



## 15 Glastonbury

### Community Overview

The Town of Glastonbury encompasses 51.37 square miles with an estimated population of over 35,159 people. The elevation ranges from about 80 to 800 feet. The Town lies primarily in the Main Stem of the Connecticut River drainage basin while a small portion in the northeast corner of Glastonbury drains to the Hockanum Watershed. In addition to the Connecticut River which flows along the western boundary, main watercourses include Hubbard, Roaring, Salmon and Slab Gut Brooks. Major transportation routes through Glastonbury include Routes 2, 3, 17, 83 and 94. Glastonbury's major industries include insurance and financial services, technology and banking, computer services, medical and adult care facilities, agriculture, as well as retail.

Since the previous plan update, development has been limited to mostly residential development, none of which are in flood-prone areas. Several large multi-family projects include apartments at Main and Hebron Avenue, Nye Road development, a mix of apartments and townhouses, and a 74-unit Pratt Street development. Additionally, there has been a development proposal suggested on Feldspar Rd in Glastonbury. Although Town staff has informally assessed this proposal, there is currently no regulatory application awaiting review. As far as town staff know, there are no plans to submit such an application in the near future. Finally, there's potential for a hotel project north of the town center, off Glastonbury Boulevard, with early plans suggesting a 5-story structure. Development/redevelopment is not increasing risk to natural hazards.

### Critical Facilities

Critical Facilities throughout the Capitol Region are listed in Appendix B. A number of Glastonbury critical facilities are listed here.

The Town's Emergency Operations Center (EOC) is now located in the Academy building. This complex is provided with Emergency generator power.

The High School is the primary shelter. The Community Center serves as the secondary shelter. Emergency supplies are kept at the Facilities Maintenance Barn located adjacent to the EOC, Town Hall, and Police Department; an emergency generator was being installed at the Facilities Maintenance barn as this HMP was being developed. Numerous charging and warming centers are dispersed throughout the town, given its large size.

**Table 15-1: Critical Facilities, Glastonbury**

Facility	Shelter	Cooling Center	Generator
Town Hall			X
Police Department			X
Glastonbury High School	Primary		X
Glastonbury East Hartford Magnet School			X
Riverfront Community Center	Secondary	X	X
Facilities Maintenance Barn (Emergency Supply Storage)			X
Four Volunteer Fire Stations			X
Eight (8) Sewage Pumping Stations			X

Facility	Shelter	Cooling Center	Generator
Center Village			X
Village Green & Knox Lane Annex			X
Herbert T. Clark Housing			X
Genesis Health Care Facility			X
Mountain Laurel Health Care Facility			X
Naubuc Green			X
Ambulance Facility			X
Welles Turner Library		X	
Waste Water Treatment Plant			
Academy Building (EOC)			X
Four (4) MDC Water Pumping Stations			
2 Eversource Substations			

During extreme heat events, Glastonbury Riverfront Community Center and Welles Turner Library can both be opened as public cooling centers. The Riverfront Community Center does not have a fixed-in-place generator but can be hooked up to a mobile generator. The Riverfront Community Center is also the town’s backup shelter. The library does not have a generator.

### Capabilities

Hazard mitigation is addressed specifically in Glastonbury’s Plan of Conservation and Development.

Nearly 92% of land at risk of flooding in Glastonbury is in the Flood Zone or otherwise zoned for resource protection /agriculture, recreation or public use. Development is generally restricted from the floodplain. The Town adopted enhanced Inland Wetlands and Watercourses Regulations in 2010 which could reduce its overall level of vulnerability.

Glastonbury coordinates tree-trimming near powerlines and power outage prevention and response with the regional energy provider (Eversource). This relationship has been positive and trimming efforts have been effective at minimizing outages. Some work has been controversial, as property owners near the lines are upset about the extent of clearing.

Glastonbury has acquired emergency generators using taxpayer funds. A STEAP grant for \$300,000 (approximate) provided funding for transitioning the Facilities Maintenance Barn to an emergency preparedness support facility.

