Western Connecticut Council of Governments
Multi-Jurisdiction Hazard Mitigation Plan Update
2026-2031

Municipal Annex
for
Town of Redding

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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 Redding 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 life and damage to 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

Incorporated in 1767, the Town of Redding is located in northern Fairfield County and is home to a population of 9,158 (2010 U.S. Census). Redding is bordered by the municipalities of Danbury and Bethel to the north, Newtown and Easton to the east, Weston and Wilton to the south, and Ridgefield to the west. Refer to Figure 2-1 for a map showing the location of Redding within the region.

Redding is located in the highlands that separate Connecticut's southwestern coastal basins from the Housatonic Valley. Redding is a hill country of high north south ridges, steep sided valleys, and numerous small streams. The highest elevation in Redding is about 830 feet in the northeast part of town. Then the low point of about 290 feet is on the Saugatuck Reservoir along the southern border. The varying terrain of Redding makes the town vulnerable to an array of natural hazards.

The Center for Land Use Education and Research (CLEAR) has developed a statewide land cover dataset derived from the 2023 Annual National Land Cover Dataset (NLCD). Areas identified as developed open space are maintained grasses such as residential and commercial lawns or golf courses. The land cover by percent of total land for Redding can be found in Table 2-1.

Table 2-1: Land Cover by Area

Land Cover Class	Percent of Total Land
Developed	2%
Forest	79%
Agriculture	4%
Developed Open Space	13%

Source: University of Connecticut Center for Land Use Education and Research (CLEAR)

2.1.2 Land Use

Redding is a rural town characterized by low density population and limited commercial uses. In general, land use in Redding largely consists of preserved open-green space and low-density residential areas. Commercial uses are limited and concentrated in the southwestern portion of Town, in the Village of Georgetown. Since the 1750's, Redding has had commercial activity on every sizeable stream, but many residents have historically favored the slowing rate of residential growth.

From the 2008 Town of Redding Plan of Conservation and Development (POCD):

"Town residents lived in the midst of more than 7,440 acres of greenspace - 36% of the Town's area - greatly surpassing the previous Town Plan goal of 25% —forever green."

The total land and water area within the Town of Redding is 20,518 acres, predominantly made up of single-family residential neighborhoods and open space. Table 2-2 summarizes the existing land uses by type as shown in the Plan of Conservation and Development. According to

this information, approximately 9,638 acres within Redding consist of developed land, while approximately 10,987 acres remain as undeveloped or open water.

Table 2-2: Redding 2018 Land Use by Area

Land Use Category	Acres
Residential	8,270
Institutional	
Government	91
Recreation	211
Care-Facility	58
Religious	40
Cemetery	13
Commercial	41
Light Industry	7
Utilities	111
Roads/Transportation	796
Open Space, Public	5,451
Open Space, Private	1,362
Conservation Easements	736
Vacant Uncommitted Private Land	3,348
Total	20,525

Source: Plan of Conservation and Development (POCD), Town of Redding, 2018

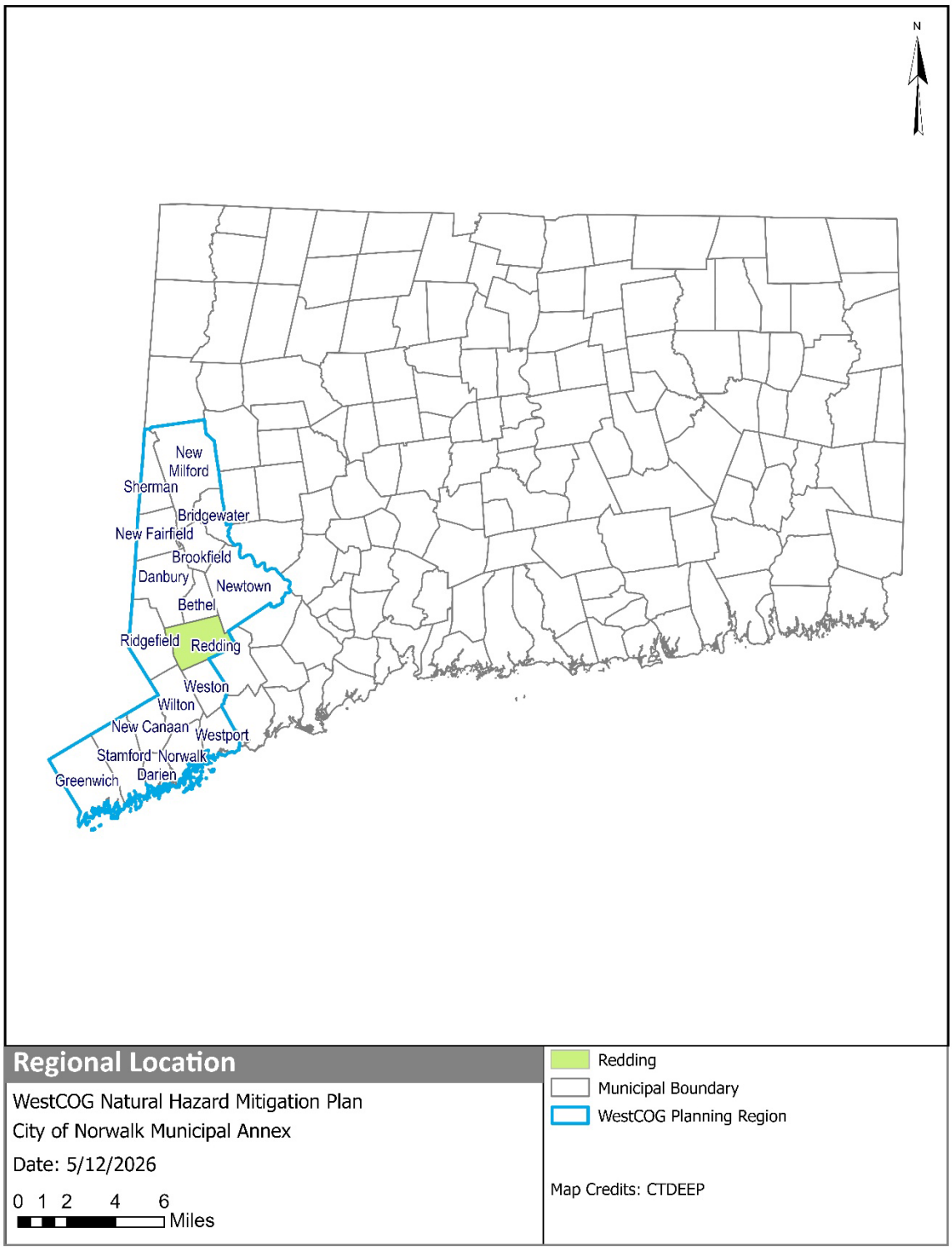

Figure 2-1: Redding Location Map

2.1.3 Climate and Climate Change

Current Conditions

Over the course of the year, the temperature in Redding typically varies from 20°F to 81°F and is rarely below 5°F or above 89°F. The warm season lasts from May 31 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 81°F and a low of 64°F. The cold season lasts from December 2 to March 11, with an average daily high temperature below 44°F. The coldest day of the year is January 29, with an average low of 20°F and high of 35°F.

Precipitation falls throughout the year in Redding. The wetter season lasts from April 9 to August 19, with a greater than 29% chance of a given day being a wet day. The chance of a wet day peaks at 36% 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 3, with an average total accumulation of 3.9 inches. The least rain falls around January 30, with an average total accumulation of 1.7 inches.

The snowy period of the year lasts from November 7 to April 11, 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 27, with an average total liquid-equivalent accumulation of 1.0 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, developed by the University of Connecticut (UConn) Atmospheric Sciences Group and 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 CO_2 emission scenario (RCP8.5).

Temperature

Annual temperatures have been increasing throughout Connecticut and are projected to continue to do so in the future. By mid-century, the 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 when the temperature remains above 68°F will quadruple from 10 days per year to more than 40, and the number of extremely hot days will increase from more than 4 per 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 Fairfield County is 3.3 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 Redding as 3.44 inches.

The NOAA Atlas 14, released on September 30, 2015, puts the 24-hour rainfall amount for a 50% annual-chance annual storm in Redding at 3.57 inches.

These precipitation amounts and more details are summarized in Table 2-3, below.

Table 2-3: 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	3.3	5.7	7.2
NRCC	3.44	6.44	9.10
NOAA Atlas 14	3.57	6.74	8.61

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, Redding can expect the 24-hour rainfall amount for a 50% annual-chance storm to be around 3.7 to 3.9 inches or greater.

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

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

2.1.4 Drainage Basins and Hydrology

Redding is divided among eight sub-regional watersheds, with the majority of the sub-regional basins draining into the Saugatuck River and then to the Aspetuck River. All of the water that passes through Redding eventually flows into Long Island Sound.

Table 2-4: Sub-regional Drainage Basins

Drainage Basin	Overall Sub-regional Area (sq. mi)	Area within Town (sq. mi)	Area within Town (acres)	Percent of Town
Saugatuck River	48.55	15.81	10,119.8	49.42%
Norwalk River	32.54	3.39	2170.74	10.59%
Mill River	24.88	0.05	36.49	0.15%
Aspetuck River	23.05	6.51	4,168.6	20.35%
West Branch Saugatuck River	11.9	0.64	412.37	2%
Sympaug Brook	7.24	0.009	6.01	0.02%
Little River	5.94	5.43	3,479	16.97%
East Swamp Brook	5.11	0.16	103.12	0.5%
Total	**n/a**	**31.99**	**20,496.13**	**100.0%**

Source: Connecticut Department of Environmental Protection GIS Data

Saugatuck River

The Saugatuck River drainage basin consists of over 48 square miles of land area covering over ten towns, including Danbury, Bethel, Redding, and Ridgefield. The overall river course is south, with headwaters beginning in Ridgefield extending into Bethel. The basin takes up a large portion of Redding as the Saugatuck River collects input from several small tributaries along the way, as well as other drainages. The river flows all the way to the Connecticut shoreline, draining into Long Island Sound. The river forms the Saugatuck Reservoir, one of Aquarion Water Company's larger public water supplies, in the southern part of Redding.

Aspetuck River

The headwaters of the Aspetuck River begin in the southern sections of Bethel and Newtown. The river flows south into Redding and Easton. Many small tributaries join the main channel as it continues south, eventually forming the Aspetuck Reservoir. Ballwall Brook is one of the larger tributaries that drain into the Aspetuck River, entering just before the reservoir. After the reservoir, the river flows through the narrow Pfeiffer Pond, and downstream, the Aspetuck converges with the Saugatuck River.

Little River

The Little River drainage basin lies in the eastern part of Redding, between the Saugatuck River and Aspetuck River basins. The river flows south into the Saugatuck Reservoir.

Norwalk River

The Norwalk River originates in neighboring Ridgefield, just north of Great Pond Road. The river flows southward, parallel to Route 7, along the southwest border of Redding until it converges with the Silvermine River in Norwalk, then flows into Norwalk Harbor.

West Branch Saugatuck River

The West Branch Saugatuck River commences in the southwest corner of Redding between Blueberry Hill Road and Fairview Farm Road and flows in a southerly direction. Just past Godfrey Road, the river begins to parallel Newtown Turnpike as it flows into neighboring Weston. This drainage basin occupies a small portion of southwest Redding.

Mill River

Only a very small portion of the Mill River drainage basin lies within the extreme southeast part of Redding. The Mill River originates in neighboring Easton, just south of Judd Road. The river flows east and then in a southerly direction near Easton Road before entering Easton Reservoir.

East Swamp Brook

Only a very small portion of the East Swamp Brook drainage basin lies within the northeast part of Redding. The headwaters of East Swamp Brook begin adjacent to the Aspetuck River's tributaries but flow in a northern orientation. Just into the northeast corner of Redding at Huntington Park, begin the headwaters which flow through Huntington and Lily Ponds. They continue into Wolf Pit Brook and, farther north, merge into East Swamp Brook. The brook then converges with Limekiln Brook at the east border of Bethel and Danbury above Meckauer Park.

Sympaug Brook

Only a very small portion of the Sympaug Brook drainage basin lies within the northern part of Redding. The majority of the Sympaug Brook basin resides in Bethel, with about a quarter of the land area in Danbury. The Redding portion of the drainage basin does not include a watercourse.

