

RESILIENT CONNECTICUT 2.0



Overview for Town of Old Lyme

April 26, 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

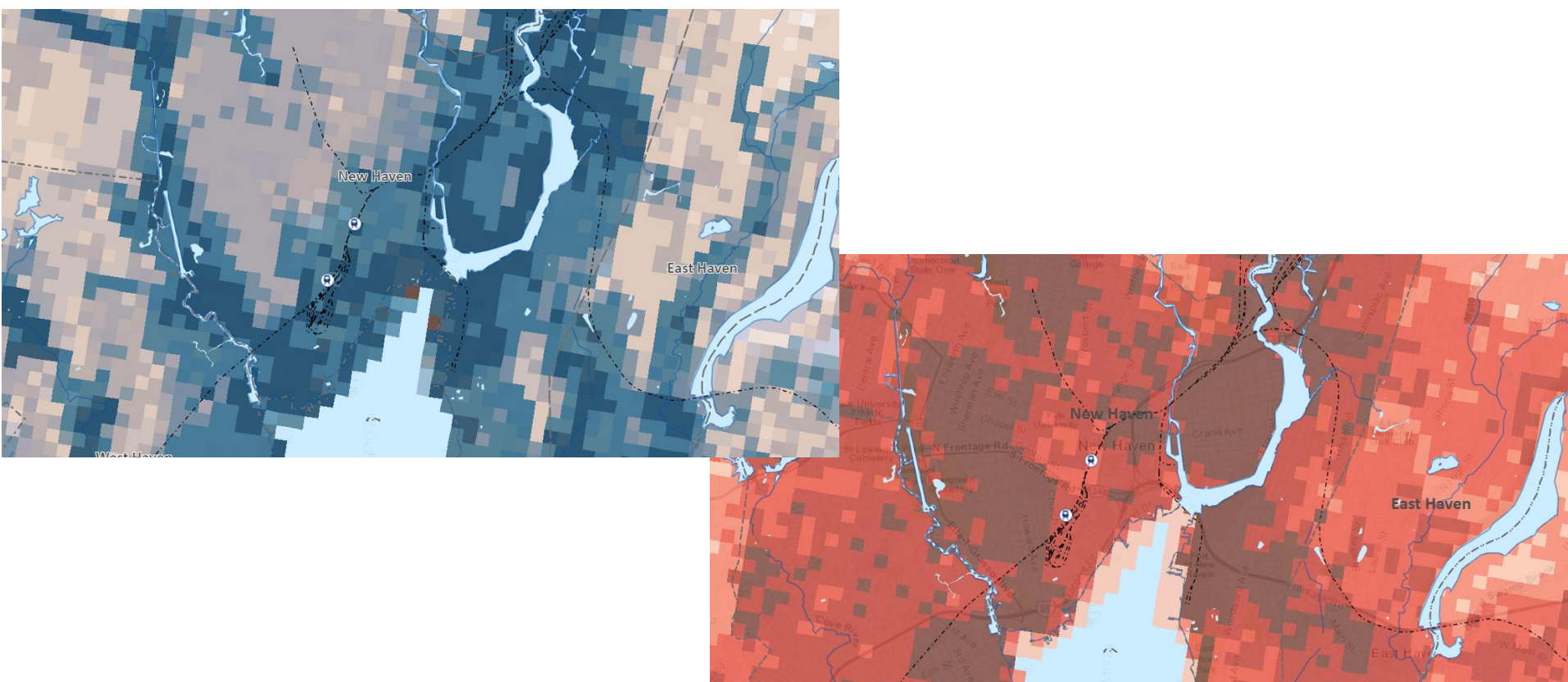


Review of Resilient Connecticut 1.0

- 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 is ending, and CIRCA is shifting into the study and concept design phase for Fairfield County and New Haven County

