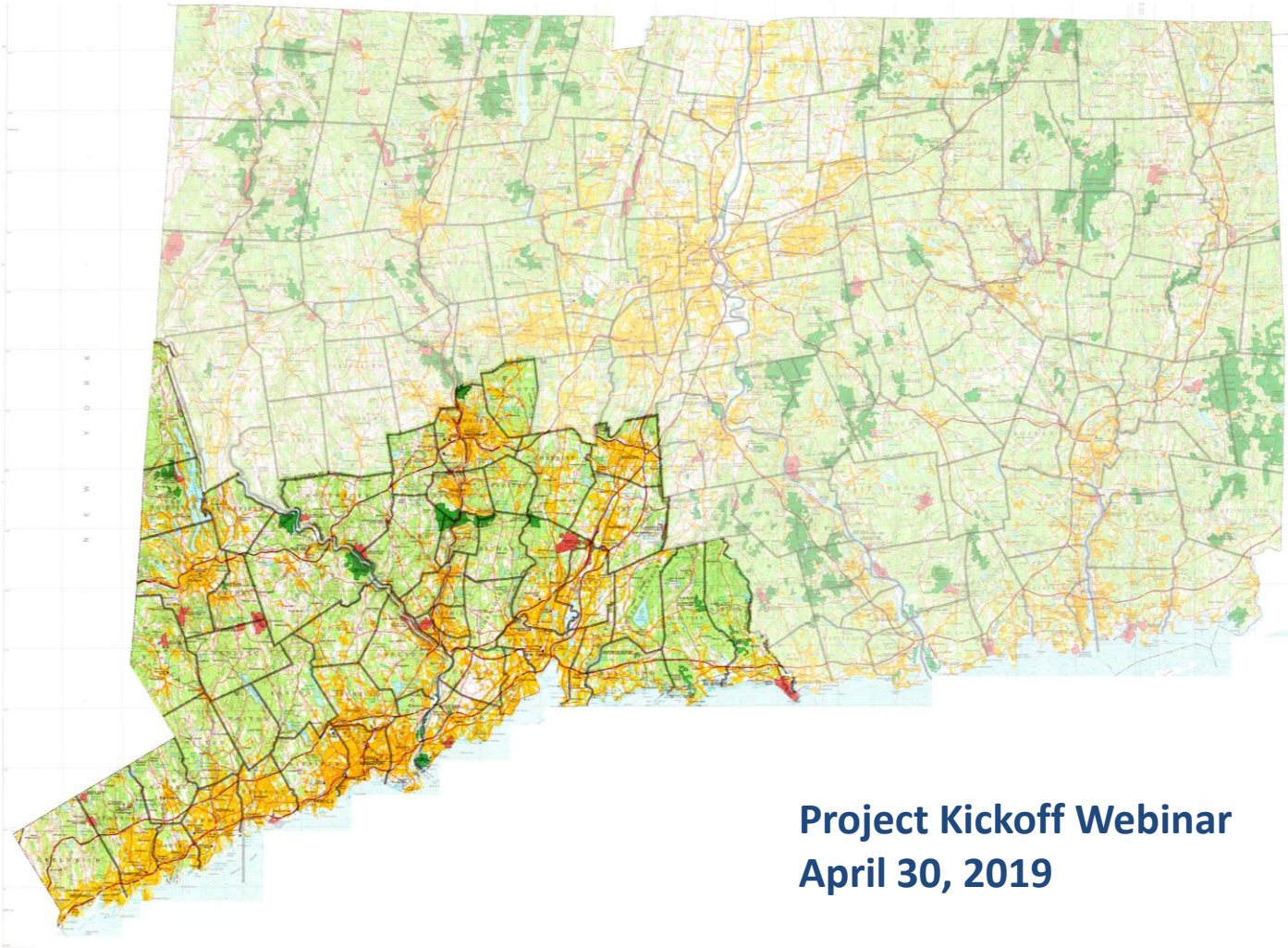


# Resilient Connecticut



Project Kickoff Webinar  
April 30, 2019

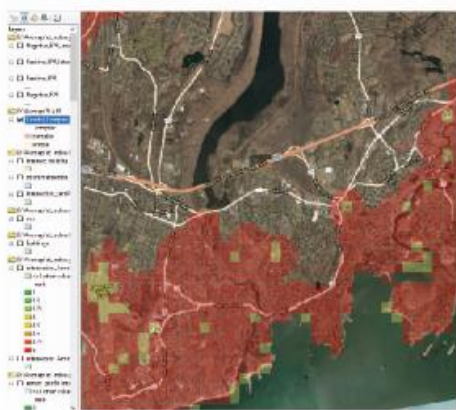
UConn



# CIRCA Mission

Increase the resilience and sustainability of vulnerable communities in Connecticut's coastal and inland areas to severe storms and the growing impacts of climate change on the natural, built, and human environment in response to critical, identified needs and priorities.





Modeling Analysis



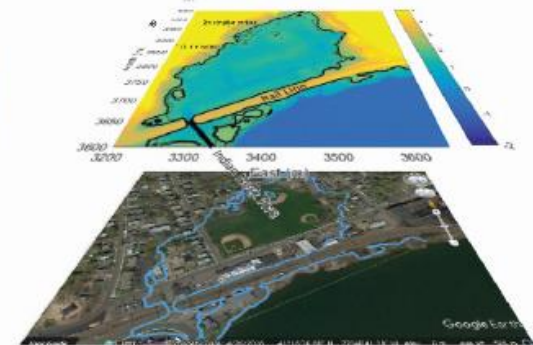
Map Viewer



Field Research



Planning



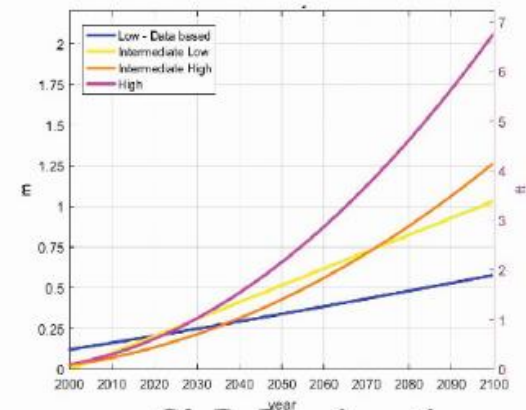
Technical to Planning



Education



Site Reconnaissance



SLR Projections

# CIRCA Staff



James O'Donnell  
Executive Director,  
Professor, Marine Sciences



John Truscinski  
Director of Resilience Planning



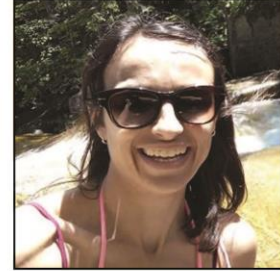
Katie Lund  
Project Coordinator



Alexander Felson  
Deputy Executive Director  
Director of Resilience Design



Yaprak Onat  
Assistant Director of Research



Caterina Massidda  
Data Analyst/Programmer



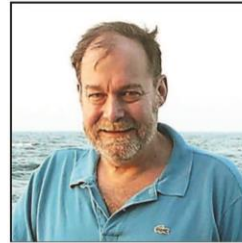
Lauren Yaworsky  
Program Assistant



Kimberly Bradley  
Project Specialist



Kay Howard Strobel  
Observations



Grant McCardell  
Modeling



Todd Fake  
Modeling



Molly James  
Observations



Amin Ilija  
Modeling



# Connecticut Geology

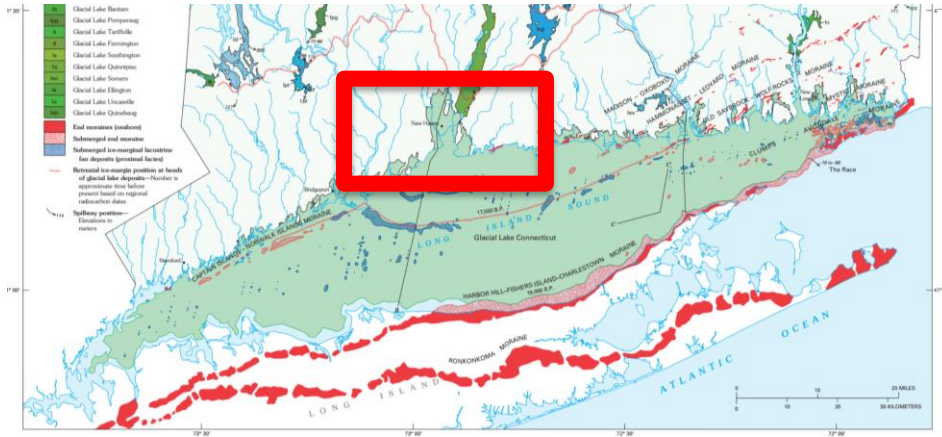
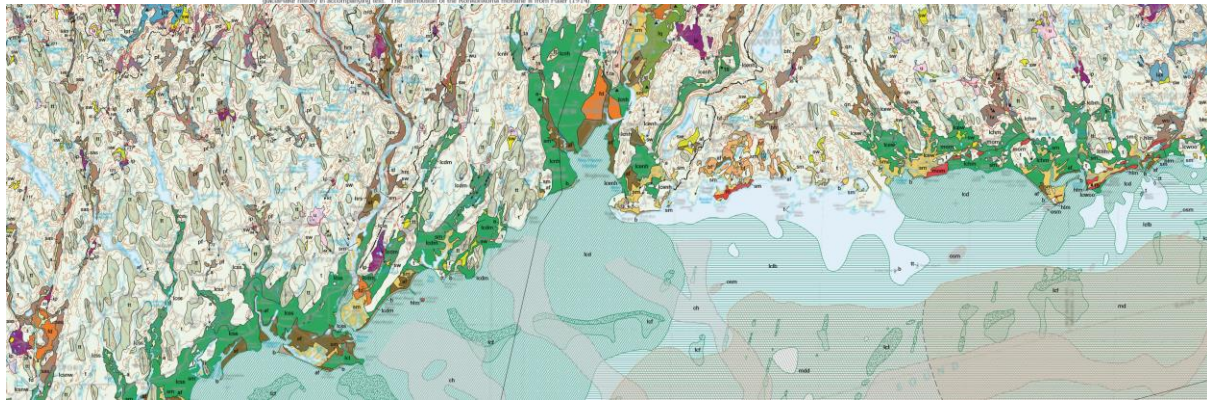
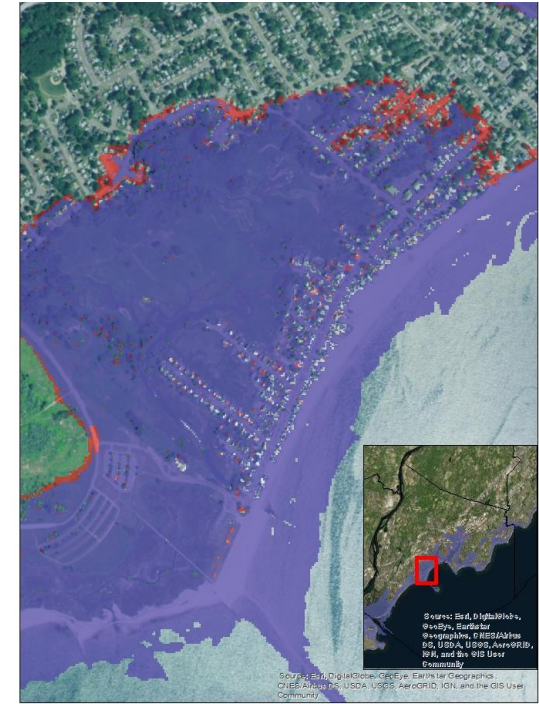


