.

Secondary damage from falling branches and trees is more common than direct wind damage to structures. Heavy winds can take down trees near power lines, leading to the start and spread of fires. Strong thunderstorms will cause power lines to fall anywhere in the town. Most downed power lines in New Milford are detected quickly, and any associated fires are quickly extinguished. Such fires can be extremely dangerous during the summer months during dry and drought conditions.

Summary

Most of the town of New Milford is at relatively equal risk for experiencing damage from summer storms and tornadoes. Areas of higher risk include those hilltops, ridges, and wind corridor areas that are considered more vulnerable to straight line winds. Based on the historic record, very few

summer storms or tornadoes have resulted in costly damages to the town. Most damages are relatively site-specific and occur to private property (and therefore are paid for by private insurance). For municipal property and roads, the Town budget for tree removal and minor repairs is generally adequate to handle the effects of summer storm damage.

3.5 WINTER STORMS AND NOR'EASTERS

3.5.1 **Setting**

Winter events and the hazards that result (nor'easter winds, snow, blizzard conditions, and ice) have a widespread geographic extent. The entire town of New Milford is susceptible to winter storms and, due to its variable elevation, can have higher amounts of snow in the outskirts of the town than in the Downtown area. In general, winter storms are considered highly likely to occur each year (although major storms are less frequent), and the hazards that result can potentially have a significant effect over a large area of the town.

Most winter weather events occur between December and March.

3.5.2 **Capabilities**

Programs specific to winter storms generally relate to preparing plows and sand and salt trucks, tree trimming to protect power lines, and other associated snow removal and response preparations. Other programs are aimed at warning residents about potential winter hazards, such as making educational pamphlets available at municipal buildings.

The New Milford Public Works Department has an annual budget allotment for plowing town roads. The Town reports having a fully-staffed department that is effective at snow removal activities. The facilities department is responsible for removing snow from the roofs of municipal buildings. In the past they have used snow blowers on large flat roofs. The largest flat roofs are those of the schools, and the school system is responsible for snow removal from its own roofs (also using snowblowers). The Kimberly Clark building also has a large flat roof; the company cleans its own roof. The Building Official and the Public Works Department are available to assist with snow removal and structural assessments of buildings as needed.

The Town also has an ice management program, through which municipal staff identify roads with icing problems, and implement drainage projects to address those problems. On state roads, problems are communicated to the state.

Connecticut DOT plows all state roads, while staff from the Public Works Department plows all 210 miles of town roads. The Public Works Department has 30 plow trucks with sanders that are either permanently attached or can be seasonally installed onto fleet vehicles. Plowing is performed along 23 established plowing routes, although priority is given to plowing egresses to critical facilities. During emergencies, a plow vehicle can be temporarily rerouted to clear the route ahead of an emergency vehicle.

Homeowners, private associations, and businesses are responsible for plowing their own driveways, private roads, and sidewalks. The Public Works Department maintains a sand and salt pile that residents may use to sand their driveways and sidewalks during the winter.

Prior to a winter weather event, Town staff ensure that all warning/notification and communications systems are ready and ensure that appropriate equipment and supplies, especially snow removal equipment, are in place and in good working order. Pre-storm treatment is typically applied to roadways to reduce the accumulation of snow. The Town also prepares for

the possible evacuation and sheltering of some populations that could be impacted by the upcoming storm (especially the elderly and special needs persons). The Public Works Director can also declare a "Snow Emergency and Parking Ban" which bans parking on certain designated streets in order to allow plowing to occur when snow is expected to accumulate. The ban is issued to the media via press release.

Actions Completed and New Capabilities

New Milford continues to maintain and improve its capabilities for winter storm mitigation. Public alerts, tree trimming, and road plowing are its primary mitigation strategies.

Summary

Overall, these programs are considered effective at mitigating the effects of winter storms. For municipal property, the Town budget for tree removal and minor repairs is generally adequate to handle winter storm damage although the plowing budget is often depleted. In particular, the heavy snowfalls associated with the winters of 2010-2011 and 2014-2015 drained the Town's plowing budgets and raised a high level of awareness of the danger that heavy snow poses to roofs.

3.5.3 Vulnerabilities and Risk Assessment

The NCDC receives data from the Danbury Weather Station regarding snowfall. Mean annual snowfall is 38 inches per year, with a maximum of 85.6 inches recorded over 77 years of data.

Connecticut experiences at least one major nor'easter every four years, although a variety of minor and moderate snow and ice storms occur nearly every winter. According to the *2019 Connecticut Natural Hazards Mitigation Plan*, Connecticut residents can expect at least two or more severe winter weather events per season, including heavy snowstorms, potential blizzards, nor'easters, and potential ice storms. Winter Storm Alfred in October of 2011 was the most severe winter storm to strike New Milford in recent years.

According to the *2019 Connecticut Natural Hazards Mitigation Plan*, recent climate change studies predict a shorter winter season for Connecticut (by as much as two weeks) and less snow-covered days with a decreased overall snowpack. These models also predict that fewer, more intense precipitation events will occur with more precipitation falling as rain rather than snow. This trend suggests that future snowfalls will consist of heavier (denser) snow, and the potential for ice storms will increase. Such changes will have a large impact on how the state and its communities manage future winter storms and will affect the impact such storms have on the residents, roads, and utilities in the state.

The amount of snowfall and freezing precipitation in the town of New Milford can be elevation-dependent during winter storms. As the higher elevations in the southern portion of town are developed, the vulnerability of New Milford residents to the effects of winter storms will increase. There is a high probability for traffic accidents and traffic jams during heavy snow and light icing events. Roads may become impassable, inhibiting the ability of emergency equipment to reach trouble spots and the accessibility of medical and shelter facilities.

After a storm, snow piled on the sides of roadways can inhibit sight lines and reflect a blinding amount of sunlight. When coupled with slippery road conditions, poor sightlines and heavy glare create dangerous driving conditions. Stranded motorists, especially senior and/or handicapped citizens, are at particularly high risk of injury or death from exposure during a blizzard. The elderly population in New Milford, in particular, are susceptible to the impacts created by winter storms due to resource needs (heat, electricity loss, safe access to food, etc.).

The structures and utilities in the town of New Milford are vulnerable to a variety of winter storm damage. Tree limbs and some building structures may not be suited to withstand high wind and snow loads. Ice can damage or collapse power lines, render steep gradients impassable for motorists, undermine foundations, and cause "flood" damage from freezing water pipes in basements. Drifting snow can occur after large storms, but the effects are generally mitigated through municipal plowing efforts. For example, the northern section of the town has traditionally experienced snow drift accumulation, especially along Merryall Road, Geiger Road, and Ridge Road. A few roads are narrow and require bucket loaders to plow effectively.

The Kimberly Clark building is a very large, economically critical manufacturing building (paper manufacturing). The building has a large flat roof, potentially susceptible to collapse in an extreme snowfall scenario. The company cleans its own roof of snow using snow blowers.

Icing causes difficult driving conditions throughout the hillier sections of the town. The Town's protocol of pretreating roads has been helpful in controlling ice in these problem areas. In addition, many of the historical icing problems in New Milford have been eliminated through drainage system improvements. However, icing remains an issue along Route 7 in the southern portion of town due to drainage issues.