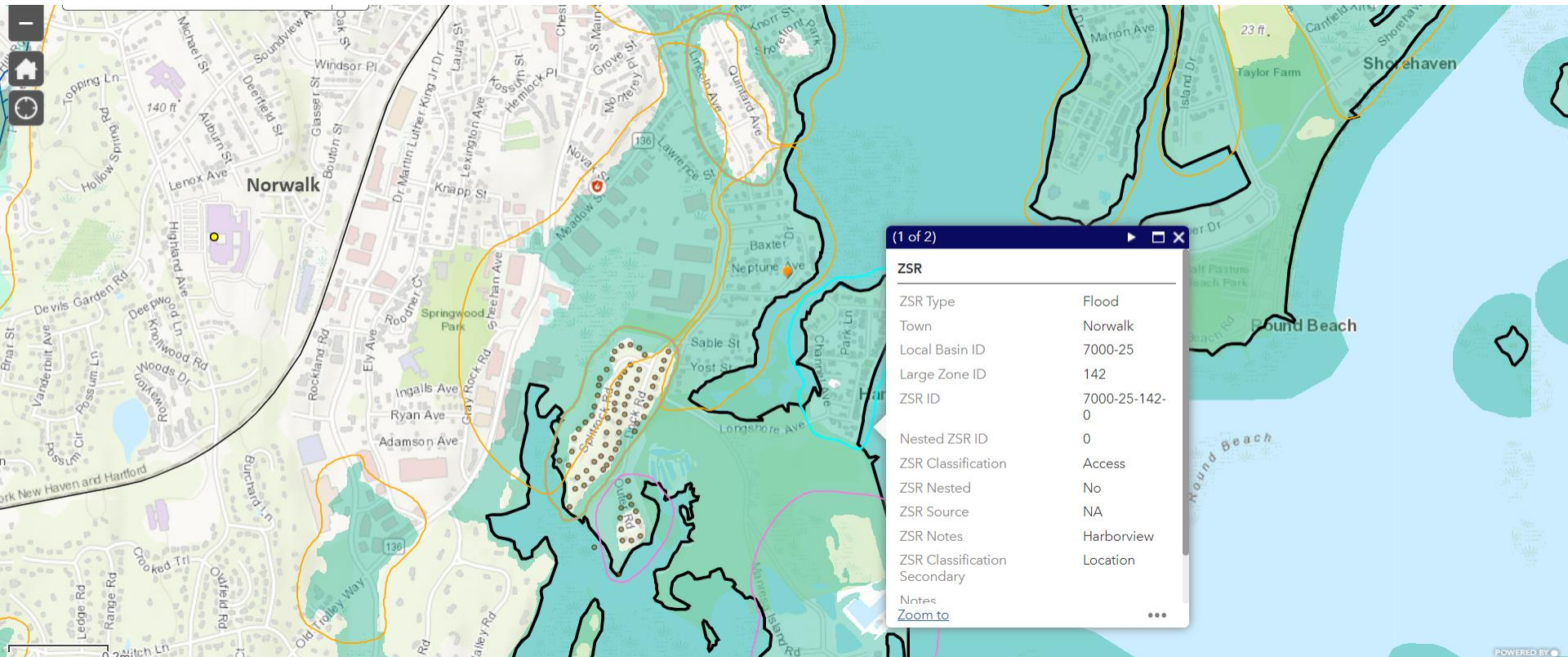
What Resulted from Resilient CT 1.0?

- Climate Change Vulnerability Index (CCVI)



What Resulted from Resilient CT 1.0?

- Zones of Shared Risk



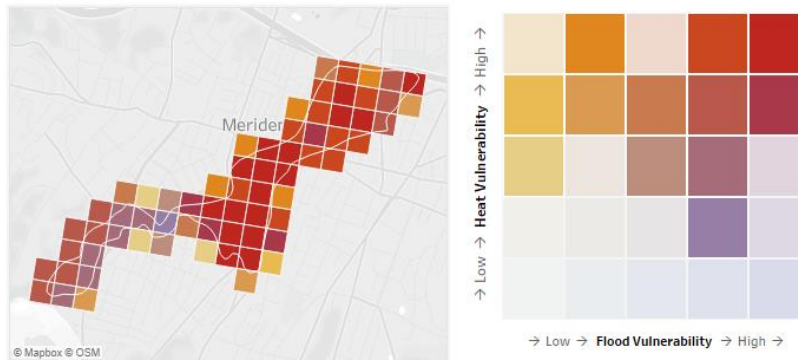
What Resulted from Resilient CT 1.0?

