Resilient CT 2.0 - Synthesis Report

April 2025

CIRCA

Connecticut Institute for Resilience and Climate Adaptation

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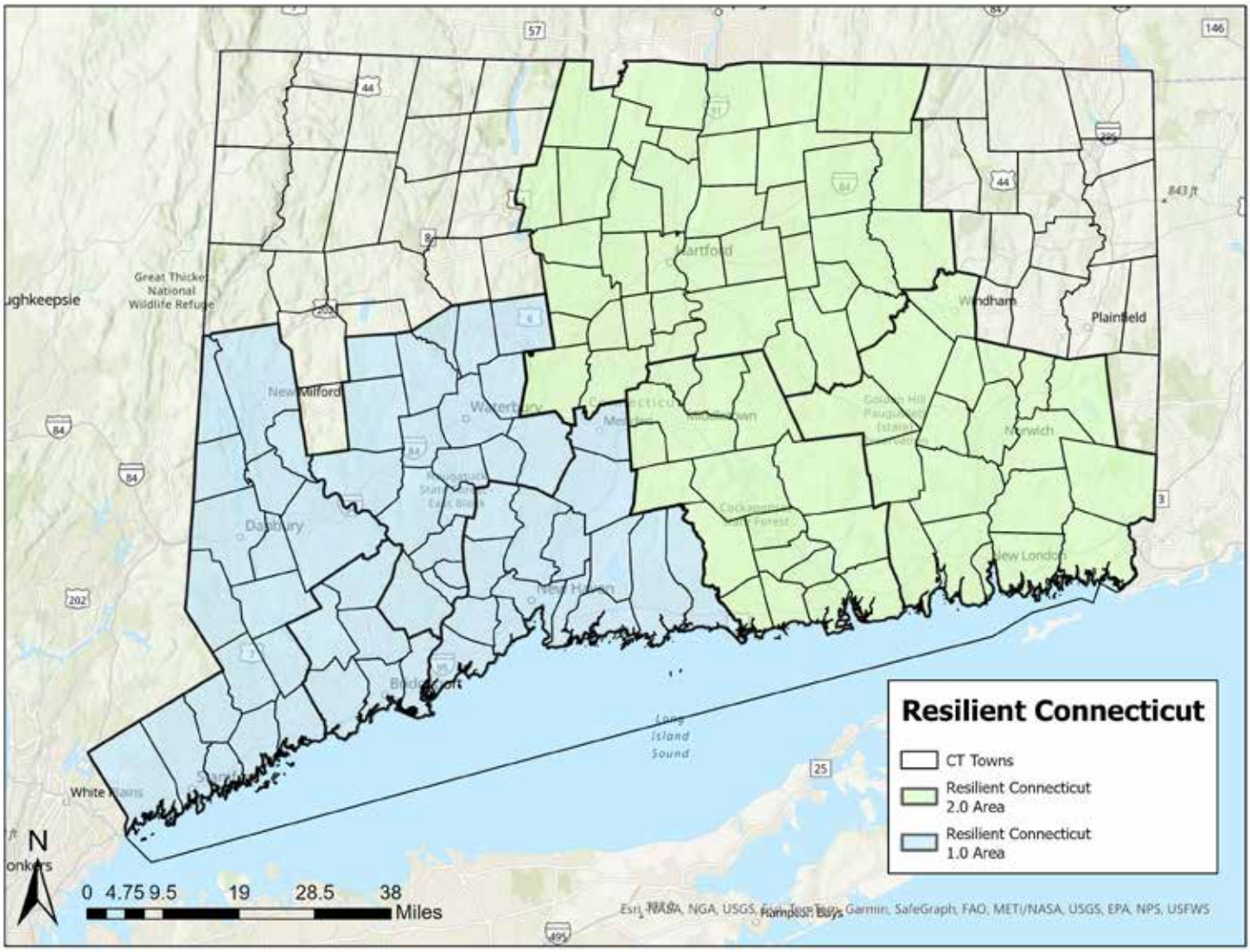
Table of Acronyms

BCA:	**Benefit-Cost Analysis**
CCVI:	**Climate Change Vulnerability Index**
CIRCA:	**Connecticut Institute for Resilience and Climate Adaptation**
COG:	**Council of Governments**
CRCOG:	**Capitol Region Council of Governments**
DEEP:	**Department of Energy and Environmental Protection**
FEMA:	**Federal Emergency Management Agency**
FMA:	**Flood Mitigation Assistance (FEMA grant program)**
GIS:	**Geographic Information Systems**
HMGP:	**Hazard Mitigation Grant Program (FEMA grant program)**
HMP:	**Hazard Mitigation Plan**
HUD:	**Department of Housing and Urban Development**
OPM:	**Office of Policy and Management**
NDRC:	**National Disaster Relief Competition**
RiverCOG:	**Lower Connecticut River Council of Governments**
ROAR:	**Resilience Opportunity Area**
SECOG:	**Southeastern Connecticut Council of Governments**
TOD:	**Transit-Oriented Development**
UConn:	**University of Connecticut**
WWTP:	**Wastewater treatment plant**
ZSR:	**Zone of Shared Risk**

1. Goals and Objectives of Resilient Connecticut 2.0

Resilient Connecticut 2.0 is an expansion of an earlier project, Resilient Connecticut 1.0, which originated from a successful State application to the HUD National Disaster Resilience Competition (NDRC) after Superstorm Sandy resulted in significant storm damage in Fairfield and New Haven Counties. Resilient Connecticut 1.0 was conducted by the Connecticut Institute for Resilience and Climate Adaptation (CIRCA) and sought to identify and address climate drivers of flood and extreme heat vulnerability in the two-county project area. The Resilient Connecticut Planning Framework emphasized the identification of vulnerabilities and risk reduction opportunities associated with transit-oriented development areas (TOD), affordable housing assets, and critical regional infrastructure. Products from Resilient Connecticut 1.0 included the following set of spatial data tools for Fairfield and New Haven Counties: the Climate Change Vulnerability Index (CCVI), a grid-based spatial index representing relative flood and heat vulnerabilities; Zones of Shared Risk (ZSR), a spatial layer identifying areas where flood-related risks are shared by a specific neighborhood or community; and Resilience Opportunity Areas (ROARs), areas with overlapping climate-related challenges that are suitable for developing resilience projects. The Resilient Connecticut 1.0 program began in 2018 and by the end of 2023 led to the completion of seven site planning projects in Danbury, Fairfield, Stratford, Ansonia, Branford, New Haven, and Norwalk.

In 2021, CIRCA received additional state funding to expand the Resilient Connecticut program, with additional focus on the regions covered by the Lower Connecticut River Valley, Southeastern Connecticut, and Capitol Region Councils of Governments. A subsequent FEMA award provided additional federal funding to supplement this effort. During Resilient Connecticut 2.0, the CCVI tool was expanded to cover the full extent of the state of Connecticut, and ZSRs were delineated for the municipalities and tribal nations in each of these three COG regions. Like 1.0, Resilient Connecticut 2.0 seeks to identify and address climate drivers of flood and extreme heat vulnerability across the extended project area. The planning framework in these regions was revised to explore a wider range of vulnerabilities outside the previous focus on TOD, affordable housing, and regional infrastructure. Resilient Connecticut 2.0 began in the Fall of 2021 and is still under way as of the time of writing in Spring 2025 with seven additional site planning projects in progress: East Haddam, Portland, Stonington Mystic, the Yantic River Corridor (Norwich, Bozrah, Franklin), Jewett City (Griswold), East Hartford and the Piper/ Webster Brook Corridor (Newington, Berlin, New Britain).



Resilient Connecticut 1.0 and 2.0 Project Areas

2. Regions of Focus:

2.1 RiverCOG Region:

The RiverCOG region encompasses 17 communities along the southernmost stretch of the Lower Connecticut River. Communities in this region face coastal, riverine, and pluvial flooding. Tributaries of the Connecticut River in the region include the Mattabesset River, Salmon River, Deep River, Eightmile River, Falls River, and Black Halls River. The region's urban center is the City of Middletown, while other municipalities have largely rural settings, small village centers, and low population density. Development is concentrated along the shoreline and the Connecticut River. TOD is limited, although local and regional rail lines run through the coastal municipalities and two ferry lines cross the Connecticut River within the region. Highways include I-95, Rt 9, and Rt 66. Travel within much of the region requires a personal vehicle.

