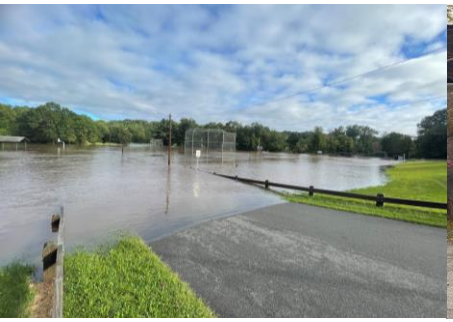
RESILIENT CONNECTICUT 2.0





Overview for Town of Westbrook

April 21, 2022

UCONN

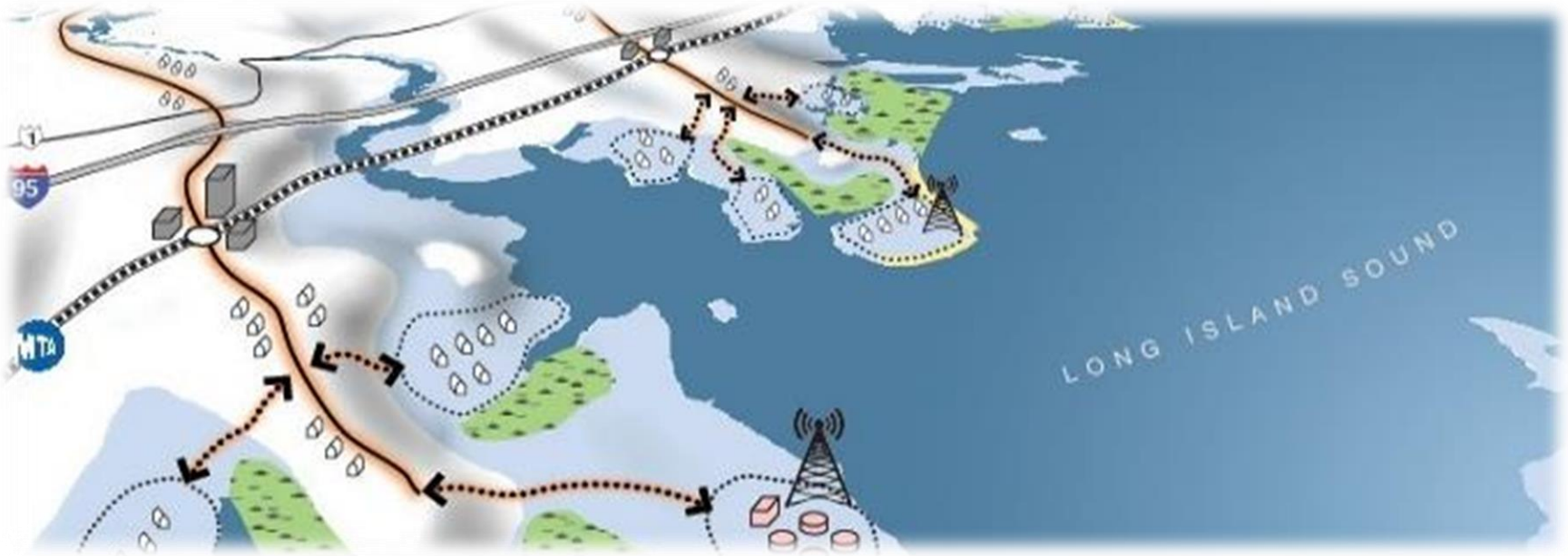
CIRCA
Connecticut Institute for Resilience and Climate Adaptation

Agenda

- Review of Resilient Connecticut 1.0
- Introduction to Resilient Connecticut 2.0
- Review of Zones of Shared Risk
- Review of Hazard Mitigation Plan Actions
- Open Discussion
- Wrap-Up

Review of Resilient Connecticut 1.0

- ***Resilient Connecticut 1.0*** originated from a successful State application to the National Disaster Resilience Competition (NDRC) several years ago

