



14 Farmington

Community Overview

Farmington is located in the southwest corner of the Capitol Region. It has a land area of 28.1 square miles and a population of approximately 25,000. Farmington’s elevation is between 160-245 feet. The majority of Farmington’s land area is located in the Farmington River watershed, but the eastern portion of Town is within the Park River Watershed. The main watercourses in Town include the Farmington and Pequabuck Rivers and Great, Hyde and Scott Swamp Brooks. Several major transportation routes traverse Farmington, including Interstate 84, and routes 4, 6, 9 and 10. The University of Connecticut’s John Dempsey Hospital and medical and dental schools are located in Farmington. Principal industries located in town include numerous national and international corporate facilities, banking, insurance, retail (West Farms Mall), biomedical research and product development, aerospace engineering and products, laser research and production, precision and specialty manufacturing, manufacture of ball bearing spindles, springs, flow and level switches, fans, metals and plastics.

The Bridgehampton development in the western part of town is about half complete. No large development projects are underway.

Critical facilities

Critical facilities throughout the Capitol Region are listed in Appendix B. In Farmington these include the Police Department (EOC) and Irving Robbins Middle School (shelter). Other critical facilities include fire stations, schools, the library, Town Hall, and other municipal departments.

Table 14-1: Critical Facilities, Farmington

Facility	Shelter	Generator
Police Department (EOC)		X
Irving Robbins Middle School	X	X
East Farms School		
Farmington high School		
Noah Wallace School		
Union School		
West District School		
West Woods Upper Elementary School		
East Farmington Fire Station		
Farmington Fire Station		
Oakland Gardens Fire Station		
Southwest Fire Station		
Tunxis Hose Fire Station		
Farmington Library		
Highway and Grounds Department		
Town Hall		
Senior/Community Center		
Water Pollution Control Plant		

Farmington's Emergency Operations Center is located in the Police Department. The Police Department is also the Public Safety Access Point (PSAP) for the Towns of Burlington and Farmington and is the communications center for all Police/Fire operations in Farmington and Fire operations in the Town of Burlington. The Irving Robbins Middle School has a new generator that can maintain power for the entire facility; the building is now a full shelter.

Capabilities

Farmington's hazard mitigation capabilities include its emergency responders, snow and tree management, and regulations limiting construction in hazard zones. Hazard mitigation is addressed specifically in the community's Plan of Conservation and Development.

The Town has not permitted any recent new construction in the floodplain. The Farmington Center Bridge over the Farmington River was replaced in 2010; capacity was not significantly changed.

Firefighting capabilities are fairly extensive within Farmington. The Town has not required any new cisterns or dry hydrants in the last few years for neighborhoods, but has required private water tanks for individual large homes located in areas without fire protection. This requirement is decided on a case-by-case basis.

Farmington coordinates the trimming of trees near powerlines with the local energy provider (Eversource). The Town reports that this relationship has been positive and has effectively lowered the number of outages that residents experience; however, some residents have complained that the tree clearing is excessive. Utilities are required to be underground in new developments.

The Town's snow management is considered to be sufficient. New plows are purchased each year to maintain the fleet.

New Capabilities

Since adoption of the 2014-2019 Capitol Region Natural Hazards Mitigation Plan Update ("2014 HMP"), a new emergency generator was installed at the Irving Robbins Middle School, allowing the facility to operate as a full shelter.

A Repetitive Loss (RL) property on Dorset Lane is traversed by a small stream at the same elevation as the rear of the house. Culverts under the street were upsized from 18 inches to 42 inches and flooding has subsequently decreased. The State's RLP list has noted that the risk at this site has been mitigated.

Farmington is currently pursuing funding for a riverbank stabilization project at the cemetery.

The Town plans to utilize the Reverse 911 communications system along with the proposed hydrologic study of the Farmington River in order to warn the owners six RL properties of



potential flooding incidences based upon rainfall predictions. This will allow for the early mitigation and evacuation of affected properties, thereby reducing the potential for loss of life and mitigating the loss of property.

Challenges

Challenges Overview

Farmington's transportation network is frequently disrupted by flooding because of the Farmington River and its tributaries. The traffic impacts of road closures in and around Farmington are compounded by the limited number of river (Farmington and Pequabuck) crossings.

During the 2011 Hurricane Irene flooding event, the main roads leading to the Town's emergency shelter became flooded and inaccessible. There is a significant gap in the Town's ability to provide a shelter during flooding events. Currently there are no other schools equipped with generator backup power.