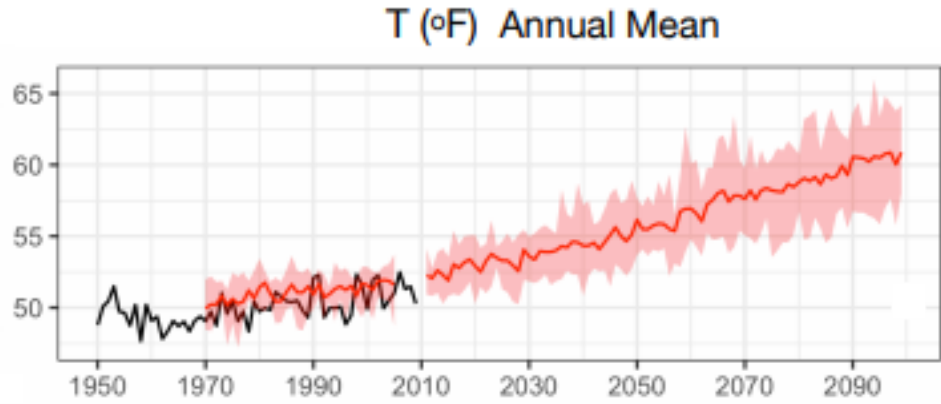
Figure 4.—Major glacial lakes in Connecticut and selected ice-margin positions during late Wisconsinan deglaciation. See discussion of glacial lake basins in accompanying text. The distribution of the Rononkonka moraine is from Fuller (1914).



**QUATERNARY GEOLOGIC MAP OF CONNECTICUT AND LONG ISLAND SOUND BASIN**  
 By  
 Janet Barbara Stone, John P. Schuler, Elizabeth Haley London, Mary L. DeGiacomo-Cohen, Ralph S. Lewis, and Woodrow B. Thompson  
 U.S. Geological Survey, U.S. Geological Survey, Massachusetts, Long Island Sound Research Center, Connecticut Geological and Natural History Survey, and U.S. Geological Survey  
 2005



# CT Temperature Projections



CT PSCAR, 2018

- Significant increase in average annual temperatures, with largest increase expected in summer and in fall.
- Increase in the number heat wave and fewer frost days.
- Growing season expected to increase ~ 35 days by 2050.

# CT Precipitation Projections

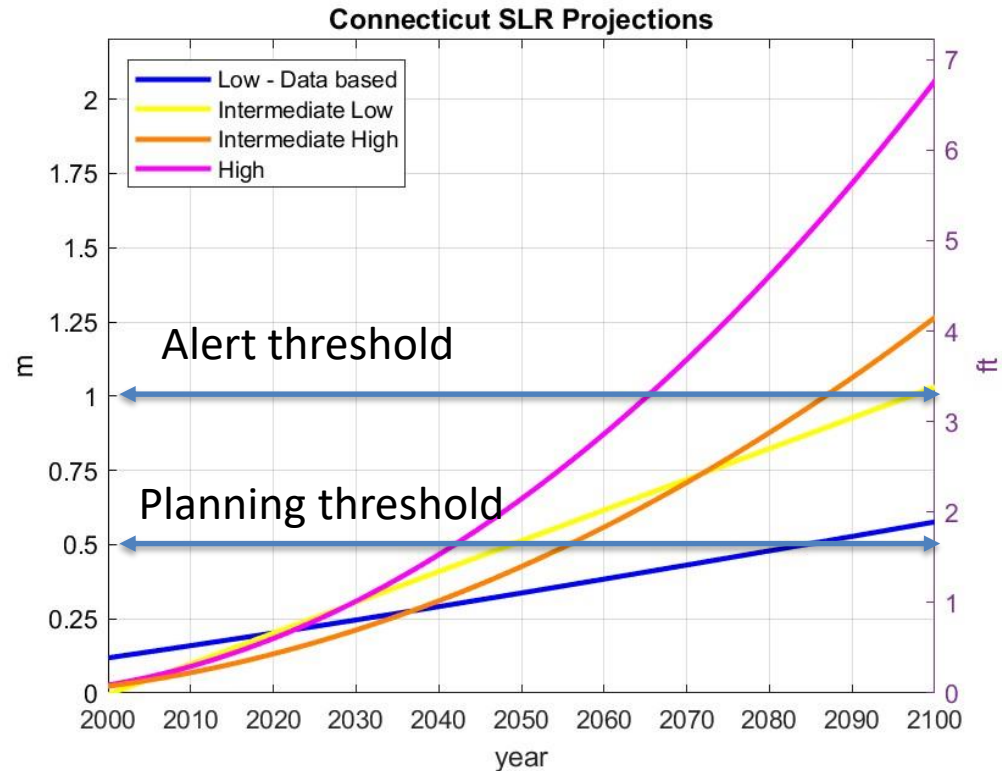
- Increase of annual precipitation, with the largest increase expected in winter and spring.
- Results in fall and summer are inconclusive.
- Number of heavy rain days is projected to increase, increasing flood risk.
- Decrease in summer water availability expected to increase drought.



New Haven MRGP report, 2018

# CT Sea Level Rise Projections

- Plan for sea level rise of 20 inches by 2050.
- Scientific basis for projections revisited every 10 years.
- Senate Bill No. 7/Public Act 18-82 “An Act Concerning Climate Change Planning and Resiliency”.

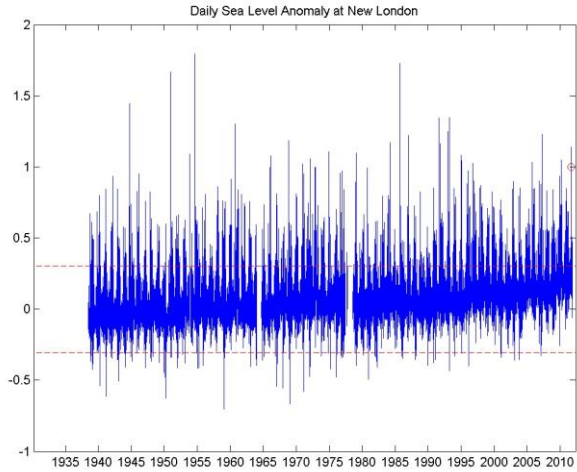
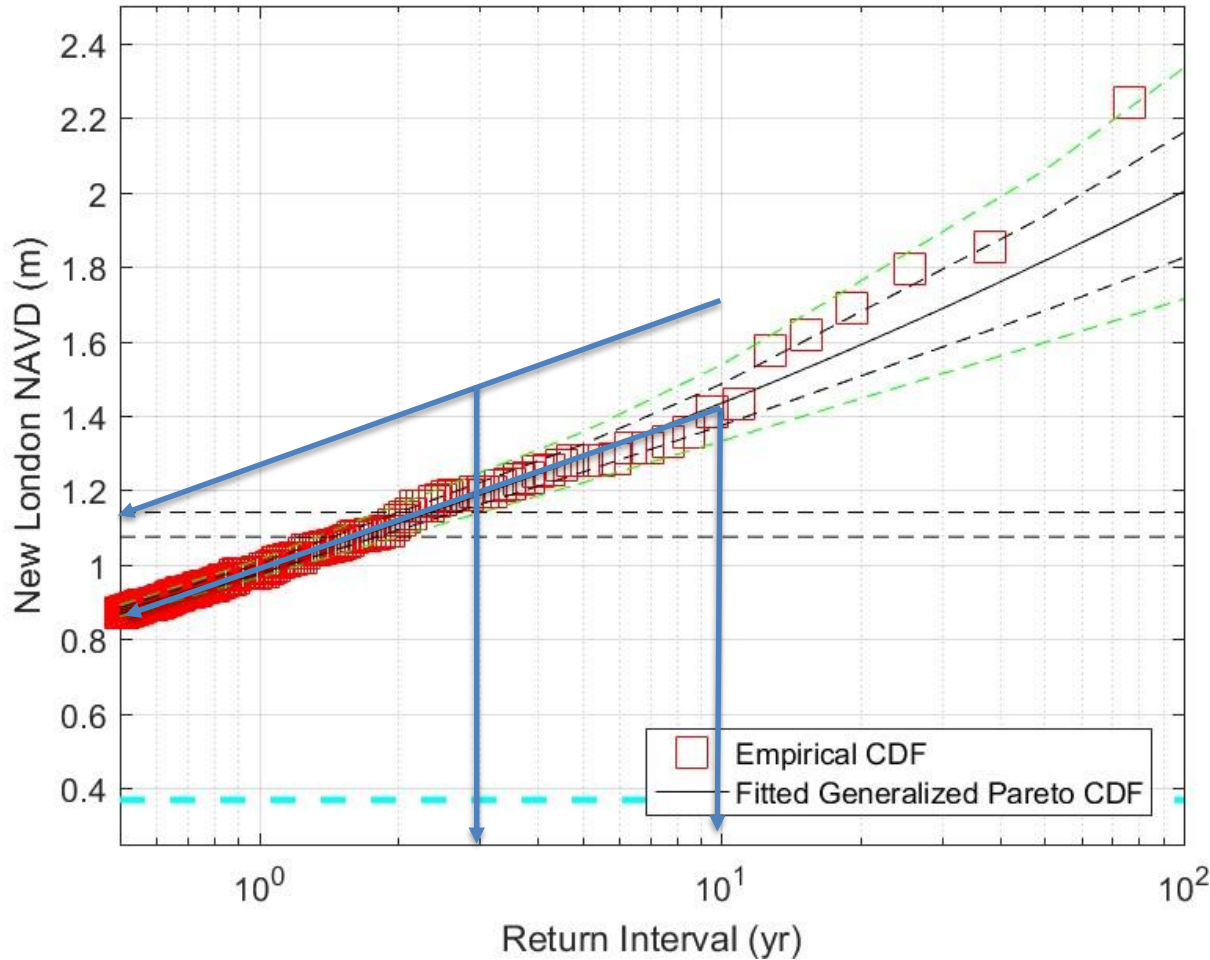