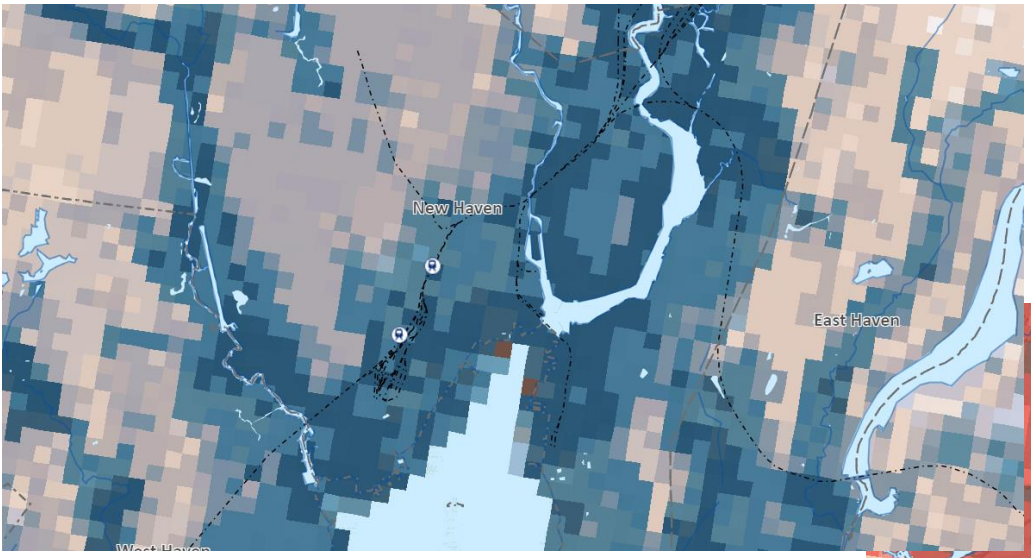


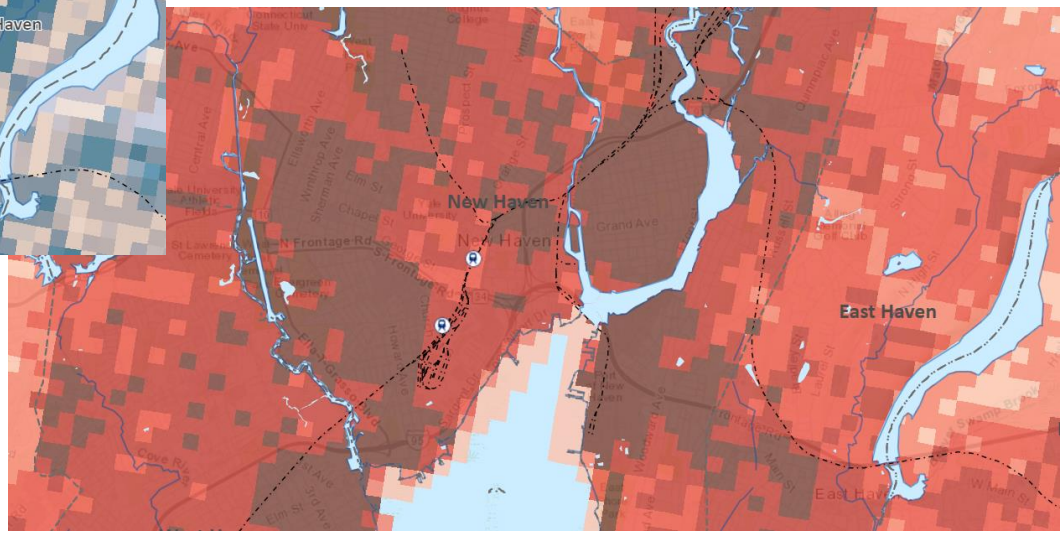
Review of Resilient Connecticut 1.0

- Originally called the "Connecticut Connections Coastal Resilience Plan," the planning effort evolved to focus on climate drivers of **flood** and **extreme heat** hazards throughout Fairfield County and New Haven County
- Transit oriented development (TOD), affordable housing, critical infrastructure, and key assets were emphasized in the planning process
- The planning phase has ended, and CIRCA is shifting into the study and concept design phase for Fairfield County and New Haven County

What Resulted from Resilient CT 1.0?

