



## 25 Rocky Hill

### Community Overview

Rocky Hill covers 13.9 square miles with a population of 19,703 (2010 Census). Elevation ranges from 30 feet to 400 feet. Land drains primarily to the Connecticut River Watershed, though the southwest portion of Town drains to the Mattabeset River. Major watercourses include the Connecticut River and Dividend, Goff, Hog, and Saw Mill Brooks. Principal transportation routes include Interstate 91 and State Routes 99, 3, 160 and 400. An active freight rail line, owned by Providence-Worcester Railroad, runs north-south along the Connecticut River. Paralleling the rail line is the Buckeye Jet Fuel line which runs from New Haven to Bradley International Airport. The State Veterans Home and Hospital and Dinosaur State Park are among approximately a dozen State agencies located in Town. Rocky Hill’s major industries include professional, scientific and technical services, finance and insurance, warehouse/ distribution, health care and construction.

An economic assessment study completed in 2011, projects an additional 1,838,000 square feet of new development potential. Population has recently increased slightly along the Route 3 corridor.

### Critical Facilities

Critical Facilities throughout the Capitol Region are listed in Appendix B. A number of those in Rocky Hill include the Police Station (Emergency Operations Center), Town Hall/Community Center, Public Library (back-up shelter and warming/cooling center), three volunteer fire stations, the High School (primary shelter), and West Hill School.

**Table 25-1: Critical Facilities, Rocky Hill**

Facility	Shelter	Generator
Police Department (EOC)		X
Public Library	Backup	X
3 Volunteer Fire Stations		
Town Hall / Community Center		X
High School	Primary	X
West Hill School		
CT State Health Lab		
CNG natural gas storage facility		
MDC H2O Storage facility		
Algonquin Gas line		
VA Home & Hospital		X
Waste Water Pollution Control		X
Buckeye Fuel Line		

### Capabilities

Hazard mitigation is incorporated into Rocky Hill’s Plan of Conservation and Development (POCD). POCD actions specifically address natural hazards.

The Town does not permit any new structures in flood zones, and in 2008 updated the Town Code Chapter 141, Flood Damage Prevention, in accordance with NFIP minimum standards.

Rocky Hill emergency response personnel are highly skilled and experienced in emergency response. Emergency response personnel and the Town of Rocky Hill highway employees are crossed trained in snow removal and emergency response for multiple and pre-disaster events.

Rocky Hill is 100% covered by hydrants on public water, operated by Metropolitan District Commission (MDC). There is a Town Ordinance requiring residents to clear snow from hydrants in front of their properties, as well as public notification reminders to do this. Mutual aid agreements with neighboring communities are in place for fire, police, and emergency response assistance.

The Town, in cooperation with the local power utility, has designated Century Hills Apartments as a first priority for power restoration due to a high concentration of apartments; the second priority is senior/over-55-adult housing developments.

Rocky Hill collects debris and has a designated area for debris disposal. The DPW has a budget of 25- to 30-thousand dollars per year to maintain trees, which has been sufficient.

### New Capabilities

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The Town changed the location of the primary shelter to the high school in 2016; the building had undergone upgrades including a new generator, cafeteria, and auditorium. This facility can accommodate up to 2,000 people.

Recent bridge and culvert replacements include the Old Main Street Bridge on Golfbrook, which was structurally deficient, and the Frank Street culvert over Sawmill Brook, where two metal pipes were rotten.

Rocky Hill has adopted new MS4 stormwater runoff regulations, which is expected to lead to lowered peak flood flows, in addition to creating water quality benefits.

### Challenges

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#### Challenges Overview

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The top three natural hazards that impact Rocky Hill are floods, hurricanes and tropical storms, and winter storms.

The MDC wastewater treatment facility located in the northeast corner of Town is in the Connecticut River flood plain and at risk from a 1%-annual chance flood event. Ferry Landing Park and parts of meadow Road become inaccessible during many spring flood events. Access to some of the buildings during some flood stage events is not possible.



When the Mattabesset River in Berlin floods, Saw Mill Brook also floods and renders the extreme western portion of France Street, the residences located there, and the Town of Berlin inaccessible. Additional areas of concern are Beach Road and Main Street (CT RT 99) near the former Ames property. Beach Road is susceptible to periodic flooding isolating homes north of Little Brook. State drainage structures located on Main Street (CT 99) are under-sized, causing periodic localized flooding.

