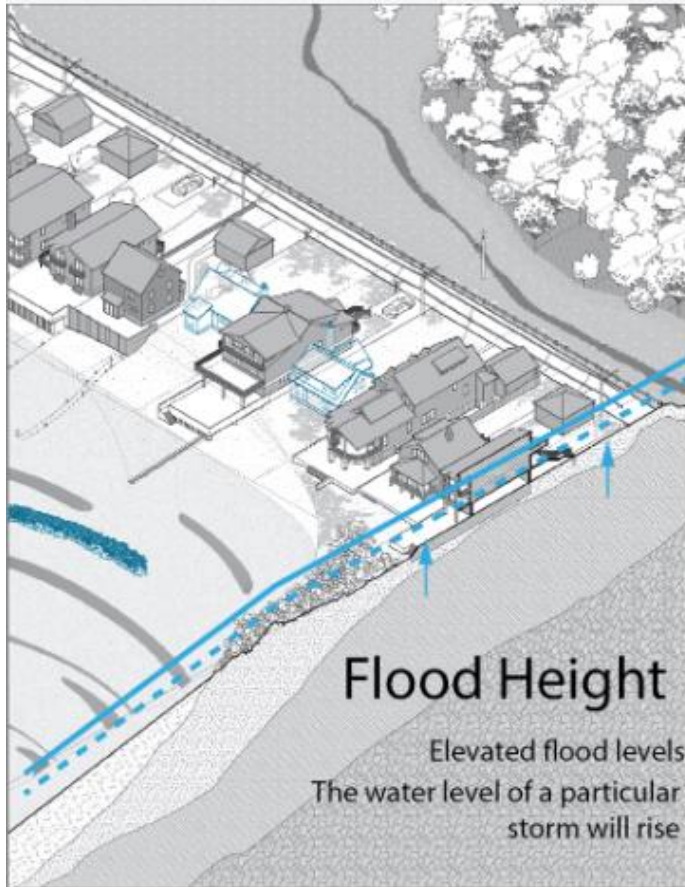


Planning and Visualization Tools for Sea Level Rise

July 23, 2019



Today's Talk

- 1. Scientific Basis for Policy Decisions.
- 2. Planning and Policy Implications.
- 3. PA 18-82 - Highlights of the new law.
- 4. CIRCA – White Papers, Drawings, Tools



Today's Talk

Scientific Basis for Policy Decisions.

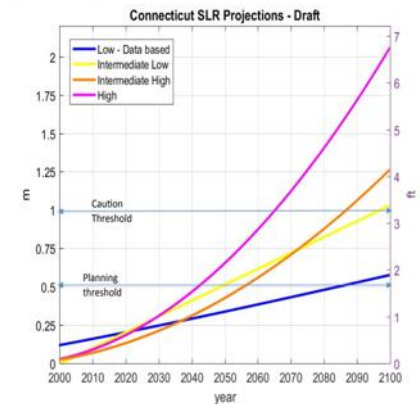


CIRCA

- Connecticut
- Institute for
- Resilience &
- Climate
- Adaptation



Figure 1. Sea level rise projections for Connecticut based on local tide gauge observations (blue), the IPCC (2013) RCP 4.5 model simulations near Long Island Sound (yellow line), the semi-empirical model predictions are in orange and the magenta shows the ice mass balance projections.



State Level

- Most of the true “Action” has been at the state and regional level – from RGGI, to Renewable Portfolio Standards, to state & local environmental law.
- States are receptive to leveraging expertise.
- Yet – A call for Federal Modelling as well.