2.2 Society, Culture, and Government

2.2.1 Population and Demographic Setting

According to the 2020 U.S. Census, Redding had a population of 8,765 with 277 persons per square mile. The Connecticut State Department of Public Health estimates Redding's 2026 population at 8,780. The American Community Survey (ACS) projects a population decline, with estimates putting the population at only 16,376 in 2030.

One important aspect of natural hazard mitigation planning is to identify a community's demographic trends in relation to natural hazards. The FEMA National Risk Index (NRI) (Version 1.20) explores and illustrates the relationships among social vulnerability, community resilience, expected annual losses from natural hazards, and risk from those hazards. The NRI has four ratings built into the dataset:

The social vulnerability incorporated into the NRI uses data from the United States Census Bureau's Community Resilience Estimate (CRE) dataset. This ten variable dataset represents the socioeconomic factors that are expected to contribute most to a community's ability to prepare for,

Figure 2-2 Community Resilience Estimates Vulnerability Components (Source: US Census Bureau)

withstand, and recover from a natural hazard event (Figure 2-2). The data used in the CRE from the 1-year American Community Survey and Population Estimates Program.

The Town of Redding has very low to relatively moderate social vulnerability (Figure 2-3). Areas with moderate social vulnerability have one or two of the contributing components. The components, which are based off of census data are:

- poverty status
- number of caregivers in the households
- unit-level crowding, communication barrier
- employment
- disability status
- health insurance coverage
- age (65+)
- vehicle access
- broadband internet access

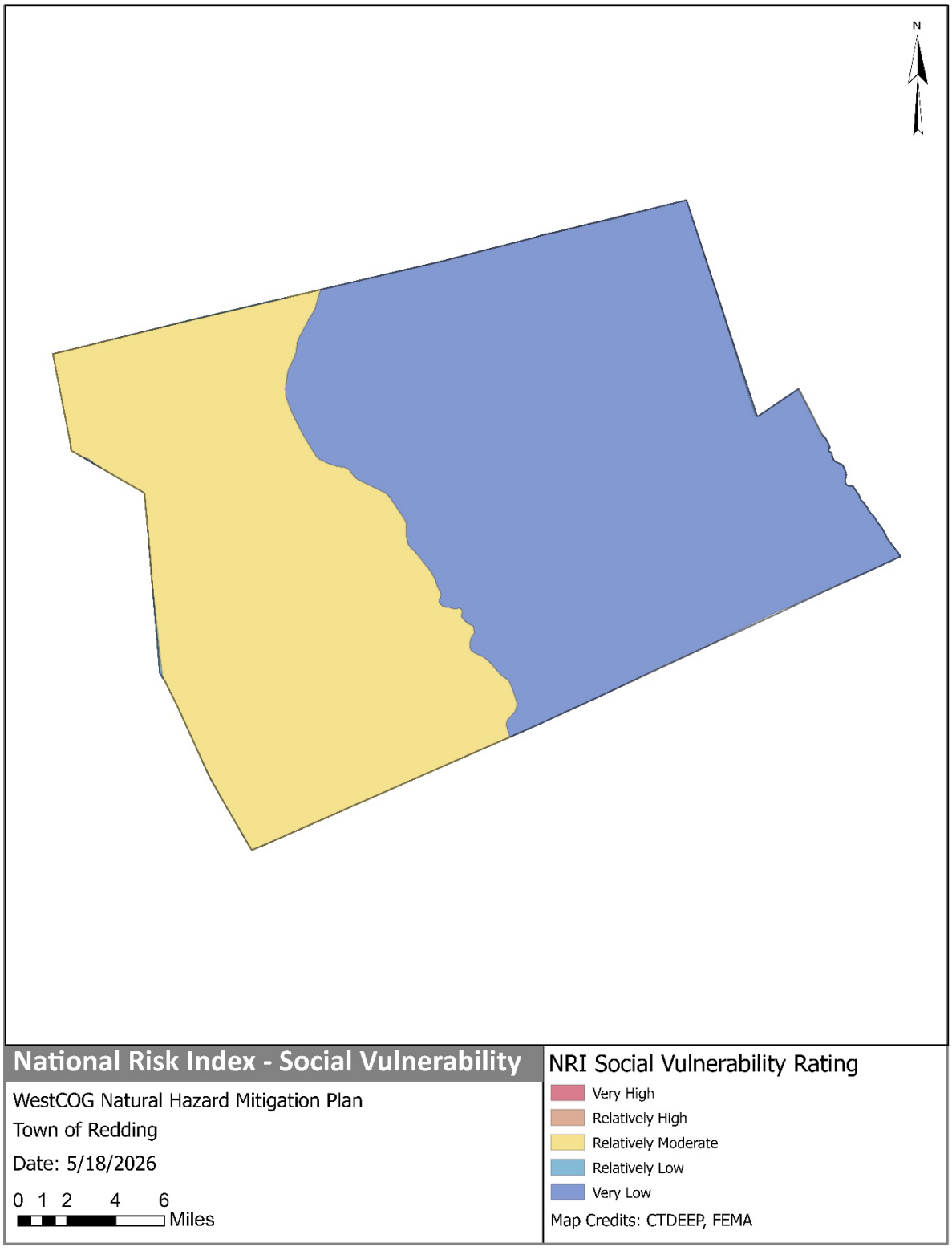

Figure 2-3 FEMA National Risk Index Social Vulnerability

2.2.2 Development Trends

According to the 2018 Plan of Conservation and Development, Redding has pioneered a low-impact development concept within its largely rural community, with its efforts to conserve open space and minimize adverse development impacts on all water supply watersheds. The Town has an Open Space Manager who helps guide conservation of open space in Town. Town officials believe that economic development has been consistent with the town's Plan of Conservation and Development.

Development and redevelopment in Redding are focused in the Georgetown area. Located in Redding's southwest corner, Georgetown is the main commercial area within the town aside from West Redding (which is addressed below). However, Georgetown is truly a multi-town village extending into adjacent portions of Weston, Wilton, and Ridgefield. Georgetown is located along the Norwalk River, where a Special Flood Hazard Area (SFHA) and floodway are mapped. Increasing development density in this area will need to be carefully balanced with the flood risk.

The former Gilbert & Bennett Manufacturing Company site in Georgetown continues to be unoccupied. The Town is currently awaiting a court decision on whether to foreclose on the property, thereby allowing the Town to acquire it. It is expected that the foreclosure will go through, but the decision has been delayed due to COVID-19 closures.

The former Gilbert & Bennett Manufacturing Company site is a brownfield and poses a risk of contamination to the river if flooded. In 2014, the State Bond Commission approved a request from the Georgetown Special Taxing District for $2 million to replace the Norwalk River flood walls at the Gilbert & Bennett site. This particular wall replacement was completed. This improvement helps keep contaminated soil from eroding downstream. However, remediation of the site remains necessary. The town anticipates that acquisition, remediation, and redevelopment of the site will require significant financial support through grants. This is a National Register historic site. One potential step to any redevelopment following acquisition would be to raise the river walls to further protect the site from flooding.

The efforts to redevelop Georgetown are expected to attract future growth for Redding and the surrounding towns. Therefore, a collaborative planning effort across town and regional boundaries is underway to ensure the project's success.

The Branchville section of Ridgefield is located in close proximity to Georgetown. The Branchville Transit-Oriented Development (TOD) area extends into Redding from Ridgefield and overlaps with the potential TOD area located in Georgetown if a new passenger rail station is developed in Georgetown. While a new train station has been constructed in Branchville, one has not yet been designed for Georgetown. Nevertheless, the proximity of two TOD areas in southwest Redding – both along the Norwalk River – means the Town will need to carefully regulate development.

Existing commercial development is also found along Route 7 north of Georgetown and in the West Redding area. The POCD recommends the Town draw on West Redding's existing

infrastructure and transportation resources and existing commercial uses in a creative way for potential "smart growth" development, including transit-oriented projects. The realignment of the rail crossing in West Redding could be a catalyst for such improvements. Overall, however, significant new developments are not anticipated in these areas.

Additionally, as of 2025, the town is working on a master plan for the Wire Mill and downtown areas. Portions of the area are located in flood zones; however, the town is aware of what needs to be done to remove structures from the flood zone and is taking this all into consideration during the planning process.

With most of Redding remaining quite rural, coupled with the focus on compact development in Georgetown, Branchville, and West Redding, the overall character of vulnerabilities to natural hazards in Redding will not change. Risks to the community will not increase as long as redevelopment is carefully regulated.

2.2.3 Governmental Structure

The Town of Redding is governed by a Selectman-Town Meeting form of government. Day-to-day administration and legislative authority of the town is performed by a board of selectmen composed of three elected persons. Executive authority is vested to the First Selectman, who serves as the chief executive.

In addition to the Board of Selectmen and the Town Meeting, there are boards, commissions, and committees providing input and direction to Town administrators. Also, Town departments provide municipal services and day-to-day administration. Many of these commissions and departments play a role in hazard mitigation, including the Board of Education, Conservation & Inland Wetland Commission, Planning Commission, Zoning Department, the Fire Departments, Emergency Medical Services, and the Highway Department. It should be noted that the three fire departments are independent districts and not a part of the municipal government.

Drainage complaints are primarily routed through the Highway Department. Occasionally, the Police Department receives these complaints as well. The complaints are usually received via phone, fax, mail, or email and are recorded in a logbook. The complaints are investigated as necessary until remediation surrounding the individual complaint is concluded.

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

The Town of Redding includes numerous historic sites and two local historic districts.

The Redding Center Historic District encompasses approximately 55 acres around Lonetown Road (Route 107), Cross Highway, and Hill Road. Near the geographic center of Town, it consists of 39 contributing resources, including the original Town Hall, the Congregational Church, and the cemetery. This area is not located in a flood zone and has no specific natural hazard risks.

The Georgetown Historic District, along the Norwalk River, is roughly bounded by Route 7, Route 107, and the Ridgefield town line on the north. It contains 123 contributing buildings and sites, including the Gilbert and Bennett Manufacturing Company site as well as four churches, two schools, and a post office (now vacant). The railroad of the Danbury-Norwalk Line runs through the center of the district, roughly following the path of the Norwalk River. Sections of the Georgetown Historic District are located in the Norwalk River's 1% Annual Chance Flood zone; the former Gilbert & Bennett Manufacturing Company site, in particular, is at risk of flooding.

See Figure 2-4 for a map of historic resources in the community.

Analysis of the State Historic Preservation Office (SHPO) database of historic resources shows how some of these resources are exposed to natural hazards, as shown in Table 2-5.

Table 2-5: Number of Historic Assets (by parcel) Exposed to Different Hazards in Redding

Hazard	Count	Value
Dam Failure	0	
Earthquake	315	$225,987,940
Flooding		
1% Annual	54	$28,743,820
0.2% Annual	38	$100,150,410
Hurricane/Tropical Storm	12	
Thunderstorm	315	$225,987,940
Tornado	315	$225,987,940
Winter Storm	315	$225,987,940
Wildfire		
Interface	23	$10,123,300
Intermix	234	$113,167,260

Note that the table above does not reflect the flood risks reported by Town personnel.

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 were identified in the 2021 plan and are no longer current actions for the 2026-2031 update.

