# *"RESILIENT CONNECTICUT 2.0"* Update

## Expanding a Climate Adaptation and Resilience Planning Process in the Capitol Region

## Presentation for the Policy Board

February 28th, 2024


CRCOG CAPITOL REGION COUNCIL OF GOVERNMENTS
Working together for a better region.

CIRCA
Connecticut Institute for Resilience and Climate Adaptation

# MEET THE PLANNING TEAM

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CIRCA
Connecticut Institute for Resilience and Climate Adaptation

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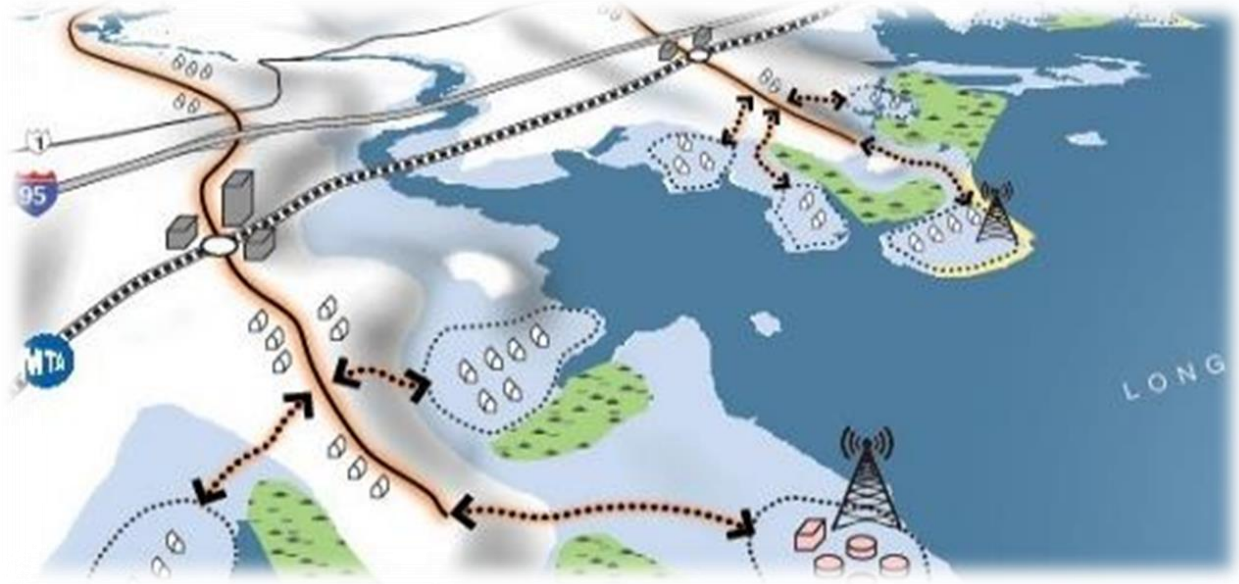
# WHAT IS *RESILIENT CONNECTICUT*?

***Resilient Connecticut 1.0*** was funded by the National Disaster Resilience Competition and focused on regional resilience and adaptation planning for flooding and extreme heat in Fairfield and New Haven Counties.

- Emphasized transit-oriented development, affordable housing, critical infrastructure, and regional assets.
- Developed Social Vulnerability Index (SVI), Climate Change Vulnerability Index (CCVI), Zones of Shared Risks (ZSR), and Resilience Opportunity Areas (ROARs)

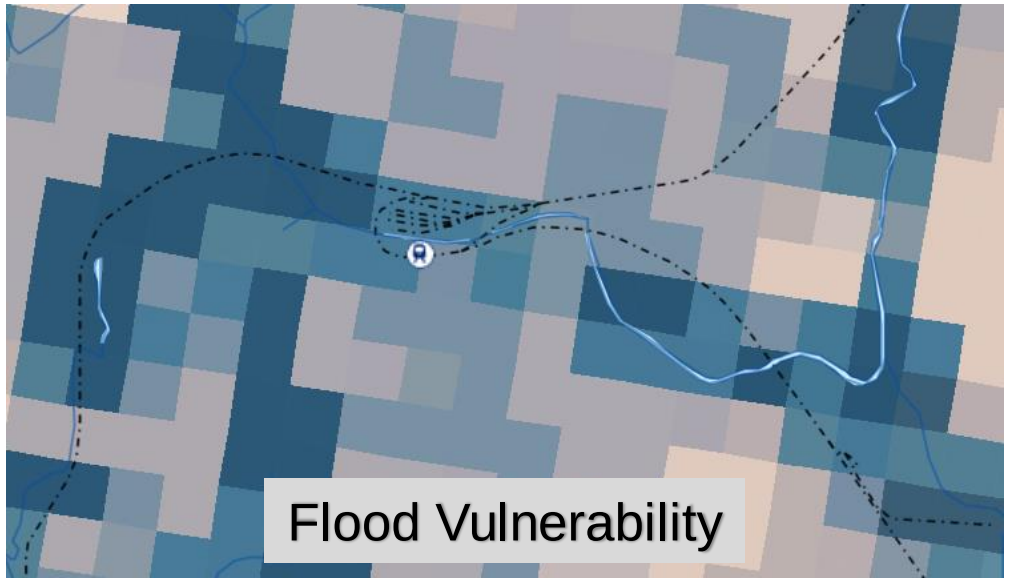
***Resilient Connecticut 2.0*** extends this effort using State funds.

