

RESILIENT CONNECTICUT 2.0



Overview for Town of Haddam

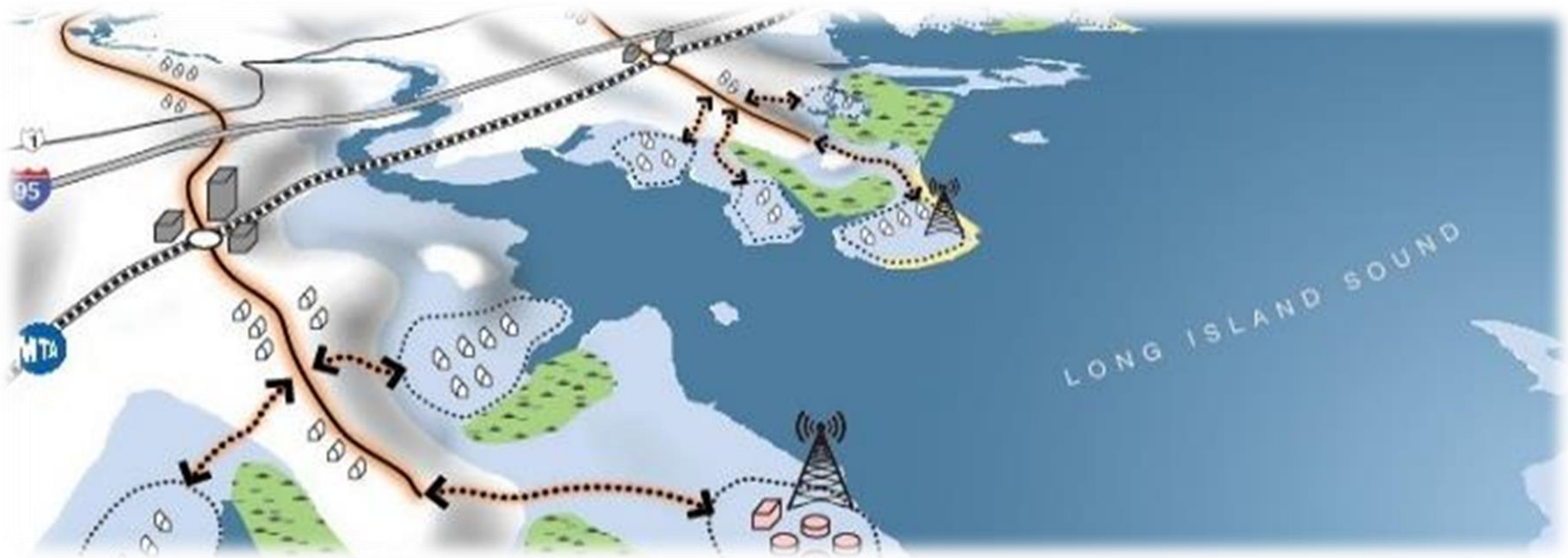
April 19, 2022

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

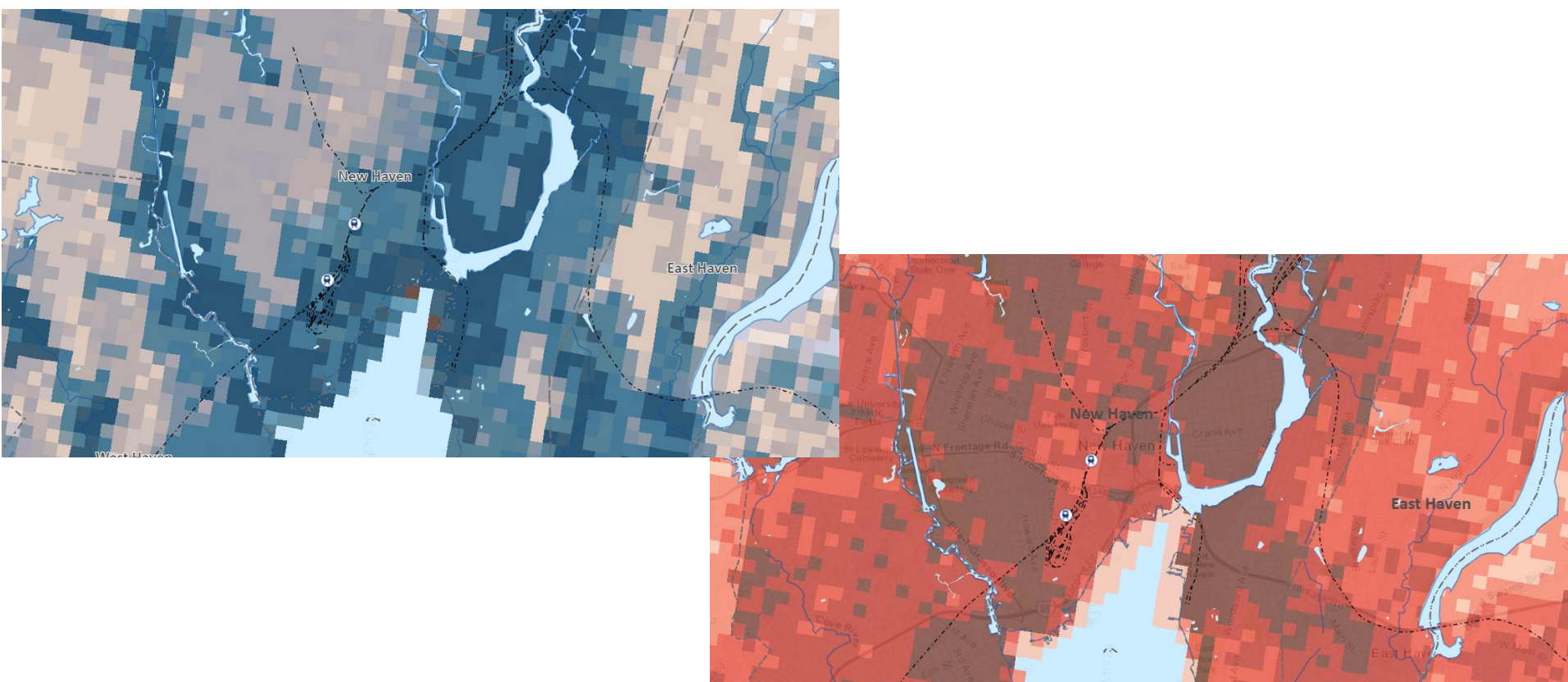