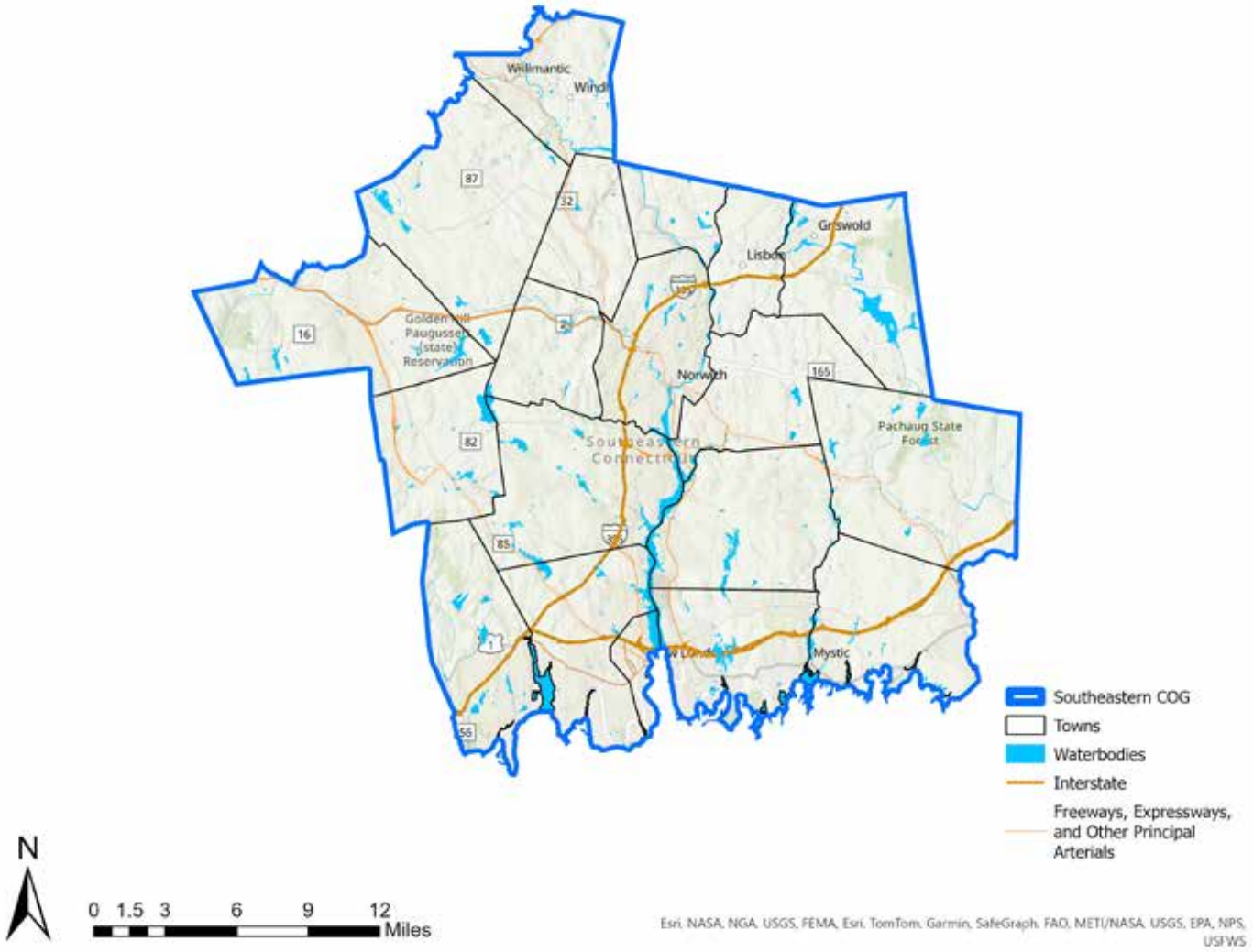
In addition to a regional Hazard Mitigation Plan, RiverCOG has completed a Bicycle & Pedestrian Plan, a GrowSMART Plan, a Metropolitan Transportation Plan, a Regional Housing Plan, a Regional Plan of Conservation and Development, a Lower Connecticut River Valley Transit Study, and a Rt 66 Transportation Study.

Lower Connecticut River Valley Council of Government (RiverCOG): A focus region for Resilient Connecticut 2.0

2.2 SECOG Region:

The SECOG region includes 22 towns, cities, and boroughs in the southeastern corner of Connecticut, reaching the Long Island Sound to the south and the Rhode Island border to the east. Two federally-recognized tribal nations – the Mohegan Tribe and the Mashantucket Pequot Tribal Nation – are also affiliated with this COG. Communities in this region face coastal, riverine, and pluvial flooding. Major rivers in the region include the Thames River, the Quinebaug River, the Shetucket River, the Yantic River, the Pawcatuck River, the Willimantic River, and the Mystic River. Many critical facilities and regional assets are located in flood-vulnerable areas, such as the historic resources and tourist attractions of Mystic on both sides of the Mystic River. Some TOD exists along the shoreline, associated with the I-95 corridor and the Amtrak rail line.

SECOG was the first COG in Connecticut to develop a combined Hazard Mitigation and Climate Adaptation Plan, approved by FEMA in 2023, and also previously completed a regional resilience assessment of critical facilities located in or near flood zones. Additional projects from the SECOG planning team include transportation planning, conservation and development planning, wastewater management planning, economic development planning, affordable housing planning, and more.

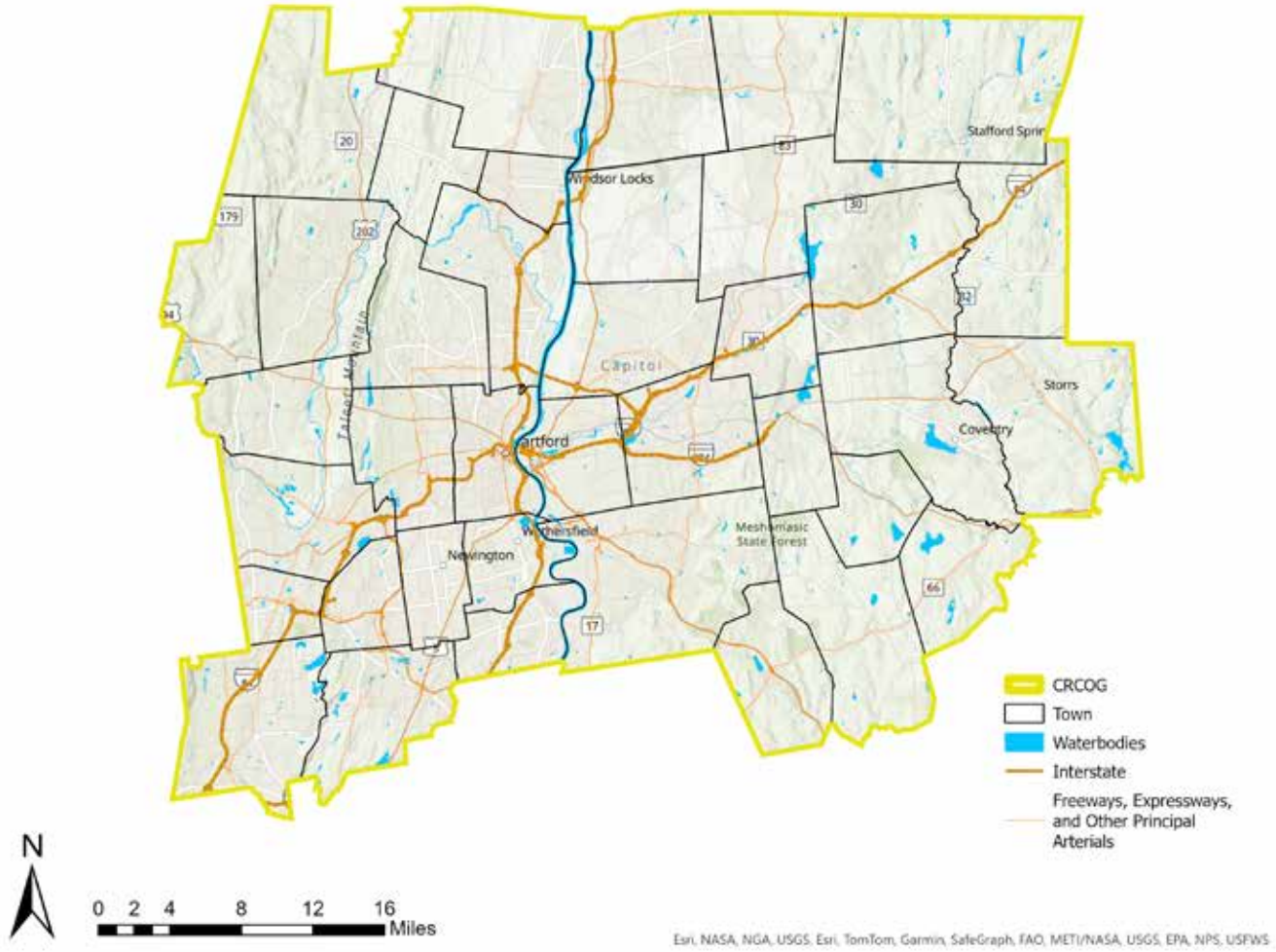


Southeastern Connecticut Council of Government (SECOG): A focus region for Resilient Connecticut 2.0

2.3 CRCOG Region

The Capitol Region Council of Governments is the largest COG in Connecticut in both population and area, consisting of 38 member municipalities in the Hartford metropolitan area and its surrounding suburbs. The region is entirely inland, but is susceptible to riverine and pluvial flooding. Major rivers crossing the CRCOG region include the Farmington River, the Connecticut River, the Hockanum River, the Park River, the Quinnipiac River, the Scantic River, and the Willimantic River. There is tremendous variation in the degree of development across CRCOG municipalities, ranging from highly urbanized to largely rural; many CRCOG municipalities report additional ongoing development, particularly in the form of multi-family housing. Regional transportation assets located within CRCOG include much of the I-91 corridor, the CT Rail Hartford Line, and Bradley International Airport.

In collaboration with CIRCA, CRCOG developed the second combined Hazard Mitigation and Climate Adaptation Plan in the state of Connecticut, approved by FEMA in 2024. Additional planning projects coordinated by CRCOG include transportation planning, conservation and development planning, economic development planning, climate action planning, and more.



Capitol Region Council of Government (CRCOG): A focus region for Resilient Connecticut 2.0

3. Phase II Summary:

3.1 Coordination with Regional Hazard Mitigation Plans:

The Resilient Connecticut program is complementary to regional hazard mitigation planning and can be completed in conjunction with the regular updates needed for FEMA hazard mitigation plans. Both SECOG and CRCOG completed hazard mitigation plan updates at the same time as their participation in Resilient Connecticut. RiverCOG's most recent HMP update was adopted in 2021 and so this COG participated in Resilient Connecticut Independent of any HMP update. The complementarities of CIRCA's role in the two planning processes are outlined below:

Hazard Mitigation Plan Update

Through the Hazard Mitigation Plan, COGs and their consultants:

- ***engage*** with municipalities and tribes to identify concerns and priorities
- ***assess*** community vulnerabilities and asset
- ***identify*** opportunities to reduce losses
- ***develop*** hazard mitigation projects for FEMA funding

Resilient Connecticut

Through *Resilient Connecticut*, CIRCA and its partners:

- ***engage*** with municipalities and tribes to identify concerns and priorities
- ***assess*** community vulnerabilities and assets
- ***identify*** opportunities for increased resilience
- ***develop*** pilot projects to directly fund

CIRCA reviewed the most recent HMPs for all the municipalities in RiverCOG, SECOG, and CRCOG, noting any text that identified specific locations experiencing regular flood or heat hazards, such as roads, bridges, culverts, coastal areas, railroad underpasses, residential neighborhoods, etc. CIRCA staff also reviewed the lists of prioritized hazard mitigation actions that each municipality either identified during their planning process or carried over from their previous HMP update.