- Increases flexibility to address the climate concerns unique to other regions.
- CRCOG is a partner in the deployment of the program in north-central Connecticut

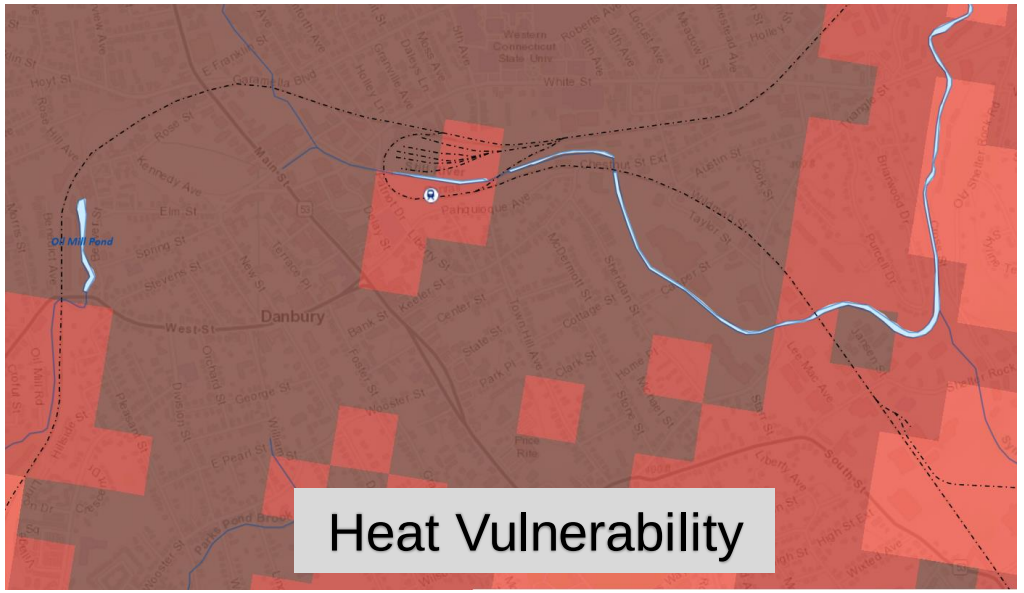


# RESILIENT CONNECTICUT METHODOLOGY

- A Climate Change Vulnerability Index (CCVI) was developed statewide




Flooding can be coastal, riverine, or pluvial (heavy rain)




Considers where extreme heat is more likely as well as inability to seek respite

$$\text{Vulnerability} = \frac{\text{Sensitivity X Exposure}}{\text{Adaptive Capacity}}$$

# RESILIENT CONNECTICUT METHODOLOGY

- Climate Challenges were Recognized as Opportunities to Address Unmet Needs

## Resilient Connecticut Phase II

### Regional Adaptation/Resilience Opportunity Areas

Name: Downtown Danbury
Location: Danbury

| Considerations | Characteristics of Area |
|---|---|
| Flood Vulnerability | ○ ○ ○ ● ◐ |
| Heat Vulnerability | ○ ○ ○ ● ○ |
| Social Vulnerability | ○ ○ ○ ● ◐ |

The center of Danbury is characterized by zones of shared risk associated with the confluence of Padanarum Brook, Kohanza Brook, and the Still River. Despite many flood risk reduction projects undertaken over decades, TOD and planned development areas are located in close proximity to – or within – these zones of shared risk. Numerous critical facilities, historic resources, and the terminus of the MetroNorth Danbury line are also located in the area. Downtown Danbury is a regional center for northern WestCOG.
Almost all of the downtown area is moderately vulnerable to heat, with the highest vulnerable area concentrate along route 53 commercial properties. Presenting few opportunities for shade or street trees, the area has high heat emittance. In addition, there is high social sensitivity throughout the area.