The Farmington Police Department (EOC and emergency communications center) is located in the 1% annual chance flood plain and has come close to flooding during past storms. The Town has no alternate site to move the communications center.

There are six RL properties in Farmington. The low lying area of these houses makes physical mitigation difficult, and homeowners are not interested in selling their property; the Town is therefore left with mitigation in the form of early warning (see Capabilities). Two RLPs on Round Hill Road (which have been handed down for generations and which the owners are not interested in selling) are surrounded by water during flood events; this impairs access, but does not cause significant damage.

Hazard Losses

The economic losses faced by the community from natural hazards can be estimated by reviewing historic, and modeling future, loss figures. Loss estimates are summarized below.

Historic FEMA Payments

FEMA reimburses communities for hazard losses through programs including Public Assistance (PA) and the National Flood Insurance Program (NFIP). Combining PA and private flood insurance payments can give an estimate for total losses to a community.

The NFIP has paid 125 property damage claims in Farmington totaling \$1,335,198 to-date. Farmington also has six properties that suffer repetitive flood loss. The NFIP has paid out claims totaling over \$813,365 in twenty RL claims on these properties to-date.

Total PA reimbursements to the community were as follows:



- Flood Events: \$80,109 (\$4,216 annually)
- Hurricane Events: \$145,915 (\$7,680 annually)
- Winter Storm Events: \$3,650,608 (\$192,137 annually)

These are summarized in the tables below.

Table 14-2: Flood Event PA Reimbursements, Farmington

Incident	Sep 1999	Oct 2005
Declaration	9/23/1999	12/16/2005
Disaster No.	1302	1619
Entity	FEMA PA Reimbursement	FEMA PA Reimbursement
State	\$1,175	\$1,457
Municipal	\$60,666	\$15,406
Nonprofit	\$1,405	\$0
Total	\$63,246	\$16,863
Annualized	\$3,329	\$888

Table 14-3: Hurricane Wind Event PA Reimbursements, Farmington

Incident	Aug - Sep 2011 (T.S. Irene)
Declaration	9/2/2011
Disaster #	4023
Entity	FEMA PA Reimbursement
State	\$1,659
Municipal	\$144,256
Nonprofit	\$0
Total	\$145,915
Annualized	\$7,680

Table 14-4: Winter Storm PA Reimbursements, Farmington

Incident	Mar 2003	Dec 2003	Jan 2005	Feb 2006	Jan 2011	Oct 2011	Feb 2013
Declaration	3/11/03	1/15/04	2/17/05	5/2/06	3/3/11	11/17/11	3/21/13
Disaster #	3176	3192	3200	3266	1958	4046	4106
Entity	FEMA PA Reimbursement						
State	\$27,188	\$24,210	\$31,486	\$36,005	\$34,643	\$25,561	\$60,626
Municipal	\$53,300	\$65,109	\$65,321	\$74,326	\$73,308	\$2,386,386	\$186,730
Nonprofit		\$78,128	\$78,665	\$90,032	\$627	\$40,500	\$218,457
Total	\$80,488	\$167,447	\$175,473	\$200,363	\$108,578	\$2,452,447	\$465,813
Annualized	\$4,236	\$8,813	\$9,235	\$10,545	\$5,715	\$129,076	\$24,516



National Centers for Environmental Information Losses

The table below summarizes events in the National Centers for Environmental Information (NCEI) severe storm database that were specifically noted as having impacted Farmington since 2012.

Table 14-5: NCEI Database Losses since 2012, Farmington

Date	Event	Property Damage
7/18/2016	Thunderstorm Wind	\$5,000
Total		\$5,000

NCEI losses under other event categories (such as drought, high wind, flooding, and winter storms) were not specifically noted as impacting Farmington, though they did impact Hartford County and nearby towns. NCEI losses are reported in Section II of this Plan.

HAZUS-MH Losses

CRCOG used FEMA’s Hazus-MH model to analyze the risks that the community might face from flooding, hurricanes, and earthquakes. The model estimates economic losses to the town due to damage to buildings and building contents, as well as other economic disruptions. Both residential and commercial structures are addressed. Losses from different hazards are summarized below. Where available, estimates from the previous and current versions of the HMP are provided side-by-side; differences between the two may have been caused by a combination of the following:

- Changes in methodology: such as hazard zone mapping
- Changes in data: such as population and property values
- Changes in the model: this HMP utilized Hazus-MH version 4.0 rather than 2.1
- Other factors: inherent in a complex software like Hazus-MH

More details are available in the Multi-Jurisdictional HMP. Ultimately, changes in the loss estimates reflect the reality that small differences in hazard event features can have a significant impact on losses incurred.