3.2 Engagement with Regional Councils of Government, Municipalities, and Tribes:

During the spring and summer of 2022, CIRCA staff met with all 17 municipalities in the RiverCOG region, all 22 member communities in the SECOG region (towns, cities, and boroughs), and 2 tribal nations affiliated with the SECOG region. During the spring, summer, and fall of 2023, CIRCA staff met with all 38 municipalities in the CRCOG region (Appendix A). At each meeting, CIRCA staff presented an overview of Resilient Connecticut 1.0 and the plans for Resilient Connecticut 2.0. Data tools such as Zones of Shared Risk and Climate Change Vulnerability Index scores (see later GIS analysis section) were also presented, depending on availability. CIRCA staff and municipal representatives reviewed the prioritized actions from the most recent municipal or regional hazard mitigation plan, noting the status of each action item and highlighting the action items with potential relevance for the Resilient Connecticut 2.0 project pipeline. Finally, all participants had an open discussion about their community's needs related to climate change and natural hazards.

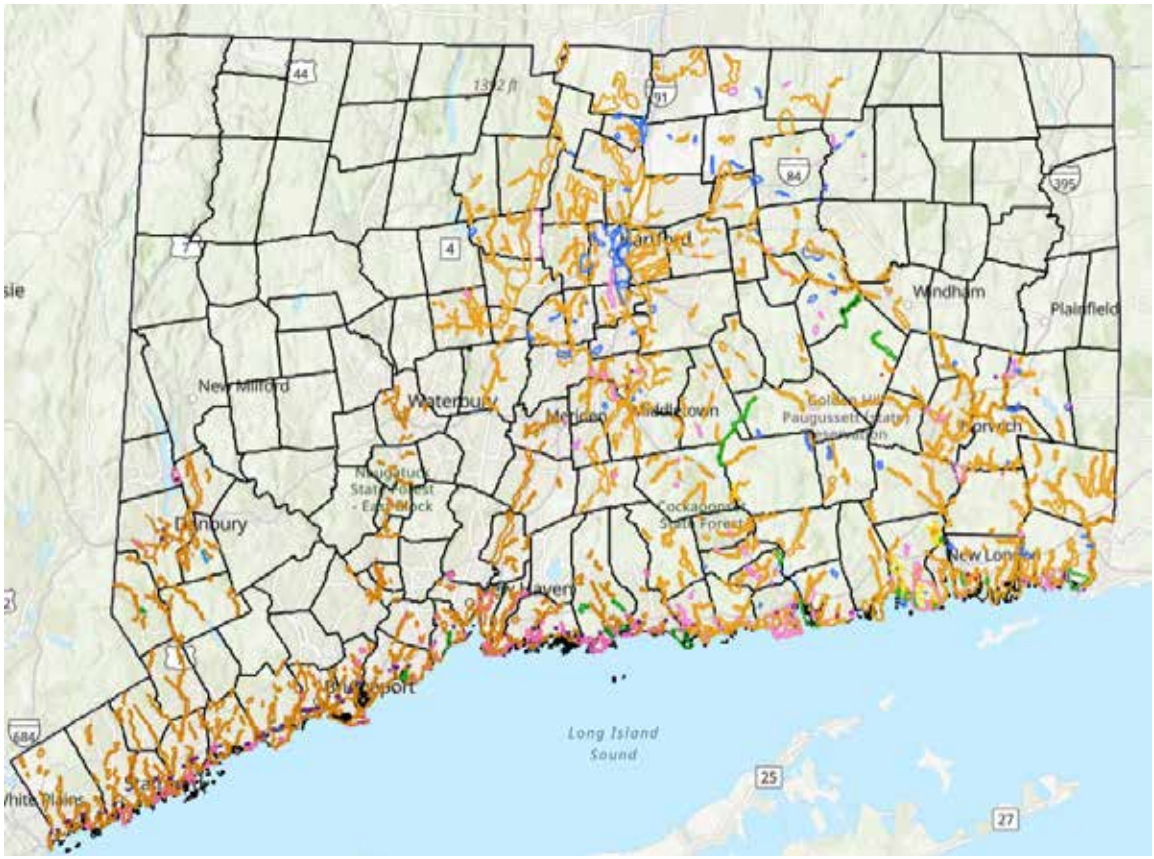
Town Engagement for the Stonington Mystic Project

3.3 GIS Analysis:

CIRCA developed and expanded the tools below as part of the Resilient Connecticut 2.0 initiative to support comprehensive climate resilience planning across the state. These resources are designed to assist planners, municipal officials, and stakeholders in making informed decisions by providing critical data, and visualization tools. For detailed information on the application of these tools during Resilient Connecticut 2.0 to prioritize and select future project sites, please refer to the appendix B included in this report.

3.3.1 Zones of Shared Risk (ZSR):

Zones of Shared Risk (ZSRs) (Miniutti, 2019) are regions that already face common flood-related challenges or may experience these challenges in the future due to climate change. A Zone of Shared Risk (ZSR) includes land, buildings, and infrastructure as well as the hydrological, ecological, social, and institutional elements that contribute to the functioning of a place. These zones were delineated by CIRCA staff based on municipal hazard mitigation plans, coastal resilience plans, input from municipal staff, and GIS overlays of road and flood data. ZSRs serve as a foundation for identifying Resilience Opportunity Areas (ROARs), ensuring that spatial analyses capture critical areas for resilience planning. Zones of Shared Risk were delineated within each municipality in ArcGIS and shared through an interactive map viewer using ArcGIS Online, now available at the following link: https://experience.arcgis.com/experience/dc79359609624ce598ed7132e63ef715/page/Zones-of-Shared-Risk/ An inventory of all digitized ZSRs can be found in Appendix C.



Zones of Shared Risk: A GIS based tool developed by the Connecticut Institute for Resilience and Climate Adaptation (CIRCA)

Types of Zones of Shared Risk (ZSR)

Location ZSR
Contains risks primarily derived from a prevalence of low-lying lands within an area. These lands are vulnerable to flooding caused by increasing sea levels or surges associated with strong storms due to their low elevation.

Access ZSR
Contains risks primarily derived from the ability (or lack thereof) to enter or exit an area due to flooding caused by increasing sea levels or surges associated with strong storms.

Proximity ZSR
Risks primarily derived from adjacency to low-lying, vulnerable lands. These lands are vulnerable by being close to areas that will experience more flooding caused by increasing sea levels or surges associated with strong storms and are likely to experience some flooding of their own.

Natural Protection ZSR
Contains risks to lands that provide natural flooding protection. These lands can attenuate flooding and damage and flooding from storm surges, contribute to both improved water quantity and quality in non-storm events, and provide valuable habitat. This ZSR type often overlaps with the other three types.

Underpass ZSR
While the first four ZSR types have been developed as a result of previous efforts, the underpass ZSR type evolved organically under Resilient Connecticut as these locations are a region-wide challenge experienced by many communities. These ZSRs identify the underpass locations that during heavy precipitation events often flood due to poor drainage and are a source of either disruption due to roadway closure or stranded vehicles.

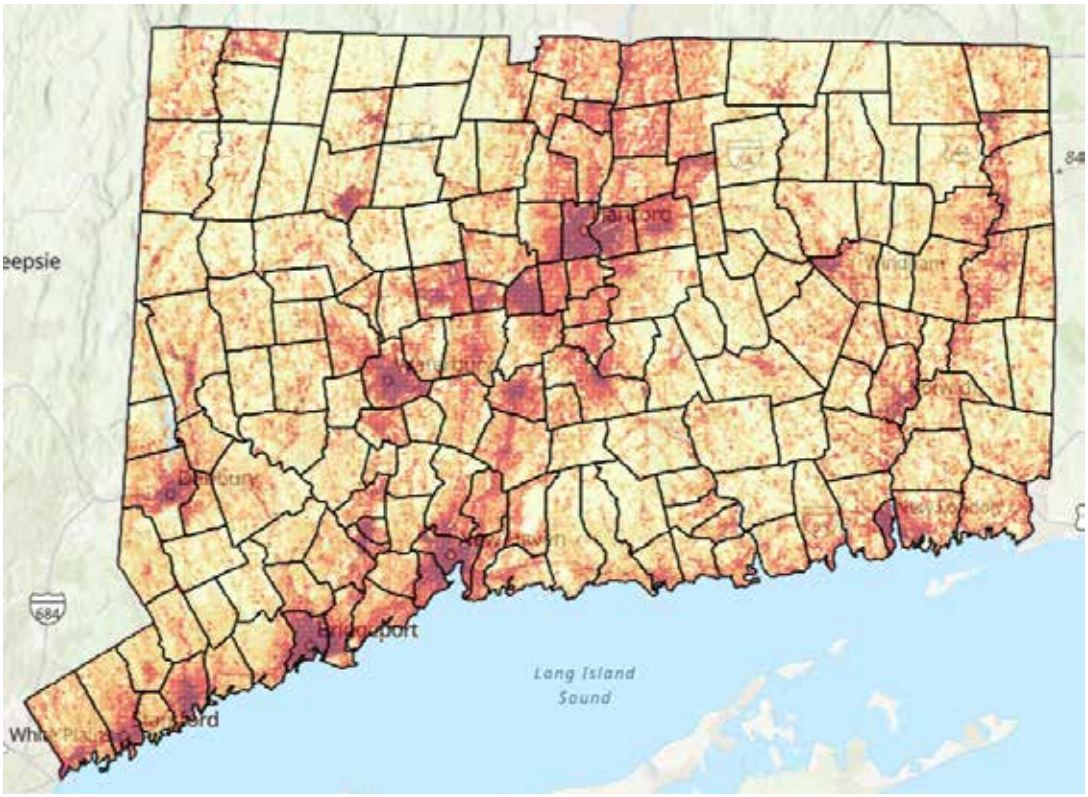
Sewershed ZSR
Sewershed ZSRs may be found in areas where a wastewater treatment plant or pump station is vulnerable to flood impacts, and by extension, the entire area served by the plant or station may therefore be vulnerable to disruption too.

Bridge ZSR
Like the underpass ZSRs, bridge ZSRs represent areas where a single point of flood vulnerability has the potential to disrupt transportation. This impact can be particularly strong in rural areas, where road density is low and a closed bridge may lead to lengthy detours.

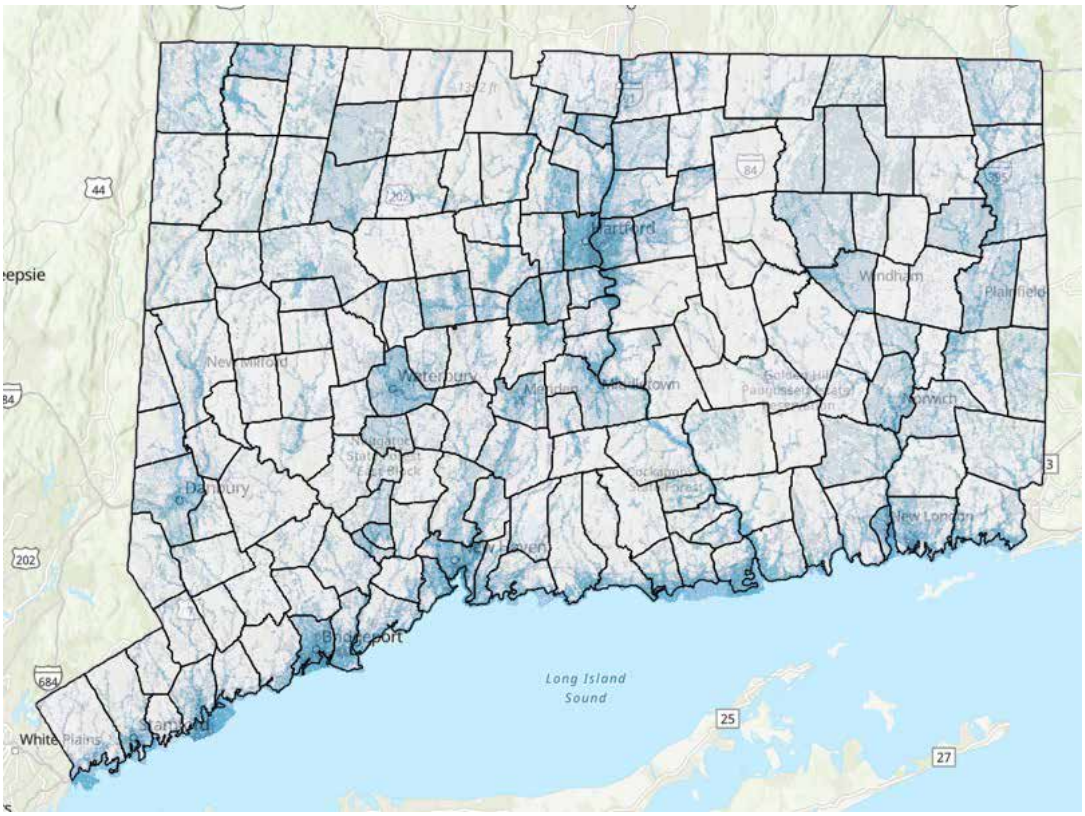
Types of Zones of Shared Risk

3.3.2 Climate Change Vulnerability Index (CCVI):

The CCVI is an index-based spatial model developed to assess vulnerability to flood and heat-related climate impacts across Connecticut. By evaluating sensitivity, exposure, and adaptive capacity, the index produces a detailed grid of vulnerability scores covering the entire state. During Resilient Connecticut 1.0, a pilot version of the CCVI was developed to cover Fairfield and New Haven Counties. With the additional funding for Resilient Connecticut 2.0, CIRCA staff partnered with SLR International, Inc. to develop a statewide version of the CCVI. This expanded tool has enhanced applicability for resilience planning for all Connecticut communities, even those not in a Resilient Connecticut focus area. CIRCA staff incorporated the CCVI into the methodology for identifying ROARs through the inclusion of flood and heat vulnerability criteria (see Appendix B for more detailed information on this methodology). More information and links to the CCVI web viewers can be found in Appendix D.



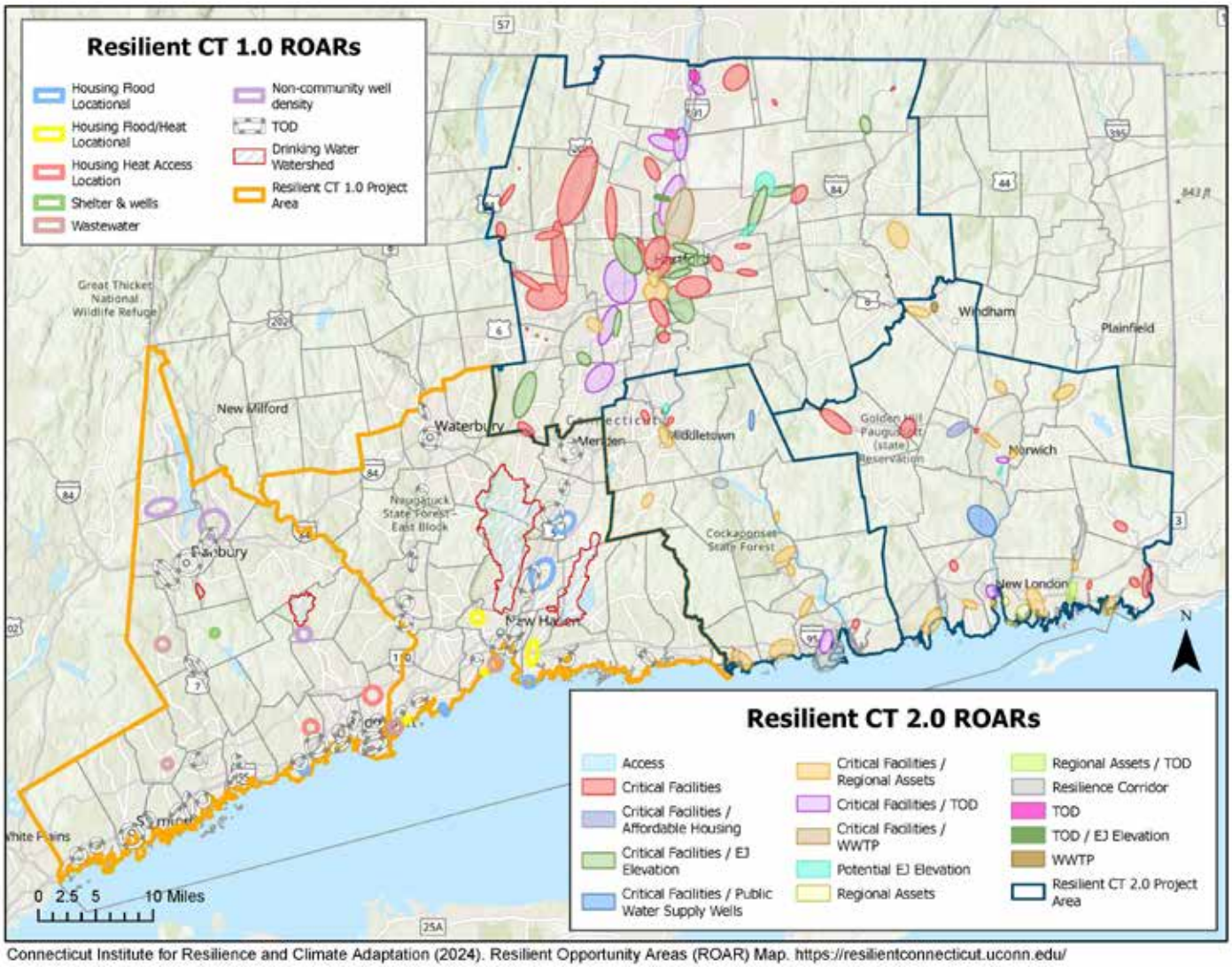
Statewide Heat Climate Change Vulnerability Index (CCVI) GIS tool developed by CIRCA and SLR as part of Resilient Connecticut 2.0



Statewide Flood Climate Change Vulnerability Index (CCVI) GIS tool developed by CIRCA and SLR as part of Resilient Connecticut 2.0

3.3.3 Resilience Opportunity Areas (ROARs):

ROARs represent key locations where climate risks intersect with planning priorities (transportation, economic development, housing, conservation, etc.) and vulnerable populations. For Resilient Connecticut 2.0, these priorities were shaped by shared concerns that emerged from CIRCA meetings with municipalities and tribes, as well as GIS data availability from state, COG, and other sources. ROARs were identified using GIS-based "recipes" that incorporated ZSRs, CCVI scores, and additional data layers reflecting regional and community-specific concerns. Recipes utilized in Resilient Connecticut 2.0 include examples such as "Critical Facilities" and "Transit-Oriented Development"; for a full list with accompanying methodology please see Appendix B. ROARs provide actionable insights for resilience planning by highlighting zones that require the development of risk reduction strategies and projects. The Index of ROARs created by CIRCA also serves as a basis for populating the statewide Resilience Project Pipeline. See the full Index of ROARs identified through the Resilient Connecticut 2.0 program in Appendix E.



Connecticut Institute for Resilience and Climate Adaptation (2024). Resilient Opportunity Areas (ROAR) Map. https://resilientconnecticut.uconn.edu/

Resilience Opportunity Areas (ROARS): A GIS based tool developed by the Connecticut Institute for Resilience and Climate Adaptation (CIRCA)

3.4 ROARs Identification and Prioritization:

CIRCA staff reviewed the results of the ROARs recipes and identified areas to move to the next stage of ROARs identification, which included digitization. Priority review was given to places in which the results of at least five recipes overlapped, places in which critical facilities were located in flood-vulnerable areas, and/or places that were directly mentioned by name as a climate-related concern by municipalities during CIRCA meetings. For full details on prioritization, please see Appendix B.