City Hall
Fire headquarters
Hose Co. 5, 6, 7, and 9
Danbury Hospital
Danbury Health and Housing Dept.
Western CT State College Police
Assisted living facilities
War Memorial
Substation
Power plant
Museums

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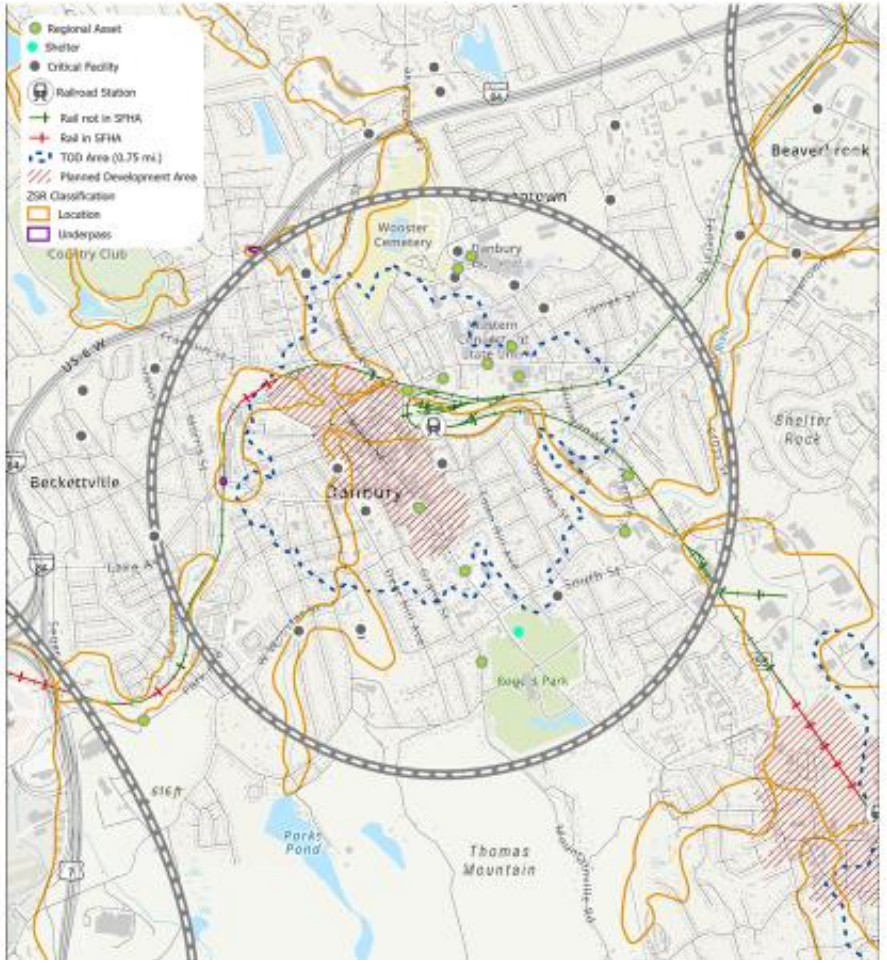
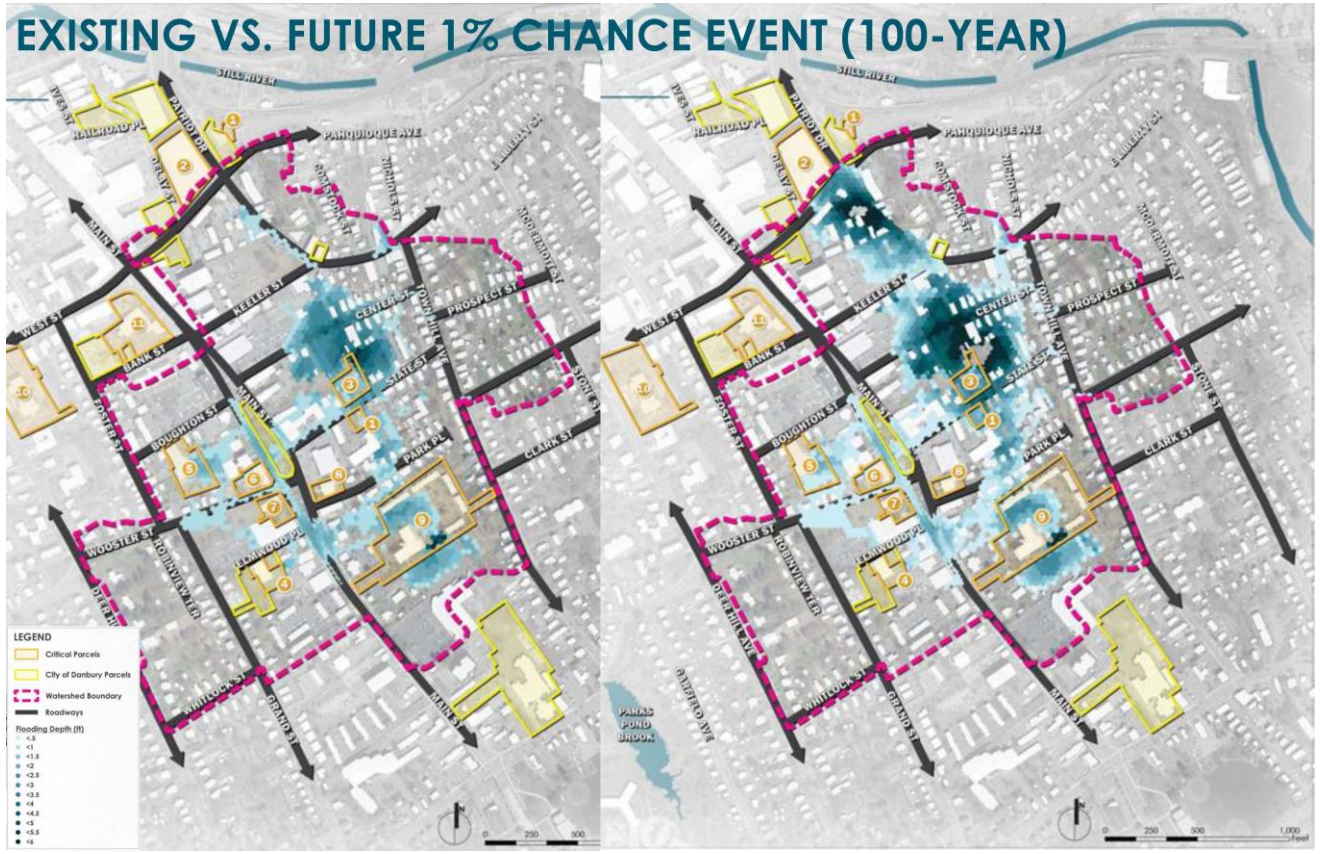



