SOUTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

Resilient Yantic River Project Update

CIRCA Resilient Connecticut Summit 2025

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Project Site & Background

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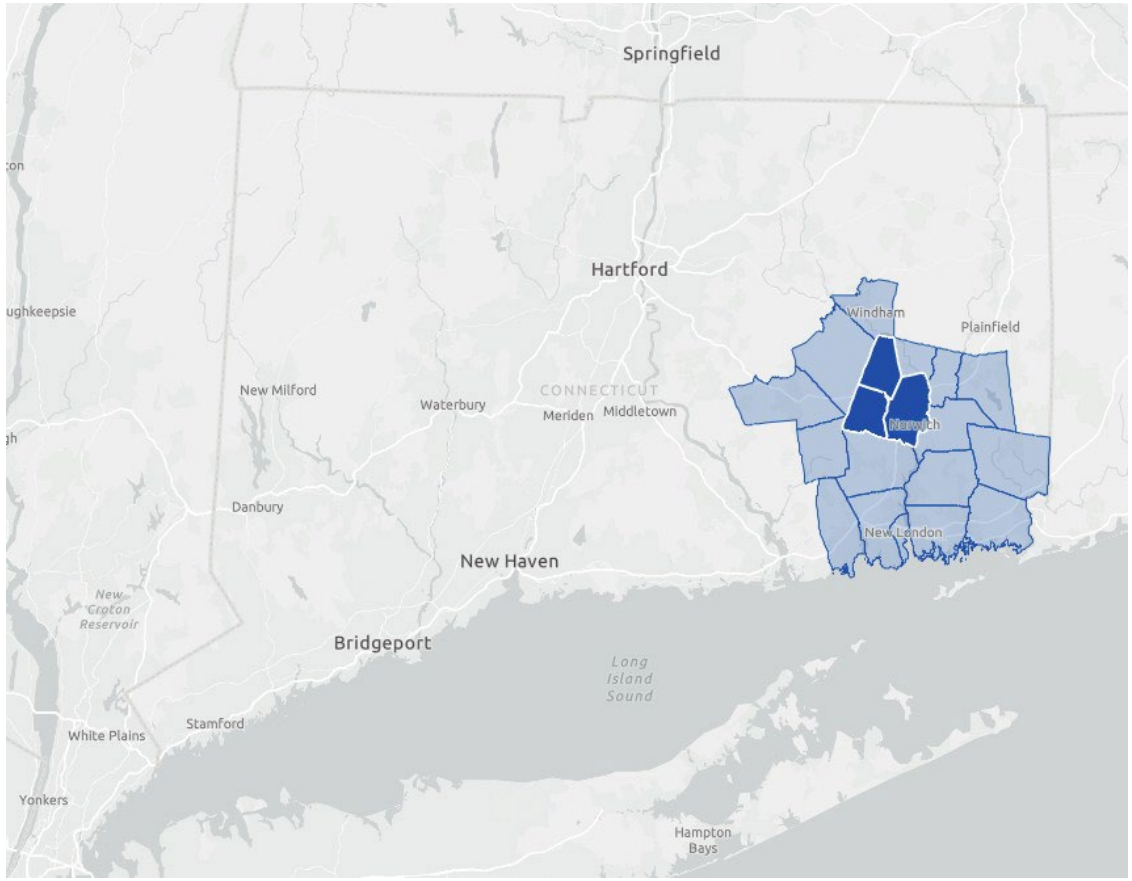
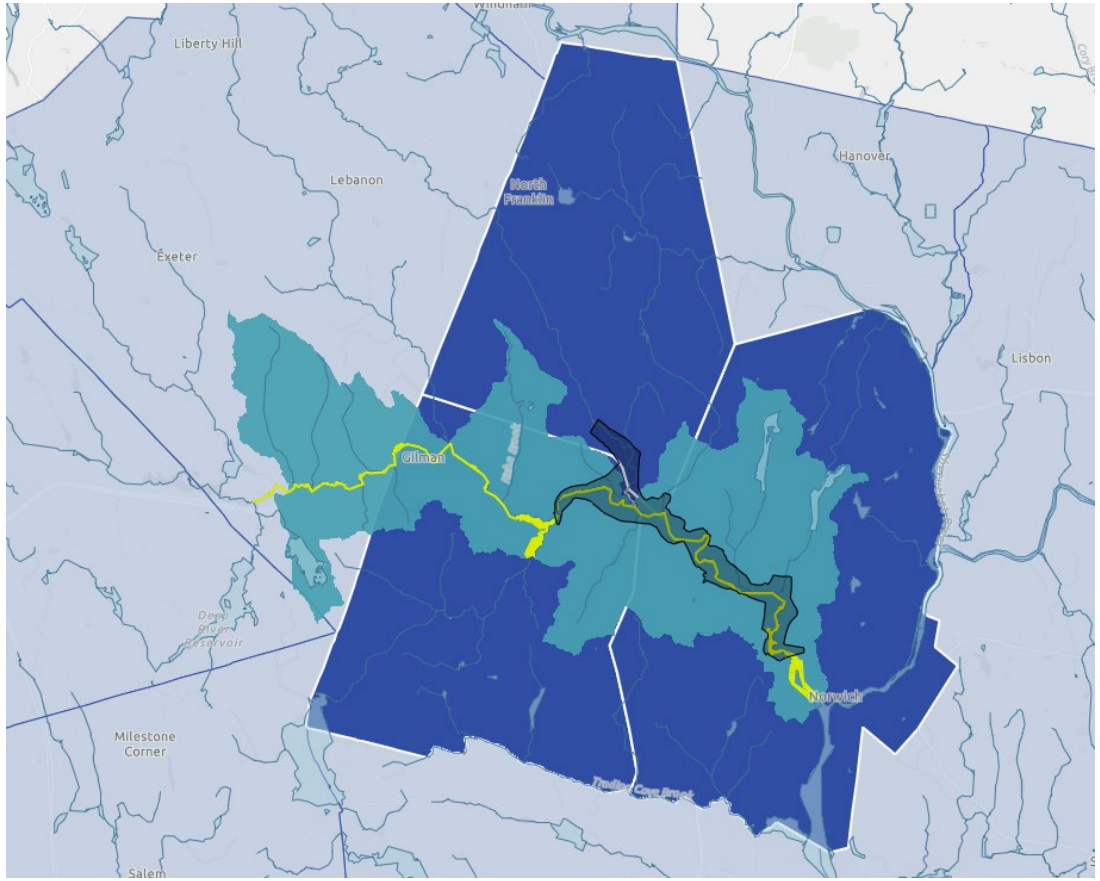
Project Locus in the SECOG Region



Yantic River Watershed



Project Site & Background

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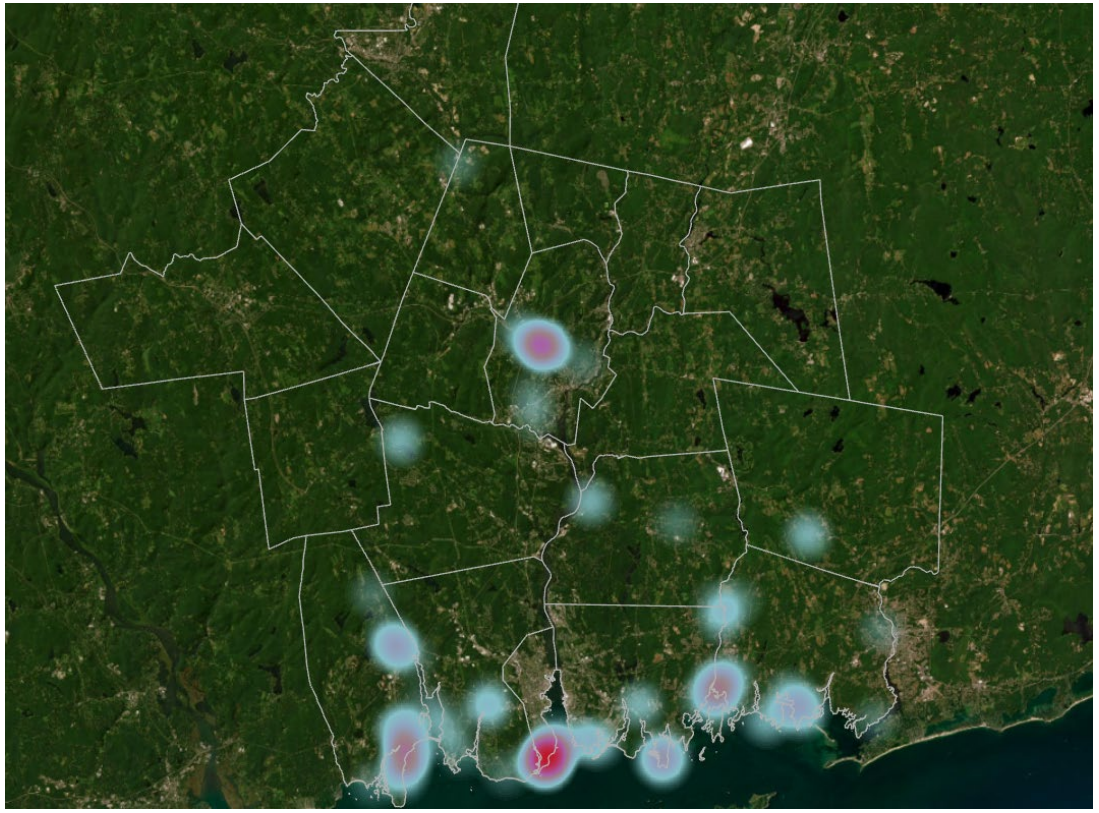
Known Flood Risk



- Properties, roadways, and critical infrastructure are located in the Yantic River floodplain **+**
- Scale of watershed **+**
- Norwich downstream position **+**
- River corridor's topography **+**
- Legacy and current barriers to water movement **=**
- **Flood risk**

Project Site & Background

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Known Flood Risk – Estimated Flood Flows (GZA)

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.

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

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Inciting Event – January 10, 2024

On the morning of January 10, 2024, a high volume of rain fell on existing snow in a part of Connecticut that had already been experiencing a winter season of repeated rainfall. These conditions caused the Yantic River to rise and flood.