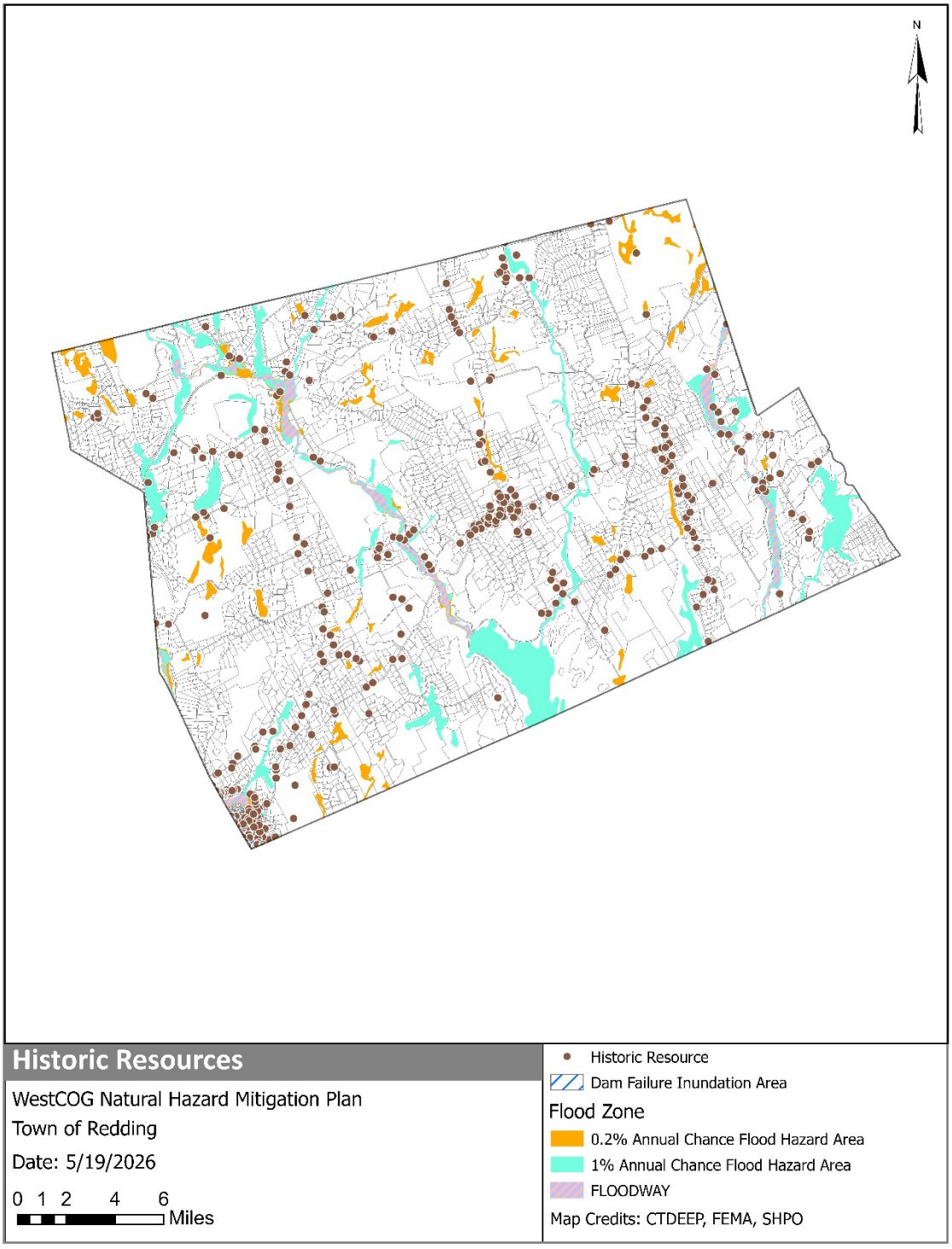

Figure 2-4: Historic Resources

2.3 Infrastructure

2.3.1 Transportation

The primary transportation corridors in Redding are Routes 53 and 58, running generally north to south; Route 107, running southwest to northeast; and Cross Highway, connecting the Town center to the eastern part of the Town. The western edge of Redding lies roughly along Route 7.

The MTA Metro-North Railroad has two stations in or near Redding: The West Redding Station and the Branchville Station. These two stations lie on the Metro-North Railroad's New Haven commuter rail line.

2.3.2 Utilities

The only community public water system in Redding is provided by Aquarion Water Company and serves part of the Georgetown neighborhood. Many other non-community public water systems are operated throughout the town. Most properties are on private wells.

Wastewater in the Georgetown neighborhood of Redding, along with the Meadow Ridge retirement community, is collected by the Georgetown Sewer Treatment Plan, which cleans the wastewater before discharging it to the Norwalk River. Other properties utilize septic systems.

Electricity and natural gas are provided to Redding by Eversource.

2.4 Planning and Regulatory Capabilities

Emergency Operations Plan

Redding maintains an Emergency Operations Plan (EOP) that it reviews annually, and updates as needed. The Town is currently in the process of rewriting its EOP to conform with the new Connecticut State template. This updated EOP will be available in a digital format.

2.4.1 Review of Existing Local Plans

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

- **Plan of Conservation and Development (POCD):** Redding updated its most recent Plan of Conservation and Development (POCD) in 2018, though it was not adopted until 2020. The document calls for protection of waterbodies, streambelts, and floodplains from development, as well as conservation of other open spaces and natural areas. Flood risks are explicitly noted in the "Land, Water and Climate" section and the "Major Natural Constraints" section of Chapter 2: Natural Resources. Flooding and stormwater management are addressed in numerous other parts of the plan as well.
- **Stormwater Management:** Redding maintains a Stormwater Management Plan. 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):** Redding 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:** Redding is included within the Western Connecticut included within the Western Connecticut Comprehensive Economic Development Strategy (CEDS) of 2023, 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):** Redding's EOP is reviewed annually and updated as needed. Dam failure Emergency Action Plans (EAPs) for dams with failure inundation zones that may impact Redding, and for which EAPs are available, are on file locally.
- **Watershed Management Plan:** Watershed Management Plans have been developed for the Saugatuck-Aspetuck, Still, and Norwalk River Watersheds. The Saugatuck River Watershed Based Plan was developed by the former South Western Regional Planning Agency (SWRPA) in 2012. The Still River Watershed Management Plan was developed by the Housatonic Valley Association with support from the Still River Partners in 2019. The Norwalk River Watershed Action Plan was prepared by the Norwalk River Watershed Initiative Committee, HDR/HydroQual, and the former South Western Regional Planning Agency (SWRPA) in 1998 and updated in 2011. 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:** An Open Space Plan, written in 2018, was adopted in 2020 as an addendum to the POCD. The plan lays out open space preservation goals and guides conservation efforts throughout the Town. Preservation of wetland and floodplain spaces is mentioned. The document does not expressly consider open space preservation as a natural hazard mitigation strategy.

Since the previous Hazard Mitigation Plan, the Town acquired the Mary Ann Guitar Preserve to maintain as open space within the Centennial Watershed State Forest. The acquisition was performed with money from an OSWA grant, Aquarion, and the Redding Land Trust. The site is bordered by 107, 53, and Newtown Turnpike. It was previously known as the Biehn Property.

2.4.1 Review of Regulatory Structures

Redding 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 is described in Section 3.

- **Building Code:** Redding enforces the Connecticut State Building Code locally.
- **Zoning Regulations:** Most recently updated in February 2024.
- **Inland Wetlands and Watercourses Regulations:** Most recently updated in April 2013.

2.5 Emergency Services, Critical Facilities, Sheltering, and Evacuation

The Town considers its police, fire, governmental, and major transportation arteries to be its most important critical facilities since these are needed to ensure that emergencies are addressed while day-to-day management of Redding continues. The Town also considers various infrastructure and facilities (such as water and sewer pump stations) to be critical facilities, as well as companies and businesses storing hazardous materials. Table 2-6 identifies all of these critical facilities.

Sheltering Capabilities

Emergency shelters are an important subset of critical facilities as they are needed in many emergency situations. There are three identified shelters in the town that are also considered critical facilities. Joe Barlow High School on Black Rock Turnpike is the primary shelter if neighboring regional shelters reach capacity

John Read Middle School on Redding Road is considered the backup shelter. The Community Center is used as a commodities/warming center during emergency situations, and can also act as a backup shelter in the event it is needed and the Middle School is inaccessible due to flooding. All three facilities have backup generators.

The Meadow Ridge Senior Living facility is a large complex that includes a senior living center (which does not have a generator), a long-term care facility (has an emergency generator) and an assisted living center (has a generator). The Meadow Ridge Facility is located on top of hill at the end of a long driveway, and does not have any direct flood risk. Access to the site during or following a disaster is a concern because Route 107, or the facility's long driveway, may be blocked by flooding or debris. The facility does have a service access off Old Farm Road. During past storms, the facility has opened its doors for town residents as a warming center, showering facility, and comfort station. The Town has been discussing with Eversource whether the facility is considered critical with regard to power restoration following an outage.

Emergency Response Capabilities

The Police Department and Emergency Services coordinate emergency preparedness in the Town of Redding. The Town's Emergency Operations Center (EOC), including its Emergency Communications Center, is located at the Redding Police Department. The EOC's goal is to provide citizens with the highest level of emergency preparedness before, during, and after disasters or emergencies. That Town coordinates with all internal departments to develop plans, protocols, and procedures that ensure the safety of Redding's citizens. It also provides technical assistance to state and local emergency response agencies and public officials.

Table 2-6: Critical Facilities

Facility	Address or Location	Comment	Em. Power	Shelter	In SFHA
Redding Community Center	37 Lonetown Road	Warming/cooling Center	✓	✓/CS	No
Joel Barlow High School	100 Black Rock Turnpike	Primary Shelter	✓	✓	No
John Read Middle School	486 Redding Road	Back-up overnight shelter	✓	✓	Yes
Police Department and EOC	96 Hill Road	Emergency Operations Center (EOC)	✓		No
Town Hall	100 Hill Road	Town Hall	✓		No
Sewage Facility / Wastewater Treatment Plant	19 North Main Street		✓		No
Highway Garage	28 Great Oak Lane	Emergency Assistance	✓		No
Georgetown Fire Department	6 Portland Avenue	Emergency Response	✓		No
Redding Ridge Fire Department and EMS Company –Fire District #1	186 Black Rock Turnpike	Emergency Response	✓		No
West Redding Fire Department – Fire District #2	306 Umpawaug Road	Emergency Response	✓		No
Town Cell Towers	Multiple locations	Communications	^		No
Meadow Ridge Facility	100 Redding Road	Elderly Housing Warming/Comfort Station	✓*	CS	No**

** Meadow Ridge generator provides partial power to the facility.*
*** Route 107 at the Meadow Ridge driveway is at risk of flooding from the Norwalk River, creating an access issue.*
^ Cell tower behind public works has a generator.
CS – Comfort Station

The Town's EOP guides its response to emergencies arising from both natural and anthropogenic hazards. The Town utilizes a program known as "CT Alert" to direct geographically specific emergency notification telephone calls into affected areas. The local radio station, 98Q (WDAQ Danbury), is also utilized for notification purposes.

The Town's Highway Department performs vegetation control, including tree trimming and removal, in the town's rights-of-way. During emergencies and following storms, the Highway Department responds to calls related to downed trees.

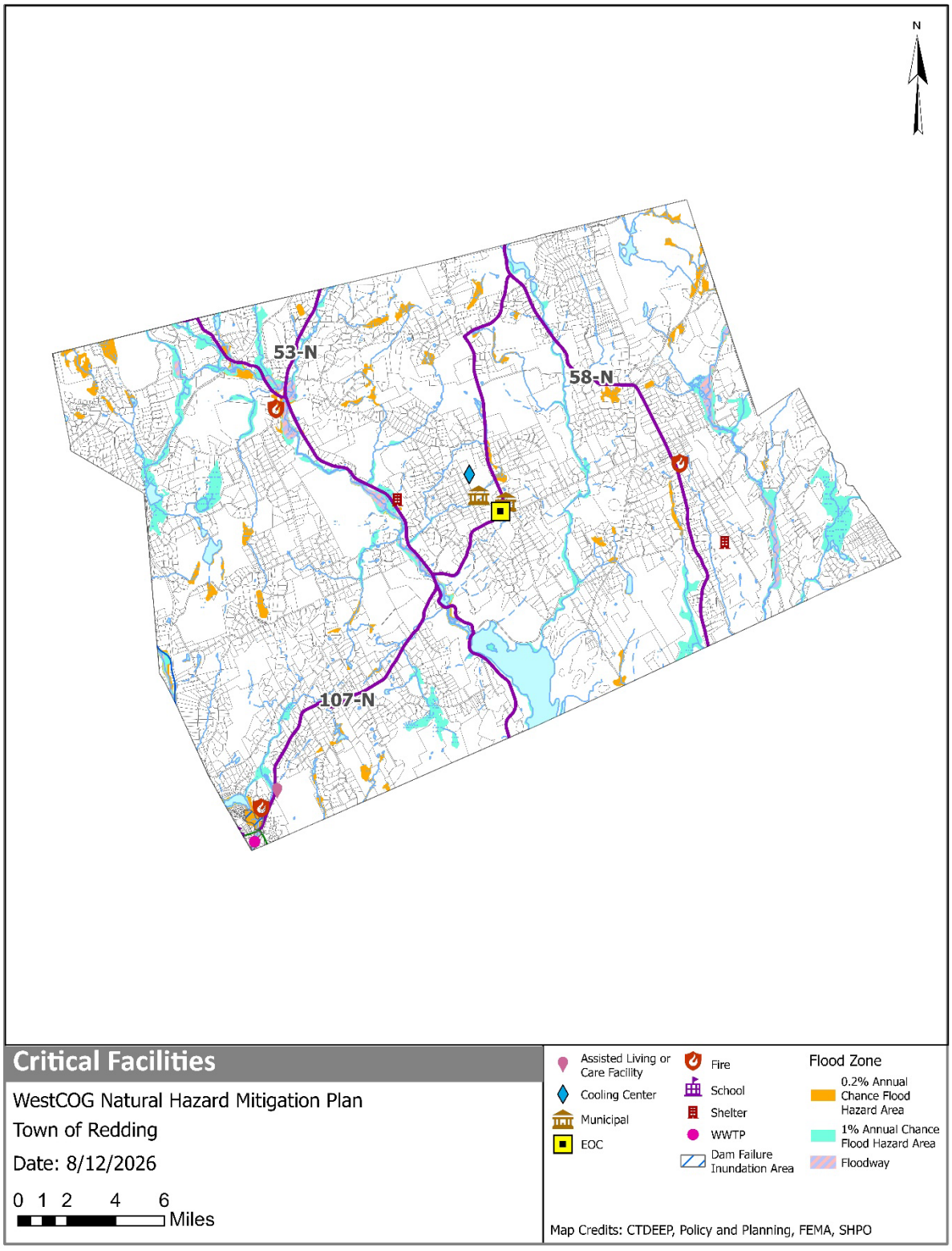

Figure 2-5: Critical Facilities & Flood Zones

Communications

Town officials have indicated that the cellular communication towers in Redding, especially the one on Redding Road, are critical facilities. In the past, storm events have caused significant power outages, requiring cell towers to use portable backup generators. Due to the length of the power outages, the generators ran out of fuel, leaving the community without cell service and severely limiting communications.