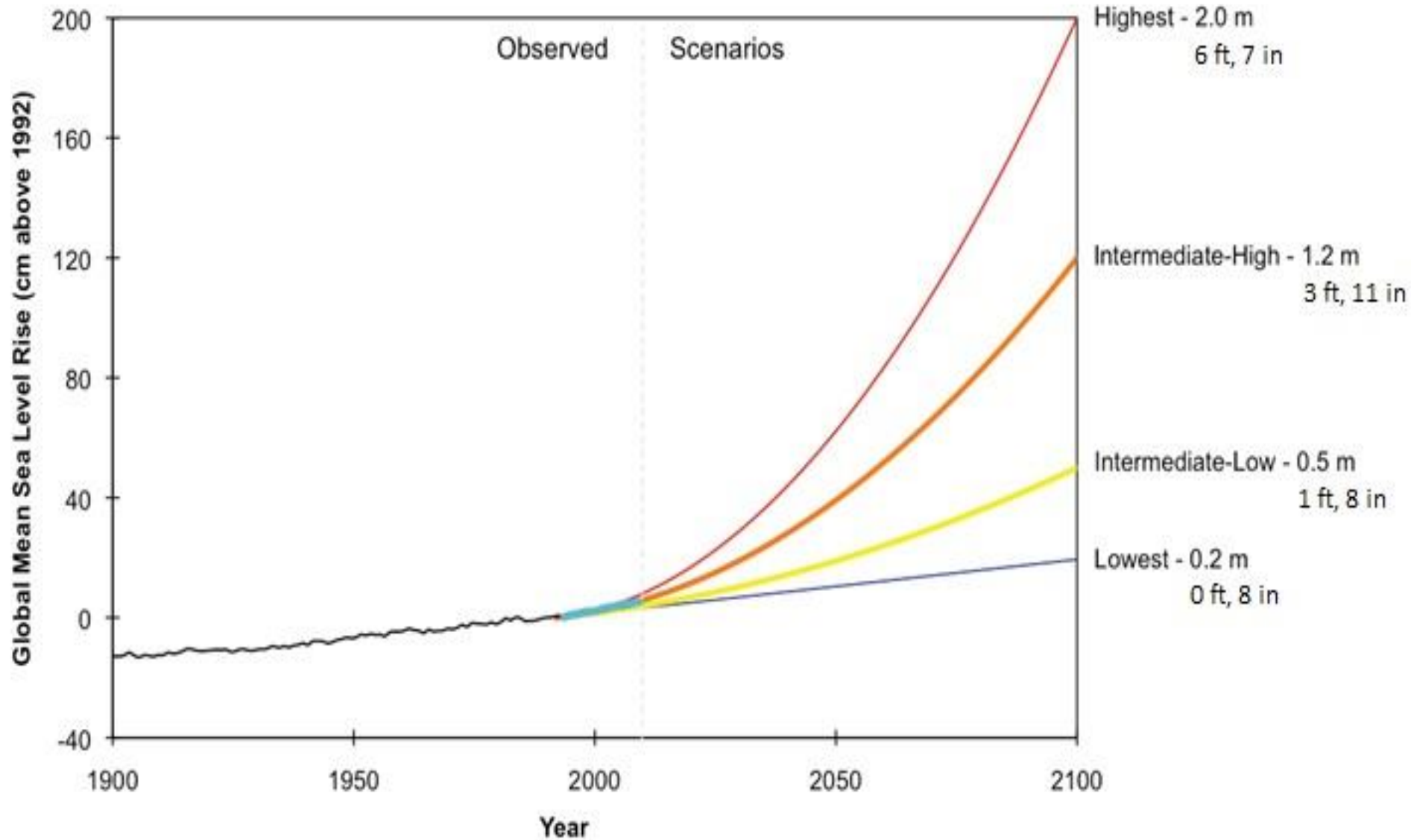


A Sea Level Rise Story

- Advantages of working together.
- A guest lecture.

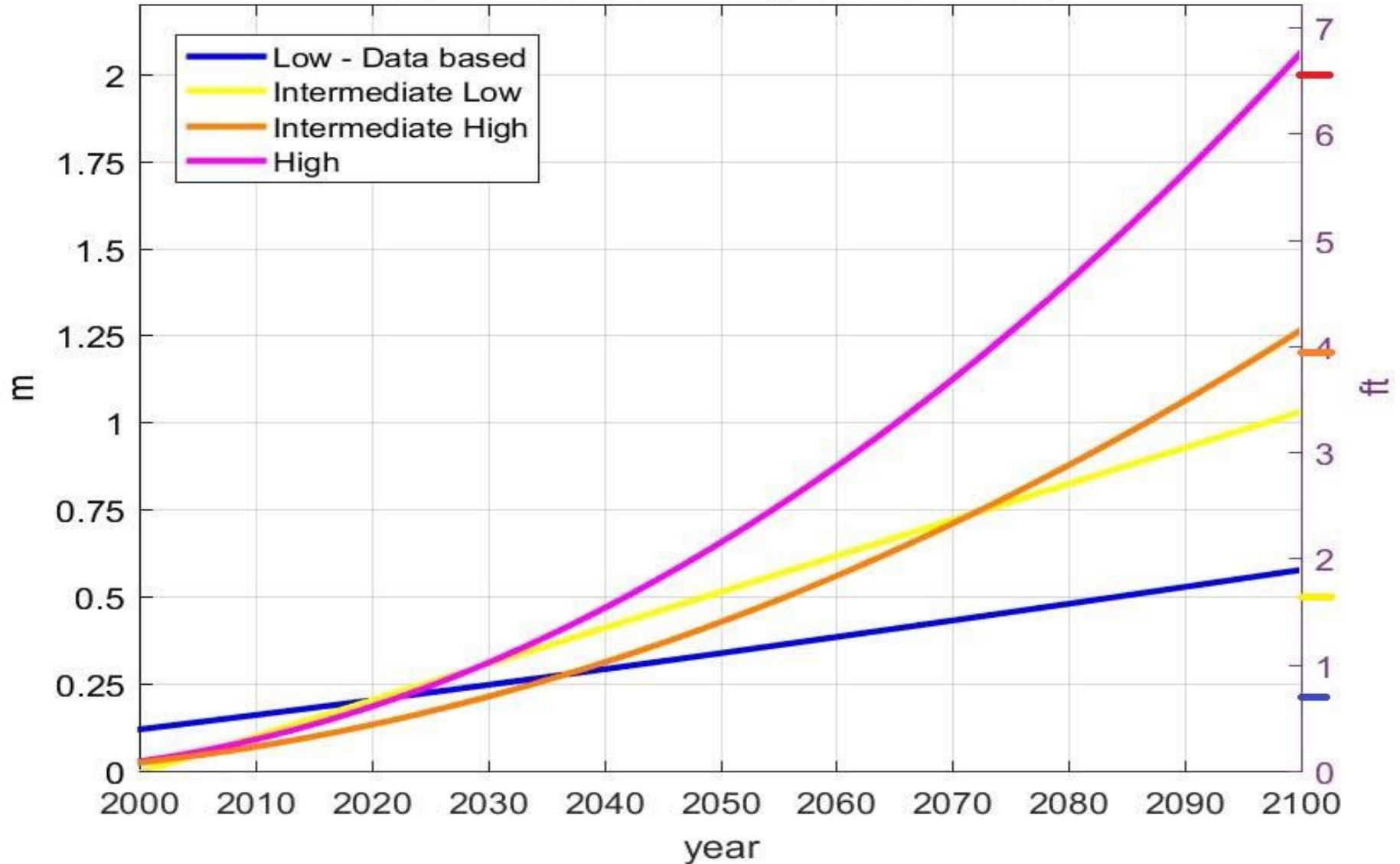


NOAA 2012 SEA LEVEL CHANGE SCENARIOS

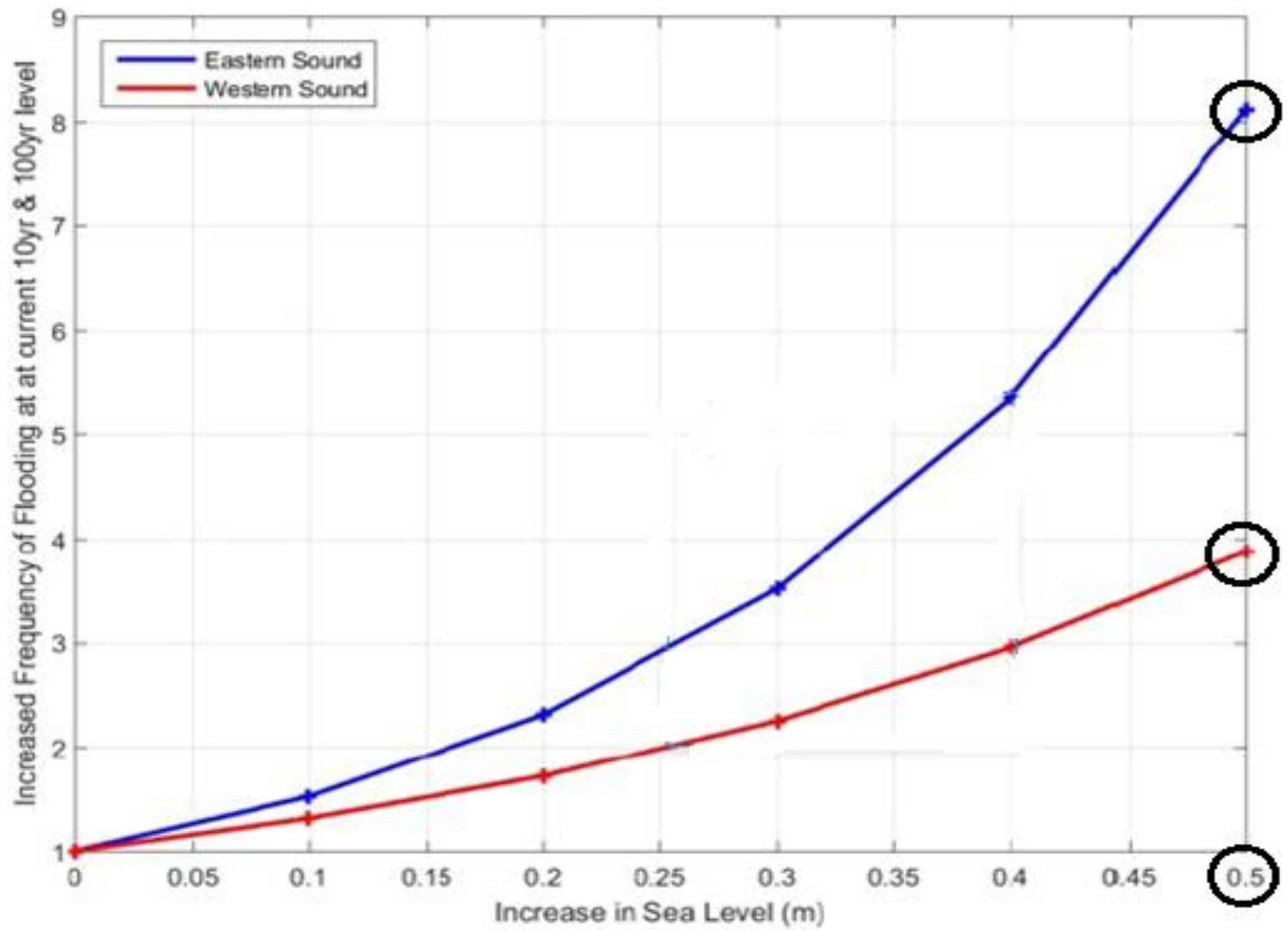


Connecticut Regional Effects

Connecticut SLR Projections - Draft





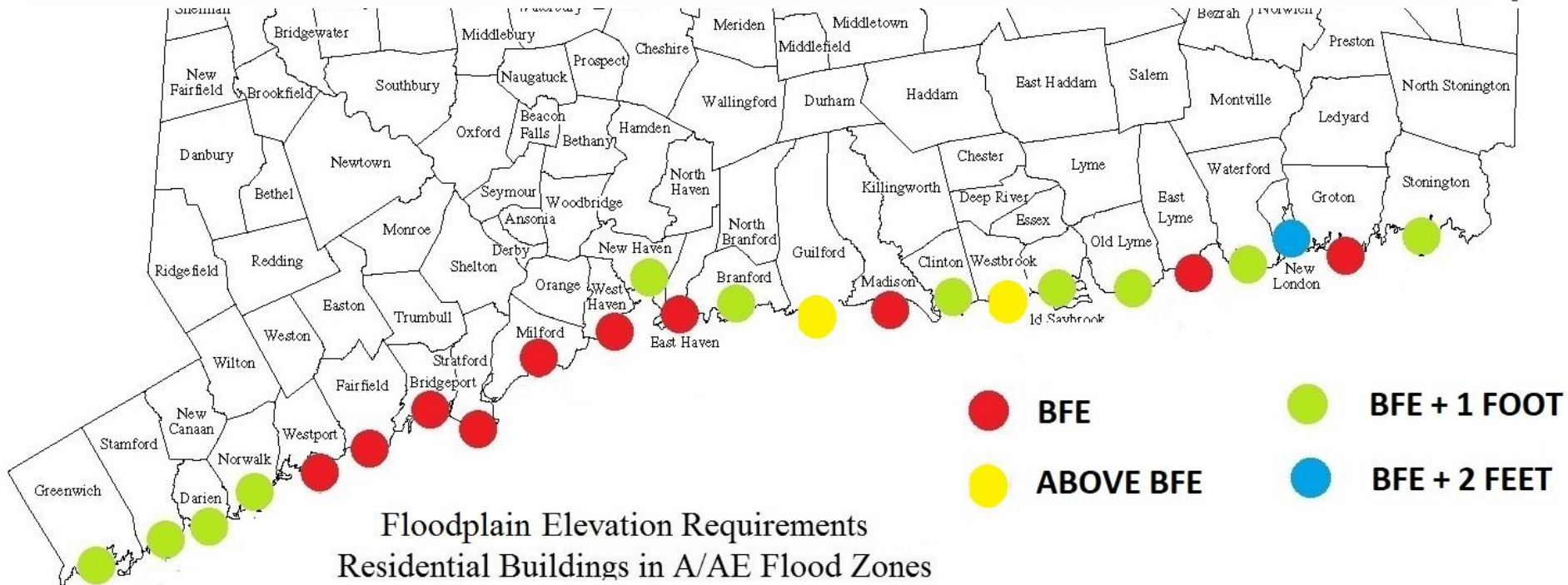


Return Rate of Current 100 Year Flood Levels

← 4X Return Rate

8X Return Rate →

With 1 Foot 8 Inch Rise by 2050



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Today's Talk

Planning and Policy Implications.



Exciting Conclusions

- 1. Policy should be storm and flood focused.
- 2. Consensus on a Planning number from towns. Other research groups concluded – towns want specific guidance.
- 3. Disparate Impact!



Storm / Flood Focused

- The key preparedness planning needs to be for storms – big storms like hurricanes, but perhaps even more importantly, nuisance storms of much heavier rainfall.



New Normal “Storms”

- Hurricane’s will be worse and more frequent.
- Yet – real danger is the 25 year flood that now comes every 5 years, or the 5 year flood that statically appears every year.



Today's Talk

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Today's Talk

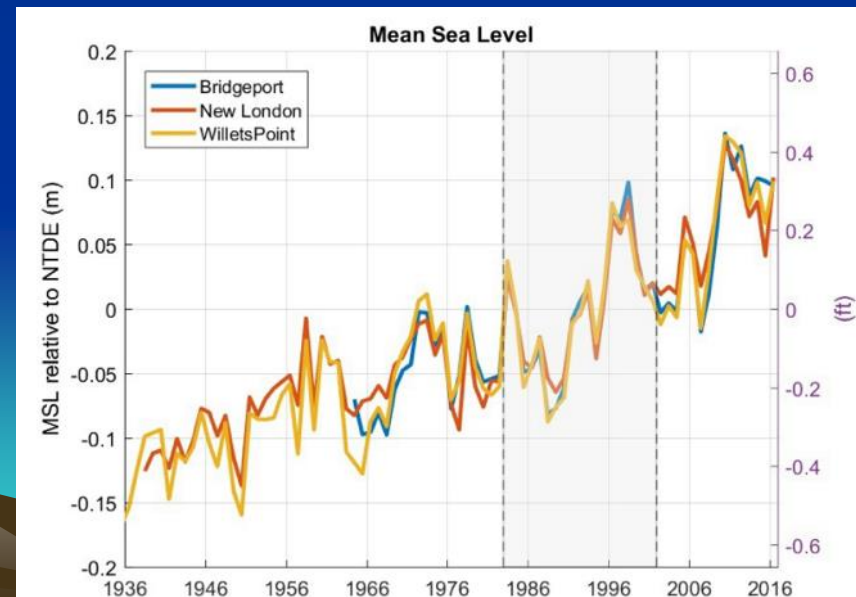
PA 18-82 - Highlights of the new law.



Before the Law: Conflicting Definitions of Sea Level Rise

- 1. Historic Tide Gauge – but inaccurate
- 2. Used an outdated NOAA standard
- 3. UCONN scenario – but no mandate to use it.

- 50cm by 2050



Public Act 18-82

- Law passed with overwhelming bipartisan support at the end of the session!



50 cm by 2050

- “CIRCA’s current projection of 50 cm of sea level rise in Long Island Sound by the year 2050 is not a prediction, nor does it represent a mean value or likely outcome. Instead, the scenario establishes a reasonable upper bound for the purposes of adaptation planning, and by enacting SB 7, state and local agencies will employ it as a prudent, consistent benchmark
- “ – Testimony of Comm. Robert Klee



Updated Every 10 Years

(CGS 25-68o)

- Within available resources and not less than once every ten years, the Marine Sciences Division of The University of Connecticut shall [update] publish a sea level change scenario for the state



PROCEDURE FOR UPDATING

- No Less than 10 years.
- Updated by Marine Sciences Division of UCONN.
- Process and Website Notification, DEEP.



Preparation of POCD

- CGS 8-23
- POCD must take into account ... “The most recent sea level change scenario updated pursuant to subsection (b) of section 25-680, as amended by this act”



State POCD

- CGS 16a-27 – New Plans will also take into consideration “the most recent sea level change scenario updated pursuant to subsection (b) of section 25- 680, as amended by this act”. (AKA CIRCA scenario).



Coastal Area

- (6) "Flood-proofing" "including, but not limited to, for properties within the coastal boundary, as established pursuant to subsection (b) of section 22a-94, not less than an additional two feet of freeboard above base flood and any additional freeboard necessary to account for the most recent sea level change scenario updated pursuant to subsection (b) of section 25- 68o, as amended by this act;"



Civil Preparedness Programs

- Updated to use the new data.



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

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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.

Height Restrictions on Elevated Residential Buildings in Connecticut Coastal Floodplains

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Legal Research Fellow

Christopher P. Kelly
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White Papers

Oceanfront State Coastal Management Programs

William R. Rath
Legal Research Fellow

Christopher P. Kelly
Legal Writing Fellow

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Statutory Adoption of Updated Sea-Level Rise Scenarios

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Connecticut Institute for Resilience & Climate Adaptation (CIRCA)



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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...](#)



POLICY & PLANNING



Living Shorelines

Preserving the natural elements of the shore while also providing protection from erosion.



Critical Infrastructure

Connecting firm science with the decision-making needs of state and local leaders.



Inland Flooding

Projecting changing precipitation patterns and future inland flooding in riverine communities.



Coastal Flooding & Waves

Mapping coastal flooding from waves, storm surge and high tide.



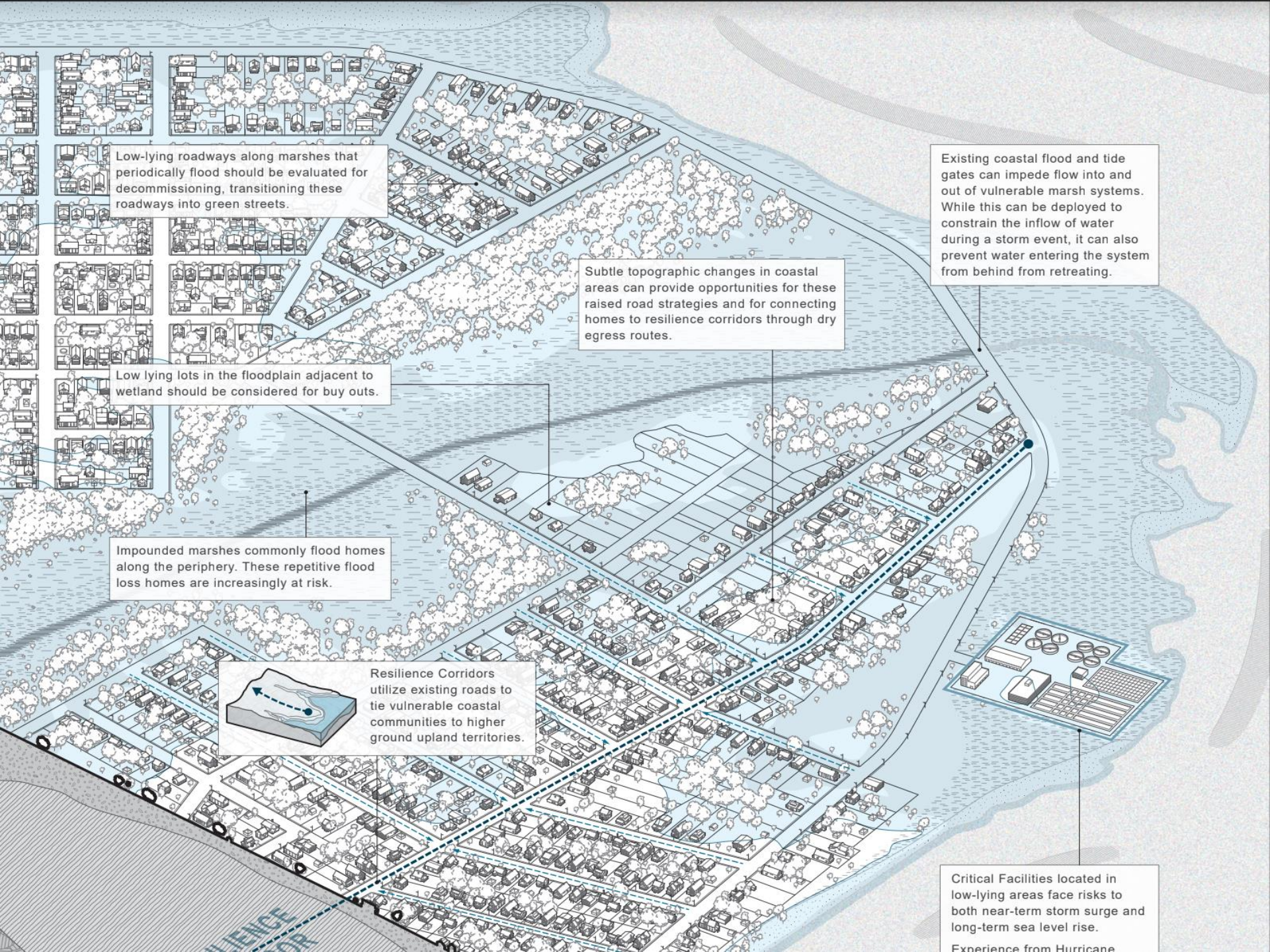
Policy & Planning

Community climate adaptation policy and planning through research and analysis.



Sea Level Rise

Providing future sea level rise scenarios for Connecticut's coastline.



Low-lying roadways along marshes that periodically flood should be evaluated for decommissioning, transitioning these roadways into green streets.

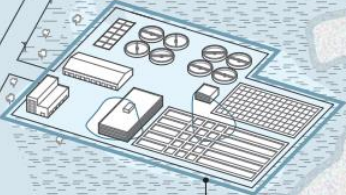
Subtle topographic changes in coastal areas can provide opportunities for these raised road strategies and for connecting homes to resilience corridors through dry egress routes.

Existing coastal flood and tide gates can impede flow into and out of vulnerable marsh systems. While this can be deployed to constrain the inflow of water during a storm event, it can also prevent water entering the system from behind from retreating.

Low lying lots in the floodplain adjacent to wetland should be considered for buy outs.

Impounded marshes commonly flood homes along the periphery. These repetitive flood loss homes are increasingly at risk.

 Resilience Corridors utilize existing roads to tie vulnerable coastal communities to higher ground upland territories.



Critical Facilities located in low-lying areas face risks to both near-term storm surge and long-term sea level rise. Experience from Hurricane

Invites a New Kind of Planning

- “Zone of Shared Risk”. One aspect to this problem is to adopt new ways of thinking about planning.
- As you’ll hear next, one invitation is to look beyond Zoning and into common areas and the risks they share.