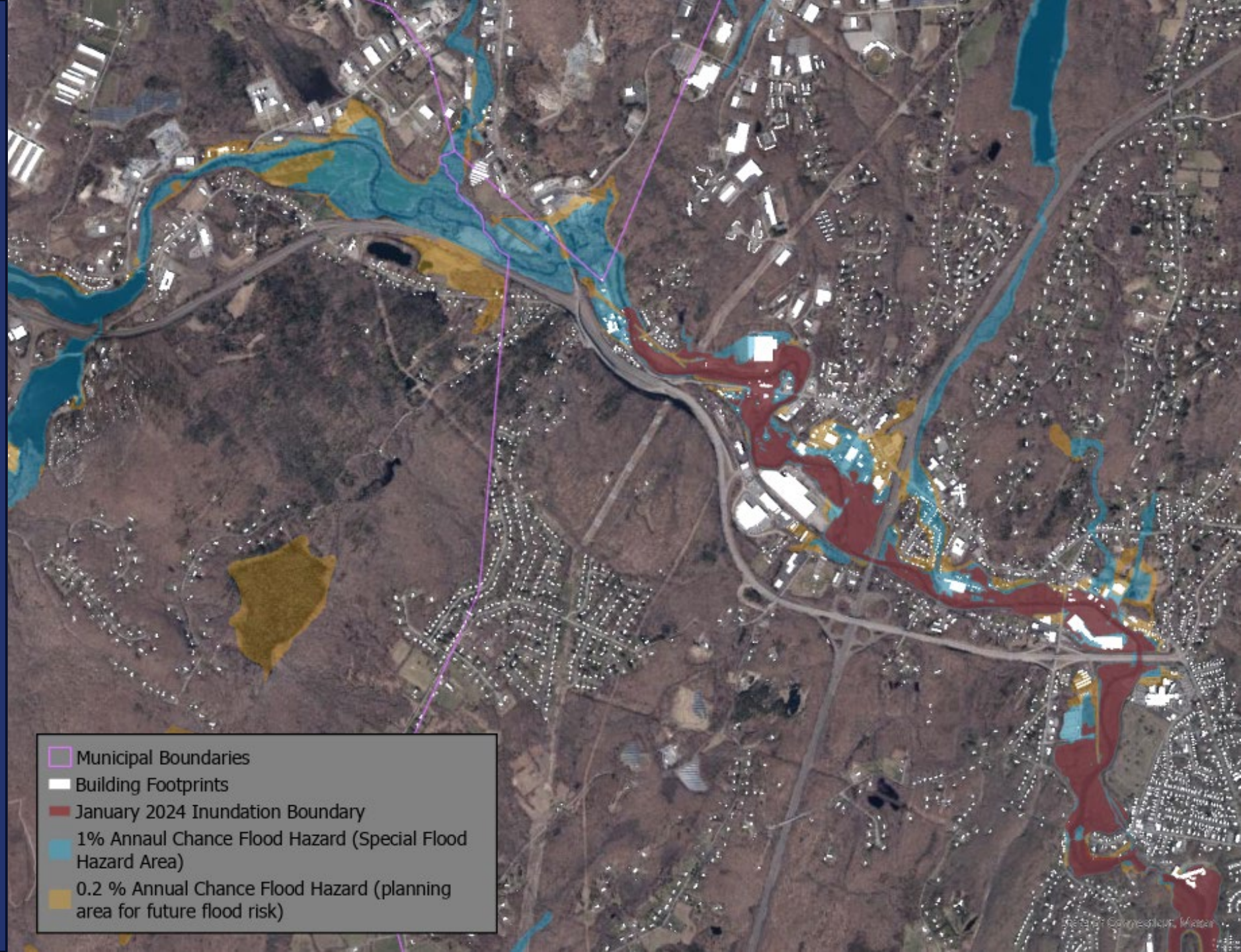
Reports of a partial failure of the Fitchville Pond Dam in Bozrah, upstream of Norwich, added another layer of risk. The flooding that the Yantic corridor experienced was independent of the conditions at the dam. However, a dam failure would have released even more water all at once and with high and terrible speed. In response, a local evacuation order was put in place alongside a federal emergency declaration affecting the area from the Bozrah town line to the Falls Mill Apartments.

Hundreds of Bozrah and Norwich residents evacuated. Flood waters damaged structures, closed roadways, and prompted emergency rescues. About 5,000 customers lost power when the Bean Hill substation was taken offline due to flood risk.

Project Site & Background

- Estimated **80 structures** were impacted by the January 2024 event (50-year flood)

- 100-year flood would impact **167 structures**
- 500-year flood would impact **269 structures**



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Key Project Components

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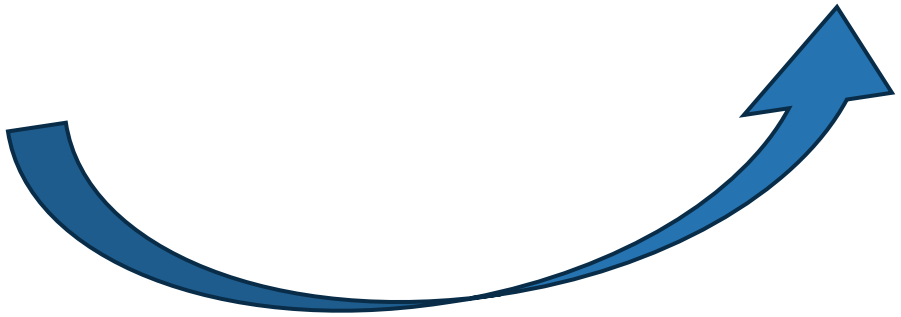
GZA / SECOG Task List

- Project Management
- Stakeholder and Public Engagement
- Current and Future Conditions Analysis
- Adaptation Options and Conceptual Designs
- Benefit / Cost Analysis
- Final Report

What we would highlight

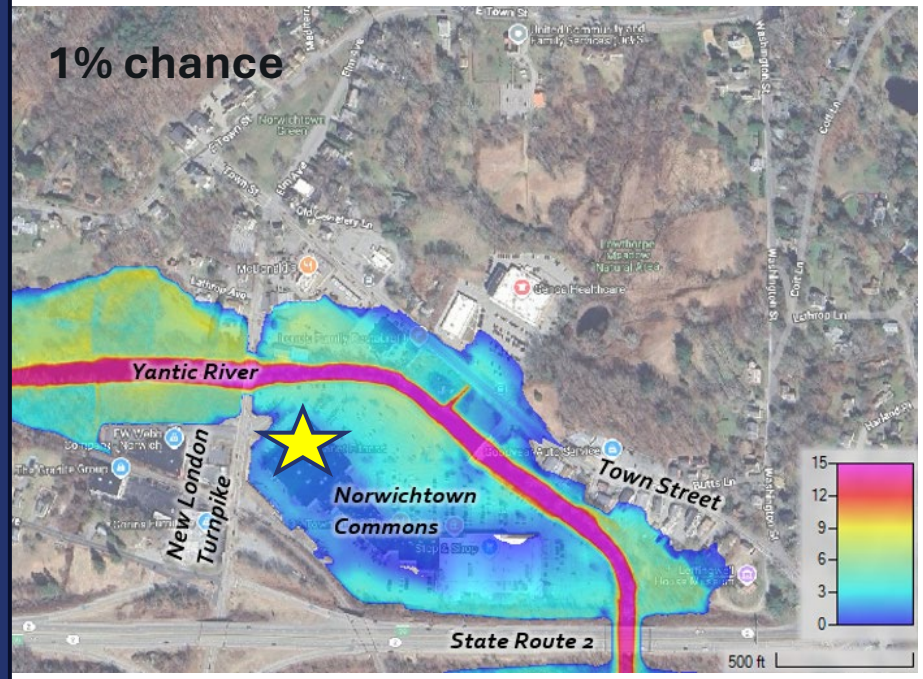
1. Understanding relative flood risk across the project area
2. Navigating the relationship between upstream and downstream communities
3. Public engagement

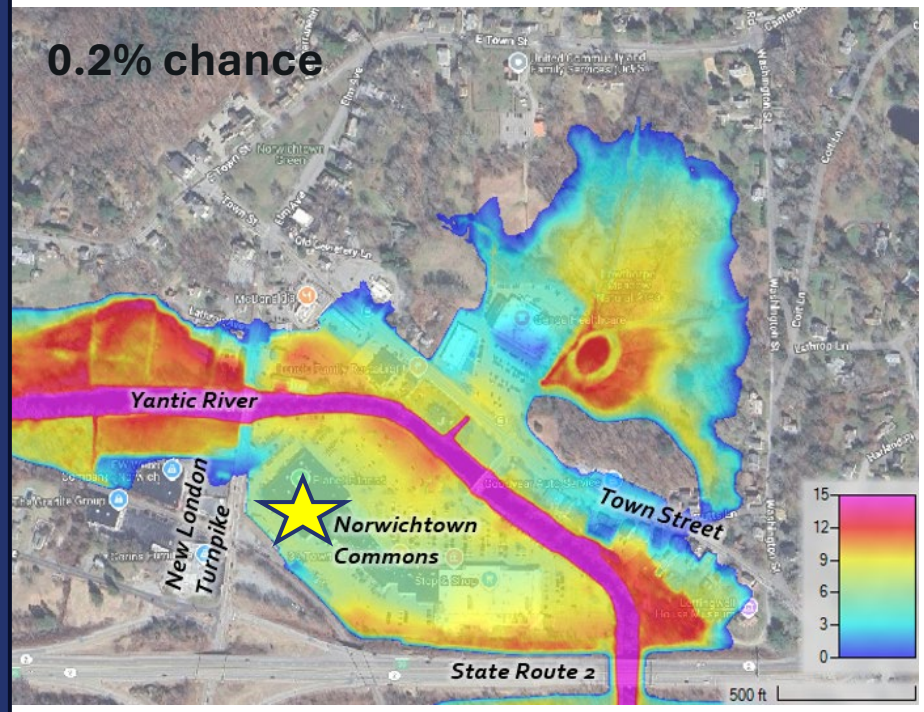


Key Project Components

1. Understanding relative flood risk across the project area

- 2024 event imagery was key
- FEMA model limitations
- GZA H&H Model allowed for testing proposed solutions in identified high-risk areas