After the completion of the GIS analysis and review, a total of 114 ROARs were identified. Of these:

20 were located in **RiverCOG** (across 17 communities)

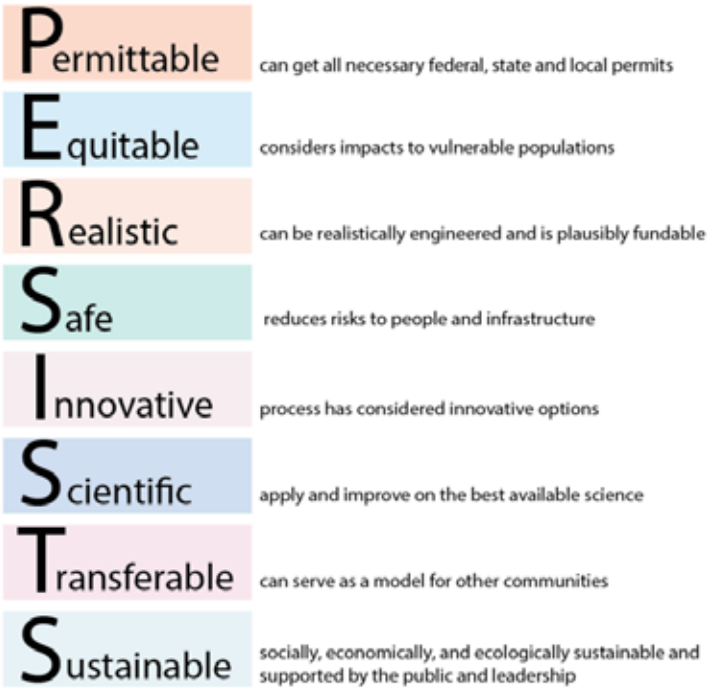
31 were located in **SECOG** (across 22 communities)

63 were located in **CRCOG** (across 38 communities)

Municipal staff play a critical role in the Resilient Connecticut project pipeline from an identified need to a fully realized climate resiliency project. During Resilient Connecticut 2.0, multiple types of information resources were developed for sharing with the municipalities and COGs to gauge the level of local and regional support for potential projects at the ROARs sites.

During Resilient Connecticut 1.0, CIRCA developed a multi-criteria evaluative framework for potential climate resiliency projects known as PERSISTS. Each ROAR identified during the Resilient Connecticut 2.0 analysis was scored using the PERSISTS framework, which consists of the eight categories below. More information about the PERSISTS framework can be found on the Resilient Connecticut website:

https://resilientconnecticut.media.uconn.edu/wp-content/uploads/sites/3830/2020/04/Resilient-Connecticut-Planning-Framework-Final-1-30-20.pdf



PERSISTS scoring rubric developed by CIRCA during Resilient Connecticut 1.0 and used to evaluate ROARs in Resilient Connecticut 2.0.

Lists of the ROARs sorted by PERSISTS scoring were used to develop informational sheets for presentation to the municipalities and COGs in the 2.0 region. These information sheets included a snapshot of recipe results for each listed ROAR as well as a map of all ROARs within a COG's region. An example of an information sheet for CRCOG is shown below. Full size information sheets for all COGs in the 2.0 region can be found in Appendix E.

Potential Climate Adaptation and Resilience Opportunity Areas in the Lower Connecticut River Valley Region

ROAR Name What is a ROAR? A ROAR is a complex climate adaptation and Resilience Opportunity ARea with potentially unmet needs related to two climate change threats: flooding and extreme heat. Each of these ROARs is generally positioned where flood vulnerability is moderate to high and heat vulnerability is moderate to high.	Location These are the primary municipalities where the ROARs are located.	These are some of the assets "counted" to identify ROARs. Many were provided by RiverCOG in a GIS layer, while some assets and resources were taken from other lists and maps. See the reverse side of this sheet for a key.									
		Critical Facilities	Regional Assets	Historic Resources	Wastewater Treatment Plants	Existing Affordable Housing	Transit Oriented Development	Building Elevations in EJ Flood Zones	"Resilient Corridor" Potential	Septic Systems	Public Water Supply Wells
Downtown to South Farms	Middletown	◕	◑	✓		✓		✓	✓		✓
Old Saybrook Center/TOD	Old Saybrook	◕	◕	✓		✓	✓	✓	✓	✓	
Portland Center	Portland	◕	◔	✓		✓			✓		
Pickett Lane Area	Durham	◕	◑	✓					✓	✓	✓
Clinton Center	Clinton	◑	◕	✓		✓	✓	✓	✓	✓	
Westbrook Center	Westbrook	◑	◕	✓		✓	✓		✓	✓	
Mile Lane	Middletown	◑	○	✓					✓		
Pocotopaug Creek	East Hampton	◑	○	✓					✓	✓	✓
Chester Center	Chester	◑	◕	✓					✓	✓	
East Haddam Center	East Haddam	◑	◔	✓	✓				✓		✓
Deep River Center	Deep River	◑	◔	✓		✓			✓		
Old Lyme Center	Old Lyme	◑	◔	✓					✓	✓	
Plains Road Corridor	Essex	◔	◑	✓				✓	✓	✓	
Higganum	Haddam	◔	○	✓					✓	✓	
River Road Area	Cromwell	◔	◔	✓				✓	✓		
Mattabassett District WWTP	Cromwell	◔	◔		✓				✓		
Portland WWTP	Portland	◔	◔		✓			✓	✓		
Route 154 Loop	Old Saybrook	○	◑	✓					✓	✓	

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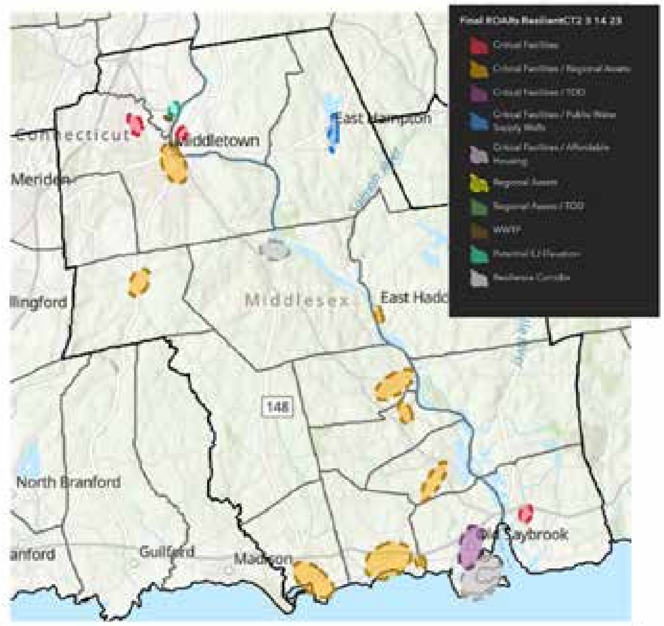
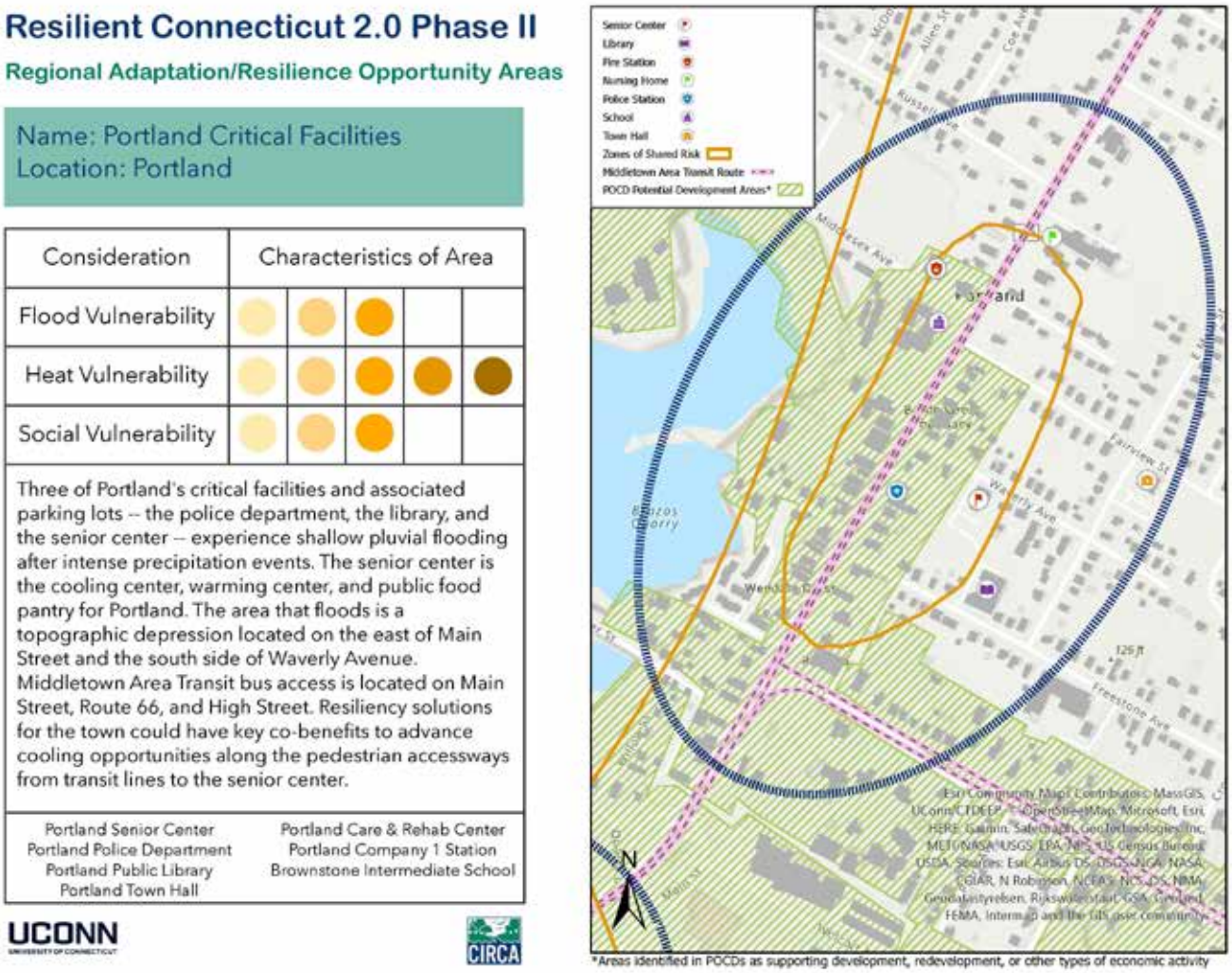