Review of Resilient Connecticut 1.0

- 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

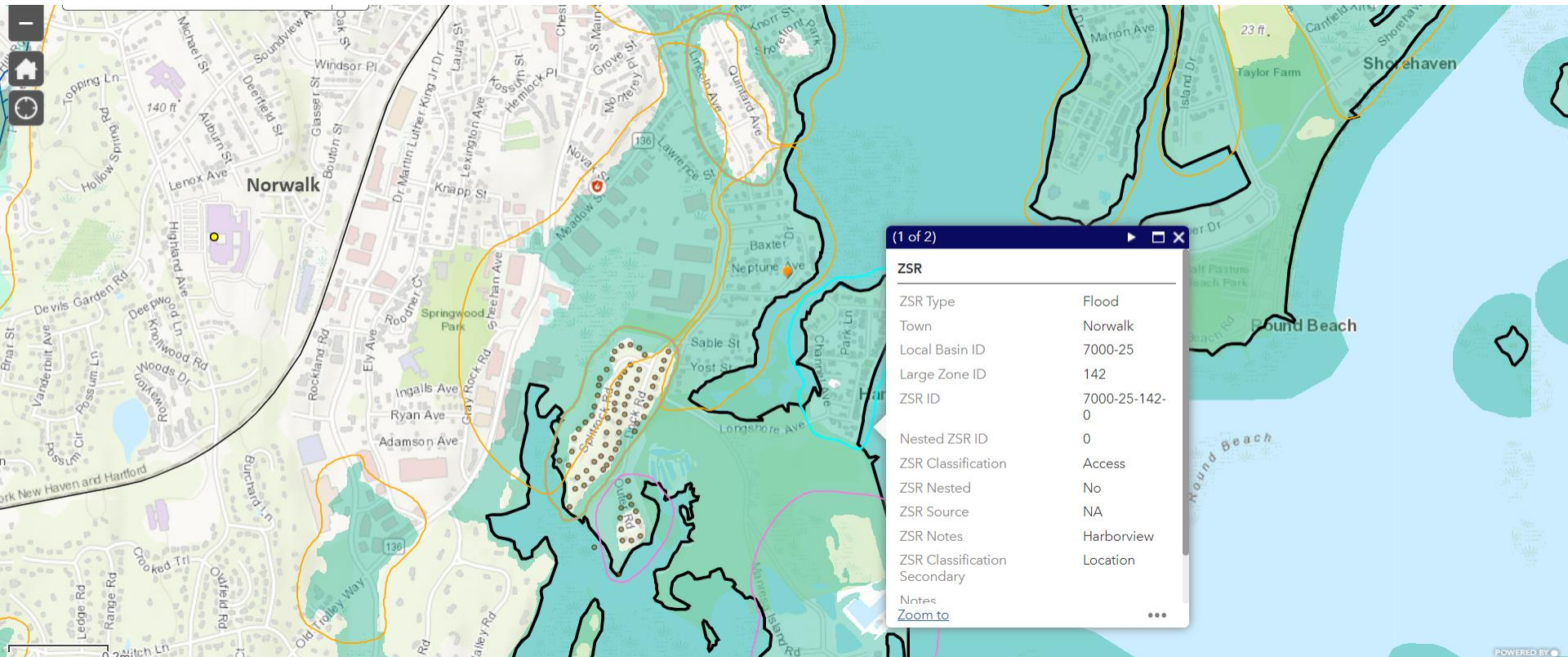
What Resulted from Resilient CT 1.0?