Snow removal from State roadways is insufficient or delayed, complicating municipal snow removal at intersections of Town and State roadways, and hindering emergency response. Maintaining access to the Town’s fire hydrants is always an issue during heavy snow events.

Heavy snow and high winds bring the risk of power failures. A primary concern is to maintain power at the Police Station/EOC, the Town Community Center/Town Hall (shelter) and the Library (backup shelter). The generators for the Police Station and the Library are in need of up-grading.

### Hazard Losses

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

### Historic FEMA Payments

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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 11 property damage claims in Rocky Hill totaling \$111,493 to-date. There have been three Repetitive Loss (RL) Property claims totaling over \$43,427 filed on a single property.

Total PA reimbursements to the community were as follows:

- Flood Events: \$26,096 (\$1,373 annually)
- Hurricane Events: \$399,947 (\$21,050 annually)
- Winter Storm Events: \$1,569,736 (\$82,618 annually)

These are summarized in the tables below.



**Table 25-2: Flood Event PA Reimbursements, Rocky Hill**

<b>Incident</b>	Sep 1999	Oct 2005
<b>Declaration</b>	9/23/1999	12/16/2005
<b>Disaster No.</b>	1302	1619
<b>Entity</b>	<b>FEMA PA Reimbursement</b>	
<b>State</b>	\$914	\$1,133
<b>Municipal</b>	\$0	\$24,048
<b>Nonprofit</b>	\$0	\$0
<b>Total</b>	<b>\$914</b>	<b>\$25,182</b>
<b>Annualized</b>	<b>\$48</b>	<b>\$1,325</b>

**Table 25-3: Hurricane Wind Event PA Reimbursements, Rocky Hill**

<b>Incident</b>	Aug - Sep 2011 (T.S. Irene)	Oct - Nov 2012 (Storm Sandy)
<b>Declaration</b>	9/2/2011	10/30/2012
<b>Disaster #</b>	4023	4087
<b>Entity</b>	<b>FEMA PA Reimbursement</b>	
<b>State</b>	\$81,736	\$61,141
<b>Municipal</b>	\$257,069	\$0
<b>Nonprofit</b>	\$0	\$0
<b>Total</b>	<b>\$338,806</b>	<b>\$61,141</b>
<b>Annualized</b>	<b>\$17,832</b>	<b>\$3,218</b>

**Table 25-4: Winter Storm PA Reimbursements, Rocky Hill**

<b>Incident</b>	Mar 2003	Dec 2003	Jan 2005	Feb 2006	Jan 2011	Oct 2011	Feb 2013
<b>Declaration</b>	3/11/03	1/15/04	2/17/05	5/2/06	3/3/11	11/17/11	3/21/13
<b>Disaster #</b>	3176	3192	3200	3266	1958	4046	4106
<b>Entity</b>	<b>FEMA PA Reimbursement</b>						
<b>State</b>	\$29,946	\$26,100	\$33,443	\$30,037	\$26,980	\$168,755	\$97,075
<b>Municipal</b>	\$38,368	\$57,158	\$59,814	\$75,450	\$113,168	\$690,663	\$119,073
<b>Nonprofit</b>	\$0	\$0	\$0	\$0	\$1,516	\$0	\$2,192
<b>Total</b>	<b>\$68,314</b>	<b>\$83,258</b>	<b>\$93,257</b>	<b>\$105,486</b>	<b>\$141,664</b>	<b>\$859,417</b>	<b>\$218,340</b>
<b>Annualized</b>	<b>\$3,595</b>	<b>\$4,382</b>	<b>\$4,908</b>	<b>\$5,552</b>	<b>\$7,456</b>	<b>\$45,232</b>	<b>\$11,492</b>

*National Centers for Environmental Information Losses*

The National Centers for Environmental Information (NCEI) severe storm database was reviewed for hazards that have impacted Rocky Hill. No hazards were specifically noted as having impacted the community since 2012, 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 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 25-5: Estimated Damages to Rocky Hill from a 1% Annual-Chance Flood**

Loss Type	2014 Results	2018 Results
Households Displaced	24	52
People Needing Shelter	27	35
Buildings at Least Moderately Damaged	1	0
<b>Economic Losses</b>		
Residential Building & Content Losses	\$1,840,000	\$2,926,688
Other Building & Content Losses	\$2,900,000	\$5,974,531
<b>Total Building &amp; Content Loss</b>	<b>\$4,740,000</b>	<b>\$8,901,219</b>
<b>Total Business Interruption Losses</b>	<b>\$0.00</b>	<b>\$238,720</b>
<b>TOTAL</b>	<b>\$4,740,000</b>	<b>\$9,139,939</b>