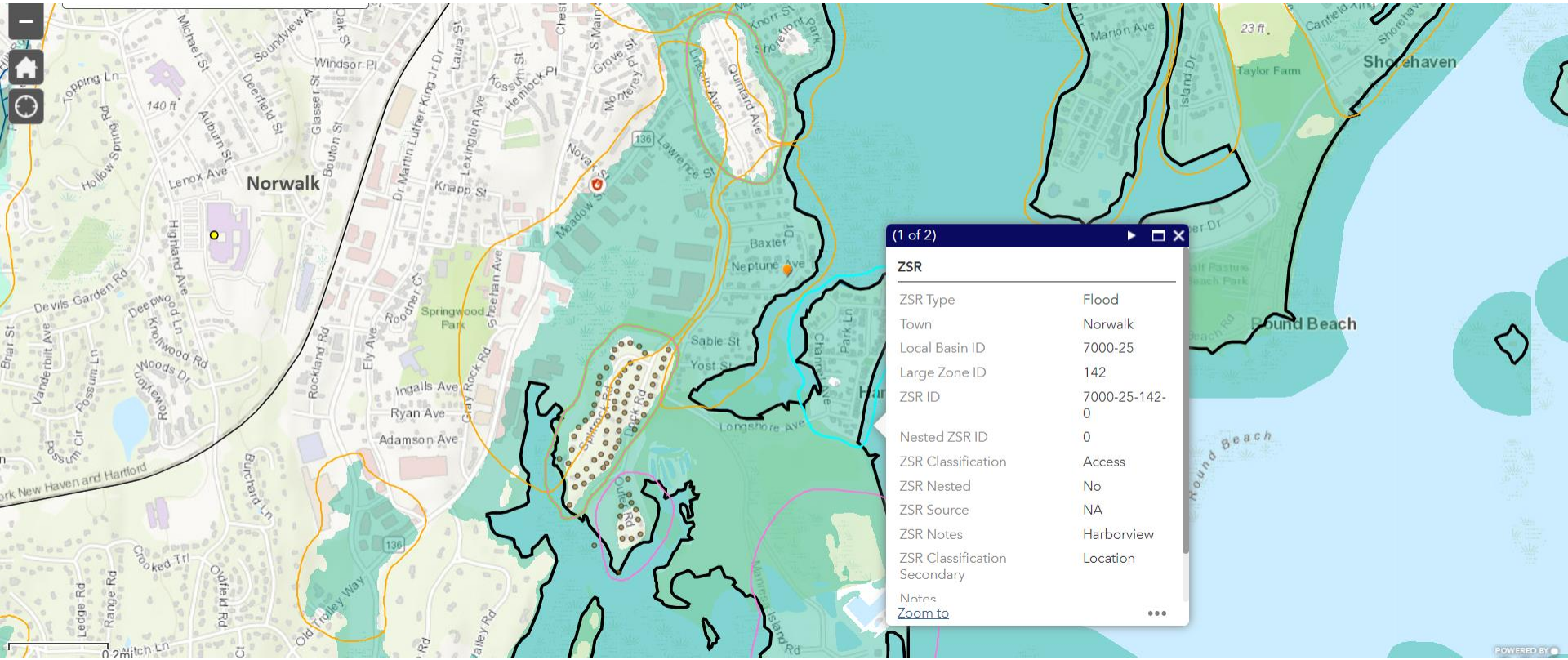
- Climate Change Vulnerability Index (CCVI)





What Resulted from Resilient CT 1.0?

- Zones of Shared Risk

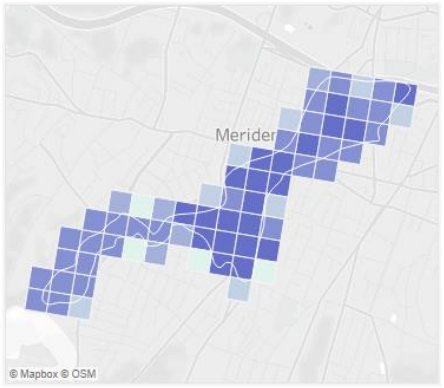


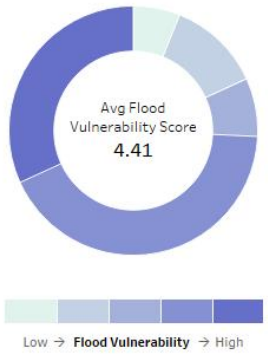
What Resulted from Resilient CT 1.0?

