



21 Marlborough

Community Overview

Marlborough is a rural community in Hartford County covering a land area of 23.3 square miles and with an estimated population of 6,133 (2020 Census). Elevation ranges from about 160 to 800 feet. The Town is located in the Salmon River Watershed. The Blackledge River, Dickinson Creek, and Fawn and Lyman Brooks are the principal watercourses in Marlborough. The 83 acre spring fed Lake Terramuggus is located in the center of Town. State routes 2 and 66 intersect in Town. As a chiefly residential community, local businesses are the predominant industry. According to the Town's Plan of Conservation and Development, one-third of Marlborough's land area is protected forest land. Continued protection of the Town's natural resources is a focus of the Town's Plan.

Since adoption of the previous plan update, the town approved 2 apartment buildings with 92-units in total. The town does not have any new development in the flood plains. Development/redevelopment is not increasing risk to natural hazards.

Critical Facilities

In Marlborough critical facilities include the Town hall Fire House #2, the senior center and the elementary school.

Table 21-1: Critical Facilities, Marlborough

Facility	Shelter	Cooling Center	Generator
Town Hall	X	X	X
Fire House #2	X	X	X
Senior Center	X	X	X
Elementary School	X	X	X

During extreme heat events, Marlborough Town Hall, Fire House #2, the Cafeteria and Community Room at the Elementary School and Marlborough Senior Center can be opened as public cooling centers. The emergency generator at the Town Hall was updated and an emergency generator was added to the senior center. Both facilities are used as shelters as well.

Marlborough currently uses Hebron's RHAM High School and Regional Health Districts as regional shelters

Capabilities

Hazard mitigation is incorporated into Marlborough's Plan of Conservation and Development (POCD). POCD actions specifically address natural hazards, including flood, wildfire, and erosion. Marlborough has Low Impact Development (LID) regulations designed to help minimize stormwater runoff. It is implementing new MS4 stormwater requirements.

There are about one dozen dry-hydrants throughout Town. Only the Town Center is served by public water, but no fire hydrants are included.

The Town's local budget for tree maintenance is now \$100,000 per year. Due to devastation of Gypsy Moths and recent severe wind events, and tree infestations. Marlborough has spent \$285,000 in tree removal since the 2019 HMP. The Town anticipates spending \$100,000 a year on tree removal each of the next five years. The Town and Eversource collaborate regularly and effectively on tree maintenance.

A culvert on an unnamed brook under South main Street has been upgraded since the 2014 HMP. Marlborough has replaced two culverts sets of twin 48-inch diameter corrugated metal culverts on Finley Hill Road at Flat Brook with twin 7- by 5-foot precast concrete box culverts and an unnamed brook with 4 x 8 -foot elliptical pipe. Also, the Town replaced twin 30" culverts on North Parker Road with an 8-by4-foot precast concrete box culvert.

Two bridges in Town have been improved since the 2019 HMP. The Jones Hollow Road Bridge, over the Blackledge River, and South Main Street Bridge, over the Fawn Brook construction were completed in 2021. The bridge decks of the North Main Street Bridge have recently been replaced.

The Marlborough Fire Department recently upgraded its Rescue vehicle and currently is replacing a Pumper Truck.

Marlborough has hired a new Emergency Management Director (EMD) and Deputy EMD. The Deputy EMD is responsible for developing a local Community Emergency Response Team (CERT). Both the EMD and Deputy EMD are attending a CT DEMHS sponsored CERT trainer course in September 2018. Marlborough is currently served by a regional CERT team covering Hebron, Andover, and Marlborough; this team includes Marlborough residents.

Since the 2019 HMP, the following actions have been incorporated as capabilities:

- 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.
- Replace one Public Works truck.
- Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.

Capabilities to address natural hazards and the losses that they have caused, have increased since the last plan has been adopted.

Challenges

Challenges Overview

Storm damage to trees resulting in road blockages, power outages and debris accumulation is a concern for the town.

