RESILIENT CONNECTICUT 2.0



Overview for Town of East Haddam March 8, 2022







- 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





• Climate Change Vulnerability Index (CCVI)









• Zones of Shared Risk

Nuclase is preseto	urbin Sr Inn Luther King J. Dr Kingdon Ave Softer St Softer St Softer St Softer St Softer St Softer St Softer St Softer St Softer St	Knorr son too	Manon Ave	23 ft. Canter Strees
Hollon Lenox Ave Norwalk	Knapp St	Baxter Baxter Neptune Ve		
Paraternit Nee Passum Ln Pessum Ln Passum Ln Passum Ln Passum Ln Passum Ln Passum Ln	Ryan Ave	Sable St Yost	Flood Norwalk ID 7000-25 ID 142 7000-25-142- 0	Found Beach
B Source and Hantlord	Adamson Ave	Nested ZSR ZSR Classifie ZSR Nested ZSR Source ZSR Notes	ID 0 cation Access No NA Harborview	a c h
Pa source Lo	and the second s	ZSR Classific Secondary Notes Zoom to	cation Location	





• 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







• Identification of Challenges that are Opportunities

Name: Downtow .ocation: Meride	n Meriden n				
Considerations	Characteristics of Area				
lood Vulnerability	$\bigcirc \bigcirc $				
leat Vulnerability	$\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$				
ocial Vulnerability	$\bigcirc \bigcirc $				
ritical facilities, historicr nd TOD intersect in dow one of shared risk. The C	esources, major transportation routes, ntown Meriden within the Harbor Brook City of Meriden has already undertaken				







- 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
 - Derby Feasibility of resilience hub at City-owned building
 - Branford Using railroad grade for flood protection
 - New Haven Egress through areas of flood risk and heat mitigation for Fair Haven



• 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/







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
- East Haddam listed ten 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/Objecti	Activity Description	Lead Agency	Est. Cost	Potential Funding Sources	Timeframe	Hazard (s) Addressed	STAPLEE Score/Priorit v	Status	Potential for Climate Adaptation and Resilience Characteristics (Low, Medium, High)
1	2- 1	Coordinate with DOT to address culverts, pipes, bridges, etc. on state owned roadways to mitigate flooding and overtopping problems. Create list, request meeting with DOT, annual reminders (refer to the list in Table 13)	PW, BOS, BOF	\$10,00 0- \$15,00 0	State DOT	2021, then Annually	F	7/H		Medium; extreme precipitation should be considered, but DOT involvement will be necessary.
2	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. (refer to the list in Table 13)	PW, BOS, BOF	\$25,00 0- \$50,00 0	HMPG, FMA, CIP, STIP, TIP, RTP	2022- 2023	F	11/H		High; extreme precipitation should be considered.
3	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	\$10,00 0- \$15,00 0	HMGP, FMA, PDM, CIP, Op	2020	F	11/H		High; extreme precipitation should be considered.
4	1- 1	Identify funding to assist flood prone properties along the Connecticut River and inland streams for acquisition. Prioritize Repetitive Loss properties.	LU, BOS		FEMA HMA, HMGP, HUD- CDBG-DR, CIP	2024	F	5/H		High; property acquisition is a strategy for reducing flood losses where combinations of sea level rise and riverine flooding may occur.
5	1- 1	Update the existing Debris Management Plan. Identify locations for large volumes of debris and comply with DEMHS debris management plan standards.	PW, FM, EMD, BO, LUO, BOS, BOF	\$0- \$1,000	CIP, OP	2023	SW, TW, WS, TI, WF	4/H		Low; this is a need that is present for dealing with natural hazards.



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 (Low, Medium, High)
6	1-1	Budget appropriate money necessary to maintain and remove dead, dying, dangerous, and diseased trees in rights-of-ways and on other town-owned land.	Public Works	\$50,000+ annually	CIP	Annually through 2025	ТІ	4/H		Medium; changes in forest cover may occur over the long term.
7	2-1	Culvert Construction. Oversee the completion of construction of the three culverts along East Shore Drive that started with 2018 FEMA Public Assistance funding.	PW, BOS, BOF	\$25,000- \$50,000	FEMA PA CIP, OP	2020	F	11/H		Low; this work is underway.
8	2-1	Culvert Construction. Oversee and complete construction of the Mitchell Road culvert improvements to reduce flooding	PW, BOS, BOF	\$10,000- \$15,000	HMGP, FMA, PDM, CIP, Op	2020	F	11/H		Low; this work is underway.
9	1-1	Critical Facilities. Install generators at Elementary Schools and Transfer Stations.	PW, FM, EMD, BO, LUO, BOS, BOF	\$1,000- \$5,000	CIP, OP	2022	SW, TW, WS, ET	5/H		Medium to High; determine whether the schools can be used for shelters and/or cooling centers.
10	3-1	Promote use of Everbridge. Place postings on the community website and social media promoting registration to the Everbridge system to grow it use.	EM	Staff Time	OP	2021	All	3/M		Low; this is a current emergency management need.





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 East 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