- Identification of Challenges that are Opportunities

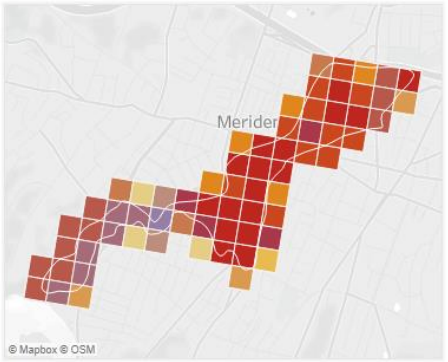
Zone of Shared Risk:
5206-00-249-0
Town: **Meriden**
Type: **Flood, Proximity**

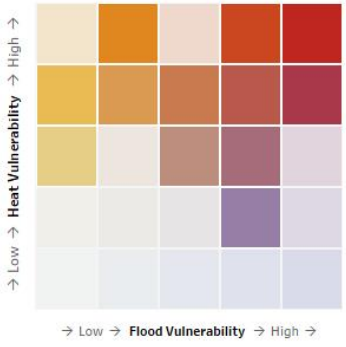
Flood Vulnerability



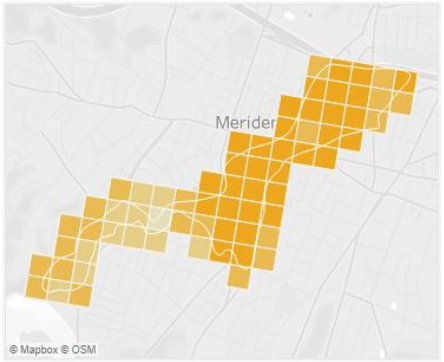


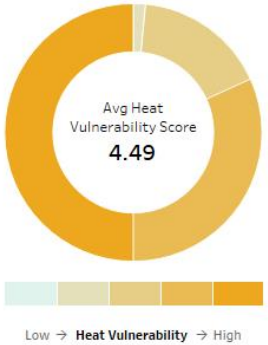
Combined Vulnerability





Heat Vulnerability





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What Resulted from Resilient CT 1.0?

- Identification of Challenges that are Opportunities

Resilient Connecticut Phase II

Regional Adaptation/Resilience Opportunity Areas

Name: Downtown Meriden
Location: Meriden

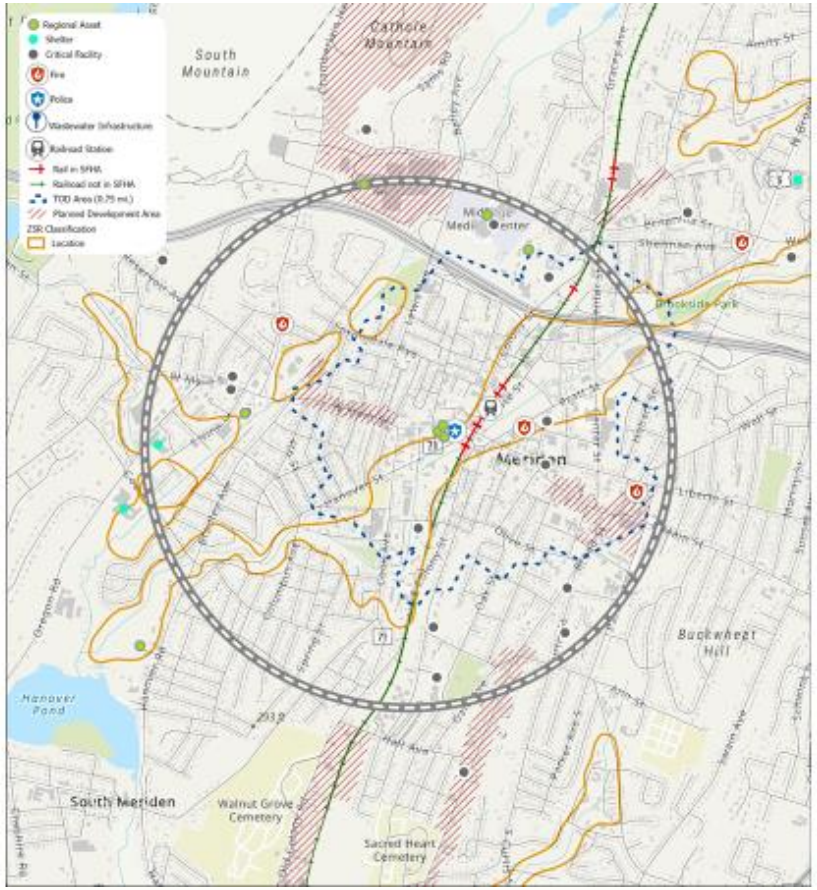
Considerations	Characteristics of Area
Flood Vulnerability	○ ○ ○ ● ○
Heat Vulnerability	○ ○ ○ ● ○
Social Vulnerability	○ ○ ○ ● ○

