

Resilient Connecticut Case Studies

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Alex Roper, GZA

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Beth Kirmmse, Fuss & O'Neill

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Mary Buchanan, CIRCA

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Agenda



Resilient Connecticut Overview

Nicole Govert and Mary Buchanan, CIRCA (5 minutes)

Resilient Yantic Project

Helen Zincavage, SECOG and Alex Roper, GZA (25 minutes)

Resilient Mystic Project

Beth Kirmmse and Ian Concannon, Fuss & O'Neill (25 minutes)

Question and Answer (5 minutes)

CIRCA's Mission and Goals

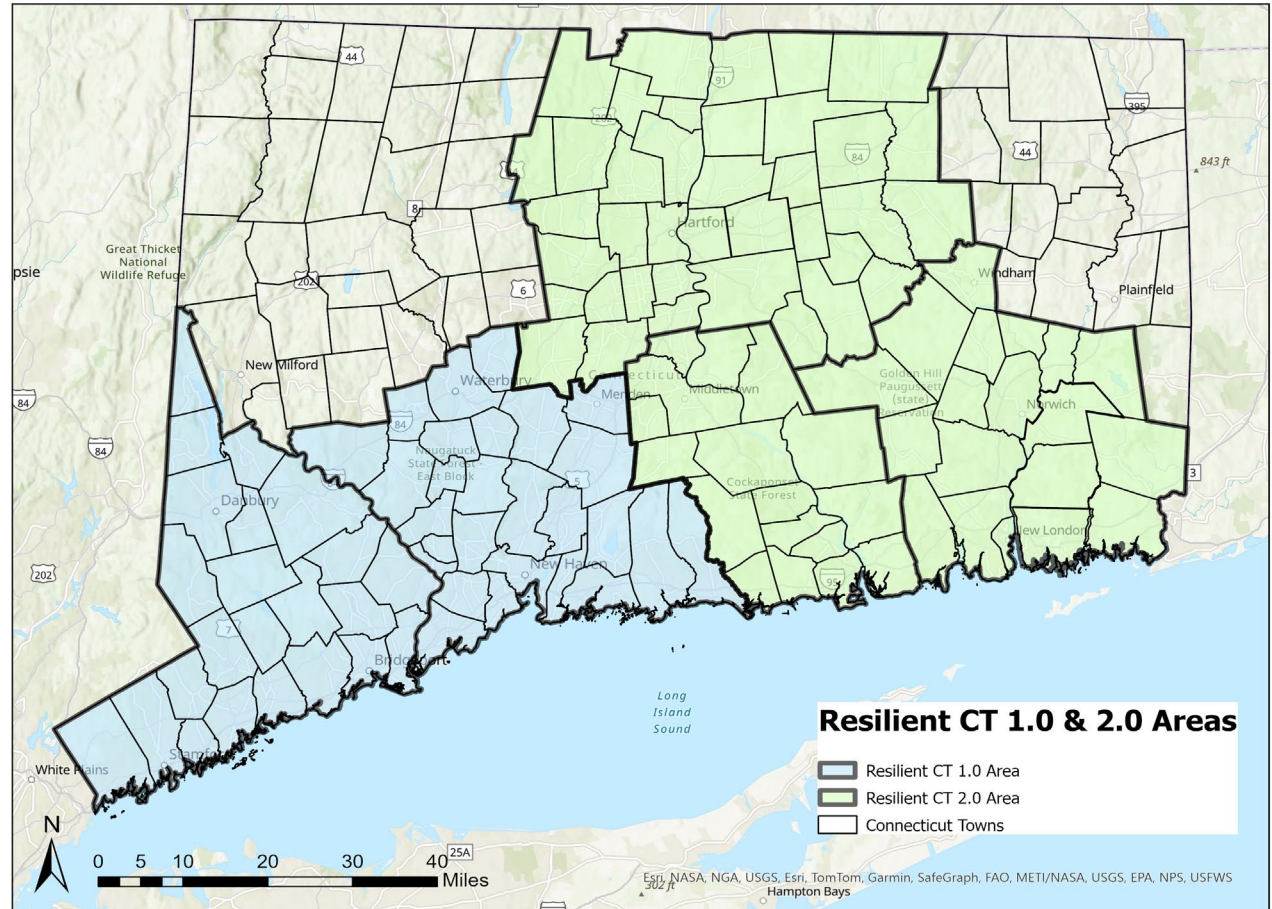
Increase the resilience and sustainability of vulnerable communities in the state's coastal and inland areas to severe storms and the growing impacts of climate change on natural, built, and human environments.