- Identification of Challenges that are Opportunities

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



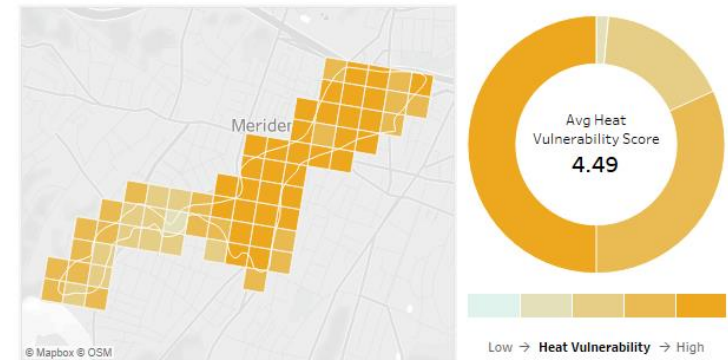
Combined Vulnerability



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

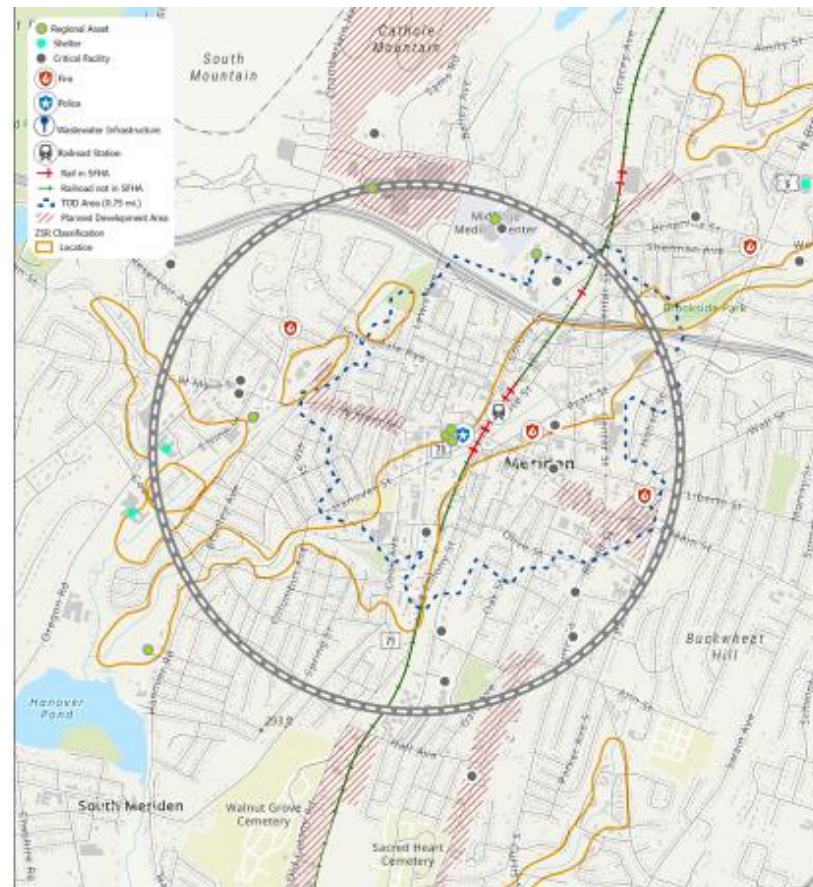
Considerations	Characteristics of Area
Flood Vulnerability	<div><div></div><div></div><div></div><div></div><div></div></div>
Heat Vulnerability	<div><div></div><div></div><div></div><div></div><div></div></div>
Social Vulnerability	<div><div></div><div></div><div></div><div></div><div></div></div>