- Climate Change Vulnerability Index (CCVI)



What Resulted from Resilient CT 1.0?

- Zones of Shared Risk



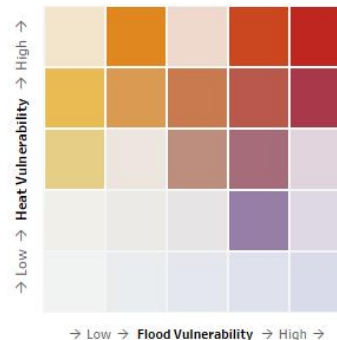
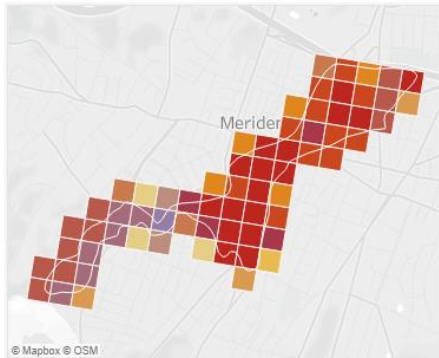
What Resulted from Resilient CT 1.0?

- Identification of Challenges that are Opportunities

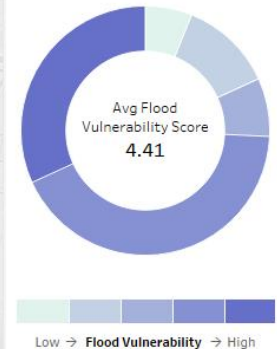
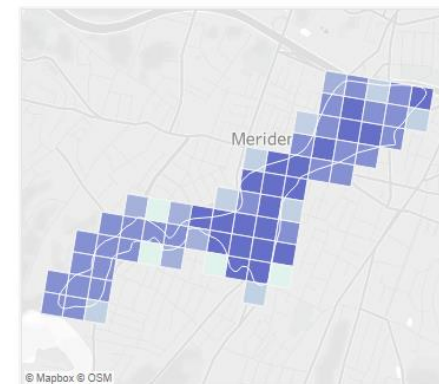
Zone of Shared Risk:
5206-00-249-0
Town: Meriden
Type: Flood,
Proximity



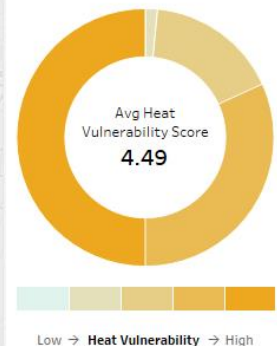
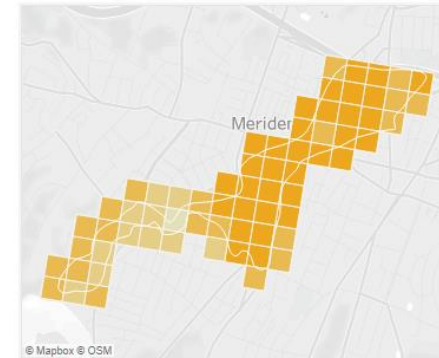
Combined Vulnerability