The communication backbone was updated since the 2021 update; not all facilities have backup power. The Town is still working to get these installed. The cell tower behind the public works facility is equipped with a generator; however, a power surge recently took down communications because the backup power was either unavailable or malfunctioning.

In Connecticut, the Department of Emergency Services and Public Protection (DESPP) added a regional focus. DESPP has divided Connecticut into five emergency planning regions, and as part of this new view, the DEMHS subsection (Division of Emergency Management and Homeland Security) of DESPP has been partnering with HVCEO and other regional planning organizations to strengthen emergency response. Redding is located in Region 5, consisting of 43 towns in western Connecticut.

Redding posts emergency preparedness information on its website, www.Townofreddingct.org, through the town Health Department. The website includes a list of emergency supplies and materials that residents should make sure they have on hand, and presents information about receiving emergency alerts.

The Town utilizes an emergency notification system known as CT Alert to send geographically specific warnings into areas at risk for hazard damage. Alerts can be sent by voice recording (by telephone), text message, email, and social media. The Town has been working hard to get residents signed up; they currently have over 6,000 subscribers and will continue to educate residents on its use.

3.0 HAZARD ASSESSMENT

Top hazard concerns of Redding include the following:

- The risk of flooding from the Norwalk River in Georgetown and West Redding
- Flash flooding on roads in West Redding
- The risk of flooding of CT Route 58 near Putnam Park Road
- The risk of flooding of CT Route 53 and Umpawaug Road
- Flooding at John Read Middle School, and the roads leading to the school becoming flooded and impassible
- Flooding of Chestnut Tree Road
- Beaver-dam-related drainage issues around Topstone Road, Marchant Road, and Chestnut Road
- Downed trees and utility wires during storms
- The lack of pressurized firefighting water in the area of the Redding Elementary School

More details about natural hazards in Redding are described in this chapter.

3.1 FLOODING (COASTAL, INLAND, AND ICE JAMS)

3.1.1 Setting

According to FEMA, most municipalities in the United States have at least one clearly recognizable floodprone area around a river, stream, or large body of water. These areas are designated as SFHAs and delineated under the NFIP. A regulatory floodplain with AE designation has been mapped along the Aspetuck River, Norwalk River, and the Saugatuck River. Areas identified as providing flood storage are identified with A Zone designations, meaning they are regulated as floodplain, but flood elevations have not been established. Portions of the Umpawaug Pond Brook, the Saugatuck River, and the Little River distribute these traits. Figure 2-5 for the areas of Redding susceptible to flooding based on FEMA flood zones.

Flooding can occur in some areas with a higher frequency than those mapped by FEMA. This nuisance flooding occurs during heavy rains with a much higher frequency than that used to calculate the 1% annual chance flood event, and often in different areas than those depicted on the FIRM panels. These frequent flooding events occur in areas with insufficient drainage, where conditions may cause flashy, localized flooding, and where poor maintenance may exacerbate drainage problems.

In general, the potential for flooding is minimal in Redding, with the majority of major flooding occurring along established SFHAs. The areas impacted by river overflow are generally limited to river corridors and floodplains. Indirect 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 drainage and other factors. The frequency of flooding in Redding is considered likely for any given year, with flood damage potentially having significant effects during extreme events.

3.1.2 Capabilities

National Flood Insurance Program

The Town has consistently participated in the National Flood Insurance Program (NFIP) since September 30, 1982, and intends to continue participation in the NFIP. SFHAs in Redding are delineated on a Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS). The FIRM delineates areas within Redding that are vulnerable to flooding and was most recently published on October 16, 2013, as part of the Fairfield County FIS update, with another anticipated update occurring in 2028. The hydrologic and hydraulic analyses from the FIS report dated December 15, 1981, were prepared by Philip Genovese and Associates for FEMA, under Contract No. H-4711, completed in May 1980.

The Zoning Enforcement Officer (ZEO) is the NFIP administrator in Redding and oversees the enforcement of NFIP regulations. The degree of flood protection established by the variety of regulations in the Town meets or exceeds the minimum criteria established by the NFIP. The Town is not enrolled in the Community Rating System program, but may consider enrolling. The town is a member of CAFM, and the ZEO attended the inaugural CAFM conference in October 2014. Future participation is anticipated.

The Town discourages new construction and substantial reconstruction within the 1% annual chance floodplain by raising concerns during the floodplain permit process. New development is strictly managed through the Town's land use process.

Ordinances, Regulations, and Plans

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

- **Zoning Regulations**: the Town of Redding Zoning Regulations were effective February 15, 2024, and have been enacted "to preserve the predominant residential, rural and agrarian characteristics of the Town of Redding, and to protect the health, safety and general welfare of its inhabitants; to secure safety from fire, panic, flood, erosion, air pollution, water pollution, and other dangers; to prevent contamination of groundwater and of surface water, including all streams, ponds, wetlands, aquifers, floodplains, well fields and water supply sources, and to control the erosion and siltation of water courses.

  Section 5.4.5 describes Flood Safety requirements and is essentially the local articulation of the NFIP regulations. The Zoning Commission first enacted flood damage prevention regulations in 1996. These regulations were revised in 2014 and reflect State of Connecticut and NFIP modifications.

  - Section 5.4.5.1 states that it is the purpose of this Regulation to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (a) restrict and prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards or which results in damaging increases in erosion or in flood heights or velocities;

- (b) require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

- (c) control the alteration of natural floodplains, stream channels, [and] natural protected barriers which are involved in the accommodation of flood waters;

- (d) control filling, grading, dredging, and other development which may increase erosion or flood damage; and

- (e) prevent or regulate the construction of flood barriers which will unnaturally divert flood waters, or which may increase flood hazards to other lands.

- Section 5.4.5.4 outlines permit requirements and the duties and responsibilities of the Zoning Enforcement Officer.

- Section 5.4.5.5 describes the provisions for flood hazard reduction. Section 5.4.5.5(5.1)(j) stated that manufactured homes are prohibited in all Special Flood Hazard Areas, this includes manufactured homes located outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or on a site in an existing park which a manufactured home has incurred substantial damage as a result of a flood.

- Section 5.4.5.5 (5.3) outlines specific standards for Special Flood Hazard Areas A and AE as follows:

    - New construction or substantial improvement of any residential, commercial, industrial or nonresidential structure shall have the lowest floor, including basement, elevated at least to two feet above the base flood elevation. Nonresidential structures may be floodproofed in lieu of being elevated provided that together with all attended utilities and sanitary facilities, the areas of the structure below the required elevation are watertight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads in the effect of buoyancy.

    - In addition, no encroachments, including fill, new construction, substantial improvements and other developments shall be permitted in floodways

unless certification (with supporting technical data) by a registered professional engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that encroachments shall not result in any (0.0 feet) increase in the flood levels during occurrence of the base flood discharge.

- Section 5.4 outlines Erosion and Stormwater Control requirements and requires the control of stormwater discharge to prevent flooding and the scouring and siltation of watercourses.

- **Inland Wetlands and Watercourse Regulations**: These regulations were effective in 1973 and are revised through April 25, 2013. They were implemented to protect the quality of the inland wetlands and watercourses within the Town of Redding by making provisions for the protection, preservation, maintenance, and use of inland wetlands and watercourses, including deterring and inhibiting the danger of flood and pollution.

  - Section 2.1 defines Regulated Activity "as any operation within or use of a wetland or watercourse involving removal or deposit of material, or any obstruction, construction, alteration, contamination, or pollution of such wetlands or watercourses, but shall not include the specified activities in Section 4 of these regulations. In all cases, the precise location of wetlands and watercourses shall be determined by the actual character of the land, the distribution of wetland soil types and locations of watercourses. The applicant shall provide this information to the Commission. Such determination shall be made by field inspections and testing conducted by a soil scientist, where soil classifications are required, or by any other qualified individual where locations of watercourses are required.

  The following are also deemed regulated activities:

  - (a) the location of any portion of any subsurface waste disposal system, including any earth-disturbing activities associated therewith, within 200 feet of the mean water line of the Norwalk, Saugatuck, Aspetuck, and Little Rivers; of Great, Umpawaug, Steichen's, Factory, Sterritt's, South, Falls, and Hedmond's Ponds; of Mirror Lake and Saugatuck Reservoir; within 150 feet of the mean water line and/or perimeter of all other watercourses; and within 100 feet of all wetlands;

  - (b) the location of any portion of any structures including any earth-disturbing activities associated therewith (for example, driveway or utility installation), or the engaging in any significant impact activity within 150 feet of the mean water line of the Norwalk, Saugatuck, Aspetuck, and Little Rivers; of Great, Umpawaug, Steichen's, Factory, Sterritt's, South, Falls, and Hedmond's Ponds; of Mirror Lake and Saugatuck Reservoir; and within 100 feet of all other wetlands and watercourses;

        - (c) the location of any portion of any subsurface waste disposal system or structure, including any earth-disturbing activities associated therewith, or the engaging in any significant impact activity, within 500 feet of the high-water line of a vernal pool;

        - (d) the engaging in any significant impact activity or the location of any portion of any structure, including any earth-disturbing activities associated therewith, as defined and regulated pursuant to the Flood Hazard Mitigation Program, as described and regulated pursuant to Section 5.4.5 “Flood Safety” of the Zoning Regulations of the Town; and

        - (e) any activity within the Town, the likely effect of which will have a significant impact on the existing condition of any of the wetlands or watercourses of the state.

    - Section 4.1.b states that no residential homes will be permitted "as of right" in wetlands and watercourses after July 1, 1987.

    - Section 6.1 states that no person may conduct or maintain a regulated activity without obtaining a permit. Section 7 outlines the permit application requirements.