The town has 5,000 acres of open space, much of which is state-owned. The state is timbering the State-owned land in town. The town owns about 500 acres and sometimes timbering on the town-owned land. However, dead/dying trees is a main concern for the town.

In Marlborough, concerns have arisen regarding the condition of culverts, particularly during storms. A culvert on South Buckboard Lane over Foot Sawmill Brook sustained damage during one storm, prompting a temporary repair. In June and July of 2021, the town faced culvert issues on South Rd, Hodge Rd, and South Buckboard Lane, resulting in the replacement of a few culverts, both temporarily and permanently. The Town spent \$400,000 upgrading the street drainage system of Stony Brook Drive as a result of flooding in 2021. All culverts are being upsized and transitioning to box culverts. The primary worry is that the 12 existing metal culverts are deteriorating due to the increased frequency and intensity of storms, causing them to lose their metal bottoms as a result of heightened water flow and friction. Tree debris is not a significant concern in clogging the culverts.

With 18% of the population over 65, Marlborough lacks a clear heat plan for this vulnerable group.

Marlborough relies on bedrock wells for water, a concern during droughts. Furthermore, the town center's water system is privately owned, limiting the town's control over its water supply.

Hazard Losses

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

Average Annualized Losses

Average Annualized Loss (AAL) estimates are summarized below. 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 Marlborough. National Centers for Environmental Information (NCEI) data, from the last 20 years, was categorized by hazard and averaged based on the proportion of population within each town in the CROCG Region. National Flood Insurance Program (NFIP) losses were calculated based on the 50 year span of the program. FEMA Public Assistance (PA) data from the past 11 years was categorized based on hazard and used to compute AAL. United States Department of Agriculture (USDA) from the past 10 years was calculated to get AAL. Expected Annual Loss data from the National Risk Index (NRI) was downloaded and categorized to get AAL for the below hazards. Dam failure data was taken from the 2019-2024 CROCG Hazard Mitigation Plan (HMP) plan since no new dam failures have occurred in the past five years. The 2019 HMP Dam failures 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.

Table 21-2: Average Annualized Losses, Marlborough

Hazard	Source	Average Annualized Losses (AAL)
Hurricanes/Tropical storms	NCEI	\$15,760.76
	NRI	\$280,754.68
	FEMA PA	\$7,502.93
Tornados/High Winds	NCEI	\$5,900.54
	NRI	\$53,123.19
Winter Storms	NCEI	\$4,674.28
	NRI	\$3,909.53
	FEMA PA	\$3,782.93
Flood	NCEI	\$4,777.31

Hazard	Source	Average Annualized Losses (AAL)
	NRI	\$7,572.36
	NFIP	\$1,890.63
Drought	NRI	\$0.00
	USDA	\$0.00
Extreme Heat	NRI	\$6,999.52
Wildfire	NRI	\$451.09
Earthquakes	NRI	\$6,461.08
Dam Failure	HMP	\$11.00

Losses Summary

A review of the above loss estimates demonstrates that the community 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

This HMCAP includes new goal statements that are aligned with *Resilient Connecticut* and the efforts of the GC3. The five new goals developed for this HMCAP were developed with cooperation from CIRCA in the *Resilient Connecticut* planning process, and are:

- Ensure that critical facilities are resilient, with special attention to shelters and cooling centers.
- Address risks associated with extreme heat events, especially as they interact with other hazards.
- Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency and severity of floods.
- Reduce losses from other hazards.
- Invest in resilient corridors to ensure that people and services are accessible during floods and that development along corridors is resilient over the long term.

The previous goals of the 2019 HMP have been replaced and incorporated into these five new goals in accordance with the explanation in the Multijurisdictional document.

Noted Hazard Mitigation Needs

Over the course of Plan development, multiple hazard mitigation needs were noted:

- The town should consider increasing their municipal budget and implement a tree management plan to address dead and dying trees on town-owned open space.
- The town should continue to enhance and monitor culvert infrastructure to withstand the increased frequency and intensity of storms.
- The part-time Emergency Management Director in Marlborough should determine if a heat plan exists and if it does not, the town should consider developing one to address the vulnerable and aging populations needs.