Critical facilities, historic resources, major transportation routes, and TOD intersect in downtown Meriden within the Harbor Brook zone of shared risk. The City of Meriden has already undertaken major flood risk reduction projects in this area, including the Meriden Green – a significant greenspace that doubles as a restored floodplain and provides a major public amenity to the city and the region. The City has additional opportunities to incorporate resilience into many redevelopment projects. There is strong heat related social sensitivity in the Meriden area, in addition to dense development, high amounts of impervious, an only few areas to provide ample shade.

City Hall
Eversource gas facility
Engine co. 1, 2, and 3
Hunters Ambulance
Police Department

Mid State Medical center
Muravnik senior Center
Lincoln Middle School
Museums

UCONN CONNECTICUT CIRCA



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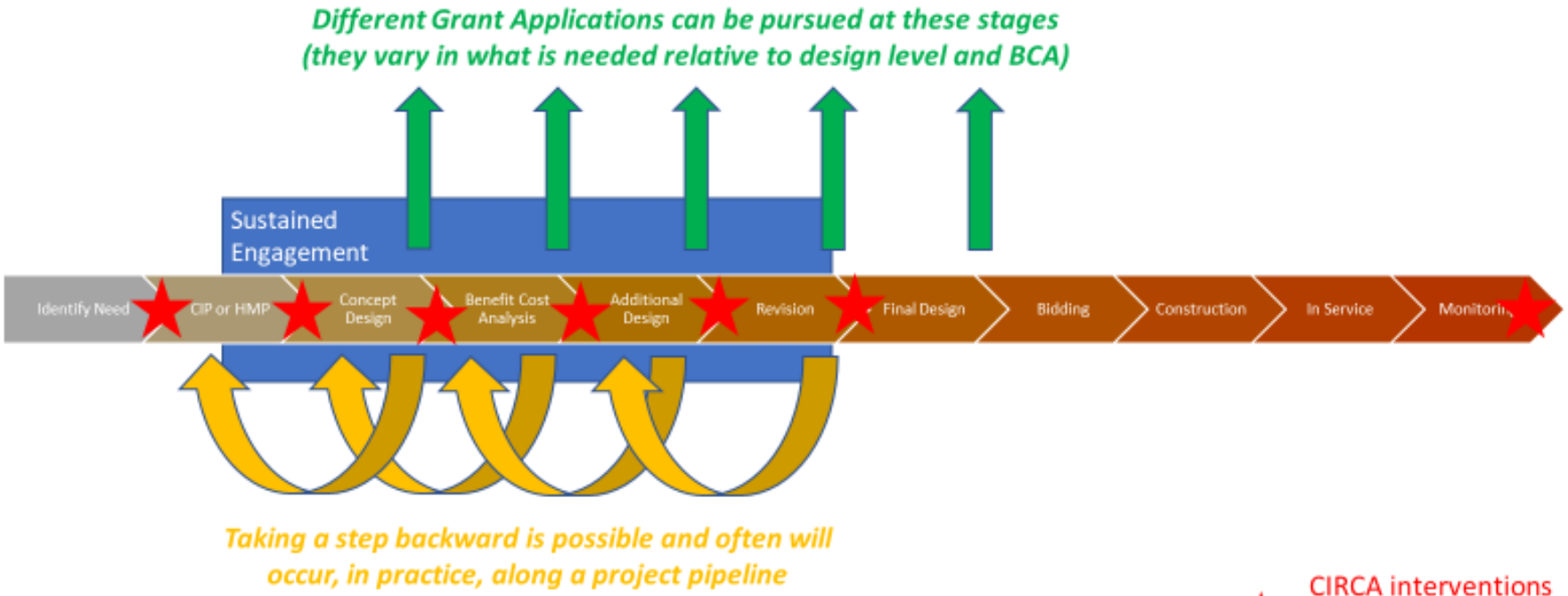
What Resulted from Resilient CT 1.0?

