Resilient Yantic River
Business Community Focus Group

May 7, 2025

TABLE OF CONTENTS

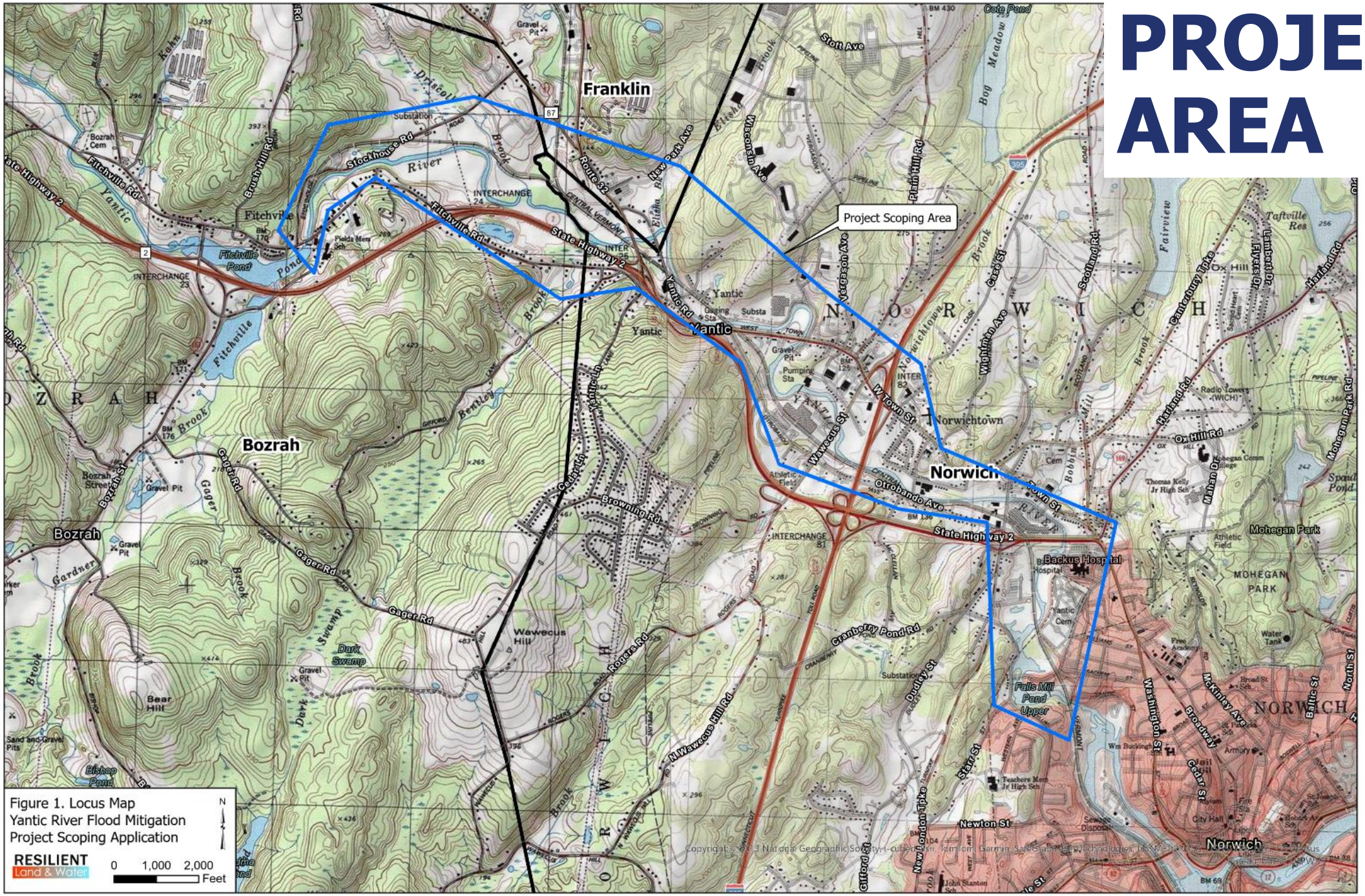
01

PROJECT BACKGROUND

RESILIENT YANTIC RIVER PROJECT GENESIS

- January 2024 flooding brought municipal leaders together.
- Flooding event coincident with FEMA BRIC FY23 application deadline – state DEMHS encouraged an application.
- CIRCA Resilient CT Phase III funding allowed flood mitigation planning efforts to begin outside of FEMA BRIC process.
- Focus in on area from Fitchville Pond downstream to Uncas Leap.

PROJECT AREA



PROJECT GOALS

- Assess current and future flood conditions along the Yantic River from Fitchville Dam, downstream to Uncas Leap.
- Develop summary of priority locations and preferred adaptation strategies supported by stakeholder engagement.
- Prepare three concept designs for flood mitigation strategies.
- Set team up to pursue funding for next design phase and implementation.

WHERE WE ARE IN PROJECT PROCESS

Planning Phase

Extended longer than we wanted – awaited ongoing FEMA flood modeling that was never forthcoming.

Current flood risk model dates to the 1980s.

Project site walks and first project community and technical advisory committee meetings.

Initial Technical Analysis

Project engineers started evaluation in the upstream end of the study area.

Proceeded to model of the Upper Falls Dam.

Proceeded to evaluation of building-specific solutions for Town Street corridor.

Engagement

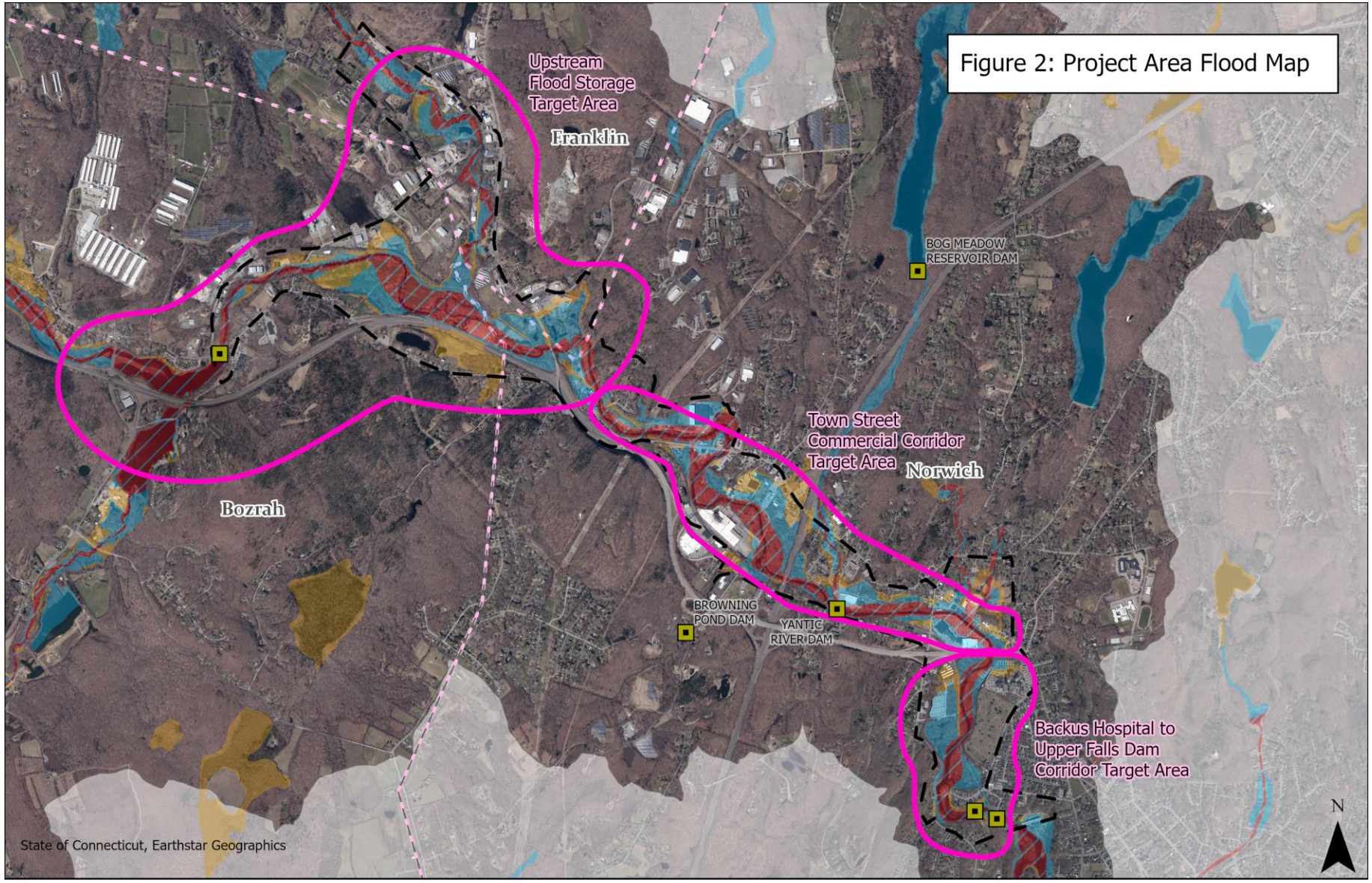
5/5 - Municipal staff focus group.

5/7* – Business community focus group.

5/21 – Public meeting.