**Table 25-6: Estimated Damages to Rocky Hill from a 1% Annual-Chance Hurricane**

Loss Type	2014 Results (1938 event)	2018 Results (1% track)
Buildings at Least Moderately Damaged	827	1
Buildings Completely Damaged	47	0
Total Debris Generated	28,622 tons	3115
Truckloads (at 25 tons/truck) of building debris	463	125
<b>Economic Losses</b>		
Residential Building & Content Losses	\$80,688,000	\$8,826,070
Other Building & Content Losses	\$21,190,000	\$475,915
<b>Total Building &amp; Content Loss</b>	<b>\$101,878,000</b>	<b>\$9,301,985</b>
<b>Total Business Interruption Losses</b>	<b>\$13,307,000</b>	<b>\$453,600</b>
<b>TOTAL LOSSES</b>	<b>\$115,185,000</b>	<b>\$9,755,585</b>



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 25-7: Estimated Damages to Rocky Hill from a Probabilistic Earthquake**

Loss Type	2018 Results
Wage Loss	\$3,766
Rent Loss	\$3,525
Relocation Loss	\$5,082
Income Loss	\$2,960
Inventory Loss	\$486
<b>Total Business Disruption</b>	<b>\$15,819</b>
Structural Loss	\$11,030
Non-Structural Loss	\$35,085
<b>Total Building Loss</b>	<b>\$46,115</b>
<b>Total Content Loss</b>	<b>\$14,209</b>
<b>TOTAL LOSSES</b>	<b>\$76,143</b>

**Table 25-8: Estimated Damages to Rocky Hill from Modeled Earthquake Scenarios**

Epicenter Location	Magnitude	Estimated Total Losses
East Haddam	6.4	\$907,521.16
Haddam	5.7	\$393,859.55
Portland	5.7	\$2,148,894.55
Stamford	5.7	\$8,078.75

### *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 each natural hazard which may impact the community 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 25-9: Average Annualized Losses, Rocky Hill**

Dam Failure	Drought	Earthquakes	Flooding	Hurricanes and Tropical Storms	Severe Winter Storms	Thunderstorms	Tornadoes	Wildfires	Total
\$35	\$0	\$76,143	\$4,308	\$1,235,529	\$82,618	\$2,618	\$289,168	\$2,500	\$1,692,917



## Losses Summary

A review of the above loss estimates demonstrates that the Town of Rocky Hill 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 Rocky Hill reviewed the mitigation actions proposed in the 2014-2019 Capitol Region Natural Hazards Mitigation Plan Update and determined the status of each. That information is included in the table below.

**Table 25-10: Status of Previous Mitigation Strategies and Actions, Rocky Hill**

Action #	Action	Notes	Status
<b>GOAL: REDUCE THE RISK OF LOSS OF LIFE AND PROPERTY AS A RESULT OF FLOODING, WINTER STORMS AND HURRICANES/TROPICAL STORMS.</b>			
<b>Objective 1: Improve the ability of the Town to provide emergency sheltering for at least 5,000 residents.</b>			
1.1	Supply new generators and appropriate fuel for The EOC/Police Station, the Library, the High School and West Hill School to be used as emergency shelters.	FEMA grant money was not approved for the application that was submitted. Generator at the police station was tested in June 2016 and it has adequate capacity. The High School generator was updated in 2016 and funded with town and state money. Town Hall does have a generator now.	Completed
1.2	Prepare plans to identify a potential site for a warehouse facility for storage of emergency sheltering resources as State/Federal funding becomes available.	Facilities identified in updated Emergency Action Plan in 2016.	Completed
1.3	Continue to replenish sheltering supplies (cots, water, food, etc.) as expiration dates warrant.	Ongoing action. This is a capability.	Completed
1.4	Seek funding sources for purchase of shelter supplies	Funding sources have not been identified, but Town has supply replenishment in its budget and will apply for more significant funding on a case-by-case basis. This action is not considered necessary.	Drop
1.5	Ensure and supply transportation access to emergency shelters.	Town staff use town buses and mini-buses for seniors. This is a capability.	Completed
<b>Objective 2: Provide access for police, fire and other emergency response personnel to the roadway system, to fire hydrants and to sidewalks in a timely manner during and after storm events.</b>			
2.1	Work with the State DOT towards better coordination and quicker State response to clear State Roads	This is an ongoing process and a capability.	Capability
2.2	Acquire specialized snow removal equipment	Upgraded dump trucks, snow plows, and new pickup trucks are now available.	Completed