- A recognition of the *Resilience Project Pipeline*



What Resulted from Resilient CT 1.0?

- Recommended Climate Adaptation & Resilience Projects
  - Danbury – Flood mitigation through stream daylighting and identification of cooling center
  - 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 – TOD connectivity across river; and heat mitigation
  - Branford – Using railroad grade for flood protection
  - New Haven – Egress through areas of flood risk and heat mitigation for Fair Haven

Introduction to Resilient Connecticut 2.0

- ***Resilient Connecticut 2.0*** is being deployed using State funds
- Timeframe is 2022-2023
- The CCVI will be expanded statewide
- Focused planning will include the RiverCOG, CRCOG, and SCCOG regions for:
  - Technical assistance for various challenges
  - Delineation of Zones of Shared Risk
  - Review of Flood Vulnerability Study and Hazard Mitigation Plan to help with identification of resilience opportunity areas

Resilient Connecticut 2.0

- Leverage Your Hazard Mitigation Plan
  - What can we pick up, advance, or re-cast?
- Find Complex Climate Adaptation and Resilience Projects
  - Flood mitigation
  - Erosion mitigation
  - Extreme heat
  - Combinations
- Be Flexible
  - We are no longer tied to TOD, affordable housing, and critical infrastructure ideas
  - What is important in the Lower Connecticut River region?

Resilient Connecticut 2.0

- ***What do we mean by technical assistance for various challenges?***
  - Essex: Ferry Street Flood Frequency Analysis
  - Old Saybrook: Fenwick Living Shoreline

Review of Zones of Shared Risk

- Seven Types of Flood and Erosion-Based ZSRs
  - Location
  - Proximity
  - Access
  - Natural Systems
  - Underpasses
  - Single Point
  - Sewershed

Original types piloted in Guilford Resilience Plan

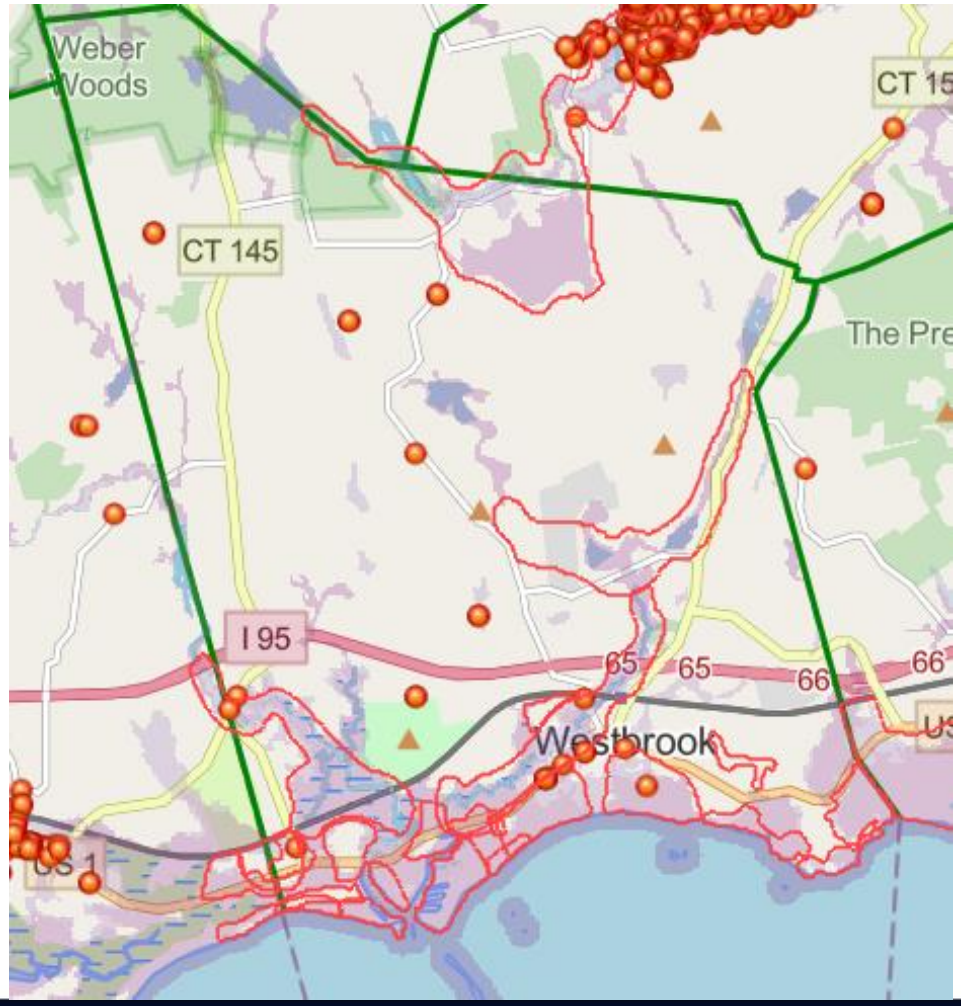
Added in Resilient Connecticut 1.0

Additional Potential Typologies for 2.0

- Resources for Mapping
  - FEMA maps **(new work maps to be issued late 2022)**
  - RiverCOG Flood Vulnerability Assessment
  - RiverCOG Hazard Mitigation Plan

ZSR Viewer

https://experience.arcgis.com/experience/9a4f68dd99f44dc58b93fd85bcfe1255/



Review of Hazard Mitigation Plan Actions

- The planning process was in 2019
- DEMHS and FEMA review was 2019
- Plan approved in fall 2019
- Westbrook listed 78 actions
- Of these, 11 are of potentially relevant for:
  - Applicability to address climate drivers of flooding and extreme heat
  - Applicability for the State's resilient project pipeline

Review of Hazard Mitigation Plan Actions

Action #	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe	Status	Potential for Climate Adaptation/ Resilience Characteristics
43	Shore Protection Systems. Conduct a study of existing shore protection systems along the entire Westbrook coast to analyze overall impacts and develop recommendations for mitigation including identification of opportunities for compensation for the hardening of one part of the shoreline by removing the equivalent extent of flood and erosion control structures from an- other part of the shoreline.	BOS/BOF, CC, LAC, DPW, DEEP	Medium-high	WESTBROOK CIP DEEP	2019—2024		High
55	SHORELINE PROTECTION. Employ Living Shoreline solutions for select areas including low wave energy environments such as tidal marsh borders and river mouths.	BOS/BOF, HMC, PC,LUD, DPW, Council of Beaches, Beach Associations	Medium-high	FEMA, NOAA DEEPW ESTBROOK OP, CIP	2019 — 2024		High

Review of Hazard Mitigation Plan Actions

Action #	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe	Status	Potential for Climate Adaptation/ Resilience Characteristics
66	SHORELINE PROTECTION. Evaluate the technical feasibility of constructing dunes and berms.	BOS/BOF, DPW, TE	Medium-high		2019—2023		High
40	West Beach Dune Restoration. Evaluate potential alternatives for the restoration of dunes along West Beach to develop solutions that will renew the coastal beach and dune system, provide storm damage protection for residents, increase flood control for adjacent properties, and restore a Town resource.	BOS/BOF, CC, LAC, DPW, DEEP	Medium-high	WESTBROOK CIP DEEP	2019-2024		High