TARGET AREAS

- Upper Watershed Floodwater Storage
- Town Street Commercial Corridor
- Backus Hospital to Upper Falls Dam River Corridor



Flood Risk Reduction Target Areas
Yantic River Corridor
Municipal Boundaries
Outside of the Yantic River Watershed
Dams

Flood Zone
1 PCT Annaul Chance Flood Hazard (A, AE, AH)
0.2 PCT ANNUAL CHANCE FLOOD HAZARD
FLOODWAY
1 PCT ANNUAL CHANCE FLOOD HAZARD CONTAINED IN CHANNEL (one in Bozrah)

SECOG

0 0.25 0.5 1
Miles

02

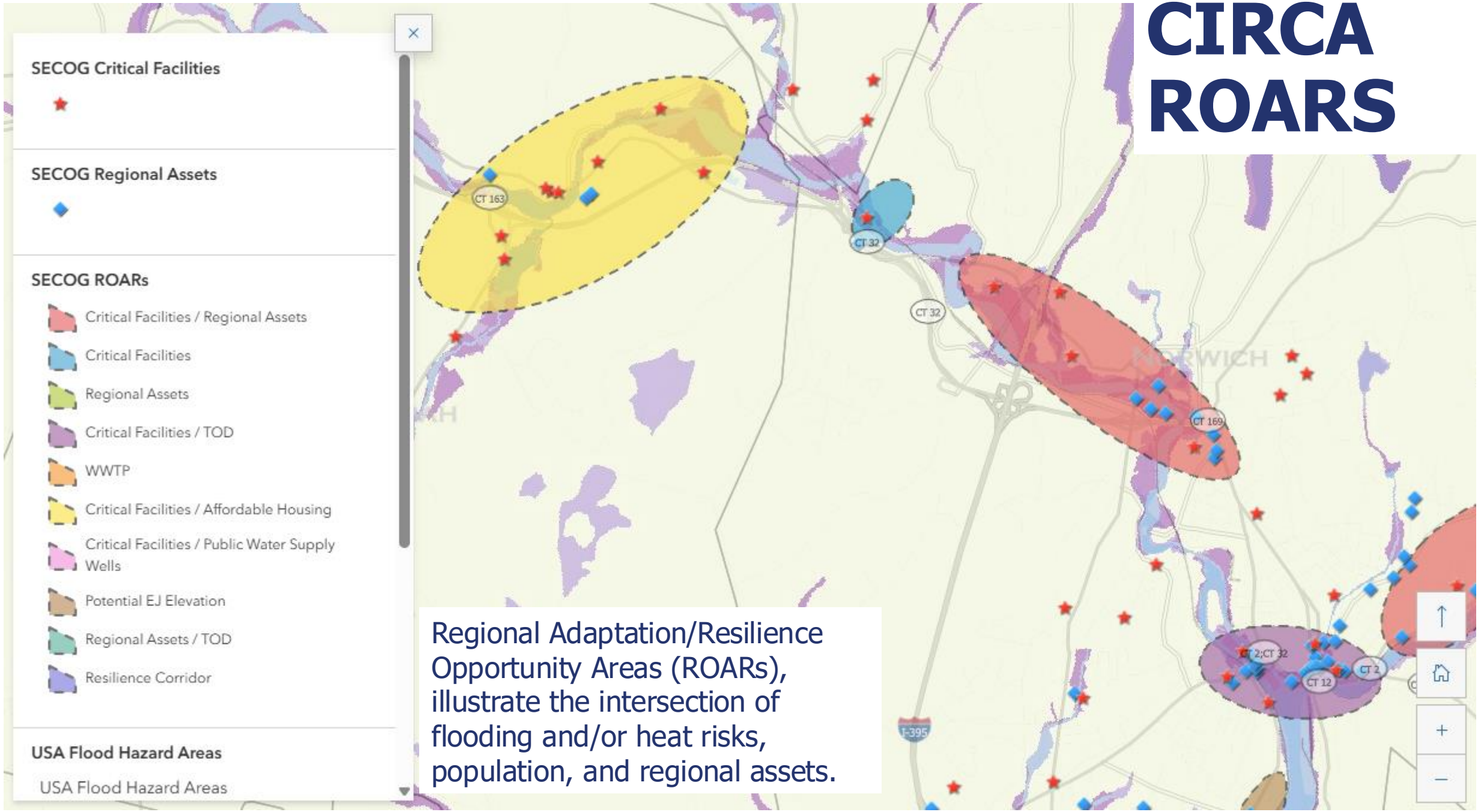
PLANNING BACKGROUND

SECOG's 2023 Multi-Jurisdictional Hazard Mitigation and Climate Adaptation Plan

Local Annex Recommendations

Community Action No.	Action
Bozrah - BZ5	Consider flood mitigation study along Yantic River to characterize risks to properties and Stockhouse Road
Norwich - NW12	Determine feasibility of removing the Upper Falls Dam to eliminate backwater flooding at Sherman Street
Norwich - NW15	Support additional park systems in the flood hazard area
Norwich - NW16	Support voluntary acquisitions of residential strucutres in the flood hazard area
Norwich - NW17	Support voluntary acquisitions of commercial properties in the flood hazard area
Norwich - NW23	Conduct studies and design solution to reduce flood risk at the Bean Hill Substation

CIRCA ROARS



Regional Adaptation/Resilience Opportunity Areas (ROARs), illustrate the intersection of flooding and/or heat risks, population, and regional assets.

Current Zoning Map

Zoning Districts

Residential

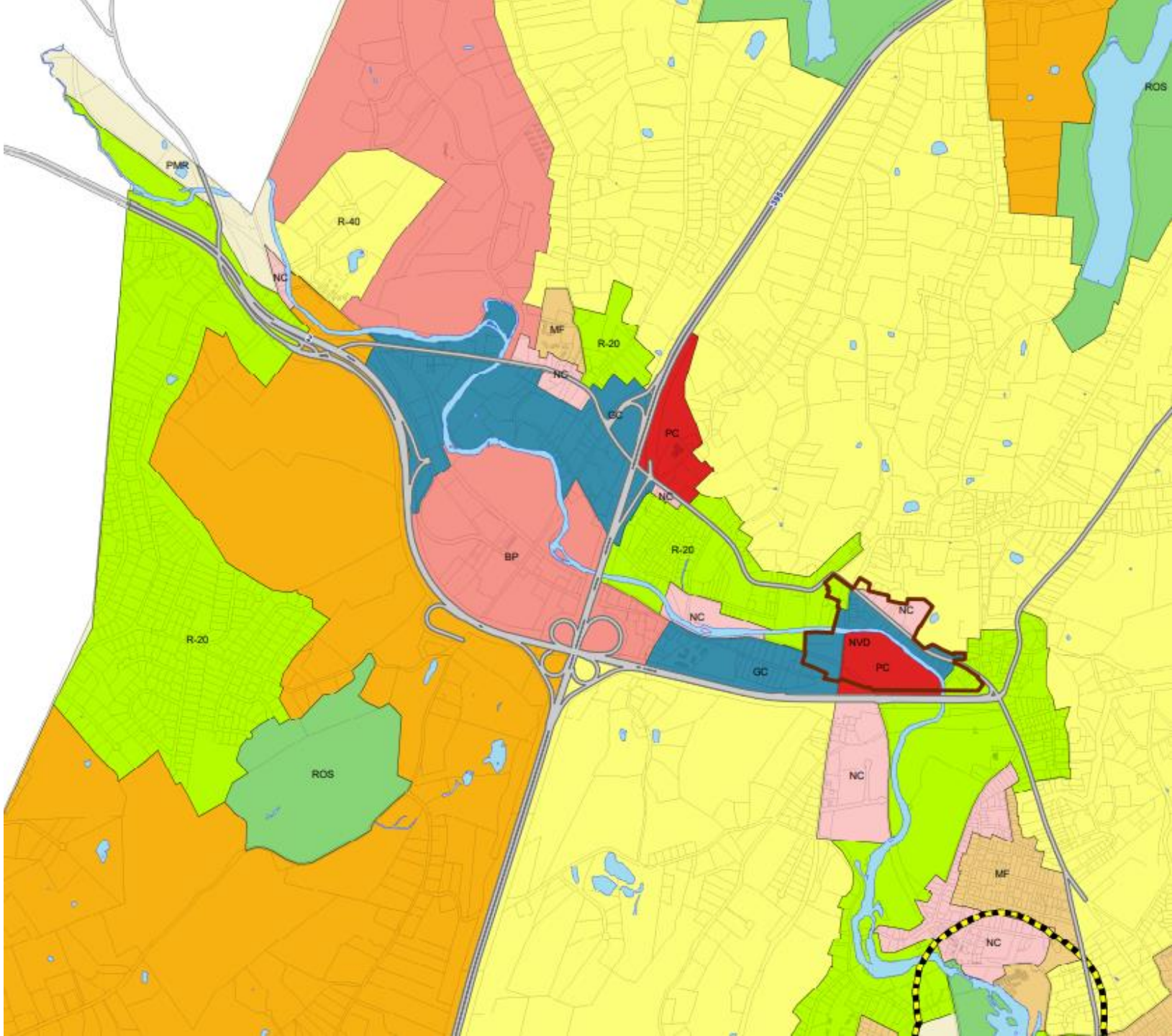
- R-80
- R-40 (Residential)
- R-20
- MF (Multi-Family)
- ROS (Recreation Open Space)

Commerical/Industrial

- CC (Chelsea Central)
- WD (Water Development)
- GC (General Commercial)
- PC (Planned Commercial)
- NC (Neighborhood Commercial)
- BP (Business Park)
- PMR (Production, Manufacturing and Research)
- PDD (Planned Development)

Overlay Districts

- IHOD Incentive Housing Overlay District
- ABOD Agriculture Business Overlay District
- NVD Norwichtown Village Overlay District
- Coastal Area Management Overlay District



