

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

Municipal Annex for City of Stamford

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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 City of Stamford 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 1893, the City of Stamford is located in southern Fairfield County and is home to a population of 135,470 (according to the US Census Bureau 2020 U.S. Census). Stamford is bordered by the municipalities of Greenwich to the west, New Canaan and Darien to the east, as well as Long Island Sound along the south, and New York State to the north. Refer to Figure 2-1 for a map showing Stamford's location within the region.

Stamford is a coastal community with several rivers and streams flowing throughout the community. The city is characterized by highly developed, lower elevations adjacent to the shoreline, with suburban development sprawling northward away from the urban areas. The Rippowam River flows south through the center of the city, cutting through the suburban and urban areas before it eventually flows into Long Island Sound. Three large waterbodies are also located in Stamford: North Stamford Reservoir, Samuel J. Bargh Reservoir, and Laurel Reservoir. The highest elevation in Stamford is about 520 feet in the northernmost areas bordering New York. The southern area of Stamford is at or close to sea level. The varying terrain of Stamford makes the city 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, expressed as a percentage of total land, is shown in Table 2-1.

Table 2-1: Land Cover by Area

Land Cover Class	Acres	% of Total Land
Developed	7,906	32%
Forest	6,889	28%
Agriculture	189	1%
Developed Open Space	9,043	37%

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

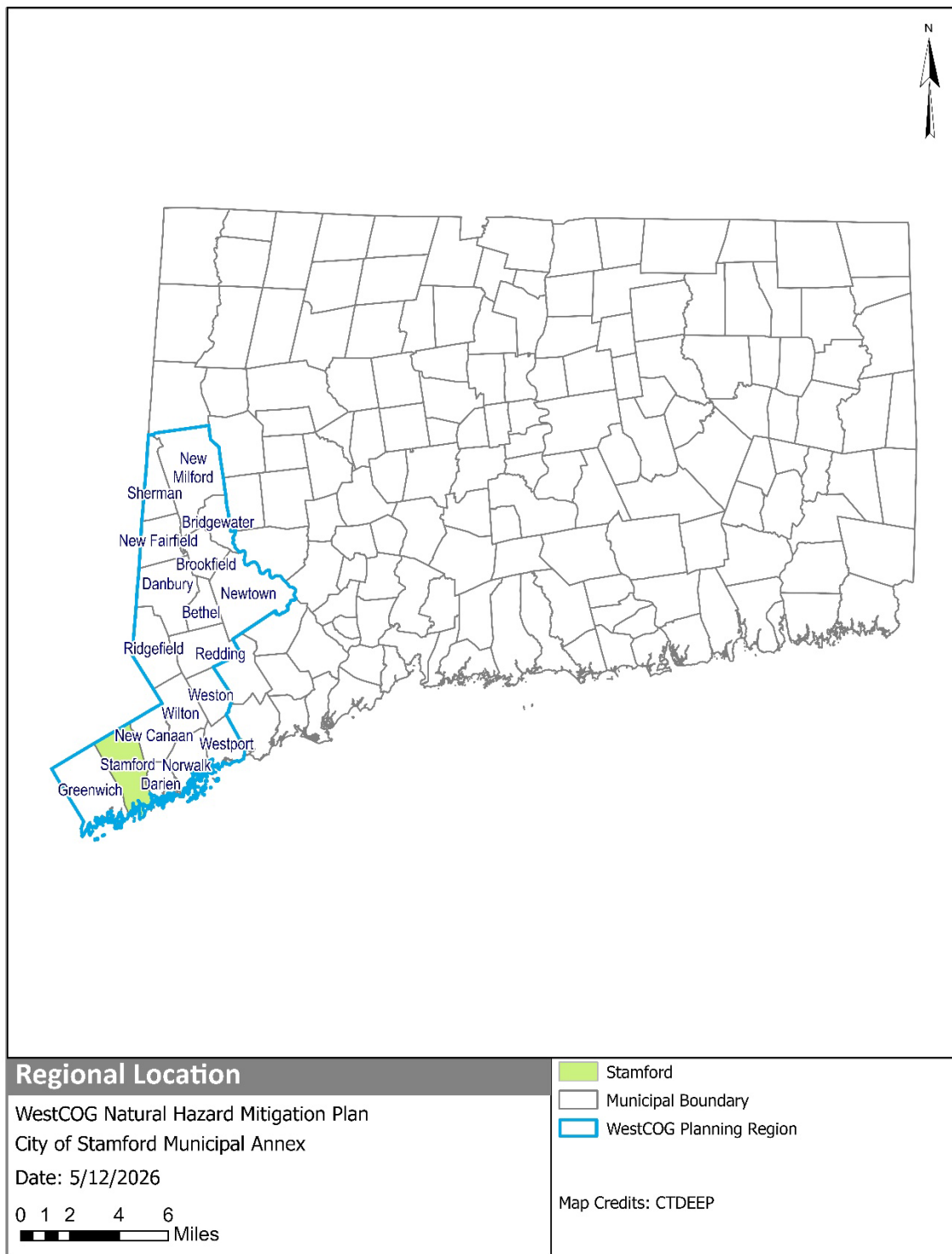


Figure 2-1: Stamford Location

2.1.2 Land Use

Stamford is a large City with both high urbanized areas, and suburban development. Most higher density development and commercial activity lies south of the Merritt Parkway, with the highest concentration of commercial activity concentrated in the southern part of the city along the Interstate 95 corridor. The areas north of the Parkway are primarily larger lot residential neighborhoods, in comparison to the smaller lots found south of the Parkway.

Over 50% of Stamford's total land area is occupied by residential development. Historically, low-density single-family residential uses have been scattered throughout the northern areas in the city, with multi-family units in closer proximity to the commercialized areas along Interstate 95 and along the shoreline. The remaining uses include commercial, industrial, mixed-use, institutional, parks and open space, vacant, and transportation related.

2.1.3 Climate and Climate Change

Current Conditions

Over the course of the year, the temperature in Stamford typically varies from 24°F to 83°F and is rarely below 10°F or above 90°F. The warm season lasts from June 2 to September 16, with an average daily high temperature above 74°F. The hottest month of the year is July, with an average high of 82°F and a low of 67°F. The cold season lasts from December 4 to March 13, with an average daily high temperature below 46°F. The coldest month of the year is January, with an average low of 25°F and high of 38°F.

Precipitation falls throughout the year in Stamford. The wetter season lasts from April 1 to August 20, 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 30. The smallest chance of a wet day is 22% on January 29.

The most rain falls during the month of April with an average total accumulation of 3.7 inches. The least rain falls in February, with an average total accumulation of 2.1 inches.

The snowy period of the year lasts from November 20 to April 6, with a sliding 31-day liquid-equivalent snowfall of at least 1.0 inches. The most snow falls during February, with an average snowfall of 7.1 inches.

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

Climate Change

Climate change projections for Connecticut were sourced from the 2019 Connecticut Physical Climate Science Assessment Report, 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 CO₂ 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 Stamford as 3.45 inches.

The NOAA Atlas 14, released on September 30, 2015, puts the 24-hour rainfall amount for a 50% annual-chance annual storm in Stamford at 3.58 inches.

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

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

Source	24-Hour Rainfall Amount (inches) by Annual-Chance Occurrence		
	50%	4%	1%
Technical Paper No. 40	3.3	5.7	7.2
NRCC	3.45	6.41	9.02
NOAA Atlas 14	3.58	6.60	8.39

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, Stamford 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 the city 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).

Sea Level Rise

WestCOG's coastal communities face an increasing threat related to rising sea levels. Per the Fifth National Climate Assessment, national rates of rise have increased from 0.05 inches (±0.01)

per year between 1901 to 1900, to 0.13 inches (± 0.02) per year between 1993 and 2022; these rates accelerated to 0.17 inches per year between 2013 and 2022. In an effort to establish a more local assessment and projection for Connecticut, the UConn CIRCA Sea Level Rise Report (2016) determined that the rate of rise for the NOAA Bridgeport tide station, the nearest station to WestCOG, was 4.0mm (± 1.8) from 1976 to 2016. As of April 2026, the NOAA Bridgeport station reported a trend of 3.43mm per year from 1964 to 2025.

Connecticut legislature has identified a 2050 “planning threshold” of 0.5 meters (1.64 feet or nearly 20 inches) rise in sea levels, and a 2100 “caution threshold” of 1.0 meters (3.28 feet). This planning threshold was a product of the sea level rise projections developed for the CIRCA Sea Level Rise Report. This planning threshold is required for certain types of planning and development projects in Connecticut.

2.1.4 Drainage Basins and Hydrology

Stamford is divided among seven sub-regional watersheds as shown in Table 2-3. The majority of the sub-regional basins drain into Long Island Sound, with one basin draining into the Rippowam River basin, and another feeding the Mianus River basin. All of the water that passes through Stamford eventually empties into Long Island Sound.

Table 2-3: Sub-Regional Drainage Basins

Drainage Basin	Overall Sub-regional Area (sq. mi)	Area within City (sq. mi)	Area within City (acres)	Percent of City
Rippowam River	23.53	17.03	10,898.89	44.41%
Mianus River	28.64	6.40	4,092.23	16.69%
Southwest Shoreline	11.54	7.34	4,699.36	19.14
East Branch Mianus River	5.39	3.76	2,403.62	9.81%
Noroton River	11.03	3.00	1,920.69	7.82%
Mill River	13.35	0.81	516.04	2.08%
Greenwich Creek	8.89	0.004	3.14	0.01%
Total	n/a	38.344	24,800.97	99.96%

Source: Connecticut Department of Energy & Environmental Protection GIS Data

Stamford is entirely encompassed within the Southwest Coast drainage basin, which drains directly into Long Island Sound. Of the seven subregional drainage basins and their respective streams, the Rippowam River running through central Stamford is the largest, followed by the Mianus River in the western part of the city.

The Rippowam River is approximately 17 miles long and originates as the Mill River in Ridgefield, Connecticut. The Rippowam Basin drains 23.53 square miles of land and ultimately flows directly into Long Island Sound. The final few miles of the river, before feeding into the sound, are also referred to as the Mill River.

The Mianus River is approximately 20 miles long and originates in North Castle, New York. The basin drains 28.64 square miles directly into Long Island Sound in Greenwich, Connecticut.

2.2 Society, Culture, and Government

2.2.1 Population and Demographic Setting

According to the 2020 U.S. Census, Stamford had a population of 135,470 with 3,603 persons per square mile. The Connecticut State Department of Public Health estimates Stamford's 2026 population at 137,144. The American Community Survey (ACS) projects a decline in population, with estimates showing a population of only 16,376 for the year 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:

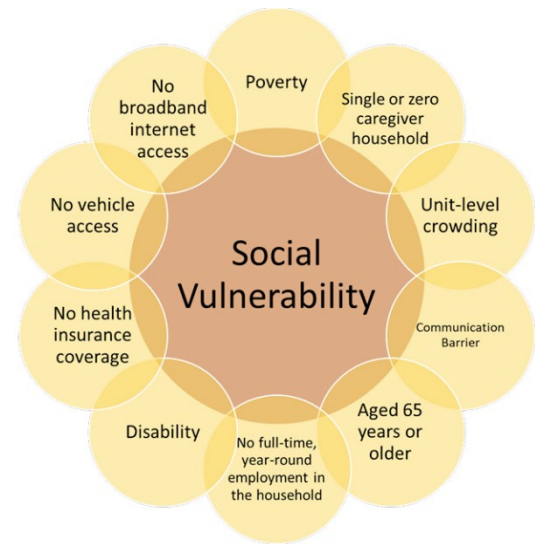


Figure 2-2 Community Resilience Estimates Vulnerability Components (Source: US Census Bureau)

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, 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 City of Stamford has areas in the city which have very low social vulnerability, and areas that are very high (Figure 2-3). Areas in the City which have high social vulnerability have high percentages of the population with three or more components of social vulnerability. 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

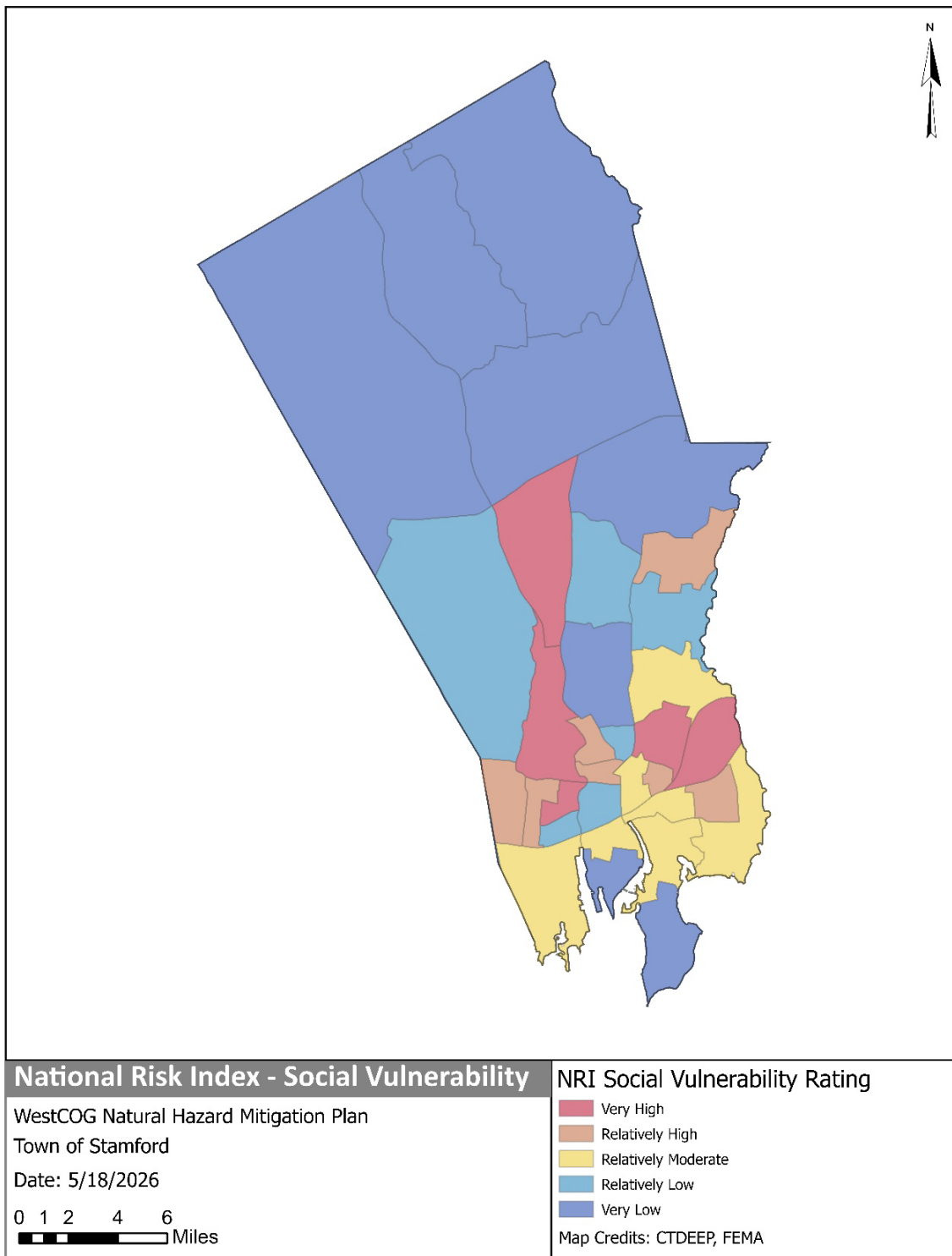


Figure 2-3 FEMA National Risk Index Social Vulnerability

2.2.2 Development Trends

During the 18th century Stamford was a hub for water dependent activity, such as merchandising, fishing, and agriculture. As time progressed, the shoreline of Stamford became developed with summer homes for New York residents and soon became settled by those who wished to live in Stamford, and commute to Manhattan. Meanwhile, inland areas of Stamford rapidly shifted from a farming community with few families to a vibrant, urbanized City. With the construction of the railroad, and demand for better transportation, Stamford was more accessible to outsiders. Thousands of immigrants from Europe populated the city, and by the late 1880's, the City was growing more industrial due to cheap labor, allowing growth and expansion.

The start of the 20th century brought about many of the modern structures that are recognizable in the downtown area, with large commercial and industrial buildings replacing earlier era construction. Stamford was soon one of the fastest growing cities in the state by any measure, whether population increases or development levels. The City is one of the three largest in Connecticut.

Stamford has maintained the commercial and water dependent character along the shoreline with the urban areas concentrated within Waterside and Harbor Point. The immediate shoreline continues to be predominantly residential, with pockets of commercial activity extending from Harbor Point. The large downtown area on the north side of Interstate 95 continues to enjoy significant redevelopment. Residential development and larger parcel sizes increase northward, away from downtown.

Stamford will continue to balance development and redevelopment with reducing risks to natural hazards. Although the hurricane barrier system (refer to Section 3.1.2.) will provide protection from storm surges, projects such as the Mill River Corridor Plan will reduce riverine risks. Overall, vulnerabilities to natural hazards will not increase over time.

2.2.3 Governmental Structure

The City of Stamford has a Mayor guided government, with an appointed cabinet which works closely with the Mayor. In addition to the Mayor's office, there are boards, commissions and committees providing input and direction to City administrators. City departments provide municipal services and day-to-day administration. Many commissions and departments play a role in hazard mitigation, including the Planning and Zoning, Environmental Protection Board, the Building Official, the Land Use Bureau, the Fire Department, Emergency Management, and the Public Works Department.

2.2.4 Historic and Cultural Resources

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

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

Hazard mitigation planning helps protect life and property from damage caused by natural and manmade hazards. **Integrating** these two planning processes helps create safe and sustainable historic communities.
- Paraphrased from FEMA Report 386-6

Historic resources in Stamford are concentrated in the Dolsen Place, Forest Street, Hubbard Heights, Long Ridge, Revonah Manor, South End, and Sterling Farms Historic Districts. Other historic resources are located throughout the community. There are numerous historic sites in the Harbor Point and South End Neighborhoods that could be vulnerable to flooding, whether it be coastal, riverine, or poor drainage. There are also resources in the Ridgeway neighborhood that may be at risk during an extreme event. See Figure 2-4 for a map of historic resources in the community.

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.

Analysis of the State Historic Preservation Office (SHPO) database of historic resources shows that some of these resources are exposed to natural hazards, as shown in Table 2-4.

Table 2-4: Number of Historic Assets (by parcel) Exposed to Different Hazard is in Stamford

Hazard	Count	Value
Dam Failure	616	\$1,586,354,444
Earthquake	1,757	\$3,140,220,244
Flooding		
1% Annual	136	\$729,752,080
0.2% Annual	108	\$279,480,700
VE Zone	13	\$154,008,440
Storm Surge		
Category 1	31	\$171,274,100
Category 2	67	\$276,602,470
Category 3	541	\$1,493,781,644
Category 4	593	\$1,617,811,004
Hurricane/Tropical Storm	1,757	\$3,140,220,244

Thunderstorm	1,757	\$3,140,220,244
Tornado	1,757	\$3,140,220,244
Winter Storm	1,757	\$3,140,220,244
Wildfire		
Intermix	39	\$27,917,530
Interface	18	\$11,691,660

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.

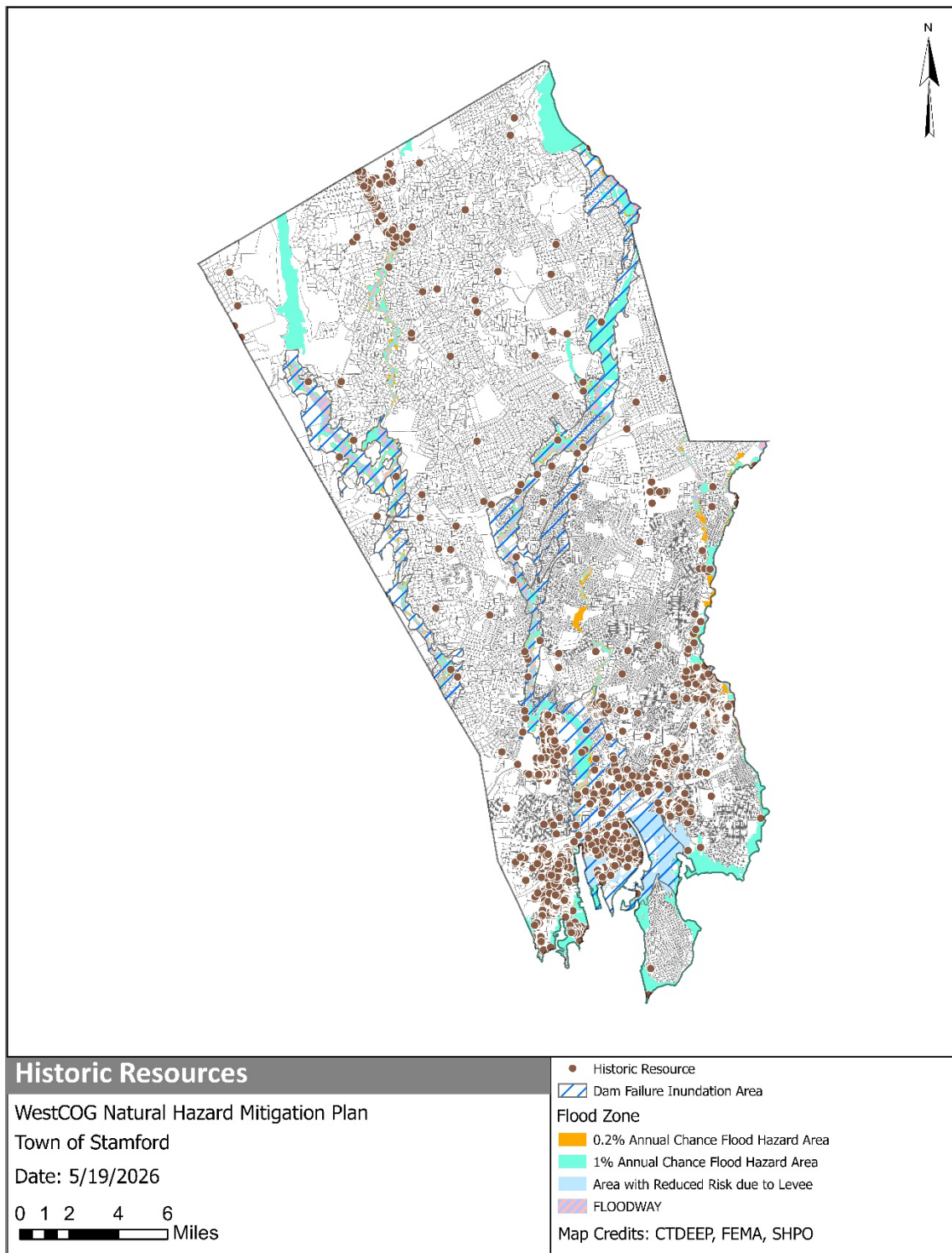


Figure 2-4: Historic Resources

2.3 Infrastructure

2.3.1 Transportation

Major transportation routes in Stamford include Interstate 95 and the Merritt Parkway (Route 15), which runs east to west through the City. The Parkway runs through the central part of the City, while I-95 runs through the southern region of Stamford. Route 104 runs from the New York border south, where it ultimately merges with Route 137, which also runs north from the border south to I-95. These two parallel routes are the main routes running north to south.

In addition, the Metro North/Amtrak rail lines also run through the City, just south and parallel to Interstate 95. There is one station located on Washington Boulevard, at the terminus of Route 137. The CTtransit bus system is also active in the City with several stops throughout the community.