Review of Hazard Mitigation Plan Actions

Action #	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe	Status	Potential for Climate Adaptation/ Resilience Characteristics
31	Evaluate publicly owned and managed outfalls and outlets along the shoreline of Westbrook to identify infrastructure that would benefit from the installation of backflow prevention (e.g. tide gates, check valve)	BOS/BOF, DPW	Low	Westbrook OB, OP and CIP	1 year		High
36	Land Acquisition (Near-term): Identify and prioritize areas for the purchase wetlands and other flood prone open space to enhance natural resources while improving coastal resiliency and flood retention.	BOS/BOF, LUD, PC	High	"FEMA HMGP, PDM and FMAW ESTBROOK CIP"	Ongoing		High
39	Encourage Repetitive Loss Property Owners to pursue flood mitigation funding for actions such as elevation or acquisition of structures where appropriate on a voluntary basis	BOS/BOF, ZC, BO, TE	Medium	FEMA HMA grants OBS OP, OB, CIP	Ongoing		High

Review of Hazard Mitigation Plan Actions

Action #	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe	Status	Potential for Climate Adaptation/ Resilience Characteristics
44	Grove Beach Flood Mitigation/ Wetland Study. Conduct a comprehensive hydraulics/hydrology study to identify the cause of flooding and to recommend mitigation measures that focus on reducing flooding within the area. The study will focus on improving watershed connectivity by increasing culvert sizes and improving wetland holding capacity and natural function. The study will evaluate the need for wetland restoration including: fragmentation caused by human activity, the effects of surrounding impervious surfaces, and the presence of non-native invasive species.	BOS/BOF, CC, LAC, DPW, DEEP	Medium-high	WESTBROOK CIP DEEP	2019—2024		High
48	Conduct a roadway emergency access and evacuation planning study to develop conceptual plans and prioritization for pursuing engineering, design and construction funding of roadways identified in the 2014 HMP Update. Roadways should include: 1) Willard Ave. Bypass; 2) Boston Post Road (Route 1); 3) Coral Sands—Dolphin, Striper, Tarpon; 4) West Beach—Seaside Ave.; 5) Middle Beach Salt Island Rd., Pepperidge, Stokes, Gerard; 6) Little Stannard Beach Rd.; 7) Stannard Beach—Second Avenue; 8) Old Kelsey Point Rd.; 9) Chapman Beach Rd./Walden Dr.; 10) Hammock Rd.; 11) Doc's Hill Rd.;12) Old Clinton Rd. (Rte. 145); 13) McVeagh & Toby Hill Rd.; 14) Meeting House Ln.; 15) Pond Meadow Rd.; 16) E. Pond Meadow Rd.; 17) Stevenstown Rd. (Route 145)	BOS/BOF, DPW, TEConnDOT	Medium-high	FHWA ConnDOT STIP RTPWESTBROOK and	2019—2022		High

Review of Hazard Mitigation Plan Actions

Activity #	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe	Status	Potential for Climate Adaptation/ Resilience Characteristics
55	Salt Island Overlook Habitat Restoration - Develop & Implement Forest Tree Planting Plan for Salt Island Overlook to restore a coastal forest habitat and increase coastal storm resiliency.	BOS/BOF, CC, LAC, DPW, DEEP	Medium -high	WESTBROOK CIP DEEP	2019 — 2024		High
61	PUBLIC SAFETY: Flood Protection. Provide flood protection for at-risk Essential and Lifeline Facilities.	BOS/BOF, PC, LUD, DPW	High	FEMA HMGP, PDM and FMAWESTBROOK OP, CIP	2019 - 2024		High

Open Discussion

- Where do you see intersections of community assets and flood-related challenges?
- Where do you see intersections of community assets and extreme heat-related challenges?
- Does Westbrook have examples of unique climate driver typologies and challenges?
- If so, could they lead to either:
  - Limited technical assistance (i.e., Essex Ferry Street)
  - The State's Resilience Project Pipeline

Wrap-Up

- Designate someone
  - To be the primary contact for coordination and meetings
- Maintain a local planning team
  - Planning/Land Use
  - Public Works
  - Emergency Management (if interested)
- Let us know what else is going on
  - Engagement with Sea Grant, DEEP/GC3, Sustainable CT, etc.
  - Applications for funding from FEMA, NFWF, LISS



QUESTIONS?

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