Research Focus Areas

- Flooding
- Extreme Heat
- Sea Level Rise
- Green Infrastructure
- Environmental Justice
- Emergency Management
- Policy

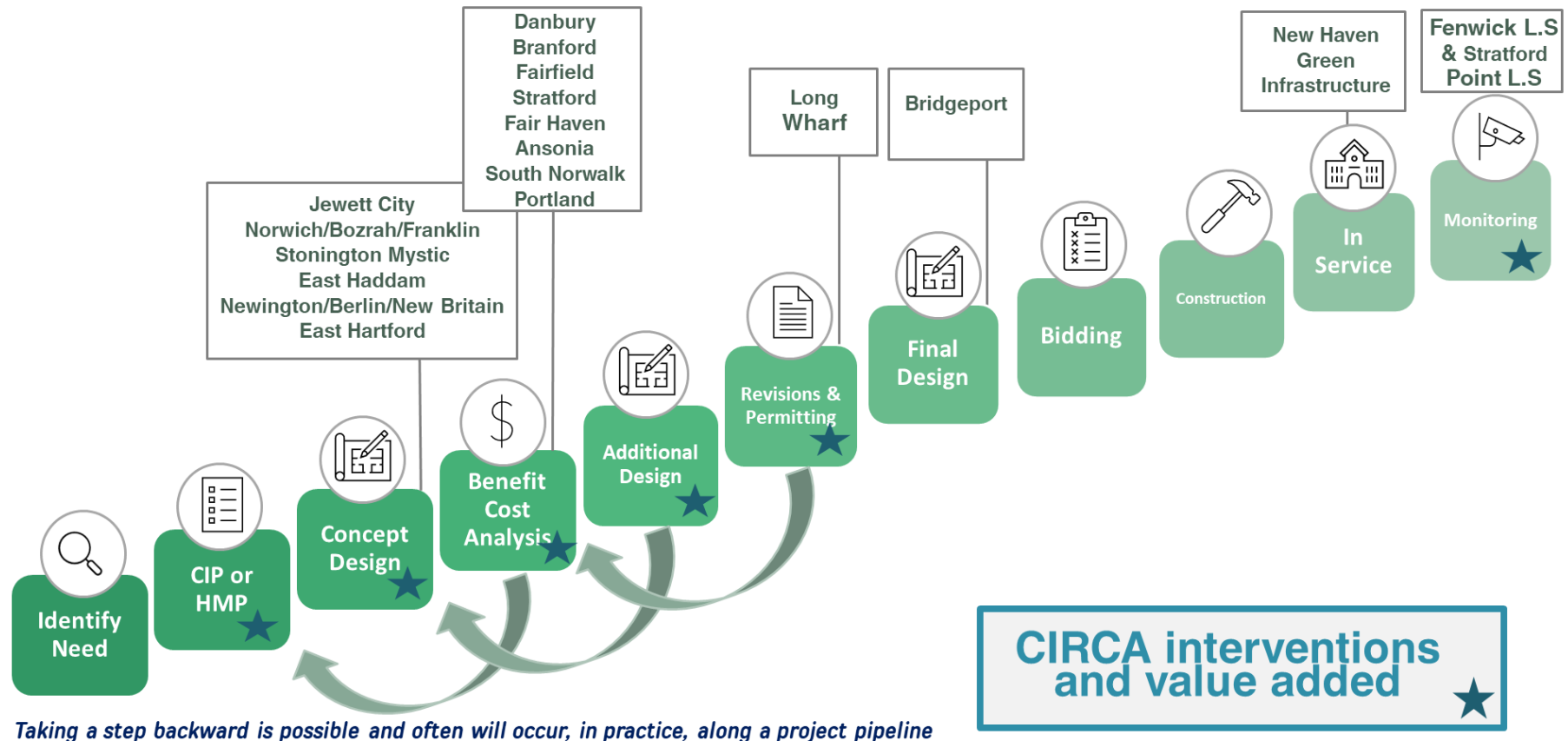
Resilient Connecticut Program

- CIRCA initiated Resilient CT in Fairfield & New Haven Counties in 2018
- The program expanded to the RiverCOG, SECOG, & CRCOG regions (New London, Middlesex, Hartford, Tolland Counties) in 2021-2024.



The goal of the program:

- Assist Municipalities in developing implementable resilience projects.
- Support development of a statewide resilience project pipeline.
- Increase coordination across municipal, regional, and state planning.



Taking a step backward is possible and often will occur, in practice, along a project pipeline

Resilient Connecticut Tools

CIRCA has created several data & mapping tools to support project development including:

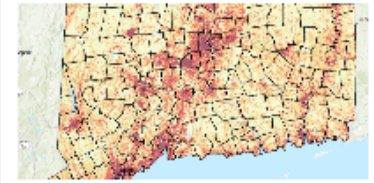
- Climate Change Vulnerability Index (CCVI)
- Zones of shared risk
- CT Environmental Justice Screening Tool
- Resilience Opportunity Areas (ROARs)



Resilient Connecticut Story Maps

Start with the Resilient CT Storymap for an overview of the program. Then explore the top Resilience Opportunity Areas (ROARs) by clicking on the story maps for the Council of Governments (COG) that have been involved in the Resilient Connecticut program. These ROARs were selected based on vulnerability assessments and stakeholder engagement to align with municipal and regional goals.