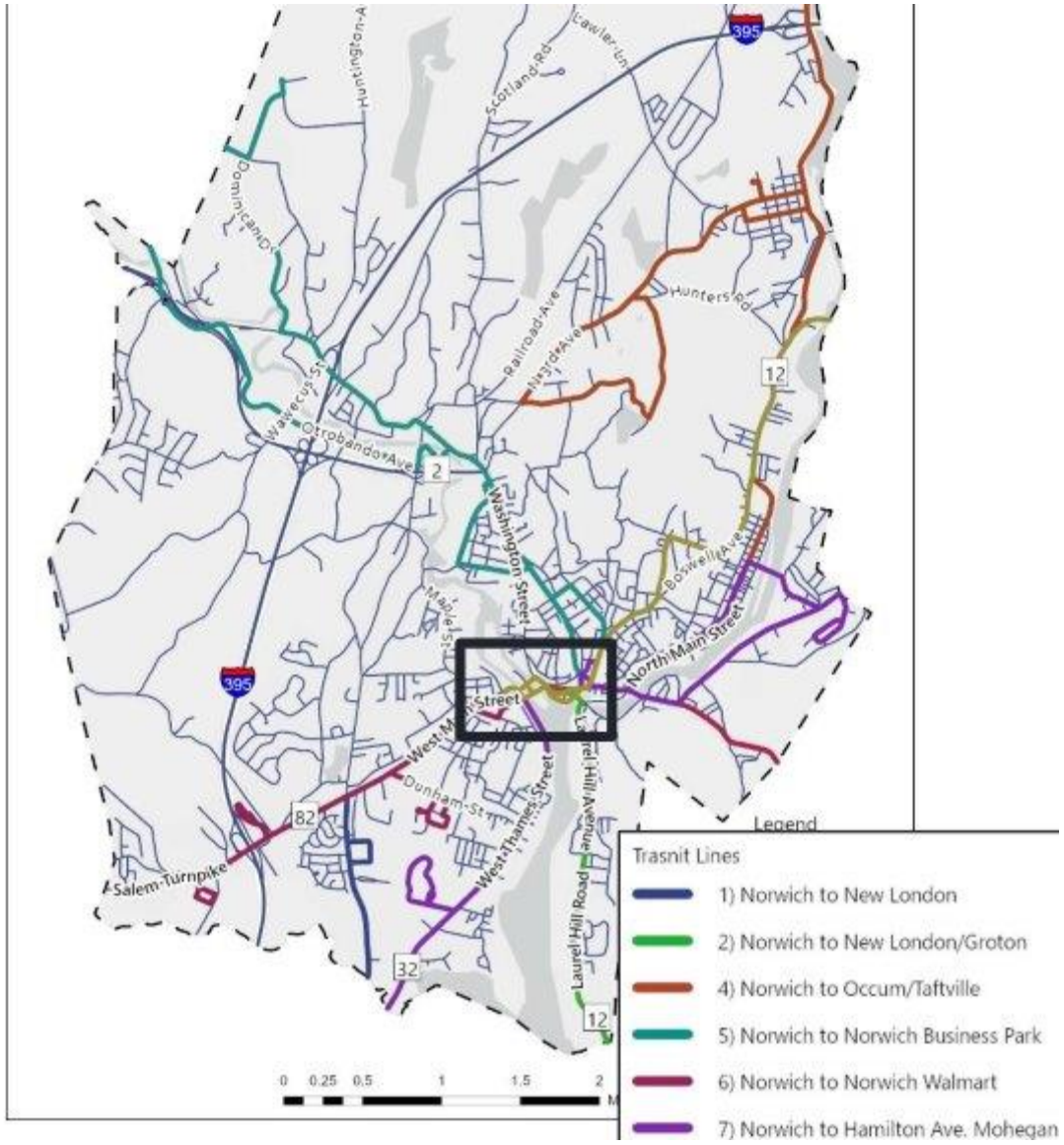
Economic Development Background

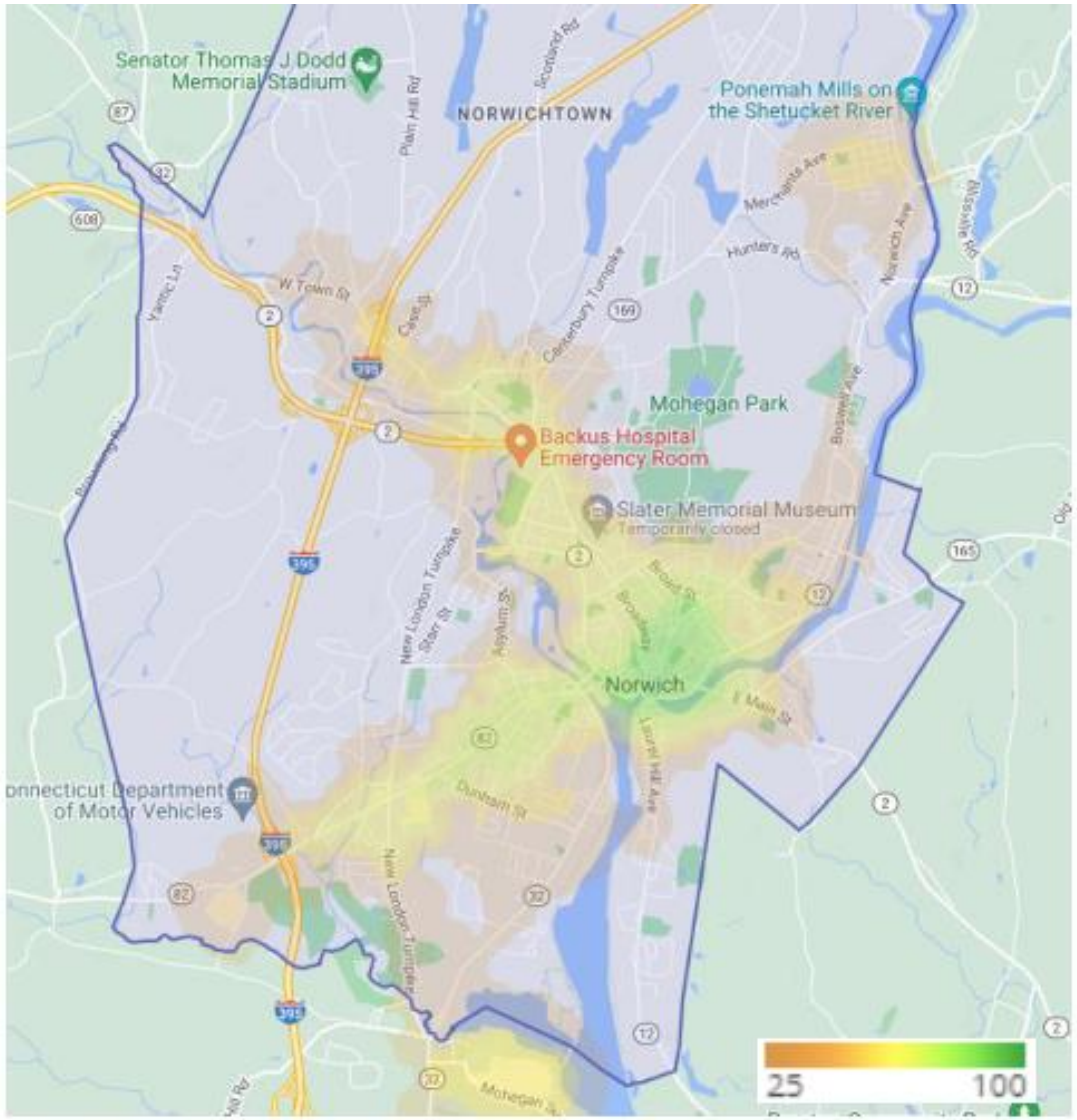
City of Norwich Principal Property Taxpayers: 2021

Name	Taxable Assessed Value	Percent of Total
Computer Science Corporation 100 Winneden Road	$49,644,000	2.4%
Norwich Town Commons 42 Town Street	$19,080,000	0.9%
Bob's Discount Furniture 72 Jewett City Road	$16,778,000	0.8%
Norwich Realty Associates LP 624 West Main Street	$11,381,000	0.6%
Domino Solar Ltd. Multiple Sites – Solar Panels	$11,203,000	0.6%
Plaza Enterprises 107-113-117 Salem Turnpike	$11,026,000	0.5%
Mashantucket Pequot Tribe 607 West Thames Street & 80 Stonington Road	$10,297,000	0.5%
Elk Thamesview LLC 495 Laurel Hill Road	$9,411,000	0.5%
Wal-Mart Stores, Inc. 220 Salem Turnpike	$9,151,000	0.3%
Algonquin Gas Transmissions LLC Multiple Sites - Utility	$8,772,000	0.5%
Total Principal Taxpayers	**$156,743,000**	**5.5%**
Total All Taxpayers	**$2,850,539,307**	**100.0%**

Source: Norwich 2021 Annual Comprehensive Financial Report

Transit / Mobility





Source: walkscore.com

Corridor in Local Planning Docs

2023 Norwich POCD Live Goal 1 – Town Street

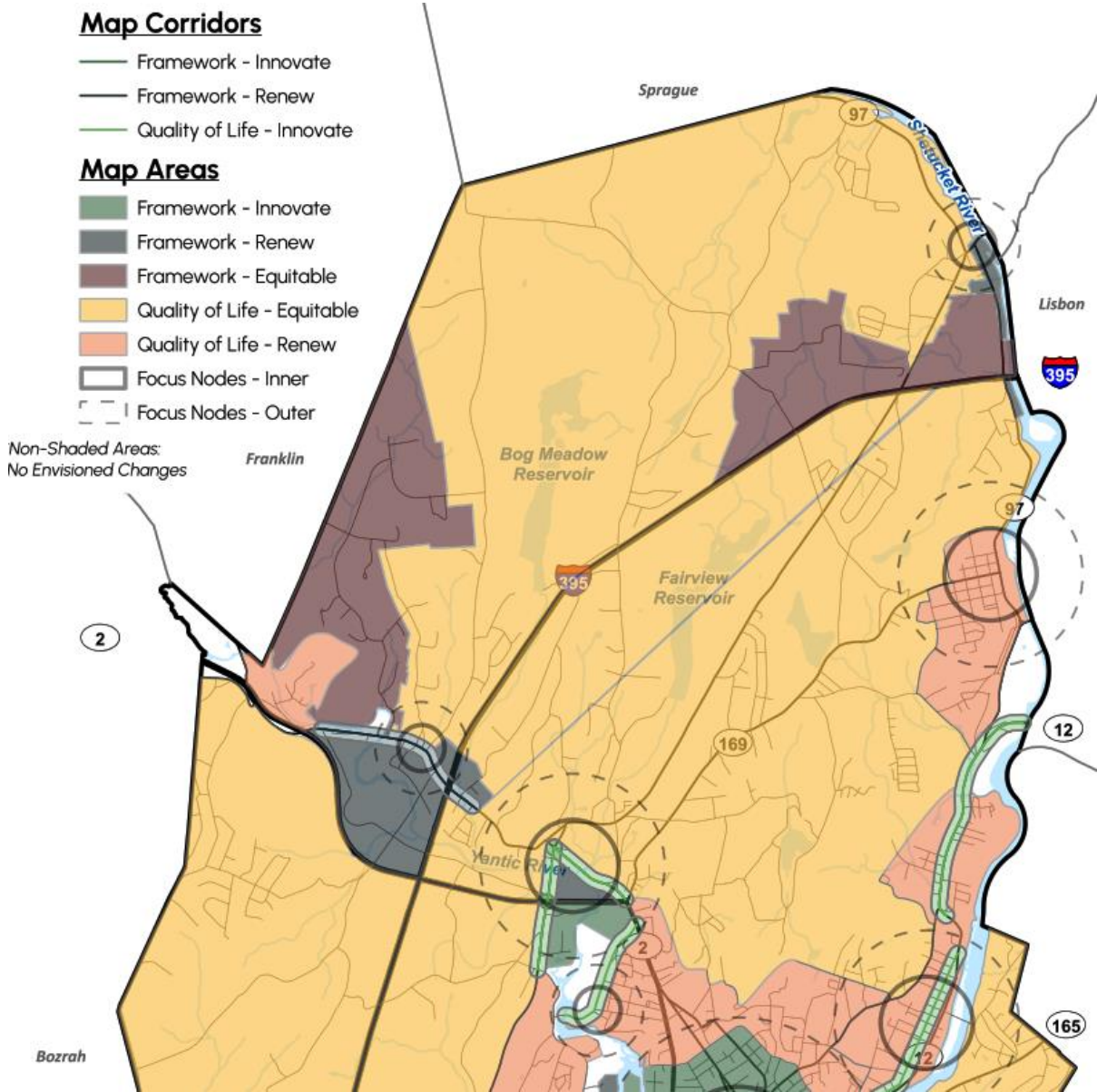
Town Street—which forms the spine of the Norwichtown Village District and has its own set of guidelines for character and development—serves as the "Main Street" for Norwichtown, serving as a both a local and regional shopping district with retail, services, and restaurants.

Over the last decade, there has been a turnover in some businesses as online services have become more prevalent. There is a strong opportunity for redevelopment in this corridor, with potential infrastructure investments creating a stronger sense of place

Action Item: Work with neighborhood residents and business organizations to identify the distinct needs of each corridor while balancing the needs of adjacent residential neighborhoods.