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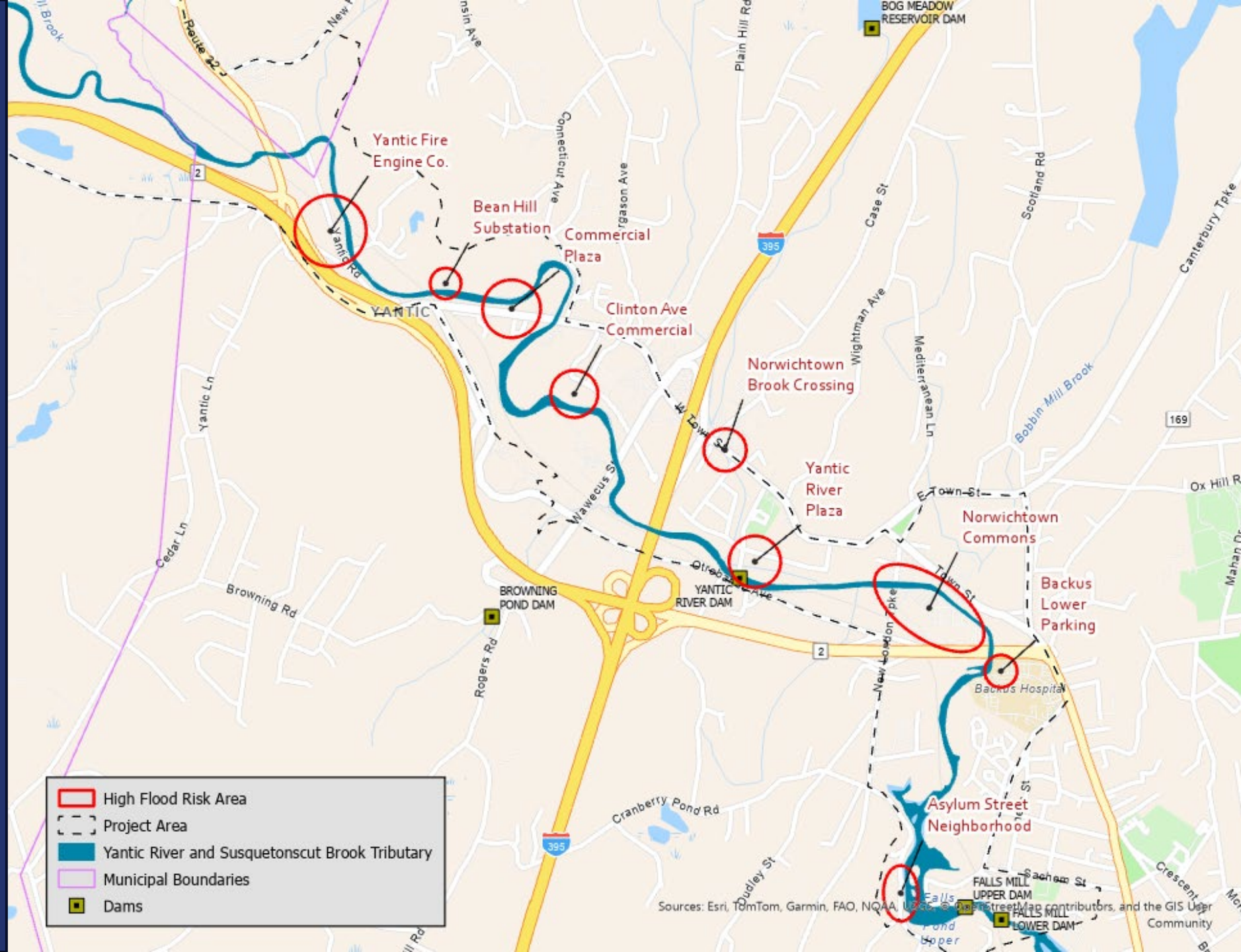
Key Project Components

1. Understanding relative flood risk across the project area

- Can we keep businesses in their current neighborhoods?
- What level of risk are we willing to accept?



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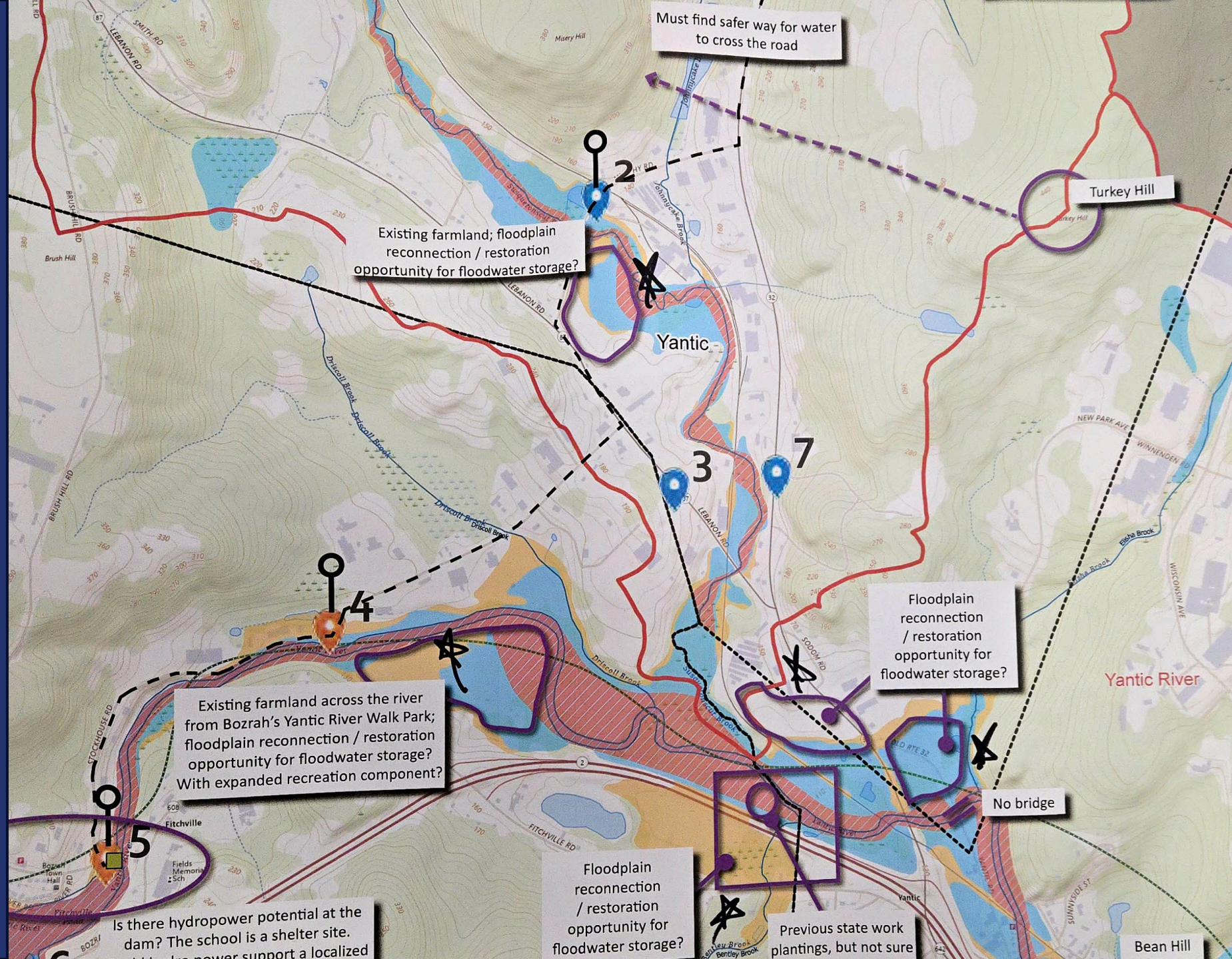
Key Project Components

2. Navigating the relationship between upstream and downstream communities

- **Very supportive and engaged upstream communities**



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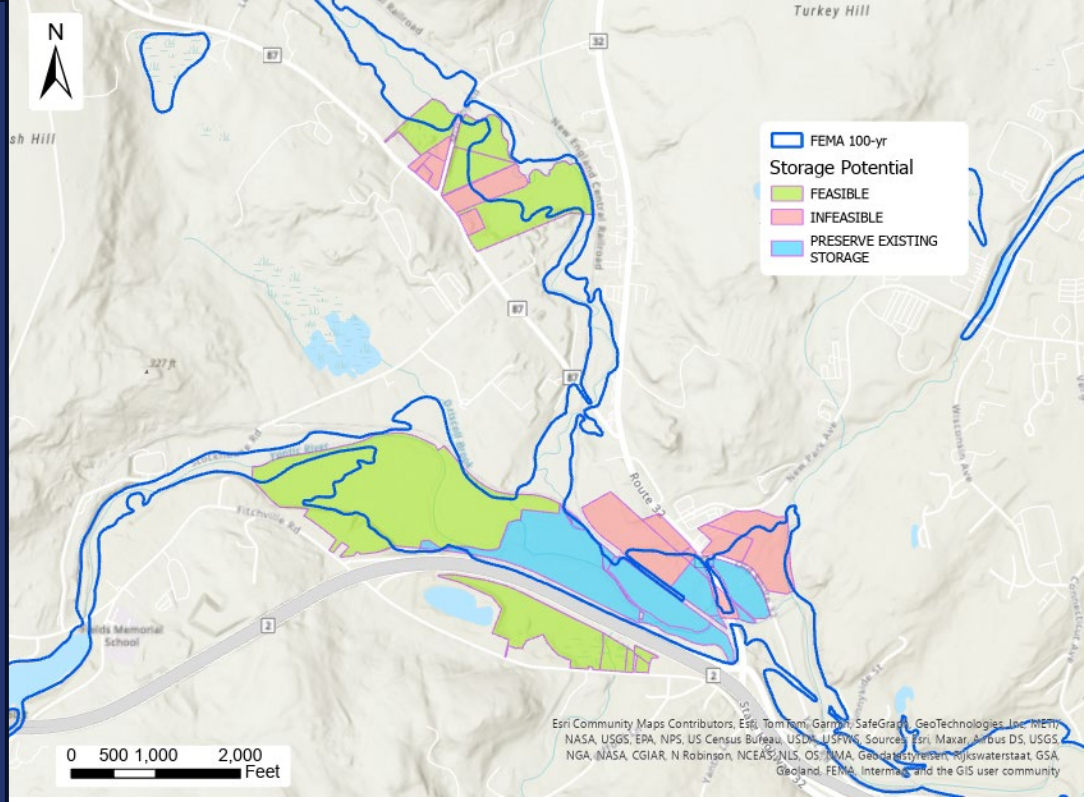
Key Project Components