Winter weather can also lead to ice jams, or temporary dams created by ice at constrictions in rivers. These dams impound water upstream, leading to flooding, and can cause severe impacts downstream if breached suddenly. New Milford has had ice-dam issues in the past, and it is a hazard of concern.

- At the Bleachery Dam, ice jamming results in large chunks of ice being tilted upward as high as two-stories. Directly below the dam is a railway bridge, which is potentially at risk from these ice chinks.
- Lovers Leap Gorge is a significant constriction on the flow of the Housatonic River, which can result in ice jam issues at the site. Water can be backed up all the way into town.
- Ice jams are a problem upstream in Kent. They have never experienced a full breach of an ice dam upstream, which could cause significant flooding in New Milford.

Summary

The entire town of New Milford is at relatively equal risk for experiencing damage from winter storms although some areas (such as icing trouble spots and neighborhoods with a high concentration of flat roofs) are more susceptible. Based on the historic record, it is difficult to determine if any winter storms have resulted in costly damages to the town as damage estimates for severe storms are generally spread over an entire county. Many damages are relatively site specific and occur to private property (and therefore are paid for by private insurance) while repairs for power outages are often widespread and difficult to quantify to any one municipality.

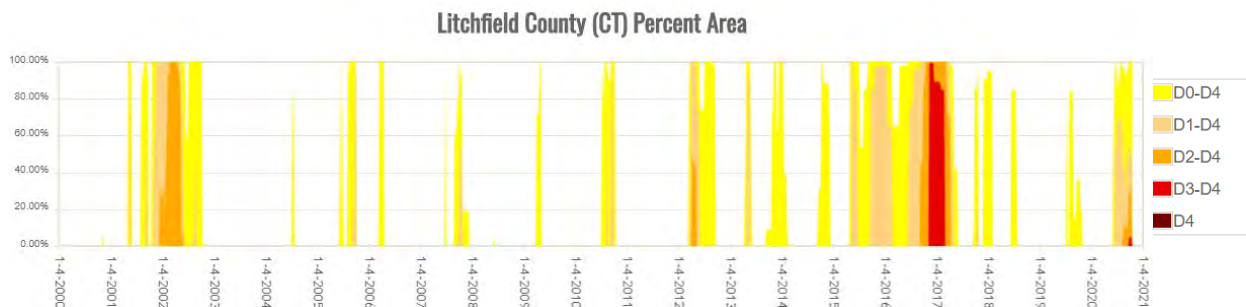
3.6 WILDFIRES AND DROUGHT

3.6.1 Setting

The town of New Milford is generally considered a low-risk area for wildfires. Wildfires are of particular concern in outlying areas without public water service and other areas with poor access for fire-fighting equipment. Hazards associated with wildfires include property damage and loss of habitat. Wildfires are considered a likely event each year but are generally contained to a small range with limited damage to non-forested areas.

Wildfires are any non-structure fire, other than a prescribed burn, that occurs in undeveloped areas. They are considered to be highly destructive, uncontrollable fires. Although the term brings to mind images of tall trees engulfed in flames, wildfires can occur as brush and shrub fires, especially under dry conditions. Wildfires are also known as "wildland fires."

In addition, New Milford, and Litchfield County overall, has experienced drought challenges over recent years. The U.S. Drought Monitor (USDM), which has been monitoring nationwide drought conditions since 2000, estimates that over the past two decades Connecticut experienced its longest drought of 46 weeks beginning June 21, 2016 and lasting until May 2, 2017. It was also estimated that the most intense period of this extended drought occurred the week of November 15, 2016, where approximately 44.5% of Connecticut lands were impacted. Figure 3-3 depicts the percent of Litchfield County experiencing drought conditions over time since 2000, where the warmer colors represent more advanced drought stages.



The 2019 Connecticut Natural Hazard Mitigation Plan assumes that the State of Connecticut has a medium probability of future drought events. This assumption is based on climate change projections anticipating hotter and wetter conditions in the near future. Climate forecasts often suggest that while precipitation may increase, the overall pattern will generally be higher intensity storms, with longer than average dry periods between events. The State Plan also identifies that Litchfield County accounts for roughly 20.19% of the state's total number of farms, with a market value of over \$46 million in product sold from these farms.

3.6.2 Capabilities

Existing mitigation for wildland fire control is typically focused on Fire Department training and maintaining an adequate supply of equipment. Firefighters are typically focused on training for either structural fires or wildland fires and maintain a secondary focus on the opposite category.

The Connecticut DEEP requires each municipality to designate an Open Burning Official who takes an online training course and exam to become certified, and manages open burning permitting. According to Town staff, the burning permit requirement has reportedly helped to reduce uncontrolled fires in New Milford.

Regulations regarding fire protection are outlined in the *Zoning Regulations* and the *Subdivision Regulations* as presented below. As noted in the 2010 POCD, access for fire fighting vehicles is believed important and therefore is prioritized in the regulations.

Zoning Regulations

- **Section 025-040(2)** and **Section 165-030(2)** require that residential rear lots be connected via a separate, unobstructed right of way that is at least 20 feet in width and connecting to a street that is adequate to accommodate fire apparatus or other emergency equipment.
- **Section 040-030(5)** presents a similar requirement for commercial rear lots in the B-1 business zone except that the right of way must be at least 30 feet in width.
- **Section 070-020(1)(g)** bans outside burning of motor vehicle parts or bodies in the motor vehicle junkyard district.
- **Section 080-030(5)(g)** authorizes the Zoning Commission to consider problems of fire protection in considering applications for approval in the Village Center District.
- **Section 105-040(1)** requires that water supply systems in Planned Residential Districts be designed as to provide adequate fire protection with hydrants or fire ponds.
- **Section 117-040(12)** requires fire hydrants or other fire suppression devices be installed in locations approved by the Fire Marshall in Major Planned Residential Development Districts.

Subdivision Regulations

- **Section 2.2.1b(6)** requires common driveways that serve two lots to install a hammerhead-type turnaround that is adequate to accommodate fire apparatus and other emergency equipment.
- **Section 2.5.3** requires the installation of fire suppression systems or hydrants within subdivisions to provide adequate fire protection.

The 2010 POCD notes that continued cooperation between land use boards and the Fire Marshall is important. The Fire Marshall reviews new developments for fire protection requirements and provides recommendations to the Planning Commission and Zoning Commission. The Fire Marshall and Fire Departments also regularly conduct public outreach and education on fire safety and safe practices throughout the community.

Public water service is provided throughout much of the southern and central portions of town, but alternative water sources are needed in outlying areas. A dry hydrant program has been implemented, but maintenance of the hydrants has proven difficult particularly for those hydrants installed in tanks.

Unlike the west coast of the United States where the fires are allowed to burn toward development and then stopped, the New Milford Fire Department goes to the fires whenever

possible. This proactive approach is believed to be effective for controlling wildfires. As noted in the 2010 POCD, the Northville and Gaylordsville Fire Departments prefer to fight fires in outlying areas by using those hydrants installed in ponds, or utilizing a direct connection to a pond as public water is not available in their areas of coverage. The Town first utilizes its pumpers and tanker trucks to fight fires before drawing water from surface water sources, although the water carrying capacity of the pumpers is limited.