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

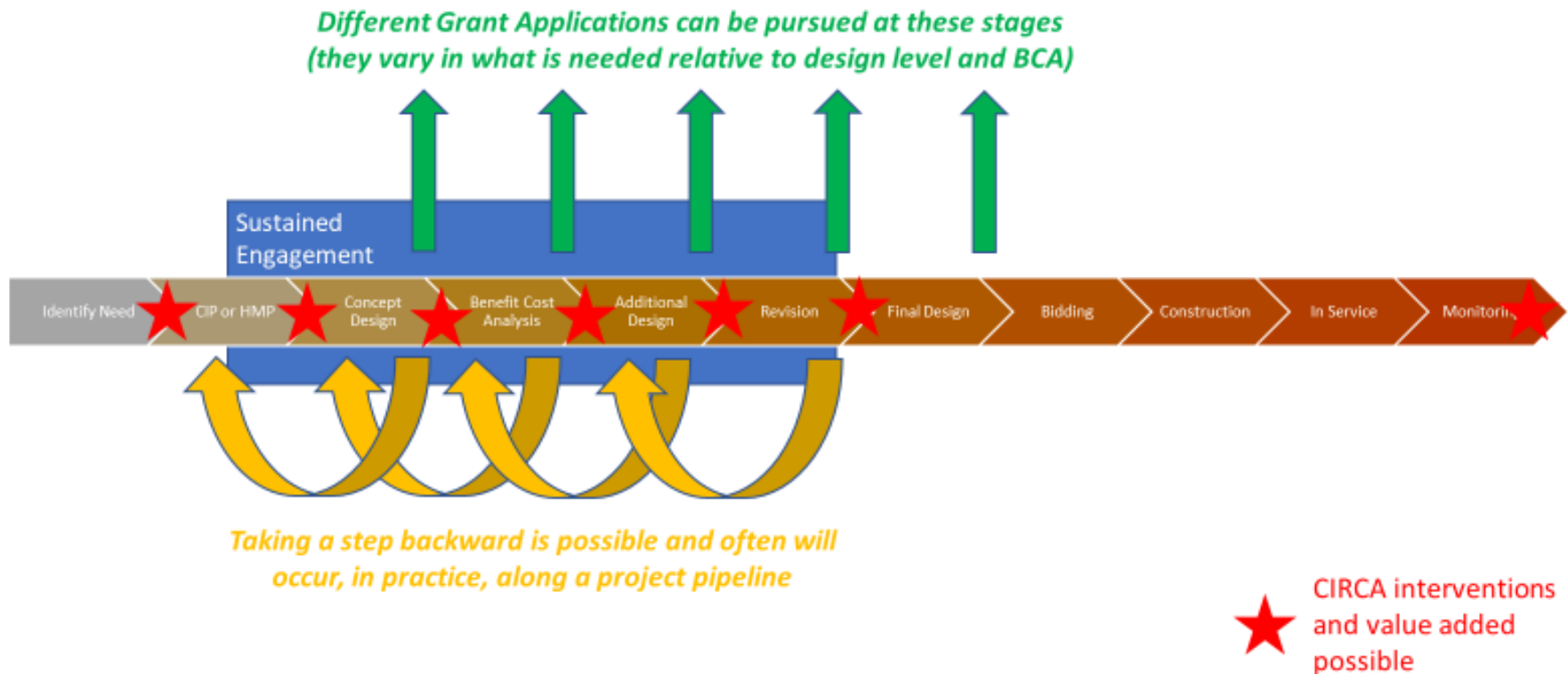


What Resulted from Resilient CT 1.0?

