RESILIENT CONNECTICUT 2.0

Overview for Town of Middletown

May 4, 2022

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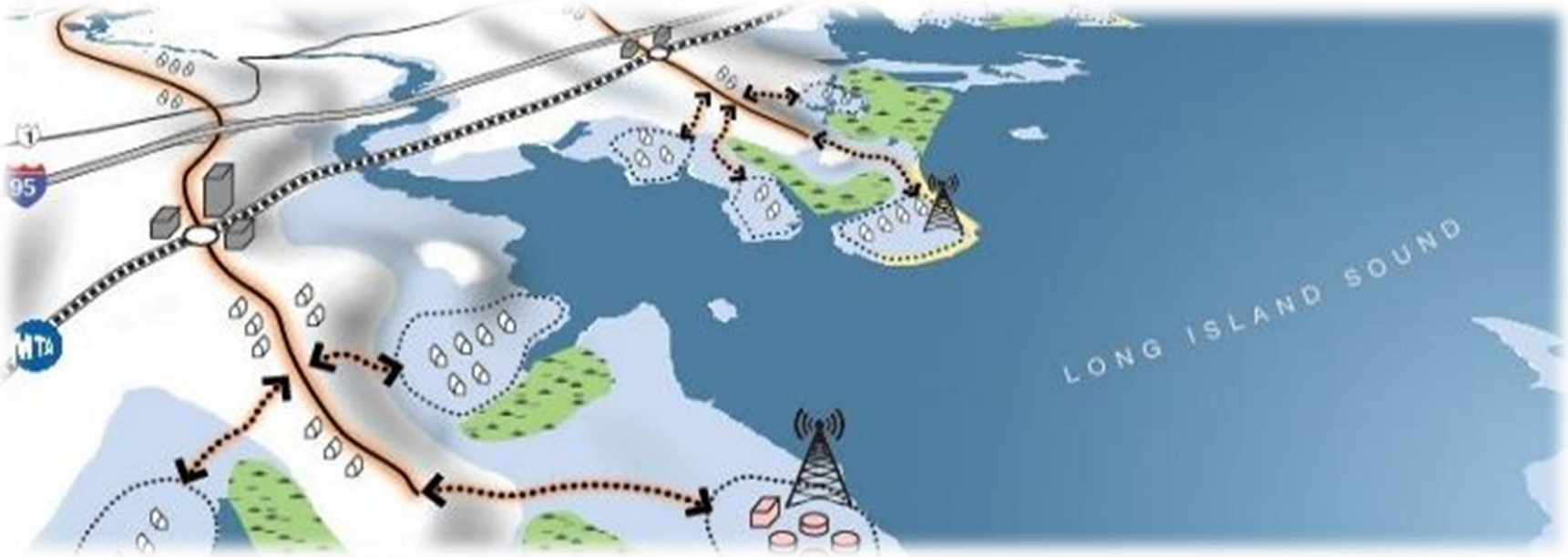
CIRCA
Connecticut Institute for Resilience and Climate Adaptation