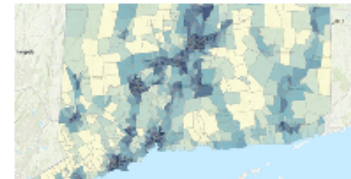
[GO TO STORY MAPS](#)



Climate Change Vulnerability Index (CCVI)

The Climate Change Vulnerability Index (CCVI) is a statewide mapping tool for flood and heat vulnerability that can be used, in conjunction with other resources, for planning and developing purposes. Additional CCVI resources include a factsheet, and webinars on the development and application of the tool.

[CCVI RESOURCES](#)



Connecticut Environmental Justice Screening Tool

Connecticut EJ Screening Tool is an interactive resource that combines both community and data-driven approach that incorporates environmental burdens and demographic indicators. This map allows users to explore the environmental health and the conditions (socioeconomic and or other distinguishing community characteristics) within a specific region, town, city, and or entire state.

[CT EJ SCREENING TOOLS](#)



Zones of Shared Risk Viewer

View the Zones of Shared Risk (ZSR) for the Resilient CT program. Zones of shared risk are regions that face common challenges either in existence already or caused by climate change, and therefore risks are shared among or between groups of people that may have different perspectives and priorities for resilience.

[ZONES OF SHARED RISK](#)

How does CIRCA use these tools for the RCT Program?

Overlapping:

- Social vulnerability
- Flood vulnerability
- Heat vulnerability
- Zones of Shared Risk

- Regional assets
- Infrastructure
- Critical facilities
- Historic resources
- TOD potential