O'Donnell, 2018

<https://circa.uconn.edu/sea-level-rise/>

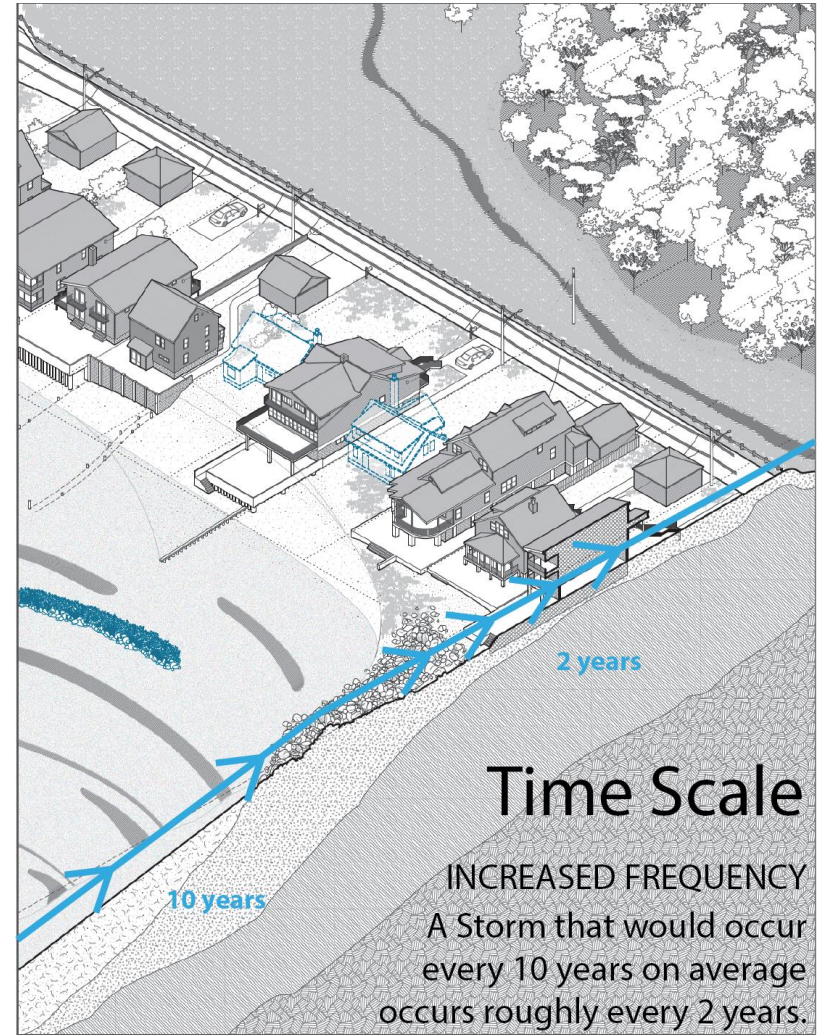
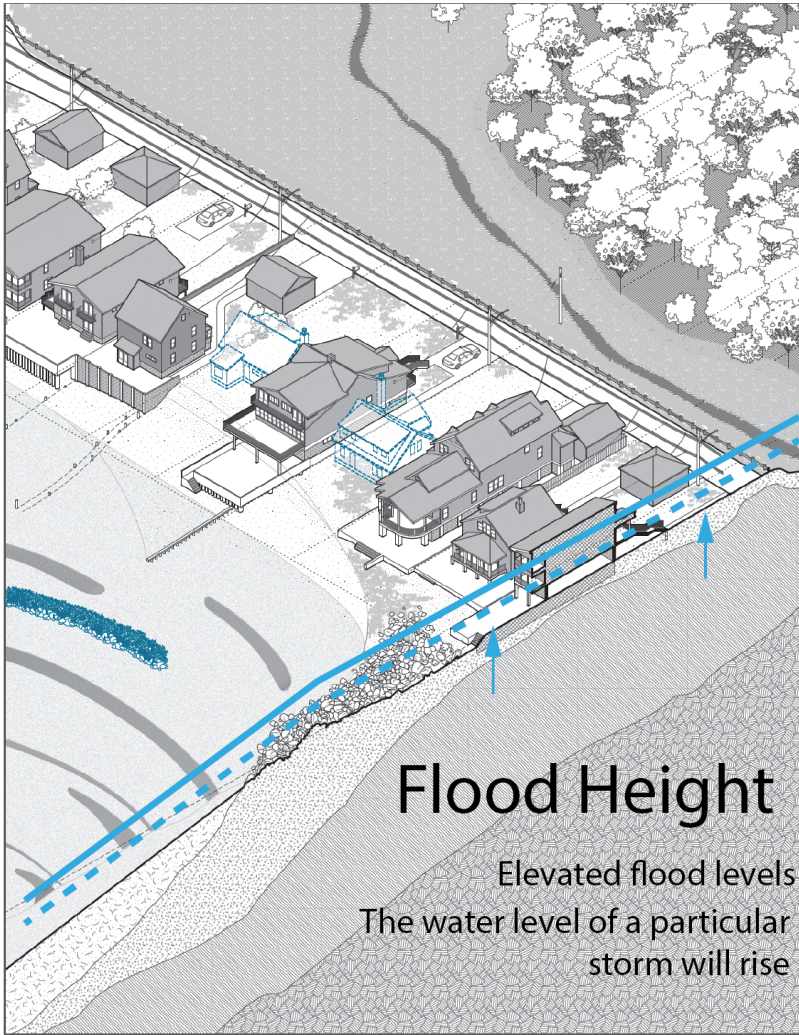


# CT Sea Level Rise Projections



New London Total  
Water Level Return  
Interval -O'Donnell

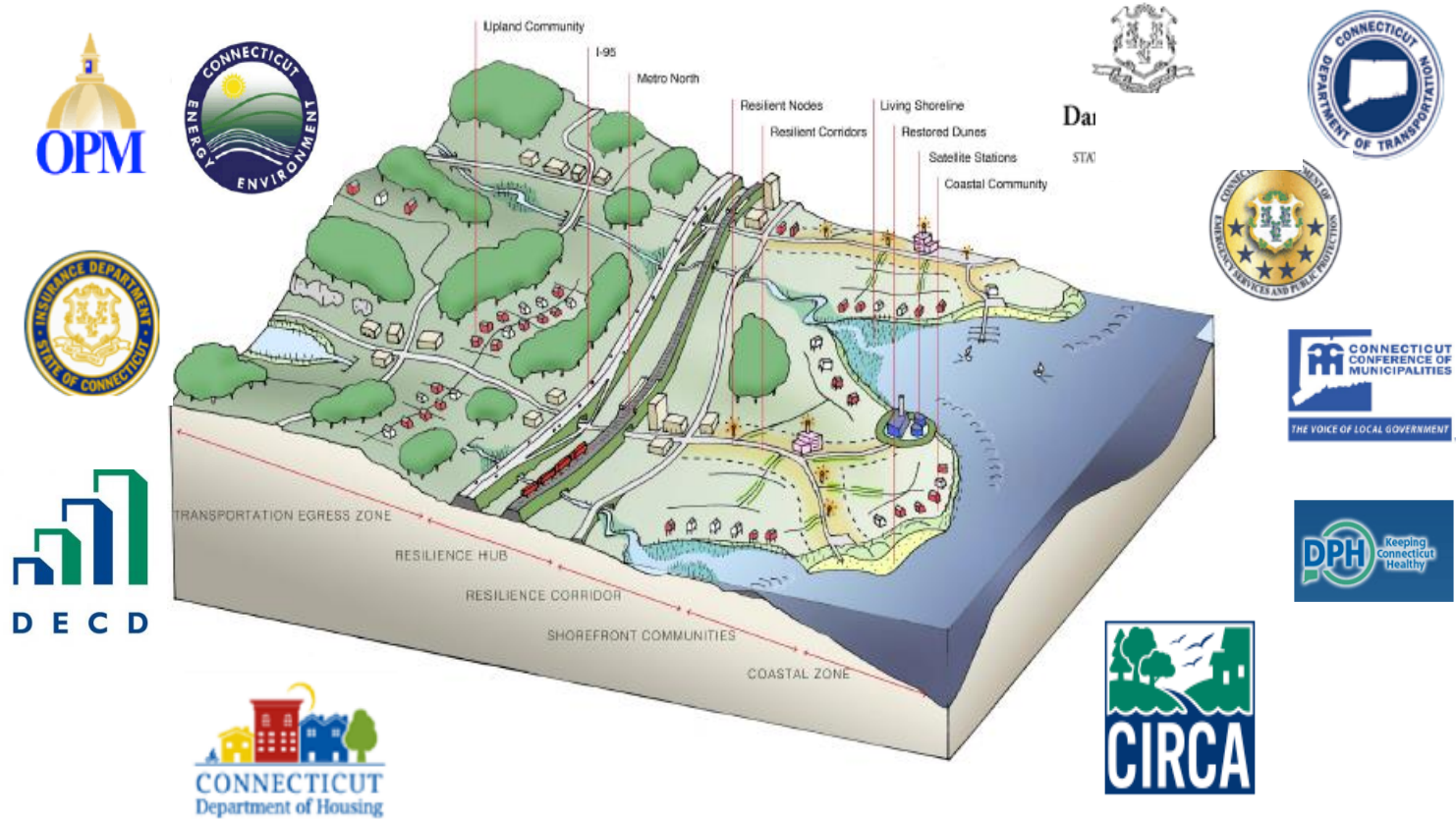






# HUD National Disaster Resilience Competition

## CIRCA partnering with State Agencies Fostering Resilience (SAFR Council)



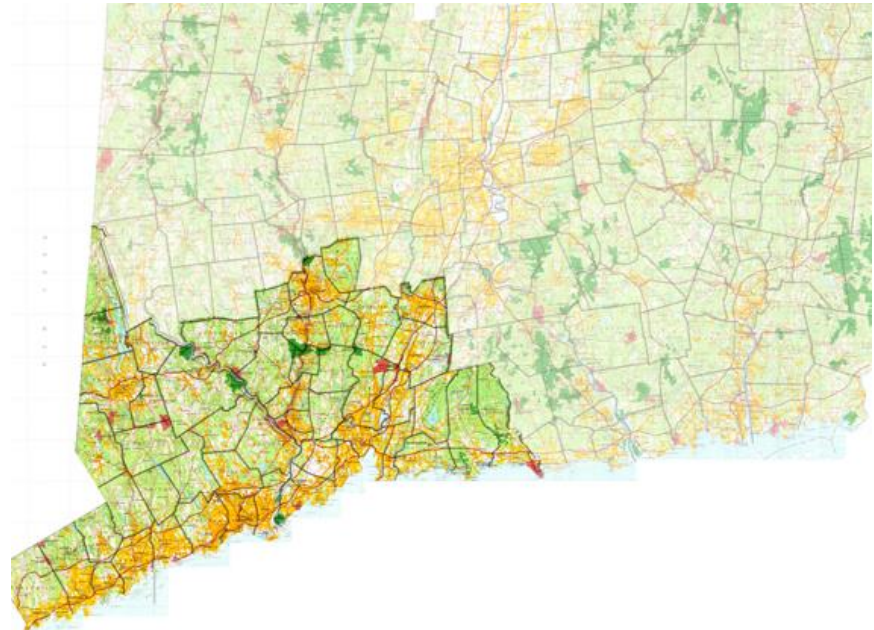
UConn





# Resilient Connecticut

- Establish resilient communities through smart planning.
- Incorporate economic development framed around resilient transit-oriented development.
- Incorporated conservation strategies, and critical infrastructure improvements.