- **Subdivision Regulations:** Adopted in 1957 and revised in 1980, the Town's Subdivision Regulations establish minimum acceptable standards of street construction; regulate the layout and development of lots and streets; and outline measures to prevent degradation of potable water sources, control erosion and siltation, preserve adequate and convenient open spaces, and retain the natural features of the land.
    - Article III, Section 3.1 states that land to be subdivided shall be demonstrated to be fully capable of providing healthful and safe living conditions for its occupants, and in its projected use to protect such conditions for adjacent areas, especially with respect to water supply, sewage disposal, flood and erosion hazards, traffic and pedestrian safety and accessibility to emergency services.
    - Article III, Section 3.2 identifies lands which require special evaluation, such as floodplains, primary and secondary aquifer recharge areas, wetlands and watercourses, all areas of soil types with “severe” or “very severe limitations, areas subject to unusual erosion hazards, natural slopes of twenty percent and greater and ledge rock areas.
    - Article III, Section 3.3.1 states that development of any land requiring special precautions for development is prohibited unless specifically approved by the Commission.
    - Article IV, Section 4.3.8 states that whenever possible, storm drainage shall be accommodated in retention basins for controlled and gradual release.
    - Article IV, Section 4.5.1 states that applications include planned control of stormwater runoff in order to prevent flooding, conserve water tables, promote groundwater recharge, minimize erosion and siltation and protect wetlands and other natural resources.
    - Article IV, Section 4.6 outlines Open Space Requirements

- **Plan of Conservation and Development:** This 2018 document is the Town's vision statement for future development. It is updated every 10 years. Recommendations in the Plan include but are not limited to the following:
    - **Section 2** - Protect habitats through open space conservation and environmentally sensitive stewardship. Continue to work with partner public-benefit organizations such as the Redding Land Trust, the Trust for Public Land, The Nature Conservancy, etc. to further these efforts.
    - **Section 2** - Review Town regulations for compliance with the CT DEEP Stormwater Management Plan and the CT DEEP Stormwater Manual.
    - **Section 3** - Purchase tracts of land as they come on the market to protect the Town as a vital watershed, maintain its rural character, provide for active and passive recreation, and preserve an equitable tax base by minimizing costs of additional schools and services. Continue meetings of Redding's seven-member Open Space Committee (consisting of two members from the Conservation Commission and Planning Commission, a representative of the Historical Society and the Redding Land Trust, and the Land Use Coordinator) on an as-needed basis to review the status.
    - **Section 3** - In order to preserve environmentally sensitive land, consider adoption of coordinated amendments to the Zoning Regulations and Subdivision Regulations to require that the countable portion of newly created lots in residential zones shall not include land comprised of wetlands, watercourses, 100-year floodplains, or slopes of 20% or greater.
    - **Section 3** - In reviewing Subdivision applications, encourage the use of scenic and historic vistas, the view from the road, and ridgelines as open space set asides to preserve the rural character, along with the long-standing priority of land conservation. Study ways to amend the Subdivision Regulations and Zoning Regulations to protect scenic vistas and areas of unique environmental value.
    - **Section 6** - Actively pursue land acquisition for open space, recreation, conservation, water supply protection as a vital investment in the Town's future quality of life and financial stability.

According to the POCD, approximately 7,530 acres (36%) of Redding has been preserved as permanent conservation and open space. "Moreover, most of the conserved land is located in contiguous parcels forming undeveloped corridors through the town. These 'forever green' corridors provide protected natural habitat, opportunities for passive recreation, and vital protection of the public water supply watershed."

Drainage, Street Flooding, and Structural Projects

The Town Zoning Office has developed and maintains a stormwater information webpage. The site includes the current Stormwater Management Plan, links to local watershed groups, and is updated periodically. According to the 2013 Stormwater Annual Report for the Town of Redding, the Highway Department documents annual catch basin inspection and cleaning. However, due to limited Town resources, it is not feasible to perform annual maintenance on all catch basins within the Town.

There are areas of street flooding throughout the town, and these are addressed by the Public Works Department as necessary. These typically relate to ponding and impassability of the given street but result in limited, if any, property impacts.

The Town's capital improvement plan (CIP) for drainage projects is a four-year plan. The CIP that was effective at the time of adoption of the previous edition of this Hazard Mitigation Plan February 2026) had a goal of upgrading several bridges in town. The following table shows drainage upgrades listed in the previous HMP, as well as the status of the projects.

Redding has a robust road reconstruction program. The Town is consistently working through a list of roads to repave and rehabilitate, and road drainage systems, including culverts, are upgraded when the roads are redone. Bridges identified in the most recent CIP include Sport Hill Road, Long Wall Road, Brookside Road, Greenbush Road, Newtown Road & Poverty Hollow, and Cross Hwy, Diamond Hill, and Old Stagecoach.

The following table summarizes recent and planned road, bridge, and culvert repair projects.

Table 3-1: Recent Road, Culvert, and Bridge Projects

Road	Notes
Topstone Road	Had multiple basins installed on the southside of the road, and several beaver dams have been addressed recently.
Poverty Hollow Road	. Drainage continues to get worse, town is unsure of the source. Upgrades are still needed here.
Station Road	Work still needs to be done here as it seems water is continuously increasing here.
SImpaug Turnpike	Remains an issue however, Metro North has stepped in to address this.
Marchant	Work still needs to occur here

Connecticut DOT has reconstructed the Route 53 Bridge over the Saugatuck River at a higher elevation prior to 2021. The Town has not experienced a major flood event since the bridge was rebuilt, but it is believed that the raised elevation will help mitigate the flooding that has historically impacted the area. It is noted that the low-lying areas on either side of the bridge continue to be low lying, and so are at risk from flooding.

Drainage work has also been recently completed on Putnam Park Road; the Town believes this work may have mitigated some of the flood concerns in this area.

The town's primary focus for flood mitigation is the commercial area of Georgetown located along the Norwalk River. The installation of flood walls and floodproofing has been a major part of redevelopment and design in this neighborhood.
Since the 2021 update, the town has completed some drainage projects, however challenges still exist and need to be addressed.

Communications

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. 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 also

receives regular weather updates through the Division of Emergency Management and Homeland Security (DEMHS) Region 5 email alerts.

Informational pamphlets regarding natural hazards are disseminated to public locations, and emergency information is available through several different media, such as newspapers, radio, and the internet.

Summary

In summary, the Town primarily attempts to mitigate future flood damage and flood hazards by restricting building activities in floodprone areas. This process is carried out by both the Planning and Zoning Commission and the Inland Wetlands Commission. All watercourses are to be encroached minimally or not at all to maintain the existing flood-carrying capacity. These regulations rely primarily on the FEMA-defined 1% annual chance flood elevations to determine flood areas. The flood damage prevention regulations require freeboard, exceeding the NFIP regulations.

3.1.3 Vulnerabilities and Risk Assessment

In general, potential present-day flooding problems in Redding are concentrated along the Saugatuck River and the Little River. The highest risk area along the Saugatuck River is in the vicinity of Route 53 at Umpawaug Road. Flooding along the Little River is prevalent along Route 58 and Putnam Park Road. Town officials note that flooding and ponding also occur along the following streets: Diamond Hill Road, Marchant Road, Simpaug Turnpike, Topstone Road, and Poverty Hollow Road.

Topstone Road has two low-lying areas susceptible to flooding; one section is a dirt road, and the other is paved. The paved low-lying section reportedly experiences flooding from Umpawaug Pond Brook relatively frequently. Mitigating this flooding is an ongoing effort of the Town. Nearby Chestnut Woods Road also experiences relatively frequent flooding.

Vulnerability Analysis of Critical Facilities

The list of critical facilities provided by the Town (Section 2.5) was used with the parcel data to accurately locate each critical facility throughout the town. One critical facility was found to lie within the 1% annual chance floodplains of a variety of watercourses in the town; the John Read Middle School located at 486 Redding Road. This facility is at risk of flooding from the Saugatuck River. The Middle School is partially located in a 1% annual chance flood zone, and while the property experiences flooding frequently, it has not experienced serious flooding damage in recent years. Flooding of Redding Road could isolate the school in cases when the building may not flood.

Vulnerability Analysis of Areas Along Watercourses

The primary waterways in Town are the Norwalk River, Saugatuck River, Aspetuck River, and the Little River. The remaining waterways in Redding are mostly small streams and brooks. Specific areas susceptible to flooding are identifiable by the FEMA defined special flood hazard areas. Refer to Figure 3-1 for the areas of Redding susceptible to flooding based on FEMA flood zones.

According to town officials, the most persistent flooding in the town is adjacent to the Saugatuck River and the Little River. Town officials have indicated that periodic flooding also occurs in the village of Georgetown along the Norwalk River. Flash flooding on roads in the West Redding area is also reportedly a problem during major rain events.

Saugatuck River

The Saugatuck River drainage basin poses flood risks in the vicinity of Route 53 near Umpawaug Road and John Read Middle School. Flooding in this area has historically caused frequent road closures. While the Route 53 Bridge over the Saugatuck has been elevated by the state, low-lying sections of road on either side of the bridge continue to be low-lying and at risk from flooding.

According to a September 2, 2013, NBCconnecticut.com article, heavy rains and flash flooding caused Simpaug Turnpike and Long Ridge Road to flood, and cars were submerged up to their windows. The town plans to install additional stormwater infrastructure along the Saugatuck River in an effort to reduce flooding and ponding impacts.

Umpawaug Pond Brook is a tributary of the Saugatuck, flowing north from Topstone Park to join the Saugatuck near the Redding train station at Simpaug Turnpike. Umpawaug Brook is reported to cause flooding on a section of Topstone Road, as well as Chestnut Woods Road.

Little River

Route 58 in the vicinity of Putnam Park Road experiences flooding that often requires road closures. This road is the main route to the hospital in Danbury.

Norwalk River

According to the Norwalk River Watershed website, “the Norwalk River has not had a significant flood since 1955. A modern repeat of the 1955 flood would do over $21 million in damage along the river… and the State has identified the region as a ‘high risk basin in immediate need of better flood control management and hazard mitigation.’” Redding views the commercial area of Georgetown, located along the Norwalk River, as a primary area of concern.

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.

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

- *Class AA*: negligible hazard potential
- *Class A*: low hazard potential
- *Class BB*: moderate hazard potential
- *Class B*: significant hazard potential
- *Class C*: high potential hazard

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 any given year.

3.2.2 Capabilities

The Dam Safety Section of the Connecticut DEEP Inland Water Resources Division is charged with the responsibility for administration and enforcement of Connecticut's dam safety laws. The existing statutes require that permits be obtained to construct, repair, or alter dams, and that existing dams be inventoried and periodically inspected to ensure that their continued operation does not pose a hazard to life, health, or property.

Dams regulated 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 dam safety requirements are codified in Sections 22a-401 through 22a-411, inclusive of the Connecticut General Statutes. Sections 22a-409-1 and 22a-409-2 of the Regulations of Connecticut State Agencies have been enacted and set requirements for the registration, classification, and inspection of dams. Dams must be inventoried by the owner with the Connecticut DEEP according to Connecticut Public Act 83-38.

Effective October 1, 2013, the owner of any high or significant hazard dam (Class B and C) must develop and implement an EAP after the Commissioner of DEEP adopts regulations. The EAP shall be updated every two years, and copies shall be filed with DEEP and the chief executive officer of any municipality that would potentially be affected in the event of an emergency. New regulations shall establish the requirements for such EAPs, including but not limited to (1) criteria and standards for inundation studies and inundation zone mapping; (2) procedures for

monitoring the dam or structure during periods of heavy rainfall and runoff, including personnel assignments and features of the dam to be inspected at given intervals during such periods; and (3) a formal notification system to alert appropriate local officials who are responsible for the warning and evacuation of residents in the inundation zone in the event of an emergency.

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. 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.

The CT DEEP also administers the Flood and Erosion Control Board program, which can provide non-competitive state funding for the 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. The Town's Planning and Zoning Commission is responsible for reviewing all development activities that occur within flood hazard or flood-prone areas.

The Town Open Space Manager monitors beaver dams in Town. When problematic impacts are observed, Public Works staff attempt to break up or remove the dams using machinery or by hand.

Actions Completed and New Capabilities

The town has developed a standard procedure for managing beaver dams.

3.2.3 Vulnerabilities and Risk Assessment

As of March 2026, there were 58 DEEP-inventoried dams within the Town of Redding. These dams are shown in Figure 2-5. Three of these dams are considered high hazard (Class C). Failure of a Class C dam has a high potential for loss of life and extensive property and infrastructure damage. As shown in Table 3-2, the three high hazard dams in the town are owned by private companies. One Class B (significant hazard) dam is located in adjacent Ridgefield. Failure of this structure may have an impact on Redding.

Table 3-2: High Hazard Dams with Potential to Affect the Town of Redding

Number	Name	Stream	Class	Owner
11701	Factory Pond Dam	Norwalk River, Redding	C	Georgetown Land Development Company LLC
11739	Meadow Ridge Detention Dam	Unnamed brook, Redding	C	Redding Life Care LLC
11742	Meadow Ridge Fire Irrigation Pond Dam	Unnamed brook, Redding	C	Redding Life Care LLC
11801	Millers Pond Dam	Norwalk River, Ridgefield	B	Dana Matthow

Millers Pond (Dam No. 11801) – Norwalk River, Ridgefield

The Millers Pond Dam is a Class B dam located at the southern end of Millers Pond in Ridgefield and impounds a reservoir from a contributing watershed of 7.04 square miles. The earthen dam is 13 feet in height and 152 feet in length. It is privately owned and used to impound a reservoir for aesthetic purposes. The dam discharges to the Norwalk River, crossing under Florida Hill Road before flowing alongside State Route 7 into Redding. Floodwaters may cause an increase in water surface elevations in the Norwalk River in Redding, potentially affecting a number of structures located between the river and Route 7.