- Overlapping
  - Social vulnerability
  - Flood vulnerability
  - Heat vulnerability
  - Regional assets
  - Infrastructure
  - Critical facilities
  - Historic resources
  - TOD potential

# RESILIENT CONNECTICUT METHODOLOGY

- Some of These Opportunity Areas Are Proceeding to Studies and Concept Designs




# REMEMBER THE GOAL

- Opportunity Areas Proceeding to Concept Design from the planning phase

✓ Danbury – Flood mitigation, identification of cooling center, and green infrastructure for co-benefits

✓ Norwalk – Resilient corridors and heat mitigation in South Norwalk

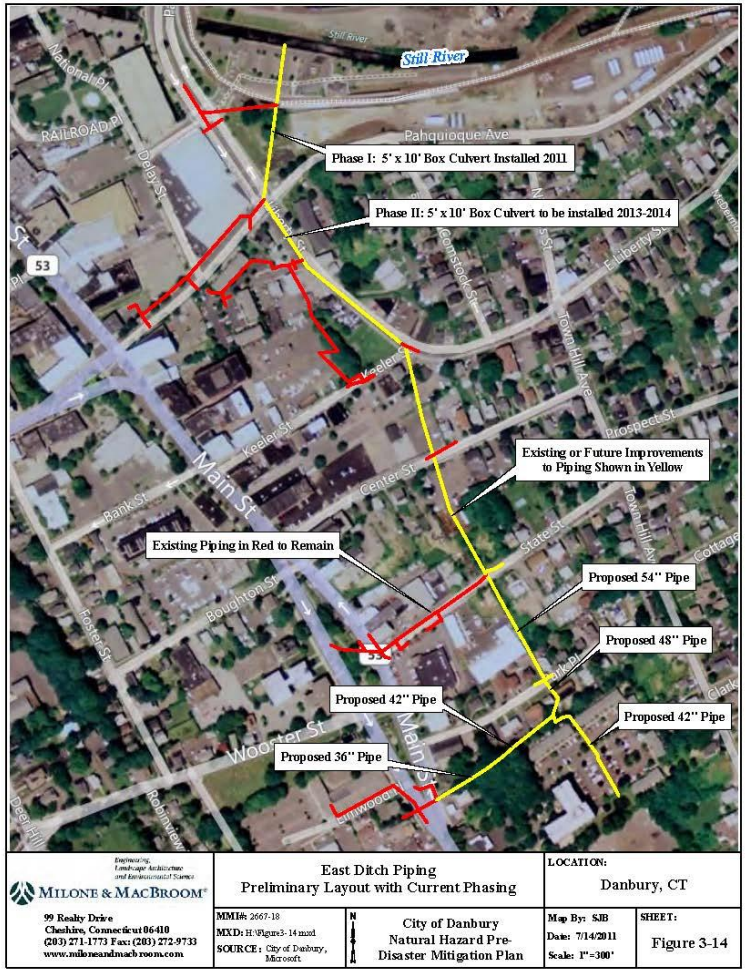
✓ Fairfield – Addressing flooding railroad underpasses and advancing green infrastructure

✓ Stratford – Re-envisioning flood solutions for the South End

✓ Ansonia – "Whole downtown resilience" through heat mitigation and TOD connectivity across river

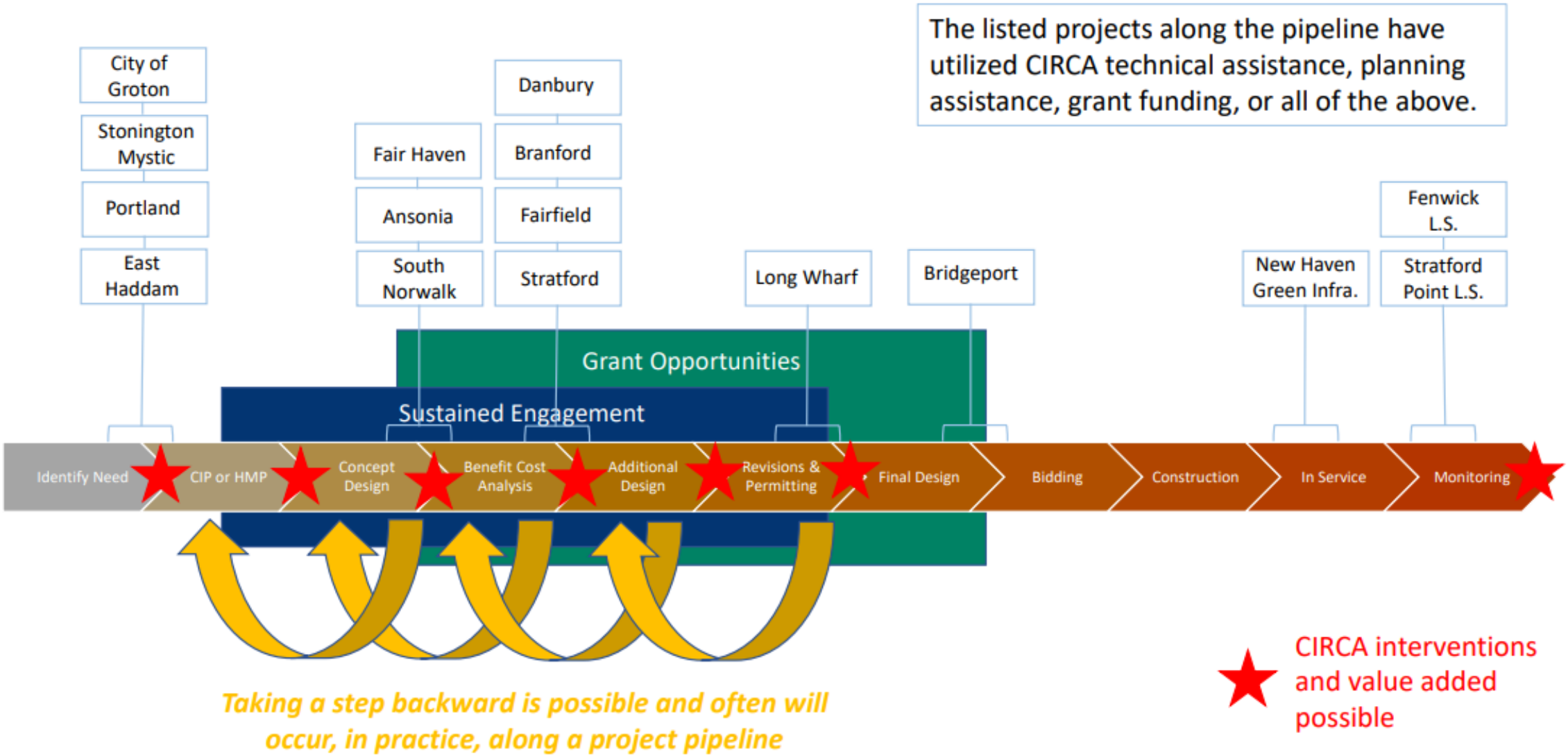
✓ Branford – Using railroad grade and flood gate for flood protection