The Town of New Milford has an all-terrain vehicle to assist with fighting fires in outlying areas. The Town also has mutual aid agreements with all its neighbors, and works with the Connecticut DEEP regarding fire protection on state-owned lands. In particular, DEMHS Region 5 has a tanker brigade that can assist New Milford fire personnel in fighting wildfires. Fire protection needs and potential problem areas are reviewed at least annually. Finally, the DEEP Forestry Division uses rainfall data from a variety of sources to compile forest fire probability forecasts. This allows the DEEP and the Town to monitor the drier areas of the state to be prepared for forest fire conditions.

Actions Completed and New Capabilities

Overall, the level of preparedness in New Milford is considered suitable for the most common wildfire and brush fire risks in the community; however, the Town will pursue opportunities to increase its capabilities to fight wildfires in more remote parts of Town (see Section 3.6.3).

3.6.3 Vulnerabilities and Risk Assessment

Areas within New Milford vulnerable to wildfire are shown in Figure 3-4. Such areas in New Milford generally lie in the northern section of town.

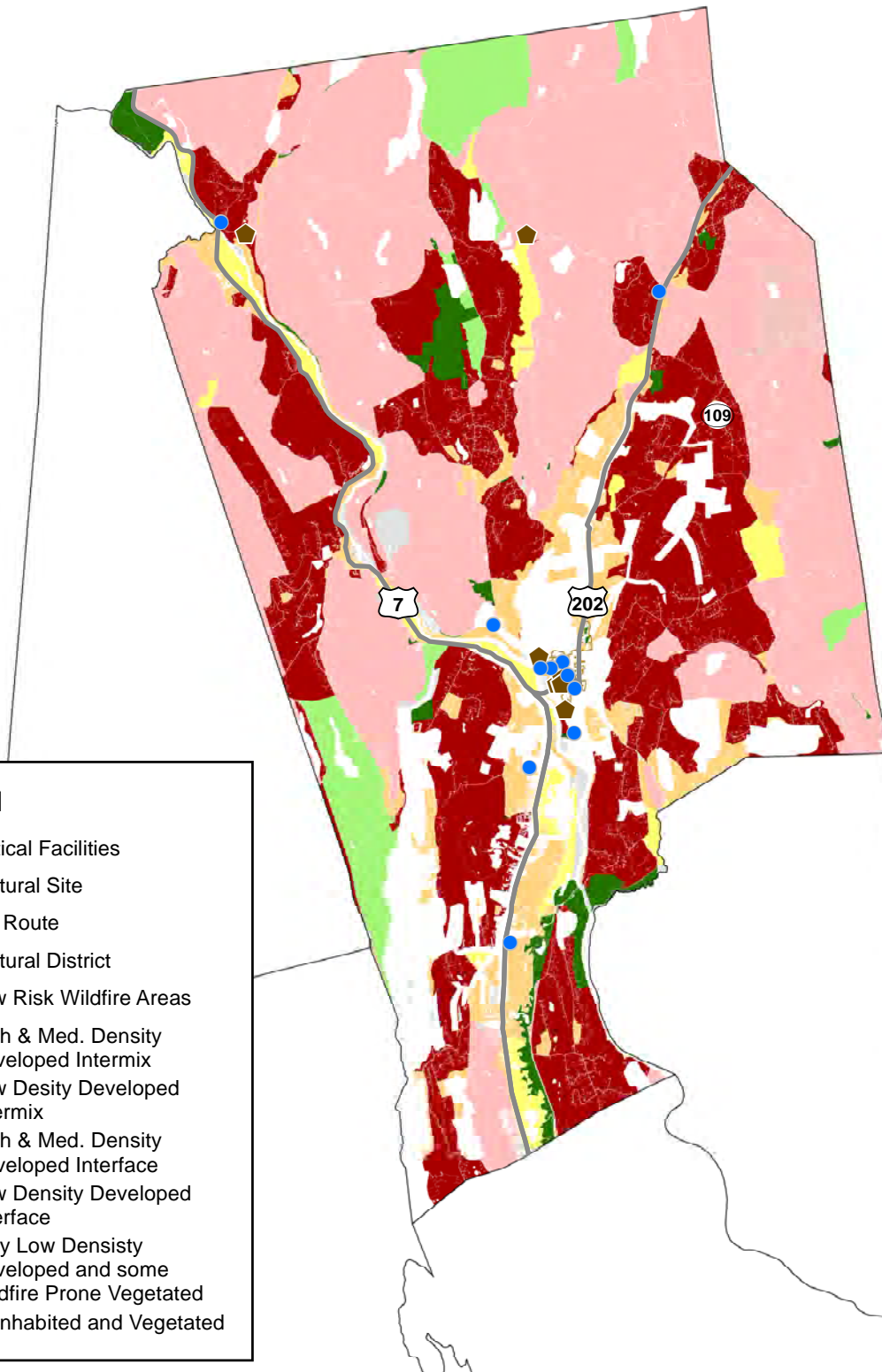
New Milford has a particular vulnerability to fire hazards where urban development and wildland areas are in close proximity. The "wildland/urban interface" is where many such fires are fought. Wildland areas are subject to fires because of weather conditions and fuel supply. An isolated wildland fire may not be a threat, but the combined effect of having residences, businesses, and lifelines near a wildland area causes increased risk to life and property. Thus, a fire that might have been allowed to burn itself out with a minimum of firefighting or containment in the past is now fought to prevent fire damage to surrounding homes and commercial areas as well as smoke threats to health and safety in these areas.

Traditionally, the highest forest fire danger in Connecticut occurs in the spring from mid-March to mid-May. Most wildfires in Connecticut are relatively small. In the drought year of 1999, the average wildfire burned five acres in comparison to the large 570-acre wildfire in Kent in 2001.

In 2016, a wildfire occurred in Lovers Leap State Park. The fire began on Friday, July 22, 2016 and burned through Sunday, July 24, 2016. The Water Witch Hose Company #2 from New Milford, fire crews from Gaylordsville and Northville, and 12 DEEP firefighters, teamed to extinguish the fire. In total the fire burned about 10 acres. Another significant fire occurred off North Kent Road on the New Milford/Kent border in March 2011. This uncontrolled grass fire burned five acres before it could be contained and spread so quickly that it consumed one of fire trucks owned by the Town of Kent.

Given the availability of firefighting water in the town – including the use of nearby water bodies – and the historic record, it is believed that the average size of a wildfire in a drought year would be between one and five acres, with the larger values occurring in outlying areas of the community.

Town staff have identified weaknesses in their fire-fighting capability. First, the 2010 POCD indicates **that improved communication equipment is necessary for the Fire Departments to properly coordinate among themselves and other emergency officials during emergencies.** Second, accessibility in parts of the northern, western, and eastern sections of town is limited in many areas and particularly difficult for larger fire apparatus to access. These areas are in outlying areas away from the public water system where access may be limited and fire protection water is not immediately available. New Milford staff are concerned that if a strong fire were to occur in a very remote area, such as on Candlewood Mountain, the Town would not have sufficient capabilities to control it.