Envision 06360 Map

- **Renew areas** will focus on the locations in Norwich in need of strengthening and preservation, combined with innovation to help them move forward over the next decade. These neighborhoods include the older residential, commercial, and industrial sections of Norwich. Initiatives will include adaptive reuse, brownfield redevelopment, infrastructure investment, and neighborhood stabilization.
- These areas of Norwich are older, former industrial or manufacturing areas, or auto-oriented commercial corridors. Many successful businesses are located here, and Norwich should continue to promote policies that allow these businesses to be successful and grow. Over the next 10-year period, as market conditions evolve, some locations in these areas may become prime redevelopment sites due to outdated buildings or site layouts. These areas should be prioritized to remain commercial/industrial whenever possible.



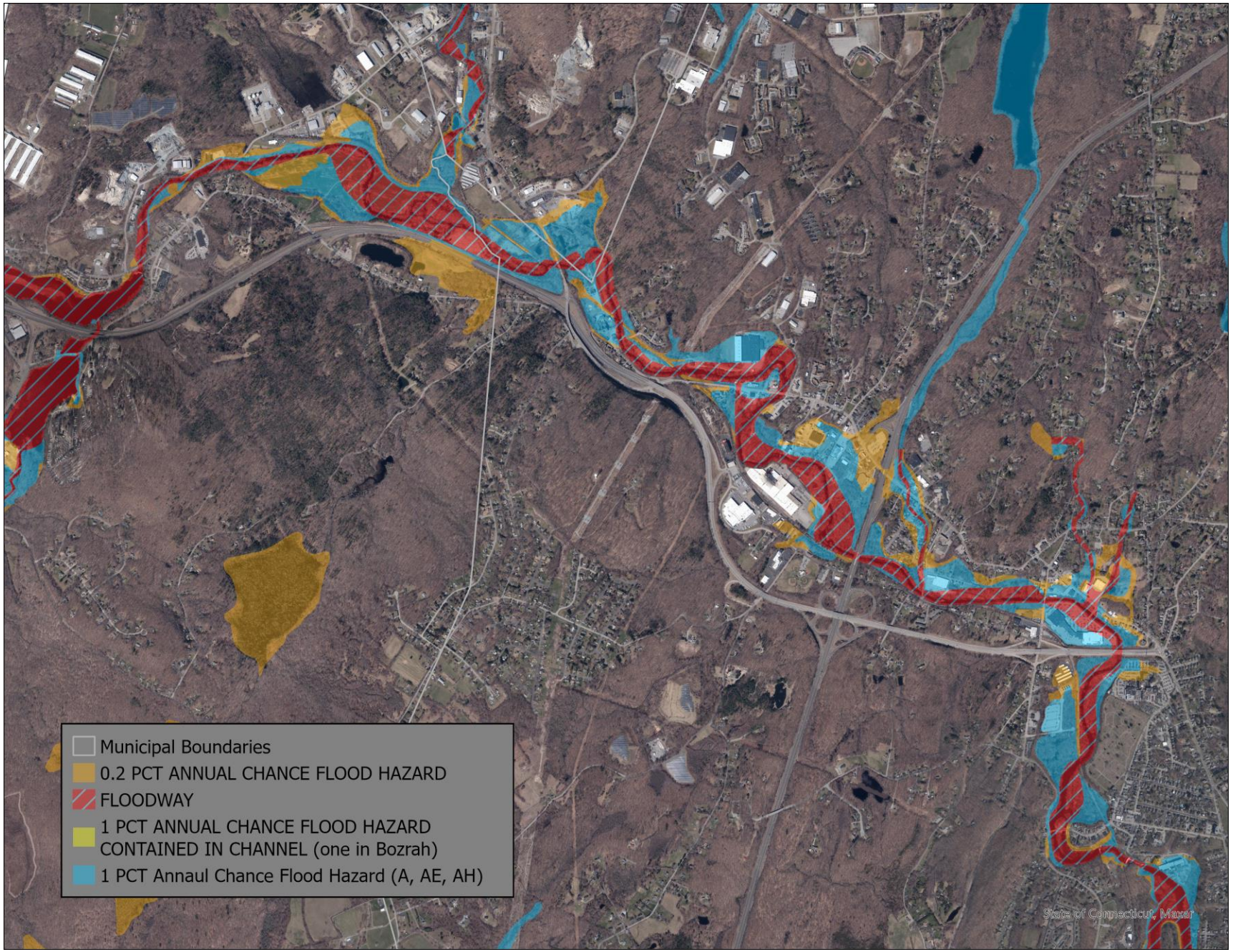
03

CURRENT & FUTURE FLOOD RISK

HISTORIC FLOOD EVENTS

GZA-Estimated Flood Flows

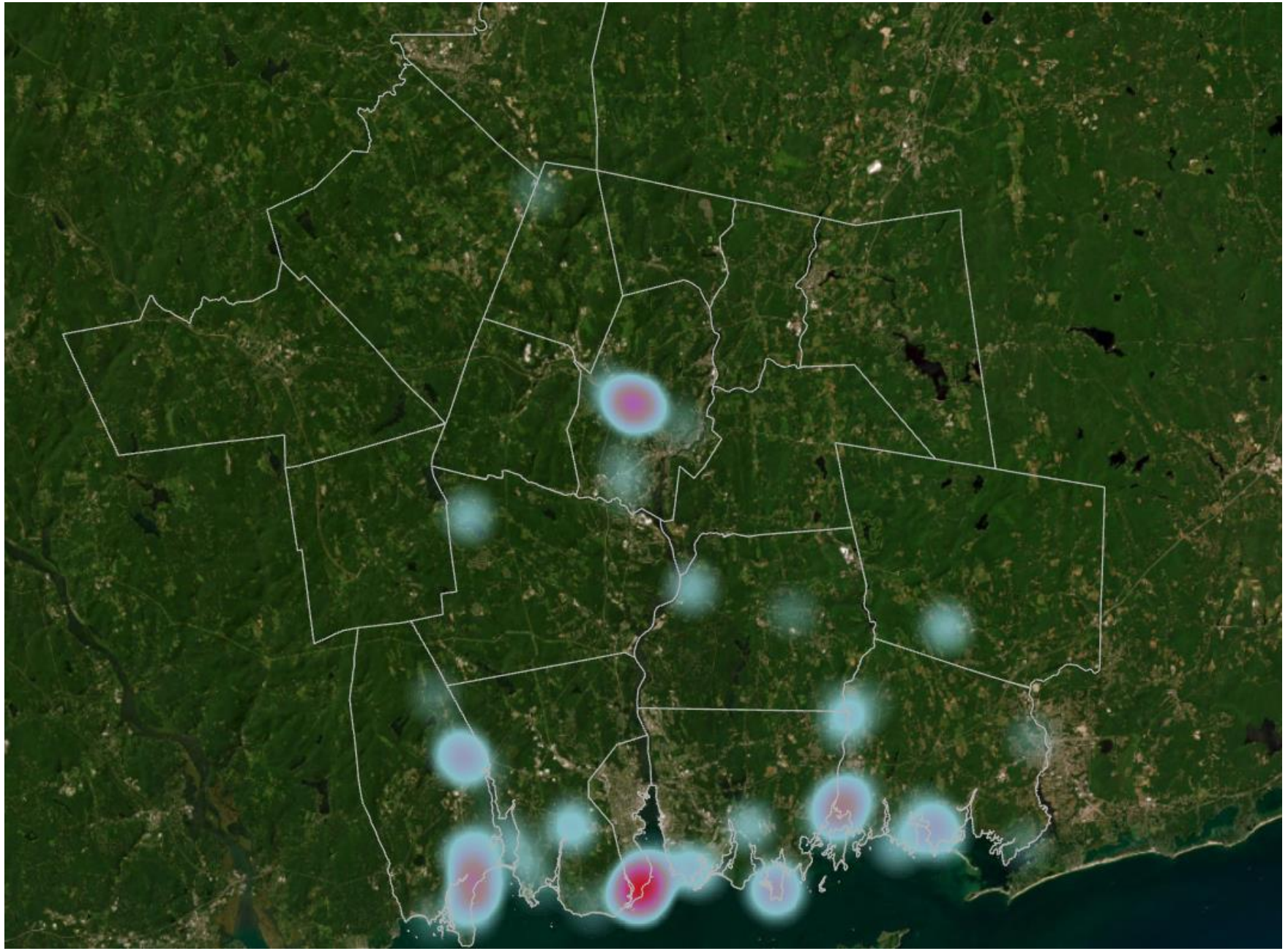
Annual Exceedance Probability (%)	Recurrence Interval (yr)	Peak Flow (cfs)	No. of Exceedances at Gage (1931-2022, 2024)	Years of Exceedance
1	100	11,500	1	1938 (13,500 cfs)
2	50	9,600	2	1938, 1982 (9,850 cfs)
5	20	7,300	5	1938, 1982, 1979, 2010, **2024** (8,500 cfs)
10	10	5,800	12	Above + 1936, 1956, 1978, 1980, 2009, 2018, 2021



CURRENT & FUTURE SPECIAL FLOOD HAZARD AREA

The area has had **five** floods beyond the 10-year magnitude in the past 15-16 years (2009-2024) vs the **one or two** expected by the probabilities.