✓ New Haven – Egress through areas of flood risk (underpasses, bridges, etc.) and heat mitigation for the Fair Haven neighborhood



**Goal: Help populate the State's "Resilience Project Pipeline"**

- Resilient CT 2.0 was expanded into RiverCOG and SCCOG with projects starting soon
- **And now: CRCOG!**



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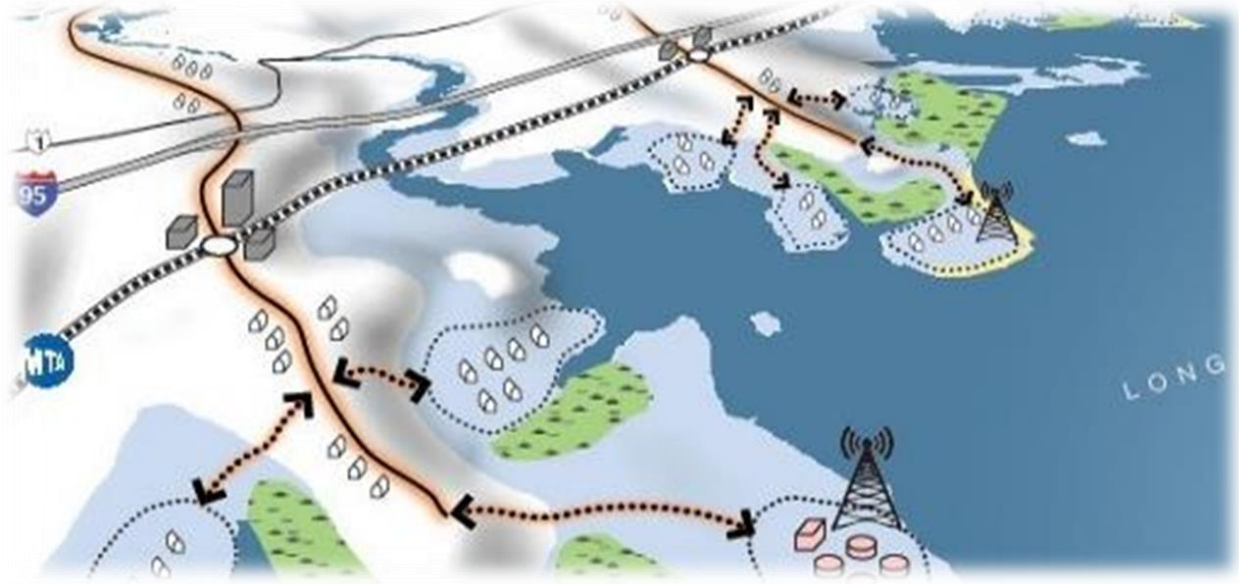

# How We ID ROARS in CRCOG

- Questions we asked:
  - Where do you see intersections of assets and **flood-related challenges?**
  - Where do you see intersections of assets and **extreme heat-related challenges?**
  - Does your municipality face any examples of unique climate driver typologies and challenges? Examples:
    - ✓ Vulnerable populations at risk for flooding and extreme heat
    - ✓ Clusters of critical facilities at risk for flooding and extreme heat
    - ✓ Lack of cooling centers or respite from extreme heat events
    - ✓ Redevelopment pressures and Transit-Oriented Development (TOD) at risk
    - ✓ Unresolved and emerging flood concerns like those of summer 2021
    - ✓ Sewer infrastructure and treatment plants at risk