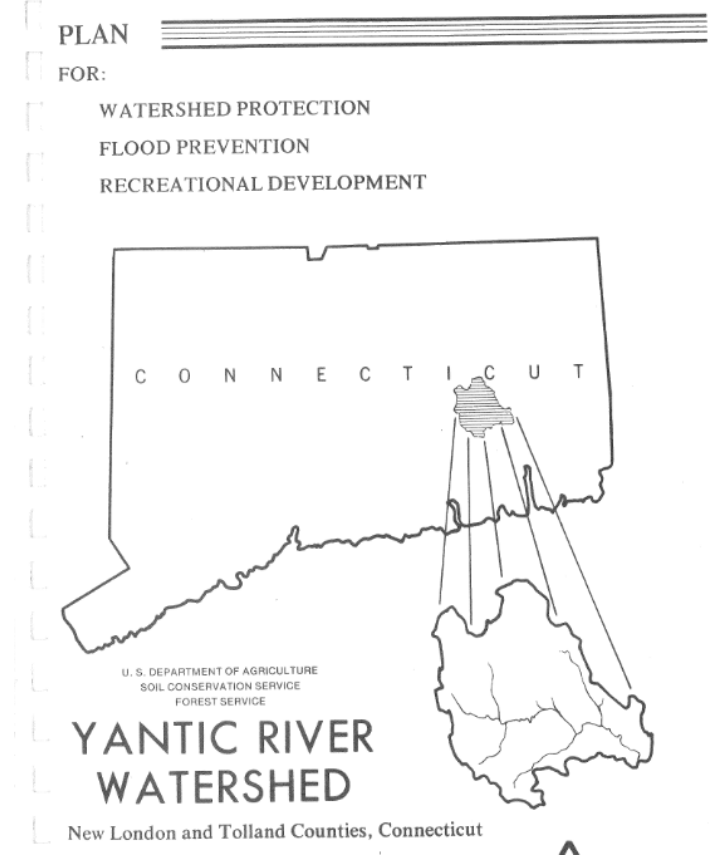
2. Upstream communities (cont.)

- **Had to cope with disappointing upstream analysis results, adding to long-term failure of action**
- **What is the current state of practice for watershed-based flood prevention planning?**



Results

- **Additional flood storage from parcels ~ 90 acre-ft**
- **About 1% of the 2-day flood volume in January 2024 – unlikely to make much impact**



PLAN

FOR:

WATERSHED PROTECTION

FLOOD PREVENTION

RECREATIONAL DEVELOPMENT

C O N N E C T I C U T

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
FOREST SERVICE

YANTIC RIVER WATERSHED

New London and Tolland Counties, Connecticut

Prepared under the Authority of the Watershed Protection and Flood Prevention Act (Public Law 566, 83d Congress, 68 Stat. 666) as amended.

Prepared By

Commissioner, Department of Environmental Protection
State of Connecticut

With Assistance By

U.S. Department of Agriculture, Soil Conservation Servi

U.S. Department of Agriculture, Forest Service

August 1975

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Key Project Components

3. Public engagement

- Two public meetings
- Radio and TV communications
- Business community gathering
- Direct canvassing to advertise business community and first public meeting

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Key Project Components

3. Public engagement

- Focus on solutions from the past; upstream solutions (understandably so)
- Hearing their local experience is critical
- Suffered major losses; still not worth it to carry flood insurance
- People are where they are because this is where they can afford the rent

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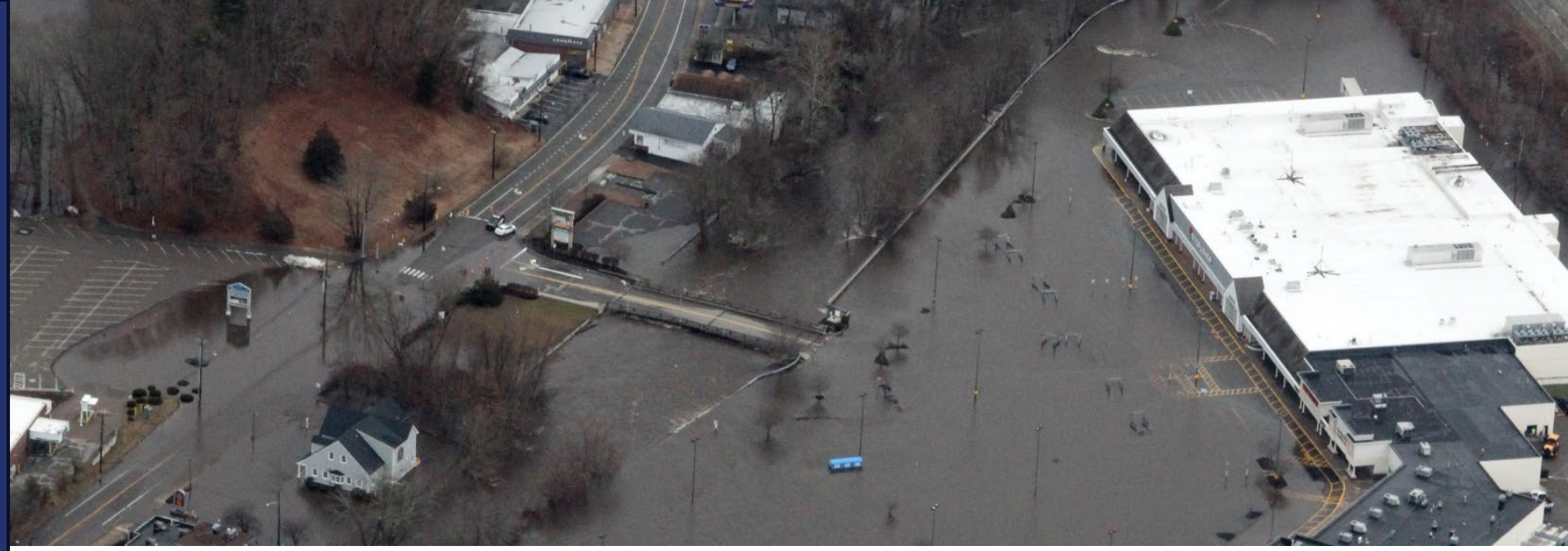
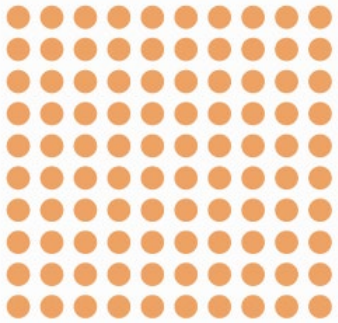


Dredging an average of 3 ft over a channel length of 27,000 river-ft and 70 ft typical width is **134 acre-ft of volume.**

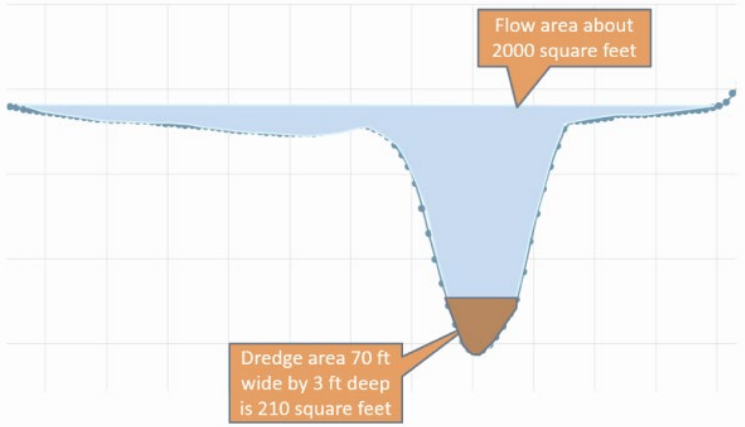
*Dredge volume is about **100 acre-ft.***



The Flow Volume for the January 2024 flood *(about a 50-year flood)* was about **10,890 acre-ft.**

*The January 2024 flood is about **100 times greater!***

Typical river section during the 100-yr flood



Dredging the channel restores a small relative area compared to the flooded area *(about 10% by section area).*

Project Outcomes & Next Steps

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Alternative	Flood Risk Reduction	Anticipated Cost	Solution Duration	Maintenance	Environmental Stewardship	Funding Sources
★ Upper Dam Removal	Low to Medium	Medium	Long	Low	High	State, Federal
★ Channel Widening	Medium	High	Medium	Low to Medium	Low	State, Federal
★ Managed Retreat	Very High	Medium to High	Long	Low	High	State, Federal
Flood Wall/ Berm	High(*)	High	Long	Medium to High	Low	City, State, Federal
Bridge Widening	Medium	Very High	Medium	Medium	Low	State, Federal
Dredging	Low to None	Medium to High	Short to None	High	Very Low	City
Building Level	Low to High	Low to High	Medium to Long	Low to High	None	State, Federal, Property Owner

Project Outcomes & Next Steps: Upper Falls Dam Removal

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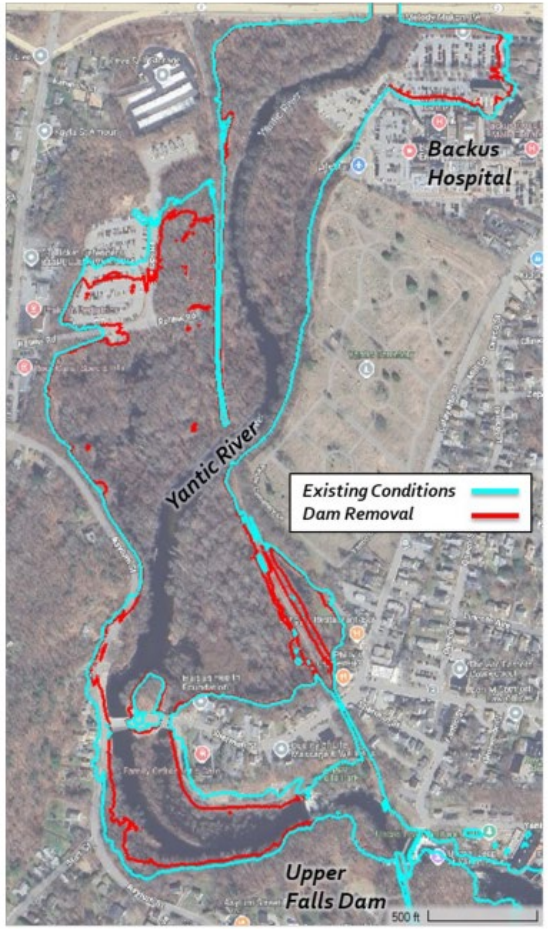
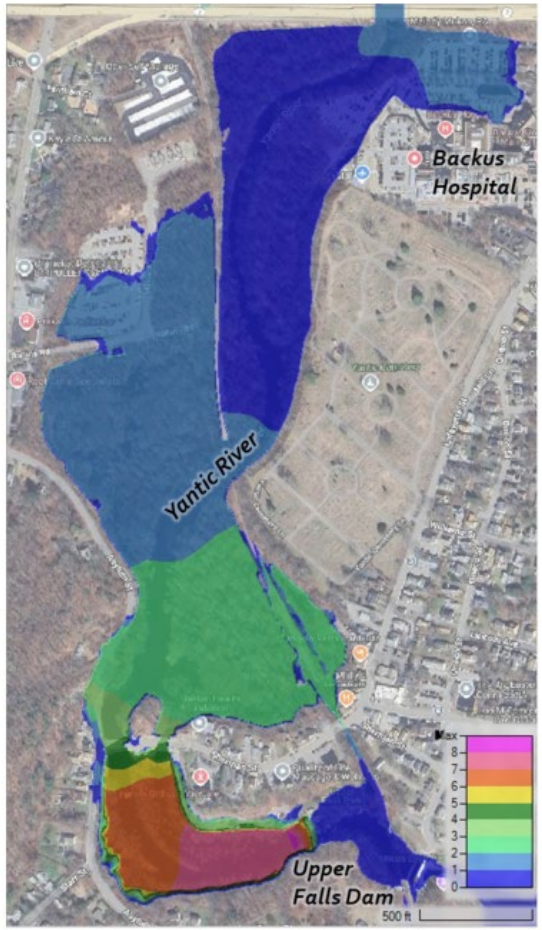
Change in Flooded Area



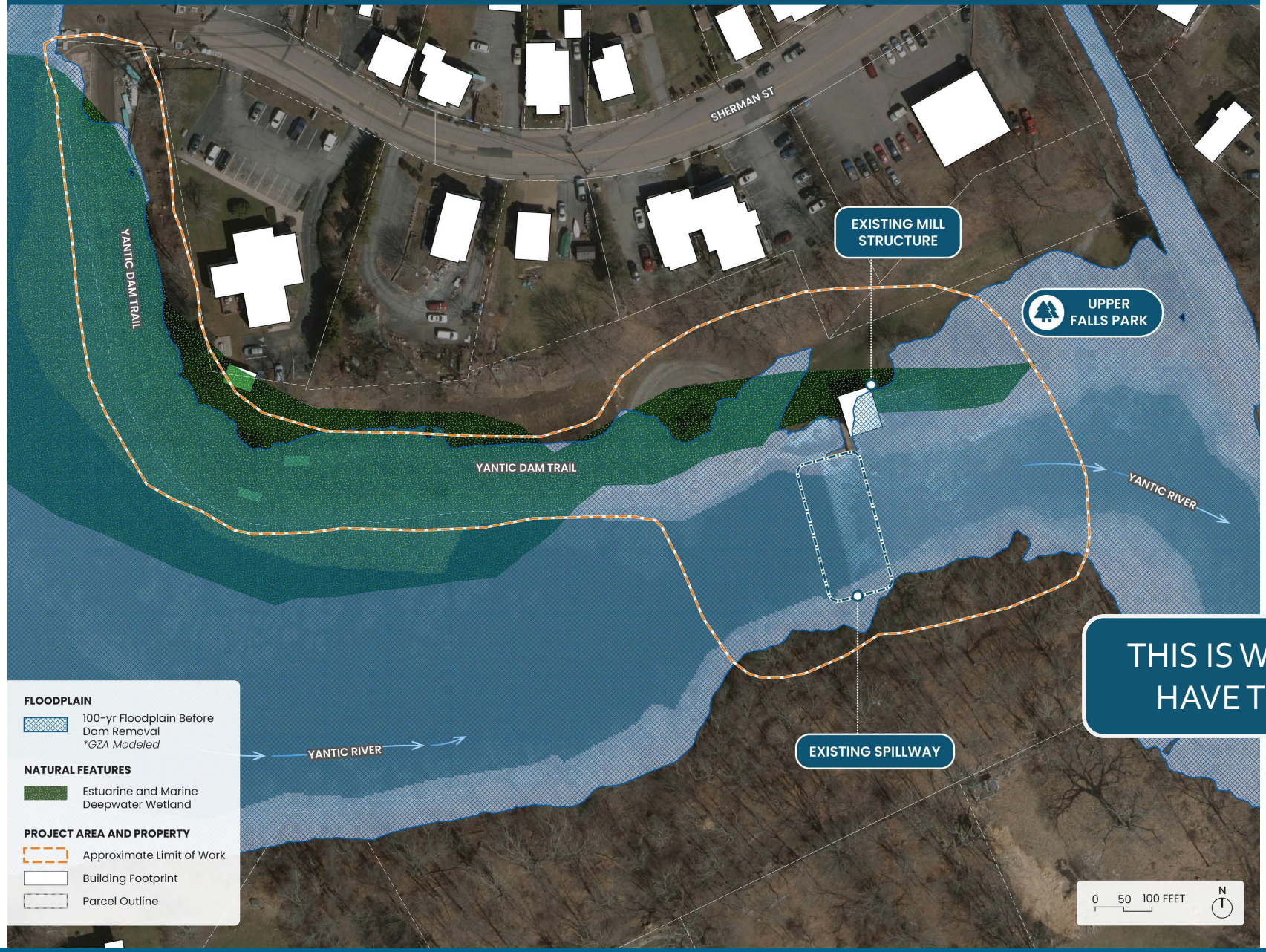
Water Level Reduction (feet)



Benefits

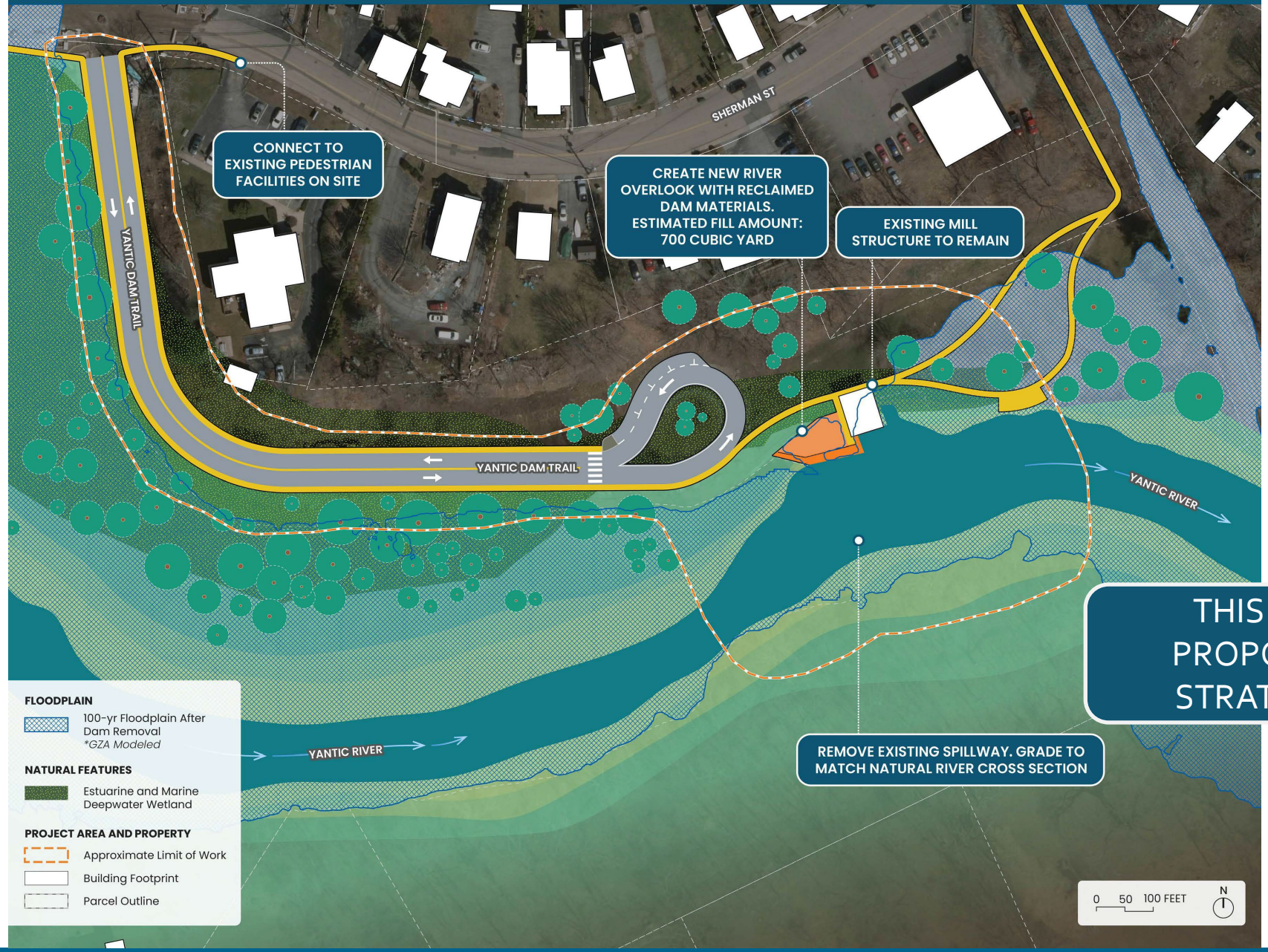
- Reduce upstream flooding.
- Eliminate a safety hazard, ongoing dam maintenance costs.
- Support the Yantic River's ecological health.

DAM REMOVAL: Existing Condition



THIS IS WHAT WE HAVE TODAY.

DAM REMOVAL: Concept Plan



THIS IS A PROPOSED STRATEGY.

Upper Falls Dam Next Steps

OBTAIN GRANT FOR PROJECT DESIGN AND ENGINEERING

- Design data gathering investigations
- Prepare for Environmental and Historic Preservation review and compliance
- Develop project design plans
- Continue community meetings
- Prepare bid package document
- Refine Benefit-Cost Analysis calculations

Project Outcomes & Next Steps: Channel Widening

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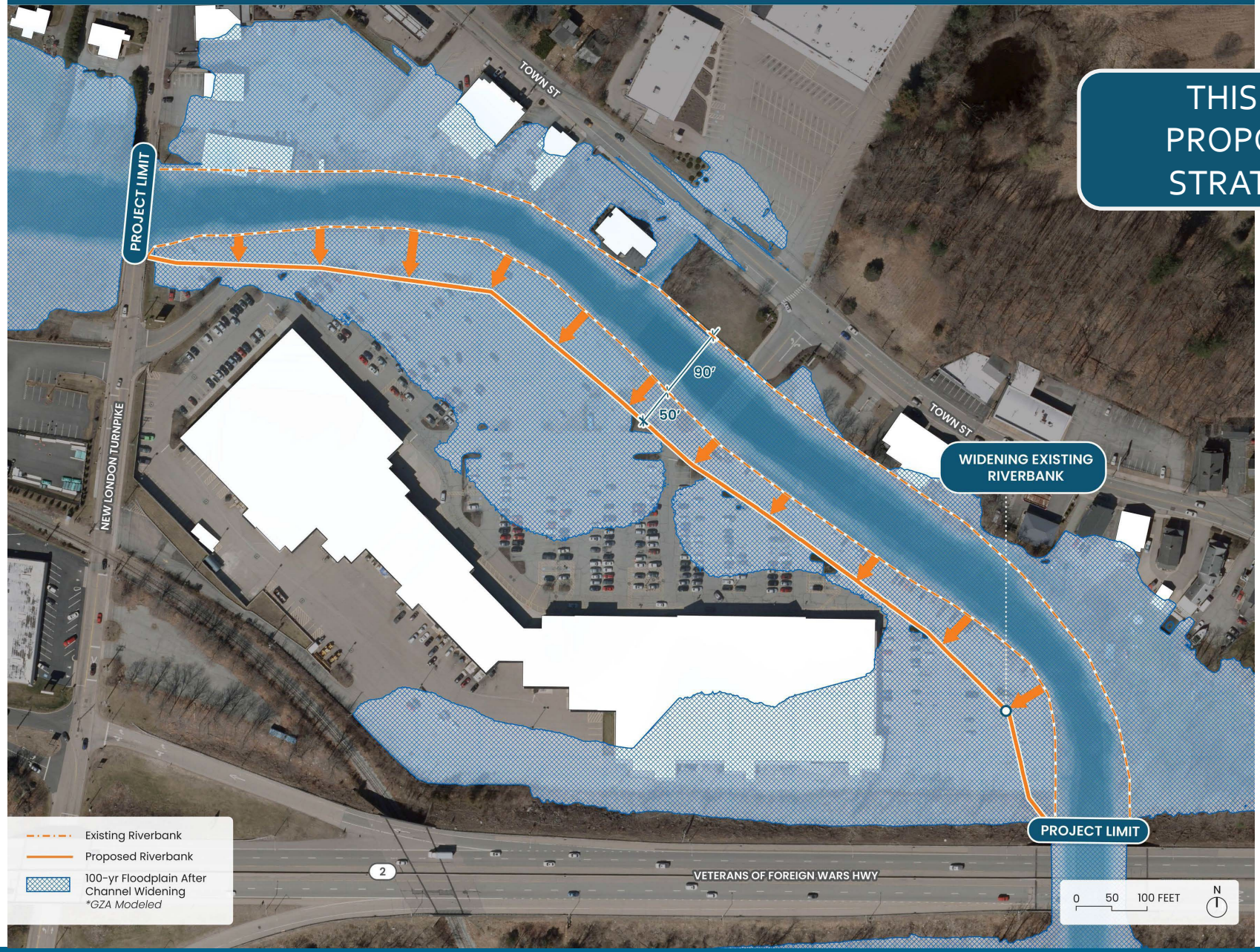
Benefits

100-Year (1% Annual Chance) Flood	500-Year (0.2% Annual Chance) Flood
Reduces flooding by 2 to 3 feet	Does not provide much benefit
Norwichtown Commons would still see 1 to 2 feet of flooding	Town Street would experience limited improvement
Slight changes to upstream and downstream flooding	

CHANNEL WIDENING: Existing Condition

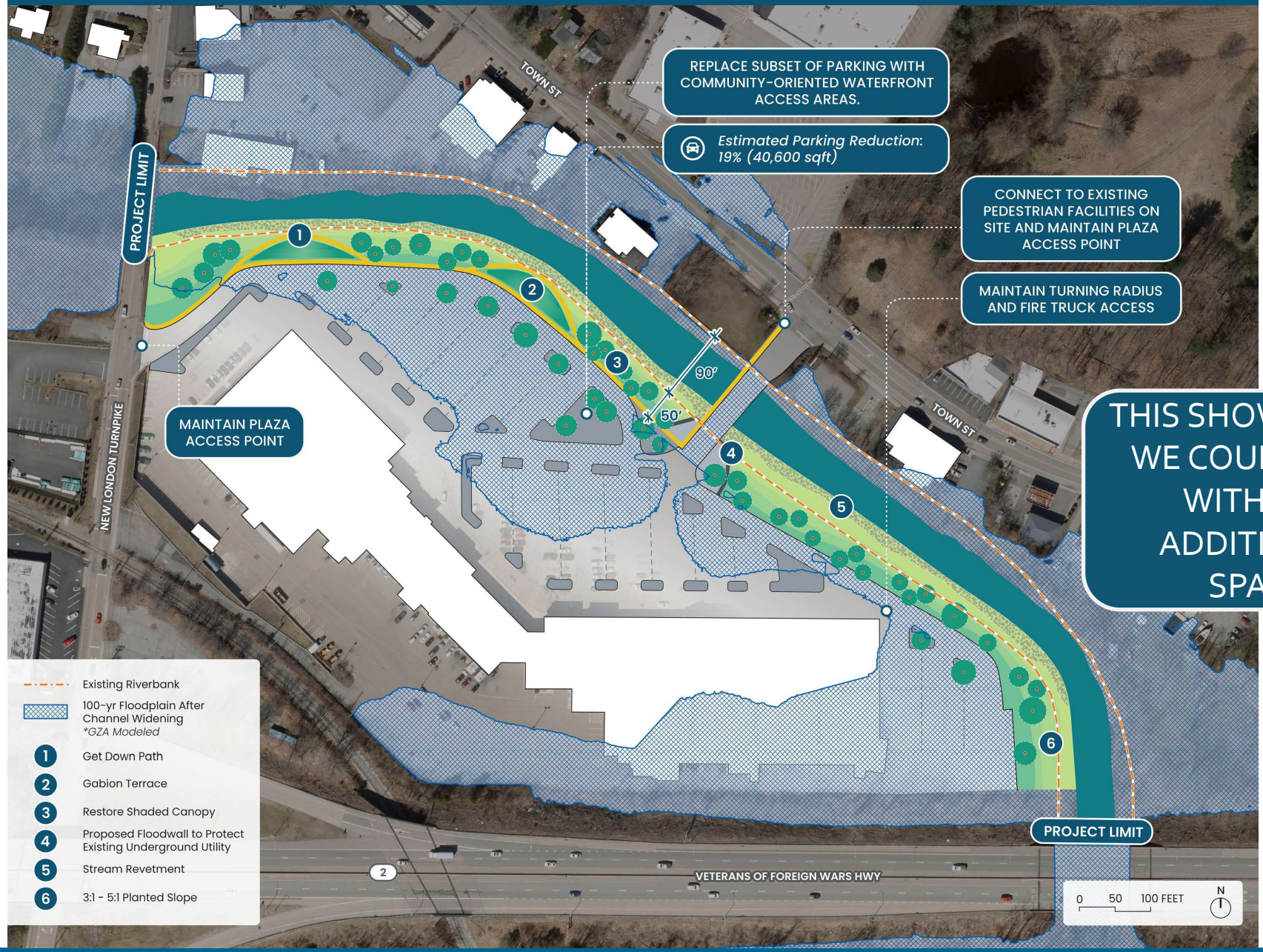
THIS IS WHAT WE HAVE TODAY.

CHANNEL WIDENING: Proposed Strategy



THIS IS A PROPOSED STRATEGY.

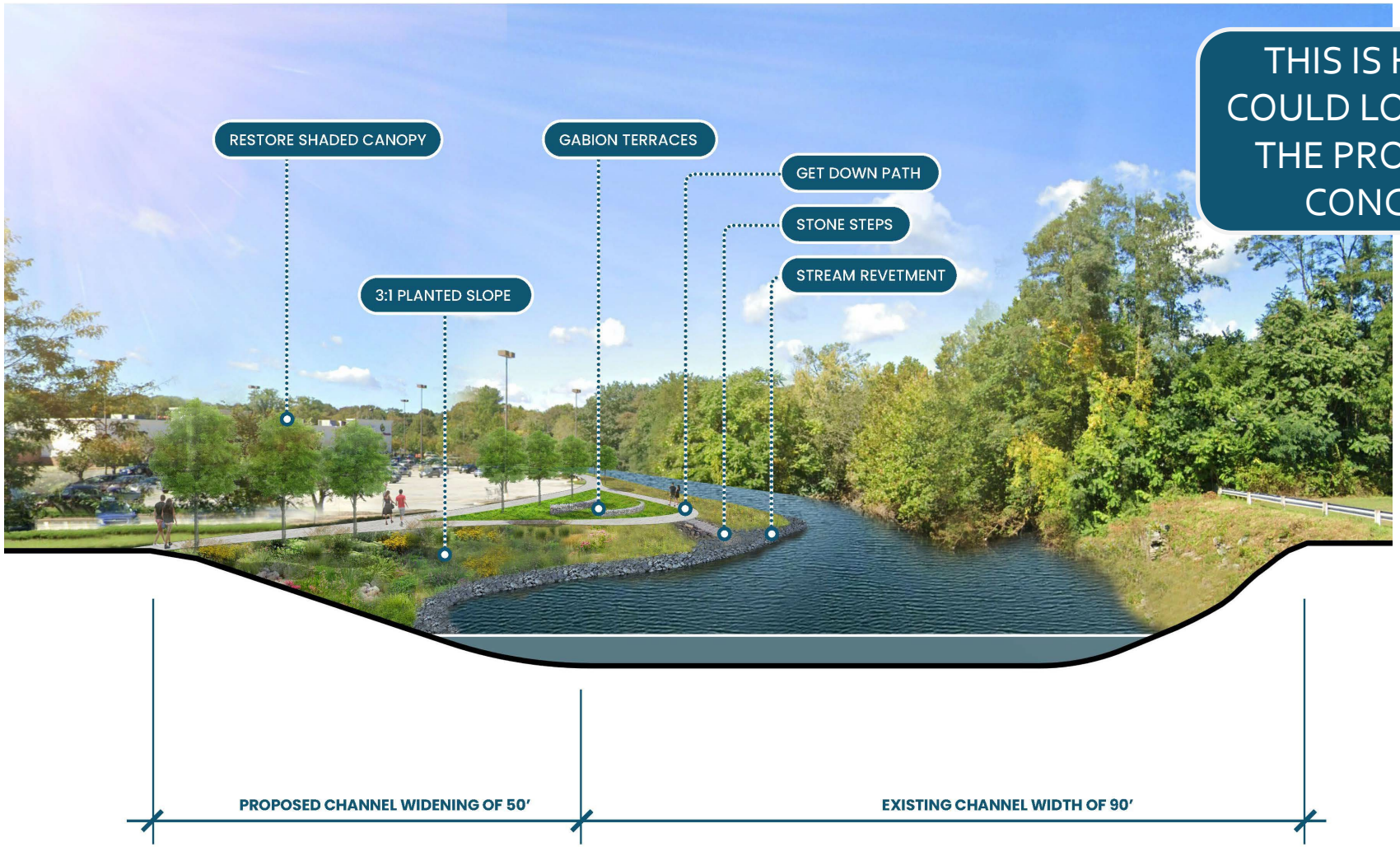
CHANNEL WIDENING: Concept Plan



THIS SHOWS WHAT WE COULD GAIN WITH THE ADDITIONAL SPACE

CHANNEL WIDENING: Existing Channel Condition

CHANNEL WIDENING: Proposed Channel Condition



THIS IS HOW IT COULD LOOK WITH THE PROPOSED CONCEPT.

Channel Widening Next Steps

REFINE PROJECT FEASIBILITY, SCOPE, AND APPROACH

- Review options with property owner and City
- Develop project task list and budget
- Pursue grant to fund project

Project Outcomes & Next Steps: Managed Retreat after Channel Widening

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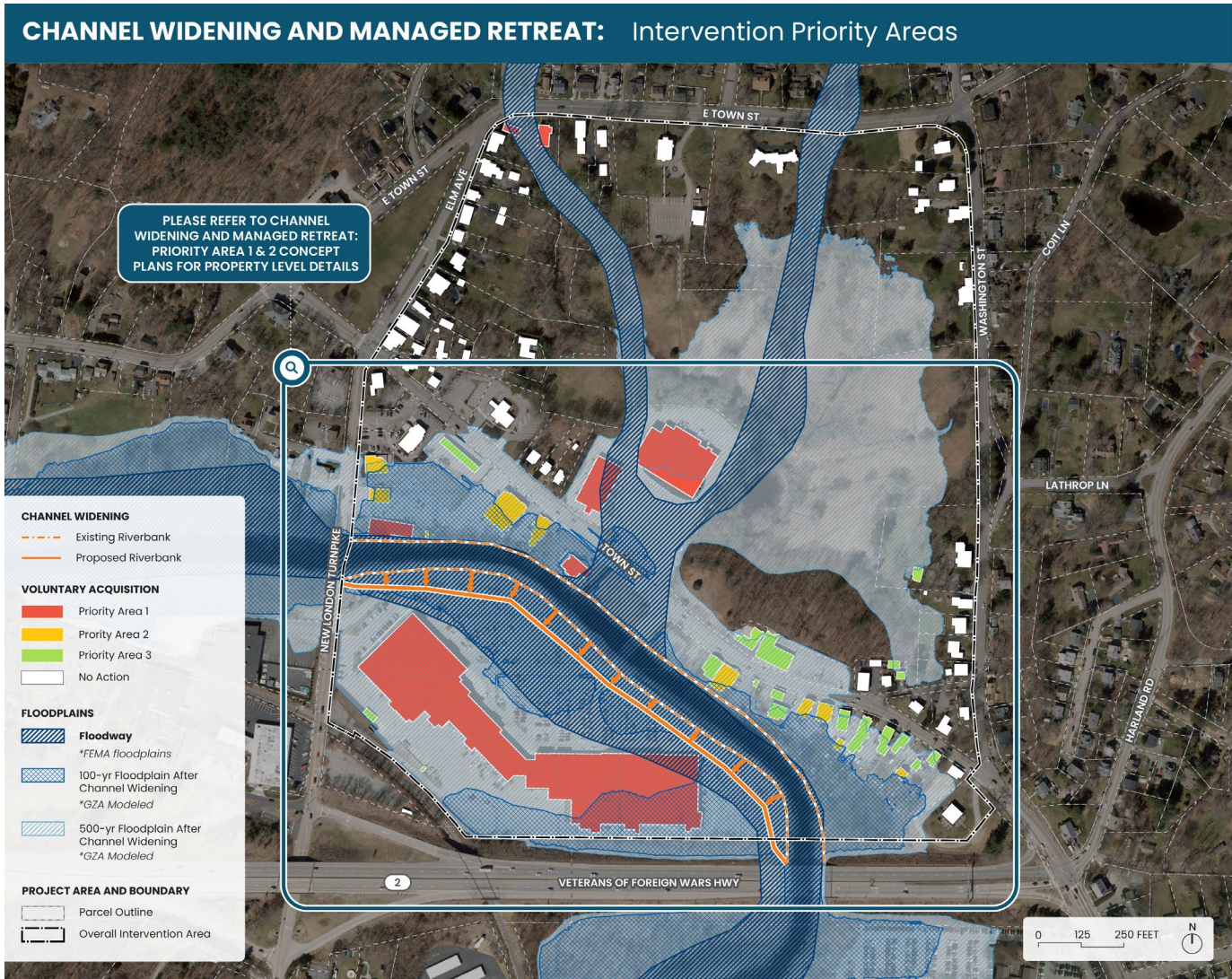
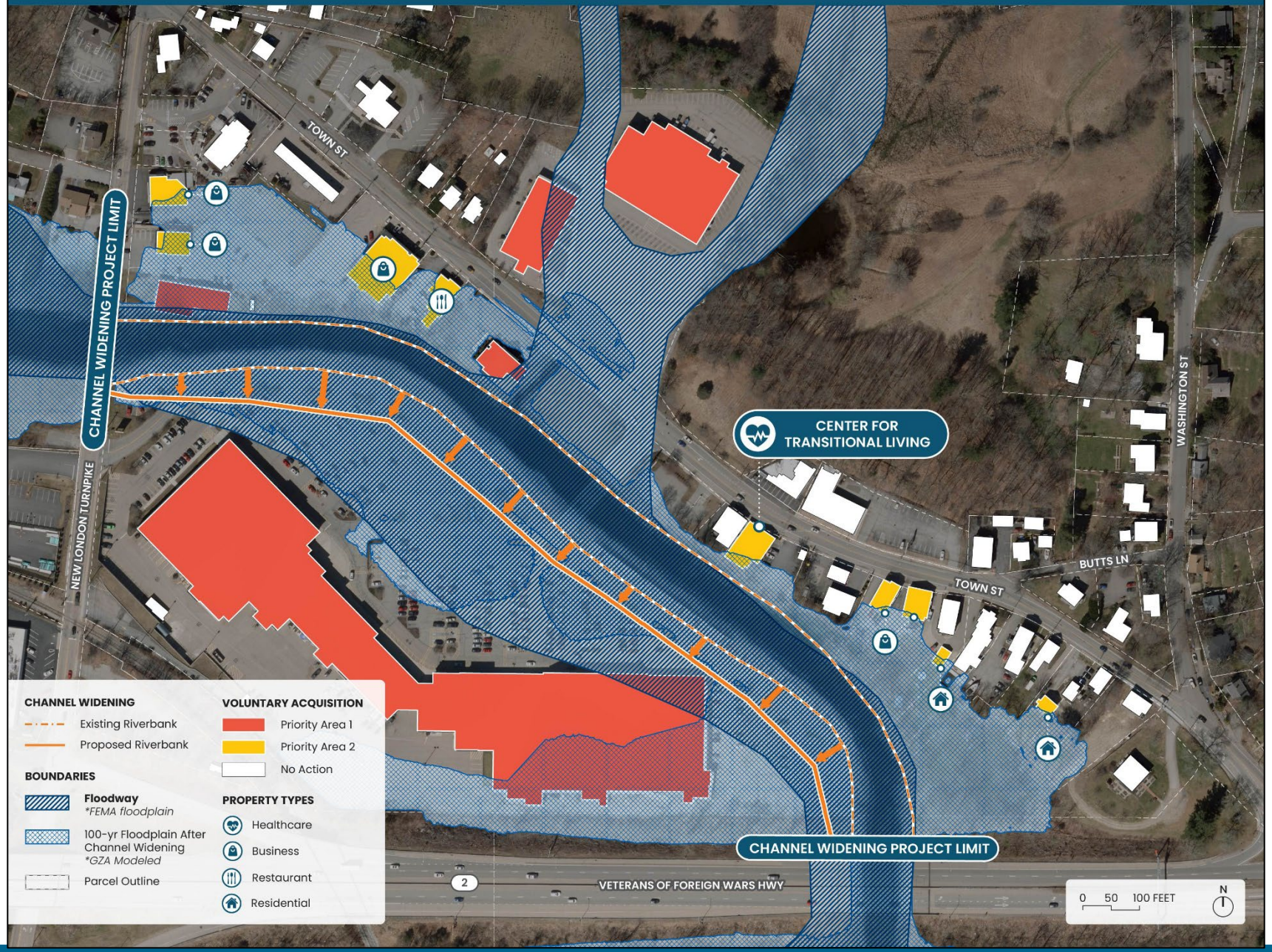
Project Parameters