●	>10 Critical Facilities or Regional Assets
◕	6-10 Critical Facilities or Regional Assets
◑	3-5 Critical Facilities or Regional Assets
◔	1-2 Critical Facilities or Regional Assets
○	Critical Facilities or Regional Assets not present

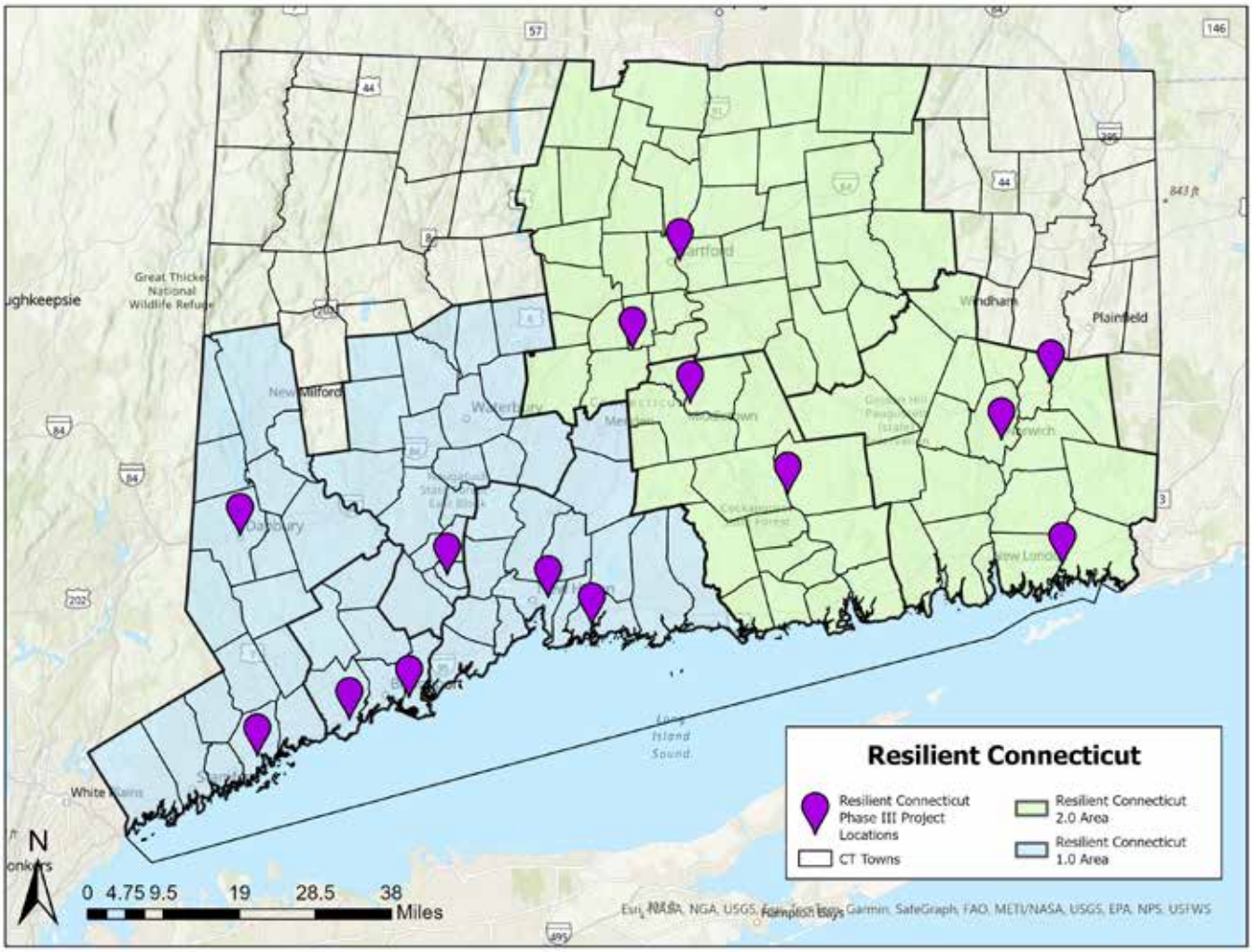
Resilience Opportunity Area (ROARs) Overview page developed by CIRCA for the top ROARS in each Council of Governments (COG) in the Resilient Connecticut 2.0 Study Area.

An individual profile page was also developed for each identified ROAR, providing a brief assessment of the flood vulnerability, heat vulnerability, and social vulnerability of each ROAR. For full details on the data that contributed to these profile pages, please see Appendix E. An example profile page is shown below. Full size profile pages for all identified ROARs in the 2.0 region can be found at https://resilientconnecticut.uconn.edu/roar-maps-index/



Example of a Resilience Opportunity Area (ROARs) Profile Page developed by CIRCA for each ROAR identified through the Resilient Connecticut program.

Using these informational tools to guide discussion, CIRCA conducted additional engagement with municipalities and COGs to gauge the level of local and regional support for potential projects at the ROARs sites. Based on these discussions, municipal priorities, COG input, and PERSISTS scoring, a subset of ROARs were selected for advancement to Phase III. Seven ROARs became the basis of the site-specific projects: two in RiverCOG, three in SECOG, and two in CRCOG. As seven Phase III projects were also advanced through Resilient Connecticut 1.0, this brought the total number of Resilient Connecticut Phase III projects since the program's inception to fourteen. Project locations are indicated in the map below, followed by summaries of each 2.0 Phase III project.



Resilient Connecticut 1.0 and 2.0 Project Areas and site-specific project locations.

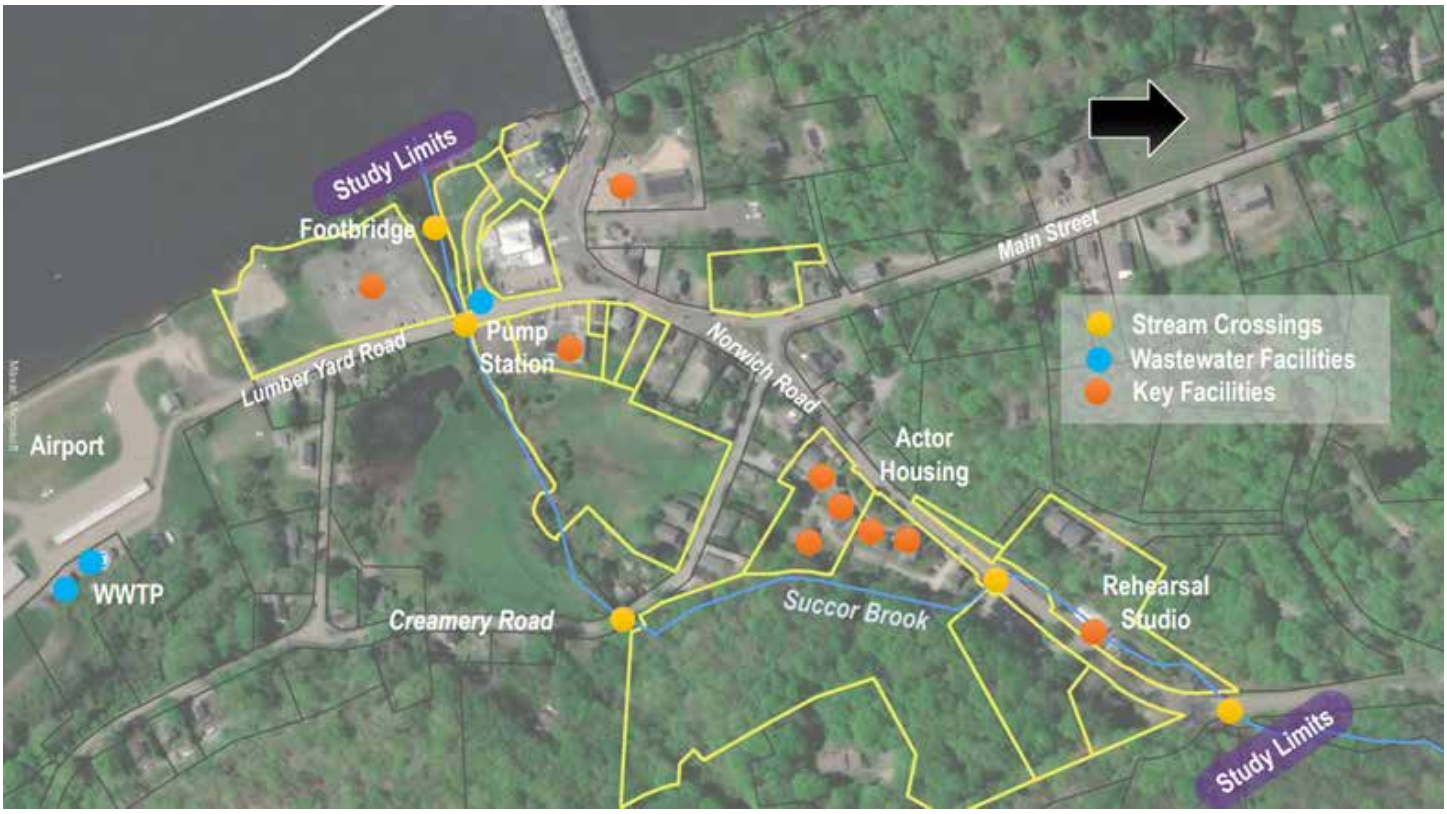
4. Phase III Summary:

4.1 Resilient East Haddam:

This project focuses on flooding from Succor Brook and the Connecticut River in East Haddam center. Flooding of Succor Brook has impacted buildings owned by Goodspeed, Norwich Road (Route 82), Creamery Road, and Lumberyard Road. Flooding from the Connecticut River has the potential to impact the Town's Wastewater Treatment Plant (WWTP), which could impact the entirety of East Haddam center. Floodwaters have entered and damaged rehearsal and administrative buildings used by Goodspeed. Floods pose an unacceptable risk to Goodspeed; as a key asset for the region and the town, making Goodspeed's operational capacities more resilient is beneficial to the region.