Legend

- Critical Facilities
- ◆ Cultural Site
- US Route
- Cultural District
- Low Risk Wildfire Areas
- High & Med. Density Developed Intermix
- Low Density Developed Intermix
- High & Med. Density Developed Interface
- Low Density Developed Interface
- Very Low Density Developed and some Wildfire Prone Vegetated
- Uninhabited and Vegetated

3.7 EARTHQUAKES AND LANDSLIDES

3.7.1 Setting

The entire town of New Milford is susceptible to earthquake damage. However, even though earthquake damage has the potential to occur anywhere both in the town as well as in the northeastern United States, the effects may be felt differently in some areas based on the type of geology. In general, earthquakes are considered a hazard that may possibly occur and that may cause significant effects to a large area of the town.

3.7.2 Capabilities

The Connecticut Building Codes include design criteria for buildings specific to each municipality as adopted by the Building Officials and Code Administrators (BOCA). These include the seismic coefficients for building design in the town of New Milford. The Town has adopted these codes for new construction, and they are enforced by the Building Official. Due to the infrequent nature of damaging earthquakes, land use policies in the Town do not directly address earthquake hazards. However, various regulations do indirectly discuss areas susceptible to earthquake damage such as steep slopes.

In the event that a damaging earthquake occurs, the Town of New Milford will activate its EOP and initiate emergency response procedures as necessary.

Actions Completed and New Capabilities

3.7.3 Vulnerabilities and Risk Assessment

Surficial earth materials behave differently in response to seismic activity. Unconsolidated materials such as sand and artificial fill can amplify the shaking associated with an earthquake. In addition, artificial fill material has the potential for liquefaction. When liquefaction occurs, the strength of the soil decreases, and the ability of soil to support building foundations and bridges is reduced. Increased shaking and liquefaction can cause greater damage to buildings and structures and a greater loss of life.

Several areas in the town of New Milford are underlain by sand and gravel, particularly within the valleys associated with the major streams. Structures in these areas are at increased risk from earthquakes due to amplification of seismic energy and/or collapse. The best mitigation for future development in areas of sandy material may be application of the most stringent building codes or possibly the prohibition of new construction. However, many of these areas occur in floodplains associated with the various streams in New Milford, so they are already regulated. The areas that are at the least risk during an earthquake due to unstable soils are the areas underlain by glacial till, which includes most of the town.

Areas of steep slopes can collapse during an earthquake, creating landslides. Seismic activity can also break utility lines such as water mains, electric and telephone lines, and stormwater management systems. Damage to utility lines can lead to fires, especially in electric and gas mains. Dam failure can also pose a significant threat to developed areas during an earthquake. For this HMP, dam failure has been addressed separately.

A series of earthquake probability maps was generated using the 2009 interactive web-based mapping tools hosted by the USGS. These maps were used to determine the probability of an earthquake of greater than magnitude 5.0 or greater than magnitude 6.0 damaging the town of New Milford. Results are presented in Table 3-3 below.

Table 3-3: Probability of a Damaging Earthquake in the Vicinity of New Milford

Time Frame (Years)	Probability of the Occurrence of an Earthquake Event > Magnitude 5.0	Probability of the Occurrence of an Earthquake Event > Magnitude 6.0
50	1% to 2%	< 1%
100	3% to 4%	< 1%
250	8% to 10%	1% to 3%
350	10% to 15%	2% to 4%

While the risk of an earthquake affecting New Milford is relatively low over the short term, long-term probabilities suggest that a damaging earthquake (magnitude greater than 5.0) could occur within the vicinity of New Milford.

As a damaging earthquake would likely affect a large area beyond the town of New Milford, it is likely that the community may not be able to receive significant regional aid for a few days. It is important for municipal facilities and departments to have adequate contingency plans and supplies to ensure that restoration activities may proceed until outside assistance may be provided.

The built environment in Connecticut includes old non-reinforced masonry that is not seismically designed. Those who live or work in non-reinforced masonry buildings, especially those built on filled land or unstable soils, are at the highest risk for injury due to the occurrence of an earthquake.

4.0 MITIGATION STRATEGIES AND ACTIONS

4.1 Goals and Objectives

Municipal goals and objectives have been made consistent regionally and are presented in the Multi-Jurisdictional Plan document.

4.2 Status of Mitigation Strategies and Actions from Previous HMP

The table on the following pages lists the mitigation actions developed in the previous HMP and the status of each. Actions to be carried forward are noted as such. Actions that have been institutionalized as capabilities are not carried forward.

#	Description	Responsible Party	Status	Notes
1	Incorporate the identified strategies of this HMP into local planning activities	MA, LC	Capability	<i>More specific recommendations will be carried forward.</i>
2	Acquire a generator for the Town Hall and then relocate the Emergency Operations Center to the Town Hall	EMD	<i>Carry Forward with Revisions</i>	<i>Action has not yet been completed due to funding constraints; however, finding a new EOC location – either at Town Hall or a nearby facility – is a top priority.</i>
3	Adopt a standardized drainage policy to ensure consistency between developments	PC, ZC	Capability	<i>Town has consistent drainage policies for both municipal and private development.</i>
4	Adopt low-impact development standards into the Zoning Regulations and Subdivision Regulations	PC, ZC	<i>Carry Forward with Revisions</i>	<p><i>Town requires LID approaches in the Candlewood Lake Watershed District, and encourages them in the Housatonic Riverfront Zone, though the term Low Impact Development is not explicitly noted. Elsewhere, stormwater drainage systems are required to align with the 2004 Connecticut Stormwater Quality Manual, which includes but does not require LID options.</i></p> <p><i>This action is carried forward to specifically call for incorporation of a requirement for documentation showing consideration of LID standards into Section 175-020:1.h: Site Plan Application Requirements Supporting Documentation – Stormwater Management.</i></p>
5	Adopt a freeboard requirement of one foot for all new development or substantial improvement within the SFHA	PC, ZC	Capability	<i>Town enforces State building code, which has freeboard requirement.</i>
6	Require the use of the FEMA Elevation Certificate to formally record elevations for compliance with the Zoning Regulations	ZC	<i>Carry Forward</i>	<p><i>Town requires Elevation Certificates on a case-by-case basis, but often obtains the same information in other manners more aligned with the building permit process. Building permits are reviewed by Building Department.</i></p> <p><i>The Town is interested in carrying this action forward.</i></p>
7	Encourage town practices to employ measures to reduce stormwater flow	MA, PZ	Completed	<i>Town is implementing new MS-4 requirements locally.</i>

#	Description	Responsible Party	Status	Notes
8	Educate residents and property owners on ways that they can reduce stormwater runoff, and possibly adopt regulatory incentives over the long term	PZ, PW	Capability	<i>Education about runoff reduction is performed by the local done by "Watersmart" group, as well as regionally by WestCOG. MS-4 requirements call for public education as well.</i>
9	Create an Open Space Plan to prioritize future open space acquisition that encourages the creation of recreational open space within SFHAs	PC, PZ	Completed	<i>Town is currently updating its Open Space Plan through its POCD update (under its final editing stage at the time of this meeting).</i>
10	Assist residential property owners interested in obtaining grant funding to elevate properties within SFHAs	MA	Carry Forward with Revisions	<i>The Town hired a new grant writer in 2018, and will explore having this kind of assistance falling under their purview. The town notes that many properties located in floodplains are significantly older structures, and elevation may be difficult.</i>
11	Encourage property owners within the SFHA to purchase flood insurance through the NFIP and complete FEMA elevation certificates for their structures	PZ	Drop	<i>Town encourages property owners to get flood insurance on a case by case basis. Most banks require purchase of flood insurance as well, so this action may not be necessary.</i>
12	Relocate the Public Works Garage out of the SFHA	PW	Carry Forward	<i>Progress has been impeded due to lack of funding and available space. Some planning has occurred.</i>
13	Elevate one or more roads leading to the Ambulance facility to ensure that egress is available during the 1% annual chance flood	PW	Carry Forward with Revisions	<i>This action is not feasible. Might be more cost-effective to relocate facility. A new action will be developed.</i>
14	Elevate portions of West Street to ensure that egress is maintained to the Water Pollution Control Facility during floods	PW	Completed	<i>There is a separate emergency crossing across the railroad tracks to provide access to the WPCF during floods. Elevating West Street is not necessary, nor feasible.</i>

#	Description	Responsible Party	Status	Notes
15	Elevate portions of West Street or develop an emergency mode of egress to the Bleachery commercial development	PW	Complete	<i>The Bleachery property owner constructed an emergency access route to Anderson Road across the railroad tracks, to provide access and egress during flood events. Elevating West Street is not necessary, nor feasible. The parking lot and first floor of the building are about 10 feet below the 1% annual chance flood stage.</i>
16	Widen portions of the side roads that are used to detour traffic when flooding occurs along Route 7 between Bridge Street and Sunny Valley Road	PW	Carry Forward with Revisions	<i>The Town has considered this action, and believes it is feasible to widen the road from 22 feet to 30 feet, and that this would address the challenge in question. At the same time, MS-4 requirements are calling to reduce the amount of paving in communities. The benefits of widening the road may not be worth the increased runoff from the increased impervious surface. The Town will explore this question further.</i>
17	Elevate one of the three bridges over the Housatonic River to be unaffected by the 0.2% annual chance flood event	PW, MA	Carry Forward with Revisions	<i>The Town does not think it is feasible to elevate one of the three existing bridges. They would like to pursue constructing a new, fourth bridge, at a higher elevation than the existing bridges. This action is replaced with an action to conduct a feasibility study and cost estimate for construction of a fourth bridge.</i>
18	Evaluate the potential flood mitigation effects of installing inflatable flashboards at the Bleachery Dam	PW, MA	Completed	<i>Town has completed an evaluation. Installation of these flashboards has the potential to drop river levels by 2 or 3 feet before a flood, protecting the center of town. Town applied for a grant in the past, from funding associated with pollution from the Pittsfield Plant, but did not receive the award. This action is completed, and is superseded by a new action to install inflatable flashboards.</i>
19	Perform a drainage study along the Housatonic River to identify drainage systems that should be outfitted to prevent floodwater from flooding Route 7	PW	Carry Forward	<i>This action has not been completed, and is carried forward. The Town has explored installing clapper valves on drainage in this area, but found that this would make it more difficult to get water off the roads.</i>

#	Description	Responsible Party	Status	Notes
20	Check the conveyance of all bridges and culverts based on more recent rainfall data statistics	PW	Carry Forward with Revision	Town does not have the ability to perform a complete inventory. Bridges and culverts are assessed as needed, and replaced or upgraded during road reconstruction. This action is replaced with a new action directing the town to use Northeast Regional Climate Center rainfall statistics when sizing culvert and bridge replacements
21	Construct a slope stabilization project to prevent mudslides along Grove Street	PW	Carry forward	Town hired a consultant to perform a slope stability assessment in 2011. The slope in question is all located on private land, and the owner is aware of possible issues. The Town is careful to maintain drainage infrastructure in the area to mitigate factors that may contribute to slope failure. The Town has not yet felt it to be necessary to compel the private landowner to either perform slope stabilization work, or to allow the Town to perform such work. The slope continues to be a concern, and so this action is carried forward.
22	Update the Zoning Regulations to require underground utilities for all new buildings regardless of zone unless such installation is deemed infeasible	ZC	Drop	Town staff do not think that the benefits of a widespread requirement for burial of utilities outweighs the costs of such construction, and the impacts it would have on development. Town staff note that the electric company requires most new buildings to connect to the grid through underground wires.
23	Encourage the use of structural techniques related to wind damage mitigation in new structures	PZ	Completed	The Town enforces the State Building Code, which includes wind-load requirements.
24	Require the use of structural mitigation techniques to harden new municipal critical facilities	ZC	Drop	The Town does not feel believe this action is necessary relative to the risks posed by wind hazards. The State Building Code will be applied.
25	Consider locations where a micro-grid could be installed	EMD	Capability	A microgrid has been installed at the High School, allowing it to operate in island-mode during a widespread power outage. Town staff note that small microgrids have been installed at other locations as well. Additionally, the Town's 2020 POCD update recommends that the Town's energy service company evaluate electrical infrastructure in municipal buildings; one sub-task of this recommendation is that the company explore opportunities for installation of microgrids. A new action directing the Town to pursue any recommendations of the energy service company evaluation will be included in this HMP.

#	Description	Responsible Party	Status	Notes
26	Evaluate critical facilities for acceptable snow loading and develop a response plan to clear roofs when necessary	BD, PW	Capability	<i>Town has sufficient capabilities and protocols in place for snow removal from roofs.</i>
27	Enact regulations preventing new residential development in areas prone to collapse such as at the bottom of steep slopes	PC, ZC	Drop	<i>Town does not feel this action is necessary given development patterns and existing regulations.</i>
28	Ensure that municipal departments have adequate backup facilities in case earthquake damage occurs to municipal buildings	EMD	Capability	<i>Town has reviewed critical facility needs. The Town has the ability to relocate critical functions between different facilities if a given facility is compromised.</i>
29	Prepare inundation mapping and EAPs for Town-owned significant hazard dams	PW	Completed	<i>Town owns one dam (United New Milford Reservoir #4 Dam, Class B). EAPs are completed for the Bleachery dam, Reservoir #4, all dams associated with Candlewood Lake, and the Bulls Bridge Powerhouse.</i>
30	Utilize inundation mapping to identify properties that may be affected and conduct outreach to ensure contact information is in Everbridge system	EMD, PZ	Completed	<i>The Town has been completing this action and was almost finished at the time of the planning meeting.</i>
31	Enact a Flood and Erosion Control Board in order to be eligible for funding to repair municipally-owned dams	MA	Drop	<i>There is only one municipally owned dam in New Milford. Town does not believe this action is necessary given the limited needs.</i>
32	Identify and implement projects to increase fire-fighting access to areas at increased risk for wildfire	EMD	Carry Forward with Revision	<i>Town has considered this action and is concerned that increasing accessibility to remote areas for firefighting purpose will also increase access for ATV-riders and other recreational purposes, which may result in an increased risk of wildfires being initiated in these locations. Additionally, most forested areas in Town are located on private land, making establishment of access routes more difficult. This action is dropped and replaced with a new action to address the risk of remote wildfires.</i>

4.3 Prioritization of Strategies and Actions

The STAPLEE method, described in the Multi-Jurisdictional document, was used to score mitigation activities. The STAPLEE matrix in Appendix A provides the total scores. Actions have been further prioritized based on implementation cost, project urgency, and municipal and public input. The strategies below are presented in priority order, with qualitative priority levels listed for each.