SECOG Region Repetitive Loss Properties



Flood Assessment Summary

FEMA 100-year Flood

- **Peak Flow = 11,530 cubic feet/sec**

Maximum Flood Depths

Bean Hill Substation

5 to 6 feet

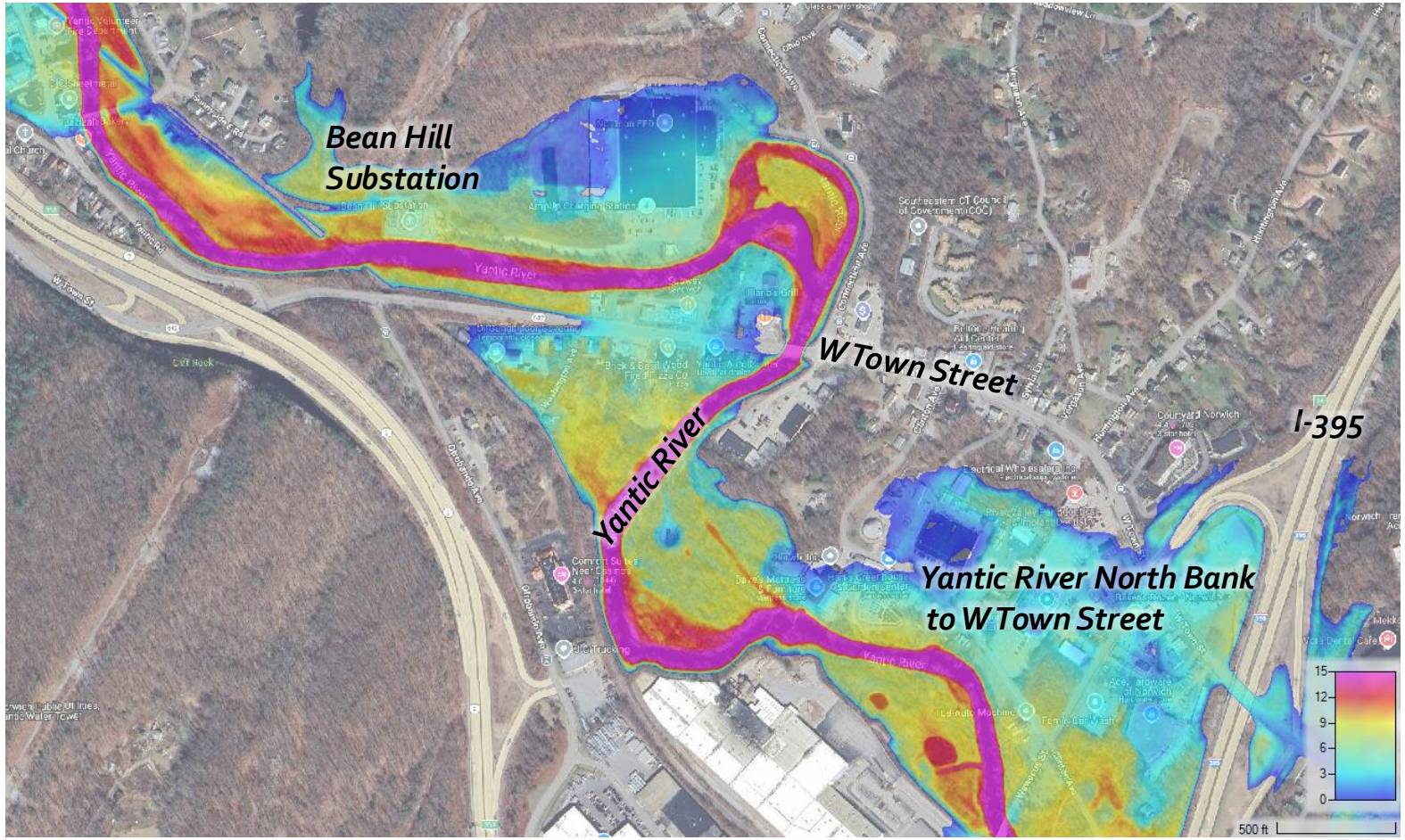
West Town Street Roadway

1 to 5 feet

Yantic River North Bank

to West Town Street

2 to 7 feet



Flood Assessment Summary

FEMA 100-year Flood

Maximum Flood Depths

Town Street Roadway

2 to 6 feet

Yantic River North Bank

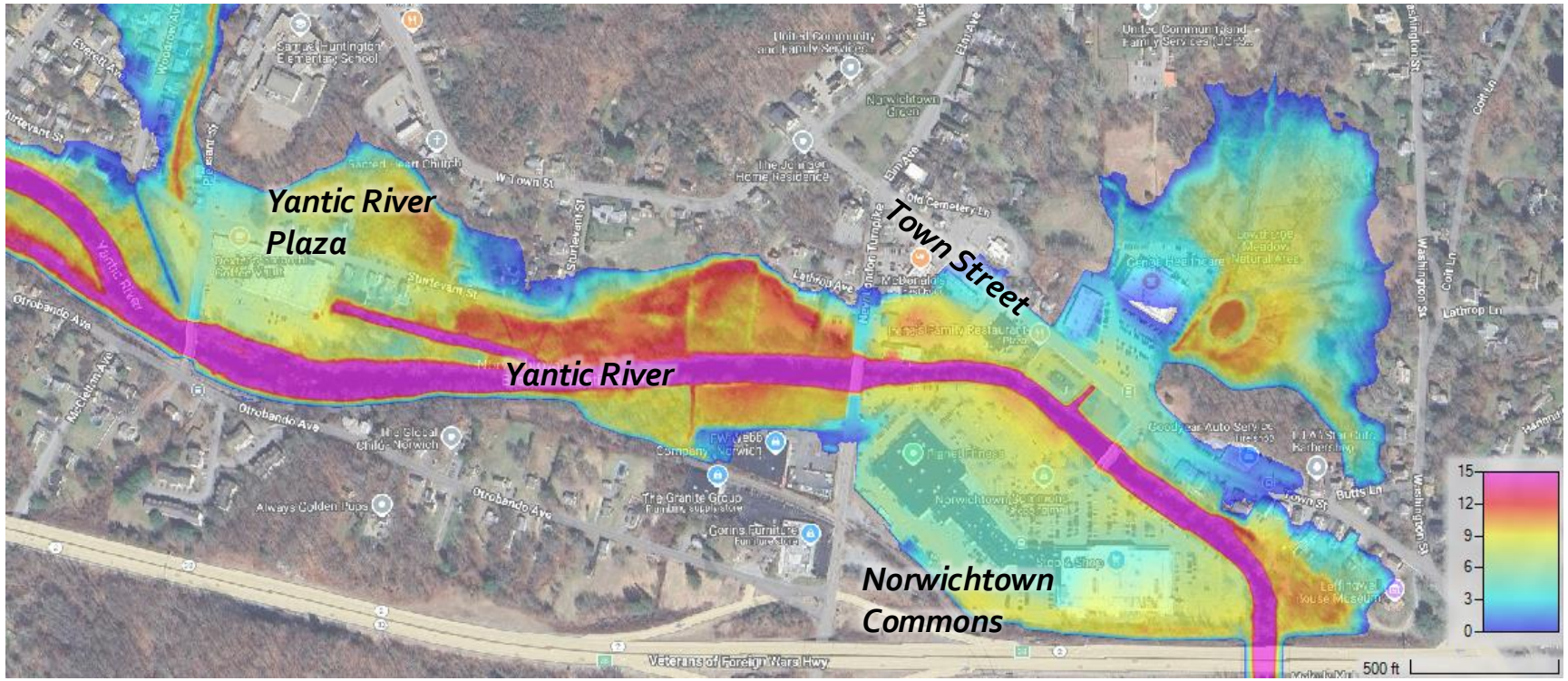
3 to 8 feet

Norwichtown Commons

5 to 9 feet

Yantic River Plaza

6 to 7 feet



Flood Assessment Summary

FEMA 100-year Flood

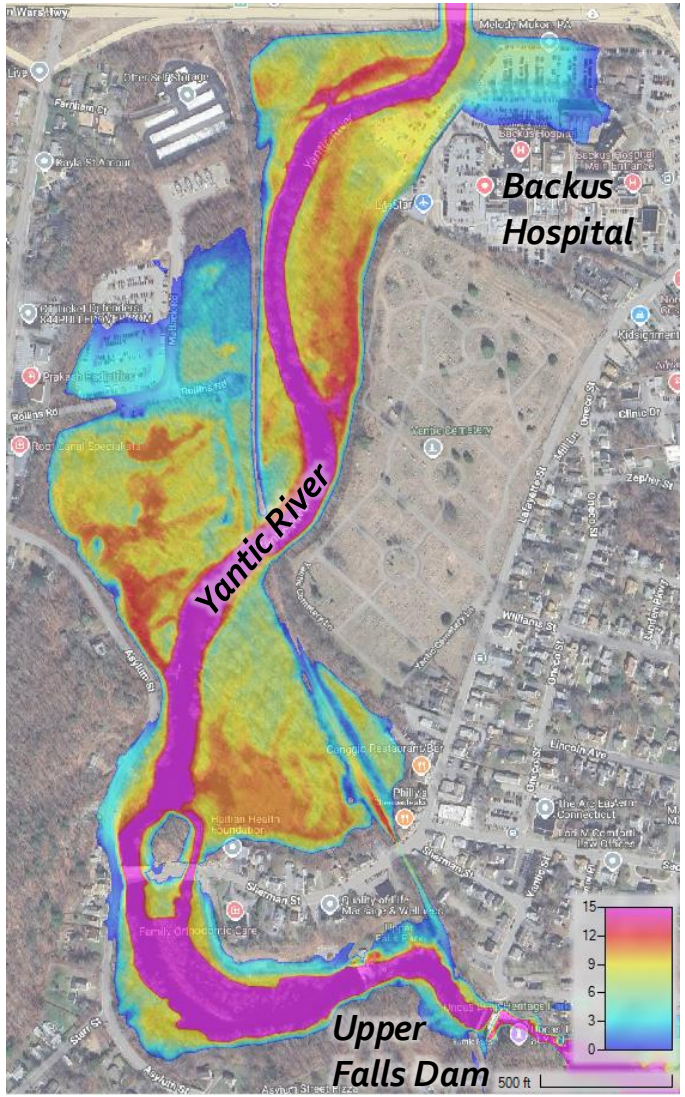
Maximum Flood Depths

Backus Hospital Lower Parking Lot

2 to 6 feet

Upper Falls Dam

Up to 23 feet



Flood Assessment Summary

- Hydrologic and hydraulic modeling to supplement existing flood information
- Our objective for this study is to find a good fit to support the development of concept designs to mitigate flooding
- In summary, the predicted flood depths and extents are severe
- The watershed is relatively large and this type of flooding is challenging to solve for the region without large-scale, expensive interventions