Status of Previous Mitigation Strategies and Actions

The Town of Marlborough reviewed the mitigation actions proposed in the 2019 HMP and determined the status of each. That information is included in the table below.

Table 21-3: Status of Previous Mitigation Strategies and Actions, Marlborough

No.	Action	Notes	Status
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.	Town staff said Marlborough registered with SCT in 2020 and the Town achieved Bronze status this summer and will continue to move forward with other certifications.	Complete/ Retire
2	Develop prioritized list of needed culvert and bridge replacements and upgrades and apply for funding to pursue that work.	Town staff said that they had an engineer evaluate culverts in 2014-2015 and 2021. The town has metal culverts that don't last a long time. They get a list and rating from the engineer every 5 years and make improvements. The town would need \$1.5 million - \$2 million to replace each culvert and they have about 5-6 that need immediate attention and another 7 to 8 metal culverts that will need replacing in the future. The town is upsizing from 48 to 7x14 box culverts. The list of the culverts that they are experiencing issues with: 1. Quinn road over Cattle Lot Brook, 2. South Buckboard Lane over Foot Sawmill Brook 3. Johnson Rd with Lyman Brook, 4. 254 South Main Street with unnamed brook, 5. Hodge Road culvert with a wetland system 6. South Main St bridge over Blackledge River.	Carry Forward with Revisions to include specific locations and that the culverts are being upsized.
3	Replace one Public Works truck.	Town staff is continuing to replace trucks. Ongoing capability.	Complete/ Retire
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.	Town staff said they would like to revise this action to have staff watch the final DEEP training/webinar and continue education.	Carry Forward with Revisions
5	Coordinate with NEMO and CROG 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.	Town staff said they are in compliance with MS4. This is a capability.	Complete/ Retire
6	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	Town staff said they would like to keep this action to have staff continue education.	Carry Forward

No.	Action	Notes	Status
7	Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.	Town staff said that they have achieved this and is a capability.	Complete/ Retire
8	Increase Public Works staff numbers.	Town staff said they have not been able to increase staff, but this is still a goal that can be kept in the text of the plan, although perhaps not needed as a table action (as FEMA will not fund this goal).	No longer a (table) need /Retire
9	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.	Town staff believes that they do not have any RLP. CIRCA will check with CRCOG. If the town does have RLP, share this information with Peter and keep/ revise the action.	Likely Complete or No Longer a Need /Retire
10	Coordinate with CT SHPO to conduct historic resource surveys 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.	Revise to say "Acquire and review SHPO GIS data point file".	Carry Forward with Revisions
11	Prepare a forest fire suppression study.	Town staff said this has not been completed yet, but this is still an interest.	Carry Forward

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.

Number	Hazard Mitigation and Climate Adaptation Actions	Hazard Mitigation and Climate Adaptation Goal	Type of Action	Responsible Department	Approx. Cost Range	Potential Funding Sources	Timeframe	Priority	Hazard(s)	EJ?	PERISTS Score	STAPLEE Score	PERISTS x STAPLEE =
MB1	Ensure that transportation and transit options are available to bring people to cooling centers.	Address risks associated with extreme heat events, especially as they interact with other hazards.	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$50,000	Transit; IJJA BBFP	07/2024 - 06/2026	High	Extreme Heat	No	19	3	57
MB2	Conduct a town wide assessment of stream crossings to identify vulnerabilities and develop a priority list for maintenance and upsizing.	Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency and severity of floods.	Structural Project	Public Works	\$10,000 - \$50,000	DCRF; Municipal CIP Budget	07/2025 - 06/2026	Medium	Riverine and Pluvial Floods	No	18	6	108
MB3	Apply for funding to pursue upsizing the following culverts: .1. Quinn road over Cattle Lot Brook, 2. South Buckboard Lane over Foot Sawmill Brook 3. Johnson Rd with Lyman Brook, 4. 254 South Main Street with unnamed brook, 5. Hodge Road culvert with a wetland system 6. South Main St bridge over Blackledge River.	Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency and severity of floods.	Structural Project	Public Works	>\$1M	LOTICIP; IJJA AOP, BIP; STEAP	07/2025 - 06/2028	High	Riverine and Pluvial Floods	No	19	4	76