The Town has undertaken a lot of work over the past few years in response to the storms of 2011. They have found it helpful to post written and electronic messages in town during events.

Several bridge and drainage projects have been completed by the Town since the previous HMP. A major drainage project underway at Tryon Street and Dug Road should reduce flooding in South Glastonbury. The Blackledge River Dam has been removed.

Glastonbury has a Fire Marshal; this official requires construction of new cisterns or dry hydrants as is deemed necessary.

Glastonbury was awarded the Silver Certification within the SustainableCT program in October 2018.

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.
- Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.
- Conduct outreach to private property owners encouraging them to remove dangerous trees and branches on their property.
- 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.
- Apply the same flood damage prevention guidelines to the Connecticut River floodplain and other isolated flood zones not associated with Roaring Brook, Salmon Brook, Grindle Brook, and Meadow Drain.

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

## Challenges

### Challenges Overview

Glastonbury has experienced disruptions and damages due to flooding and severe storms. Specific locations mentioned by town staff include Forest Lane, Shoddy Mill Road, the low end of Tryon Street, almost at Portland line and Naubuc Ave (although this has not flooded recently). In addition, there's an area near Ferry Lane that sometimes floods, but this is not a major concern for the town. Challenges also stem from the increased frequency of intense precipitation events. Drainage system capacity issues have been revealed during such events and resulting high groundwater tables contribute to continuous flow through aged metal drainage pipe, thereby contributing to premature deterioration.

Droughts tend not to be a significant hazard in Glastonbury; however, some residents on private wells use significant amounts of water for turf irrigation, which can have an impact on groundwater supplies. In addition, Uranium in private wells has been an issue in certain parts of town.

A concentration of lower-income housing is located on the north side of town near Harris Street / Deming Road / off Griswold, which may not have air conditioning. If these facilities don't have A/C, this could pose a threat during extreme storms.

Town staff noted that there has been an increase in the number of assisted living facilities in town over the past few years.

Town staff also noted that they are working with DEEP to identify hazards in the CT River if there was an oil spill from the north.

### 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 Glastonbury. 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 15-2: Average Annualized Losses, Glastonbury**

Hazard	Source	Average Annualized Losses (AAL)
Hurricanes/Tropical storms	NCEI	\$90,352.60
	NRI	\$1,734,145.66
	FEMA PA	\$48,189.83
Tornados/High Winds	NCEI	\$33,826.36
	NRI	\$321,601.42
Winter Storms	NCEI	\$26,796.53
	NRI	\$23,066.57
	FEMA PA	\$18,520.62
Flood	NCEI	\$27,387.16
	NRI	\$105,100.00
	NFIP	\$3,237.53
Drought	NRI	\$106,247.25
	USDA	\$57,250.45
Extreme Heat	NRI	\$40,335.12
Wildfire	NRI	\$3,438.59
Earthquakes	NRI	\$56,595.50
Dam Failure	HMP	\$62.00

*Losses Summary*

A review of the above loss estimates demonstrates that the Town of Glastonbury 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 a number of actions to reduce the flooding on Forest Lane, Shoddy Mill Road, Tryon Street, and Naubuc Ave including installing additional drainage systems and/or improving existing ones, continue to regularly maintain and clear stormwater drainage infrastructure and or develop an early warning system to alert residents in advance of potential floods and severe storms.
- The town should consider ensuring that the assisted living facilities and lower-income housing facilities have A/C and/or easy access to cooling centers during extreme storms
- To address uranium in private wells, the town should work with homeowners to find a new water sources.
- The town should continue to work with residents with private wells and educate them on proper water usage during droughts.

## Status of Previous Mitigation Strategies and Actions

The community reviewed the mitigation actions proposed in the 2019 Capitol Region Natural Hazards Mitigation Plan Update and determined the status of each. That information is included in the table below.