Flood Vulnerability



Heat Vulnerability



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

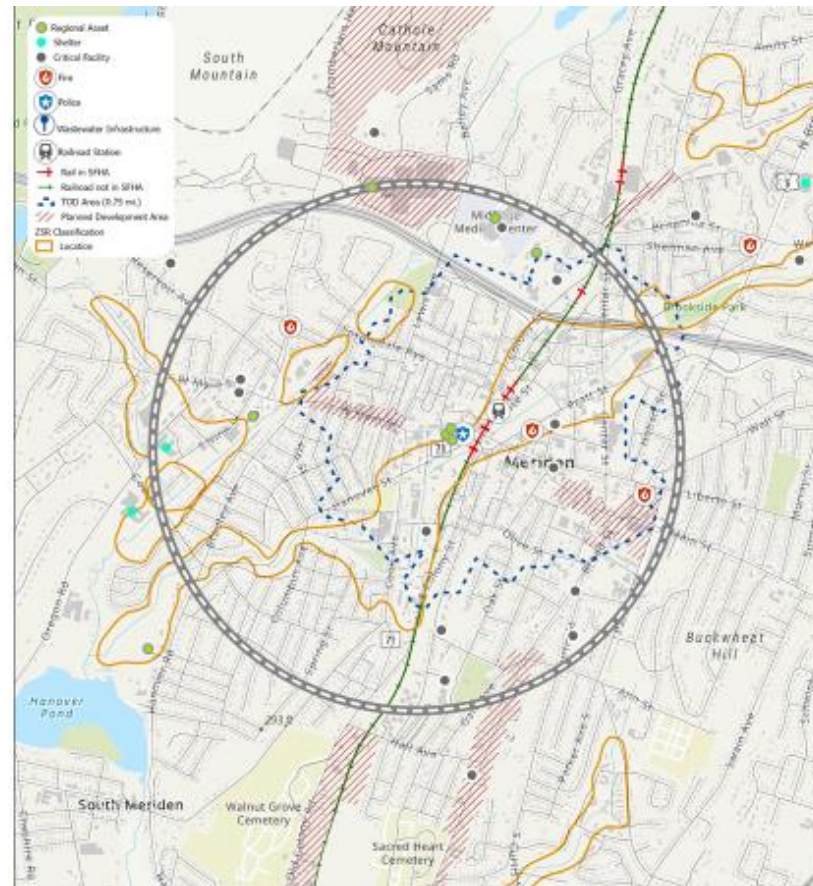
Considerations	Characteristics of Area
Flood Vulnerability	<div><div></div><div></div><div></div><div></div><div></div></div>
Heat Vulnerability	<div><div></div><div></div><div></div><div></div><div></div></div>
Social Vulnerability	<div><div></div><div></div><div></div><div></div><div></div></div>

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, and 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
UNIVERSITY OF CONNECTICUT