Number	Hazard Mitigation and Climate Adaptation Actions	Hazard Mitigation and Climate Adaptation Goal	Type of Action	Responsible Department	Approx. Cost Range	Potential Funding Sources	Timeframe	Priority	Hazard(s)	EI?	PERISTS Score	STAPLEE Score	PERISTS x STAPLEE =
MB4	Ensure that options are available to help property owners make their water supply wells resilient to droughts, floods, and loss of capacity	More than one goal.	Water & Wastewater Utility Projects	Planning	\$0-\$10,000	DWSRF; FEMA HMA; STEAP	07/2025 - 06/2026	High	Riverine and Pluvial Floods/Drought	No	19	10	190
MB5	Expand public water systems to areas served by private wells when needed to address drought impacts and provide fire protection	Reduce losses from other hazards.	Water & Wastewater Utility Projects	Selectmen	>\$1M	DWSRF; FEMA HMA; STEAP	07/2026 - 06/2028	High	Drought/Wildfire	No	19	8	152
MB6	Develop more water supply sources and interconnections as needed	More than one goal.	Water & Wastewater Utility Projects	Planning & Selectmen	>\$1M	DWSRF; FEMA HMA; STEAP	07/2026 - 06/2028	High	Drought/Wildfire	No	19	8	152
MB7	Prepare a forest fire suppression study.	Reduce losses from other hazards.	Prevention	Fire Department	\$10,000 - \$50,000	FEMA HMA	07/2025 - 06/2026	Medium	Wildfires	No	18	5	90
MB8	Develop a comprehensive tree management plan that addresses the growing concern of dead and dying trees within the town.	Reduce losses from other hazards.	Natural Resources Protection	Planning & Public Works	\$10,000 - \$50,000	Municipal Operating Budget	07/2025 - 06/2026	High	Hurricanes and Tropical Storms/Tornadoes and High Winds/Severe Winter Storms	No	19	5	95
MB9	Develop a town wide heat Management plan for vulnerable populations including senior citizens.	Address risks associated with extreme heat events, especially as they interact with other hazards.	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$50,000	Municipal Operating Budget	01/2025 - 12/2025	High	Extreme Heat	No	18	6	108
MB10	Watch the DEEP Chemical Management and Climate Resilience Webinar: https://portal.ct.gov/DEEP/P2/Chemical-Management-and-Climate-Resilience/Chemical-	Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency	Education and Awareness	Emergency Management	\$0-\$10,000	Municipal Operating Budget	01/2025-12/2025	Low	Riverine and Pluvial Floods	No	17	7	119

Number	Hazard Mitigation and Climate Adaptation Actions	Hazard Mitigation and Climate Adaptation Goal	Type of Action	Responsible Department	Approx. Cost Range	Potential Funding Sources	Timeframe	Priority	Hazard(s)	EI?	PERSIST Score	STAPLEE Score	PERSIST x STAPLEE =
	Management-and-Climate-Resilience	and severity of floods.											
MB11	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency and severity of floods.	Education and Awareness	Floodplain Manager	\$0-\$10,000	Municipal Operating Budget	01/2025 and annually during this month	Medium	All Hazards	No	17	6	102
MB12	Review the Connecticut Cultural Resource Information System (ConnCRIS) to identify and understand historic and archaeological resources in areas of hazard risks found here: https://conncris.ct.gov .	Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency and severity of floods.	Property Protection	Planning	\$0-\$10,000	SHPO; Municipal Operating Budget	01/2026 - 12/2026	Medium	Wildfires/Tornadoes and High Winds/Riverine and Pluvial Floods	No	18	9	162
MB13	Update town website to include hazard mitigation and emergency preparedness tips for town residents, including sections corresponding to each hazard considered in this Plan Update.	More than one goal.	Education and Awareness	Planning & Emergency Management	\$0-\$10,000	Municipal Operating Budget	01/2025 - 12/2025	Medium	All Hazards	No	17	7	119