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

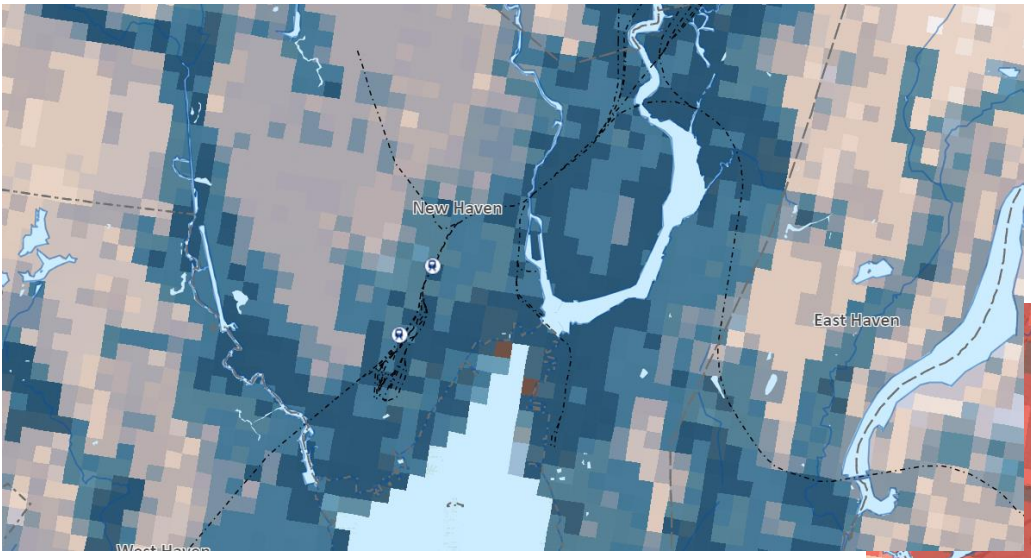


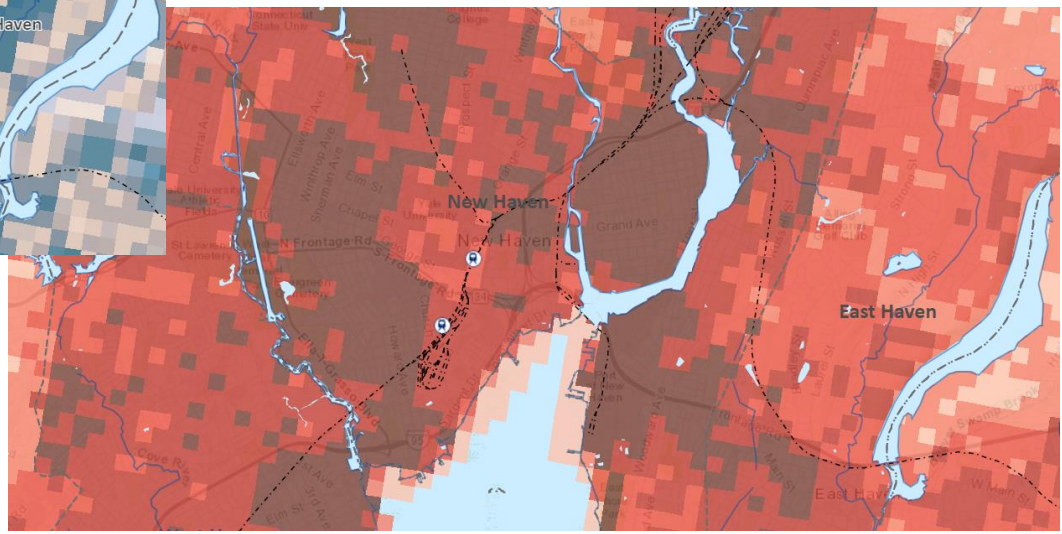
Review of Resilient Connecticut 1.0

- 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 is ending, 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?