4.4 Mitigation Strategies and Actions Implementation Table

The Town proposed to initiate several new mitigation actions for the upcoming five years. Additionally, a number of actions from the previous planning period are being carried forward or replaced with revised actions. These are listed below.

Action NMD-01	
Explicitly Consider Natural Hazard Risks (Especially Flood Risks) in Development of the POCD Update	
Lead	PC
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2021
Priority	High

Action NMD-02	
Incorporate specific actions listed in the Hazard Mitigation Plan as Strategies in the POCD Update	
Lead	PC
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2021
Priority	High

Action NMD-03	
Provide information on the Town website about CT DEEP training and information around small business chemical management for hazard resilience.	
Lead	EM, BOS
Cost	\$0 - \$25,000
Funding	Operating Budget, CT DEEP
Timeframe	2021
Priority	High

Action NMD-04	
Use the CT Toxics Users and Climate Resilience Map to identify toxic users located in hazard zones within your community. Contact those users to inform them about the CT DEEP small business chemical management initiative.	
Lead	EM, BOS
Cost	\$0 - \$25,000
Funding	Operating Budget, CT DEEP
Timeframe	2021
Priority	High

Action NMD-05	
Host a CT DEEP presentation for municipal staff and local businesses about business chemical management for hazard resilience.	
Lead	EM, BOS
Cost	\$0 - \$25,000
Funding	Operating Budget, CT DEEP
Timeframe	2021
Priority	High

Action NMD-06	
Take one of the following actions that will mitigate natural hazard risks while also meeting Sustainable CT objectives: <ul style="list-style-type: none"> - Disseminate a toolkit for pre-disaster business preparedness. - Revise regulations to promote Low Impact Development. - Include the goals of this Hazard Mitigation Plan, and at least three other sustainability concepts, in your next POCD update.	
Lead	BOS
Cost	\$0 - \$25,000
Funding	Operating Budget, Sustainable CT Community Match Fund
Timeframe	2021
Priority	High

Action NMD-07	
Coordinate with CT SHPO to conduct historic resource surveys, focusing on areas within natural hazard risk zones (flood zones, wildfire hazard zones, steep slopes) to identify historic resources at risk and support the preparation of resiliency plans across the state.	
Lead	Planning
Cost	\$25,000 - \$50,000
Funding	CT SHPO
Timeframe	2024
Priority	Med

Action NMD-08	
Identify possible new locations for the Ambulance Facility that would that egress is available during the 1% annual chance flood; perform a feasibility analysis to determine cost-effectiveness of relocation	
Lead	EMD
Cost	\$50,000 - \$100,000
Funding	Capital Improvement Plan, FEMA Grant
Timeframe	2025
Priority	Med

Action NMD-09	
Implement remote wildfire detection technologies (such as cameras or drones) to improve the speed with which the Fire Department is able to detect and respond to such fires.	
Lead	EMD, FD
Cost	\$50,000 - \$100,000
Funding	Operating Budget
Timeframe	2025
Priority	Med

Action NMD-10	
Acquire a generator for the Town Hall	
Lead	EMD
Cost	\$100,000 - \$500,000
Funding	Capital Improvement Plan, FEMA Grant, Other Grant
Timeframe	2025
Priority	Med

Action NMD-11	
Identify an appropriate location for a new EOC (outside the SFHA; such as the Town Hall) and pursue its development	
Lead	EMD
Cost	More than \$1 million
Funding	Capital Improvement Plan, FEMA Grant, Other Grant
Timeframe	2026
Priority	Med

Action NMD-12	
Relocate the Public Works Garage out of the SFHA	
Lead	PW
Cost	More than \$1 million
Funding	Capital Improvement Plan, FEMA Grant, Other Grant
Timeframe	2026
Priority	Med

Action NMD-13	
Require the Town's Grant Writer to identify grant opportunities for elevating buildings within SFHAs, and perform outreach to property owners within SFHAs to inform them of such opportunities.	
Lead	Grant Writer
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2022
Priority	Med

Action NMD-14	
Require the use of the FEMA Elevation Certificate to formally record elevations of new and substantially improved buildings, for compliance with the Zoning Regulations	
Lead	ZC
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2022
Priority	Med

Action NMD-15	
Require Building Department Staff to complete virtual trainings in the completion and use of FEMA Elevation Certificates	
Lead	PC, BD
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2022
Priority	Med

Action NMD-16	
Revise floodplain zoning regulations to reflect the new State Building Code requirements for one foot of freeboard for construction in the 1% annual-chance flood zone.	
Lead	Planning
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2023
Priority	Low

Action NMD-17	
Compare local floodplain regulations with Revised State Model Flood Regulations to identify any remaining opportunities for improvement	
Lead	Planning
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2023
Priority	Low

Action NMD-18	
Require consideration of the most recent Northeast Regional Climate Center rainfall statistics (precip.eas.cornell.edu) when developing alternatives for culvert and bridge replacement designs and sizes.	
Lead	PW
Cost	\$0 - \$25,000
Funding	Operating Budget
Timeframe	2023
Priority	Low

Action NMD-19	
Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	
Lead	EM, BOS
Cost	\$0 - \$25,000
Funding	Operating Budget, FEMA Grant
Timeframe	2023
Priority	Low

Action NMD-20	
Explicitly incorporate a requirement for documentation showing consideration of Low Impact Development standards into Section 175-020:1.h: Site Plan Application Requirements Supporting Documentation – Stormwater Management.	
Lead	PC, ZC
Cost	\$0 - \$25,000
Funding	Operating Budget, FEMA Grant
Timeframe	2023
Priority	Low

Action NMD-21	
Perform a drainage study along the Housatonic River to identify drainage systems that should be outfitted to prevent floodwater from flooding Route 7	
Lead	PW
Cost	\$25,000 - \$50,000
Funding	Capital Improvement Plan, FEMA Grant
Timeframe	2024
Priority	Low

Action NMD-22	
Work with CT DEEP to validate and/or correct the RL list and update the mitigation status of each listed property.	
Lead	Planning
Cost	\$25,000 - \$50,000
Funding	FEMA Grant
Timeframe	2024
Priority	Low

Action NMD-23	
Conduct a feasibility study and cost estimate for widening (from 22 feet to 30 feet) portions of the side roads (Sunny Valley Rd & Fort Hill Rd), that are used to detour traffic when flooding occurs along Route 7 between Bridge Street and Sunny Valley Road; MS4 best practices would be implemented during reconstruction.	
Lead	PW
Cost	\$25,000 - \$50,000
Funding	Operating Budget, Grant
Timeframe	2024
Priority	Low

Action NMD-24	
Conduct a feasibility study and cost estimate for construction of a fourth bridge over the Housatonic River that would not be affected by the 0.2% annual chance flood event, to protect travel across the river under such conditions.	
Lead	PW, MA
Cost	\$25,000 - \$50,000
Funding	Operating Budget, Grant
Timeframe	2024
Priority	Low