Table 14-6: Estimated Damages to Farmington from a 1% Annual-Chance Flood

Loss Type	2014 Results	2018 Results
Households Displaced	748	247
People Needing Shelter	1,992	367
Buildings at Least Moderately Damaged	393	0
Economic Losses		
Residential Building & Content Losses	\$92,150,000	\$20,660,048
Other Building & Content Losses	\$135,120,000	\$56,215,119
Total Building & Content Loss	\$227,270,000	\$76,875,167
Total Business Interruption Losses	\$1,200,000	\$2,325,028
TOTAL	\$228,470,000	\$79,200,194



Table 14-7: Estimated Damages to Farmington from a 1% Annual-Chance Hurricane

Loss Type	2014 Results (1938 event)	2018 Results (1% track)
Buildings at Least Moderately Damaged	667	1
Buildings Completely Damaged	27	0
Total Debris Generated (tons)	39,248	2408
Truckloads (at 25 tons/truck) of building debris	374	96
Economic Losses		
Residential Building & Content Losses	\$67,080,000	\$6,076,267
Other Building & Content Losses	\$21,020,000	\$1,410,805
Total Building & Content Loss	\$88,100,000	\$6,311,216
Total Business Interruption Losses	\$11,740,000	\$47,787
TOTAL LOSSES	\$99,840,000	\$6,359,003

Losses were calculated from a modeled probabilistic earthquake (1% annual-chance of occurrence), as well as for four specific scenarios with epicenters around Connecticut.

Table 14-8: Estimated Damages to Farmington from a Probabilistic Earthquake

Loss Type	2018 Results
Wage Loss	\$7,234
Rent Loss	\$4,559
Relocation Loss	\$8,075
Income Loss	\$5,345
Inventory Loss	\$617
Total Business Disruption	\$25,830
Structural Loss	\$14,555
Non-Structural Loss	\$45,810
Total Building Loss	\$60,366
Total Content Loss	\$19,669
TOTAL LOSSES	\$105,864

Table 14-9: Estimated Damages to Farmington from Modeled Earthquake Scenarios

Epicenter Location	Magnitude	Estimated Total Losses
East Haddam	6.4	\$471,145.65
Haddam	5.7	\$122,893.57
Portland	5.7	\$494,239.95
Stamford	5.7	\$12,458.58

Other Hazard Costs

Town officials estimate that a typical severe winter storm event will cost the Town about \$35,000 in overtime and equipment. This estimate is based on the January 4th and 5th, 2018, snowstorm.



Average Annualized Losses

Average Annualized Loss (AAL) figures are useful tools for comparison of the risks faced from different hazards with different likelihoods of occurring in a given time period. AAL estimates were prepared for Farmington based on the methodologies discussed in Section II of the Multi-Jurisdictional HMP. Dam failure, drought, tornado, and wildfire losses were sourced from the 2014 Connecticut Natural Hazard Mitigation Plan Update, with dam failure data supplemented by the National Performance of Dams Program and the Connecticut Department of Energy & Environmental Protection. Earthquake and hurricane losses were calculated in HAZUS-MH. Losses for flooding came from NFIP claims, for winter storms from Public Assistance Reimbursements, and for thunderstorms from the NCEI database. These are presented in the table below in dollars per year. Note that Hurricanes and Tropical Storms represent the largest share of total annualized losses.

Table 14-10: Average Annualized Losses, Farmington

Dam Failure	Drought	Earthquakes	Flooding	Hurricanes and Tropical Storms	Severe Winter Storms	Thunderstorms	Tornadoes	Wildfires	Total
\$45	\$0	\$105,864	\$39,353	\$1,588,528	\$192,137	\$3,365	\$371,785	\$5,208	\$2,306,287

Losses Summary

A review of the above loss estimates demonstrates that the Town of Farmington has experienced significant expenses as a result of natural hazards, and is at risk for additional losses if some of the less-frequent events were to occur. These actual and potential losses justify hazard mitigation actions to reduce losses in the future.

Mitigation Strategies and Actions

Status of Previous Mitigation Strategies and Actions

The Town of Farmington reviewed the mitigation actions proposed in the 2014 HMP and determined the status of each. That information is included in the table below.