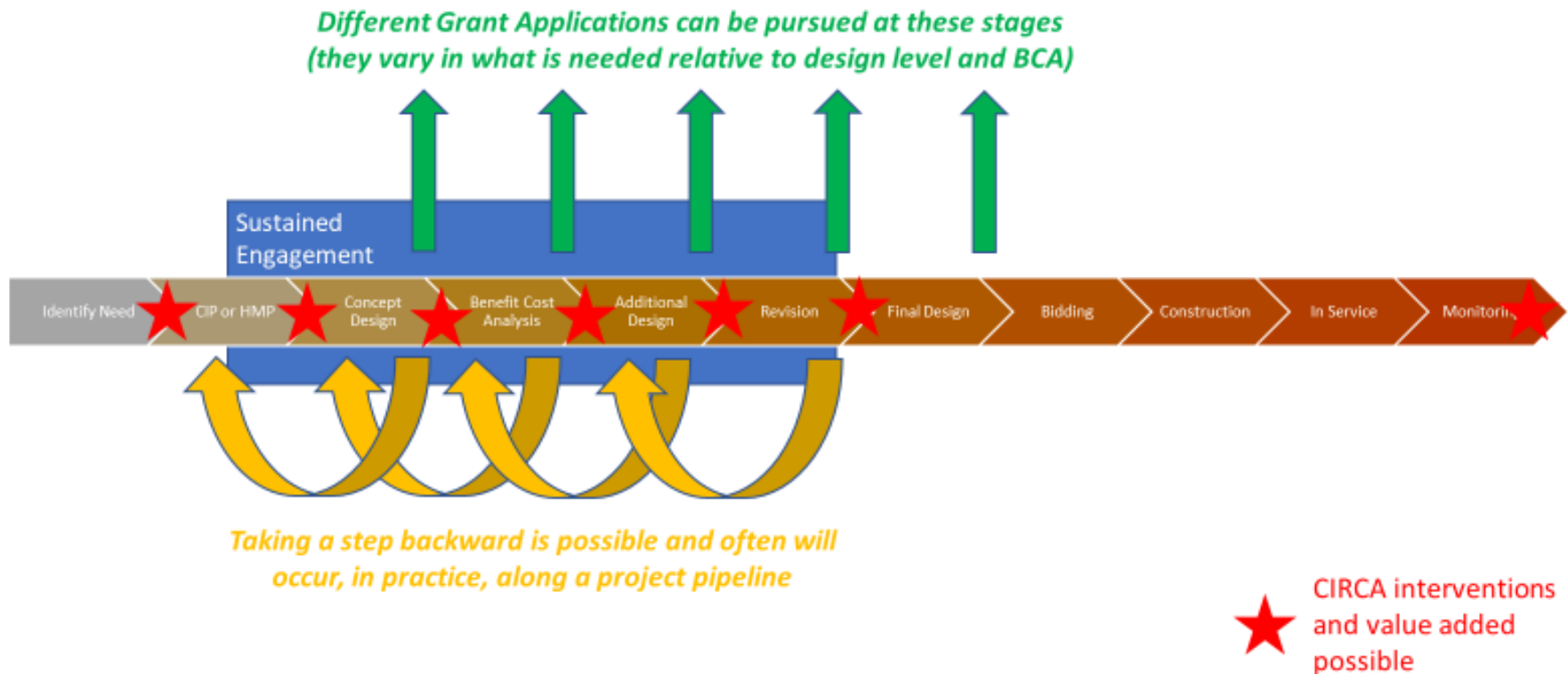


What Resulted from Resilient CT 1.0?

- 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

What Resulted from Resilient CT 1.0?