Action #	Action	Notes	Status
2.3	Continue enforcement of fire hydrant and sidewalk clearing ordinance	This is an ongoing process and a capability.	Capability
<b>Objective 3: Restore power loss due to storm events in an expeditious manner and to targeted priority areas through improved emergency response coordination with utility companies.</b>			
3.1	Continue to work with and improve coordination with utility companies to provide first order power restoration to Century Hills, senior housing, age restricted developments and assisted living developments.	Added generators in senior housing. All other work is on-going and a capability.	Completed
3.2	Hold meetings on a regular basis to plan and coordinate natural hazard mitigation and coordinated disaster response.	On-going effort. Town staff meet internally to discuss hazard mitigation and disaster response. Eversource has their representatives participate in town meetings during substantial storms. This is a capability.	Capability
<b>Objective 4: Reduce the likelihood of flooding by improving existing natural and artificial drainage systems.</b>			
4.1	Improve the drainage on Beach Road by installing a box culvert raising the road above the flood elevation. Currently periodic flooding occurs isolating the homes north of the Little Brook.	Not yet complete due to lack of resources. Town will seek funding from State local bridge program.	Carry Forward
4.2	Improve the end of France Street to provide a two lane road meeting current design standards. Outer France Street becomes impassable during times of flooding due to flood waters over the road from the Sawmill Brook in Rocky Hill and Mattabesset River in Berlin. Rocky Hill residents have no access to or from the west and are forced to use a one lane road with limited visibility.	This problem impacts people on outer France Street and Berlin. It is not feasible for the town to implement any solutions right now due to budget constraints. An emergency access currently exists for Rocky Hill residents. This may be an issue to be addressed by the Town of Berlin.	Drop
4.3	Continue municipal education and fine program to disconnect residential sump pumps from sewage system.	A study was done by MDC 3-4 years ago to detect illegal tie-ins into the sewer system and that has been taken care of. This is now a capability.	Capability
4.4	Continue to support MDC's Clean Water project	Work started in 2014 and is on-going. Town is doing pipelines and updating water treatment plant in Rocky Hill. This is a capability.	Capability
<b>Objective 5: Implement flood mitigation measures to protect the MDC wastewater treatment facility located in the northeast corner of Town.</b>			
5.1	Work with the MDC towards implementation of flood protection measures.	On-going. Work started in 2015. The Town will continue to work with MDC. This is a capability.	Capability
<b>Objective 6: Mitigate flood loss/damage during flood events within the Connecticut River flood plain.</b>			
6.1	Continue with advanced notification and education of impacted property owners.	Town has reverse 911 system and also posts notices on Town webpage to sign up for alerts.	Capability





Action #	Action	Notes	Status
6.2	Continue implementation and enforcement of the Town's Flood Damage Prevention Ordinance and the Flood Overlay District Zoning Regulation.	POCD updated in 2015 and zoning updated in 2017. On-going capability.	Capability
6.3	Acquire targeted properties as State/Federal funding becomes available	45 Meadow Road property was purchased last year and demolished recently this year. It will be a park. It's in a floodplain. Town is planning to acquire 47 Meadow Road. Acquisition of flood-prone properties is an ongoing effort and a capability.	Completed
<b>Objective 7: Improve emergency response coordination with utility companies and the Towns of Berlin, Newington, Wethersfield and Cromwell.</b>			
7.1	Hold meetings on a regular basis to plan and coordinate natural hazard mitigation and coordinated disaster response.	This is part of the Town's standard operations. This is a capability.	Capability

### 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.

<b>Action #1</b>	
<b>Apply for funding through the State local bridge program to install a box culvert on Beach Road and raising the road above the 1% annual-chance flood elevation.</b>	
<b>Goal</b>	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.
<b>Category</b>	Structural Projects
<b>Lead</b>	Public Works
<b>Cost</b>	More than \$100,000
<b>Funding</b>	Grants
<b>Timeframe</b>	07/2022 - 06/2023
<b>Priority</b>	High