Table 14-11: Status of Previous Mitigation Strategies and Actions, Farmington

Action #	Action	Notes	Status
GOAL: REDUCE TRAFFIC CONGESTION DUE TO FLOODING OF MAJOR EAST/WEST ROUTE (MEADOW ROAD)			
Objective 1: Implement traffic study to improve access to alternate routes (Town Strategic Plan)			
1.1	Consider the feasibility of a fourth bridge over the Farmington River. Because this is expected to be a long term, multi-year project, for the 2014-2019 Plan period, the action to be taken is to develop a scope of work for a feasibility study.	A design has been completed. The next steps are permitting and securing of funds.	Carry Forward



Action #	Action	Notes	Status
Objective 2: Consider the elevation of Meadow Road to reduce incidents of flooding			
2.1	Conduct an engineering and feasibility study of elevating Meadow Road and installing culverts to allow flow in both directions. Because this is expected to be a long term, multi-year project, for the 2014-2019 Plan period, the action to be taken is to develop a scope of work and Request for Proposal (RFP) for the study.	No progress has been made on this action due to lack of resources. Carry Forward.	Carry Forward with Revisions
Objective 2: Ensure that future development does not increase flood risk.			
1.1	Improve communications with the Army Corps of Engineers to obtain advance warning of releases from the Goodwin Dam.	A drill was conducted in 2017. MDC and the Army Corps have been notifying the town of releases.	Complete
1.2	Consider partnering with neighboring watershed communities to conduct a hydrologic study of the Farmington River.	No progress has been made on this action due to lack of resources. Carry Forward.	Carry Forward with Revisions
1.3	Consider performing a town-wide hydrologic study.	No progress has been made on this action due to lack of resources. The Town Council has cut funding for this effort several times. Carry Forward.	Carry Forward with Revisions
2.1	Continue to work with the Capitol Region Emergency Planning Committee on obtaining generators and other supplies.	A new generator has been installed at the High School	Capability
4.1	Continue to use the town newsletter and website to release relevant information.	This is a capability. Everbridge is also used to release important emergency information to residents.	Capability
5.1	The current shelter becomes inaccessible during flooding events. The Town plans to make Irving A. Robbins School our shelter. The school is also a medical backup shelter to the University of Connecticut Health Center.	This action has been completed	Complete
6.1	Establish the Farmington Fire Station as a backup dispatch center and EOC. The site needs to be equipped with phone lines and communications equipment.	The Farmington Fire Station has been abandoned as a backup EOC locations. The Southwest Fire Station will be the new backup EOC. Carry revised action forward.	Carry Forward with Revisions
7.1	Design a permanent retaining wall system or structure such as steel sheet piling to prevent further erosion of the existing gravel embankment.	This refers to the cemetery on Garden Street. Limited progress has been made. Regulatory agencies and FEMA have not endorsed submitted designs. Bank stabilization is still needed. Carry forward revised action.	Carry Forward with Revisions

Active Mitigation Strategies and Actions

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



Each of the following actions has been prioritized based on FEMA guidelines, listed from highest to lowest priority, and numbered.

Action #1

Enter the Sustainable CT program through Registration and review actions that can be undertaken to pursue Certification. Make progress with the actions related to hazard mitigation.

Goal	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.
Category	Natural Resources Protection
Lead	Planning
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	01/2019 - 12/2019
Priority	High

Action #2

Identify funding sources and requirements to conduct a town-wide hydrologic study.

Goal	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies
Category	Prevention
Lead	Public Works
Cost	\$0 - \$10,000
Funding	Town Operating Budget / Grants / CT DEEP / DEMHS
Timeframe	07/2019 - 06/2020
Priority	High

Action #3

Develop a new concept for a permanent erosion prevention measure at the cemetery on Garden Street that will be accepted by regulatory agencies. Complete a grant application to implement the new concept.

Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Structural Projects
Lead	Public Works
Cost	\$10,000 - \$25,000
Funding	Town Operating Budget
Timeframe	07/2019 - 06/2021
Priority	High



Action #4

Conduct outreach to local small businesses with the aim of preventing the accidental release and pollution from chemicals stored and used at their facilities during or following natural hazard events.

Goal	6. Improve public outreach, education, and warning systems
Category	Education & Awareness
Lead	Planning, in coordination with DEEP
Cost	\$0 - \$10,000
Funding	Materials & Resources Provided by CT DEEP
Timeframe	01/2019 - 12/2019
Priority	Medium

Action #5

Coordinate with NEMO and CRCOG to share resources and gain technical support for hazard mitigation actions involving stormwater management and public outreach, which have parallel benefits related to MS4 stormwater permit compliance.

Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Prevention
Lead	Public Works
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	01/2020 - 12/2020
Priority	Medium

Action #6

Develop a scope of work and Request for Proposals (RFP) for an engineering and feasibility study of elevating Meadow Road and installing culverts to allow flow in both directions.

Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Structural Projects
Lead	Public Works
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	07/2020 - 06/2021
Priority	Medium



Action #7

Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.

Goal	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies
Category	Education & Awareness
Lead	Planning
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	07/2019 - 06/2024
Priority	Medium

Action #8

Explore the feasibility of a fourth bridge over the Farmington River. For the current planning period, develop a report of permitting needs and possible funding sources to allow for next steps to be taken during the next Plan period.

Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Public Works
Cost	\$10,000 - \$25,000
Funding	Town Operating Budget
Timeframe	07/2020 - 06/2022
Priority	Medium

Action #9

Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.

Goal	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.
Category	Property Protection
Lead	Public Works
Cost	\$10,000 - \$25,000
Funding	Town Operating Budget / DEMHS
Timeframe	07/2020 - 06/2022
Priority	Medium



Action #10

Conduct an assessment of the Town's snow-removal capabilities to identify opportunities for improvement.

Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Public Works
Cost	\$25,000 - \$50,000
Funding	Town Operating Budget / Grants
Timeframe	07/2021 - 06/2023
Priority	Medium

Action #11

Establish the Southwest Fire Station as a backup EOC.

Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Emergency Management
Cost	\$25,000 - \$50,000
Funding	Town Operating Budget / Grants / DEMHS
Timeframe	01/2021 - 12/2023
Priority	Medium

Action #12

Identify, possibly in cooperation with neighboring watershed communities, funding sources and requirements to conduct a hydrologic study of the Farmington River.

Goal	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies
Category	Prevention
Lead	Public Works
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	07/2021 - 06/2022
Priority	Low



Action #13

Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.

Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Property Protection
Lead	Planning
Cost	\$0 - \$10,000
Funding	Town Operating Budget / DEMHS
Timeframe	07/2021 - 06/2022
Priority	Low

Action #14

Coordinate with CT SHPO to conduct outreach to historic property owners to educate them on methods of retrofitting their properties to be more hazard-resilient while maintaining historic character.

Goal	8. Ensure community character and social equity are addressed in mitigation activities
Category	Education & Awareness
Lead	Planning, in coordination with SHPO
Cost	\$0 - \$10,000
Funding	SHPO
Timeframe	01/2021 - 12/2022
Priority	Low

Action #15

Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.

Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Property Protection
Lead	Planning
Cost	\$10,000 - \$25,000
Funding	Town Operating Budget / CT DEEP / DEMHS
Timeframe	07/2021 - 06/2023
Priority	Low



Action #16

Coordinate with CT SHPO to conduct historic resource surveys, focusing on areas within natural hazard risk zones (such as flood or wildfire hazard zones and areas near steep slopes), to support identification of vulnerable historic properties and preparation of resiliency plans across the state. This action leverages existing resources and best practices for protection of historic and cultural resources through an ongoing statewide initiative by CT SHPO.

Goal	8. Ensure community character and social equity are addressed in mitigation activities
Category	Property Protection
Lead	Planning, in coordination with SHPO
Cost	\$10,000 - \$25,000
Funding	SHPO
Timeframe	07/2021 - 06/2023
Priority	Low






Capitol Region Natural Hazards Mitigation Plan Update










Farmington, Connecticut

Flood Plains, Dams & Critical Facilities

Dam Hazard Class



-  BB, A, AA OR Unclassified
-  Class B - Significant Hazard
-  Class C - High Hazard

Critical Facilities

-  Fire Station
-  Police Station
-  School
-  Healthcare Facility
-  State Facility
-  Town Facility
-  Waste Water Facility
-  Emergency Center
-  NRHP Buildings/Sites