- A recognition of the *Resilience Project Pipeline*



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

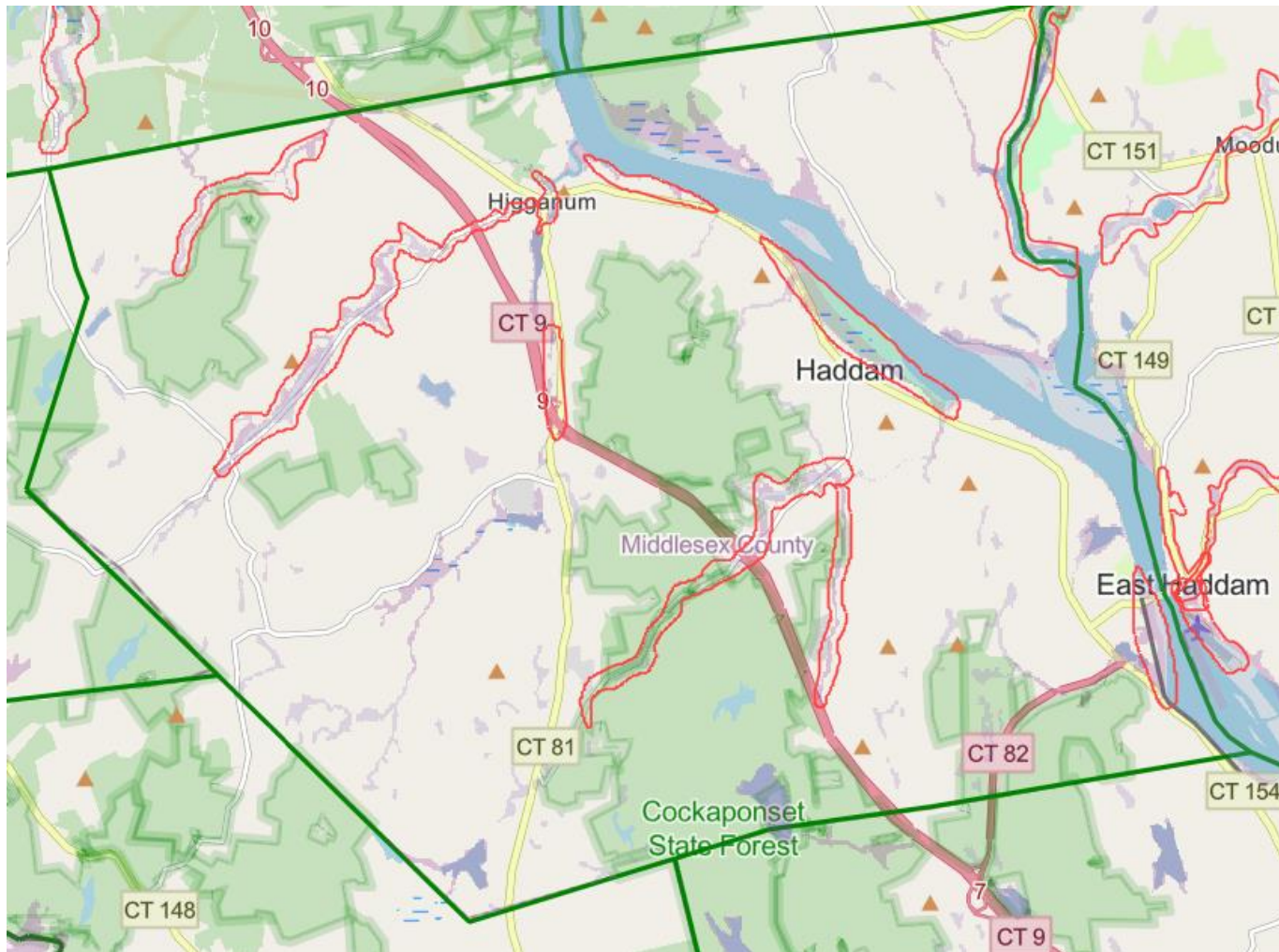


Review of Zones of Shared Risk

- Seven Types of Flood and Erosion-Based ZSRs
 - Location
 - Proximity
 - Access
 - Natural Systems
 - Underpasses
 - Single Point
 - Sewershed
 - Resources for Mapping
 - FEMA maps (**new work maps to be issued late 2022**)
 - RiverCOG Flood Vulnerability Assessment
 - RiverCOG Hazard Mitigation Plan
- Original types piloted in Guilford Resilience Plan
- Added in Resilient Connecticut 1.0
- Additional Potential Typologies for 2.0

ZSR Viewer

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



Review of Hazard Mitigation Plan Actions

- The planning process was in 2019-2020
- DEMHS and FEMA review was 2020-2021
- Plan approved in spring 2021
- Haddam listed 19 actions
- We will review each to comment on the status and note:
 - Applicability to address climate drivers of flooding and extreme heat
 - Applicability for the State's resilient project pipeline

Review of Hazard Mitigation Plan Actions

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	STAPLEE Score /Priority	Status	Potential for Climate Adaptation/ Resilience Characteristics
1	2-1	Relocate the DPW which is partially located in the SFHA	DPW, BOS, BOF	\$100,000+	OB, Grants	7/2021 - 6/2024	SW, F, CC	8/H		High
2	2-1	Evaluate the capacity of all stream crossing infrastructure along Beaver Meadow Road to identify components that need upgrades or repairs.	DPW, BOS, BOF	\$25,000-\$50,000	OB	7/2021 - 6/2022	SW, F, CC	7/H		High
3	3-1	Collaborate with other communities within the region to identify capable tree removal contractors.	DPW	\$1,000-\$10,000	Staff Time	7/2021 - 6/2022	SW, TW, WS, TI, WF, CC	5/H		Low
4	2-1	Develop an inventory of areas tree assets that raise concerns, and coordinate with Eversource Vegetation Management on addressing these assets.	DPW	\$1,000-\$5,000	Staff Time	7/2022 - 6/2024	SW, TW, WS, TI, WF, CC	5/M		Low
5	2-1	Upgrade 2 undersized culverts and aging, undersized bridge on Wiese Albert Road	DPW, BOS, BOF	\$50,000-\$100,000	OB, Grants	7/2023 - 6/2025	SW, F, CC	8/H		High
6	2-1	On Brainerd Hill Road: replace undersized culvert with single span bridge and drainage system, replace culvert (at Joseph Cir. Intersection) with a precast box culvert, and conduct a drainage study and upgrade culvert over inlet to Black Shop Pond.	DPW, BOS, BOF	\$100,000+	OB, Grant	7/2023 - 6/2025	SW, F, CC	8/H		High