# Resilient Connecticut - Project Phases

*Oct 2018 – May 2022*

Phase 1:  
*Develop Resilience  
Planning Framework*

- Coordinate with State Agencies (SAFR) and stakeholders
- Review existing local, state, and relevant national and international resilience and adaptation planning efforts
- Draft Resilience Framework

Phase 2:  
*Conduct Resilience  
Planning in New Haven  
and Fairfield Counties*

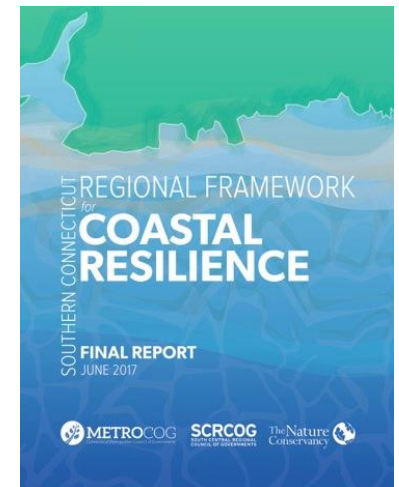
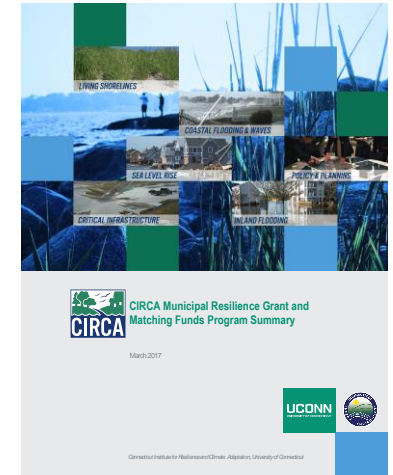
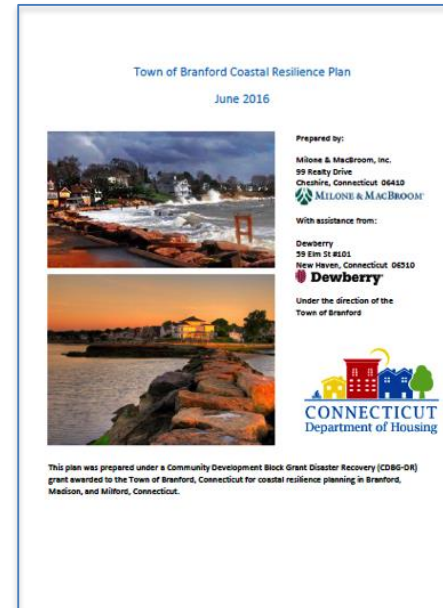
- Regional resilience planning incorporating the Resilience Framework
- Municipal resilience planning activities incorporating the Resilience Framework
- Regional engagement; coordination across plans and initial synthesis

Phase 3:  
*Synthesize, prioritize  
and develop  
implementation plans*

- Site plan development
- Synthesis report and Resilience Roadmap
- Funding site plan projects

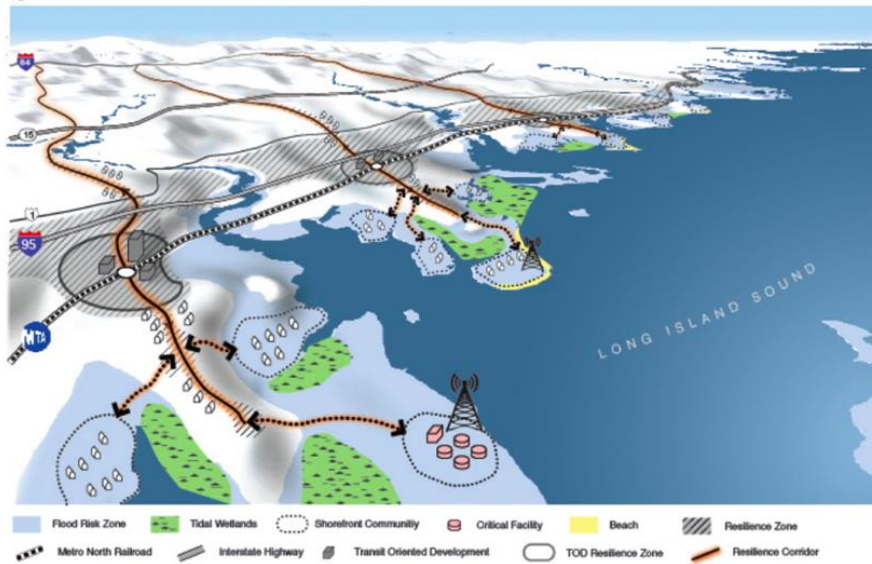
# Phase 1: Develop Resilience Planning Framework

- Bring together the stakeholders;
  - State Agency Workgroup and Connecticut Resilience Framework Advisory Committee
- Assess the current planning efforts in the state; and
- Build a resilience framework for planning efforts going forward

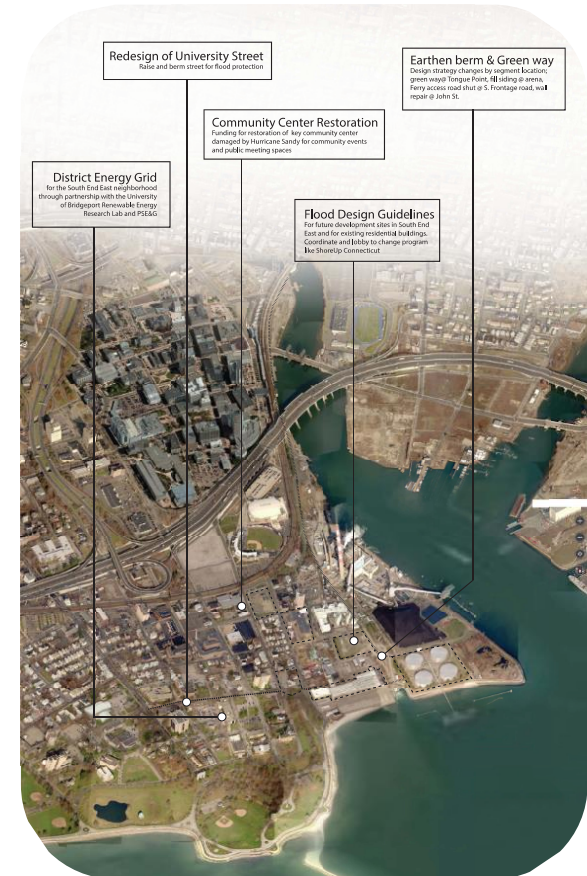




# Phase 2: Conduct Resilience Planning in New Haven and Fairfield counties



- Regional
- Municipal
- Regional engagement, coordination across plans and initial synthesis

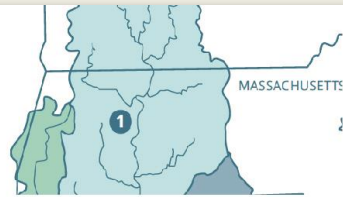


# Phase 3: Synthesize, prioritize and develop implementation plans

- Site plan development
- Funding site plan projects
- Resilience Roadmap Recommendations



Rebuild by Design Illustrative plan of South End showing catalytic development potential and NDRC Projects