 NRHP Districts/Areas

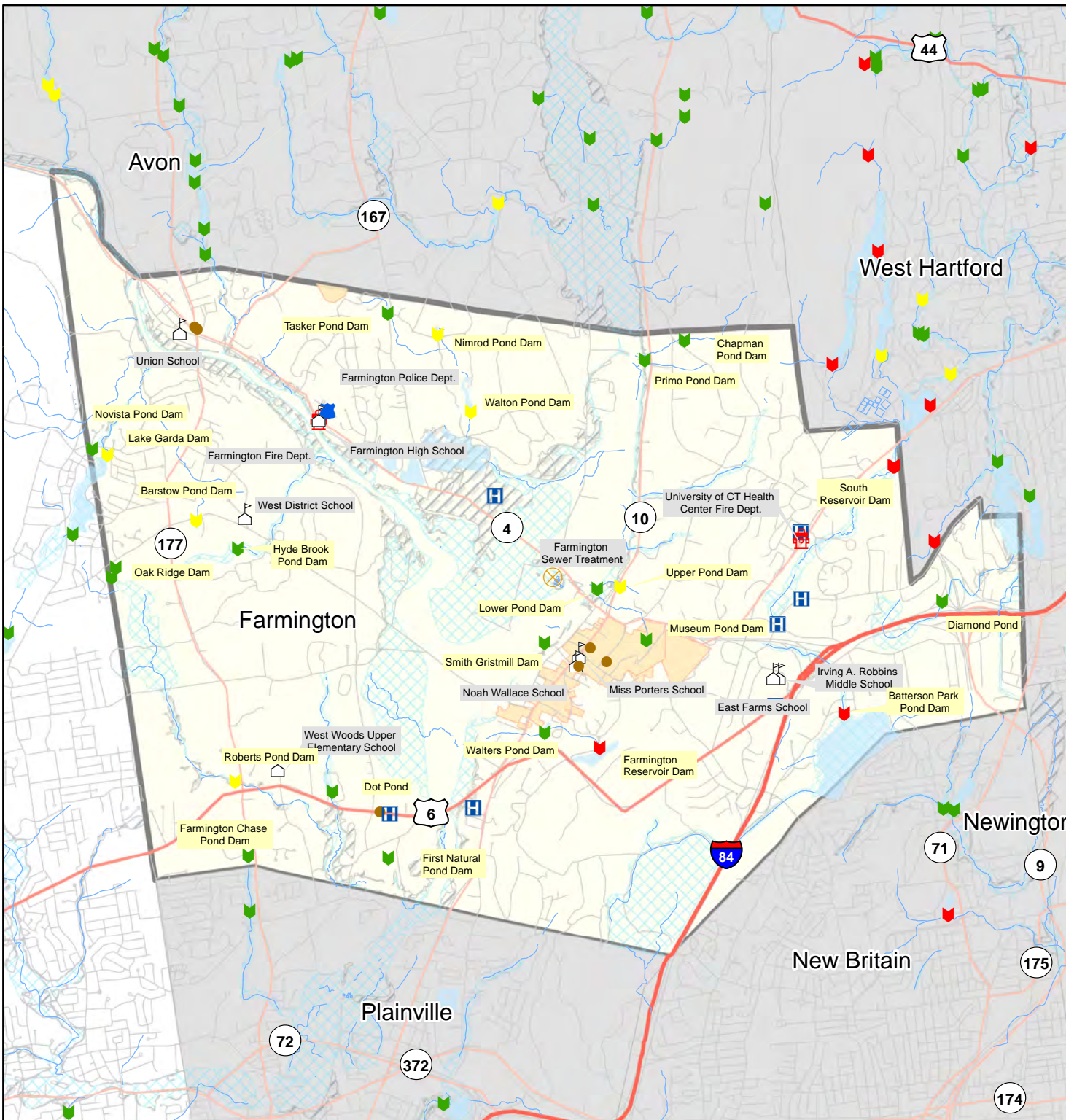
FEMA Flood Hazard Area

-  100 Year Flood Zone
-  500 Year Flood Zone

Data Sources: FEMA, National Register of Historic Places, CT DEEP, CRCOG, ESRI



99 Realty Drive Cheshire, CT 06410
 (203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com






Capitol Region Natural Hazards Mitigation Plan Update












Farmington, Connecticut

Dam Breach Inundation Area & Critical Facilities

Dam Hazard Class

-  BB, A, AA OR Unclassified
-  Class B - Significant Hazard
-  Class C - High Hazard

Critical Facilities

-  Fire Station
-  Police Station
-  School
-  Healthcare Facility
-  State Facility
-  Town Facility
-  Waste Water Facility
-  Emergency Center
-  NRHP Buildings/Sites
-  NRHP Districts/Areas
-  Dam Breach Inundation Areas

Data Sources: FEMA, National Register of Historic Places, CT DEEP, CRCOG, ESRI



99 Realty Drive Cheshire, CT 06410
 (203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