Project Status: This project is currently in concept design and development phase, which includes benefit/cost analysis of alternatives. The Town is planning to apply for funding, with help from CIRCA, and move this project further in the near future.

Project Documentation: https://resilientconnecticut.uconn.edu/resilient-east-haddam/



Study area for the Resilient East Haddam Project including critical facilities and regional assets

Resilient East Haddam Public Workshop 1: Engagement Opportunity to discuss existing and future conditions of the Succor Brook Corridor.

4.2 Resilient Jewett City:

This project focuses on the western portion of Jewett City. Flooding of the Quinebaug River and Pachaug River caused inundation in Jewett City during the severe flood event of March 2010. During this flood, the Jewett City and Griswold WWTP (wastewater treatment plant) was inundated, and service was disrupted. Since then, several close calls have occurred in southeastern Connecticut, including the recent flood of September 2022. The project has evaluated alternatives for flood mitigation of several townhouse complexes near the confluence of the Quinebaug and Pachaug Rivers. The project has also evaluated alternatives for flood mitigation of a sewer pump station that serves the townhouses.

Project Status: The project is near completion. The Borough and Town are interested in pursuing a FEMA application either through HMGP or FMA in the near future, pending the outcome of the BCA analysis.

Project Documentation: https://resilientconnecticut.uconn.edu/resilient-jewett-city/

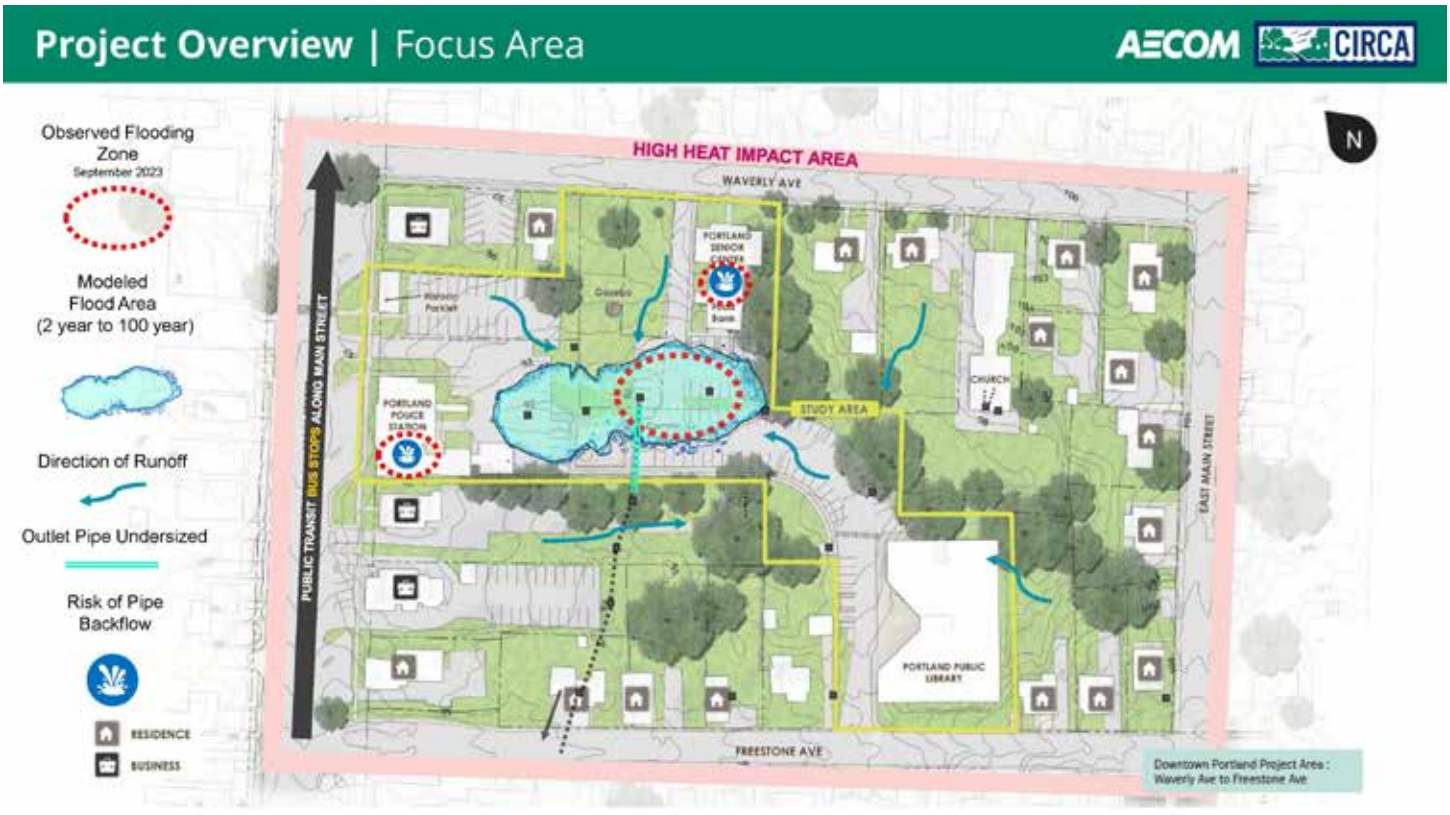
Resilient Jewett City Study Area with goals for the project.

4.3 Resilient Portland:

The Resilient Portland project focuses on a block in downtown Portland, that includes the Portland Public Library, Waverly Senior Center and Food Bank, and the Portland Police Station. This area is vulnerable to localized flooding during heavy rain events and extreme heat. The project includes three design alternatives to reduce flooding, each building upon the previous option. Alternative I focuses on drainage system improvements by replacing an undersized pipe. Alternative II expands on this by adding strategies to reduce impervious surfaces and incorporate green infrastructure, like rain gardens, as well as planting trees. Alternative III includes all the elements of the previous options with additional features such as improved pedestrian walkways, shade structures, and increased parking with pervious pavement.

Project Status: This project is complete with the final report for the project available here: resilientconnecticut.media.uconn.edu/wp-content/uploads/sites/3830/2025/02/Portland_Report_Final-Digital.pdf. The town recently underwent a change in leadership and the CIRCA team is working with the new First Selectman to evaluate next steps.

Project Documentation: https://resilientconnecticut.uconn.edu/resilient-portland/



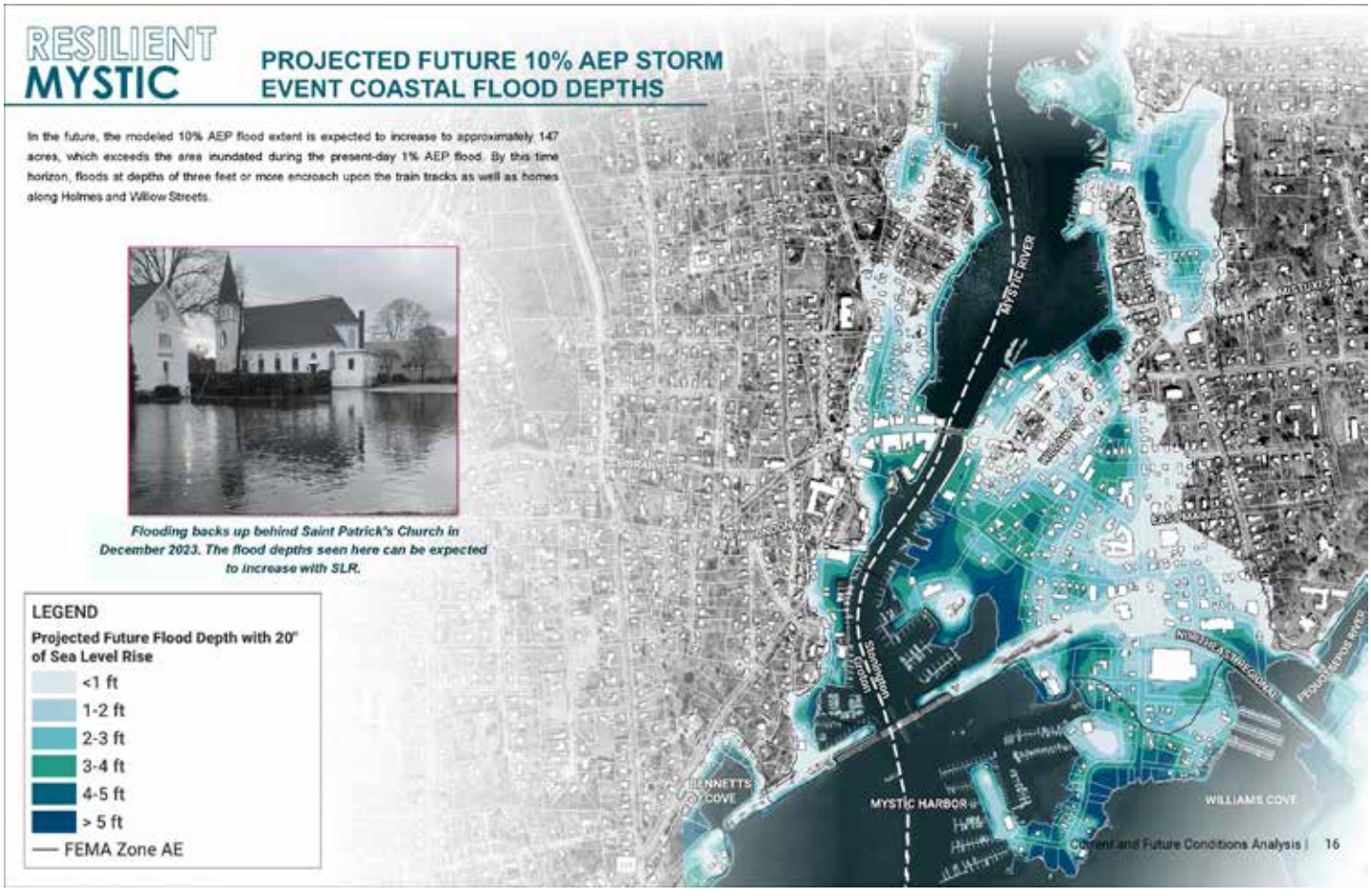
Portland Focus Area Overview

4.4 Resilient Stonington Mystic:

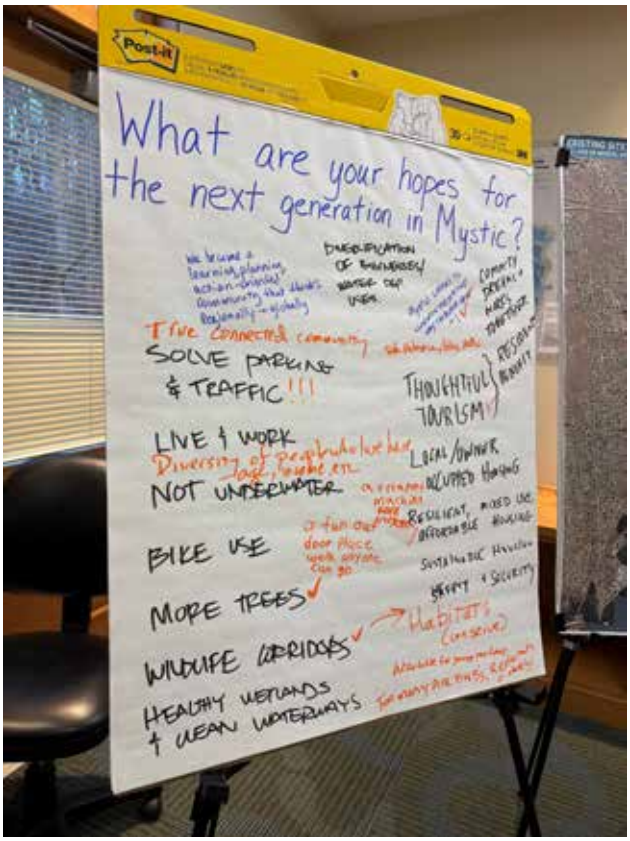
The Mystic section of Stonington experiences coastal flood inundation from king tides, storm surges, nor'easters, etc. Over time, flooding is expected to increase in frequency and duration. Inundation has impacted and/or isolated private and public properties, transportation infrastructure, transit lines, critical facilities such as the Mystic Fire Company fire station, historic and cultural resources, and major economic assets such as Mystic Seaport Museum. The primary objectives are to determine how to relocate or protect historic resources; to develop long-term plans to protect several types of critical facilities and the passenger rail station; and to enhance connections from critical facilities to the greater Stonington community.

Project Status: Current and future conditions have been modeled. A three day public design workshop was held in February 2025 where initial concept designs were discussed. Final concept designs and BCA are currently being conducted.

Project Documentation: https://resilientconnecticut.uconn.edu/resilient-stonington-mystic/



Example of model for future flooding generated for Mystic



Town Engagement for the Stonington Mystic Project

4.5 Resilient Yantic River – Norwich, Bozrah, and Franklin:

This project focuses on identifying and implementing flood risk mitigation strategies in three key target areas along the Yantic River corridor, spanning 3 towns: 1) Upstream Flood Compensatory Storage: Potential locations in Bozrah or Franklin are under consideration. After completing a desktop analysis of flood storage opportunities and engaging with property owners, one area will be selected for detailed evaluation and planning. 2) Town Street Commercial Corridor: This area will explore flood risk mitigation options to protect businesses and infrastructure. Strategies may include implementing floodproofing measures. 3) Backus Hospital to Upper Falls Dam River Corridor: A project will be identified and developed along this river segment, targeting flood risk reduction and improved resilience. Specific plans are to be determined based on further analysis and stakeholder input.

Project Status: The project is currently underway, and public engagement is planned for the 2nd quarter of 2025.

Project Documentation: https://resilientconnecticut.uconn.edu/resilient-norwich/

Upper Watershed Floodwater Storage Target Area 1 for Resilient Yantic Program

Norwich Town Street Commercial Corridor: Target Area 2 for Resilient Yantic Program

Backus Hospital to Upper Falls Dam Corridor: Target Area 3 for Resilient Yantic Program

4.6 Resilient East Hartford:

Downtown East Hartford is a priority area for a resilience project, particularly along Main Street from Connecticut Boulevard to the railroad underpass. The East Hartford Flood Control (Levee) System provides some flood protection from the Connecticut River, but stormwater flooding remains a concern. Downtown East Hartford reportedly experiences road flooding during rain events, with flooding extending onto sidewalks and into businesses. Flooding presents public safety challenges to residents of the Town, as residents sometimes attempt to drive through floodwater near the railroad underpass. East Hartford is also vulnerable to extreme heat. This is attributed primarily to the high social sensitivity within the community, combined with dense development, impervious surfaces, disconnected green spaces for mitigating high heat impacts, and an absence of nearby formal cooling centers and/or shelters with enough capacity for numbers of people to comfortably occupy space.

Project Status: This project kicked off in January 2025 and is planned to run through the remainder of the year.

Project Documentation: https://resilientconnecticut.uconn.edu/resilient-east-hartford/

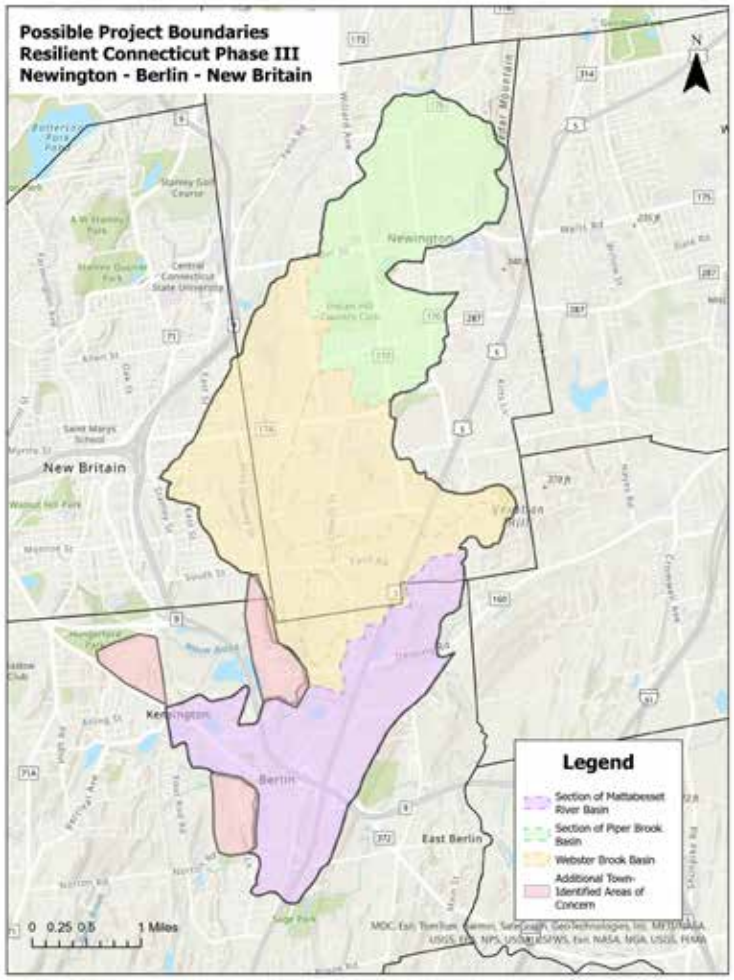
East Hartford Study Area

4.7. Resilient Piper and Webster Brooks – Newington, Berlin, and New Britain:

Community planning and technical evaluation around the Piper Brook and Webster Brook corridor is required to evaluate flood mitigation options, reduce flood hazard risk, and protect life, property, and infrastructure in central Connecticut, particularly in the Town of Newington, the Town of Berlin, and the City of New Britain. Several resilience opportunity areas have been identified along the Piper Brook and Webster Brook corridor in this tri-town area, including the Piper Brook ROAR in Newington and the Kensington and Mattabessett River ROAR in Berlin. Additional infrastructure in this area includes an Amtrak rail line and Route 9, both of which impact drainage along Piper and Webster Brooks. The geographic scope of this effort will include sections of the Piper Brook, Webster Brook, and Mattabessett River basins, including Stamm Road in Newington, John Downey Drive in New Britain, and extending downstream through the Kensington area of Berlin.

Project Status: This project kicked off in January 2025 and is planned to run through the remainder of the year.

Project Documentation: https://resilientconnecticut.uconn.edu/resilient-newington-berlin/



Piper and Webster Brook Study Area covering Newington, Berlin and New Britain

Flooding in 2021. The blocked bridge is by the Webster Brook near New Britain Highschool & the soccer fields. Photo Credit: Mark Moriarty, New Britain Director of Public Works

5. Additional Project Support:

In addition to the main activities performed through the Resilient Connecticut Program, several support initiatives were conducted to enhance climate resilience across the state. These efforts include the Municipal Resilience Grant Program to advance two specific climate priorities for Connecticut: 1) implementation of stormwater authorities and 2) development of a resilience "project pipeline." (Appendix F). Additional efforts include the deployment of heat and flood sensors to monitor key climate variables, track weather patterns, create early warning systems and provide valuable data and insights to inform evidence-based decision-making and climate adaptation strategies. For more information on the heat sensors see Appendix G and for more information on the flood sensors, see Appendix H. CIRCA's Legal Team also developed the Zoning Library, which includes examples of zoning policies that municipalities can modify and/or adopt to enhance local climate resilience (Appendix I).

6. Appendices:

Appendix A. Inventory of CIRCA Town Engagement

Appendix B. GIS Analysis Methodology

Appendix C. Zones of Shared Risk Inventory

Appendix D. CCVI Resources (Fact Sheet, Viewer Links)

Appendix E. ROARs Inventory + COG ROARs Information Sheets

Appendix F. Municipal Resilience Grant Program Round 2

Appendix G. Heat Sensor Project Factsheet

Appendix H. Flood Sensor Project Factsheet

Appendix I. CIRCA Legal Team Products

7. Acknowledgements

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