Factory Pond Dam (Dam No. 11701) – Norwalk River, Redding

The Factory Pond Dam is located at the southeast end of Factory Pond and impounds a storage volume of 192 acre-feet from a contributing watershed of 12.2 square miles. The earthen dam was constructed in 1874 and is 18.75 feet high and 175 feet long. It is owned by the Georgetown Land Development Company, LLC, and used to impound a reservoir for recreation.

An EAP for the Factory Pond Dam was prepared by Philip W. Genovese & Associates, Inc. addressing actions to be taken during an emergency. In August 2006, drawdown and inspection indicated seepage and mortar issues. Tighe & Bond developed design plans in 2007 detailing corrective procedures that included low pressure grouting and repointing the spillway.

The Georgetown historical area of Redding is located immediately downstream of the structure. Floodwaters from a failure would affect structures in this developed area. An August 1981 Phase II dam inspection report includes an Emergency Operations Plan for the structure. The plan identifies Gilbert & Bennett Manufacturing Company as the responsible party for response in an emergency situation; however, the factory has since been closed and is being redeveloped as housing. A dam breach analysis completed for the 1981 EOP includes an inundation map of the downstream area. Mapping indicates floodwaters would inundate structures on the both sides of Route 57/107.

Meadow Ridge Detention Dam (Dam No. 11739) – Unnamed watercourse, Redding

The Meadow Ridge Detention Dam is a Class C earth dam located between Woods Way and Meadow Ridge Road, impounding a 1.5-acre pond. The structure is owned by Redding Life Care LLC and used to create a detention sediment basin. The dam is 11 feet high and 240 feet long. There are no structures located downstream of the dam.

Meadow Ridge Fire Irrigation Pond Dam (Dam No. 11742) – Unnamed brook, Redding

The Meadow Ridge Fire Irrigation Pond Dam is a Class C earth dam located at the southwest end of an impoundment used for fire protection. The dam is owned by Redding Life Care LLC and is located approximately 960 feet north of the Redding Life Care facility, on the east side of Meadow Ridge Road. The structure is 8 feet high and 180 feet long. Although there are no structures located downstream of the pond, floodwaters resulting from failure have the potential to affect Meadow Ridge Road and access to the care facility.

Other Dams

According to town officials, the Topstone Dam, which is defined as a low-hazard dam has an effect on the hydraulic control of the Umpawaug Pond Brook and has had some scour issue and Topstone Road has experienced erosion. The town considered this an area of concern for maintenance and observation.

Beaver Dams

Finally, the Town of Redding is concerned with potential failures of beaver dams. Town officials noted that there are several beaver dams in town. Particular problem locations are around Topstone Road, Marchant Road, and Chestnut Woods Road. Beaver activity that could present minor flooding risks occurs adjacent to Diamond Hill Road on Moffitts Brook, as well as off of Chestnut Woods Road on a branch of the Umpawaug Pond Brook. Chestnut Woods Road regularly experiences minor flooding as the stream flows over the road. In 2025, a large release reportedly occurred due to the failure of a beaver dam. These beaver dams cause a significant amount of drainage issues and damage to Town infrastructure, but at this point, damage to private property has not been reported. The town has also noted that several private property owners are utilizing beaver deterrent devices in town; however, there are concerns that residents may not know how to use these devices properly, and education is needed.

Changes and Improvements

The Town of Redding continues to be at low risk for dam failure.

3.3 HURRICANES AND TROPICAL STORMS

3.3.1 Setting

Hurricanes have the potential to affect any area within the Town of Redding. A hurricane striking Redding 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; though recent events, such as Tropical Storm Isaias in 2020, have shown that inland winds can still be devastating. Additionally, 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

Existing mitigation measures appropriate for flooding were discussed in Section 3.1. These include the ordinances, codes, and regulations that have been enacted to minimize flood damage. In addition, various structures exist to protect certain areas, including dam and local flood protection projects.

Wind loading requirements are addressed through the state building code. The 2022 Connecticut State Building Code was amended in 2009 and 20182 with an effective date of October 1, 20228. The code specifies the design wind speed for construction in all Connecticut municipalities. Effective 2022, the design wind speed for Redding is 110 miles per hour for a Category 1, 120 miles per hour for a Category 2, 125 miles per hour for a Category 3, and 130 miles per hour for a Category 4 or greater. Redding has adopted the Connecticut Building Code as its building code. The town website provides links to the State Building Codes so that developers are able to find design standards for wind.

The Redding tree warden maintains an aggressive tree and tree limb trimming program with an annual budget of around $15,000. Utilities must be placed underground in new developments; this capability is considered proactive to prevent damage from wind and falling trees.

Eversource, the local electric utility, provides tree maintenance near its power lines

During emergencies, the Town currently has three designated emergency shelters available for residents, as discussed in Section 2.5.

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. The Town participates in the statewide CT Alert system and has utilized it effectively during previous events. During past hurricane and tropical storm events, the Town used the CT Alert system to notify all residents in the SFHA that they may evacuate and use one of the shelters.

3.3.3 Vulnerabilities and Risk Assessment

The Town of Redding is vulnerable to hurricane damage from wind and flooding and from any tornadoes accompanying the storm.

Downed trees and wires have been a big challenge in previous storms, and tree maintenance continues to be a major concern for the town. While the Town has a tree warden and a tree maintenance budget, it is reported to be insufficient for the amount of work that needs to be done as a very rural Town with many forested roads. Additionally, the tree warden has identified many dead Ash trees (killed by the Emerald Ash Borer infestation) all around Town that are fall risks. While the Public Works Department is chipping away at dangerous trees little by little, it does not have the budget to address everything.

Redding's housing stock consists of historic buildings more than 50 years old, 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. Homes located within SFHAs are also at risk from flooding as a result of the heavy rainfall that typically occurs during tropical storms and hurricanes.

As the Town of Redding 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 needs based on areas that are damaged or need 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. During extended power outages, it is believed that only 10% to 20% of the affected population of the town will relocate, while most will stay in their homes until power is restored. In the case of a major (Category Three or above) hurricane, the Town will likely depend on state and federal aid to shelter 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 Redding. Because these types of storms and the hazards that result (flash flooding, wind, hail, and lightning) might have a limited geographic extent, it is possible for a summer storm to harm one area within the town without harming another.

Based on the historic record, it is considered highly likely that a summer storm that includes lightning will impact the town 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 Fairfield County each year that could cause significant damage to a small area.

3.4.2 Capabilities

Warning is the primary existing mitigation method 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.

Aside from warnings, several other methods of mitigation for wind damage are employed in Redding, as explained in Section 3.3. In addition, 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 the tornado "watch" stage.

3.4.3 Vulnerabilities and Risk Assessment

The Town of Redding has moderate to high potential to experience tornado damage. NOAA states that climate change could increase the frequency and intensity of tornadoes, so the pattern of occurrence in Connecticut may change in the future. The likelihood of lightning strikes in the Redding 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 Redding is considered moderate in any given year.

Most thunderstorm damage is caused by straight-line winds or downbursts exceeding 100 mph. The risk of downbursts occurring during such storms and damaging the Town of Redding is believed to be low for any given year. All areas of the town are susceptible to damage from high winds, although more building damage is expected in the town center, while more tree damage is expected in the less densely populated areas.

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. Town personnel note that strong thunderstorms will cause power lines to fall all over the town. Most downed power lines in Redding 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. It is important to have adequate water supply for fire protection to ensure the necessary level of safety is maintained.

Summary

The entire Town of Redding is at relatively equal risk for experiencing damage from summer storms and tornadoes. 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, the Town budget for tree removal and minor repairs is generally adequate to handle summer storm damage.

3.5 WINTER STORMS AND NOR'EASTERS

3.5.1 Setting

The entire Town of Redding 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 town center. In general, winter storms are considered highly likely to occur each year (although major storms are less frequent), and the hazards that result (nor'easter winds, snow, and blizzard conditions) can potentially have a significant effect over a large area of the town.

3.5.2 Capabilities

Capabilities specific to winter storms are generally those related to preparing plows and sand and salt trucks, tree trimming to protect power lines, and other associated snow removal and response preparations.

The amended Connecticut Building Code specifies that a pressure of 40 pounds per square foot (psf) be used as the base "ground snow load" for computing snow loading for different types of roofs. The International Building Code specifies the same pressure for habitable attics and sleeping areas, and specifies a minimum pressure of 35 psf for all other areas. Snow accumulation on the roofs of critical facilities has not been reported to be an issue.

The Highway Department has 11 plow trucks and an annual snow-removal budget of over $200,000. There are ten routes which total approximately 101 miles: 93.92 miles of paved road and eight miles of dirt road. The MgCl/salt mixture is used for deicing. Town plowing typically occurs before CT DOT plowing. Priority is given to plowing egresses to critical facilities. Homeowners, private associations, and businesses are responsible for plowing their own driveways and roads. The Town reports that its snow removal capabilities are robust.

Prior to a winter weather event, the Town ensures that all warning/notification and communications systems are ready and ensures that appropriate equipment and supplies, especially snow removal equipment, are in place and in good working order. In some known problem areas, pre-storm treatment is applied to roadways to reduce the accumulation of snow. The Town also prepares for the possible evacuation and sheltering of populations that could be affected by the upcoming storm (especially the elderly and persons with special needs).

Actions Completed and New Capabilities

The Town of Redding continues to mitigate winter storms.

3.5.3 Vulnerabilities and Risk Assessment

Redding 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 2023 Connecticut State Natural Hazard Mitigation Plan, the state can expect to experience at least four major snow events each year, with an average of 8 winter events in a

season for Fairfield County. It is estimated that Redding's average annual snowfall is greater than four feet.

Recent climate change studies predict a shorter winter season for Connecticut (as much as two weeks) and fewer 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.

After a storm, snow piled along the sides of roadways can reduce sightlines and reflect blinding amounts of sunlight. When coupled with slippery road conditions, poor sightlines, and heavy glare, these conditions 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 Redding, in particular, is 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 Redding 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.

Icing causes difficult driving conditions throughout the hillier sections of the town, including along Route 53 in the northwestern portion of town. The Town's standard of pre-salting has been helpful in controlling ice in these problem areas. In 2025, the Town noted that smaller, low accumulation storm events tend to require more salt than larger storms.

Summary

The entire Town of Redding 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. The Town budget for tree removal and minor repairs is generally adequate to handle winter storm damage, although the plowing budget is often depleted. The town maintains an area which can be used to stage snow when accumulation is high.

3.6 WILDFIRES AND DROUGHT

3.6.1 Setting

The Town of Redding 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 firefighting equipment. Such areas in Redding are limited. Hazards associated with wildfires include property damage and habitat loss. Wildfires are considered a likely event each year but, when one occurs, it is generally contained to a small range with limited damage to non-forested areas.

In addition, Redding and Fairfield County have overall experienced drought challenges over recent years. The 2023 Connecticut Natural Hazard Mitigation Plan assumes that the State of Connecticut is likely to experience a drought every two to three years. This assumption is based on climate change projections that anticipate hotter, 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 Fairfield County accounts for roughly 7.28% of the state's total number of farms, with a market value of over $42 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. Redding reports that its firefighting capabilities are robust.

The Connecticut DEEP Division of Forestry monitors the weather each day during non-winter months as it relates to fire danger. This allows the DEEP and the Town to monitor drier areas of the state and prepare for forest fire conditions. Forest fire danger levels are classified as low, moderate, high, very high, or extreme. In addition, the National Weather Service issues a Red Flag warning when winds will be sustained, or there will be frequent gusts above a certain threshold (usually 25 mph), the relative humidity is below 30%, and precipitation for the previous five days has been less than one-quarter inch. Such conditions can cause wildfires to spread quickly from their source.

The following regulations regarding fire protection are outlined in the Redding Zoning Regulations:

- **Section 3.6** states that every building shall be capable of safe, legal access from a public road or street. When developed, the lot shall be provided with a driveway for use by emergency vehicles such as fire apparatus, police, and rescue vehicles.
- **Section 5.1.3** requires that adequate fire and police protection be provided before a special permit application is granted.
- **Section 5.2.9(d)** requires the submittal of plans that demonstrate the availability of, and an agreement to provide to the site, a water supply system for both domestic use and fire protection.