**Table 15-3: Status of Previous Mitigation Strategies and Actions, Glastonbury**

No.	Action	Notes	Status
11	Update the Town-wide storm drainage management program/Master Drainage Studies. Provide recommendations pertaining to the latest innovative techniques to manage stormwater quality and quantity, such as biofilters and rain gardens.	Related to Master Drainage studies completed for various watershed areas in Town. The existing documents date back to the 1980's. These studies are very comprehensive and look at not only general strategies but also look at specific system component condition/capacity. Replicating this level of detail in updating the plans would require a significant Capital funding appropriation. No such appropriation is currently in place and it is difficult to envision such going forward given the many competing projects and limited resources. Nonetheless, the existing documents still provide good information and general guidance for consideration. It is likely that we will simply continue with current practice.	Remove/Retire
10	Update the Storm Drainage Management Reports prepared for the Roaring Brook, Salmon Brook, Grindle Brook and Meadow Drain watersheds to ensure their continued use as policy guidelines for development within these areas to prevent downstream flooding, erosion, and property damage.	Related to Master Drainage studies completed for various watershed areas in Town. The existing documents date back to the 1980's. These studies are very comprehensive and look at not only general strategies but also look at specific system component condition/capacity. Replicating this level of detail in updating the plans would require a significant Capital funding appropriation. No such appropriation is currently in place and it is difficult to envision such going forward given the many competing projects and limited resources. Nonetheless, the existing documents still provide good information and general guidance for consideration. It is likely that we will simply continue with current practice.	Remove/Retire
5	Apply the same flood damage prevention guidelines to the Connecticut River floodplain and other isolated flood zones not associated with Roaring Brook, Salmon Brook, Grindle Brook, and Meadow Drain.	Policies in place do adequately prevent flood damage in the CT River Flood Plain. In fact, an argument can be made that Regulations are overly restrictive.	Capability/Remove
1	Complete the Tryon Street and Dug Road drainage project to reduce flooding in South Glastonbury.	Drainage outfall to the CT River completed along with system installations over the westerly half of the road. Additional drainage construction and road construction being considered for the eastern half of the road.	Complete/Retire

No.	Action	Notes	Status
12	Identify long-term stream channel erosion problems and prioritize for remediation. Include specific remediation projects in the next HMP update.	The Town has a long standing Policy of not becoming involved in maintenance of water courses where they are located on private property. Water courses which flow over publicly owned land are treated differently. Currently the Town is not aware of any severe stream channel erosion problem on Town land, however we would look to address such should we encounter such a situation.	Carry Forward with Revisions
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.	The town staff don't believe there are many businesses in low-lying flood areas for which this would be a concern. Glastonbury has local flood zoning that prevents many uses within a flood zone. This is no longer a need and can be removed.	No longer needed / Retire
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.	Glastonbury is on track with MS4. This is a capability.  Five town-owned facilities have new stormwater pollution prevention plans.	Capability / Retire
4	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	. Community Development staff are relatively new to their positions and will intend on future involvement with relevant courses and conferences.	Capability / Retire
6	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	The town has its own sewer and eight town-owned sewer pump stations.  For water, the western part of town is supplied by MDC potable water. The eastern section is the Town of Manchester potable water. There are four MDC pumping facilities in town, all water.	Retire
7	Conduct outreach to private property owners encouraging them to remove dangerous trees and branches on their property.	The town has a tree warden and money in the budget to address tree problems that are town-owned. The town also worked with Eversource to coordinate taking out trees in the power right-of-way.  In terms of private trees, the town will sometimes send a letter asking private landowners to take action. So this is a capability.	Capability / Retire
8	Adopt best-practices guidelines for contractors performing major tree clearing projects to minimize impacts on drainage.	The town environmental planner would review any proposals for subdivisions with implications for wetland areas or sensitive areas. Seems like the intent of this action has been achieved.	Complete / Retire
13	Make progress with the hazard mitigation goals associated with SustainableCT certified actions.	The town is certified silver.	Complete / Retire