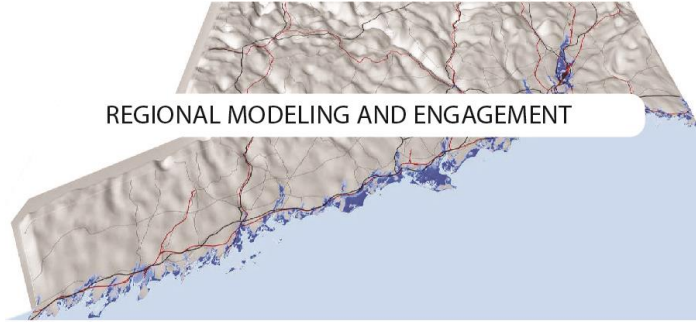


MASSACHUSETTS

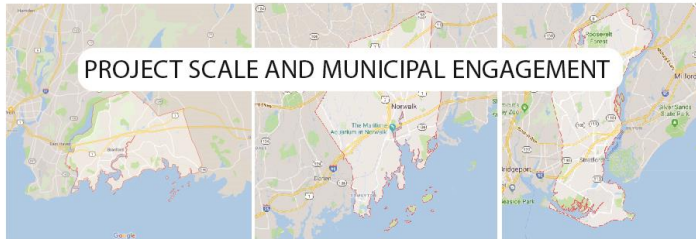
STATE AND REGIONAL ANALYSIS



REGIONAL MODELING AND ENGAGEMENT



PROJECT SCALE AND MUNICIPAL ENGAGEMENT

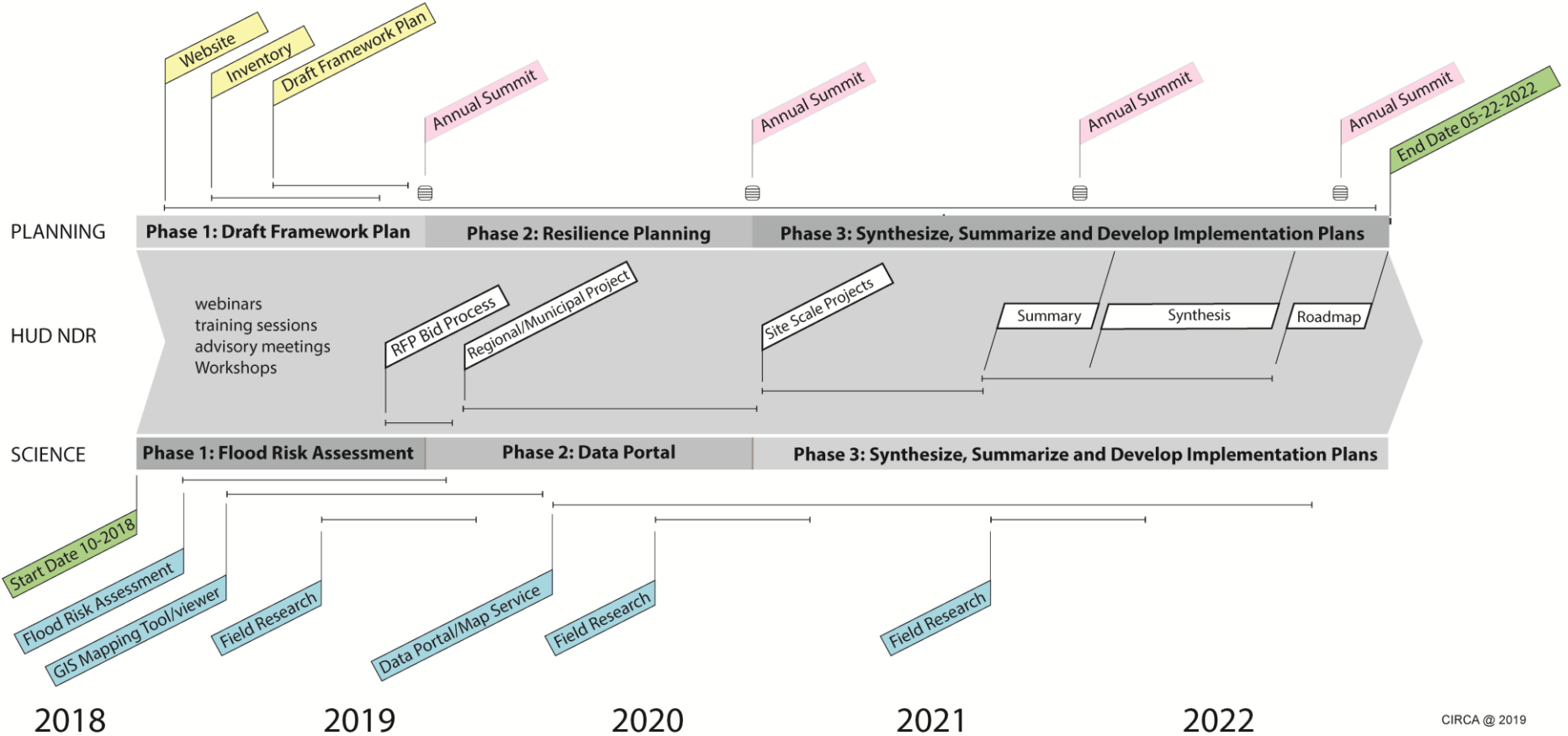


FIELD RESEARCH





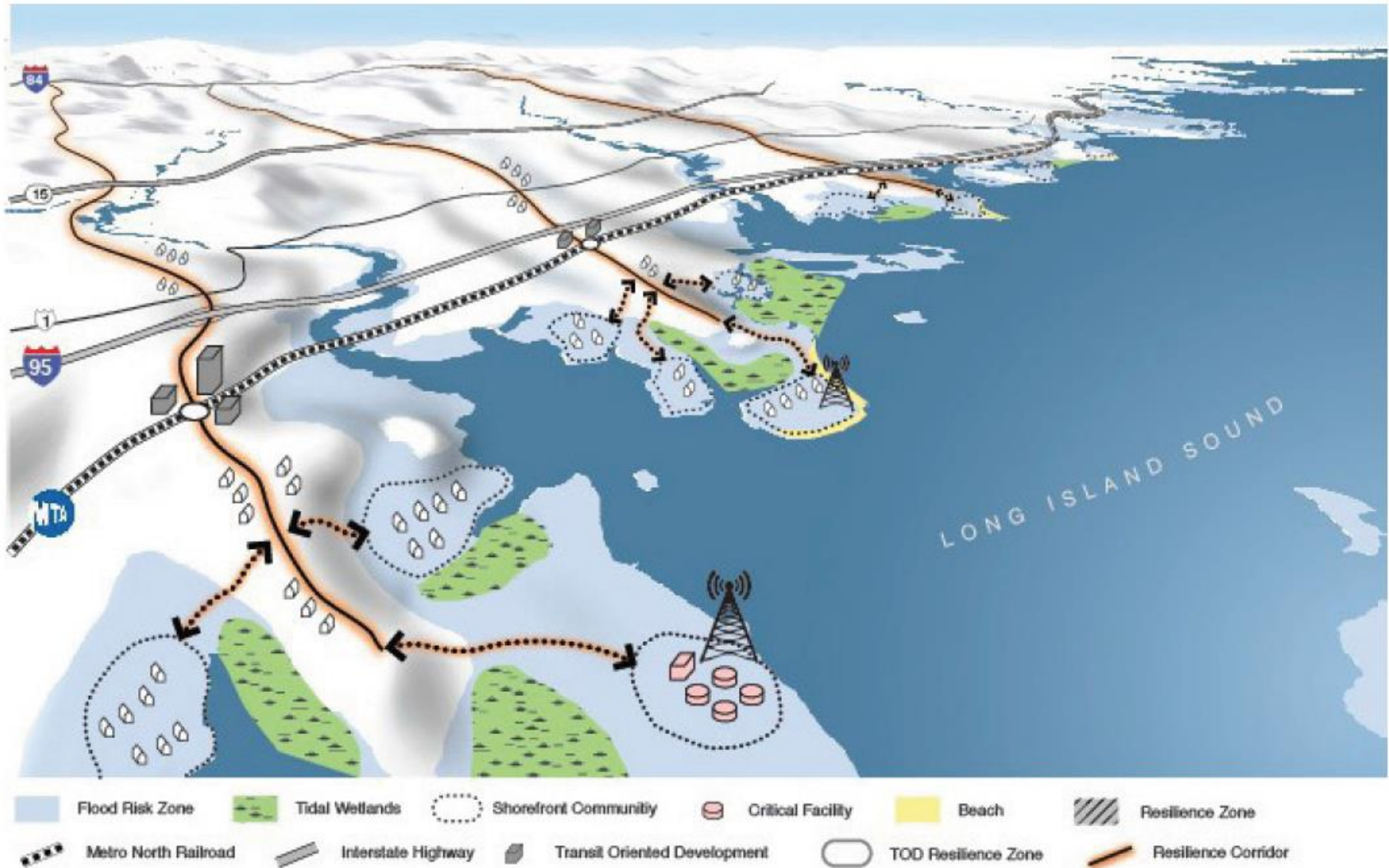
# RESILIENT CONNECTICUT– Project Timeline



CIRCA @ 2019

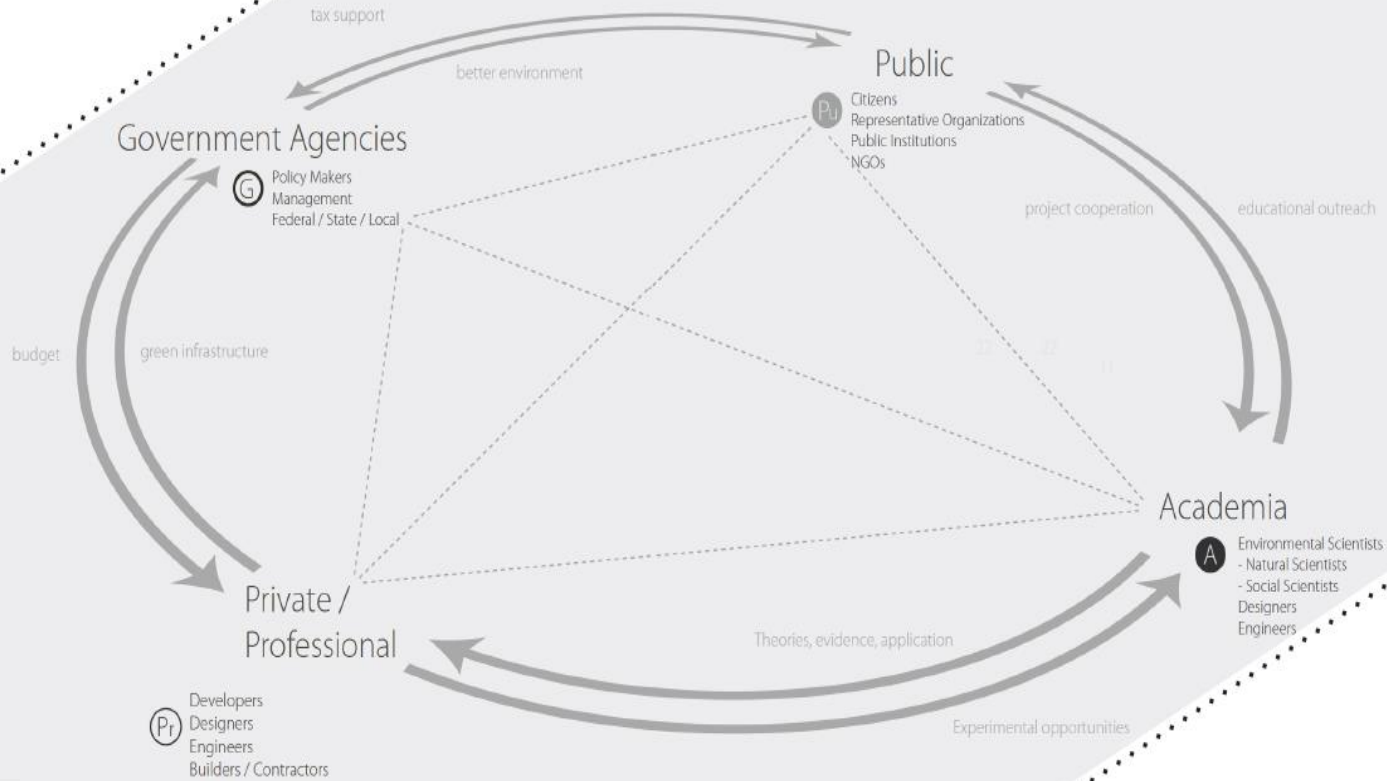


# Resilient Connecticut - Planning



# Technical

We work at multiple scales and across disciplines with diverse clients and stakeholders



cross-sector collaboration

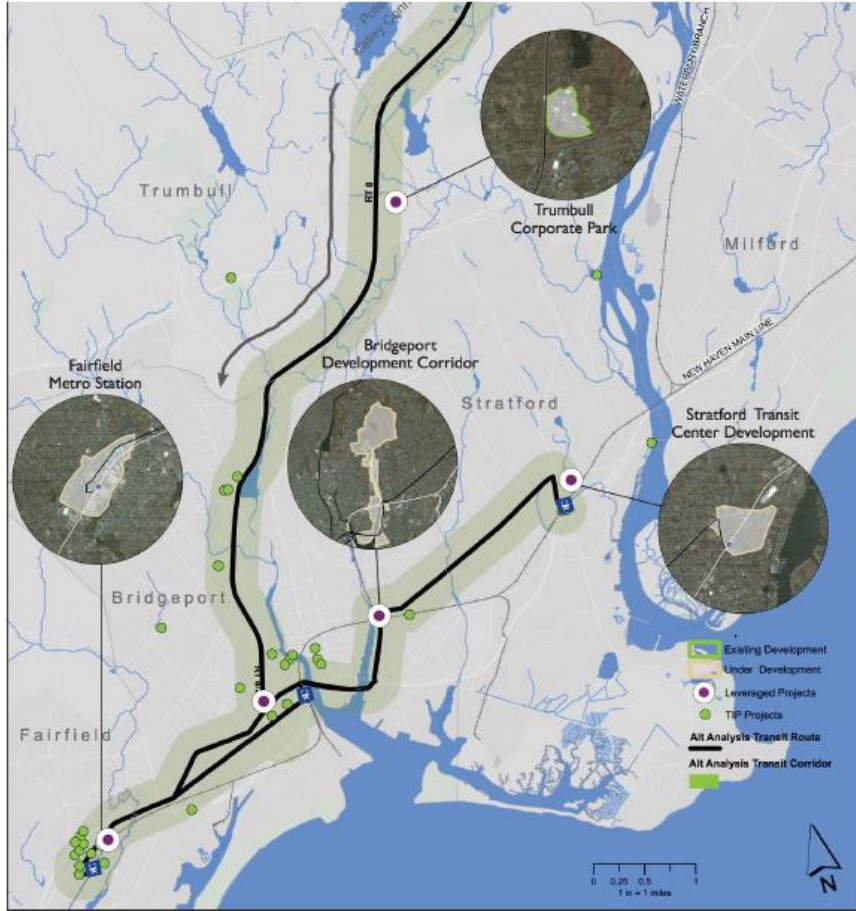
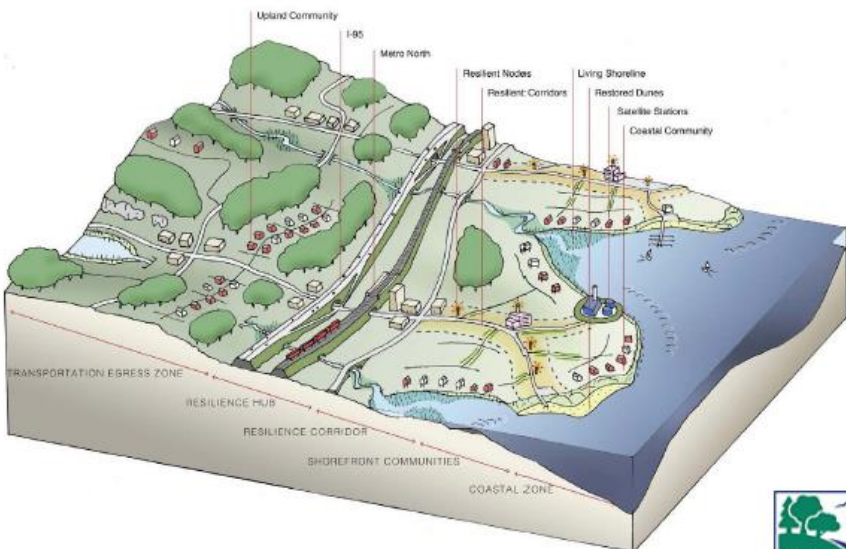
# Planning