**Action #2**

**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.**

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

**Action #3**

**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.**

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

**Action #4**

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

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



**Action #5**

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

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

**Action #6**

**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.**

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

**Action #7**

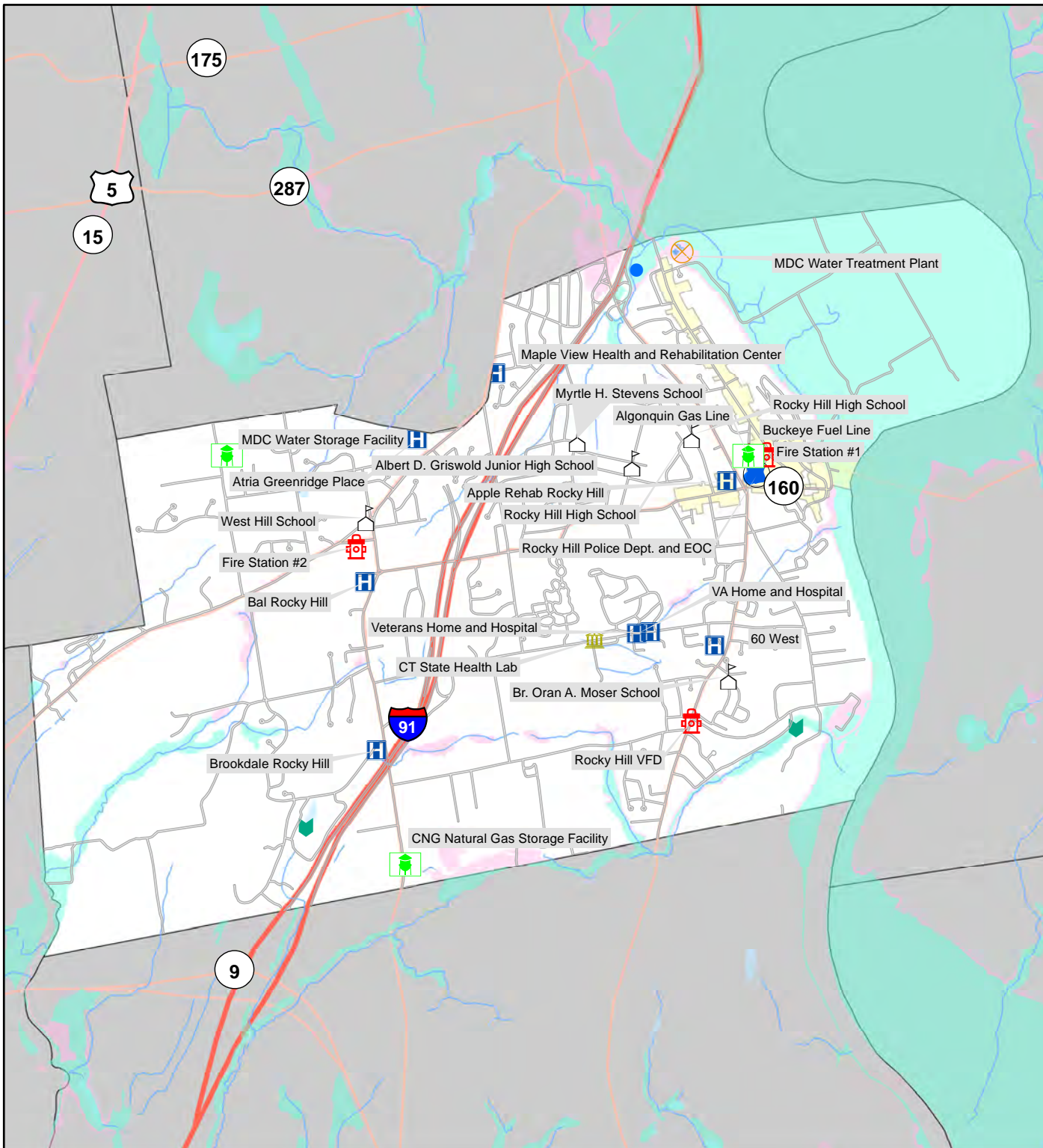
**Coordinate with CT SHPO to conduct historic resource surveys, focusing on areas within natural hazard risk zones (such as flood or wildfire hazard zones and areas near steep slopes), to support identification of vulnerable historic properties and preparation of resiliency plans across the state. This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

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














# Capitol Region Natural Hazards Mitigation Plan Update


## Rocky Hill, Connecticut Flood Plains, Dams & Critical Facilities





### Critical Facilities

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

### Dam Hazard Class

-  A, AA, BB or Unclassified

### FEMA Flood Hazard Area

-  100 Year Flood Zone
-  500 Year Flood Zone

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