# CRITERIA FOR IDENTIFYING ROARS IN CRCOG

| Factor | Potential Criteria to Count | Zones of Shared Risk | Mod-High Flood | Mod-High Heat |
|---|---|---|---|---|
| **Regional Assets** | One or more; use DECD and COG-provided data | Must be inside | Yes | Yes |
| **Critical Facilities** | Two or more | Must be inside | Yes | Yes |
| **Resilient Corridors** | Collectors and arterials; including State-owned | Must intersect | Yes | No |
| **Transit Oriented Development** | Rail and busway passenger stations | Must intersect | Yes | Yes |
| **Historic Resources** | One district or >10 structures | Must be inside | Yes | Yes |
| **Existing Affordable Housing** | Two or more assets | Must be inside | Yes | Yes |
| **WWTP** | Serving SV/EJ customers | Must be inside | Yes | No |
| **Public Water Supply Watersheds** | Serving SV/EJ customers | Must intersect | Yes | No |
| **Public Water Supply Wells** | Serving SV/EJ customers | Must be inside | Yes | No |
| **Private Dams** | Class A or lower; not State-owned | Must be upstream | Yes | No |
| **Brownfields** | Two or more | Must be inside | Yes | Yes |
| **Septic Systems** | >10 single family homes (>2,000 gpd) | Must be inside | Yes | No |
| **Home elevation unmet needs** | SV/EJ Census Tracts | Must be inside | Yes | No |

# RESILIENCE OPPORTUNITY AREA INFO SHEET

Potential Climate Adaptation and Resilience Opportunity Areas in Central Connecticut
Draft: January 31, 2024

CIRCA
Connecticut Institute for Resilience and Climate Adaptation

| ROAR Name<br>What is a ROAR?<br>A ROAR is a complex climate adaptation and **R**esilience **O**pportunity **AR**ea 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<br>These are the primary municipalities where the ROARs are located. Some of the ROARs span two municipalities. | These are some of the assets "counted" to identify ROARs. Many were provided by CRCOG in a GIS later, 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 |
| Willow Brook Watershed - DCRF | New Britain | ● | ◐ | | | | ■ | ■ | ■ | ■ | |
| Cross-boundary Trout Brook | Hartford & West Hartford | ● | ◐ | ■ | | ■ | ■ | ■ | ■ | ■ | |
| Cross-Boundary Park River | Hartford & West Hartford | ● | ◐ | ■ | | ■ | ■ | ■ | ■ | ■ | |
| Piper Brook | Newington | ◔ | ◐ | ■ | | ■ | ■ | ■ | ■ | ■ | |
| Burnham Brook | East Hartford | ◐ | ◐ | ■ | | | | ■ | ■ | ■ | ■ |
| Willow Brook | East Hartford | ◐ | ◔ | | | | | ■ | ■ | | |
| South Meadows & South End | Hartford | ● | ◐ | ■ | | ■ | | ■ | ■ | ■ | |
| North End Critical Facilities | Hartford | ◔ | ◔ | ■ | | ■ | | | | | |
| Mill Brook - Newington | Newington | ◐ | ◔ | | | | | ■ | ■ | | |
| Kettle Brook | Windsor Locks | ● | ◔ | | | ■ | ■ | | ■ | ■ | |
| Kensington & Mattabassett River | Berlin | ● | ◔ | ■ | | ■ | ■ | | ■ | ■ | |
| Talcottville & Hockanum River | Vernon | ● | ◔ | ■ | ■ | ■ | | ■ | ■ | | ■ |
| Lower Hockanum River | East Hartford | ● | ◔ | ■ | ■ | ■ | | ■ | ■ | ■ | |
| Central Southington | Southington | ● | ◔ | ■ | | | | ■ | ■ | ■ | ■ |
| Enfield WPCF | Enfield | ◔ | ◔ | | ■ | | | | | | |
| Hockanum River & Tolland Turnpike | Manchester & Vernon | ◔ | ◔ | ■ | | | | ■ | ■ | | |
| South Fork Hockanum River | Manchester | ◐ | ◔ | | ■ | ■ | | | ■ | | ■ |
| Freshwater Brook | Enfield | ◔ | ◔ | ■ | | | | | ■ | ■ | |
| Plainville WPCF | Plainville | ◔ | ◔ | | ■ | | | | | ■ | |
| Nod Brook | Avon | ◔ | ◔ | | | | | | ■ | | |
| Valley Brook and Goff Brook | Rocky Hill | ◔ | ◔ | ■ | ■ | | | ■ | ■ | | |
| Coventry Sewage Treatment Plant | Coventry | ◔ | ◔ | | ■ | | | | | ■ | |
| Simsbury Center & Farmington River | Simsbury | ● | ◔ | ■ | ■ | | | | ■ | ■ | |
| Central Wethersfield | Wethersfield | ● | ◔ | ■ | | | | | ■ | ■ | |
| Staffordville Critical Facilities | Stafford | ◔ | ○ | | | | | | | | |
| Farmington River | Farmington | ◐ | ◐ | ■ | ■ | | | | ■ | ■ | |
| Collinsville | Canton | ◔ | ◐ | ■ | ■ | | | | ■ | | |
| Hop Brook & Connecting Brooks | Manchester | ◐ | ◐ | ■ | | | | | ■ | | |
| Upper Hockanum River | Ellington | ◔ | ◔ | ■ | ■ | ■ | | ■ | ■ | ■ | |
| Andover Town Garage on Hop Brook | Andover | ◔ | ◔ | | | | | | | ■ | |