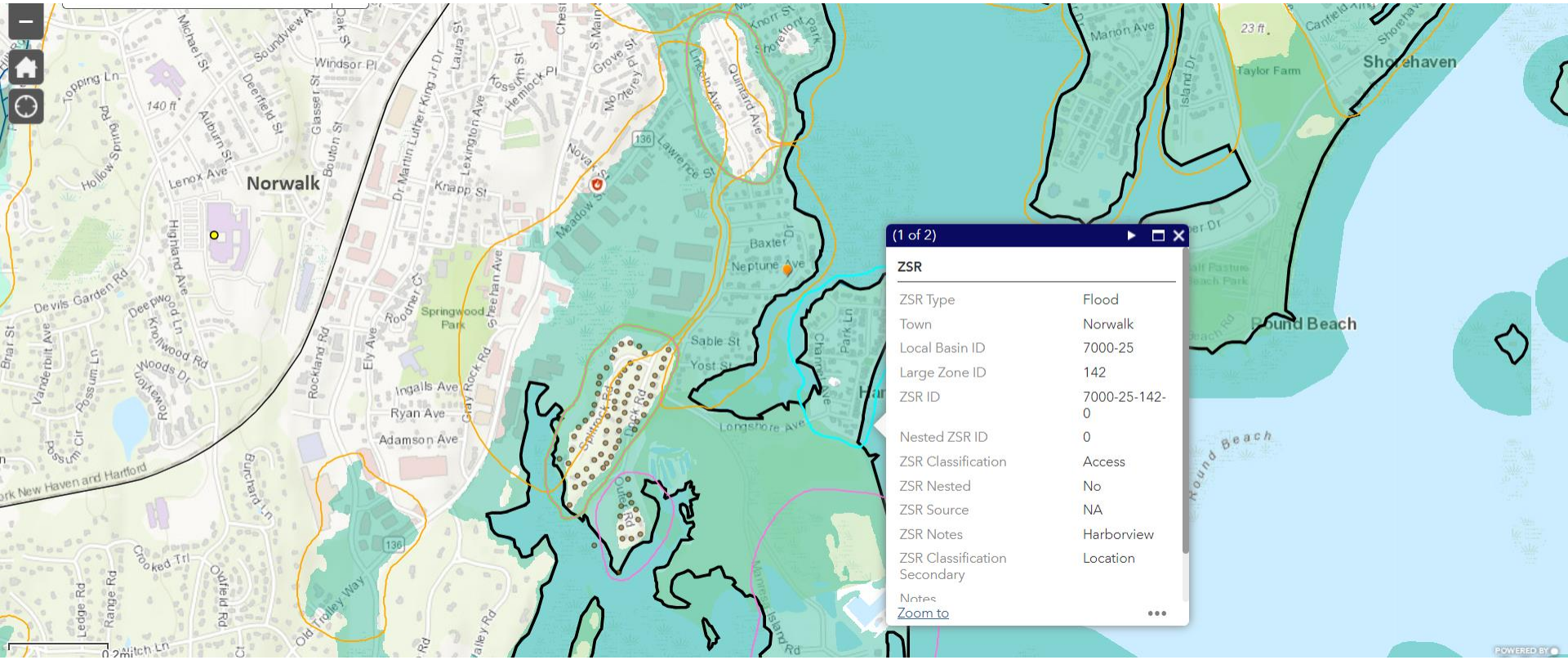
- Climate Change Vulnerability Index (CCVI)





What Resulted from Resilient CT 1.0?

- Zones of Shared Risk



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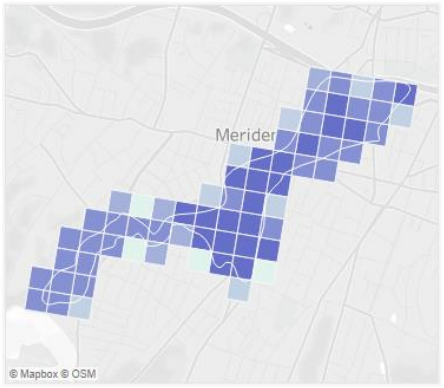
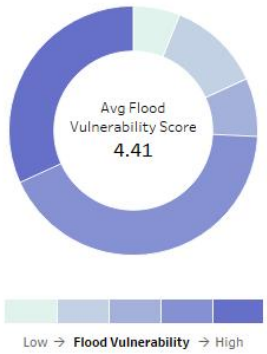
What Resulted from Resilient CT 1.0?

- Identification of Challenges that are Opportunities

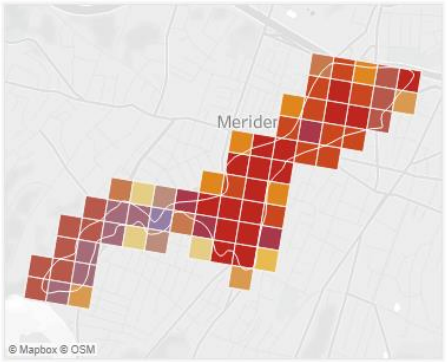
Zone of Shared Risk:
5206-00-249-0
Town: **Meriden**
Type: **Flood, Proximity**