# Development around TOD nodes and corridors



- Flood Risk Zone
- Tidal Wetlands
- Showfront Community
- Critical Facility
- Ewash
- Facilities Zone
- Metro North Railroad
- Interstate Highway
- Transit Oriented Development
- TOD Resilience Zone
- Resilience Corridor

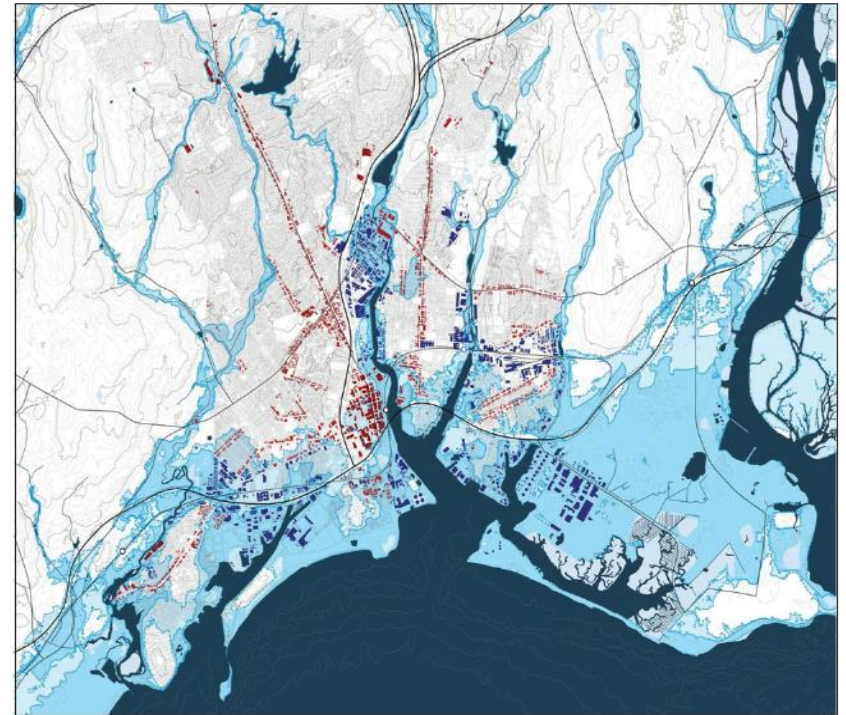
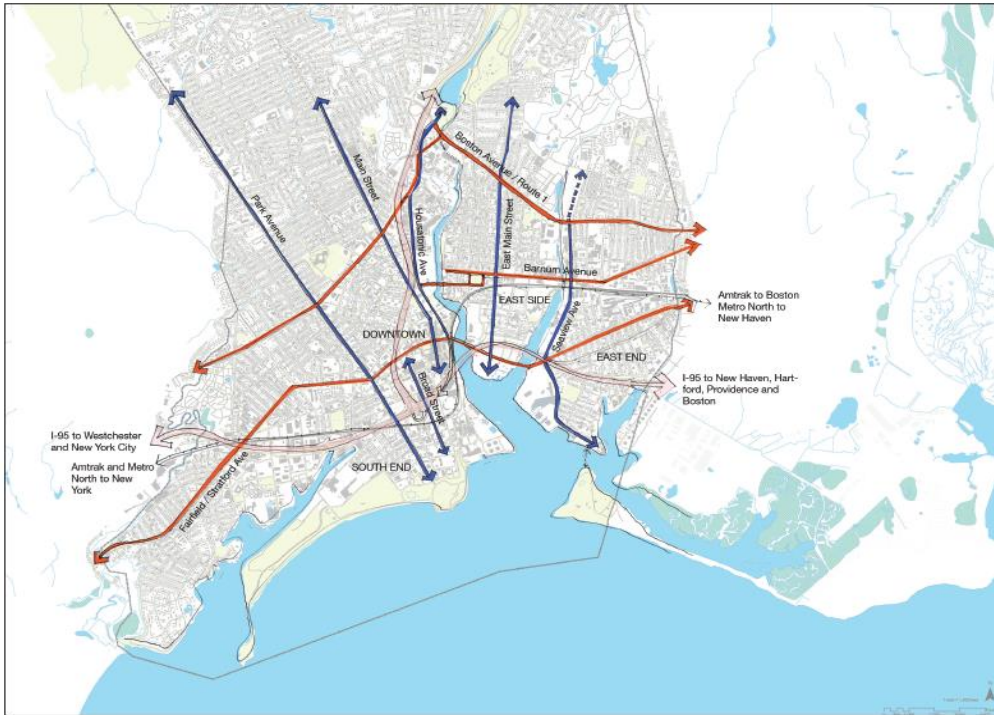


Transit oriented development (TOD) is the development of residential, commercial and employment centers within one-quarter to one-half mile or walking distance of public transportation facilities (rail, bus) that meet transit supportive standards for land uses, built environment densities and walkable environments.



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# Coastal Resilience Planning

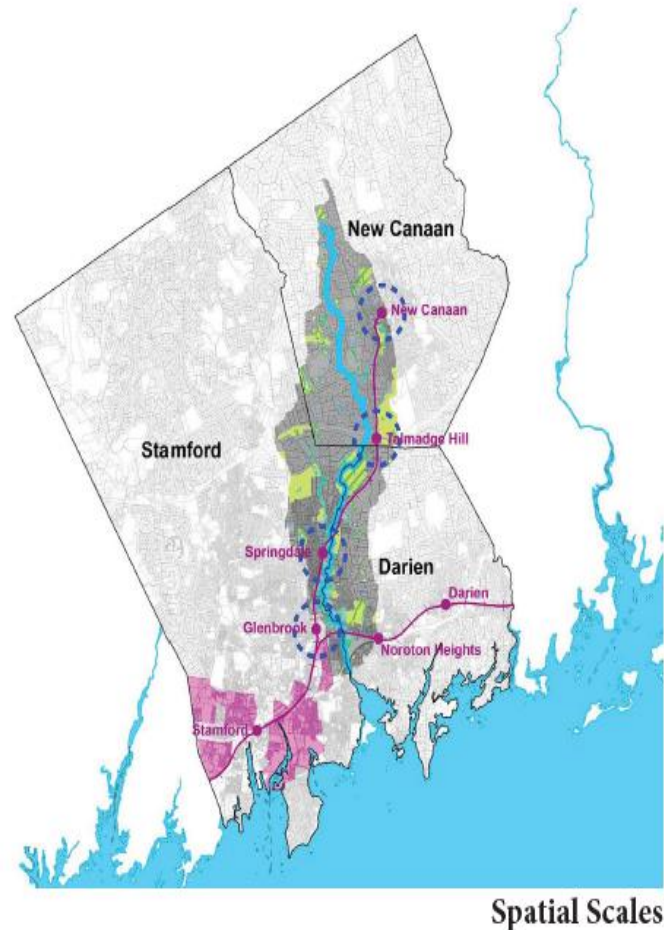
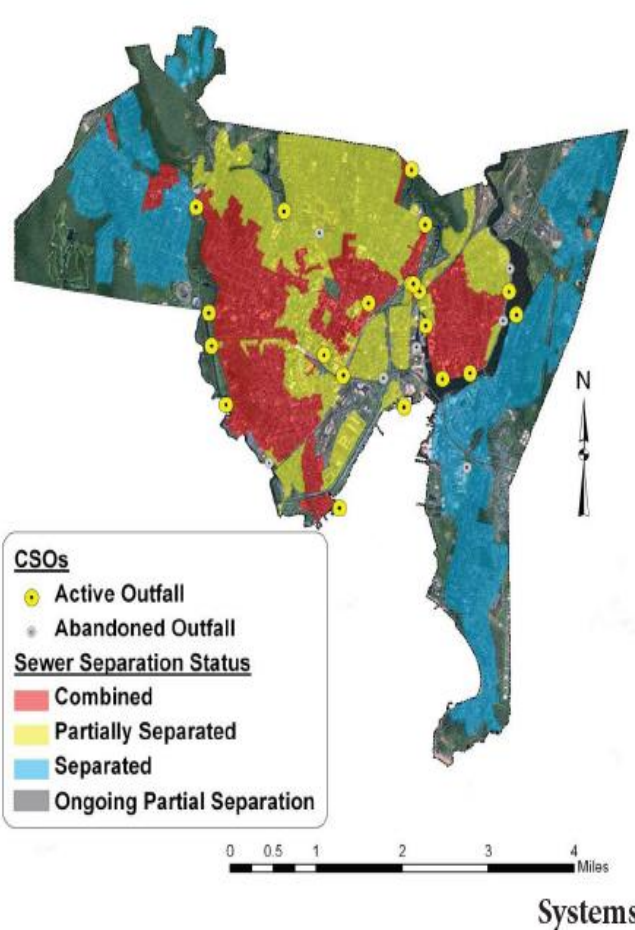


## Bridgeport – Resilience Corridors

Yale School of Architecture Urban Design Studio



# Regional Scale Analysis

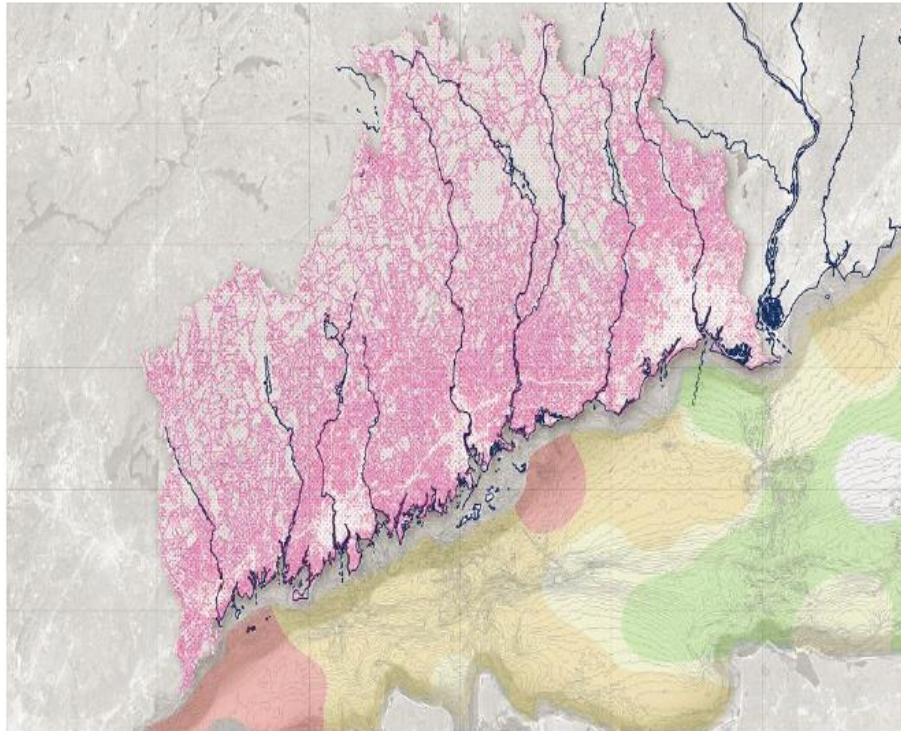




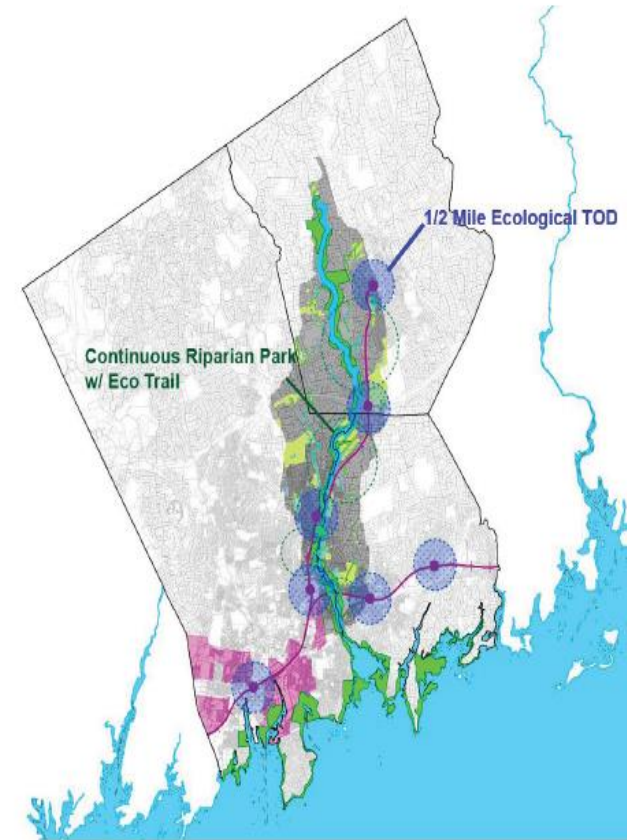
# Regional Scale Analysis

## 1. Background & Site Analysis

Developed Land & Hypoxia



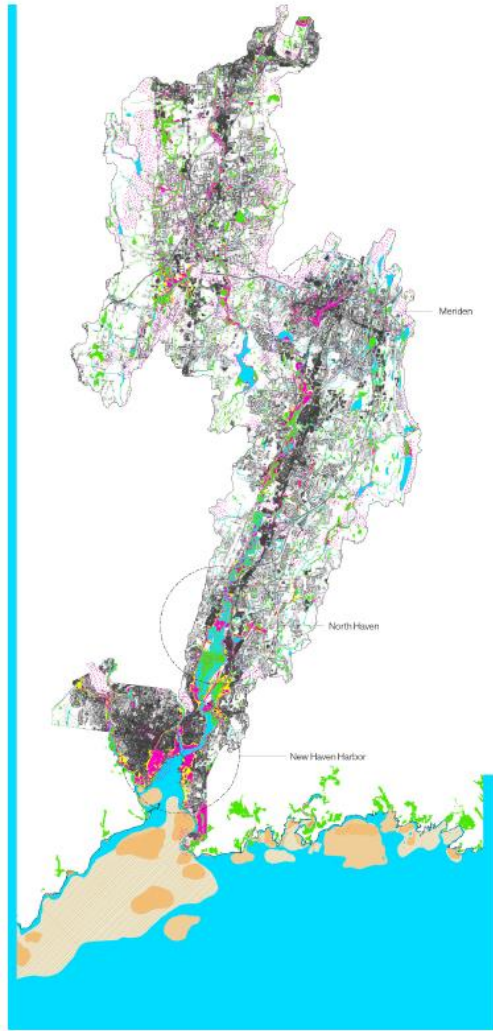
Southwest Region



Noroton River Sub-regional Basin

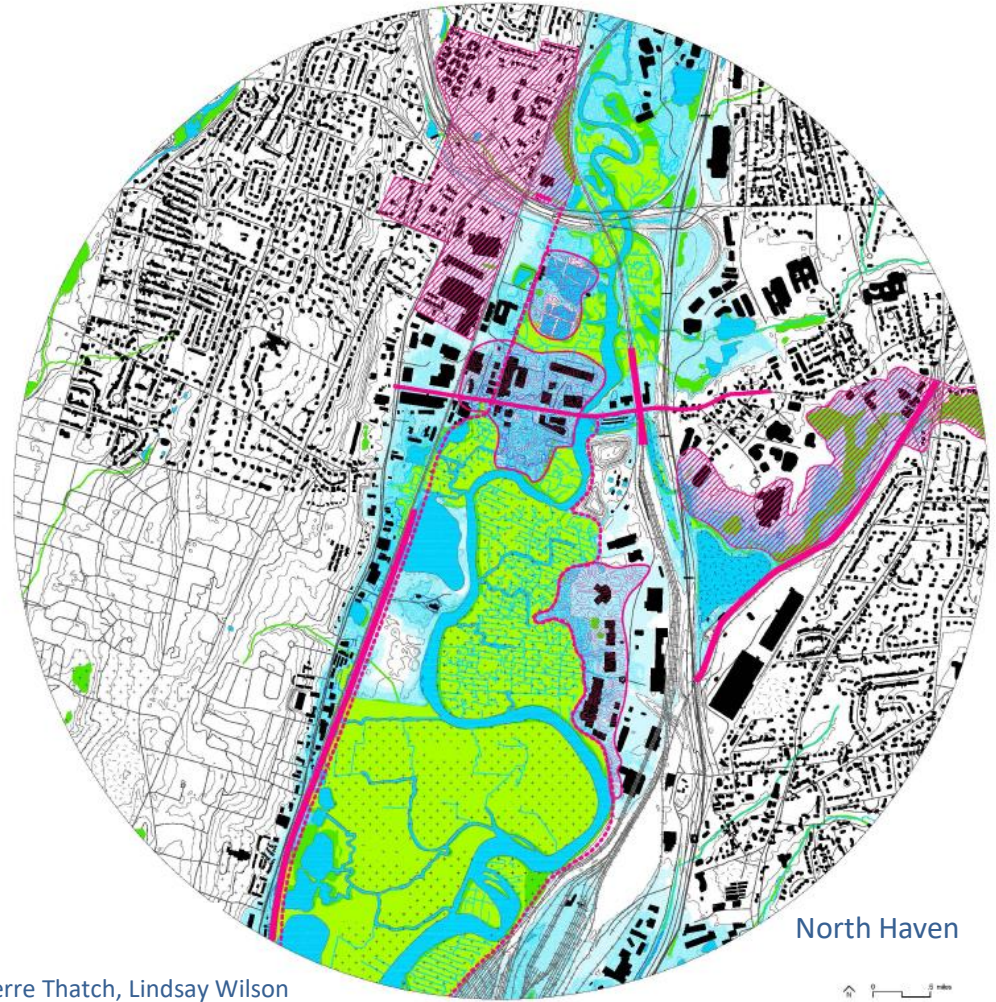
Yale University  
Ecological Urban Design 2017  
Eli Ward, Jacqueline Hall, Justin Lai and Emma Greenbaum

# Watershed to site scale analysis



Quinnipiac River

Yale University  
Ecological Urban Design 2017  
Kevin Dahms, Tess McNamara, Pierre Thatch, Lindsay Wilson

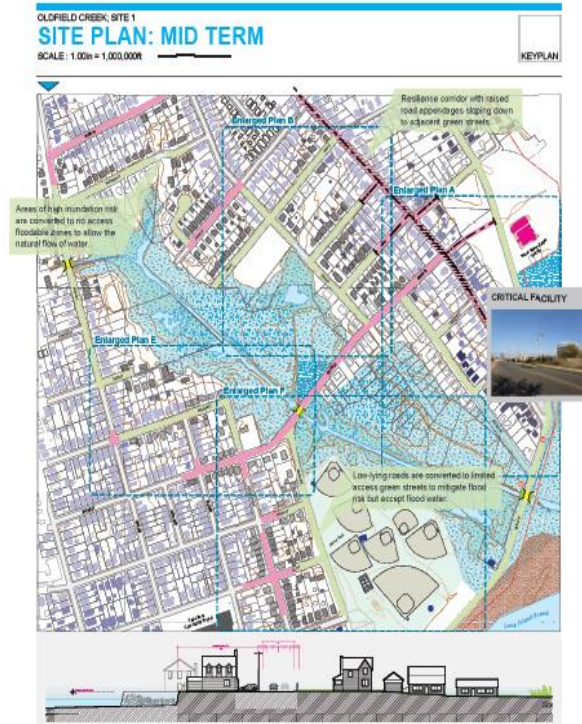
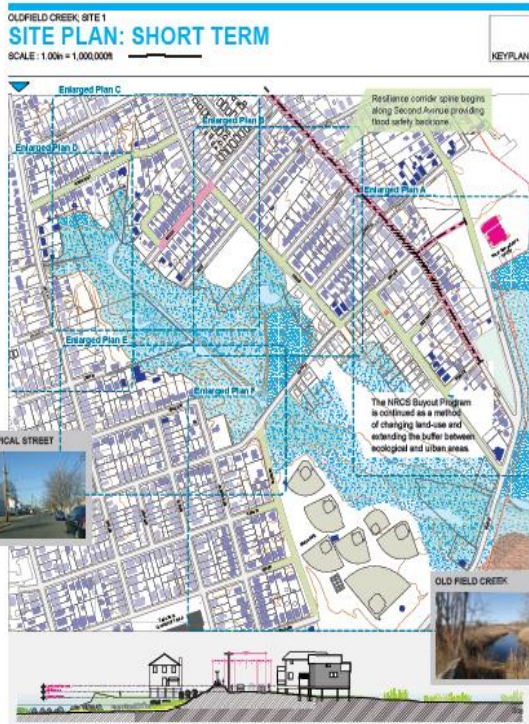


North Haven





# Municipal to site scale analysis



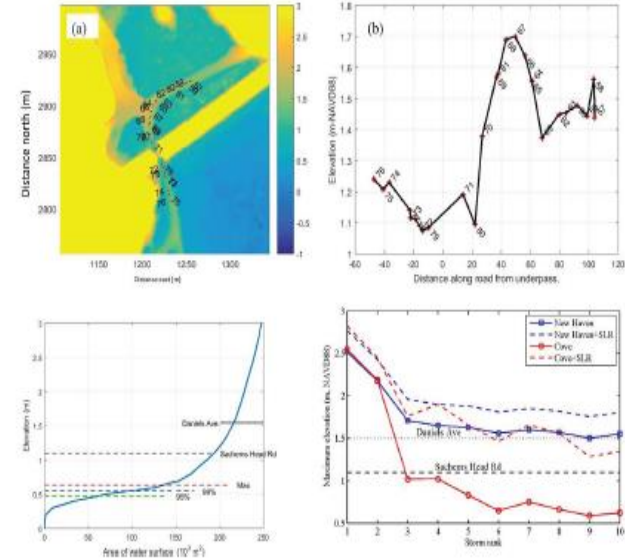
West Haven



# Research and Modeling Approaches



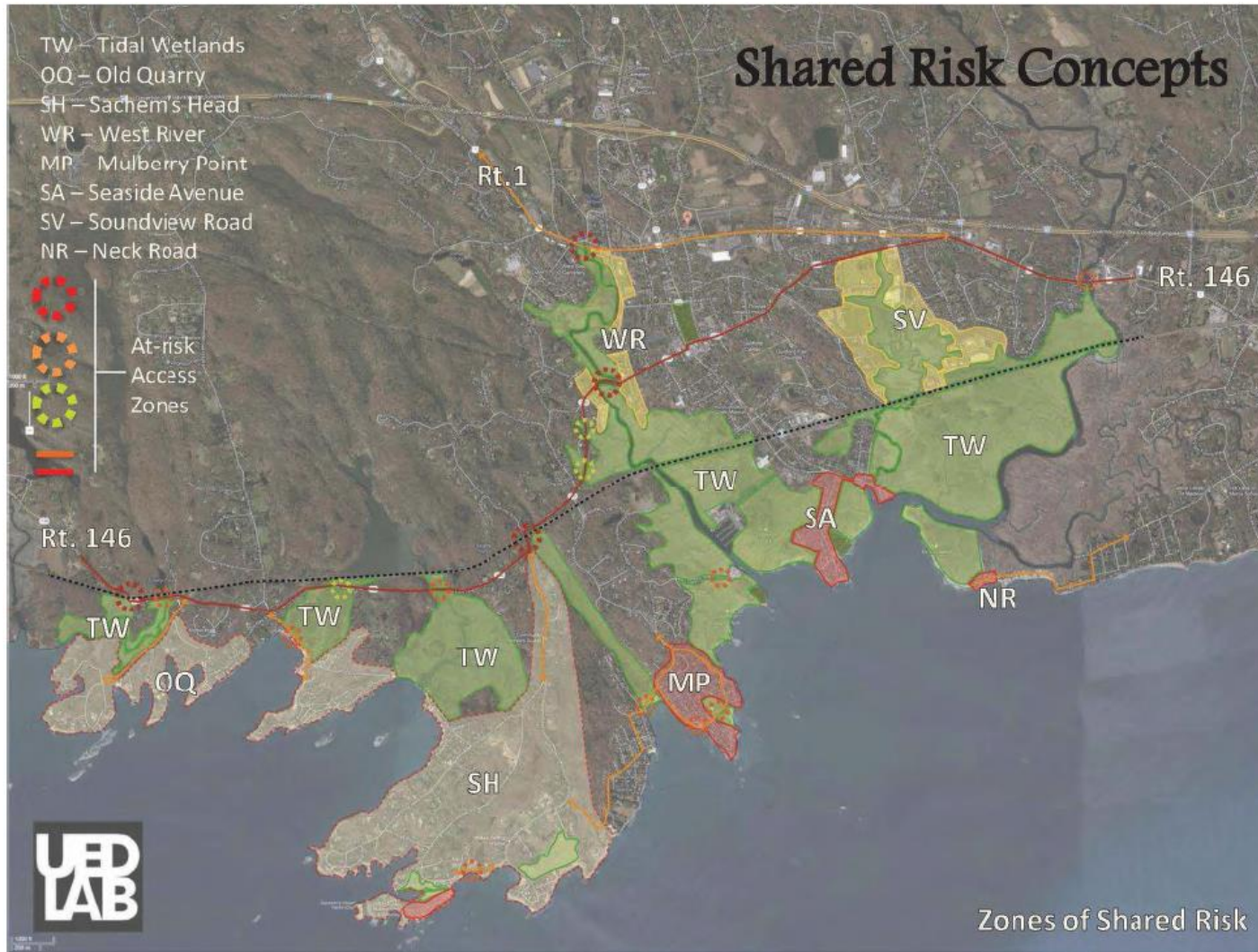
Instruments (in red) were deployed to study how the water level in the Sound drives flooding (blue and green arrows) along RT 146 in Branford and Guilford.



(a) The topography of the north end of The Cove. (b). Elevation measurements of the elevation of Sachems Head Road (RT 146) crossing under AMTRAK.

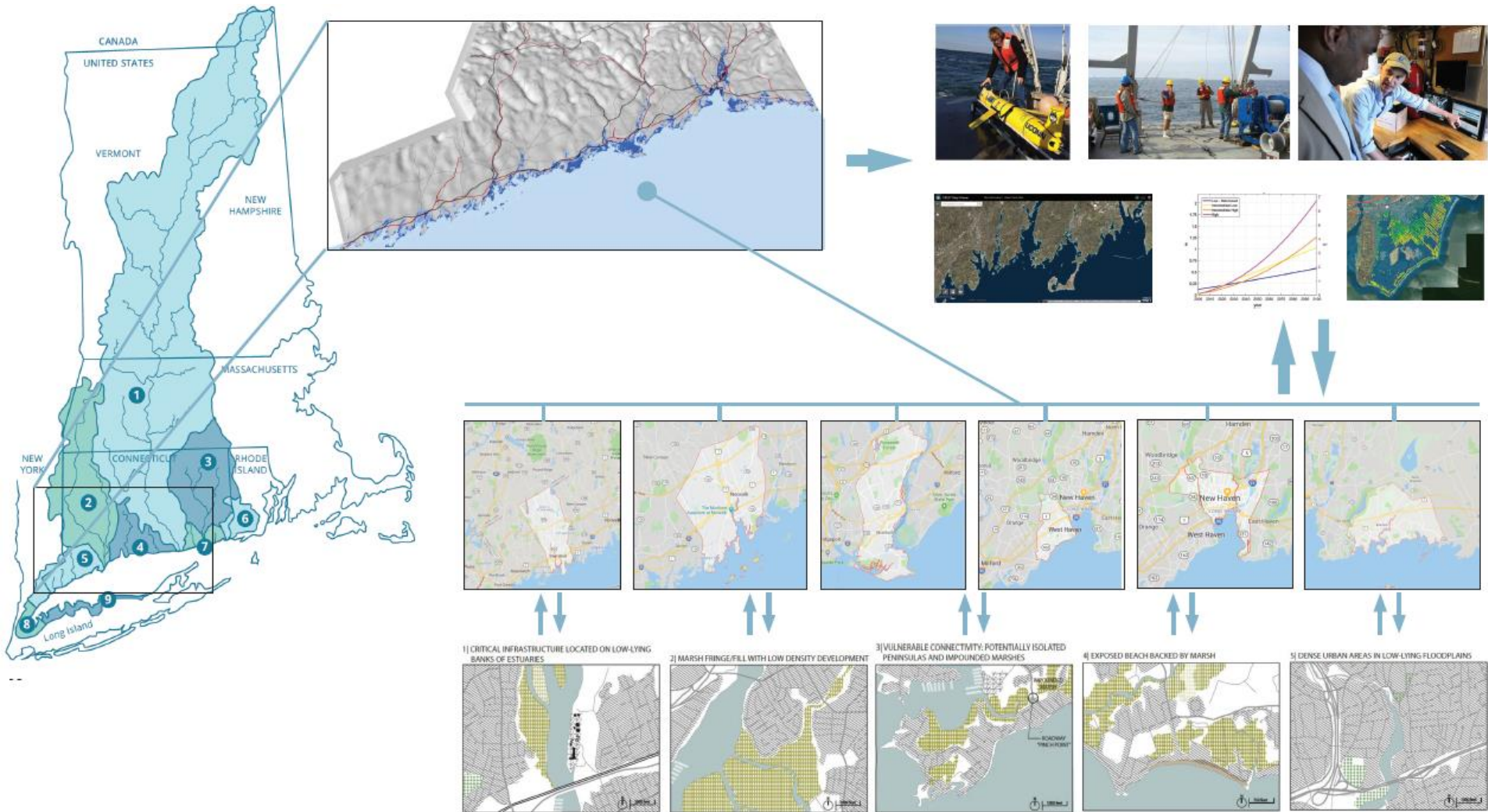
CIRCA Research and Modeling Approaches: Branford and Guilford example of “High Resolution Flood Risk Assessment” illustrates how our research can improve planning for towns and inform the Resilience Roadmap

# Technical to Municipal Planning





# Draft Resilient Framework Plan - Summary





# ENGAGEMENT STRATEGY



## Advisory Groups

Groups will include a State Agency Workgroup, a Resilience Framework Advisory Committee, and Technical Advisors as needed throughout the project.



## Events

Events will be hosted regularly throughout the project and include workshops, annual summits, Innovative Design Trainings, Engineering for Coastal Resilience Trainings, and a monthly webinars between events.



## Website

This new Resilient CT website will have content targeted primarily to technical audiences (engineers, COGs, town and state agency staff) and will contain background on the project, engagement opportunities, references/resources, and planning tools



## Social Media

CIRCA will use their existing Resilience Roundup Newsletter, CIRCA Announcements, and Twitter accounts.



## Announcements

Resilient Connecticut Workshop: Developing A Planning Framework for New Haven and Fairfield Counties

Resilient Connecticut Webinar



## e-Mail List

[SIGN UP NOW](#)



[READ THE ROUNDUP](#)

# resilientconnecticut.uconn.edu

UConn | UNIVERSITY OF CONNECTICUT

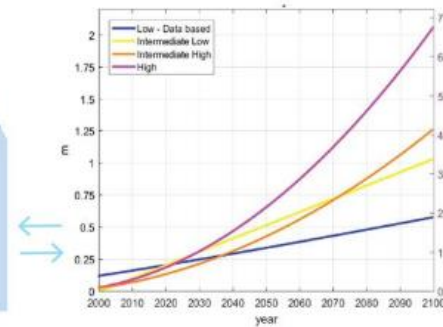
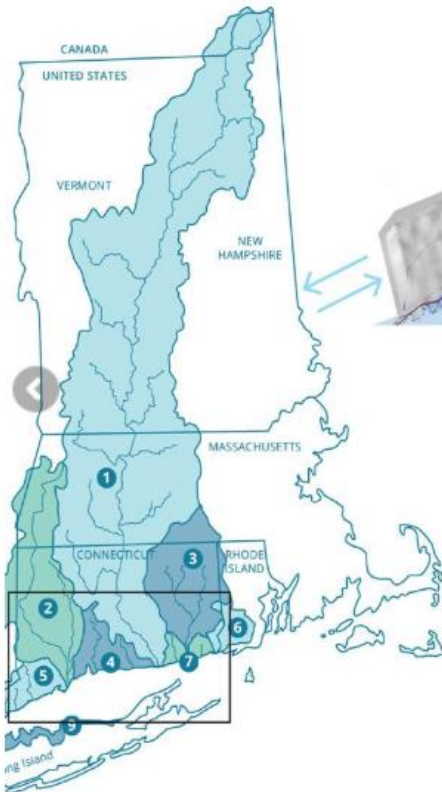
Q A-Z

CONNECTICUT INSTITUTE FOR RESILIENCE & CLIMATE ADAPTATION (CIRCA)

## Resilient Connecticut

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Providing technical analysis and innovative planning tools for a climate resilient Connecticut

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Howdy, Katherine Lund

## WHAT IS RESILIENT CONNECTICUT?

CIRCA, in coordination with state agencies, regional councils of governments (COGs) and municipalities, has initiated *Resilient Connecticut*, as part of Phase II of the HUD **National Disaster Resilience Competition**. Resilient Connecticut will provide the state with a regional and watershed focused Climate Adaptation Planning Framework piloted in the Superstorm Sandy impacted regions of New Haven and Fairfield Counties. The project will generate recommendations for a *Statewide Resilience Roadmap* that includes regional resilience and adaptation planning, policy consideration, and actionable priorities. In addition, science-based regional risk assessments will inform municipal to regional scale initiatives and pilot projects. Resilient Connecticut's guiding principle is to establish resilient communities through smart planning that incorporates economic development framed around resilient transit-oriented development, conservation strategies, and critical infrastructure improvements.



# Resilient Connecticut

## Engagement & Outreach



### Advisory Groups

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e-Mail List

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