CIRCA contact information
for questions and feedback:
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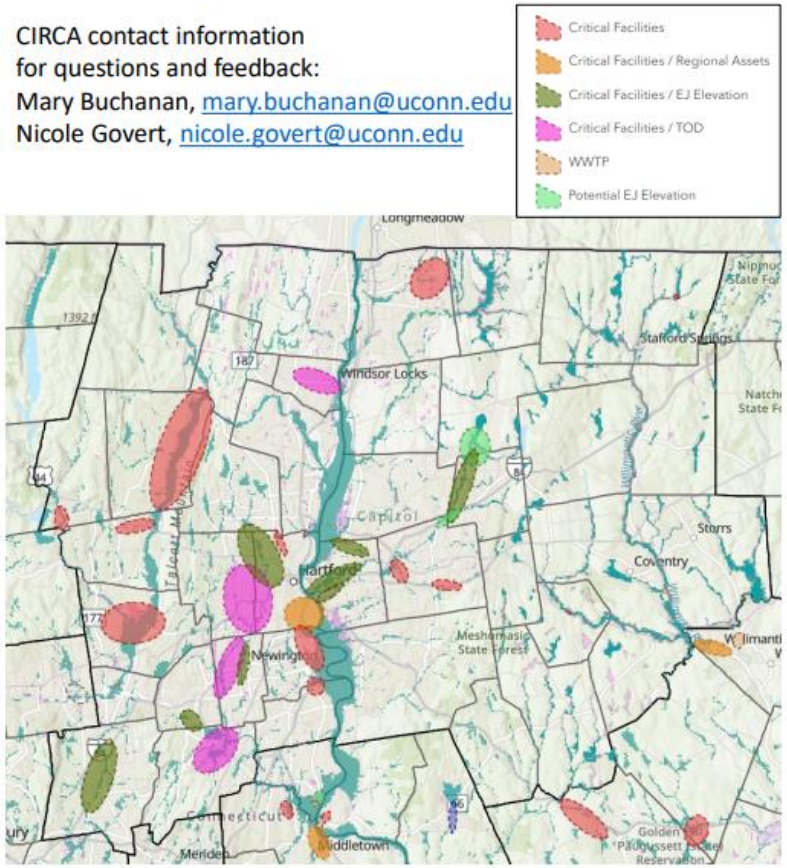


| | |
|---|---|
| ● | >10 Critical Facilities or Regional Assets |
| ◔ | 6-10 Critical Facilities or Regional Assets |
| ◐ | 3-5 Critical Facilities or Regional Assets |
| ◔ | 1-2 Critical Facilities or Regional Assets |
| ○ | Critical Facilities or Regional Assets not present |

# Upcoming Projects in the CRCOG Region

- CIRCA will be a partner on two DEEP Climate Resilience Fund projects that overlap with ROARs within the CRCOG Region and meet Resilient Connecticut goals:
  - *Willow Brook Watershed – New Britain*
  - *Kennedy Brook & Kane Brook – Hartford / West Hartford*

- We are also looking to do **2-3** more projects in the CRCOG region.
  - These project sites have not yet been selected.
  - We'd like your input!

# NEXT STEPS: CONTACT US!

- Let CIRCA know if your municipality would be interested in doing a project in one of the identified areas! This would involve…
  - Working with CIRCA to develop the scope of work
  - Serving on an advisory committee to work with the selected consultants
  - Participating in community outreach efforts


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