Review of Hazard Mitigation Plan Actions

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	STAPLEE Score/Priority	Status	Potential for Climate Adaptation and Resilience Characteristics
7	2-1	On Jackson Road: Conduct a drainage study and replace undersized culverts over an unnamed stream and Ponset Brook.	DPW, BOS, BOF	\$100,000 +	OB, Grant	7/2023-6/2025	SW, F, CC	8/H		High
8	2-1	Conduct drainage study and replace culverts over Ponset Brook at Valley Ridge Drive and Little City Road.	DPW, BOS, BOF	\$100,000 +	OB, Grant	7/2023-6/2025	SW, F, CC	8/H		High
9	2-1	Conduct drainage study for improvements along Bible Rock Brook at Thayer Road and Thayer Road Extension.	DPW, BOS, BOF	\$100,000 +	OB, Grant	7/2022-6/2023	SW, F, CC	8/H		High
10	2-1	Conduct drainage study along the brook at Dish Mill Road (North).	DPW, BOS, BOF	\$50,000-\$100,000	OB, Staff Time	7/2022-6/2023	SW, F, CC	8/H		High
11	2-1	On Walkley Hill Road, conduct a drainage study and install precast box culvert over Krieger Brook.	DPW, BOS, BOF	\$100,000 +	OB, Grant	7/2023-6/2025	SW, F, CC	8/H		High
12	2-1	On Turkey Hill Road: Conduct a drainage study and install a precast box culvert over Turkey Hill Brook.	DPW, BOS, BOF	\$100,000 +	Ob, Grant	7/2023-6/2025	SW, F, CC	8/H		High
13	2-1	Intersection of Jail Hill, Beaver Meadow, Hayden Hill and Turkey Hill Roads. Conduct drainage study and construct detention system.	DPW, BOS, BOF	\$50,000-\$100,000	OB, Grant	7/2023-6/2025	SW, F, CC	8/H		High

Review of Hazard Mitigation Plan Actions

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe for Completion	Hazard (s) Addressed	STAPLEE Score/Priority	Status	Potential for Climate Adaptation/Resilience Characteristics
14	2-1	On Camp Bethel Road: Conduct drainage study and upgrade undersized culvert over Rutty Creek.	DPW, BOS, BOF	\$100,000 +	OB, Grant	7/2023 - 6/2025	SW, F, CC	8/H		High
15	3-1	Educate the property owners of mitigation actions they can take in areas of increased risk including Andrews Marina/Harpers Landing, and little Meadow Road (elevate or floodproof homes).	BOS, LUO, FM, BO	\$1,000-\$5,000	Staff Time	2021	SW, F, CC	6/M		High
16	2-1	Work with the owner of Sawmill Pond Dam (#6109) to pursue an engineering study.	DPW, BOS, BOF, EMD	\$25,000-\$50,000	Staff Time	7/2022 - 6/2023	SW, F	5/M		Medium; depends on specific needs
17	1-1	Identify strategies to minimize remaining flood risk at the Higganum Center, including debris maintenance.	DPW, BOS, BOF	\$1,000-\$10,000	Staff Time	7/2021 - 6/2022	SW, WS, F, CC	7/H		High
18	2-1	Upgrade culverts on Candlewood Hill Road.	DPW, BOS, BOF	\$50,000-\$100,000	OB, Grant	7/2023 - 6/2024	SW, F, CC	8/H		Medium; depends if culvert size will be increased
19	2-1	On Foot Hills Road: Conduct drainage study to remedy roadway flooding and winter icing problems.	DPW, BOS, BOF	\$10,000-\$25,000	OB, Grant	7/2022 - 6/2023	SW, WS, F, CC	8/H		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 Haddam 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?

David Murphy, PE, CFM
david.2.murphy@uconn.edu

Mary Buchanan, PhD
mary.buchanan@uconn.edu