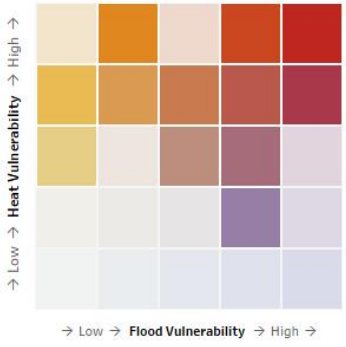
Flood Vulnerability



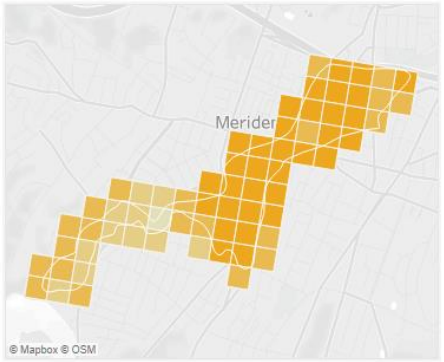


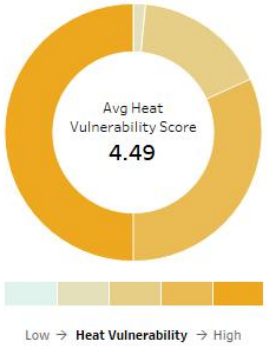
Combined Vulnerability





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

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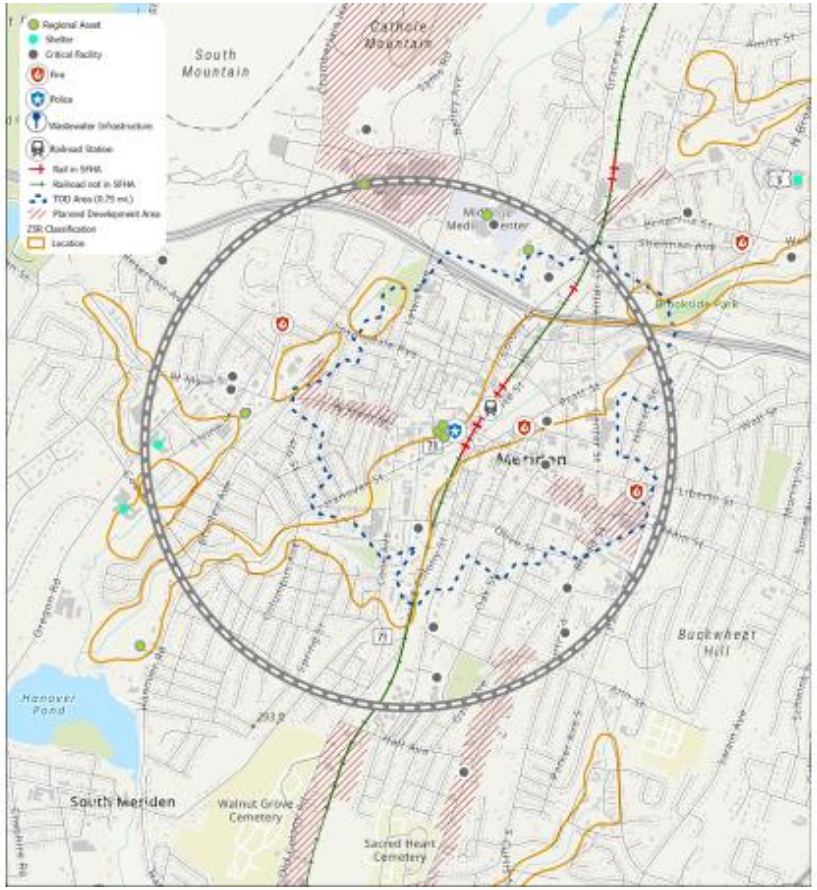
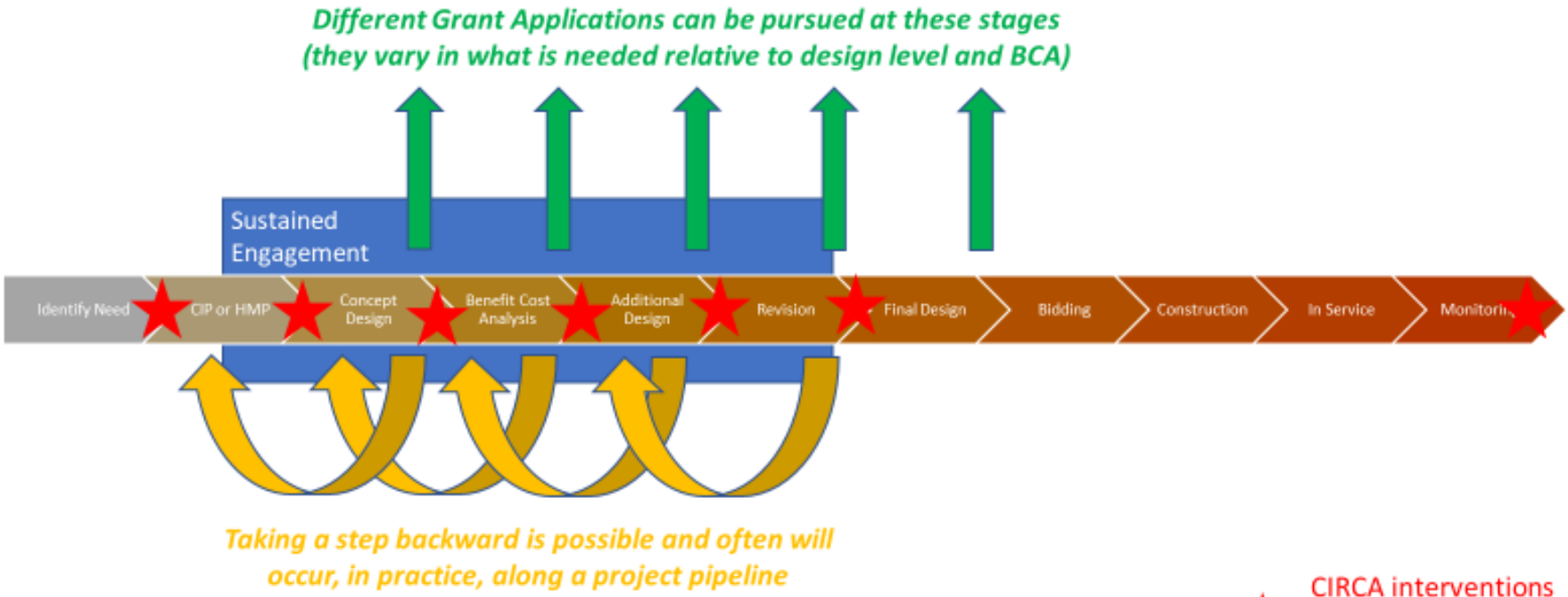


What Resulted from Resilient CT 1.0?

- 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

Original types piloted in Guilford Resilience Plan

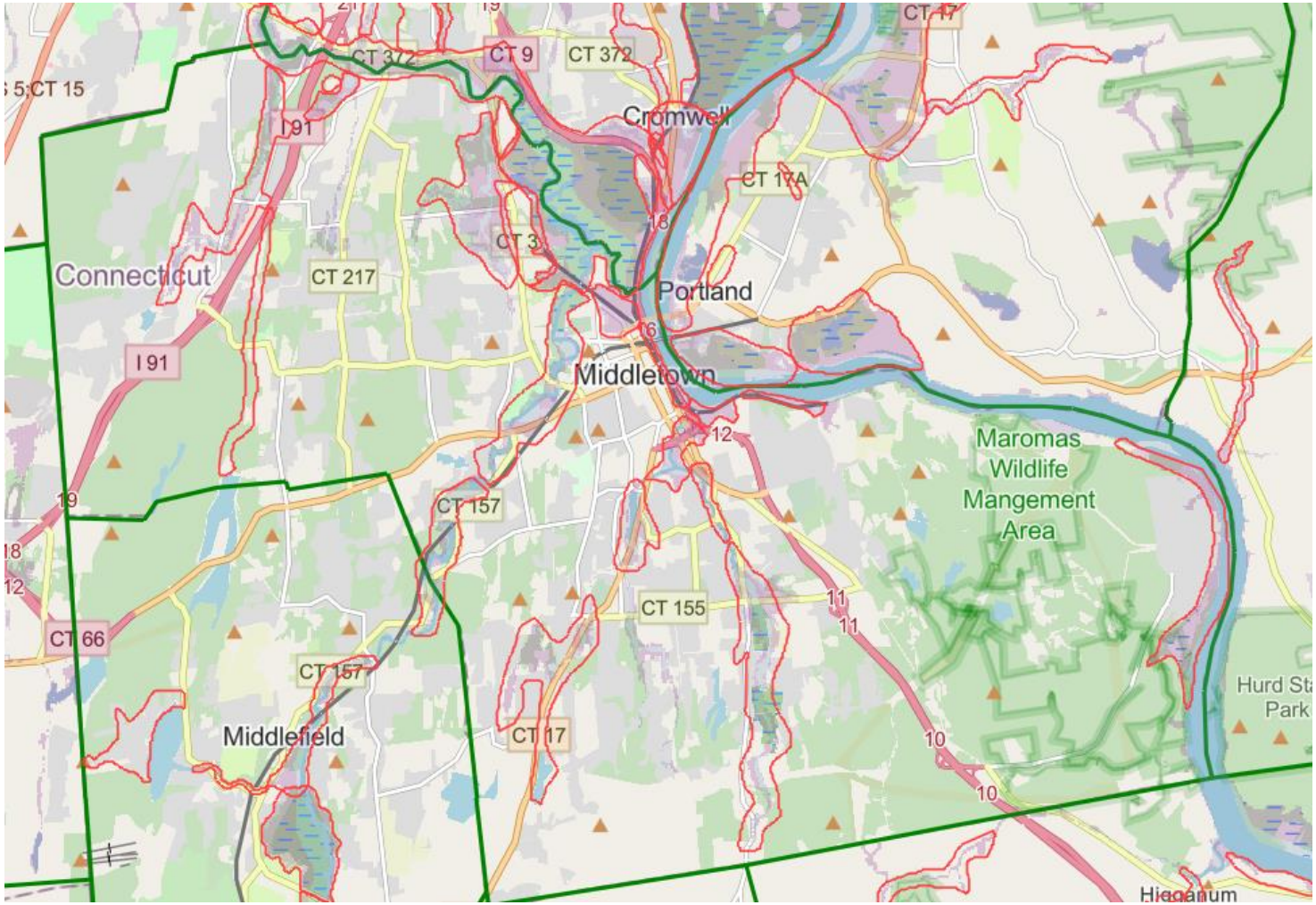
Added in Resilient Connecticut 1.0

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/



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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
- Middletown listed 23 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	Hazard (s) Addressed	Total STAPLEE Score/Priority	Status	Potential for Climate Adaptation /Resilience Characteristic
1	1-1, 3-1	NFIP Community Rating System Participation. Work with FEMA's contractor to complete a "quick-check" to determine if ongoing activities in Middletown would qualify it for a class 9 rating in the CRS. If so, join and identify additional activities for additional points.	PZ, PW, EM	$0-$5,000	OP, Staff Time	2022	F	6/H		Low; activities are ongoing
2	1-1	Update the Debris Management Plan. Annually survey trees that need to come down. 35-50 per year. Add requirement for on-call trimming. Create an inventory of ash trees and management plan.	PW, EM	$0-$10,000	CIP, OP	Annually through 2025	SW, TW, WS, F, WF	4/H		Low
3	1-1	Budget appropriate money necessary to maintain and remove dead, dying, dangerous, and diseased trees in rights-of-way and on town land	PW	$40-50K	CIP, OP	Annually through 2025	TI	6/H		Low
4	1-1, 3-1	Comprehensive River Management Plan. Update and research property acquisition strategies for undeveloped property(ies) along the river front.	LUO, PW	$40-50K	HMGP, RLP, FMA, CIP	2025	F	10/H		High
5	1-1	Flood Prone Area Mitigation Materials. Increase inventory of flood prone mitigation items (i.e. sand bags and barricades. Items necessary for flooding in all flood prone areas.	PW	$1,000-$10,000	CIP	2021-2022	F	4/M		High
6	2-1, 3-1	Flood Study(ies) for RLP on Millbrook Road. Conduct a flood study South of Randolf Road for a feeder brook into the main stem (Sumner Brook) that may address strategies for flooding on Millbrook Road	LUO, BO, FM	$10,000 - $25,000	HMGP, RLP, FMA	2022	F	8/H		High