- **Section 5.2.9(f)** requires plans for the protection of persons and property from fire. At a minimum such plans shall be based on advisory reports of the local Fire Marshal and/or the Town Building Official and shall (1) provide automatic fire suppression capabilities (sprinkler systems) in all units of multiple use buildings, in all two family and multiple family dwellings and in all other nonresidential buildings in excess of 1,000 square feet floor area, in conformity with National Fire Protection Association (NFPA) Standards 13, 13D and 13R and (2) conform to NFPA Standard "Fire Protection in Planned Building Groups, 1985 edition."
- **Section 5.4.4** states that stormwater runoff shall be collected and detained where feasible, creating water storage basins accessible and usable for firefighting, flood control and irrigation purposes.

As of the 2021 update, the town has nine dry hydrants in the Redding Ridge fire district and utilizes mutual aid agreements with neighboring towns as needed. Additional dry hydrants are believed to be present in the Georgetown and West Redding districts.

The Connecticut DEEP Open Burning Program requires designation of certified Open Burning Officials in each municipality. This individual oversees permitting of open burning.

The Redding Fire Department goes to the fires whenever possible. This proactive approach is believed to be effective for controlling wildfires.

Actions Completed and New Capabilities

Redding continues to maintain its strong wildfire mitigation capabilities.

3.6.3 Vulnerabilities and Risk Assessment

According to the Connecticut DEEP, the actual forest fire risk in Connecticut is low due to several factors. First, the overall incidence of forest fires is very low. According to the 2023 State Hazard Mitigation Plan, an average of 243 fires per year occurred from 2013 to 2022; an increase from the average 109 fires per year reported in the 2019 State HMP. In 2020 alone, there were a reported 603 wildland fire events. Secondly, as the wildfire/forest fire prone areas become fragmented due to development, the local fire departments have increased access to those neighborhoods for firefighting equipment. Third, the problematic interface areas such as driveways too narrow to permit emergency vehicles are site specific. Finally, trained firefighters at the local and state level are readily available to fight fires in the state, and inter-municipal cooperation on such instances is common.

The historic record suggests that most wildfires in Connecticut are relatively small. In the drought year of 1999, the average wildfire burned 5 acres, compared with the two most extreme wildfires recorded since 1986, which burned 300 acres each. Given the availability of firefighting water in Redding, including the use of nearby water bodies, it is believed that this average value for a drought year and the extreme value are applicable to the town. Areas within Redding vulnerable to wildfire are shown in Figure 3-1.

Connecticut 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 pose a threat, but the combined presence of residences, businesses, and lifelines near a wildland area increases the 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.

The Wildland-Urban Interface (WUI) index is used to identify areas that may be at greater risk of wildfires based on the density of development in comparison to the amount of wildfire prone vegetation. The Town of Redding is a patchwork of high and medium density development intermixed, and low-density development intermixed with fire prone vegetation types. However, given firefighting capacity and water availability, it is likely that the town has effective capabilities to minimize damage from fires that may occur.

According to the Town of Redding, the Town sees small brush fires every year. The total cost to fight wildfires in any given year is $9,000 (equipment and labor) for an average of three wildfire events, and tend to be a few acres in size each time. Property damage is negligible, as the damage occurs only in forested areas without any structures.

There is no public water system available in the area of the Redding Elementary School. This is an area of particular concern; if a fire were to occur in that area, the Town would not be able to provide sufficient water pressure to protect the school structure. Under current conditions, the town would pull water directly out of the pond across the way. While this is not specifically a wildfire risk, a wildfire occurring in this area could potentially spread to the school structure.

Traditionally, the highest forest fire danger in Connecticut occurs in the spring from mid-March to mid-May.

Given the industrial nature of some land uses in downtown Redding, the potential for wildfires to become structural fires involving chemicals exists.

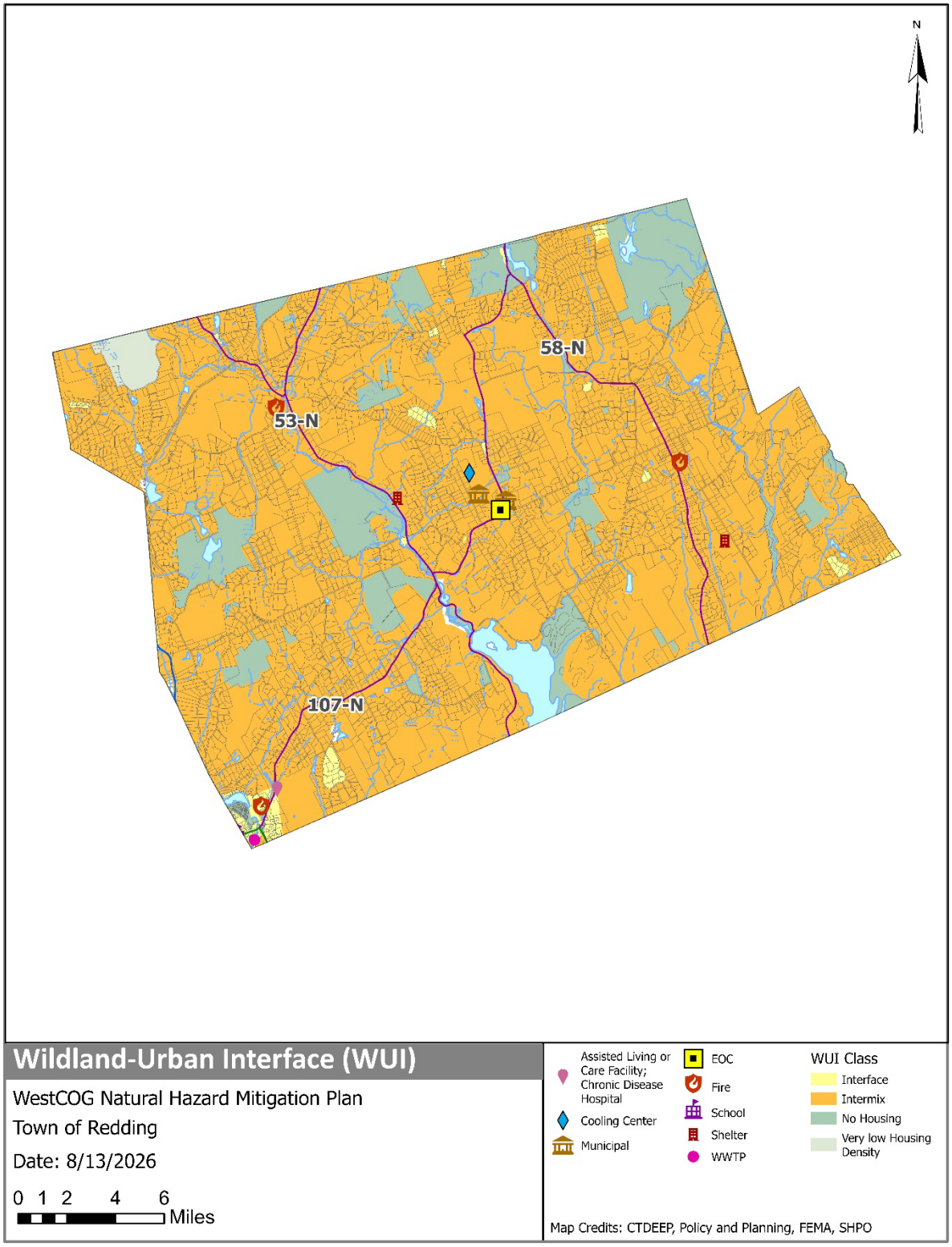

Figure 3-1: Wildfire Areas

3.7 EARTHQUAKES AND LANDSLIDES

3.7.1 Setting

The entire Town of Redding is susceptible to earthquake damage. However, even though earthquake damage has the potential to occur anywhere, both in the town and 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, but that may cause significant effects to a large area of the town.

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 Redding. Results are presented in Table 3-3.

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

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	2% to 3%	< 1%
100	4% to 6%	1% to 2%
250	10% to 12%	2% to 3%
350	12% to 15%	3% to 4%

Based on the historic record and the probability maps generated from the USGS database, the state of Connecticut possesses areas of seismic activity. It is likely that Connecticut will continue to experience minor earthquakes (magnitude less than 3.0) in the future. While the risk of an earthquake affecting Redding 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 Redding.

The built environment in Connecticut includes old non-reinforced masonry that is not seismically designed. Those who live or work in nonreinforced 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.

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 Redding. 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 documents do indirectly discuss areas susceptible to earthquake damage and regulations that help to minimize potential earthquake damage.

- **Plan of Conservation and Development**: The 2020 Plan discusses the protection of land-related resources such as steep slope areas and certain soil types.

- **Subdivision Regulations**: The 1980 regulations do not explicitly address the issue of construction on steep slopes. The regulations do require that soil erosion and sediment control plans be developed for proposed projects.

- **Zoning Regulations:** The 2024 regulations require applicants to provide the location of proposed erosion and sediment control measures on site plans. The regulations also state that all uses shall make proper provision for control of erosion, sedimentation and stormwater in particular to: (a) minimize soil loss and sedimentation due to the effects of wind, water, ice, and construction activity; (b) preserve the stability, fertility and vegetation cover of unpaved site areas; (c) control stormwater discharge to prevent flooding and the scouring and siltation of watercourses; (d) conserve water tables through adequate on-site stormwater recharge and € protect lives and facilities from the effects of major floods.

Actions Completed and New Capabilities

The town continues to mitigate for earthquakes and landslides where possible.

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 is susceptible to liquefaction. When liquefaction occurs, the strength of the soil decreases, and the ability of the 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.

Some areas in the Town of Redding are underlain by sand and gravel. Structures in these areas are at increased risk from earthquakes due to amplification of seismic energy and/or collapse. Many of these areas occur in floodplains associated with the various streams and rivers in Redding. The areas that are not at increased 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.

Changes and Improvements

Redding continues to be at low risk of earthquakes.

3.8 EXTREME HEAT

3.8.1 Setting

Extreme heat can occur at any time during the warmer months and can be defined as temperatures that hover 10 degrees or more above the average high temperature for the region. The NWS defines extreme heat as a period of abnormally hot weather generally lasting more than two days. A *heat wave* typically lasts three or more days with temperatures over 90 degrees for those days. These events typically last for a prolonged period of time, can vary in extent and intensity, and are often accompanied by high humidity.

An extreme heat event or heat wave can occur anywhere throughout Connecticut and any of the WestCOG communities. According to the 2023 Connecticut State Natural Hazard Mitigation Plan, Fairfield and Litchfield counties experienced, between 2012 and 2021, the greatest and least average annual number of days with temperatures greater than 90 degrees, respectively. Fairfield County experienced an average of 5 days, while Litchfield County experienced an average of 0 days.

Extreme heat events are expected to increase. The WestCOG Regional Climate Assessment (2026) notes that "by 2050, in a high CO_2-emissions scenario (RCP 8.5), average temperatures are expected to rise by approximately 5°F and continue to increase thereafter." The region is also likely to see an increase in heat wave days, summer days (where daily maximum temperatures are above 77 degrees), and tropical nights (where the daily minimum is below 68 degrees).

3.8.2 Capabilities

The Town of Redding has identified cooling centers in town which can provide respite to members of the community during an extreme heat event or heat wave. The Town also monitors the National Weather Service and local forecasts for heat warnings and advisories, in addition to guidance set forth by the State.

Actions Completed and New Capabilities

The town has identified two cooling centers in Redding.

3.8.3 Vulnerabilities and Risk Assessment

While the entire town is at risk of an extreme heat event, vulnerability can vary widely throughout the community as it does across Connecticut. To better characterize vulnerability to extreme heat, UConn CIRCA has developed a tool to aid in understanding extreme heat vulnerability for communities across the state. This tool, known as the Climate Change Vulnerability Index (CCVI), comprises dozens of factors that contribute to a community's heat sensitivity, exposure, adaptive capacity, and, ultimately, overall heat vulnerability. CCVI can be used as a tool to characterize heat vulnerability for Redding.

In general, the most vulnerable populations in Redding would include the young and the elderly, and those populations living in the more densely developed areas in town which may have reduced tree coverage and a greater density of impervious surface. According to the CCVI, more heat vulnerable areas in Town are concentrated in Redding Center, along the Route 58 corridor, and Georgetown area, although vulnerability is moderate to low compared to other WestCOG communities.

Changes and Improvements

The town, like all WestCOG communities, is now including extreme heat in its HMP and beginning to plan more intently to address extreme heat impacts.

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 below lists the mitigation actions developed in the previous HMP and their status. Actions to be carried forward are noted as such. Actions that have been institutionalized as capabilities are not carried forward.

Table 4-1 Status of Previous Mitigation Actions

#	Description	Status	Notes
1	Collaborate with CIRCA on the "Resilient Connecticut" project	Carry Forward	Little activity with program.
2	Coordinate with CT SHPO to conduct outreach to owners of historic properties to educate them on methods of retrofitting historic properties to be more hazard-resilient while maintaining historic character.	Remove	Make Regional - None to date. Only contact with SHPO is on the brownfield and how to remediate properties. Do have some bridge projects coming up that will include SHPO. May become regional/COG action to help with resources
3	Coordinate with Aquarion Water Company to identify areas where fire-fighting capacity may be limited due to lack of water pressure or storage.	Carry forward	No communication with company on this, there is no public water. The town has installed dry hydrants in 3 locations around schools. Pretty central locations so the FD can quickly access. Installed summer 2025. Town does have one fire hydrant in Georgetown. Have not heard of any issues from Georgetown FD regarding any issues. HS is sprinklered other schools are not.
4	Assess the costs and potential benefits to enrolling in the Community Rating System (CRS)	Carry forward	No progress
5	Ensure that the appropriate municipal personnel are trained in flood damage prevention methods by becoming a CAFM member, and/or by attending DEEP, FEMA-deployed, or CAFM trainings.	Carry forward with revision	No knowledge of floodplain manager. Michael Moran is a CAFM member, has attended trainings. ZEO/Conservation officer/provides support to planning as land use officer.
6	Work with Eversource to identify municipal actions to improve electric grid resiliency.	Carry forward	Eversource is doing a lot of vegetation management and cutting. Have done full easement cuttings. Beyond this, little coordination on municipal actions.

#	Description	Status	Notes
7	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.	Carry forward, maybe reflect the continuation of using this resource.	No town engineer, 4 bridges in design for replacement that were destroyed during 2024 event. Working to meet 100 year at least, 500 year did come up in discussion.
8	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.	Remove	May become regional
9	Evaluate flooding at the intersection CT Route 58 and Putnam Park Road which may impact emergency vehicles, school buses, and the general public to ensure adequate access to the Hospital in Danbury.	Carry forward with revision	Consolidate/revise with #12 - Only had one issue within the last 4 years.
10	Annually conduct an emergency operations exercise for a local terrorism, sabotage, or mass casualty event.	Carry forward with revision	Reliant on grants from DEMHS on this, has not happened recently, but getting back on track. New police chief becoming more involved. Belongs to Region 5 for mutual aid with Public Works - try to perform quarterly radio/communication testing.
11	Use beaver deterrent devices such as beaver stops, beaver bafflers, or beaver deceivers where necessary to protect property.	Carry forward.	Last year there was a large release because a beaver dam gave out. Discussions regarding private property owners implementing these structures. May be a good public education project.
12	Work with CTDOT to evaluate drainage issues along the Little River in the vicinity of Route 58 and Putnam Park Road to determine potential flood reduction methods.	Carry forward with revision	Significant downstream flooding along Little River during August floods. Would like DOT to evaluate issues - Gilbert bennet Brook, culverts under 107 are thought to be inadequate.
13	Increase the availability of water sources in the town's high-risk areas	Remove	Happy with existing sources, not necessarily looking for more. Emergency services strategic plan - currently developing.
14	Install dry hydrants at the pond located across from Redding Elementary School.	Remove	Completed but in different location. Behind the school. Tank at the community center. Tapped existing irrigation system for fields for tanks behind elementary school and middle school.

#	Description	Status	Notes
15	Conduct a drainage analysis of the Saugatuck River drainage basin, with a focus on Route 53 and Umpawaug Road, Long Ridge Road and Simpaug Turnpike, to determine potential flood reduction methods.	Carry forward	Drainage Analysis Saugatuck River drainage basin (RTE 53, Umpawaug Rd, Long Ridge, Simpaug) to reduce flood impacts. Beaver issue. Flooding metro north trainlines and roads. Some area has been mitigated. May want to add Gallows Hill Road to this analysis/study. Lots of flooding here where cars get stuck at middle school.
16	Coordinate with the owner of Topstone Dam to ensure scour issues are addressed, in order to minimize impacts to Topstone Road.	Carry forward	No progress, still a priority.
17	Upgrade drainage and culverts on Poverty Hollow Road	Carry forward Poverty Hollow, Marchat, Station seems like there is much more water here lately.	Topstone has had a couple basins added on southside. Several of the beaver dam locations have been addressed by relocation. Simpaug was a MetroNorth issue, so they have taken this over, also a beaver issue.
18	Upgrade drainage and culverts on Station Road		
19	Upgrade drainage and culverts on Marchant Road		
20	Upgrade drainage and culverts on Simpaug Turnpike		
21	Upgrade drainage and culverts on Topstone Road		

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.

APPENDIX A

Appendix A: STAPLEE Matrix

Action #	Action Description	Responsible Entity	Cost Range	Funding Sources	Timeframe	Community Priority	Type of Action	Hazard	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Admin Benefit	Admin Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environ. Benefit	Environ. Cost	STAPLEE Score
RDD-01	Compare local floodplain regulations with Revised State Model Flood Regulations to identify opportunities for improved consistency when adopting the new FEMA maps for the Saugatuck, Southwestern CT, and Housatonic studies. Ensure that freeboard is consistent with the State Building Code.	Planning	$0 - $25,000	Operating Budget	2026 or when directed by the State NFIP Coordinator	High	Prevention	Flooding	1	0	1	0	1	0	1	0	1	0	1	0	1	0	**9**
RDD-02	Assess the costs and potential benefits to enrolling in the Community Rating System (CRS)	Planning	$0 - $25,000	Operating Budget	2027	Low	Education & Awareness	Flooding	1	0	1	0	0	1	1	0	1	0	0	0	1	0	**5**
RDD-03	Encourage appropriate municipal personnel to participate in training in flood damage	Planning	$0 - $25,000	Operating Budget	2027	Med	Education & Awareness	Flooding	1	0	1	0	1	1	1	0	1	0	0	0	0		**5**

Action #	Action Description	Responsible Entity	Cost Range	Funding Sources	Timeframe	Community Priority	Type of Action	Hazard	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Admin Benefit	Admin Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environ. Benefit	Environ. Cost	STAPLEE Score
	prevention methods by becoming a CAFM member, and/or by attending DEEP, FEMA-deployed, or CAFM trainings.																						
RDD-04	Require consideration of the most recent NOAA Atlas precipitation data when developing alternatives for culvert and bridge replacement designs and sizes.	DPW	$0 - $25,000	Operating Budget	2027	High	Prevention	Flooding	1	0	1	0	1	1	0	0	0	0	1	0	1	0	**6**
RDD-05	Work with CTDOT to evaluate flooding and drainage issues along the Little River in the vicinity of Route 58 and Putnam Park Road to determine potential flood reduction methods as incidents	DPW	$25,000 - $50,000	Capital Improvement Plan, FEMA HMA, CT DOT	2027-2029	Med	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**

Action #	Action Description	Responsible Entity	Cost Range	Funding Sources	Timeframe	Community Priority	Type of Action	Hazard	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Admin Benefit	Admin Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environ. Benefit	Environ. Cost	STAPLEE Score
	here may impact emergency vehicles, school buses, and the general public to ensure adequate access to the Hospital in Danbury.																						
RDD-06	Conduct a drainage analysis of the Saugatuck River drainage basin, with a focus on Route 53 and Umpawaug Road, Long Ridge Road, Gallows Hill Road, Simpaug Turnpike, and along Metro North raillines to determine potential flood reduction methods.	DPW	$100,000 - $500,000	Capital Improvement Plan, FEMA HMA, CT DOT	2027-2029	Med	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**

Action #	Action Description	Responsible Entity	Cost Range	Funding Sources	Timeframe	Community Priority	Type of Action	Hazard	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Admin Benefit	Admin Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environ. Benefit	Environ. Cost	STAPLEE Score
RDD-07	Coordinate with the owner of Topstone Dam to ensure scour issues are addressed, in order to minimize impacts to Topstone Road.	EMD	$100,000 - $500,000	Capital Improvement Plan, STEAP	2028-2029	Low	Structural Projects	Dam-Related Concerns	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**
RDD-08	Upgrade drainage and culverts on Poverty Hollow Road	DPW	$500,000 - $1M	Capital Improvement Plan, FEMA HMA, STEAP	2029-2031	Med	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**
RDD-09	Upgrade drainage and culverts on Station Road	DPW	$500,000 - $1M	Capital Improvement Plan, FEMA HMA, STEAP	2029-2031	Med	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**
RDD-10	Upgrade drainage and culverts on Marchant Road	DPW	$500,000 - $1M	Capital Improvement Plan, FEMA	2029-2031	Med	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**

Action #	Action Description	Responsible Entity	Cost Range	Funding Sources	Timeframe	Community Priority	Type of Action	Hazard	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Admin Benefit	Admin Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environ. Benefit	Environ. Cost	STAPLEE Score
				HMA, STEAP																			
RDD-11	Develop an outreach campaign to educate residents on the use of beaver deterrent devices.	Planning	$0 - $25,000	Operating Budget	2027-2028	Low	Education & Awareness	Flooding	1	0	1	0	1	1	1	0	0	0	0	0	1	0	**5**
RDD-12	Use beaver deterrent devices such as beaver stops, beaver bafflers, or beaver deceivers where necessary to protect property.	DPW	$25,000 - $50,000	Operating Budget, Capital Improvement Plan, CT DEEP	2027-2028	Low	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**
RDD-13	Work with Eversource to identify municipal actions to improve electric grid resiliency.	DPW	$25,000 - $50,000	Operating Budget	2027-2030	Low	More than one category	Multiple Hazards	1	0	1	0	1	1	1	0	0	0	1	1	1	0	**5**
RDD-14	Implement the Emergency Service Strategic plan.	EMD	$25,000 -	Operating Budget, Capital	2027	Med	Preparedness &	All Hazards	1	0	1	0	1	1	1	0	0	0	1	0	0	0	**6**

Action #	Action Description	Responsible Entity	Cost Range	Funding Sources	Timeframe	Community Priority	Type of Action	Hazard	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Admin Benefit	Admin Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environ. Benefit	Environ. Cost	STAPLEE Score
			$50,000	Improvement Plan			Emergency Response																
RDD-15	Biennially conduct an emergency operations exercise for a natural hazard and/or other emergency event and encourage participation in State run exercises.	EMD, PD	$25,000 - $50,000	Operating Budget	2027, 2029, and 2031	Low	Education & Awareness	All Hazards	1	0	1	0	1	1	1	0	1	0	0	0	1	0	**6**
RDD-16	Install backup power at communication facilities.	EMD	$100,000 - $500,000	Capital Improvement Plan	2027-2028	High	Preparedness & Emergency Response	All Hazards	1	0	1	0	1	0	1	0	1	0	1	1	1	0	**7**
RDD-17	As the opportunity arises, collaborate with CIRCA on the "Resilient Connecticut" project to advance further study in areas with flood and extreme heat risks.	BOS	$0 - $25,000	Operating Budget plus CIRCA funds from State and Federal sources	2028-2030	Low	More than one category	Multiple Hazards	1	0	1	0	1	1	1	0	0	0	1	0	1	0	**7**

Action #	Action Description	Responsible Entity	Cost Range	Funding Sources	Timeframe	Community Priority	Type of Action	Hazard	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Admin Benefit	Admin Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environ. Benefit	Environ. Cost	STAPLEE Score
RDD-18	Coordinate with Aquarion Water Company to identify areas where fire-fighting capacity may be limited due to lack of water pressure or storage.	Fire Department	$100,000 - $500,000	Operating Budget, FEMA Assistance to Firefighters Grant	2027-2030	Med	Water & Wastewater Utility Projects	Wildfire and Drought	1	0	1	0	1	1	1	0	1	0	1	1	1	0	**6**
RDD-19	Work with Aquarion Water Company to enforce mandatory twice-per-week irrigation schedule.	BOS	$0 - $25,000	Operating Budget	2027-2031	Low	Education & Awareness	Drought	1	0	1	0	1	1	0	0	0	0	0	0	1	0	**4**