

# CIRCA Grant Program: Products & Tools for Resilience

Katie Lund  
CIRCA Director of Engagement

CAFM Conference  
October 30, 2019

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# Mission

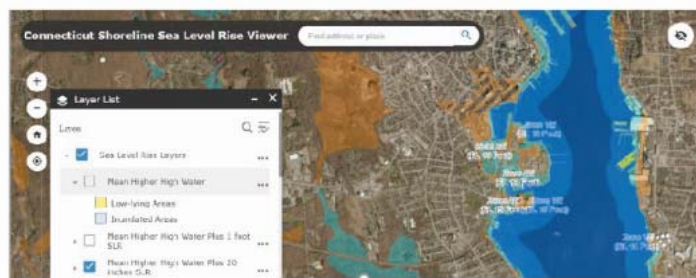
Increase the resilience and sustainability of vulnerable communities in the state's coastal and inland areas to severe storms and the growing impacts of climate change on natural, built, and human environments.

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Modeling Analysis



Map Viewer

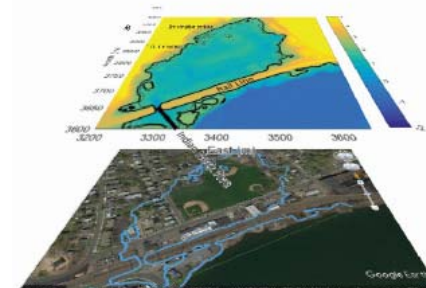


Field Research



Planning

## CIRCA ACTIVITIES



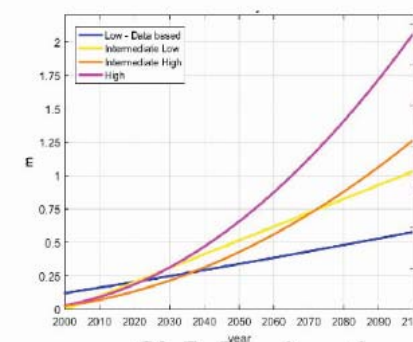
Technical to Planning



Education



Site Reconnaissance



SLR Projections

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# CIRCA Grant Programs: \$1.6 million awarded to 36 projects



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## **Municipal Resilience Grant Program – 18 Grants ~ \$745K**

Awards to: 10 municipalities, 5 COGs

Leverage: \$400K

Awards to municipal governments and councils of governments (conceptual designs, planning & demonstration projects, or development of policies to increase climate resilience)

## **Matching Funds Grant Program – 11 Grants ~ \$330K**

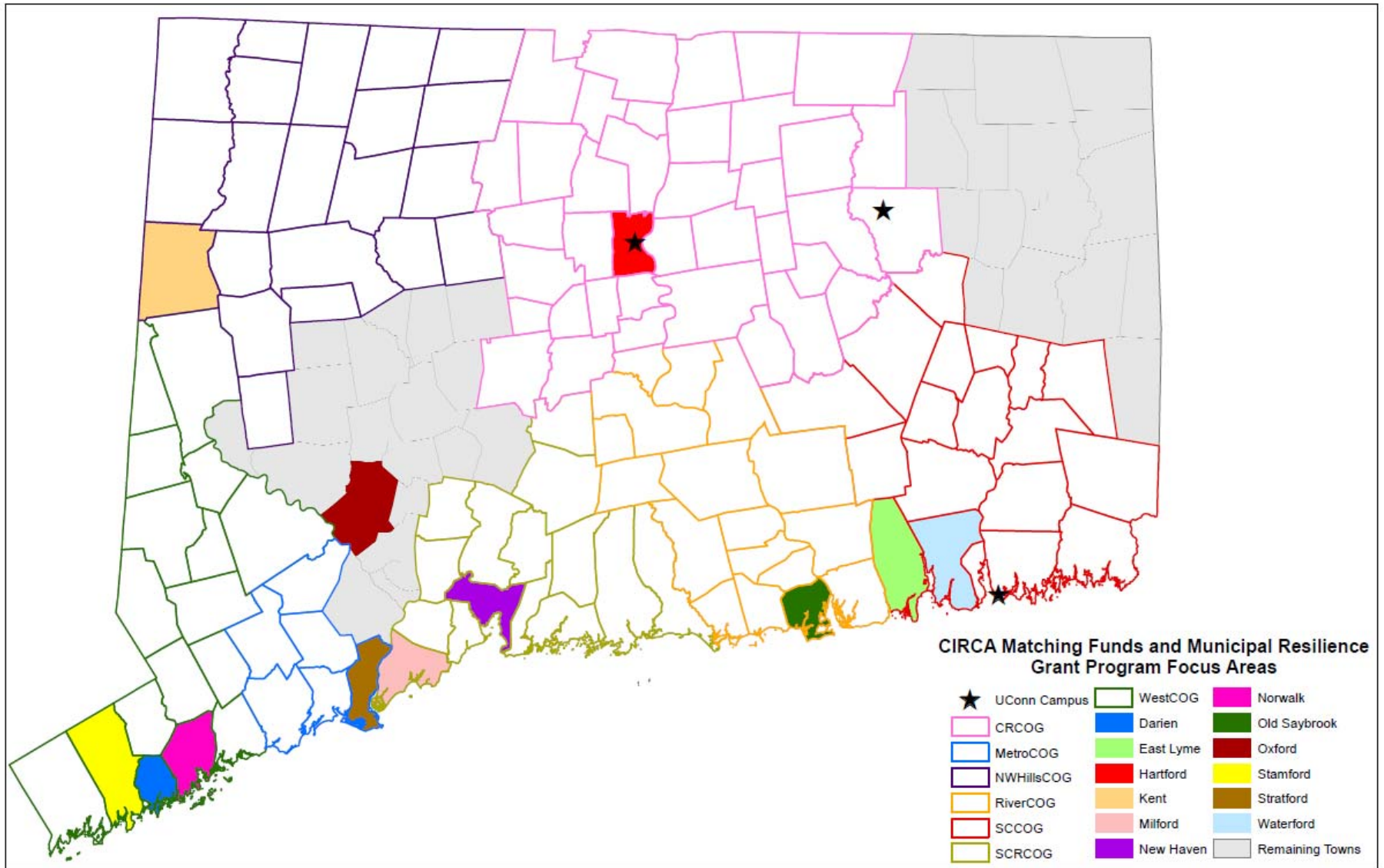
Awards to: 2 COGs, 4 NGOs, 5 academic institutions

Leverage: \$1.4 million

Required primary funding within 6 months of CIRCA's award.  
CIRCA funds provided up to 25% of the primary funding.

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## Green Infrastructure/Living Shorelines:

- Fenwick - Hepburn Dune Living Shoreline Project
- MetroCOG - Beardsley Zoo Green Infrastructure Project

## Critical Infrastructure:

- Stamford - Resilience Opportunity Assessment

## Policy and Planning:

- NHCOC - A Vision and Toolkit for Adaptation in the NWHills
- East Lyme - Coastal Resilience, Flood Ordinance, and Flood Commission  
([Local Resilience Committee webinar tomorrow!](#))

## Coastal and Inland Flooding:

- New Haven - Assessing Impacts of Tides and Precipitation on Downtown Storm Sewer System

# circa.uconn.edu

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Q A-Z

Connecticut Institute for Resilience & Climate Adaptation (CIRCA)



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## COASTAL FLOODING



### About CIRCA

The mission of the Connecticut Institute for Resilience and Climate Adaptation (CIRCA) is to increase the resilience and sustainability of vulnerable communities along Connecticut's coast and inland waterways to the growing impacts of climate change on the natural, built, and human environment. [Read More...](#)



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## COASTAL FLOODING & WAVES

Information on coastal flooding and waves for Connecticut



### Overview

Reports, presentations, posters, and outreach materials



### References

Interactive map viewer and technical tools



### Tools

Coastal flooding and waves research and planning projects



### Projects

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Information on coastal flooding and waves for Connecticut

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## Tools

Coastal flooding and waves research and planning projects

## Projects

### FEATURED REFERENCE



#### New Haven's Downtown Storm Sewer Impacts

Assessing impacts of tides and precipitation through use of real-time depth and flow monitoring to reduce downtown flooding.

[LEARN MORE](#)

### FEATURED REFERENCE



#### Road Flooding in Coastal Connecticut

Demonstration project to estimate flood frequency on Rte 146 in Guilford and Branford along with possible adaptation strategies.

[LEARN MORE](#)

### FEATURED TOOL



#### LIS Wave and Site Suitability Data

Wave heights for different return periods in LIS and living shoreline site suitability data in an online map viewer.

[LEARN MORE](#)

### FEATURED PROJECT



#### WCOG Regional CRS Program

A regional approach to FEMA's CRS program to reduce flood insurance rates for residents in participating communities.

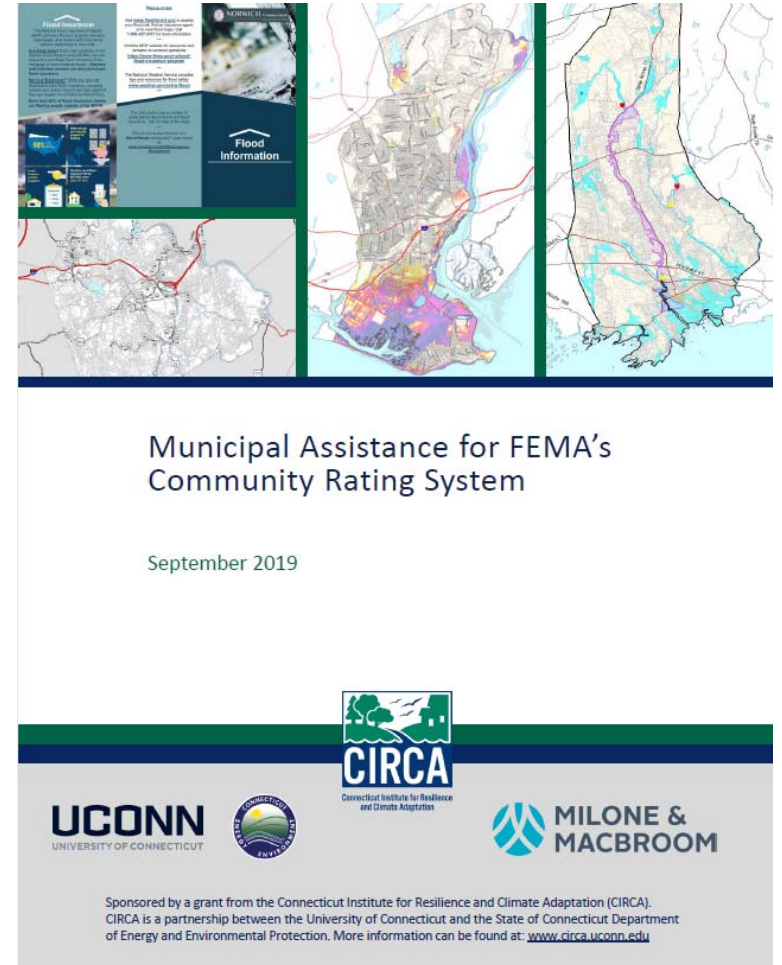
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# Coastal and Inland Flooding

- Partner with DEEP and funding to MMI
- Support communities seeking CRS entry and advancement
- **Boost current rating:**  
Guilford, Newtown Stratford  
(open space mapping, document prep, brochure development)
- **Enter CRS program:**  
Norwich 14 activities (document prep, regulatory review, map development)
- **Point assessment:**  
RiverCOG open space mapping to demonstrate points



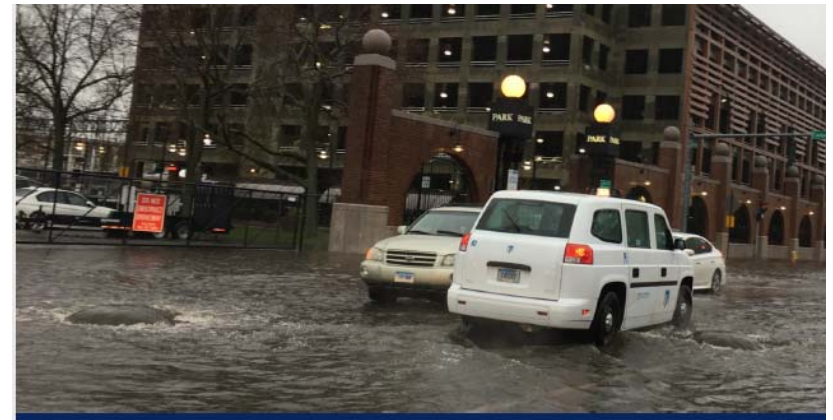
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# New Haven - Assessing Impacts of Tides and Precipitation on Downtown Storm Sewer System

- Downtown drainage system:
  - 835 acres
  - 76% impervious surface
  - Combined and separately sewered areas
  - 2 outfalls into New Haven Harbor
- Installation of depth and flow sensors in city drainage area to collect data on storm sewer performance.
- Proposed solutions:
  - Pump stations to the harbor
  - Mix of green and grey approach to decrease stormwater runoff



## Assessing Impacts of Tides and Precipitation Through Use of Real-Time Depth and Flow Monitoring

Downtown New Haven, CT  
January 2019

Giovanni Zinn, City Engineer, City of New Haven  
Dawn Henning, Project Manager, City of New Haven



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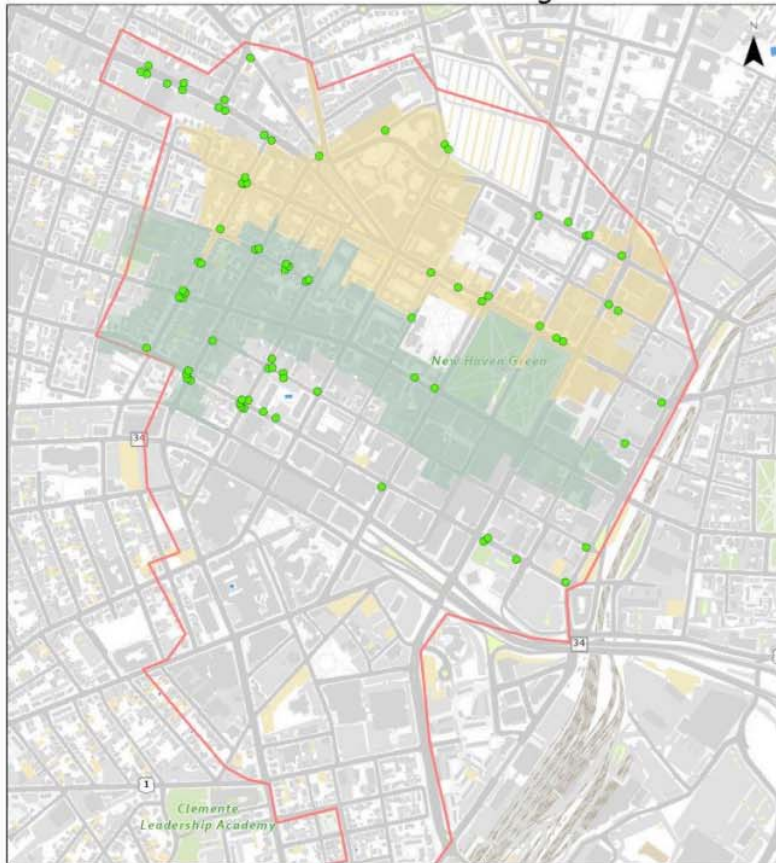


Sponsored by a grant from the Connecticut Institute for Resilience and Climate Adaptation (CIRCA).  
CIRCA is a partnership between the University of Connecticut and the State of Connecticut Department of Energy and Environmental Protection. More information can be found at: [www.circa.uconn.edu](http://www.circa.uconn.edu)

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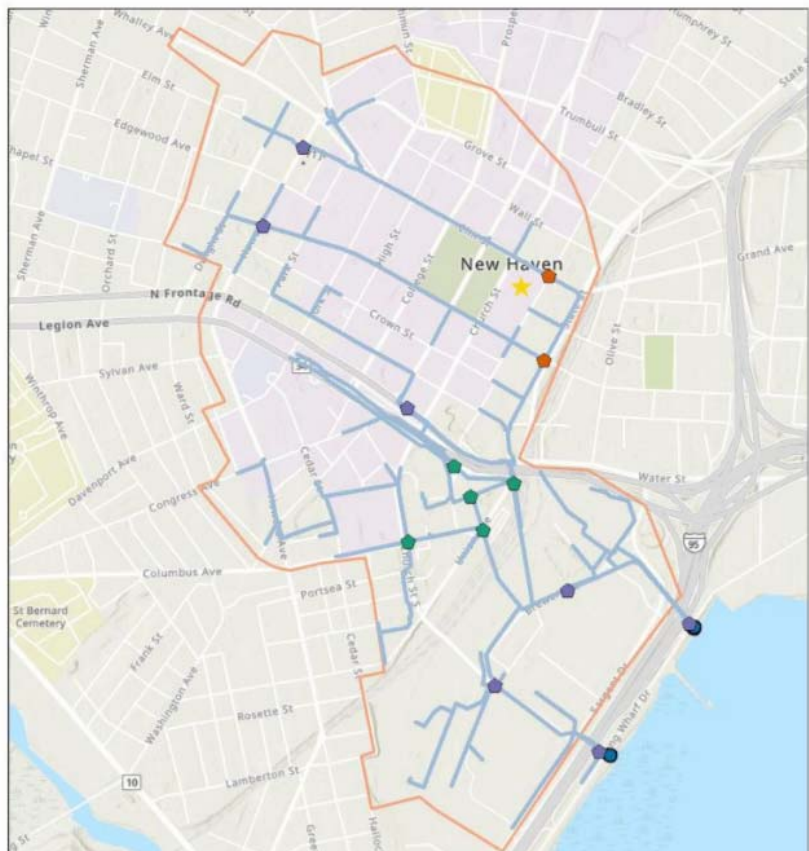
Downtown Bioswale Drainage Area



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## City of New Haven Downtown Monitoring Locations



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# Resilient Connecticut

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<https://resilientconnecticut.uconn.edu/>

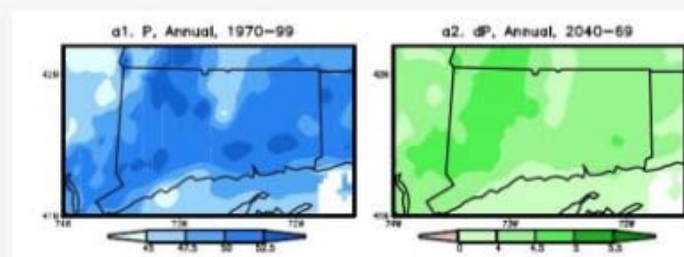
## Connecticut's climate report: precipitation projections and a New Haven case study

Posted on August 29, 2019 by Katherine Lund

### Resilient Connecticut Webinar Series

Connecticut's climate report:  
precipitation projections and a New Haven case study

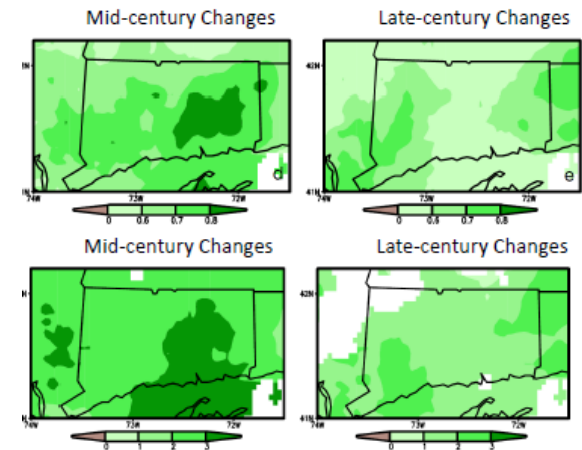
Friday, September 27, 2019  
12:00 – 1:00 pm



# Connecticut Physical Climate Science Assessment Report (PCSAR)

Observed trends and projections of temperature and precipitation

August 2019



Assessment of the state of the science regarding observed changes and projections for temperature and precipitation

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





## Municipal Resilience Planning Assistance

CIRCA partnered with [CT DEEP](#), [CLEAR](#), [CT Sea Grant](#) and UConn faculty to develop information and tools organized under topics of:

- 1) sea level rise and coastal flooding,
- 2) inland flooding,
- 3) critical infrastructure, and
- 4) policy and planning.

### Funding

Work was made possible through a Municipal Resilience Planning Assistance grant from the [State of Connecticut Department of Housing](#) CDBG-Disaster Recovery Program and the [US Department of Housing and Urban Development](#).

<https://circa.uconn.edu/municipal-resilience-planning/>



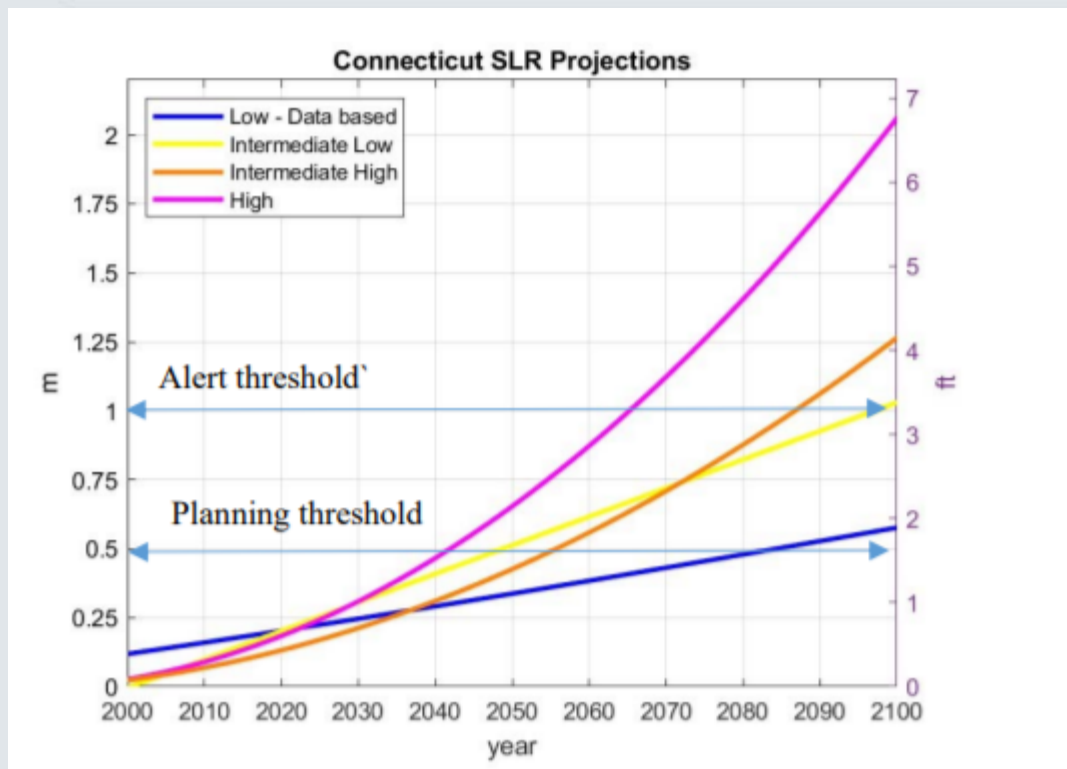


## TOOLS

### Sea Level Rise Projections for Connecticut

CIRCA recommends that Connecticut plan for the upper end of the range of values projected of sea level rise or up to **20 inches (50cm) of sea level rise higher than the national tidal datum in Long Island Sound by 2050** and that it is likely that sea level will continue to rise after that date.

[LEARN MORE](#)



## Floodplain Building Elevation Standards Current Requirements & Enhancement Options for Connecticut Shoreline Municipalities

William R. Rath  
Legal Research Fellow

Christopher P. Kelly  
Legal Writing Fellow

Kristie A. Beahm  
Legal Writing Fellow

May 1, 2018

This White Paper is sponsored by CIRCA, the Connecticut Institute for Resilience and Climate Adaptation. This work is made possible through a grant from the State of Connecticut Department of Housing Community Development Block Grant Disaster Recovery Program and the US Department of Housing and Urban Development.

**DISCLAIMER:** This white paper addresses issues of general interest and does not give any specific legal advice pertaining to any specific circumstance. Parties should obtain advice from a lawyer or other qualified professional before acting on the information in this paper.

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## Height Restrictions on Elevated Residential Buildings in Connecticut Coastal Floodplains

William R. Rath  
Legal Research Fellow

Christopher P. Kelly  
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Kristie A. Beahm  
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May 1, 2018

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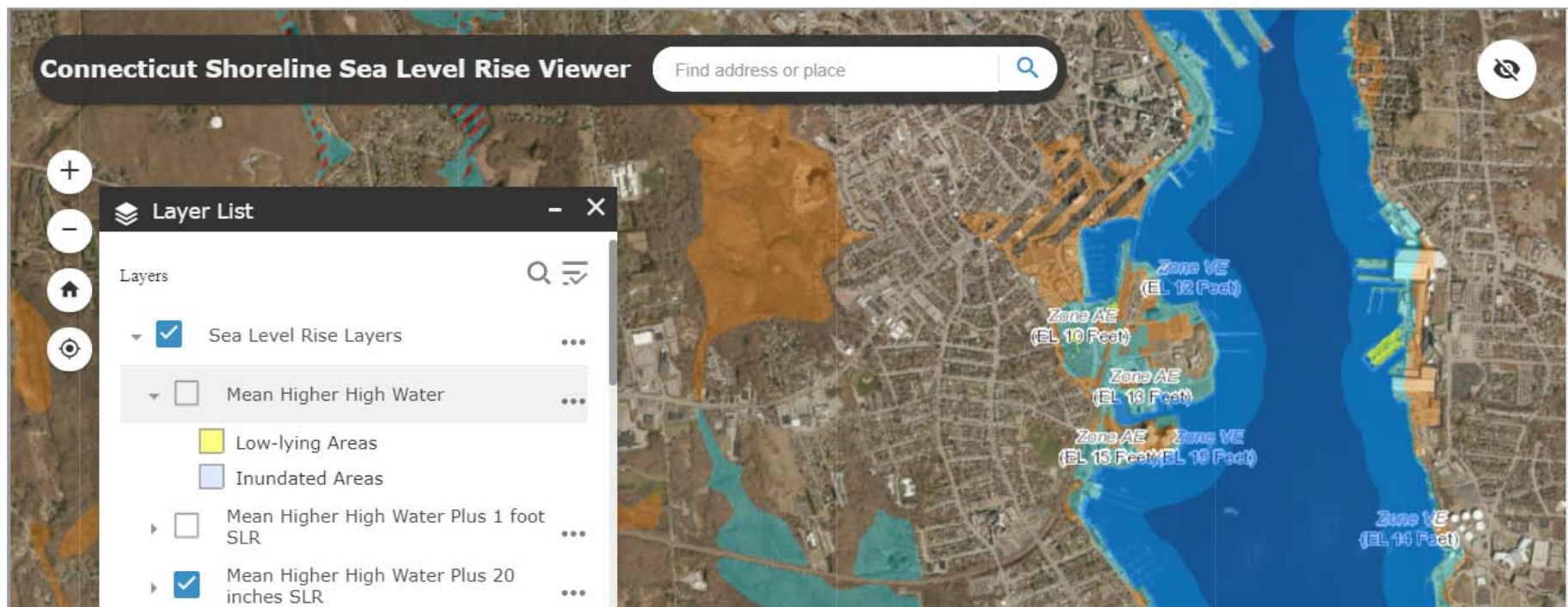
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## Connecticut Sea Level Rise and Storm Surge Map Viewer

This dataset shows two different sea level rise projections (1 foot and 20 inches), above a Mean Higher High Water (MHHW) along the Connecticut coastline and the adjacent inland. CIRCA research recommends that planning anticipates sea level will be 20 inches higher than the national tidal datum in Long Island Sound by 2050. CIRCA's report on [Connecticut sea level rise](#) provided the basis for projections in Bill S.B. 7, which was introduced into the 2018 legislative session and was enacted into law as Public Act 18-82.

To view the data, zoom in on the map to your area of interest. Use the Layers menu widget at the bottom of the map window to select data to display. Different projections of sea level rise/storm surge scenarios and FEMA flood hazard map layers will activate automatically at different scales.



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## Municipal Issues & Needs for Addressing Climate Adaptation in Connecticut

### **Authored by:**

Bruce Hyde, UConn Center for Land Use Education and Research and UConn Extension

Juliana Barrett, Connecticut Sea Grant College Program and UConn Extension



## Bank Street-South Water Street Sea Level Rise Planning Project, New London, CT



# Product Distribution

- CIRCA Website - [circa.uconn.edu](http://circa.uconn.edu)
- Blog posts and Resilience Roundup
- Twitter
- DEEP newsletters
- Press releases
- Project networking
- Workshops
- Broader engagement for next 3 years – Resilient Connecticut project

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