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7	2-1	Bank Stabilization. Conduct remediation project at RLP - Canoe Club, Harbor Drive to stabilize river bank and increase storage capacity.	LUO	$10,000-$25,000	HMGP, RLP, FMA	2021	F	8/H		High
8	2-1	Financing and Mitigation for Nejako Drive RLPs. Study was conducted with mitigation strategies recommended. Implement strategies. Research funding sources.	LUO	$50,000-100,000	HMGP, RLP, FMA	2022	F	8/H		Medium; depends on specific needs
9	2-1	Evacuation Routing. City working with contractor to improve current system and increase efficiency(ies) for evacuation routing.	LUO	$10,000-$25,000	HMGP, RLP, FMA	Ongoing through 2022	SW, TW, WS, F	5/H		High
10	2-1	Business Continuity. Continue to improve COOP (City Hall)	BOF	$0-$1,000	HMGP, CIP	Annually through 2025	SW, TW, ET, WS, F, TI, WF, D, E, CC	5/H		Low
11	1-1, 3-1	Debris Management Plan. Continue to develop an updated debris management plan town wide.	PW	$1,000-$5,000	CIP	2021-2022	SW, TW, WS, TI, WF	4/H		Low
12	1-1	Critical Facilities. Currently the senior center needs a generator to operate elevators for evacuation. Conduct analysis of gas stations and supermarkets for cost of generators.	BOS	$1,000-$5,000	CDBG	2022	SW, TW, WS	6/H		Medium; depends if facilities will be used as shelters or cooling centers

Review of Hazard Mitigation Plan Actions

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe	Hazard (s) Addressed	STAPLEE Score/Priority	Status	Potential for Climate Adaptation and Resilience Characteristics
13	2-1	Upgrade Wells and Facilities. Replace two wells below the 100-year flood at J.S. Roth Well field. Well Improvements/Storm Hardening.	Water and Sewer	$1.7M (Wells)	HMGP, CIP, OP	2020-2021	F	9/H		High
14	2-1	Harbor Park Pumping Station. Abandon some facilities and install watertight grinder pump.	Water and Sewer	$100K	HMGP, CIP, OP	2023	F	9/H		High
15	2-1	Johnson Street Pumping Station. Upgrade Storm Wall.	Water and Sewer	$15K	HMGP, CIP, OP	2025	F	9/H		High
16	2-1	Adder Brook Dam. Repair Diversion Chamber.	Water and Sewer	$25K	HMGP, CIP, OP	2023	F	9/H		Low
17	2-1	South Main Street. Replace station to upland site.	Water and Sewer	$400K	HMGP, CIP, OP	2025	F	9/H		High
18	2-1	Adder Brook Dam (see Dam Hazard Report). Repair outlet at gatehouse. Spillway needs improvement and dam raised to pass ½ PMF	Water and Sewer	$250K (outlet) $2M (raise dam)	HMGP, CIP, OP	2025 (raising dam may be longer term project)	F	12/H		Low

Review of Hazard Mitigation Plan Actions

Activity #	Goal/Objective	Activity Description	Lead Agency	Est. Cost*	Potential Funding Sources	Timeframe	Hazard (s) Addressed	STAPLEE Score/Priority	Status	Potential for Climate Adaptation / Resilience Characteristics
19	2-1	Mt. Higby Dam. Using Dam Hazard Report perform improvements to spillway and dam raised to pass ½ PMF.	Water and Sewer	$2.5 M	HMGP, CIP, OP	2025 (may be longer term project)	F	12/M		Low
20	2-1	Laurel Brook Dam. Intake improvements and dike repairs to pass ½ PMF.	Water and Sewer	$800 K	HMGP, CIP, OP	2025	F	9/H		Low
21	2-1	Saw Mill Interceptor. Need waterproof repair tops.	Water and Sewer	$50K	HMGP, CIP, OP	2025	F	9/H		Medium
22	2-1	#3 Dam. Improvements needed to spillway. DOT Project (Route 66 Widening Project) is complete.	Water and Sewer		HMGP, CIP, OP	2025	F	9/M		Low
23	2-1	Coginchaug River Sewer. Raise all structure tops above flood elevation.	Water and Sewer	$50K	HMGP, CIP, OP	2025	F	9/M		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 Middletown 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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