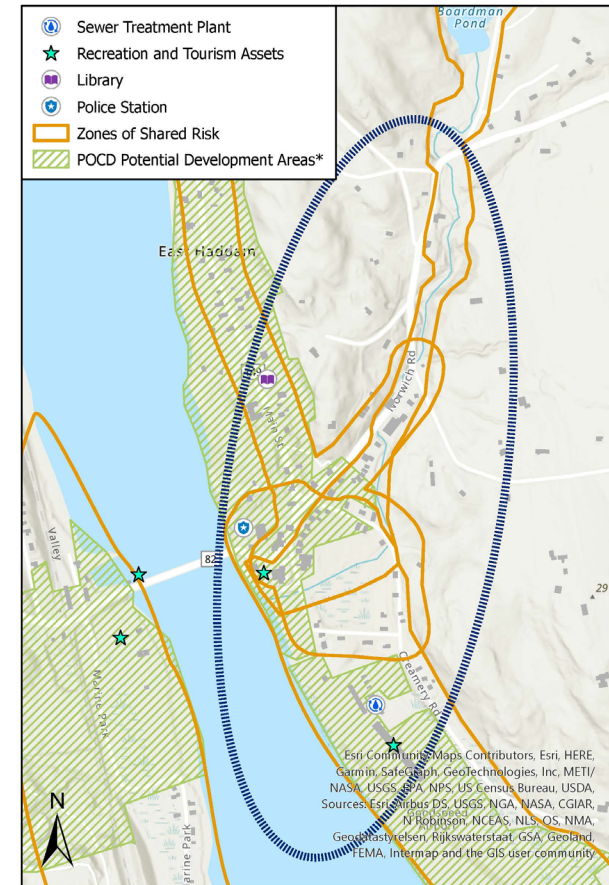
**= Resilience
Opportunity Area
(ROAR)**

Resilient Connecticut 2.0 Phase II Regional Adaptation/Resilience Opportunity Areas

Name: Goodspeed / Succor Brook
Location: East Haddam

| Consideration | Characteristics of Area | | | | |
|--|-------------------------|--|---|--|--|
| Flood Vulnerability | ● | ● | ● | | |
| Heat Vulnerability | ● | ● | | | |
| Social Vulnerability | ● | | | | |
| <p>East Haddam residents have identified flooding from Succor Brook as a persistent concern for the center of town. This brook periodically overtops its banks, and past flash floods have impacted structures associated with the Goodspeed Opera House, including the actor housing, library of musical theater, and rehearsal studio. The Goodspeed is a regional asset that brings 80,000 - 100,000 visitors to East Haddam every year. Additional community assets in this area include the town's police department, sewer treatment plant, and public library, the latter of which can be used as a cooling center when needed.</p> | | | | | |
| <p>Goodspeed Opera House Goodspeed Airport East Haddam Police Department</p> | | <p>Rathbun Free Memorial Library East Haddam Sewer Treatment Plant</p> | | | |

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Number of ROARs Identified

177 total ROARs were identified

64 were identified in Resilient CT
1.0.

114 ROARs were identified
in Resilient CT 2.0

20 within
WestCOG,

13 within
MetroCOG

6 within
NVCOG

24 within
SCRCOG

20 within
RiverCOG

31 within
SCCOG

63 within
CRCOG

How ROARs become Projects

- CIRCA ranks the ROARs based on PERSISTS framework
- CIRCA meets with local stakeholders
- CIRCA develops a Scope of Work
 - What type of modeling needs to be done?
 - What type of stakeholder engagement needs to be completed?
 - What are the deliverables?
- CIRCA hires a consulting firm on behalf of the town