04

FLOOD MITIGATION ALTERNATIVES AND INITIAL RESULTS

Flood Mitigation Alternatives for the Region

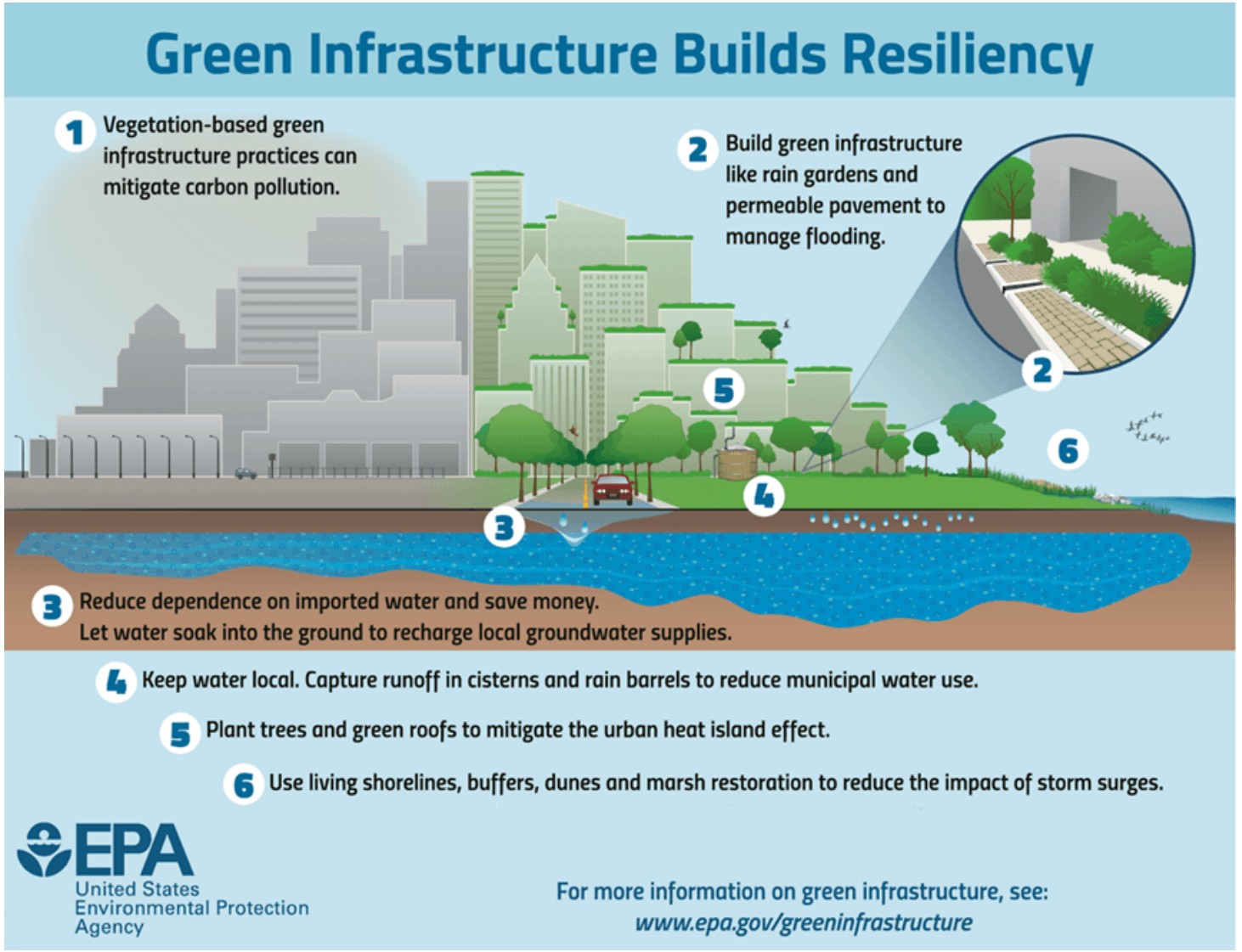
Mitigation Alternative	Benefit and Cost	Funding Source?
Berms Walls and Levees	Moderate benefit, high cost	City, State, Federal
Downstream Dam Removal	Low to moderate benefit, moderate cost	Numerous grant possibilities
River Maintenance and Dredging	Low benefit, moderate to high cost	City
Widening Bridge Spans and Culverts	Low to moderate benefit, high cost	State (DOT)
Watershed-scale Improvements	Long-term moderate benefit, moderate to high cost	City, State, Private Property Owners

Regional Flood Mitigation Alternatives

Widening Bridge Spans and Culverts: Increasing the size of water passageways below roads. Unlikely to significantly reduce major flood levels by itself near Town Street since existing bridges do not appear to cause severe water backups. Larger openings pass more flood flow to downstream areas.

Regional Flood Mitigation Alternatives

<u>Design and implement holistic watershed-scale improvements</u>: Reducing impervious areas, adding green infrastructure, increasing storage. Long-term action. Requires coordination and cooperation from many different parties, including private property owners.



Upstream of Town Street

Fitchville Dam

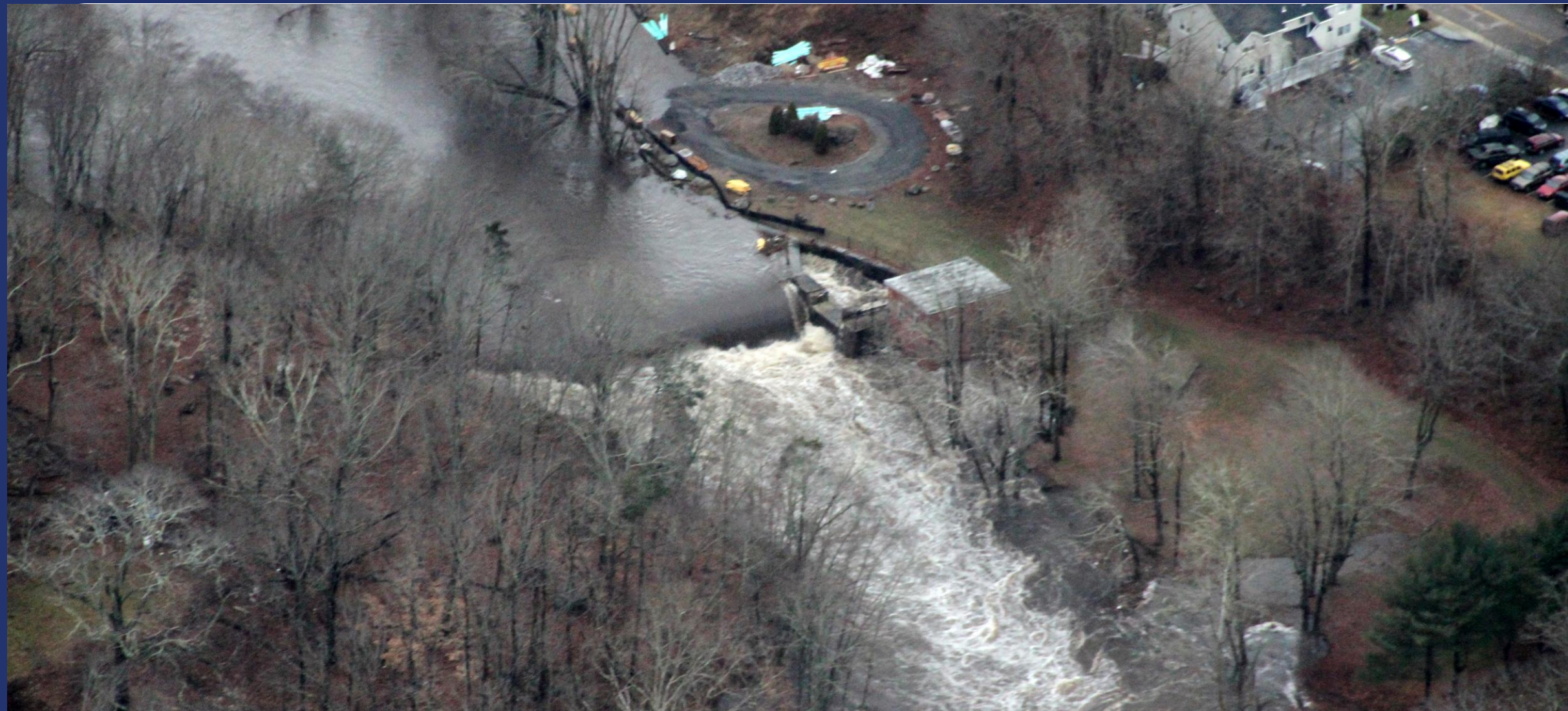
Discussion Baseline

- January 2024 flooding would have occurred the same way regardless of the leak at the dam. It was independent of the dam issue.

Challenges with converting to a flood control structure

- Not built for flood control – would need to be rebuilt.
- Long-term maintenance – who would own it and maintain it?

Downstream of Town Street



Regional Flood Mitigation Alternatives

Downstream dam removal: Removal of Upper Falls Dam to reduce upstream flood levels. Unlikely to reduce flood levels around Town Street by more than a few inches. Requires vetting and community outreach, significant permitting, construction cost.

Source: The Bulletin

Regional Flood Mitigation Alternatives

River maintenance and dredging: Removal of accumulated sediment within the main Yantic River channel. Restores channel capacity, clears partially blocked bridges and culverts. Unlikely to significantly reduce major flood levels since floods mainly use floodplain and overbank areas.

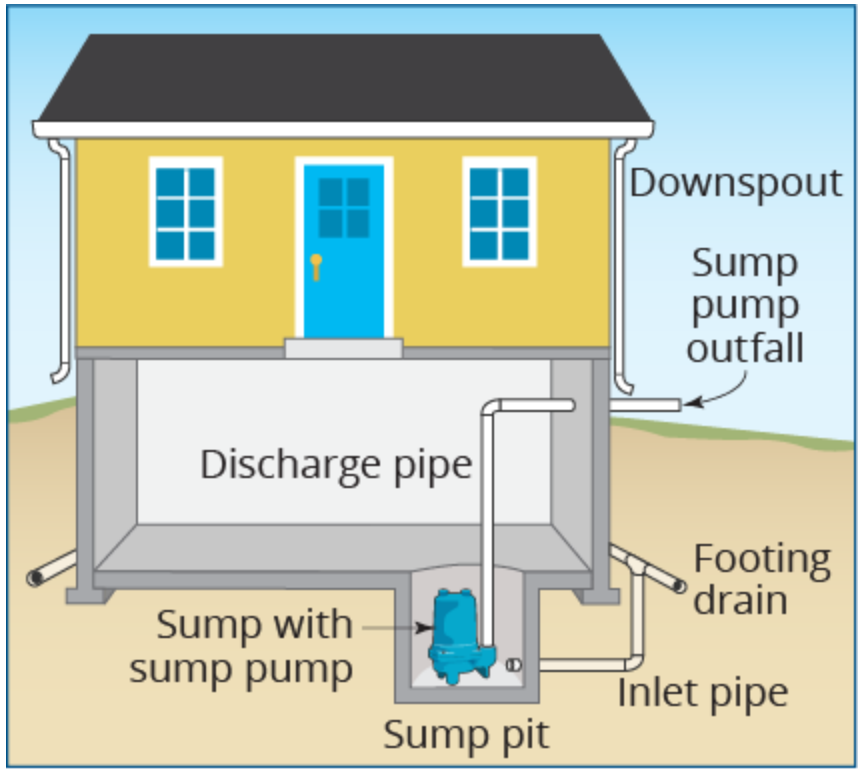
Source: National Park Service

Flood Mitigation Alternatives for Structures

Mitigation Alternative	Applicability	Funding Sources
Install basement sump pumps in flood prone structures	Residential or Non-residential Properties	Private owners CT Green Bank (CGB)
Relocate critical equipment above flood levels	Residential or Non-residential Properties	Private owners, CGB federal grants
Wet floodproofing measures for unoccupied ground floors	Residential or Non-residential Properties	Private owners, CGB, state / federal grants
Dry floodproofing measures for shallow floods	Non-Residential Properties	Private owners, CGB state/federal grants
Raise / elevate buildings	Residential Properties (generally)	Private owners, state/federal grants
Strategic relocation (Moving up)	Residential or Non-residential Properties	City Resiliency Reserve Fund, state, federal