2.3.2 Utilities

Aquarion Water Company owns and operates one public water system in Stamford; this is the utility's largest main system. This system provides water for the southern half of the City, with some northeastern service lines along Route 137 and west along Mill Road. The remaining properties rely on a private well for drinking water.

The Stamford Water Pollution Control Authority maintains the sewer systems in the southern half and northeastern areas of the City.

Residents and businesses use oil, propane, or natural gas for heat. Natural gas is in the southern region of the City numerous distribution lines from Eversource.

According to geISP (geISP.com), access to Broadband Internet is available to most residents in Stamford. There are 3 DSL providers (MegaPath, AT&T, and Verizon), 1 Cable Internet provider (CSC Holdings), and 6 Fiber Internet providers (CSC Holdings, Fibertech Networks LLC, Level (3) Communications, Zayo Enterprise Networks, Connecticut Education Network, and COGENT). There are also 4 Mobile Broadband (cellular) providers with service available in Stamford.

2.4 Planning and Regulatory Capabilities

Stamford has in place a number of community planning mechanisms, regulations, and policies that serve to mitigate natural hazards by limiting development in hazardous areas, requiring buildings to be constructed to certain standards, or otherwise directing development and construction toward increased resilience. These are summarized below.

2.4.1 Review of Existing Local Plans

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

- **Stamford Master Plan 2025-35:** The City of Stamford does not maintain a POCD; rather, it includes development goals in its Master Plan. The Master Plan addresses natural hazard concerns and resilience within the community, and includes strategies that will mitigate

risks from such hazards as the community continues to develop. Many of these strategies are included in the "A Healthy City" chapter.

- **Stormwater Management:** Stamford recently adopted the City of Stamford Stormwater Drainage Manual (dated 6/19/2020). The manual complies 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):** Stamford 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:** Stamford is 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. The City also has a local economic development plan called the Choose Stamford Campaign.
- **Emergency Operations Plan (EOP):** Stamford's EOP is reviewed annually and updated as needed. Dam failure Emergency Action Plans (EAPs) for dams with failure inundation zones that may impact Stamford, and for which EAPs are available, are on file locally.
- **Watershed Management Plan:** Watershed Management Plans have been developed for the Mianus River Watershed and the Mill/Rippowam River Watershed. The Mianus River Watershed Based Plan was developed for the South Western Regional Planning Agency (SWRPA) by AKRF, Inc. in 2012, while the Mill/Rippowam River Watershed Plan was developed for the City of Stamford in 2012 by CDM Smith. 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:** Stamford does not maintain a stand-alone Open Space Plan; instead, open space planning is incorporated into the community's Master Plan. The City adopted a Citywide Parks Strategic Plan in 2023.

2.4.2 Review of Regulatory Structures

Stamford 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:** Stamford enforces the Connecticut State Building Code locally.
- **Zoning Regulations:** Most recently updated in May 206.
- **Inland Wetlands and Watercourses Regulations:** Most recently updated in June 2024.
- **Subdivision Regulations:** Most recently updated in November 2019. Include provisions promoting installation of firefighting water sources, construction of adequate emergency access and egress, burial of utilities, and use of Low Impact Development techniques and Green Infrastructure.

2.5 Emergency Services, Critical Facilities, Sheltering, and Evacuation

The City considers its police, fire, and governmental facilities to be critical since these are needed to ensure that emergencies are addressed while day-to-day management of Stamford continues. The City also considers various facilities housing higher-risk individuals (such as elderly individuals or children) and large populations to be critical facilities; and privately-owned fueling stations are also considered critical facilities. Table 2-5 identifies all of these critical facilities.

Table 2-5: Critical Facilities

Facility	Address or Location	Type	Emergency Power	Shelter	In 1% Floodplain
Stamford Government Center	888 Washington Blvd	EOC/City Hall			
Long Ridge Fire Company Incorporated Station 1	366 Old Long Ridge Rd	Fire			
Springdale Fire Department	987 Hope Street	Fire			
Stamford Fire and Rescue Department Station 1 - Headquarters	629 Main St	Fire			
Stamford Fire and Rescue Department Station 2	215 Washington Boulevard	Fire			
Stamford Fire and Rescue Department Station 3	80 Fairfield Avenue	Fire			
Stamford Fire and Rescue Department Station 4	364 Shippan Avenue	Fire			
Turn of River Fire Dept 1	268 Turn of River Road	Fire			
Turn of River Station 2	50 Roxbury Road	Fire			
Long Ridge Fire Company Incorporated Station 2	2619 High Ridge Road	Fire/Ambulance			
Stamford Fire and Rescue Department Station 5	1620 Washington Boulevard	Fire/Rescue			✓
Belltown Fire Department	8 Dorlen Rd	Fire/Shelter		✓	
Stamford Fire and Rescue Department Station 6	17 Arthur Pl	Fire/Shelter		✓	
Stamford Emergency Medical Services Incorporated	684 Long Ridge Road	Ambulance			
Stamford Health System	166 W Broad St	Hospital			
Stamford Hospital	One Hospital Plaza	Hospital			
Stamford Police Department	725 Bedford Street	Police			
University of Connecticut - Stamford Campus Police Sub-Station	16 Broad Street	Police			✓
Highways Department	90 Magee Ave	Public Works			
Stamford Leaf Compost Facility	130 Magee Ave	Public Works			
Water Pollution Control Facility	111 Harbor View Avenue	Public Works			
St. John Lutheran's Church	884 Newfield Avenue	Church/Shelter		✓	
Cloonan Middle School	11 W North Street	School/Shelter		✓	✓
Rippowam Middle School	381 High Ridge Rd.	School/Shelter		✓	
Scofield Middle Magnet	641 Scofieldtown Road	School/Shelter		✓	
Westhill High School	125 Roxbury Rd.	School/Shelter		✓	
Academy of Information Technology & Engineering	411 High Ridge Rd	School			
All Care Medical Training	1492 High Ridge Road	School			

Facility	Address or Location	Type	Emergency Power	Shelter	In 1% Floodplain
Apples Early Childhood Education Center	381 High Ridge Road	School			
ARTS Tutoring Program Boys and Girls Club	347 Stillwater Avenue	School			
Beauty Tech Academy	848 High Ridge Road	School			
Bi-Cultural Day School	2186 High Ridge Road	School			
Career Blazers Learning Center	9 West Broad Street	School			✓
Children School	118 Scofieldtown Road	School			
Conn Inst For Real Est & Appr	27 Strawberry Hill Ave, Suite 200	School			
CT Inst For Paralegal Studies	26 Sixth St, Suite 253	School			
Davenport Ridge School	1300 Newfield Ave	School			
Dolan School	51 Toms Rd.	School			
EMS Institute	684 Long Ridge Rd	School			
Grace Daycare and Learning Center	602 High Ridge Road	School			
Hart School	61 Adams Ave	School			
J.M. Wright Technical High School	120 Bridge St	School			
Jewish High School of Connecticut	1937 West Main Street	School			
Julia A. Stark School	398 Glenbrook Rd.	School			
K. T. Murphy School	19 Horton St	School			
King & Low-Heywood Thomas School	1450 Newfield Avenue	School			
Mater Salvatoris College-Prep Schpp;	403 Scofieldtown Rd	School			
Newfield School	345 Pepper Ridge Rd.	School			*
Northeast School	82 Scofieldtown Rd.	School			✓
Our Lady of Grace Nursery School	635 Glenbrook Road	School			
Pinacle, Spire	201 High Ridge Rd	School			
Preschool Team	888 Washington Blvd	School			
Rogers School	83 Lockwood Ave	School			
Roxbury School	751 W Hill Rd	School			
Sacred Heart Academy Stamp	200 Strawberry Hill Ave	School			
Sacred Heart University Landmark Square	3 Landmark Sq	School			
Springdale	1127 Hope St	School			
St Cecilia Elementary School	1186 Newfield Avenue	School			
Stamford Academy	229 North Street	School			
Stamford Charter School for Excellence	1 Schuyler Avenue	School			
Stamford High School	55 Strawberry Hill Ave	School			
Stamford Hspt School of Radiologic	1 Hospital Plaza	School			
Stamford Public Schools Office of Adult and Continuing Education	175 Atlantic Street	School			
Stillmeadow School	800 Stillwater Rd.	School			
Strawberry Hill - An Extension of Rogers International School (New School)	200 Strawberry Hill Avenue	School			
The Catholic Academy of Stamford Lower Campus	1186 Newfield Avenue	School			

Facility	Address or Location	Type	Emergency Power	Shelter	In 1% Floodplain
The Catholic Academy of Stamford FÇô Upper Campus	926 Newfield Avenue	School			
The Long Ridge School	478 Erskine Road	School			
The Mead School	1095 Riverbank Rd	School			
Toquam Magnet School	123 Ridgewood Ave	School			
Trailblazers Academy	83 Lockwood Avenue	School			
Trinity Catholic High School	926 Newfield Avenue	School			
Turn of River	117 Vine Rd	School			
University of Bridgeport Stamford Center	5 Riverbend Drive	School			
University of Connecticut Stamford	1 University Pl	School			
Villa Maria Education Center	161 Skymeadow Drive	School			
Waterside School	770 Pacific Street	School			
Westlawn Inst Of Marine Technology	733 Summer Street	School			
Westover School	412 Stillwater Ave	School			
Atria Assisted Living, Stamford	59 Courtland Avenue	Care Facility			
Atria Assisted Living, Town Center	26 Mill River St	Care Facility			
Atria Stamford	77 Third St	Care Facility			
Brighton Gardens of Stamford Alsa	59 Roxbury Rd	Care Facility			
Catholic Family Services	30 Myano Lane	Care Facility			
Connecticut Renaissance, Inc.	141 Franklin St	Care Facility			
Courtland Gardens Health Center, Inc.	53 Courtland Ave	Care Facility			
Dental Center of Stamford, Inc.	587 Elm Street	Care Facility			
Edgehill Health Center	122 Palmers Hill Road	Care Facility			
Fairfield Family Care	27 5th Street	Care Facility			
Families in Recovery Program	141 Franklin St	Care Facility			
Family Centers Inc.	60 Palmers Hill Rd	Care Facility			
Hillandale School Based Health Center	195 Hillandale Avenue	Care Facility			
Homestead Health Center	160 Glenbrook Rd	Care Facility			
Jewish Family Service, Inc.	111 Prospect Street	Care Facility			
Liberation Clinic	125 Main Street	Care Facility			
Liberation House	119 Main Street	Care Facility			
Long Ridge Post-Acute Care	710 Long Ridge Rd	Care Facility			
Main Street Clinic	115 Main Street	Care Facility			
Mediplex Of Stamford	710 Long Ridge Road	Care Facility			
Meridian Center	159 Colonial Road	Care Facility			
Meridian House	929 Newfield Avenue	Care Facility			
School Based Health Ctr At Westhill H.S.	125 Roxbury Road	Care Facility			
School Based Hlth Ctr At Stamford High	55 Strawberry Hill Avenue	Care Facility			
Scofield Manor	614 Scofieldtown Rd	Care Facility			
Smith House Skilled Nursing Facility	88 Rock Rimmon Rd	Care Facility			
St Camillus Center	494 Elm Street	Care Facility			