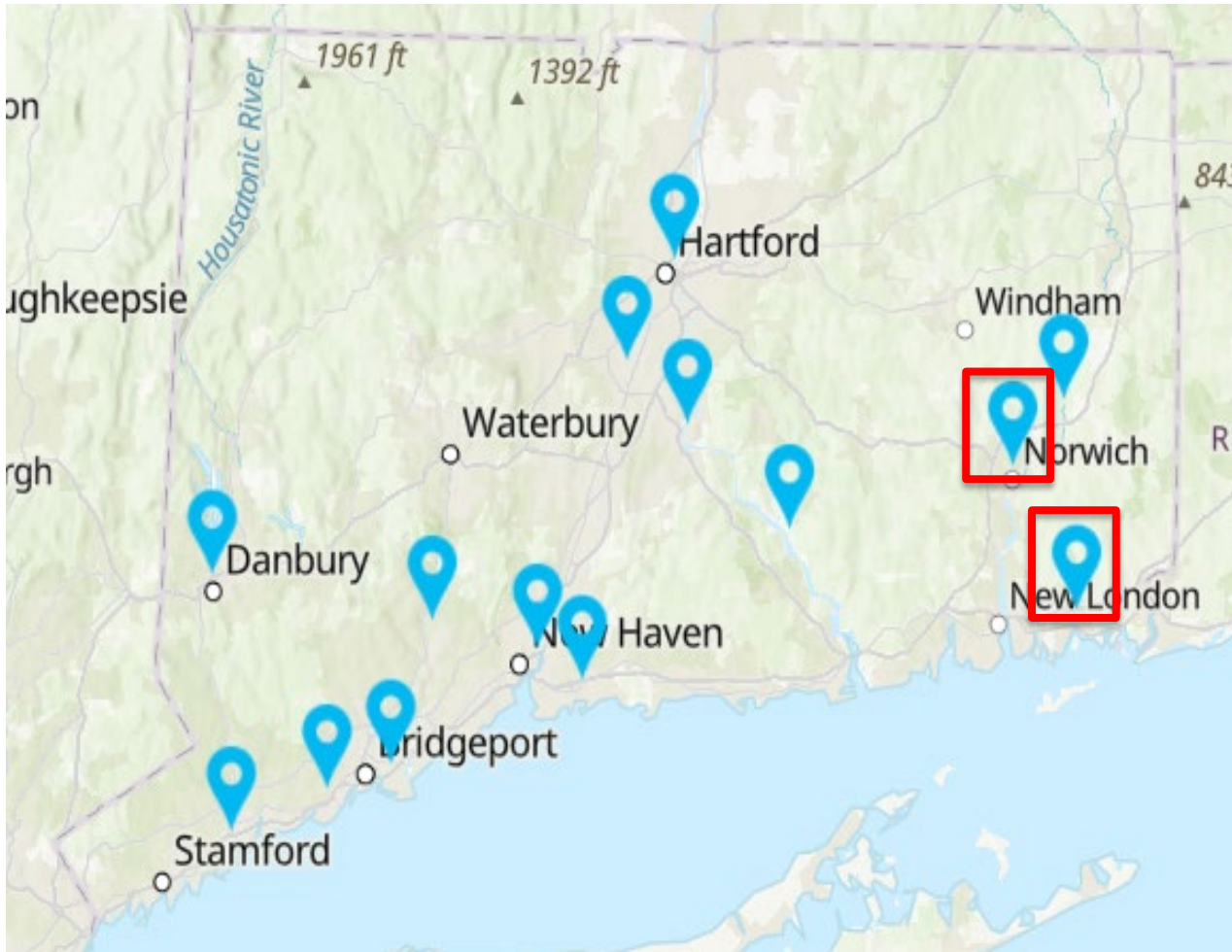
| | |
|----------------------|---|
| P ermittable | can get all necessary federal, state and local permits |
| E quitable | considers impacts to vulnerable populations |
| R ealistic | can be realistically engineered and is plausibly fundable |
| S afe | reduces risks to people and infrastructure |
| I nnovative | process has considered innovative options |
| S cientific | apply and improve on the best available science |
| T ransferable | can serve as a model for other communities |
| S ustainable | socially, economically, and ecologically sustainable and supported by the public and leadership |

What do the consultants do for these projects?

- **Future and Existing Conditions Report**
 - What is the flooding like now? What will it be like in the future?
 - What is heat exposure like now? What will it be in the future?
- **Concept Designs for Mitigation**
 - Green Infrastructure
 - Resilient Corridors
 - Cooling alternatives (cooling centers, resilience hubs..)
 - Drainage system improvements
- **Benefit Cost Analysis**
 - Will FEMA fund the project?
 - Will the project cost less than the expected damages if an area floods?

Goal: The products from the projects set the town up to apply for state advancement or federal implementation grants

Phase III Project Areas



7 Projects from RCT 1.0

Ansonia
Branford
Danbury
New Haven (Fair Haven)
Fairfield
South Norwalk
Stratford

7 Projects from RCT 2.0

East Haddam
Jewett City
Yantic River
Portland
Stonington Mystic
East Hartford
Piper and Webster Brook

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