Flood Mitigation Alternatives for Structures

Sump pumps: unlikely to mitigate major floods but helps reduce flood duration and mitigate minor floods

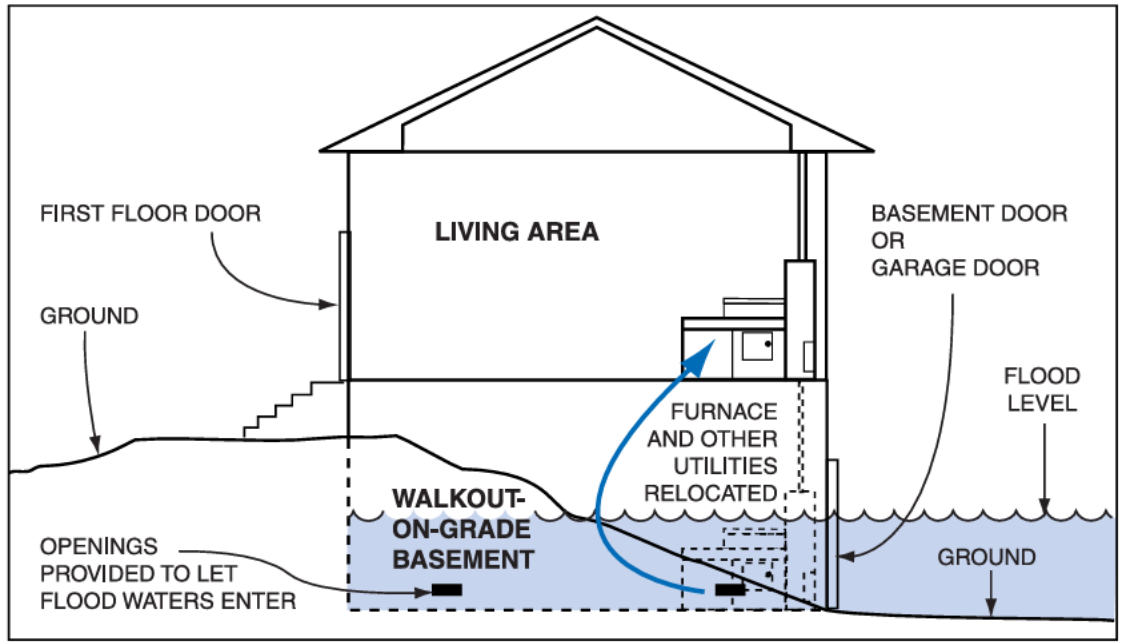


Source: FEMA.gov

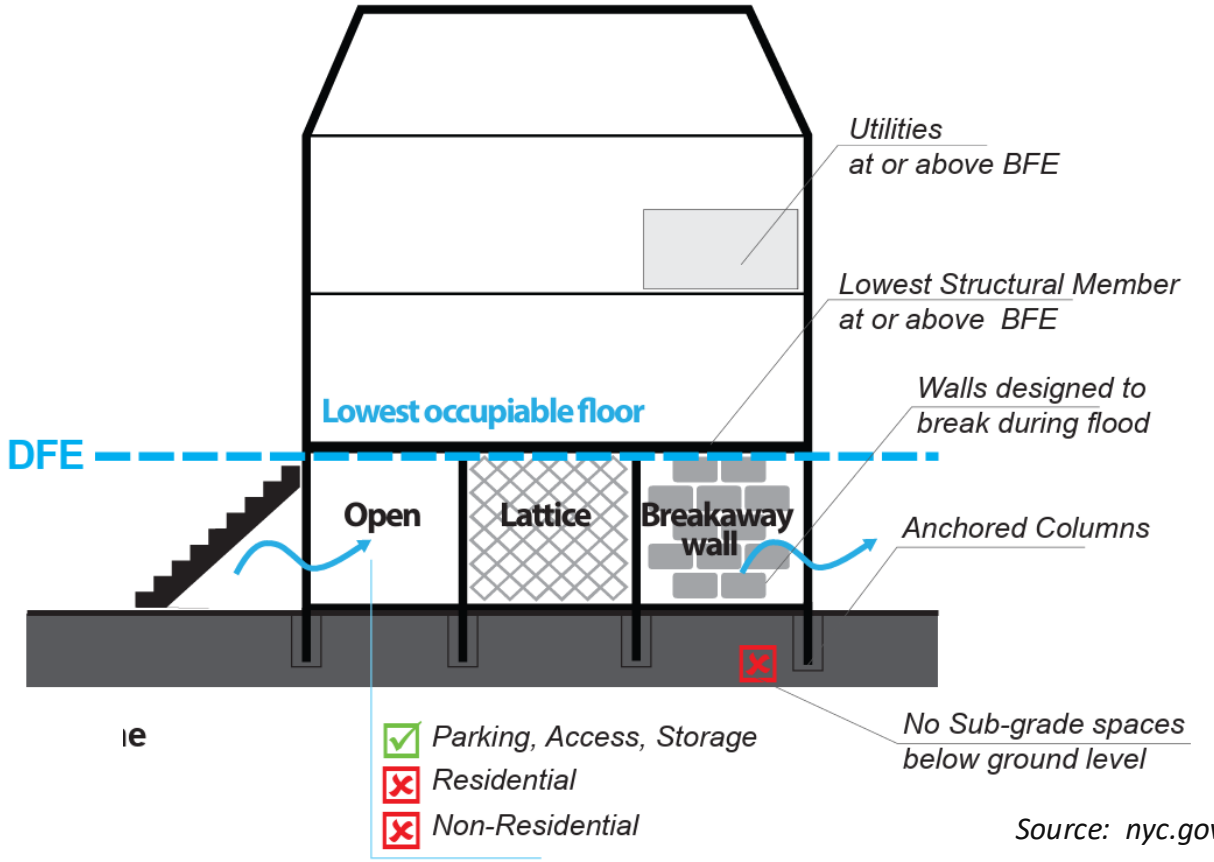
Relocate critical equipment above flood level: elevation on blocks etc. or relocation (e.g., to the roof) helps a structure be usable again faster and reduces losses due to flooding

Flood Mitigation Alternatives for Structures

Wet floodproofing: Allowing floodwaters to enter and exit an area designed and constructed to resist damages from flooding. Can be used for residential or non-residential structures. Floodproofed area usable only for parking, storage, access.



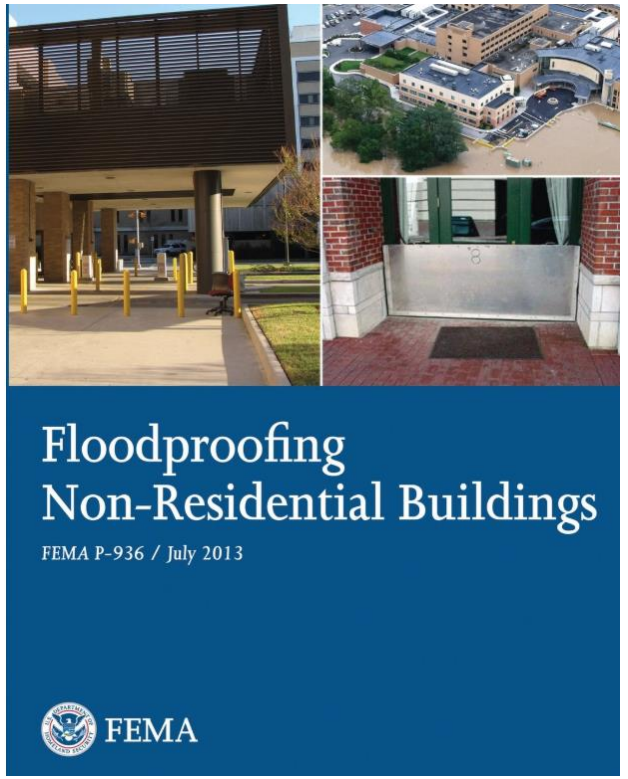
Source: fema.gov



Source: nyc.gov

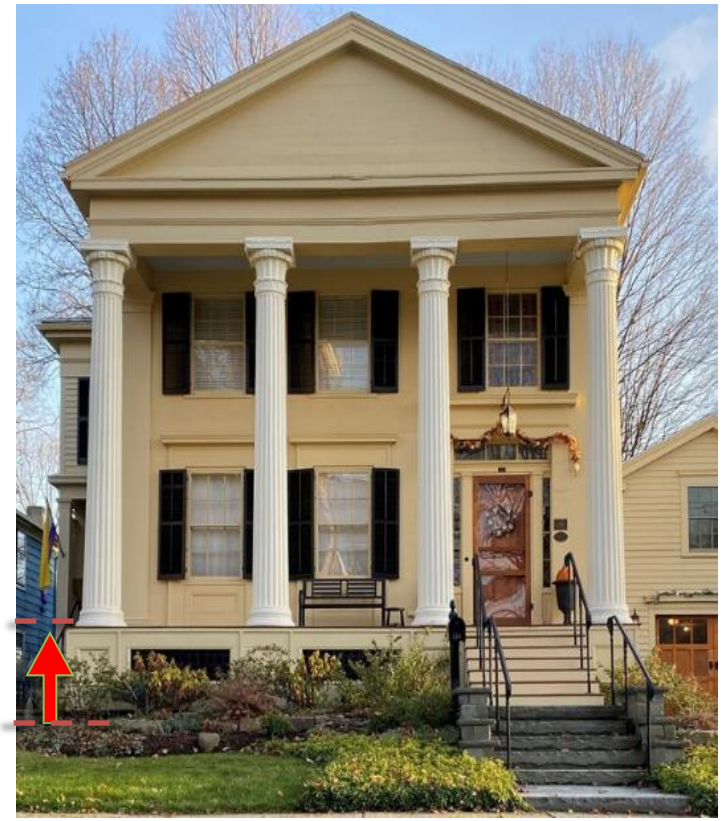
Flood Mitigation Alternatives for Structures

Dry floodproofing: Making a structure watertight (sealants, temporary or permanent flood shields, etc.) so that floodwaters cannot enter.
Recommended for non-residential structures. May require active human intervention.
Limited to areas of shallow (<3 ft) depth and slow-moving waters.



Flood Mitigation Alternatives for Structures

Elevation: Raising the structure above the flood. Common for residential structures. May be cost-prohibitive. Unlikely to be an option for single-story commercial structures.