Figure 21-1: CIRCA Environmental Justice Rank and Critical Facilities, Marlborough

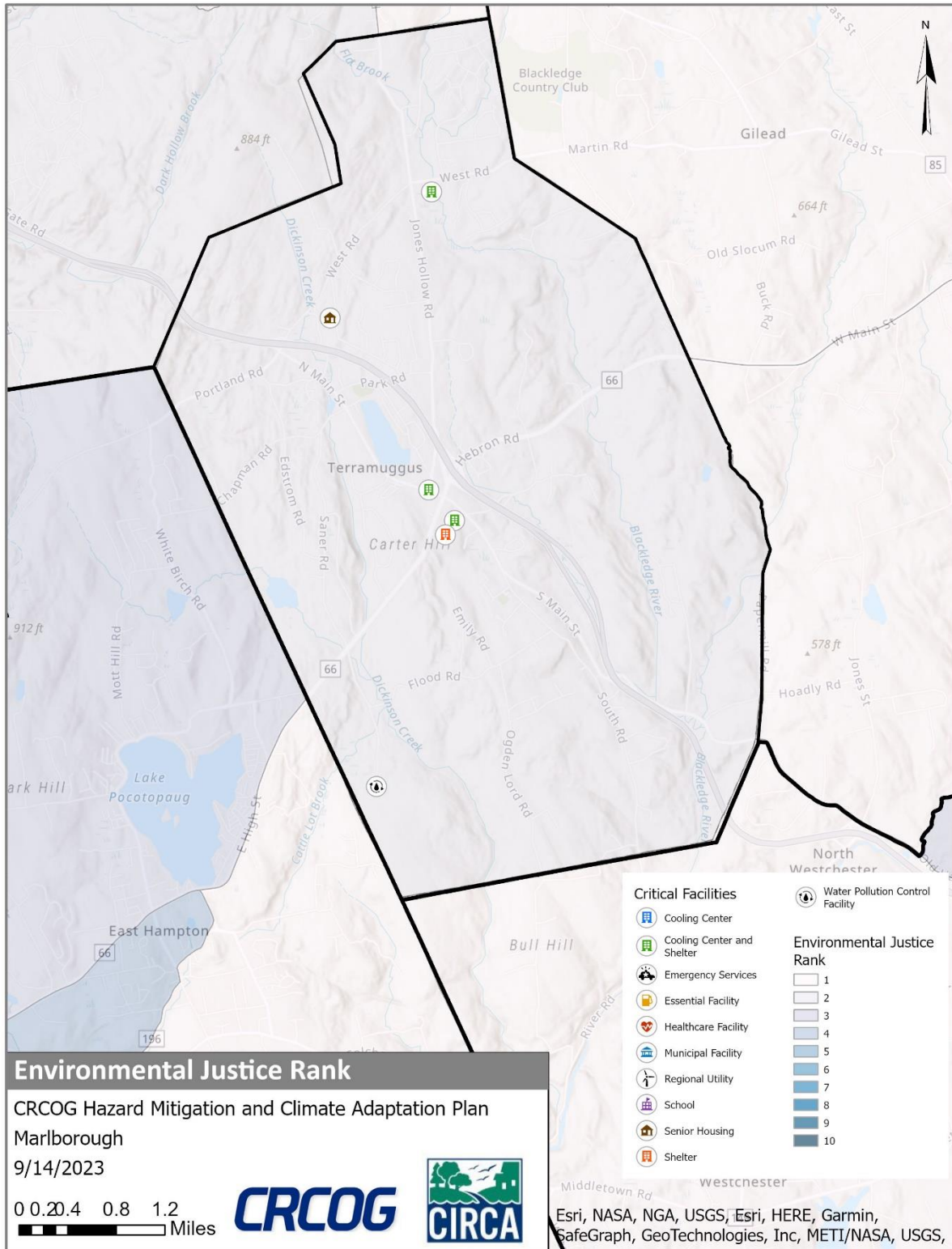


Figure 21-2: FEMA Flood Zones and Critical Facilities, Marlborough

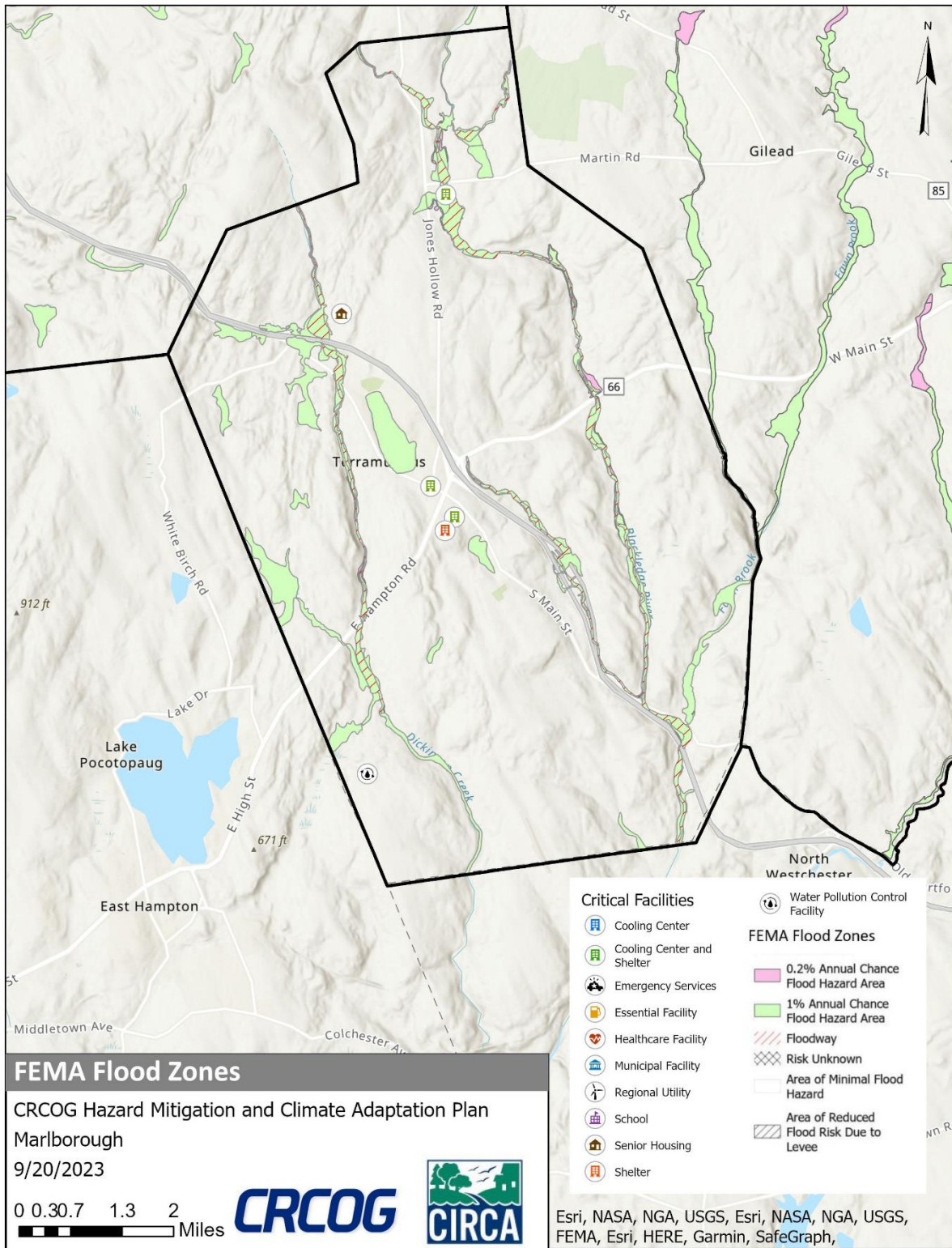


Figure 21-3: CIRCA Flood CCVI and Critical Facilities, Marlborough

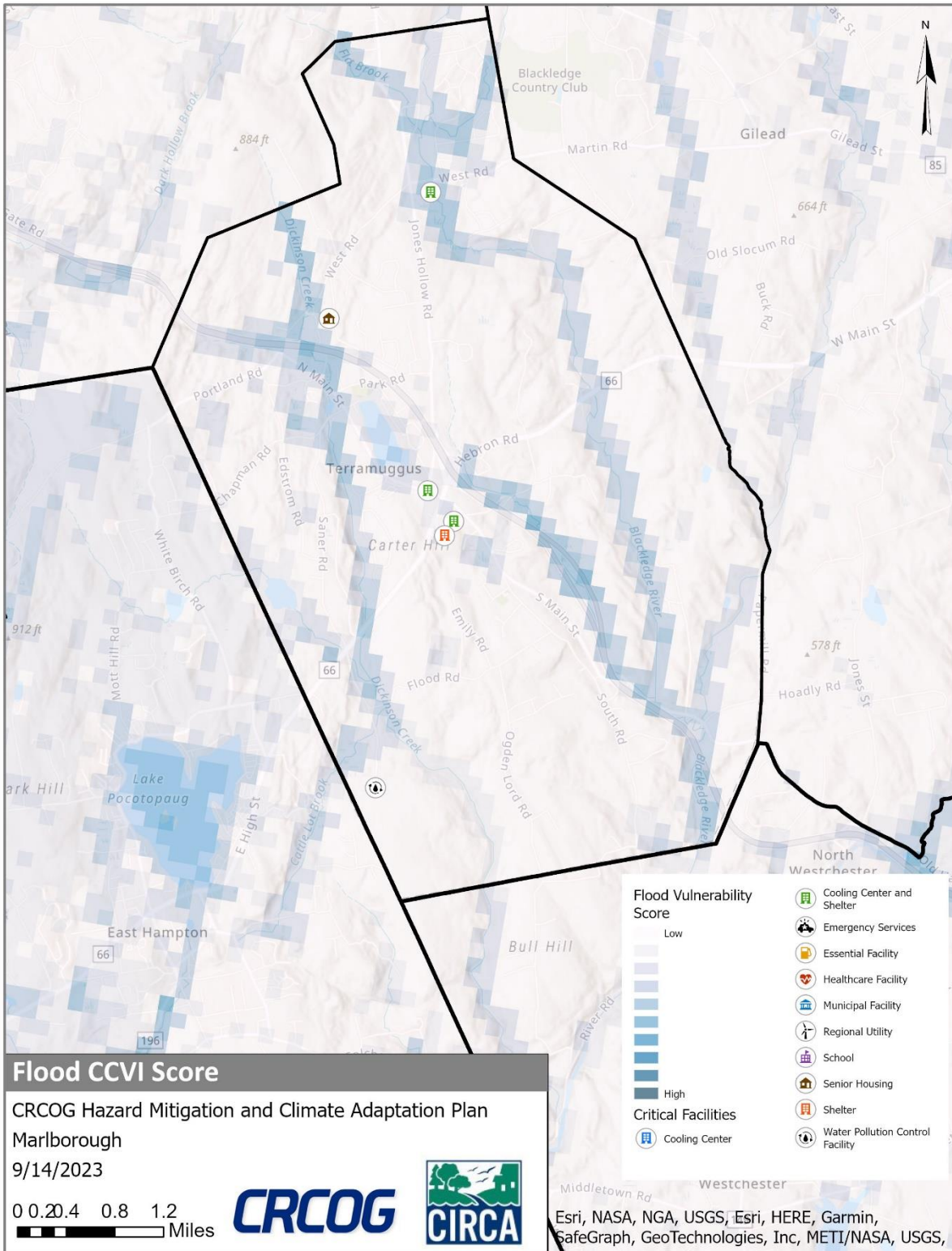


Figure 21-4: CIRCA Heat CCVI and Critical Facilities, Marlborough