- 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

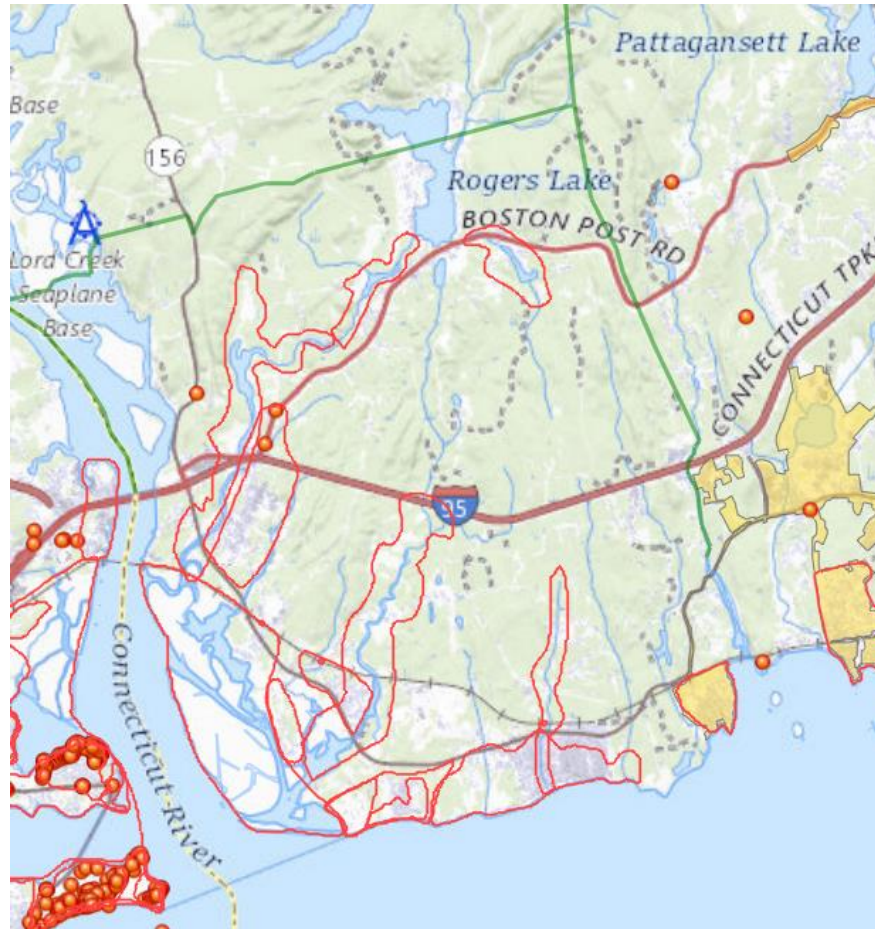


Review of Zones of Shared Risk

- 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
- Old Lyme listed 29 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	STAPLEE Score/Priority	Status	Potential for Climate Adaptation and Resilience Characteristics
1	1-1	Business Recovery Plan. Emergency Management is working on long-term recovery for COVID-19, ESF14, Regional Emergency Planning Team. Complete this work and expand to other natural disasters.	EM	\$10,000-\$50,000	OP	2021-2022	SW, TW, ET, WS, F, TI, WF, D, E, CC	5/H		Low
2	1-1	Use Capital Improvement Program (CIP) to set aside funds for infrastructure improvements to reduce loss of life and property during natural hazard (NH) events.	BOF, BOS, PW	\$10,000-\$100,000	CIP, OP	Annually	All	8/H		Medium; depends on infrastructure
	1-1	Plan of Conservation and Development: During the next update, add this plan by reference to the POCD	LUO, BOS	Staff time	OP	2025	All	8/H		Low
3	1-1	Design Standards: Use SHPO Best Practices Guide for resilience when evaluating design of improvements to at risk historic and cultural resources.	BO, FM, HDC	\$0-\$10,000	CIP, OP	2022	All	7/H		High
4	1-1	Flood Zone Study: Review other flood study work (i.e. CIRCA SLR Study) currently available and prepare recommendations for incorporation the next time there is a FEMA flood study. Evaluate incorporation into planning initiatives before there is a FEMA flood study update.	LUO, ZC, CC	\$1,000-\$5,000	CIP, OP	2020-2025	F, CC	11/H		High
5	1-1	Grants. Identify and apply for grants to fund infrastructure improvements and other mitigation tasks identified in this plan.	BOF, BOS, LUO, EMD	\$0-\$1,000	CIP, HMGP, PDM, CDBG-DR, Other Grants	Annually through 2025	All	6/H		Medium; depends on specific infrastructure
6	3-1	Local Sea Level Rise Study: Review and use CIRCA SLR Study, UCONN Sea Grant education outreach, flood susceptibility mapping to investigate possible mitigation actions and to assess legal, financial and policy implications. Establish an ad hoc committee to look at impacts and make recommendations.	BOS, LUO, EM, CIRCA	\$10,000-\$25,000	CIP, OP	2025	F, CC	11/H		High

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
7	1-1	Possible Open Space Criteria. Acquisition of open space is ongoing. Make flooding and SLR a criterion. Advance an assertive land acquisition plan to reserve vacant land subject to NHs.	ZC, PC, LUO, CC, OS, BOS, BOF	\$50,000-\$100,000	HMPG, PDM, CIP	2023-2025	F, CC	8/M		High
8	2-1	Post Disaster School Arrangements. Establish reciprocal arrangements with other school districts for getting students back into classes during extended recovery periods. Working with other Town School Districts. Distance learning post COVID-19 could eliminate the need. Re-evaluate in 5 years.	BOE, EMD, CC, OS	\$0-\$1,000	HMGP, CIP, OP	Ongoing through 2025	SW, TW, WS, F, E	3/L		Low
9	1-1	Potential Financial Impact of Probable Events. Estimate the municipal tax revenue that could potentially be lost in various events to provide the Board of Selectmen and Board of Finance with an idea of how large a “rainy day” fund might be necessary to cover that post disaster period when there would be minimal income and maximum output of public funds at all levels of government.	Assessor, LUO, BOS, BOF, Tax Collector	\$100,000	CIP, OP	Ongoing through 2025	SW, TW, WS, F, E	6/M		Low
10	1-1	Private Property Funds. Evaluate opportunities for public funding for projects on private property where the benefits exceed the costs. Potential to share resources between town and beach communities.	BOS, BOF, LUO, EMD	\$10,000-\$20,000	HMPG, FMA, RFC, SRL	Ongoing through 2025	SW, F, CC	4/L		Medium; depends on properties
11	1-1	Regulations. Strengthen existing subdivision regulations to either optimally prevent road or house construction within the floodplain, or alternatively raise structures above BFE. Looking at increasing setbacks to tidal wetlands from 50 to 100 feet.	IWC, PC, ZC, LUO, BO, FM	\$0-10,000	CIP	2025	F	8/H		High
12	1-1	Critical Facilities. Upgrade as necessary all facility mechanicals, such as generators, in municipal and other critical facilities. Continue to participate in a regional sheltering program with East Lyme and others. Add generator to Sr. Center.	PW, BOS, BOF, EMD	\$5,000-\$10,000	PDM, HMPG, CIP	2025	SW, TW, WS, F, E	8/H		Medium; depends if shelters or cooling centers
13	2-1	Firefighting Infrastructure Analysis. Evaluate existing firefighting infrastructure to identify needs for improvement to cover gaps in availability. Underway with ISO review in 2020.	FM, Fire Dept.	\$10,000-\$25,000	CIP, OP	2020	WF, D, SW, WW, HW	2/L		Medium

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
14	1-1	Municipal Buildings Capable of being Shelters. Future investment in municipal structures should include funding for new construction or renovation that will assure the structure is compliant with the standards for use as a shelter, to the extent possible. Need 24-hour location to be set up at schools. Town Hall is currently in flood zone.	BOS, BOF, BO, EMD, BOE	\$100,000+	HMPG,PDM, CIP	2025	SW, TW, ET, WS, F, E	8/H		High
15	3-1	Develop a list of techniques for homeowner self-inspection especially for those located in coastal areas.	BOS, LUO, BO, EMD	\$0-\$10,000	CIP, OP	Annually through 2025	SW, TW, WS, F	5/H		Medium
16	1-1	Develop a strategy and funding program to elevate or relocate structures of flood-prone properties or acquire RL properties that request a "buy-out". Encourage owners of repetitive loss and severe repetitive loss properties (residential and commercial) to obtain assistance for hazard mitigation funding from DEEP/FEMA for elevation of structures and repairs where applicable.	LUO, BO, FM, EMD	\$50,000 - \$100,000	FEMA, HMGP, HMA, HUD – CDBG-DR	2025	F	5/M		High
17	2-1	Upgrade Fire Fighting Infrastructure. Upgrade existing fire ponds to ensure adequate water supply is available. Construct new fire ponds and fire wells where water is not currently available. Upgrade where appropriate and maintain dry hydrants and water sources to ensure adequate fire- fighting capability. Any subdivision more than three homes pond or cistern.	FM, EMD,BOS, FD	\$50,000 - \$100,000	HMGP, PDM, CIP, OP	2025	WF, D	6/M		Medium
18	2-1	Dam Inventory. Review DEEP requirements (i.e. rules updated for high hazard dams). Need for future inundation studies. Update inventory of dams and assess downstream risks due to catastrophic failure. Include State, Town, and Privately-owned dams. Future studies on Dam inundation are needed and DEEPs database needs to be updated to reflect existing dams not listed.	LUO, BOS, EMD	\$10,000 - \$25,000	CIP, OP for Inventory, HMPG and Grants for inundation study work.	2021-2022	F	5/H		Low
19	2-1	Dune Restoration. Review Sea Grant study on living shoreline projects/education on dunes. Implement dune restoration and marshland protection techniques for flood storage and surge protection.	LUO, PW, BOF, BOS, F&EC	\$50,000 - \$100,000	FMA, HMPG	2021-2022	SW, F, CC	3/L		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	STAPLE Score/Priority	Status	Potential for Climate Adaptation and Resilience Characteristics
10	2-1	Drought Mitigation. Consider regulatory changes to require moisture sensors for all newly installed irrigation systems.	LUO	\$10,000-\$25,000	OP	2022	D	4/L		Medium
21	3-1	Risk Assessment. Use GIS to conduct NH risk assessments that identify potentially affected areas and depicts evacuation routes.	LUO, EMD, IT	\$10,000 - \$20,000	OP	2025	SW, TW, WS, F, WF, E, CC	6/M		Medium
22	1-1	Street Tree Program. Implement a tree hazard management program to encourage appropriate planting practices to minimize future storm damage to buildings, utilities and streets.	PW, TC, Tree Warden, PC	\$10,000 - \$20,000	OP	Annually through 2025	SW, TW, TI	4/M		Low
23	3-1	Circulate Existing Literature. Access existing literature prepared by regional groups, the Chamber of Commerce and FEMA and display for public distribution in the Library. Already completed for Town Hall	BOS, LUO, EMD	\$0-\$1,000	OP	2021	SW, TW, ET, WS, F, TI, WF, D, E, CC	4/M		Low
24	3-1	Drought Education. Coordinate with Connecticut Water Company on public education and public service announcements during droughts. Add recommendations for moisture sensors and other water conservation techniques.	BOF, BOS	\$0-\$1,000	HMPG, PDM	Annually through 2025	D	4/L		Medium