No.	Action	Notes	Status
9	Carry out a campaign to educate property owners on the impact of using water, especially private well water, to irrigate turf during droughts. Include alternative options.	<p>The town has a number of homes with private wells. Drought is still a concern of the town for this reason.</p> <p>Town staff think that messaging would be sent out if there was a drought, but it might be on a case-by-case basis.</p>	Carry forward, perhaps with revisions?
14	Promote the use of drywells and other infiltration structures to direct runoff and precipitation into structures for groundwater recharge	<p>Significant progress has been made relative to this item. MS4 compliance and discharge water quality requirements are referenced with respect to Development and re-development projects.</p> <p>The land use regulations have some groundwater protection areas</p>	Carry forward, perhaps with revisions to be more achievable ?
15	Adopt new Drought Ordinances that reflect and promote the findings and recommendations of the 2003 Connecticut Drought Preparedness and Response Plan (or future updates to that document).	<p>The town does not have a drought ordinance. Revise to something more achievable / useful.</p>	Revise
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.	<p>The town has a lot of historic structures. The town already has access to the new SHPO layer, so this can be considered a capability. The town is not looking to do more surveys, so that part of the action is no longer a need.</p>	Capability / Retire



## 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.

**Table 15-4: Active Mitigation Strategies and Actions, Glastonbury**

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?	PERSISTS Score	STAPLEE Score	PERSISTS x STAPLEE =
GB1	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; IIJA BBFP	07/2024 - 06/2026	High	Extreme Heat	No	19	3	57
GB2	Identify long-term stream channel erosion problems on Town land and prioritize for remediation. Include specific remediation projects in the next HMP update.	Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency and severity of floods.	Natural Resources Protection	Public Works	\$50,000 - \$100,000	DCRF; FEMA HMA; NOAA/NFWF	07/2025 - 06/2027	High	Riverine and Pluvial Floods	No	19	5	95
GB3	Promote the use green infrastructure to increase infiltration and reduce runoff.	Reduce flood and erosion risks by reducing vulnerabilities and consequences, even as climate change increases frequency and severity of floods.	Natural Resources Protection	Planning	\$0- \$10,000	Municipal Operating Budget	07/2024- 06/2025	High	Riverine and Pluvial Floods	No	19	7	133
GB4	Adopt a drought ordinance based on the current model ordinance provided by the state.	Reduce losses from other hazards..	Natural Resources Protection	Planning	\$0- \$10,000	Municipal Operating Budget	01/2025 - 12/2025	High	Drought	No	19	9	171
GB5	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	Structural Project	Public Works	\$10,000 - \$50,000	DCRF; Municipal CIP Budget	07/2025 - 06/2027	Medium	Riverine and Pluvial Floods/ Tidal Connec	No	18	6	108

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	PERSISTS x STAPLEE =
		increases frequency and severity of floods.							ticut River Flooding				
GB6	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
GB7	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	Fire Department	>\$1M	DWSRF; FEMA HMA; STEAP	07/2026 - 06/2028	High	Drought /Wildfire	No	19	8	152
GB8	Work with the Connecticut Institute for Resilience and Climate Adaptation (CIRCA) to develop an appropriate scope of work to address flooding and extreme heat concerns in Resilient Opportunity Areas (ROARs).	More than one goal.	More than one type	Public Works	\$0-\$10,000	CIRCA	07/2024 - 06/2027	Medium	Riverine and Pluvial Floods/ Extreme Heat/Tidal Connecticut River Flooding	No	18	5	90
GB9	Participate in EMI and DEMHS courses or the seminars and annual conference held by CIRCA and 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	High	All Hazards	No	18	6	108
GB10	Educate property owners on a case-by-case basis on the impact of using water, especially private well water, to irrigate turf	Reduce losses from other hazards..	Education and Awareness	Planning	\$0-\$10,000	Municipal Operating Budget	01/2025 and annually during this month	High	Drought	No	18	7	126

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 =
	during droughts. Include alternative options.												
GB11	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	Community Development	\$0-\$10,000	Municipal Operating Budget	01/2025 - 12/2025	Medium	All Hazards	No	17	7	119

Figure 15-1: CIRCA Environmental Justice Rank and Critical Facilities, Glastonbury

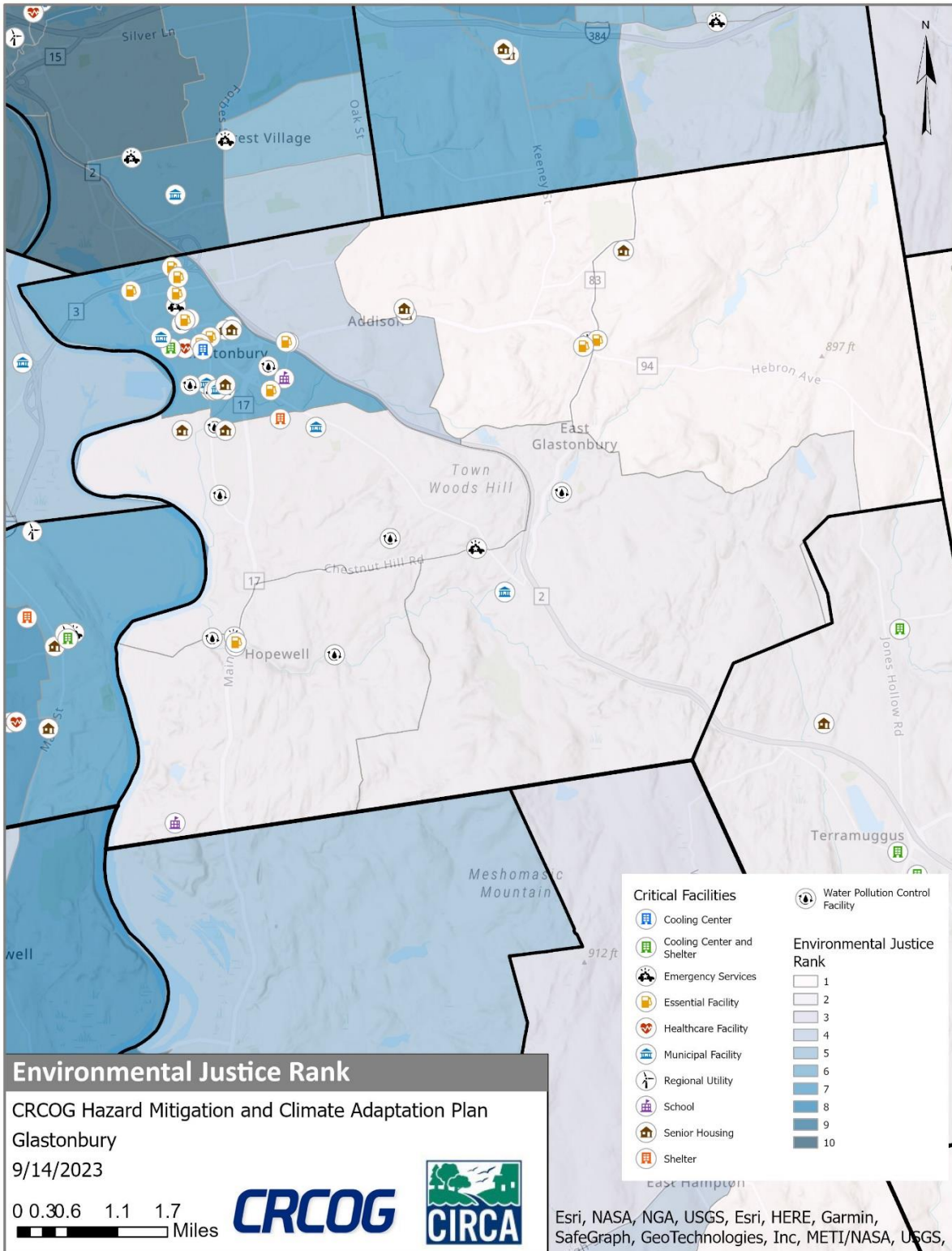




Figure 15-2: FEMA Flood Zones and Critical Facilities, Glastonbury

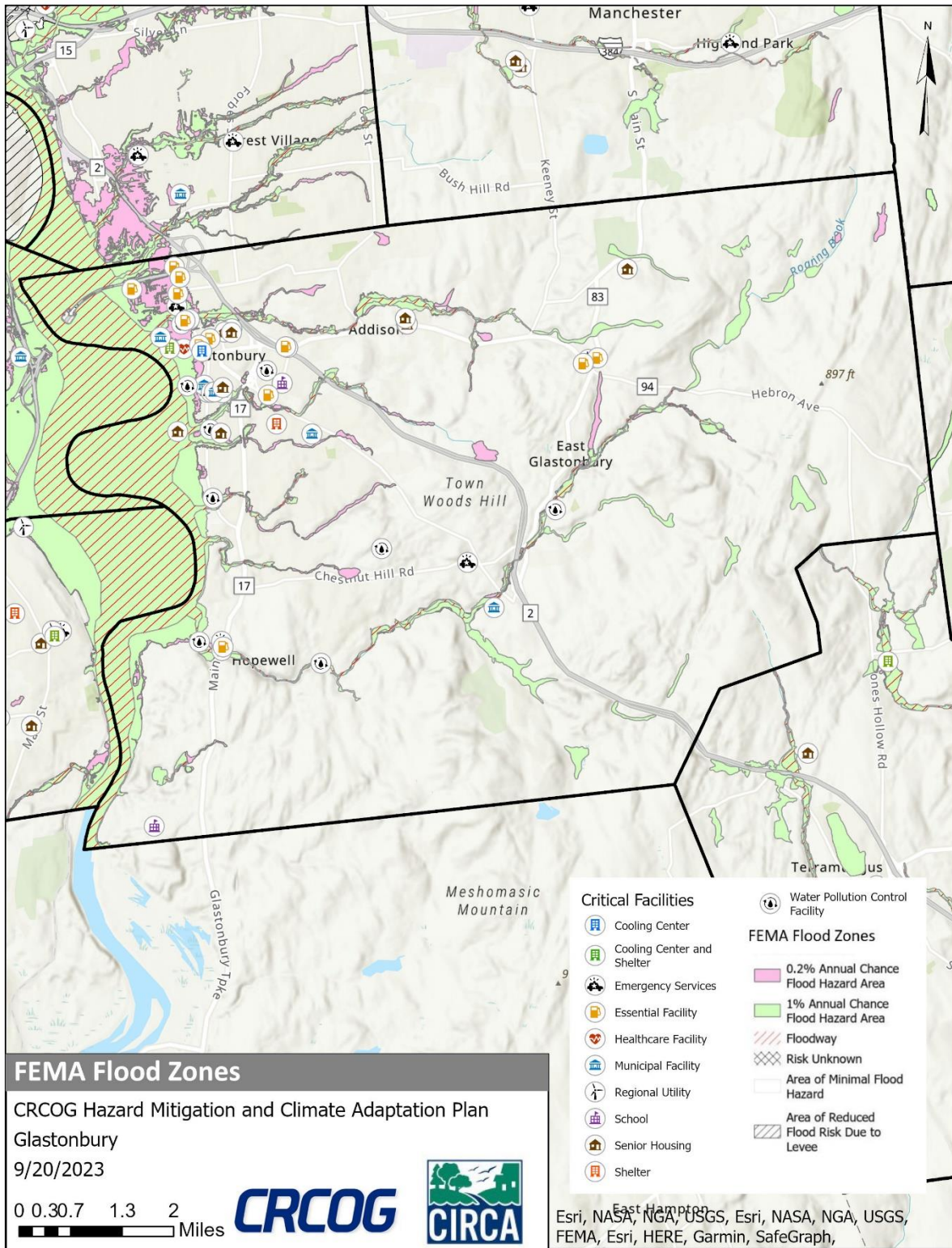


Figure 15-3: CIRCA Flood CCVI and Critical