Facility	Address or Location	Type	Emergency Power	Shelter	In 1% Floodplain
Stamford Community Health Center	137 Henry Street	Care Facility			
Stamford Community Health Center	90 Fairfield Avenue	Care Facility			
Stamford Dialysis Center	30 Commerce Road	Care Facility			
Stamford Health Department	141 Franklin St	Care Facility			
Stamford Surgical Center	1290 Summer Street	Care Facility			
Stamford Youth Options	159 Colonial Road	Care Facility			
Sterling Glen Assisted Living Services Agency, LLC	77 Third St	Care Facility			
Sunrise Assisted Living of Stamford	251 Turn of River Rd	Care Facility			
The Stamford Rehabilitation Hospital	128 Strawberry Hill Ave	Care Facility			
The William And Sally Tarent Center for Continuing Care	146 W Broad St	Care Facility			
Activities for Kids	35 Crescent Street	Daycare			
All About Kids	115 Waterbury Avenue	Daycare			
Baby Cottage I	1109 Newfield Avenue	Daycare			
Baby Cottage II	1116 Hope Street	Daycare			
Bright Beginnings	430 High Ridge Road	Daycare			
Bright Horizons Child Development Center	4 High Ridge Park	Daycare			
Bright Horizons Child Development Center	778 Long Ridge Road	Daycare			
Bright Horizons Children Center	300 First Stamford Pl	Daycare			
Bright Minds Daycare Center	20 Forest Street	Daycare			
Brookdale Nursery School	29 Brookdale road	Daycare			
Building Blocks	72 Camp Avenue	Daycare			✓
Building Blocks II	816 High Ridge Road	Daycare			
Chelsea Piers	1 Blachley Road	Daycare			
Children's Corner	68 Southfield Avenue	Daycare			
Cottontails	143 Minivale Rd	Daycare			
Creative Care Child Care	1231 Washington Blvd	Daycare			
Edgewood Academy	18 Edgewood Avenue	Daycare			
First Presbyterian Church Nursery School	1101 Bedford Street	Daycare			
First United Methodist Church Nursery	6 Cross Road	Daycare			
Gans Yeladin Preschool	752 High Ridge Road	Daycare			
Gray Farms Nursery School	884 Newfield Avenue	Daycare			
Italian Center Nursery School	1620 Newfield Avenue	Daycare			
Jewish Community Center	458 Lakeside Drive	Daycare			
Just a Helping Hand	595 Hope Street	Daycare			
Kinder Place	1035 Newfield Avenue	Daycare			
Mark of Excellence	29 Grove Street	Daycare			
Mother's Little Helper Day Care	133B Connecticut Ave	Daycare			
Noah's Ark Nursery School	132 Glenbrook Road	Daycare			
Our Lady of Grace	635 Glenbrook Road	Daycare			
Playland	802 Ponus Ridge Road	Daycare			
Room to Grow	535 Fairfield Avenue	Daycare			

Facility	Address or Location	Type	Emergency Power	Shelter	In 1% Floodplain
Shiny Little Stars	2510 Bedford Street	Daycare			
Stamford Museum and Nature Center	39 Scofieldtown Road	Daycare			
The Learning Center at Piper's Hill	17 Roxbury Road	Daycare			
UBS-Bright Horizons	29 Federal Street	Daycare			
Union Memorial	58 Church Street	Daycare			
Villa Divino Amore Nursery School	117 Hope Street	Daycare			
Stormwater pumping station Dyke Ln	71 Dyke Lane	Pump Station			
Stormwater pumping station Cummings Park	500 Shippan Avenue	Pump Station			
Stormwater pumping station Halloween Blvd	90 Magee Avenue	Pump Station			
Stormwater pumping station Wampanaw	800 Shippan Avenue	Pump Station			
A & K Service	524 Newfield Ave	Fuel			
BP	351 Hope St	Fuel			
BP	224 Magee Ave	Fuel			
BP	59 W Broad St	Fuel			
Citgo	953 Hope St	Fuel			
Citgo	493 Glenbrook Rd	Fuel			
Citgo	939 High Ridge Rd	Fuel			
Citgo	780 Pacific St	Fuel			
Citgo	355 W Main St	Fuel			
Citgo	16 Long Ridge Rd	Fuel			
Dagostino Bros Foreign Car Service	316 Long Ridge Rd	Fuel			
Global	1199 High Ridge Rd	Fuel			
Global	765 E Main St	Fuel			
Gulf	250 Hope St	Fuel			
Gulf	1285 High Ridge Rd	Fuel			
Gulf	1492 High Ridge Rd	Fuel			
Gulf	1125 E Main St	Fuel			
Gulf	527 Glenbrook Rd	Fuel			
Gulf	10 West Ave	Fuel			
Gulf	1095 Long Ridge Rd	Fuel			
Gulf	280 West Ave	Fuel			
Irving	1335 Hope St	Fuel			
Long Ridge Services	1095 Long Ridge Rd	Fuel			
Mini Mart	314 Cove Rd	Fuel			
Mobil	920 High Ridge Rd	Fuel			
Shell	582 Newfield Ave	Fuel			
Shell	179 Shippan Ave	Fuel			
Shell	243 West Ave	Fuel			
Shell	339 Hope St	Fuel			
Shell	1039 Hope St	Fuel			
Shell	899 High Ridge Rd	Fuel			
Shell	2666 Summer St	Fuel			

Facility	Address or Location	Type	Emergency Power	Shelter	In 1% Floodplain
Shell	38 W Broad St	Fuel			
Sunoco	910 High Ridge Rd	Fuel			
Sunoco	136 Myrtle Ave	Fuel			
Sunoco	316 Long Ridge Rd	Fuel			
Sunoco	2661 Long Ridge Rd	Fuel			
Turnpike Shell	243 West Ave	Fuel			

* Facility is adjacent to a 0.2% annual-chance flood zone.

** Pump station is incorporated into FEMA-accredited levee.

❖ The WPCF is adjacent to a 1% annual-chance flood zone and portions of the property are within an “Area with Reduced Flood Risk Due to Levee.” Much of the facility is mapped as outside the flood zone.

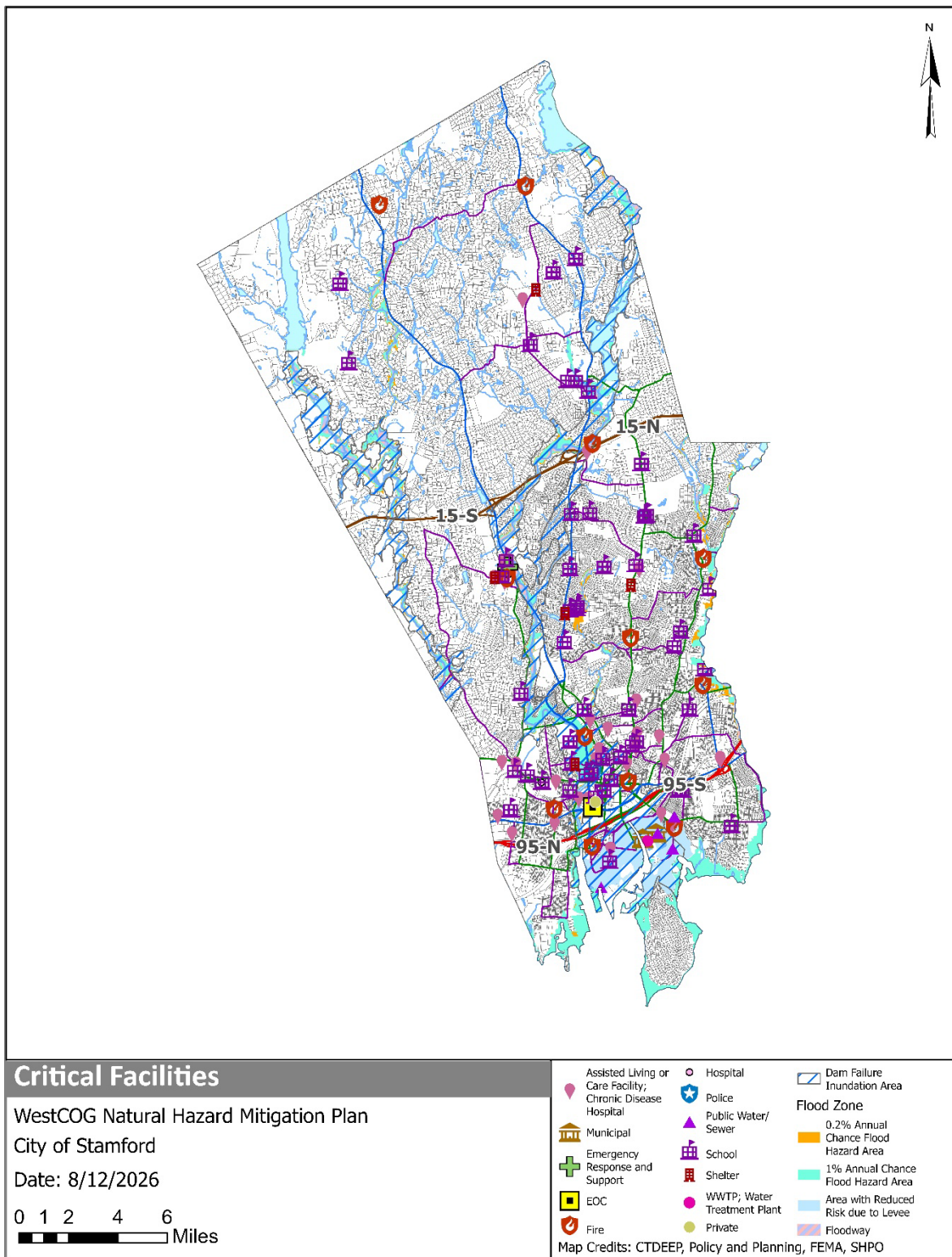


Figure 2-5: Critical Facilities & Flood Zones

There are several shelters for residents throughout the City, including schools, fire houses and a church.

Emergency Response

The City's Emergency Operations Center (EOC), including its Emergency Communications Center, is located in Stamford Government Center. Stamford is located in the Connecticut Department of Emergency Services and Public Protection (DESPP) Region 1, consisting of 14 municipalities in southwestern Connecticut.

The City's Operations Department performs tree and shrub removal and trimming on City-owned lands and rights-of-way. During emergencies and following storms, the Operations Department, in conjunction with the Parks Department, responds to calls related to downed trees.

The City also prepares for the possible evacuation and sheltering of some populations that could be impacted by the upcoming storm (especially the elderly and special needs persons).

Emergency Communication Capabilities

The City of Stamford utilizes the CT Alert notification system to alert residents of emergency situations. This system allows the state to direct geographically specific emergency notification telephone calls into affected areas. Various media outlets are also used to relay information to the public. These resources are identified in Table 2-6

Table 2-6: Emergency Notification Media Outlets

Outlet	Media Type
Primary Emergency Notification Outlets	
Fairfield County Public Radio – 91.1 FM & 1400 AM	Radio
WGCH Radio – 1490 AM	Radio
Fox Radio – 95.9 FM	Radio
News12 Connecticut – Channel 12	Television
Secondary Emergency Information Outlets	
Stamford Advocate	Newspaper
The Greenwich Time	Newspaper
The Hartford Courant	Newspaper
WNLK 1350 AM (Cox Radio)	Radio
WEBE 107.9 FM	Radio
Cablevision Channel 78	Television

Information about natural hazards and hazard preparedness are posted on the City Website through the Public Safety Health & Welfare Department.

Changes to Emergency Services since the Previous HMP

The City of Stamford continues to seek opportunities for improved emergency services capacity.

3.0 HAZARD ASSESSMENT

3.1 FLOODING (COASTAL, INLAND, AND ICE JAMS)

3.1.1 Setting

The potential for flooding exists across Stamford, with the majority of major flooding occurring along established riverine and coastal 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 can also be a concern. This type of flooding occurs particularly along roadways due to inadequate drainage and other factors. Coastal flooding can occur during a severe storm event via storm surge and as nuisance flooding, which occurs during extremely high-tide events. The frequency of flooding in Stamford is considered likely for any given year, with flood damage potentially having significant effects during extreme events.

A regulatory floodplain with AE designation has been mapped along the Mianus River, East Branch Mianus River, Rippowam River, and Springdale Brook. There are also regulatory floodplain areas with a VE or an AE designation along the Long Island Sound shoreline. The 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. The Laurel, Samuel J. Bargh, and North Stamford Reservoirs distribute these traits. Floodplain and floodway designations have also been established along the rivers with AE designations. Refer to Figure 2-5 for the areas of Stamford susceptible to flooding based on FEMA flood zones.

In general, potential flooding problems in Stamford are concentrated along the multiple rivers and the coastline. City officials have noted that coastal events have become a growing concern, with some flooding events straining the capacity of certain bridges.

Coastal flood events, especially storm surge from hurricanes and tropical storms, can cause some of the most severe damage and high economic impacts on the City and residential properties. Figure 3-1 shows hurricane storm surge inundation zones.

3.1.2 Capabilities

The City primarily attempts to mitigate future flood damage and flood hazards by restricting building activities in floodprone areas. This process is carried out through both the Planning and Zoning process. 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.

There is a large area, including portions of the Harbor Point and South End neighborhoods, that are designated as an area with a reduced flood risk due to a levee. The Stamford Hurricane Protection Barrier, which is comprised of three elements, is a United States Army Corps of Engineers structure that reduces flood risk to the areas behind the barrier. It consists of a 2,850 foot-long, 17 foot-high earthfill dike which has stone slopes in the East Branch of Stamford Harbor. This dike was constructed with a 90-foot -wide opening to allow for navigation, as well as a pump station to discharge interior drainage. Along the West Branch of Stamford Harbor is a

concrete wall which is 1,350 feet long, a 2,950 earthfill dike, and a pumping station. There is also a 4,400 earthfill dike at Westcott Cove. This dike is 19 feet high and has two pumping stations.

Floodplain Management, NFIP, and CRS

The City has consistently participated in the NFIP since January 16, 1981, and intends to continue participation in the NFIP. SFHAs in Stamford are delineated on a Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS). The FIS and FIRMs for the City were most recently revised in 2013. The City also participates in the FEMA Community Rating System (CRS) program, which recognizes and rewards more stringent floodplain regulations. By participating in the program, City residents receive a discount on flood insurance.

The NFIP administrator for the City oversees the enforcement of NFIP regulations. The degree of flood protection established by the variety of regulations in the City meets the minimum requirements for regulatory purposes under the NFIP. The City has a minimum elevation standard to include one foot of freeboard.

Ordinances, Regulations, and Plans

Stamford enforces regulations, codes, and ordinances to mitigate potential damages due to flood hazards. NFIP regulations are incorporated into the City's Inland Wetlands Regulations, Zoning Regulations, and Subdivision Regulations. Specific regulations include:

Zoning Regulations:

- Section 9 – Sustainability and Resiliency: this section covers coastal area management regulations, flood prone area regulations, soil erosion and sediment control, and stormwater management.
- Section 9.B – Flood Prone Area Regulations
Updated in 2020, these regulations comply with FEMA standards. Defines Substantial Improvement as being cumulative over a five-year period. Requires one foot of freeboard for residential structures and utilities. Other elements of the regulations, including those pertaining to critical uses and facilities and hazardous materials, are more strict than the NFIP standard and are credited under CRS.
- Section 9.D – Stormwater Management
Updated in 2020 to require compliance with MS4 requirements, and promotes Low Impact Development.

Drainage and Street Flooding

The Stamford Highway Department is responsible for the ongoing maintenance and inspections of drainage systems. The installation of storm drains, catch basins, and curbs, along with efficiency improvements and upgrades, has been budgeted for in the capital improvement program.

When complaints are made regarding drainage issues, the Citizens Service Bureau in the Operations Department takes a record of the report and forwards the issue to the Highway

Department or Engineering. Each department then addresses the complaint as appropriate and keeps records of the work done.

Public Information

The City receives regular weather updates through the Division of Emergency Management and Homeland Security (DEMHS) Region 1 email alerts as well as watches and warnings through the National Weather Service. A tidal gauge in Bridgeport and a flood gauge on the Rippowam River (waterdata.usgs.gov/monitoring-location/01209901) help City officials watch for flooding conditions and respond accordingly. Additional data gained from a tide monitor on the Hurricane Barrier also informs the City.

As part of the City's CRS requirements, the City annually sends a letter to the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas.

Actions Completed and New Capabilities

The City has been working to secure funding for several infrastructural upgrades with much success, including for seawall repairs, stormwater drainage project on Pine Hill Avenue, and for the construction of a new pedestrian bridge and removal of the old Bridge on West Main Street.

3.1.3 Vulnerabilities and Risk Assessment

Repetitive Loss Properties

There are 102 repetitive loss properties (RLPs) located in the City of Stamford; 98 are residential, and 4 are commercial. There are 12 properties along the Rippowam River, 1 along the Mianus River, 2 along the Springdale Brook, 68 within the coastal zone, and the remaining along smaller tributaries or not adjacent to a significant stream. Data is based on the most current FEMA list; the city is consistently working to keep this list up-to-date.

Critical Facilities

There are four facilities located within the 100-year flood zones. Of these facilities, the fire department is critical to emergency response during a hazard event.

The at-risk facilities include:

- Stamford Fire and Rescue, Station 5
- Our Lady of Grace Nursery School
- Stamford Surgical Center
- Rippowam Manor Senior Housing

Additionally, the properties of the Springdale School, Hart School, and Cloonan Middle School are each located partially within or immediately adjacent to 0.2% annual-chance flood zones.

The Stamford Water Pollution Control Facility is adjacent to a 1% annual-chance flood zone, and portions of the property are protected by a FEMA-accredited levee. Much of the facility is

mapped as outside the flood zone. Despite these protections, the risk of flooding at the facility during an extreme event is a concern for the City, as the facility's operation is essential for public health and safety, and flooding of the facility would present an immediate health risk to surrounding areas. Other features of the sanitary sewer system, such as the Greenwich Avenue pump station, may also be susceptible to flooding.

The four stormwater pumping stations (located at 500 Shippan Ave, 71 Dyke Lane, 90 Magee Ave, and 800 Shippan Ave) support the city's levee system by pumping stormwater out of the at-risk area. While the risk to these facilities from flooding is minimal due to their design, their functioning during a flood event is critical.

At-Risk Areas

Stamford has reported flooding to be a concern along the entire Long Island Sound coastline.

Additionally, riverine floodplains are present along many rivers and streams in the City. These are summarized below:

Zone AE (with elevation data)	Zone A (no elevation data)	Coastal Zones AE or VE
Mianus River	Haviland Brook	Southwest Shoreline
Mianus River East Branch	Poorhouse Brook	
Rippowam River (Including Haviland Brook, Poorhouse Brook, Ayers Brook and Toilsome Brook)	Ayres Brook	
Noroton River (Including Springdale Brook)		

FEMA A-Zones (no elevation data) are also present around localized drainage areas, reservoirs, and lakes throughout the city.

Rippowam River

Southern reaches of the river have the largest delineated floodplains, and therefore may be considered to be the most at-risk areas along the river. Within this southern half, there are 11 RLPs, indicating past flood challenges. There are several road crossings over the river in the downtown area, which may present challenges in regard to infrastructural capacity during a heavy event. It is also important to note that a stretch of this river has been restored to promote increased flood storage, and properties have been acquired and conserved as open space.

Long Island Sound Coastline

The shoreline of Stamford is primarily residential, with pockets of commercial activity. The entire coastline, specifically Shippan Point, Waterside, and the East Side (particularly Cummings Park), are all identified to have low lying, coastal stretches which may be at risk of both nuisance and storm surge flooding.

Changes and Improvements

The City is currently assessing repetitive loss properties as a component of a Coastal Resilience Plan, and is working with CIRCA to complete flood modeling for the City as part of the Coastal Resilience Plan.

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. While flooding from a dam failure generally has a moderate geographic extent, the effects are potentially catastrophic. Fortunately, a major dam failure is considered very unlikely in any given year.

3.2.2 Capabilities

Dam failure inundation areas are included in the CT Alert emergency notification system contact database. The City has the Emergency Action Plan (EAP) for the Aquarion-owned dams on file in the event of a potential failure. The high hazard dams including the Samuel J. Bargh (Mianus) Reservoir Dam and the North Stamford Reservoir Dam.

Actions Completed and New Capabilities

Stamford continues to maintain copies of EAPs and mitigates dam failure impacts as necessary.

3.2.3 Vulnerabilities and Risk Assessment

As of March 2026, there were 79 DEEP-inventoried dams within the City of Stamford. These dams are shown in Figure 2-5. Three of these dams are a Class C, or high hazard dam, and four others are a Class B, or significant hazard dam. As shown in Table 3-1, the high hazard dams located in the City pose a risk to the City of Stamford, along with some portions of the Town of Greenwich.

Table 3-1: High Hazard Dams with Potential to Affect the City of Stamford

#	Name	Location	Class	Owner
13501	North Stamford Reservoir Dam	North Stamford Reservoir, Stamford	C	Aquarion Water Company of CT
13503	Samuel Bargh Reservoir Dam	Mianus Samuel Bargh Reservoir, Stamford	C	Aquarion Water Company of CT
13502	Laurel Reservoir Dam	Laurel Reservoir, Stamford	C	Aquarion Water Company of CT
13506	Bendels Pond Dam	Bendels Pond, Stamford	B	Stamford Museum & Nature Center
13511	Pound Pond Dam	Pound Pond, Stamford	B	Private
13516	McManus Pond Dam	McManus Pond, Stamford	B	Private
13510	Union Pond Dam (AKA Anabel Pond Dam)	East Branch Mianus River	B	Private

Failure of a high hazard dam can affect properties downstream of the impoundment both in and outside of the City, with potential large inundation zones traveling along each respective waterway.

The North Stamford Reservoir Dam is 350 feet in length, with a maximum height of 40 feet. It is an earth and concrete structure that impounds roughly 111 acres at normal water levels with a contributing watershed of 23.20 square miles. The primary purpose of the dam is for public water supply containment.

The Samuel Bargh Reservoir Dam, also owned by Aquarion Water Company, is a 950-foot-long and 75-foot-high earth and concrete dam. This dam impounds roughly 230 acres and has a contributing watershed of 18.3 square miles.

The Laurel Reservoir Dam is a 50-foot high and 1,850-foot-long earth and concrete dam owned by Aquarion Water Company. The Dam impounds approximately 265, with a contributing watershed of 13.4 square miles.

Changes and Improvements

Stamford continues to be at low risk from dam failure.

3.3 HURRICANES AND TROPICAL STORMS

3.3.1 Setting

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

Connecticut is located in FEMA Zone II regarding maximum expected wind speed. The maximum expected wind speed for a three-second gust is 160 mph. The American Society of Civil Engineers recommends that new buildings be designed to withstand this peak three-second gust.

3.3.2 Capabilities

Wind loading requirements are addressed through the state building code. The current Connecticut State Building Code was amended in 2022 and adopted with an effective date of October 1, 2022. The code specifies the design wind speed for construction in all Connecticut municipalities. Effective 2022, the design wind speed for Stamford is 110 miles per hour for a Category 1, 120 miles per hour for a Category 2, 130 for a Category 3, and 135 miles per hour for a Category 4 or greater. Stamford has adopted the Connecticut Building Code as its building code. The City website provides links to the State Building Codes so that developers can find wind design standards.

As discussed in section 3.1.2, the City has a large hurricane barrier that provides storm surge protection to those neighborhoods located behind the system.

Actions Completed and New Capabilities

The City completed a tree inventory throughout Stamford, which will be made available to the public and Eversource in the near future once finalized. The City passed a tree ordinance, which will fund a position for a City Forester.

3.3.3 Vulnerabilities and Risk Assessment

Most of the damage to the City from historical tropical cyclones has been due to the effects of flooding and wind. Areas of known and potential flooding problems are discussed in Section 3.1

The City of Stamford is vulnerable to hurricane damage from wind, flooding, storm surge, and from any tornadoes accompanying the storm. In fact, most of the damage to the City from historical tropical cyclones has been due to the effects of flooding. Factors that influence vulnerability to tropical cyclones in the City include building codes currently in place, local

zoning and development patterns, and the age and number of structures located in highly vulnerable areas of the community.

Changes and Improvements

Stamford has upgraded regulations to promote Low Impact Development and the City of Stamford Street Tree Planting Manual.

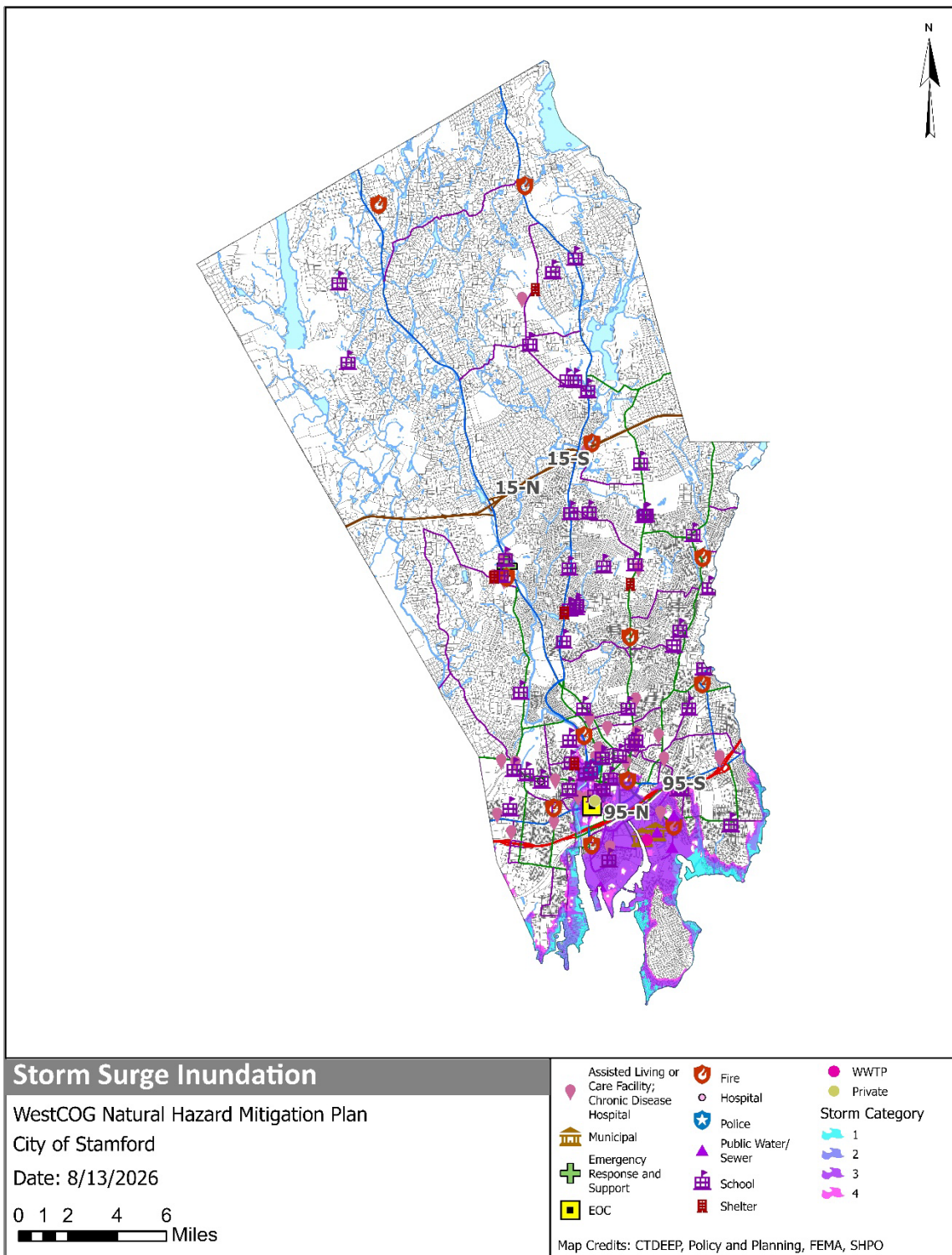


Figure 3-1: Storm Surge Inundation Zones

3.4 SUMMER STORMS AND TORNADOES

3.4.1 Setting

Summer storms and tornadoes have the potential to affect any area within the City of Stamford. 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 City without harming another.

Based on the historic record, it is considered highly likely that a summer storm that includes lightning will impact Stamford 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

Stamford addresses the hazards associated with summer storms and tornadoes via capabilities outlined under the flooding and hurricane sections. The City is continuously working to reduce high wind damages with building code enforcement and controlling drainage concerns with robust maintenance. The City's capabilities regarding mitigation of high wind events are described in Section 3.3.2.

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. Stamford's emergency communication capabilities are described in Section 2.5.

Actions Completed and New Capabilities

Stamford has updated its tree maintenance capacity, developed a tree inventory, and completed traffic safety improvements to aid evacuations.

3.4.3 Vulnerabilities and Risk Assessment

The entire City of Stamford is at relatively equal risk for experiencing damage from summer storms and tornadoes. Based on the historic record, a few summer storms have resulted in costly damages to the City. Most damages are relatively site specific and occur to private property (and therefore are paid for by private insurance). For municipal property, the City budget for tree removal and minor repairs is generally adequate to handle summer storm damage.

According to the 2023 State Natural Hazard Mitigation Plan Update, Fairfield County has a moderately high risk of tornado activity based on historical occurrences. Therefore, by virtue of its location in Fairfield County, the City of Stamford has moderate to high potential to experience tornado damage. In general, thunderstorms and hailstorms in Connecticut are more frequent in the western and northern parts of the state and less frequent in the southern and eastern parts. The majority of these events do not cause any measurable damage. Although

lightning is usually associated with thunderstorms, it can occur on almost any day. The likelihood of lightning strikes in the Stamford area is very high during any given thunderstorm, although no one area of the City is at a higher risk of lightning strikes. The risk of at least one hailstorm occurring in Stamford is considered moderate in any given year.

Thunderstorms are expected to impact the region about 20 days each year. The majority of these events do not cause any measurable damage. Although lightning is usually associated with thunderstorms, it can occur on almost any day.

The risk of downbursts occurring during such storms and damaging the City of Stamford is believed to be low for any given year. All areas of the City are susceptible to damage from high winds, although more building damage is expected in densely developed areas, such as downtown Stamford and surrounding areas, while more tree damage is expected in the less densely populated, more rural areas in northern areas of the City.

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. Most downed power lines in Stamford 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.

Changes and Improvements

Stamford continues to mitigate summer storms and tornadoes.

3.5 WINTER STORMS AND NOR'EASTERS

3.5.1 Setting

The entire City of Stamford is susceptible to winter storms and, due to its variable elevation, can have higher amounts of snow in the northern neighborhoods of the City than in the downtown area. In general, winter storms are considered highly likely to occur each year (although major storms are less frequent), and the hazards that result (nor'easter winds, snow, and blizzard conditions) can potentially have a significant effect over a large area of the City.

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 Stamford's average annual snowfall is about 2.5 to 4 feet.

3.5.2 Capabilities

Prior to a winter weather event, the City 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, especially bridges and elevated roadways, pre-storm treatment is applied to reduce the accumulation of snow. Once snow begins to accumulate, the City has developed steps to ensure timely and efficient snow clearing. Main roadways, emergency routes, and primarily neighborhood streets are the initial focus, with an overall goal to have all City roads treated within two hours of the first snowfall, assuming the snowfall accumulation rate is within this manageable time frame.

The City has also developed snow emergency routes. These routes are posted on the Road Maintenance section of the City website. Emergency routes are utilized in the event of a major snowstorm, and if the mayor declares a snow emergency.

The City 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).

CTDOT plows all State roads and Interstates. City 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.

Actions Completed and New Capabilities

Stamford's winter storm mitigation capabilities continue to be significant, although there has not been a significant change in these capabilities since the previous HMP was adopted.

3.5.3 Vulnerabilities and Risk Assessment

The entire City of Stamford 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 public assistance reimbursement from

Winter Storm Alfred was \$228,000, proving that winter storms can be very costly. However, many damages are relatively site specific and occur to private property (and therefore are paid for by private insurance) while repairs for power outages are often widespread and difficult to quantify to any one municipality.

For municipal property, the City budget for tree removal and minor repairs is generally adequate to handle winter storm damage although the plowing budget is often depleted.

The structures and utilities in Stamford 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.

The elderly population in Stamford is particularly susceptible to the impacts created by winter storms due to resource needs (heat, electricity loss, safe access to food, etc.).

Changes and Improvements

The City of Stamford continues to mitigate snowstorm wind and accumulation risks.

3.6 WILDFIRES AND DROUGHT

3.6.1 Setting

The City of Stamford is generally considered a moderate risk area for small wildfires but a low risk area for large 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 Stamford are limited to the northern stretches of the City. Hazards associated with wildfires include property damage and habitat loss.

In addition, Stamford and Fairfield County overall have 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

Regulations regarding fire protection in Stamford are outlined in the *Zoning Regulations* and the *City Code of Ordinances*:

- Section 126-2: ... reasonable safety of such persons requires the establishment of a fire lane for the orderly access and operation of fire and other emergency equipment...

- Section 127-6: No person shall leave any outdoor fire unattended.
- Section 127-5: Open burning prohibited, any open burning must be conducted in accordance with all applicable Statutes and Regulations.

The City's Fire Department is a dual level service, with both volunteer and career firefighters staffing the firehouses throughout the community. The career department has 238 employees, including staff, and operates out of 5 fire stations throughout the City.

Actions Completed and New Capabilities

The City continues to mitigate wildfire and drought.

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, a total of 2,430 wildland fire events occurred between 2013 and 2022, with an average of 1.2 total acres burned per incident. 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 levels are readily available to fight fires in the state, and inter-municipal cooperation on such instances is common.

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 the City – including the use of nearby water bodies – and the historic record, it is believed that the average size of a wildfire in a drought year would be less than one acre, although the extreme value of five acres is likely applicable to the City. Wildfire Risk Areas are mapped in Figure 3-2.

Wildfires are more common in rural areas than in developed areas, as most fires in populated areas are quickly noticed and contained. The likelihood of a severe wildfire developing is reduced by the state's extensive network of water features, which create natural breaks that can stop the spread of a fire. During long periods of drought, these natural features may dry up, increasing the vulnerability of the state to wildfires.

The most common causes of wildfires are arson, lightning strikes, and fires started from downed trees hitting electrical lines. Thus, wildfires have the potential to occur anywhere and at any time in both undeveloped and lightly developed areas. The extensive forests and fields covering the state are prime locations for a wildfire. In many areas, structures and subdivisions are built abutting forest borders, creating areas of particular vulnerability.

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 northern areas of Stamford, specifically north of the Merritt Parkway, could be considered at greater risk due to moderate to high levels of development intermixed with fire

prone vegetation. However, given firefighting capacity and water availability, it is likely that the City has effective capabilities to minimize damage from fires that may occur.

Changes and Improvements

The City's vulnerability to wildfires continues to be low.

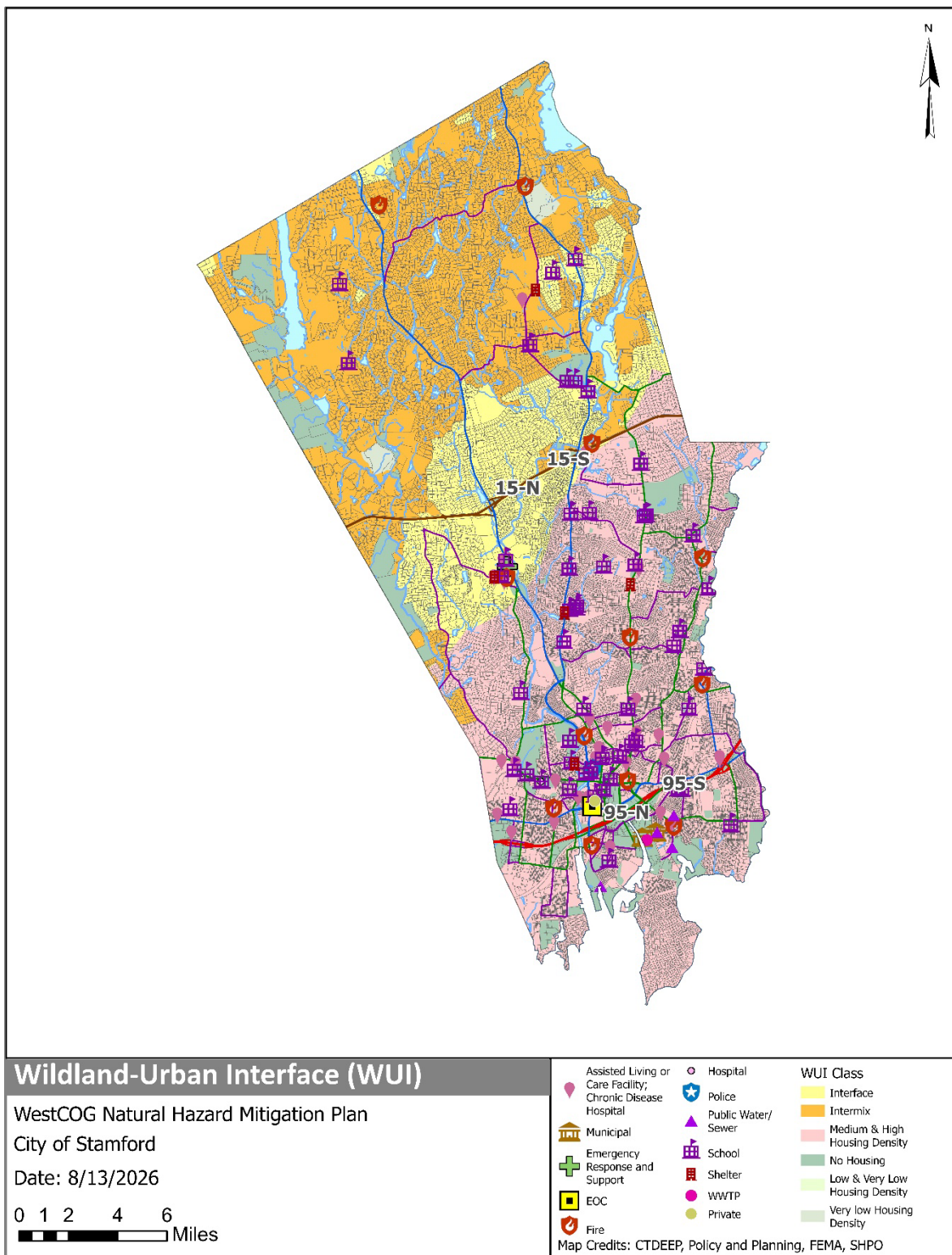


Figure 3-2: Wildfire Risk Areas

3.7 EARTHQUAKES AND LANDSLIDES

3.7.1 Setting

The entire City of Stamford is susceptible to earthquake damage. However, even though earthquake damage has the potential to occur anywhere both in the City 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 City.

3.7.2 Capabilities

The City has adopted the state building 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 City 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.

Subdivision Regulations:

- Encourage the conservation of existing undeveloped land by preserving water bodies, wetlands, watercourses, major stands of trees, steep slopes, ridge lines, significant geological features, and other areas of environmental value.
- Require that soil erosion and sediment control plans be developed for proposed projects.

Master Plan:

- Conserve and manage natural areas by way of partnerships, with the typical aim at areas of erosion or with steep slopes.

Zoning

- Applications and plans must identify slopes greater than 25%
- Excavation finished slope requirements shall not exceed 1:1.5 (vertical to horizontal) in undisturbed earth, 1:2 in earth fill, and 4:1 in rock, whether or not the ground surface will be below water, provided further that all slopes of the perimeter bank or shore of any pond or lake shall not exceed 1:3 (vertical to horizontal).

Actions Completed and New Capabilities

Stamford continues to have appropriate capabilities for mitigating earthquake events.

3.7.3 Vulnerabilities and Risk Assessment

Some areas in Stamford are underlain by sand and gravel and artificial fill, particularly within the more urban areas such as the Cove neighborhood, which is underlain by artificial fill, and along the Rippowam and Noroton Rivers, which are primarily sand and gravel. Structures in these areas are at increased risk from earthquakes due to amplification of seismic energy and/or collapse. Most of the remaining area is underlain by glacial till and is therefore not at increased risk during an earthquake due to unstable soils.

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 City of Stamford. Results are presented in Table 3-1 below.

Table 3-1: Probability of a Damaging Earthquake in the Vicinity of Stamford

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%

Changes and Improvements

The City's vulnerability to earthquakes continues to be low.

3.8 SEA LEVEL RISE AND SHORELINE CHANGE

3.8.1 Setting

The coastal areas of Stamford are susceptible to sea level rise and shoreline change. With most of the shoreline being residential, and commercial and water dependent activity in pockets throughout, residential properties are at a greater risk of future inundation. Sea level rise may not be considered a high hazard risk in and of itself; however, rising seas in conjunction with extreme weather may result in inundation farther inland than seen during past events. In addition to extreme weather, nuisance flooding may also become a more frequent issue during extreme high tides.

The State of Connecticut has adopted the recent sea level rise projections developed by the University of Connecticut, Connecticut Institute for Resilience and Climate Adaptation (CIRCA), as the latest planning threshold for coastal municipalities. This projection anticipates a rise of 50 cm (20 inches) by the year 2050.

3.8.2 Capabilities

The City has begun to see an increase in nuisance flooding, and has experienced the impacts of extreme storm surge, leaving City officials aware of the potential impacts of an extreme storm with elevated sea levels.

City staff have begun to identify the areas that are at risk of increased nuisance flooding, and solutions and mitigation strategies are being recognized. In an effort to protect municipal infrastructure, projects are also being developed and funded, such as the Greenwich Avenue pump station which is at risk of inundation.

Section 9.A of Stamford's Zoning Regulations lists Coastal Area Management Regulations. These apply to all buildings, uses, and structures fully or partially within the coastal boundary as defined by Section 22a-94 of the Connecticut General Statutes.

One of Stamford's primary coastal mitigation strategies is the maintenance of a Hurricane Barrier and Flood Protection System. The City also maintains seawalls and other shore protection structures along the coast; rehabilitation of a number of these structures is an action included in this plan moving forward.

Actions Completed and New Capabilities

Stamford continues to mitigate damages due to sea level rise and shoreline change through enforcement of coastal and floodplain zoning regulations, preservation of open space in coastal areas, and maintenance of the Hurricane Barrier. The City is working on the development of a coastal resilience plan, which will include flood modeling. The rehabilitation of the Cove Island Park Marina seawall is in design and the rehabilitation of the seawall at the end of Shippan Avenue has been completed

..

3.8.3 Vulnerabilities and Risk Assessment

The most at-risk areas are those immediately along the shoreline, with risk slightly declining moving inland. The South End neighborhood is particularly at risk of increased nuisance flooding under future sea levels. In addition, a 100-year storm event with one foot of sea level rise has the potential to inundate many of the coastal areas, including Harbor Point, southern areas of Downtown, portions of the East Side neighborhood, and southern properties in Waterside.

With much of the commercial areas at risk of flooding during a 100-year event with elevated sea levels, there is a large economic factor at risk. Many of the large-scale companies, historic resources, and tourist attractions are in these vulnerable areas.

Changes and Improvements

The City continues to work to upgrade infrastructure at risk of inundation.

3.9 EXTREME HEAT

3.9.1 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 five days on average, while Litchfield County experienced zero days on average.

Extreme heat events are expected to increase. The WestCOG Regional Climate Assessment (2026) notes that “by 2050, in a high CO₂-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).

3.9.2 Capabilities

The City of Stamford has identified several shelters that can also act as cooling centers in the city, which can provide respite to members of the community during an extreme heat event or heat wave. The City 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 City has identified numerous shelters which can act as cooling centers in Stamford.

3.9.3 Vulnerabilities and Risk Assessment

While the entire city 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. The CCVI can be used to characterize heat vulnerability in Stamford.

In general, the most vulnerable populations in Stamford would include the young and the elderly, and those populations living in the more densely developed areas in the city, which may have reduced tree coverage and a greater density of impervious surface. According to the CCVI, more heat vulnerable areas in the City are the areas south of Route 15, with the highest vulnerability in the downtown area and along the Interstate 95 corridor.

Changes and Improvements

The city, 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 Prior Mitigation Actions

#	Description	Status	Notes
1	Provide information on the Town website about CT DEEP training and information around small business chemical management for hazard resilience.	Remove	Move to Regional - Nothing done
2	Use the CT Toxics Users and Climate Resilience Map to identify toxic users located in hazard zones within your community. Contact those users to inform them about the CT DEEP small business chemical management initiative.	Remove	Move to Regional - Nothing done
3	Host a CT DEEP presentation for municipal staff and local businesses about business chemical management for hazard resilience.	Remove	Move to Regional - Nothing done
4	Take one of the following actions that will mitigate natural hazard risks while also meeting Sustainable CT objectives: - Disseminate a toolkit for pre-disaster business preparedness. - Revise regulations to promote Low Impact Development. - Include the goals of this Hazard Mitigation Plan, and at least three other sustainability concepts, in your next Master Plan update.	Complete	Master plan is complete, elements may have be integrated.
5	Widen the railroad underpasses at Elm Street, Canal Street, and Greenwich Avenue.	Carry Forward	Has not happened

#	Description	Status	Notes
6	Complete a design to remove the traffic lights at the Magee Ave, Shippan Ave, and Harbor Dr intersection and construct a roundabout to allow for more efficient traffic flow during an emergency, and to reduce the reliance of power during an outage on a main evacuation route.	Carry forward	Project is in design.
7	Implement a modern traffic signal with a backup power source at the Shippan Ave, Elm St, and Cove Rd intersection.	Carry forward with Revisions	In design, which is almost complete.
8	Greenwich Avenue – Davenport Street Waterside Circulator to improve traffic safety and enhance evacuation route for the Waterside neighborhood.	Complete	
9	Washington Boulevard and Pulaski Street Roadway Widening to improve traffic safety and enhance evacuation routes for the Waterside & South End Neighborhoods.	Complete	
10	Lower Atlantic Street Roadway Widening (Washington Boulevard to Station Place/Dock Street) to improve traffic safety and enhance evacuation routes for the Waterside & South End Neighborhoods	Carry forward with Revisions	Underway
11	Collaborate with CIRCA on the "Resilient Connecticut" project	Carry forward with Revisions	Working with CIRCA - they are doing modeling for CRP, heat study, and flood gauges.
12	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	Move to Regional - Nothing done
13	Increase the City funding allocations for public tree maintenance and plantings.		Spring 2026 now. City also passed tree ordinance that will bring a city forester on staff.

#	Description	Status	Notes
14	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	Move to Regional - Nothing done
15	Conduct an extensive flood and coastal risk assessment to evaluate risks in RL areas, to critical facilities, and to critical infrastructure.	Carry forward with Revisions	Part of the CRP.
16	Conduct a city-wide inventory and assessment of street trees in potential coordination with Eversource.	Complete	Project is complete. Not shared with Eversource, but it will soon be public.
17	Orange Street stormwater drainage improvement project - replace failing corrugated metal piping (surcharges during flood events; manhole covers blow off during rainstorms).	Carry forward and revision	Part of citywide drainage assessment (part of the 1 of 5).
18	West Hill Road stormwater drainage improvement project.	Carry forward	Funding issue for this project. Some interim work has been done, but nothing otherwise.
19	Work with Eversource to identify municipal actions to improve electric grid resiliency.	Carry forward and revision	City works regularly with Eversource, so this is an ongoing effort. Past few years City has been working with Eversource on a 5 mile resiliency project to connect two substations. Going into construction now.
20	Revise floodplain zoning regulations to recognize the "coastal AE zone".	Carry forward	Not done.
21	Compare local floodplain regulations with Revised State Model Flood Regulations to identify any remaining opportunities for improvement	Carry forward	Not done.
22	Work with CT DEEP to validate and/or correct the RL list and update the mitigation status of each listed property.	Remove	Move to regional. Assessing RL areas is also part of the CRP.
23	Annually conduct an emergency operations exercise for a local terrorism, sabotage, or mass casualty event.	Carry forward	Follow up with Lou D. or public safety

#	Description	Status	Notes
24	Operations Department (Highways, Parks, Recycling & Sanitation) and Eversource to develop a plan for clearing debris in the event of a severe storm; increase funding for debris management.	Carry forward	Not fully complete.
25	Widen entire Cove Road corridor, Shippan Avenue to Weed Avenue, to allow for increased evacuation capacity.	Carry forward with Revisions	Land use bureau and transportation are doing a corridor study and design Cove Road study - follow up on this.
26	Repair or replace the 5-by-5-foot box culvert on Bouton Street West to mitigate future flooding.	Carry forward	Has not been done. Interim repairs have been completed, but still needs permanent solution.
27	Move forward with the plans to remove the West Main Street Bridge and construct a fully compliant pedestrian bridge above the 1% annual-chance floodplain, and also remove several piers.	Carry forward and revise	Removal has not occurred, but pedestrian bridge is complete. Design is being awarded for dismantling and removal. Design is nearly executed.
28	Pine Hill Avenue stormwater drainage improvement project.	Carry forward	Completed 4 of 5 tasks - 5th task is the largest. Funded through ARPA, and running through Dec 2026.
29	Explore retrofit opportunities as needed for the hurricane barrier system.	Carry forward	Repairs estimated to occur 2027, at the earliest, and part of the CRP has identified the need to conduct a thorough assessment of the hurricane barrier system.
30	Explore adding clerical and/or technical support staff to EOC.	Carry forward	Not done.
31	Identify additional segments of seawalls located along coastal roadways that may require rehabilitation.	Carry forward	Part of the resilience plan is identifying structures that need to be updated, including seawalls. Resiliency plan to be complete in Spring 2026. Was progressing with EDA for Magee, however, it is stalled at the moment.
32	Develop sidewalks along Weed Avenue and Cove Road to better control pedestrian traffic and reduce pedestrian-caused congestion during an evacuation.	Carry forward	Working on the contract for design.

#	Description	Status	Notes
33	Rehabilitate seawalls at Cove Island Park Marina	Carry forward with revision	In design – revise to reflect this.
34	Rehabilitate seawalls at Czescik Marina	Carry forward	No plans as of yet.
35	Complete rehabilitation of West Beach Seawall	Carry forward	Have a grant for the scour wall.
36	Complete reconstruction of the seawall at the end of Shippan Avenue.	Complete	
37	Dredge Holly Pond and include project elements that reduce coastal risks	Remove	No plans to dredge Holly Pond - working on a coastal resilience plan and this is not coming up. Broken flood gates, in two municipalities, so there are certain challenges. A project to this extent would take significant political backing. Holly Pond area is being considered as part of the coastal resiliency plan. Highly unlikely to occur, potentially remove, or revise to address flooding concerns in this neighborhood.

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 City 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
SFD-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.	Land Use Bureau	\$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
SFD-02	Revise floodplain zoning regulations to recognize the "coastal AE zone" relative to the limit of moderate wave action.	Land Use Bureau	\$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

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
SFD-03	Continue to participate in the WestCOG program that provides outreach to repetitive loss property owners.	Mayor's Office	\$0 - \$25,000	Operating Budget and COG general services budgets	Annually in 2026, 2027, 2028, 2029, and 2030	Med	Property Protection	Flooding	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8
SFD-04	Work with WestCOG to update the mitigation status of repetitive loss properties.	Mayor's Office	\$0 - \$25,000	Operating Budget and COG general services budgets	2029	Med	Property Protection	Flooding	0	0	1	0	1	0	0	0	1	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
SFD-05	Conduct a feasibility study to determine the benefits and logistics for implementing a stormwater authority to management a stormwater utility program.	Mayor's Office	\$100,000 - \$500,000	Capital Improvement Plan, DCRF	2029-2030	High	More than one category	Flooding	1	0	1	0	1	1	0	1	1	0	1	1	1	0	4
SFD-06	Collaborate with CIRCA on the the Coastal Resilience Plan flood modeling and heat sensory project; implement specific findings or strategies that result from this work.	Land Use Bureau, Mayor's Office	>\$1M	Capital Improvement Plan, FEMA HMA	2026-2029	Med	More than one category	Multiple Hazards	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8

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
SFD-07	Implement strategies identified in the Coastal Resilience Plan related to repetitive loss properties, critical facilities, and critical infrastructure.	Land Use Bureau, Mayor's Office	>\$1M	Capital Improvement Plan, FEMA HMA	2026-2029	High	More than one category	Multiple Hazards	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8
SFD-08	Implement strategies identified in the Cummings Pond Resilience Plan.	Land Use Bureau, Mayor's Office	>\$1M	Capital Improvement Plan, FEMA HMA	2027-2030	High	More than one category	Flooding															
SFD-09	As the opportunity arises, collaborate with CIRCA on the "Resilient Connecticut" project to advance further study in areas with flood and extreme heat risks.	Land Use Bureau, Mayor's Office	\$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
SFD-10	Explore retrofit opportunities as needed for the hurricane barrier system.	Mayor's Office	>\$1M	Capital Improvement Plan, FEMA HMA, Army Corps Grants	2027-2030	High	Structural Projects	Flooding	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7
SFD-11	Complete the design for rehabilitation of seawalls at Cove Island Park Marina; execute construction when complete.	Engineering	>\$1M	Capital Improvement Plan	2026-2027	Med	Structural Projects	Multiple Hazards	0	0	1	0	1	0	1	0	0	0	1	1	0	0	4
SFD-12	Rehabilitate seawalls at Czescik Marina	Engineering	>\$1M	Capital Improvement Plan	2027-2028	Med	Structural Projects	Multiple Hazards	0	0	1	0	1	0	1	0	0	0	1	1	0	0	4
SFD-13	Complete rehabilitation of West Beach Seawall	Engineering	>\$1M	Capital Improvement Plan	2027-2028	Med	Structural Projects	Multiple Hazards	0	0	1	0	1	0	1	0	0	0	1	1	0	0	4

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SFD-14	Identify additional segments of seawalls located along coastal roadways that may require rehabilitation.	Engineering	\$100,000 - \$500,000	Capital Improvement Plan	2028-2029	Med	Structural Projects	Multiple Hazards	0	0	1	0	1	0	1	0	0	0	1	1	0	0	4
SFD-15	Pursue funding for flood mitigation projects resulting from the Toilsome Brook flood study	Mayor's Office	>\$1M	Capital Improvement Plan, FEMA HMA	2027-2029	High	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	6
SFD-16	Execute upgrades and repairs identified in the Citywide Drainage Assessment, prioritizing those locations identified as challenges.	Engineering	>\$1M	Capital Improvement Plan, FEMA HMA	2027-2031	High	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	6
SFD-17	Repair or replace the 5-by-5-foot box culvert on Bouton Street West to mitigate future flooding.	Engineering	>\$1M	Capital Improvement Plan, FEMA HMA	2028-2029	High	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	6

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SFD-18	Complete the removal of the West Main Street Bridge and also remove several piers.	Engineering	>\$1M	Capital Improvement Plan, FEMA HMA	2030-2031	High	More than one category	Flooding	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7
SFD-19	Widen the railroad underpasses at Elm Street, Canal Street, and Greenwich Avenue to improve egress and incorporate flood mitigation solutions.	Transportation, Traffic, and Parking	>\$1M	Capital Improvement Plan, FEMA HMA, PROTECT	2028-2031	Med	Structural Projects	Flooding	1	0	1	0	1	1	1	0	1	0	1	1	1	0	6

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SFD-20	Complete a design to remove the traffic lights at the Magee Ave, Shippan Ave, and Harbor Dr intersection and construct a roundabout to allow for more efficient traffic flow during an emergency, and to reduce the reliance of power during an outage on a main evacuation route.	Transportation, Traffic, and Parking	>\$1M	Capital Improvement Plan, LOTCIP Grant	2028-2031	Med	Structural Projects	Multiple Hazards	1	0	1	0	1	1	0	0	1	0	1	1	1	0	5
SFD-21	Complete design, and implement a modern traffic signal with a backup power source at the Shippan Ave, Elm St, and Cove Rd intersection.	Transportation, Traffic, and Parking	>\$1M	Capital Improvement Plan, CMAQ Grant	2028-2031	Med	Structural Projects	Multiple Hazards	1	0	1	0	1	1	1	0	1	0	1	1	0	0	5

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SFD-22	Complete design and implement to the Atlantic Street Roadway Widening (Washington Boulevard to Station Place/Dock Street) to improve traffic safety and enhance evacuation routes for the Waterside & South End Neighborhoods	Transportation, Traffic, and Parking	>\$1M	Capital Improvement Plan, LOTCIP, PROTECT, Private Developer Contribution	2028-2031	Med	Structural Projects	Multiple Hazards	1	1	1	0	1	1	1	0	1	0	1	1	0	0	4
SFD-23	Widen entire Cove Road corridor, Shippan Avenue to Weed Avenue, to allow for increased evacuation capacity; ensure mitigation goals align with the Cove Road corridor study.	Transportation, Traffic, and Parking	>\$1M	Capital Improvement Plan, FEMA HMA, PROTECT	2028-2031	Med	Structural Projects	Multiple Hazards	1	1	1	0	1	1	1	0	1	0	1	1	0	0	4

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SFD-24	In accordance with the multi-use path concept plans, complete the design for sidewalks along Weed Avenue and Cove Road to better control pedestrian traffic and reduce pedestrian-caused congestion during an evacuation.	Transportation, Traffic, and Parking	>\$1M	Capital Improvement Plan, LOTCIP, PROTECT	2028-2031	Low	Structural Projects	Multiple Hazards	1	0	1	0	1	1	1	0	0	0	0	1	1	0	3
SFD-25	Work with Eversource to complete the ongoing efforts to connect substations to increase redundancy.	Engineering	\$0 - \$25,000	Operating Budget	2026-2028	Low	More than one category	Multiple Hazards	1	0	1	1	1	1	1	0	1	0	1	1	1	0	4
SFD-26	Explore adding clerical and/or technical support staff to EOC.	EMD	\$50,000 - \$100,000	Operating Budget	2027-2028	Low	Preparedness & Emergency Response	All Hazards	1	0	1	0	1	1	0	0	0	0	0	1	0	0	1

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SFD-27	Annually conduct an emergency operations exercise for a natural hazard event.	EMD	\$25,000 - \$50,000	Operating Budget	Annually in 2027, 2028, 2029, 2030, and 2031	Med	Education & Awareness	All Hazards	1	0	1	0	1	1	1	0	1	0	0	0	1	0	6
SFD-28	Encourage Highways, Parks, Recycling & Sanitation, and Eversource to collaborate to develop a plan for clearing debris in the event of a severe storm; increase funding for debris management.	Operations, Mayor	\$50,000 - \$100,000	Operating Budget	2027-2028	Low	More than one category	Multiple Hazards	1	0	1	0	1	1	1	0	0	0	1	0	1	0	7

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SFD-29	Increase the City funding allocations for public tree maintenance and plantings, and to support the City Forester's goals.	Land Use, Parks Maintenance	\$50,000 - \$100,000	Capital Improvement Plan, New Zoning Certificate Fee Requirements	2026-2029	Med	Natural Resources Protection	Extreme Heat	1	0	1	0	1	1	1	0	0	0	1	1	1	0	5
SFD-30	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