- After channel widening, 28 properties would still be at risk.
- Additional site scale evaluation of these properties is needed. Properties with the most severe flood risk (those in the floodway) could be good candidates for managed retreat.
- Assessing interest in relocation would be the first step to understand who is impacted, who wants to move, and needed support. A managed retreat program would coordinate buyout funding and help participants relocate.



CHANNEL WIDENING AND MANAGED RETREAT: Priority Area 1 Concept Plan

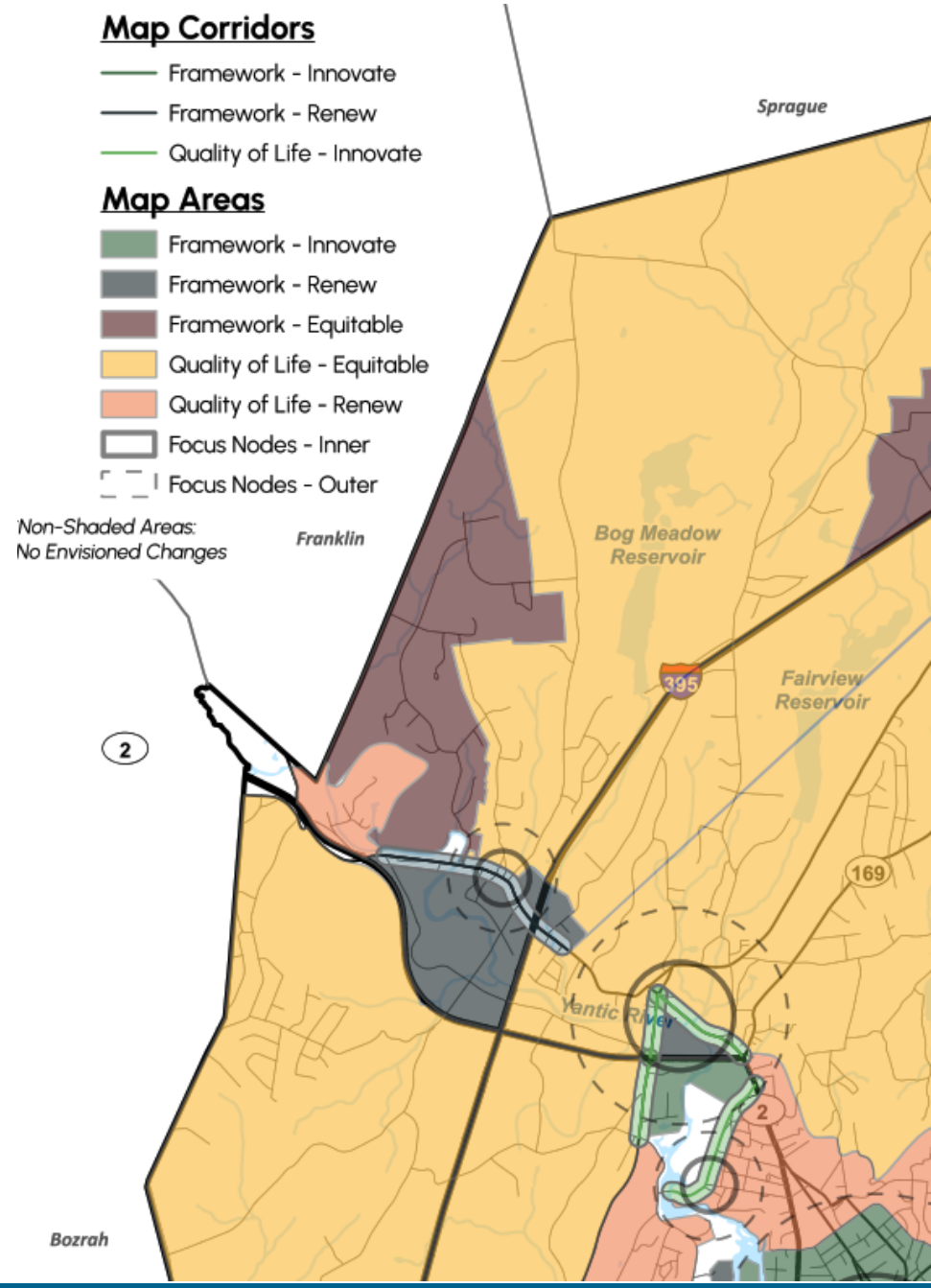
CHANNEL WIDENING AND MANAGED RETREAT: Priority Area 2 Concept Plan



Managed Retreat Next Steps

(1) RECEIVING AREA PLANNING

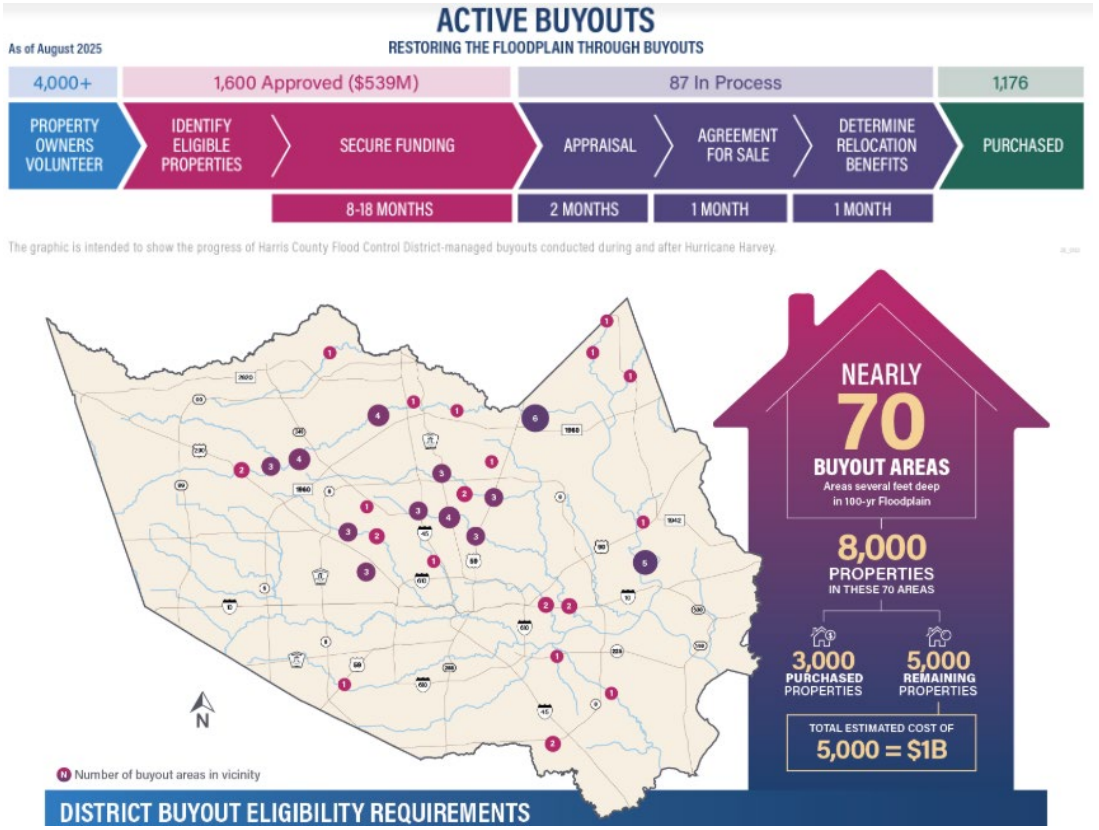
- Initiate corridor economic development plan to determine areas that may be feasible for new or redevelopment.
- In line with the Norwich POCD: initiatives will include adaptive reuse, brownfield redevelopment, redevelopment due to outdated buildings or site layouts.



Managed Retreat Next Steps

(2) PREPARE FOR NEXT FLOOD EVENT & INITIATE RELOCATION PROGRAM

- Continue to provide information to existing and potential future tenants of the corridor on flood risk.
- Confirm interest in relocation from property owners and understand their specific barriers to relocation.
- Have acquisition funding applications ready for next post-disaster funding period AND
- Advocate for new funding sources at the state level for a proactive relocation program.



Lessons Learned

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Many lessons learned

- Engagement through canvassing was most effective but didn't know it would be in preparation.
- State of insurance locally is deeply broken, and we need big picture solutions.
- Difficulty of only planning the "move from" side without the "move to" along with it.
- Quantifying project benefit of a multi-pronged solution set.

… And many questions moving forward

- What level of risk are we willing to accept?
- What is choice?
- Can we be helpful in advocating for a state-level buy out program?
- How do we acknowledge interlocking challenge of the housing crisis? Designated "Distressed Floodplain Zones" with additional relocation subsidy?
- How do we set ourselves up to be eligible for technical assistance roles at COGs? Would regional stormwater authorities make COGs qualify as "tax taking entities" to access federal programs that require this designation?

Thank you and Contact Info

SOUTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

Project Planning Team

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