Facilities, Glastonbury

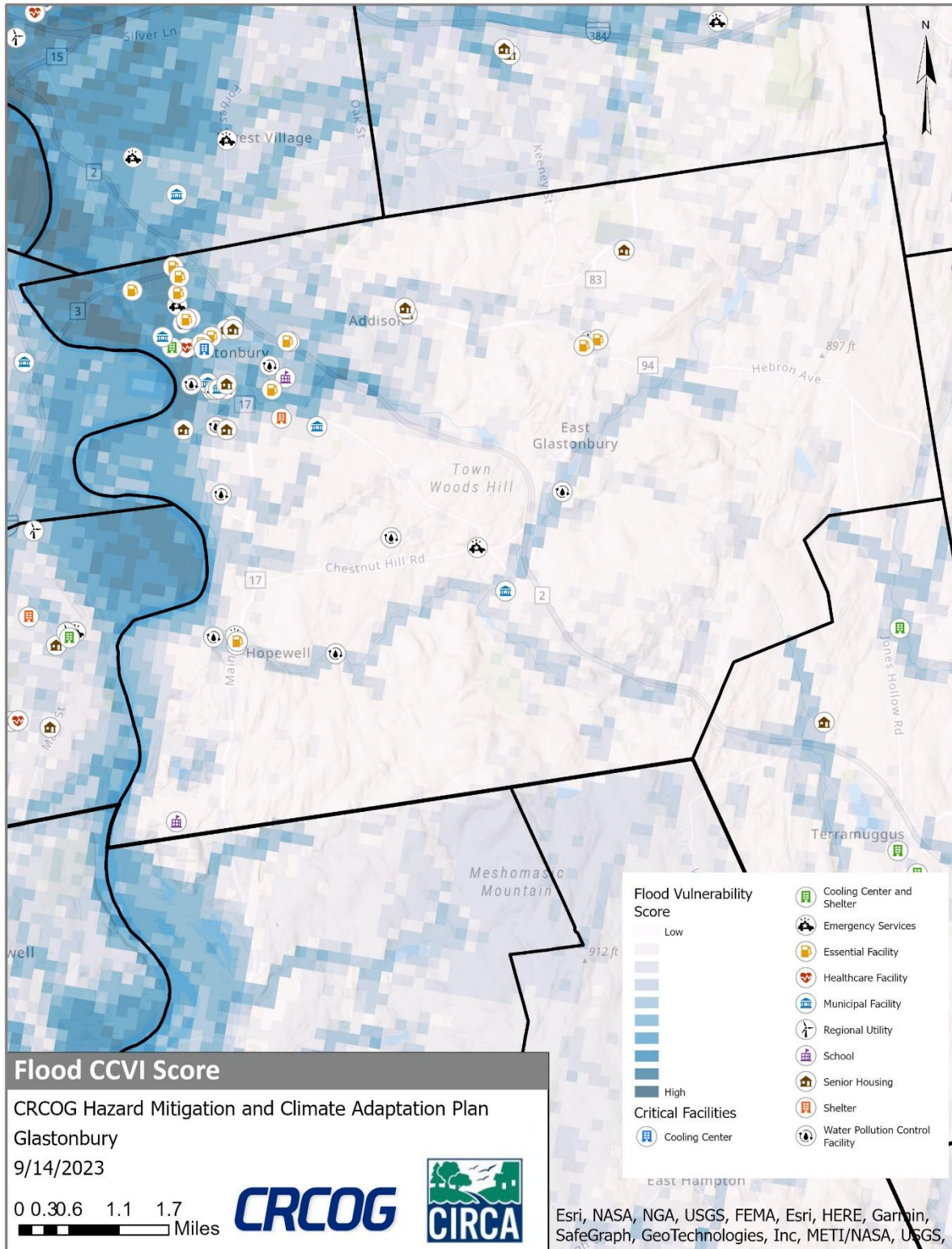




Figure 15-4: CIRCA Heat CCVI and Critical Facilities, Glastonbury