Source: National Parks Service

Flood Mitigation Alternatives for Structures

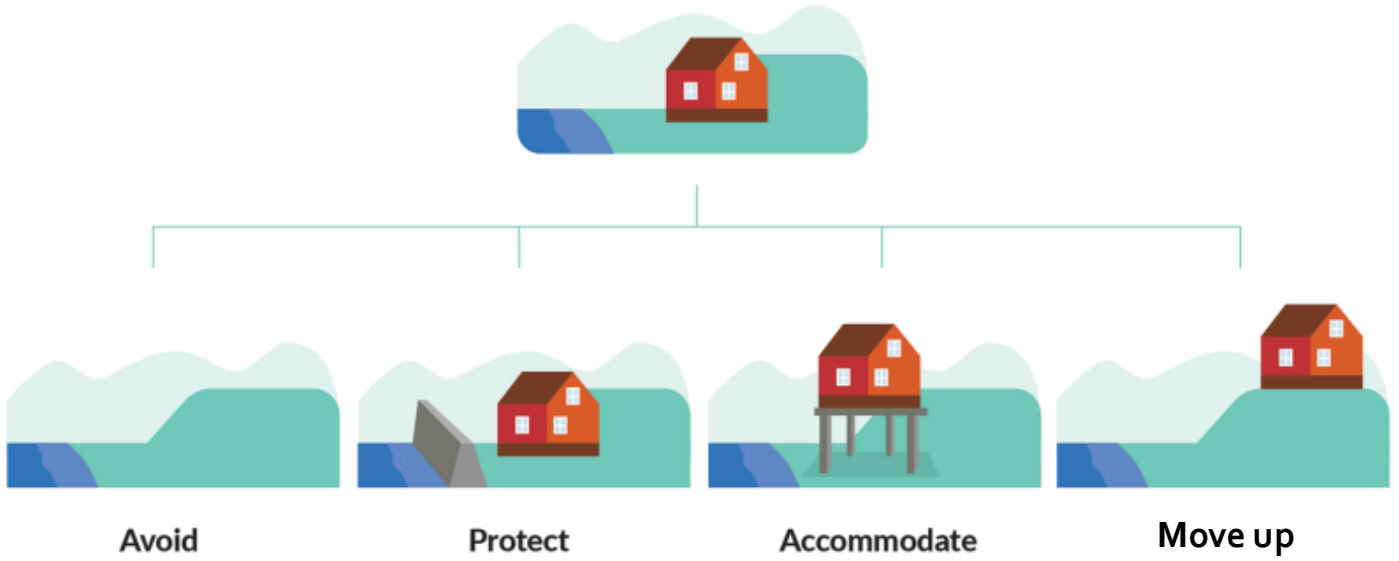
"Moving Up" — A Potential Resilience Strategy

Why Now:

- More intense and frequent flooding from the Yantic River is expected in the future
- Increased insurance premiums and repetitive losses & property damages
- Staying low is risky, costly and disruptive to business

What Is It:

- Proactive, community-supported relocation to higher ground
- Begins with assessments and ***voluntary*** participation



Moving Up Pros and Cons

Benefits

Risk reduction and public safety	Environmental restoration / Creation of new public space	Opportunity for sustainable planning
Less dependence on emergency response services	Cost savings over time	Reduced municipal losses

Challenges

Financial constraints	Maintaining community connections	Legal concerns
Development of relocation sites	Maintenance of tax revenue	Maintaining organization and momentum over time

Flood Mitigation Alternatives for Structures

"Moving Up" — What it could look like and contributors to success

- Assessment of community needs – community collaboration is essential
- Voluntary Buyouts at pre-disaster appraised property value – fair, transparent, well-funded program
- Planning for safer and sustainable economic redevelopment – relocation plans should ensure affordability and opportunity
- Returning floodplain to public parks or open space
- Support tools include FEMA, CDBG, zoning reform, and equity mapping
- Success depends on a shared vision

Ocean Beach Park after the Great Hurricane of 1938

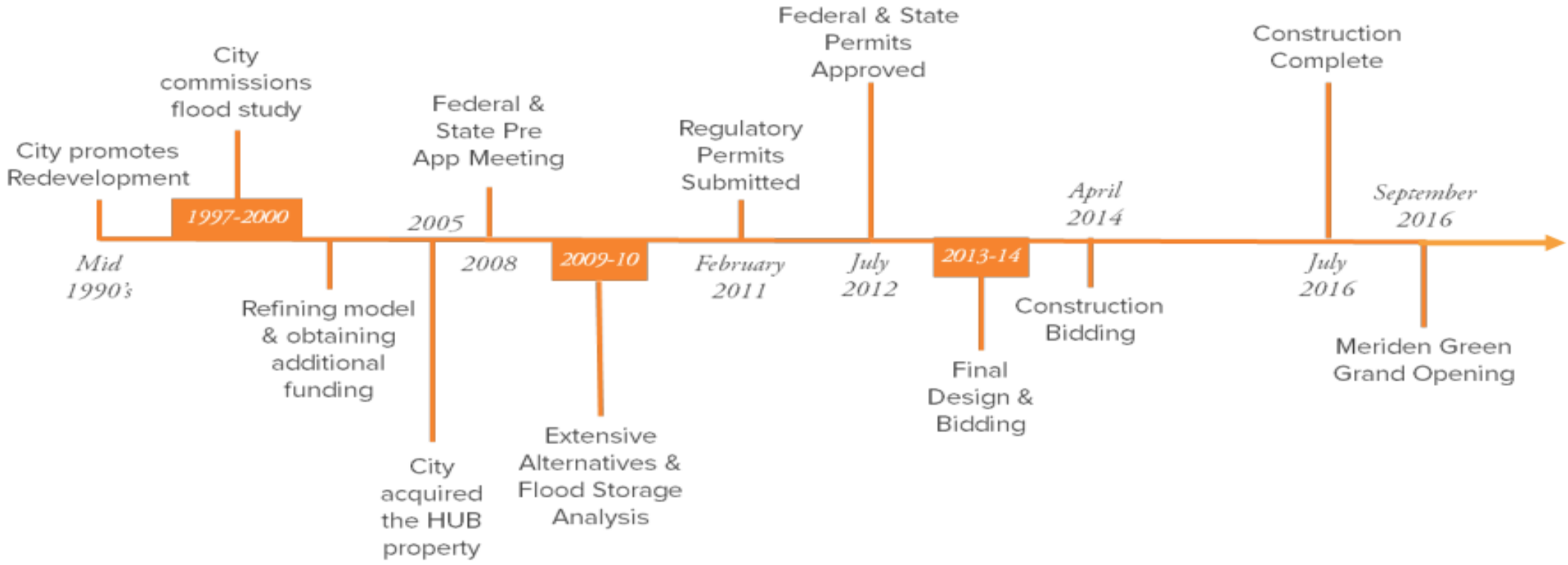
Moving Up has been done before in Connecticut

Master Plan

Meriden Green – City of Meriden and State of CT

Timeline

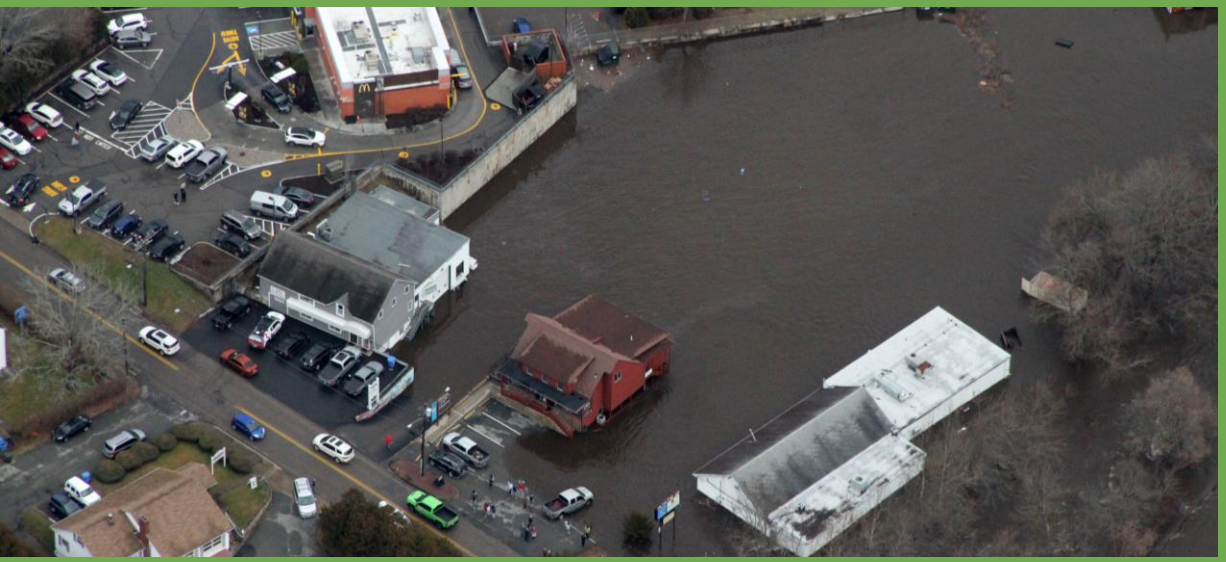
Meriden Green – City of Meriden and State of CT



Flood Control

Meriden Green – City of Meriden and State of CT

Future Development Opportunities



OPEN DISUCSSION – TOWN STREET CORRIDOR

06

CLOSE OUT

NEXT STEPS

CONCEPT DESIGN

Based on preferences voiced by stakeholders and public, design at least three concepts for flood risk mitigation projects.

ENGAGEMENT FOLLOW-UP

Decide on best forum for communicating back to public and stakeholders.

Relay concept designs and integrate any additional feedback.

Communicate next steps in project design.

NEXT PROJECT PHASE

Find funding for full design and engineering, benefit-cost analysis, EHP review, etc.

THANK YOU!

Public Open House

Residents of Norwich, Bozrah, and Franklin impacted by Yantic River flooding at home, on roadways, or otherwise are encouraged to attend to discuss potential flood risk reduction options and their potential benefits and trade-offs.

Date: May 21, 2025 | **Time**: Drop in any time between 5:00 and 7:00 PM. Formal project presentation at 6:00.**
Location: Otis Library, 261 Main Street, Norwich

What happens at a project Open House?

Individual work, family, and life schedules are different. The open house format, allowing participants to drop-in any time between 5-7 PM, helps us minimize barriers to participation. Whatever time you arrive, you can expect:

The project team will greet you at the door and explain the project background and purpose.

At your own pace, you can move through a series of stations that cover:

- A corridor-wide view of flood challenges
- A menu of flood mitigation options
- A specific look at the Town Street corridor and area economic development
- A specific look at the Upper Falls Dam area

At 6:00 PM, we will ask the group to come together for a formal presentation. Self-paced station exploration will resume after the presentation.

If you can't make the open house, the project webpage contains a project description, link to a project video, and a **feedback section:

Project Webpage:

bit.ly/ResilientYanticRiver

Pre-registration is appreciated to give organizers an idea of the headcount for refreshments, but is not required.

Register Here: