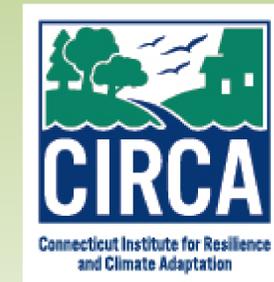




City of New Haven Commercial Industrial Toolbox (CIT)



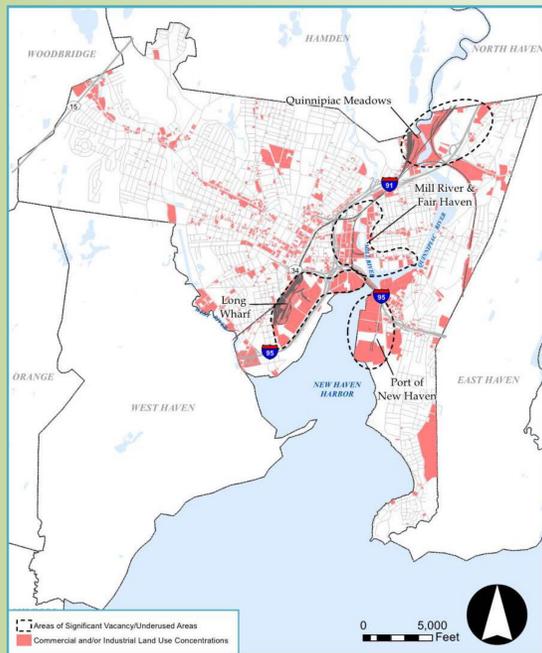
Connecticut Institute for Resilience and Climate Adaptation
Municipal and Research Project Forum

March 10, 2017

Purpose and Scope

- To provide a comprehensive and practical guide for **resilient renovation/construction in commercial and industrial areas of the city, which may be replicated in other commercial/industrial areas in Connecticut.**
- To protect lives and property and prevent temporary loss of business in commercial/industrial areas of the city due to flooding by identifying case studies of similar initiatives throughout the country and recommending mitigation strategies that are best applicable to New Haven.
- To further serve the mission of the Program for Public Information (PPI) of FEMA's Community Rating System program by educating commercial/industrial stakeholders on how to prepare, adapt and quickly recover from major flooding events.

Commercial and Industrial Concentrations within New Haven

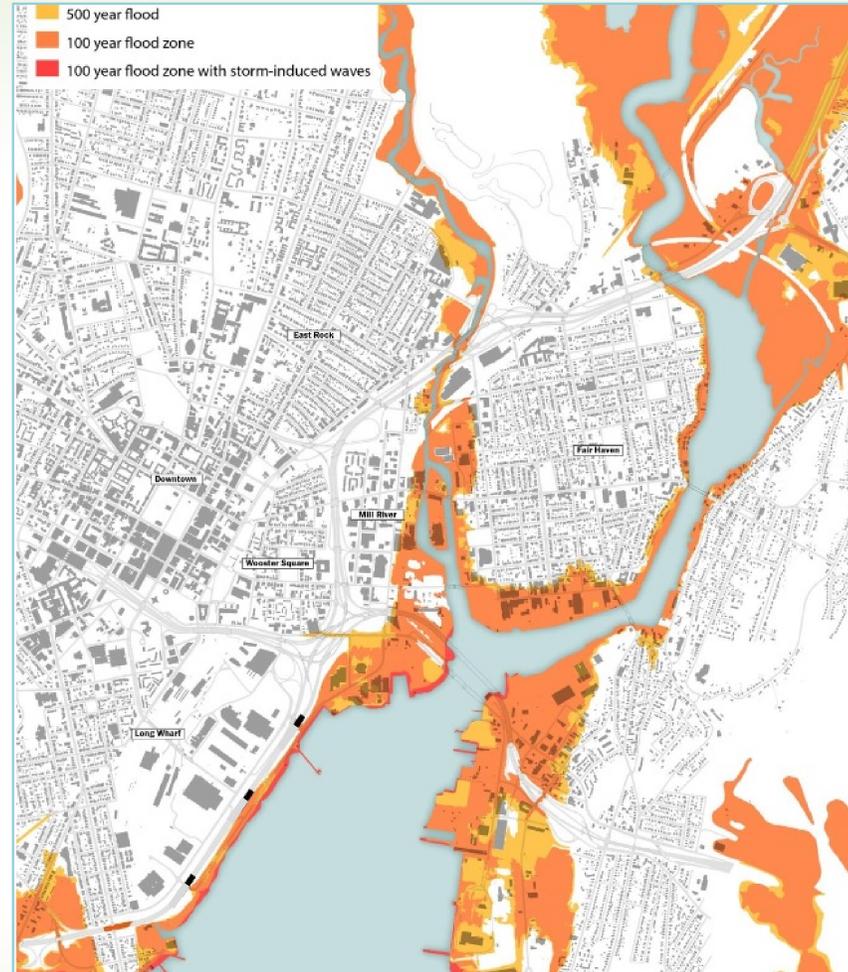


Approximately **\$6 billion** of commercial building value exists within New Haven. Many of the city's large scale commercial/industrial parcels are located in Long Wharf and Mill River neighborhoods by the waterfront.

An estimated **\$175 million** of commercial and industrial building-related losses, and **\$139 million** of commercial and industrial business interruption losses are potentially threatened by 100-year coastal flood event if they are not protected.

Source: City of New Haven HMP Update II Draft, 2016

Flood Hazard Areas of New Haven



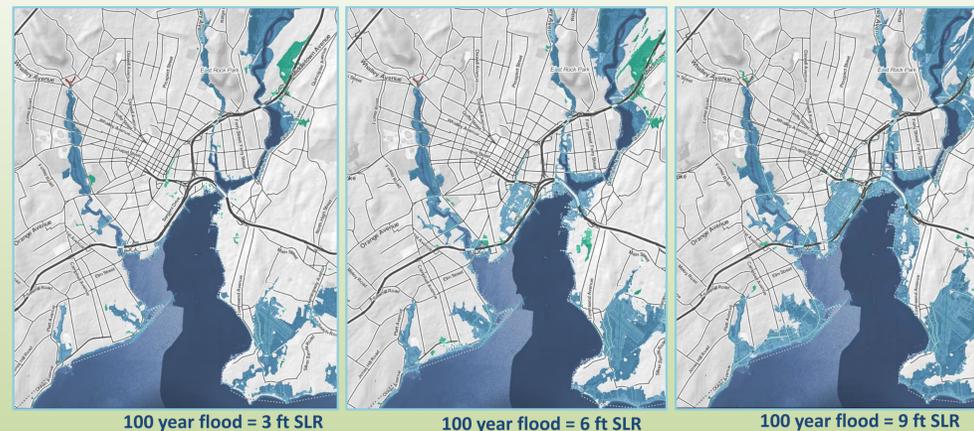
Source: Mill River District Planning Study, New Haven, Connecticut, June 2013



Flooding near IKEA in Long Wharf Due to a Storm in August 2012



Why Is CIT necessary?



Source: National Oceanic and Atmospheric Administration Sea Level Rise (SLR) Projections

Sample Mitigation Strategies

Elevation: Raising existing structures or building components to equal or greater than the base flood elevation. Raising grade for new buildings.

Relocation: Moving existing structures or building components to outside the floodplain or to a higher level or higher floor within the building.

Dry Floodproofing: Employing flood-resistant barriers to protect a building against floods of limited duration and depth, such as impermeable walls, sealing openings, and enhancing the drainage system.

Wet Floodproofing: Modifying a building so as to withstand some exposure to floodwaters, such as raising utilities to or above the base flood elevation level, installing flood openings to equalize the pressure from the floodwaters, and using water-resistant materials.

Other: To be identified as part of the study.

Timeline for CIT Project Completion