Action NMD-25	
Complete a Wildfire Risk Assessment to identify vulnerabilities and mitigation options for wildfires in New Fairfield.	
Lead	EMD, FD
Cost	\$25,000 - \$50,000
Funding	Operating Budget, Grant
Timeframe	2024
Priority	Low

Action NMD-26	
Annually conduct an emergency operations exercise for a local terrorism, sabotage, or mass casualty event.	
Lead	EMD
Cost	\$25,000 - \$50,000
Funding	Operating Budget
Timeframe	2024
Priority	Low

Action NMD-27	
Construct a slope stabilization project to prevent landslides along Grove Street	
Lead	PW
Cost	\$100,000 - \$500,000
Funding	Capital Improvement Plan, Other Grant
Timeframe	2026
Priority	Low

APPENDIX A

Appendix A: STAPLEE Matrix

#	Action Description	Regional Theme	Lead Department	Cost Estimate	Potential Funding Sources	Timeframe for Completion	Weighted STAPLEE Criteria														Total STAPLEE Score
							Benefits							Costs							
							Social	Technical (x2)	Administrative	Political	Legal	Economic (x2)	Environmental	Social	Technical (x2)	Administrative	Political	Legal	Economic (x2)	Environmental	
NMD-01	Explicitly Consider Natural Hazard Risks (Especially Flood Risks) in Development of the POCD Update	Integrate with other Planning	PC	\$0 - \$25,000	Operating Budget	2021	1	1	1	1	1	1	1	0	0	0	0	0	0	0	9
NMD-02	Incorporate specific actions listed in the Hazard Mitigation Plan as Strategies in the POCD Update	Integrate with other Planning	PC	\$0 - \$25,000	Operating Budget	2021	1	1	1	1	1	1	1	0	0	0	0	0	0	0	9
NMD-03	Provide information on the Town website about CT DEEP training and information around small business chemical management for hazard resilience.	CT DEEP Small Business Chem	EM, BOS	\$0 - \$25,000	Operating Budget, CT DEEP	2021	1	1	1	0	1	1	1	0	0	0	0	0	0	0	8
NMD-04	Use the CT Toxics Users and Climate Resilience Map to identify toxic users located in hazard zones within your community. Contact those users to inform them about the CT DEEP small business chemical management initiative.	CT DEEP Small Business Chem	EM, BOS	\$0 - \$25,000	Operating Budget, CT DEEP	2021	1	1	1	0	1	1	1	0	0	0	0	0	0	0	8
NMD-05	Host a CT DEEP presentation for municipal staff and local businesses about business chemical management for hazard resilience.	CT DEEP Small Business Chem	EM, BOS	\$0 - \$25,000	Operating Budget, CT DEEP	2021	1	1	1	0	1	1	1	0	0	0	0	0	0	0	8
NMD-06	Take one of the following actions that will mitigate natural hazard risks while also meeting Sustainable CT objectives: - Disseminate a toolkit for pre-disaster business preparedness. - Revise regulations to promote Low Impact Development. - Include the goals of this Hazard Mitigation Plan, and at least three other sustainability concepts, in your next POCD update.	Sustainable CT	BOS	\$0 - \$25,000	Operating Budget, Sustainable CT Community Match Fund	2021	1	1	1	1	0	1	1	0	0	0	0	0	0	0	8
NMD-07	Coordinate with CT SHPO to conduct historic resource surveys, focusing on areas within natural hazard risk zones (flood zones, wildfire hazard zones, steep slopes) to identify historic resources at risk and support the preparation of resiliency plans across the state.	SHPO	Planning	\$25,000 - \$50,000	CT SHPO	2024	1	1	1	1	0	1	0	0	0	0	0	0	0	0	7
NMD-08	Identify possible new locations for the Ambulance Facility that would that egress is available during the 1% annual chance flood; perform a feasibility analysis to determine cost-effectiveness of relocation	Critical Facility Mitigation	EMD	\$50,000 - \$100,000	Capital Improvement Plan, FEMA Grant	2025	0	1	1	1	1	1	0	0	0	0	0	0	0	0	7
NMD-09	Implement remote wildfire detection technologies (such as cameras or drones) to improve the speed with which the Fire Department is able to detect and respond to such fires.	Wildfire Fighting Capacity	EMD, FD	\$50,000 - \$100,000	Operating Budget	2025	0	1	1	1	0	1	1	0	0	0	0	0	0	0	7
NMD-10	Acquire a generator for the Town Hall	Energy Resiliency & Backup Power	EMD	\$100,000 - \$500,000	Capital Improvement Plan, FEMA Grant, Other Grant	2025	1	1	1	0	1	1	0	0	0	0	0	0	0	0	7
NMD-11	Identify an appropriate location for a new EOC (outside the SFHA; such as the Town Hall) and pursue its development	Critical Facility Mitigation	EMD	More than \$1 million	Capital Improvement Plan, FEMA Grant, Other Grant	2026	0	1	1	1	1	1	0	0	0	0	0	0	0	0	7
NMD-12	Relocate the Public Works Garage out of the SFHA	Critical Facility Mitigation	PW	More than \$1 million	Capital Improvement Plan, FEMA Grant, Other Grant	2026	0	1	1	1	1	1	0	0	0	0	0	0	0	0	7
NMD-13	Require the Town's Grant Writer to identify grant opportunities for elevating buildings within SFHAs, and perform outreach to property owners within SFHAs to inform them of such opportunities.	Outreach and Education	Grant Writer	\$0 - \$25,000	Operating Budget	2022	1	1	1	1	0	1	0	-1	0	0	0	0	0	0	6
NMD-14	Require the use of the FEMA Elevation Certificate to formally record elevations of new and substantially improved buildings, for compliance with the Zoning Regulations	Floodplain Management Regulations	ZC	\$0 - \$25,000	Operating Budget	2022	1	1	1	0	1	1	1	-1	0	0	-1	0	0	0	6
NMD-15	Require Building Department Staff to complete virtual trainings in the completion and use of FEMA Elevation Certificates	Municipal Capacities	PC, BD	\$0 - \$25,000	Operating Budget	2022	0	1	1	1	1	0	1	0	0	0	0	0	0	0	6
NMD-16	Revise floodplain zoning regulations to reflect the new State Building Code requirements for one foot of freeboard for construction in the 1% annual-chance flood zone.	Floodplain Management Regulations	Planning	\$0 - \$25,000	Operating Budget	2023	0	1	1	0	1	1	0	0	0	0	-1	0	0	0	5

[illegible]

APPENDIX B

Appendix B: SVI Summary

Town of New Milford

Climate Vulnerability Assessment

A Component of Sustainable CT Action 5.4

The Town of New Milford, for this Climate Vulnerability Assessment (CVA) is considered a rural inland town, resulting in various climate change vulnerabilities. Inland flooding, extreme heat, and winter storms may impact the community the most as many issues have been identified.