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
25	3-1	Preparedness Webpage. Annually (or as events dictate) update Town website with NH preparedness information, including hazard areas, evacuation routes deemed appropriate per NH event and locations of shelters. Post on Town website information about recovery assistance following NH events. Update town webpage with the section on Hazard Preparedness for the public. Include maps of evacuation route, storm surge areas, and shelters. Include options for mitigation for residential structures and business recovery and provide links to FEMA, NOAA, DEMHS and RiverCOG websites for additional information.	BOS, IT, EMD	\$10,000-\$25,000	HMGP, PDM, FMA, CIP, OP	2022	SW, TW, ET, WS, F, TI, WF, D, E, CC	5/H		Low
26	3-1	Neighborhood Mitigation. Engage neighborhood associations annually to participate in implementing the NH Mitigation Plan. Encourage engagement in future HMP updates.	BOS, EMD	\$0-\$1,000	HMGP, CIP, OP	2025	SW, TW, ET, WS, F, TI, WF, D, E, CC	4/M		Low
27	2-1, 3-1	Repetitive Loss and Other Flood Prone Properties. Work with property owners to identify funding sources to mitigate properties through elevation or acquisition. Identify means of overcoming past challenge of not having the appetite to be the subgrantee and contract with owners.	PW, BOS, BOF, EM, LUO	\$1,000-\$5,000 to evaluate. Staff time	HMPG, FMA, PDM, CDBG-DR to implement	2021 then Implementation Annually	F	7/H		High
28	2-1	Conduct engineering studies to mitigate various Town-owned structures in need of repair, culverts, pipes, bridges, etc., on Town-owned roadways that are causing flooding and overtopping problems. Replace 1-2 annually. Cross Lane Underpass is top priority.	PW, BOS, BOF	\$25,000-\$50,000	HMGP, FMA, PDM, CIP, Op, State DOT	2021, then annually	F	7/H		High
29	2-1	Support mitigation projects that will result in protection of public or private property from natural hazards through stormwater management improvements for areas identified by the Town. Identify and implement one per year.	PW, BOS, BOF	\$10,000-\$100,000	HMGP, FMA, PDM, CIP, Op	2021, then annually	SW, TW, ET, WS, F, TI, WF, D, E, 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 Old Lyme 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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