Hazards

Inland Flooding

With FEMA flood zones in town, such as along the Housatonic River and the East Aspetuck River, there is continuously concern for riverine flooding. Also, Candlewood lake is in the southwestern part of town and can also be a source of flooding. Several areas in town are at risk of flooding, such as the Public Works Garage site, while the Emergency Operations Center is at risk of becoming inaccessible during small rain events. Other roadways also experience flooding often, including Route 7, which is a main commercial corridor in town. With precipitation expected to increase due to climate change, flooding events may occur more frequently. Overall, flooding has been an issue in several areas in the past and may continue to be an issue with future shifts in precipitation.

Winter Storms

New Milford is largely residential, with higher densities of development along Route 202, with the remaining developed areas being relatively rural. Winter storms have resulted in disruptions and damages in the past and can potentially do so in the future. Anticipated shifts in winter precipitation may bring more freezing rain events, which can result in an increase of downed trees during a winter storm event. Downed trees can result in power outage, and lack of emergency access and egress.

Drought and Extreme Temperatures

A majority of the town relies on private wells for drinking water, with public water service being concentrated along the Route 202 corridor. Therefore, impacts to water supply may be an issue to the town as temperatures rise in the near future, resulting in isolated issues with water scarcity. With increased temperatures, and high pumping levels, private wells may be impacted during times of drought.

In addition to private wells, many rural communities have high levels of agricultural activity, whether it be crop production or livestock, these operations are heavily water dependent for healthy growing and revenue generation.

When considering these impacts from climate change, the primary vulnerabilities for the town of New Milford include:

- Private well owners
- Emergency access
- Agricultural operations

Secondary Impacts

Economic Impacts

With areas vulnerable to isolation during flooding and winter storm events, the town faces an economic challenge of addressing the flooding concerns and increasing snow and debris removal capacity. There is also a potential economic impact to local businesses during flooding events, and heavy winter storms. Businesses may also incur expenses related to flood mitigation or clean-up efforts, or experience loss of income if there is no site access during a storm.

Winter storm snow removal or icing also presents financial responsibility to the town by way of roadway treatment. As precipitation events may increase during winter months, the town may seek to increase sand or salt stockpiles to account for increased icing events.

Private property owners who rely on private drinking water wells may also be impacted economically during droughts or periods of extreme heat. With increasing heat, typically comes increased water demand. This demand would be placed upon local aquifers, potentially resulting in the need for new well construction, or deepening of an existing well.

The many impacts of climate change can result in economic impacts to many citizens, business owners, and municipal budgets as the impacts can be felt on a town level, down to building level.

Social Impacts

To identify social impacts to the town, the Center for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI) was used to identify any vulnerable populations within the town. This index was developed to supplement a community's natural hazard preparation actions. To evaluate social vulnerability, the CDC incorporates 15 factors (Fig. 1) into the overall calculation under the categories, or themes, of: socioeconomic status, household composition and disability, minority status and language, and housing type and transportation. These themes and their ranking are based on census statistics. By evaluating these factors and determining a level of social vulnerability, a community can identify specific needs for before, during, and after an event. Such needs may include sheltering capacity, evacuation routes, or to decide how many emergency personnel may be required to respond after an event.

Each municipalities' census tracts were ranked for overall vulnerability, and theme vulnerability, in comparison to other Connecticut municipalities.

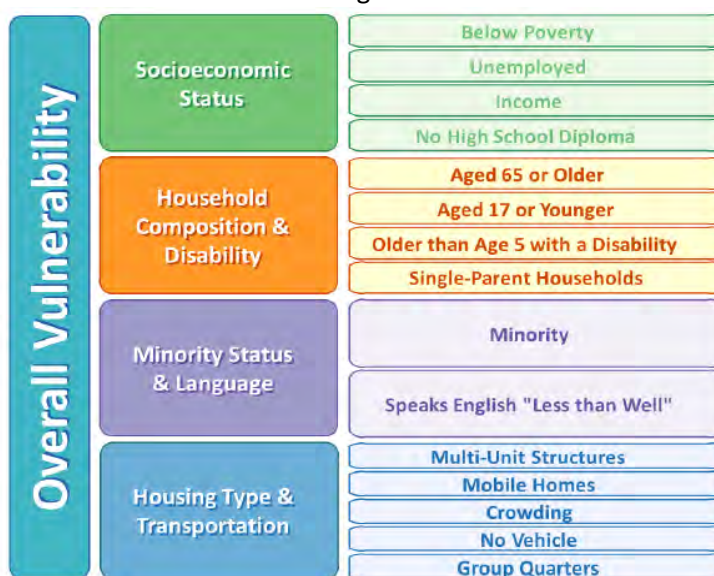


Figure 1: The CDC SVI Index Factors. Graphic: svi.cdc.com

This rank, 0 to 1, is based on the percentile rank among all tracts within the State of Connecticut. A value closer to 0 indicates a lower vulnerability, while a value closer to 1 indicates a higher vulnerability. Table 1 presents the overall vulnerability and theme rankings for New Milford.

Table 1: New Milford SVI Factor Rankings

	Overall SVI	Socioeconomic	Household Composition & Disability	Minority Status & Language	Housing Type & Transportation
NEW MILFORD	.33	.42	.20	.35	.41

The Town of New Milford is considered to have a low to moderate level of vulnerability, with their most vulnerable social aspect being the socioeconomic status of certain populations, along with high density housing and lack of transportation. There are also minority populations in town, along with those that speak English “less than well”. These populations are primarily located in the southeastern half of town, with the most vulnerable populations settled along Route 7 from Rooster Tail Hollow south to the Route 7 and Lanesville Road intersection.

These populations may be vulnerable to impacts from drought, flooding and storm events based on the geographic concentrations.

Public Health Considerations

Of the primary vulnerabilities identified, drought and flooding can potentially have public health repercussions. During hot summer months, or drought, if private wells were to be impacted, certain populations may find themselves without adequate drinking water supply, resulting in health problems. Also, when considering the environmental shifts occurring during drought periods, drinking water contamination may become an issue as aquifers become stressed due to excessive pumping.

Food scarcity is another consideration when discussing the impacts of drought and extreme temperatures. Agricultural operations that are impacted by water shortages may find that crop or livestock yields are below average, ultimately resulting in food scarcity concerns. Depending on the size of an operation, the impacts can be on a small or large scale.

Flooding also presents the concern of pollution into nearby water bodies as commercialized and impervious areas drain, they collect pollutants and excess sediment. Depending upon the drainage areas, this runoff can have environmental impacts in associated ecosystems, or public health impacts if water bodies are used for recreational activities.

Vulnerable Populations

The SVI identified the presence of certain populations within the town that may be more vulnerable to climate change hazards. In addition to the SVI, the Connecticut Department of Public Health (DPH)¹ has identified at least three convalescent home facilities in New Milford.

¹ <https://www.elicense.ct.gov/Lookup/LicenseLookup.aspx>

These populations often need additional time for hazard response, so evacuation or preparation, and may find it more challenging to recover due to financial constraints or health concerns. These populations should be considered more vulnerable for the reasons that emergency response and preparation may be more challenging, health issues may be of higher concern, and language barriers may exist when working to communicate with the community on risks, response, and recovery efforts.

In addition to the populations, it is important to identify the facilities that can provide different types of assistance to the populations, and others, during or after an event. These facilities, and their proximity to flood zones, can be found in Figure 2-4.