

Update of Hazard Mitigation Plan for the Naugatuck Valley Region



Public Workshop:
Hazard Mitigation Strategies and Actions

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LOGISTICS

- Meeting will be recorded
- How to proceed if we have technical or other problems
- **Please comment in the chat box if you have any technical questions**
- **Please use the Q&A features to ask questions**



AGENDA

- Purpose and Need for Hazard Mitigation Planning
- Review of Hazards to be Addressed
- Types of Hazard Mitigation Actions
- Examples of Hazard Mitigation Actions
- New Actions Identified by NVCOG Towns
- Regional and State Initiatives
- Next Steps
- Open Discussion



PURPOSE AND NEED FOR HAZARD MITIGATION PLANNING

Authority

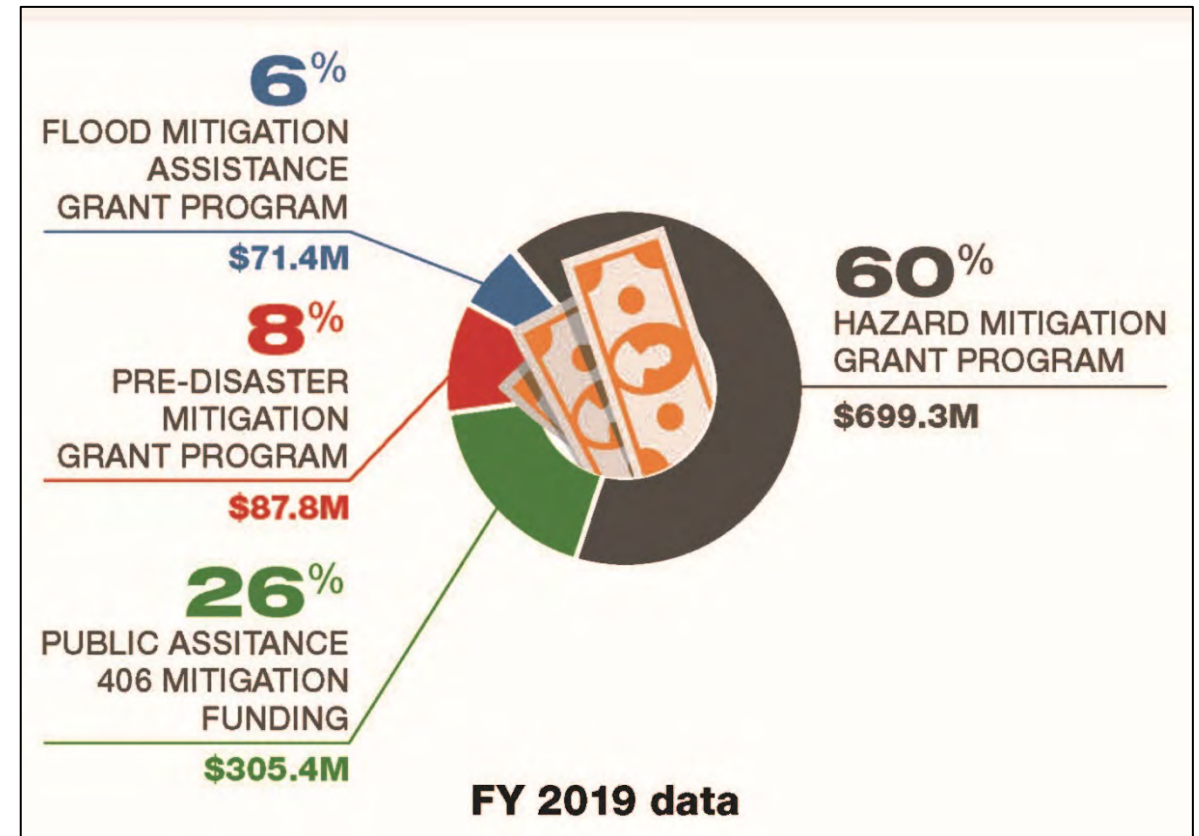
- Disaster Mitigation Act of 2000 (amendments to Stafford Act of 1988)

Goal of Disaster Mitigation Act

- Promote disaster *preparedness*
- Promote hazard mitigation *actions* to reduce losses

Mitigation Grant Programs

- Flood Mitigation Assistance (FMA)
- Hazard Mitigation Grant Program (HMGP)
- Building Resilient Infrastructure and Communities (BRIC) – Replaced Pre-Disaster Mitigation (PDM)



Graphic courtesy of FEMA

PURPOSE AND NEED FOR HAZARD MITIGATION PLANNING

What is a Natural Hazard?

- An extreme natural event that poses a risk to people, infrastructure, and resources.



What is Hazard Mitigation?

- Actions we take now that reduce or eliminate long-term risk to people, property, and resources from natural hazards and their effects.



New Elevated Construction



Removal of Structures from Floodplain

PURPOSE AND NEED FOR HAZARD MITIGATION PLANNING

- **Status of Plans in Connecticut**
 - Most initial plans developed 2005-2011
 - Local plans updated every five years
- **Status of NVCOG Plans**
 - Most initial plans developed 2005-2011 for individual towns and cities
 - The most recent plans were adopted between December 2012 and July 2016, and many have expired
 - All towns and cities will be part of ONE new plan



PURPOSE AND NEED FOR HAZARD MITIGATION PLANNING

After Adopting a Plan, mitigation grants can be used for:

- Building acquisitions or elevations
- Culvert replacements
- Drainage projects
- Bank stabilization
- Landslide stabilization
- Wind retrofits
- Seismic retrofits
- Snow load retrofits
- Standby power supplies for critical facilities



This home in Trumbull was acquired and demolished using a FEMA grant



PURPOSE AND NEED FOR HAZARD MITIGATION PLANNING



Top 5 Hazard Mitigation Project Types in 2020

For fiscal year 2020, FEMA obligated more than **\$884 million** in Hazard Mitigation Assistance grants to states, local communities, tribes and territories for **1,884 projects** that will reduce risk.

These top five project types, ranked by dollars obligated, comprise approximately **59 percent** of total dollars obligated, or **\$522 million**.



1 With funding from FEMA, the community voluntarily **acquires** properties from homeowners and demolishes or relocates any structures on the property to mitigate flood risk. The land then remains as open space in perpetuity.

2 **Flood risk reduction** projects such as dikes, levees, floodwalls and erosion projects that are cost-effective, feasible and designed to reduce risk.

3 **Utility protection and Infrastructure retrofit projects** are measures to reduce risk to existing public utility systems, roads and bridges. Examples include burying power lines underground to prevent debris or trees downing them during storms or elevating sewer systems to reduce flood risks.

4 **Elevations** are when homes are raised so that potential floodwaters flow underneath the home.

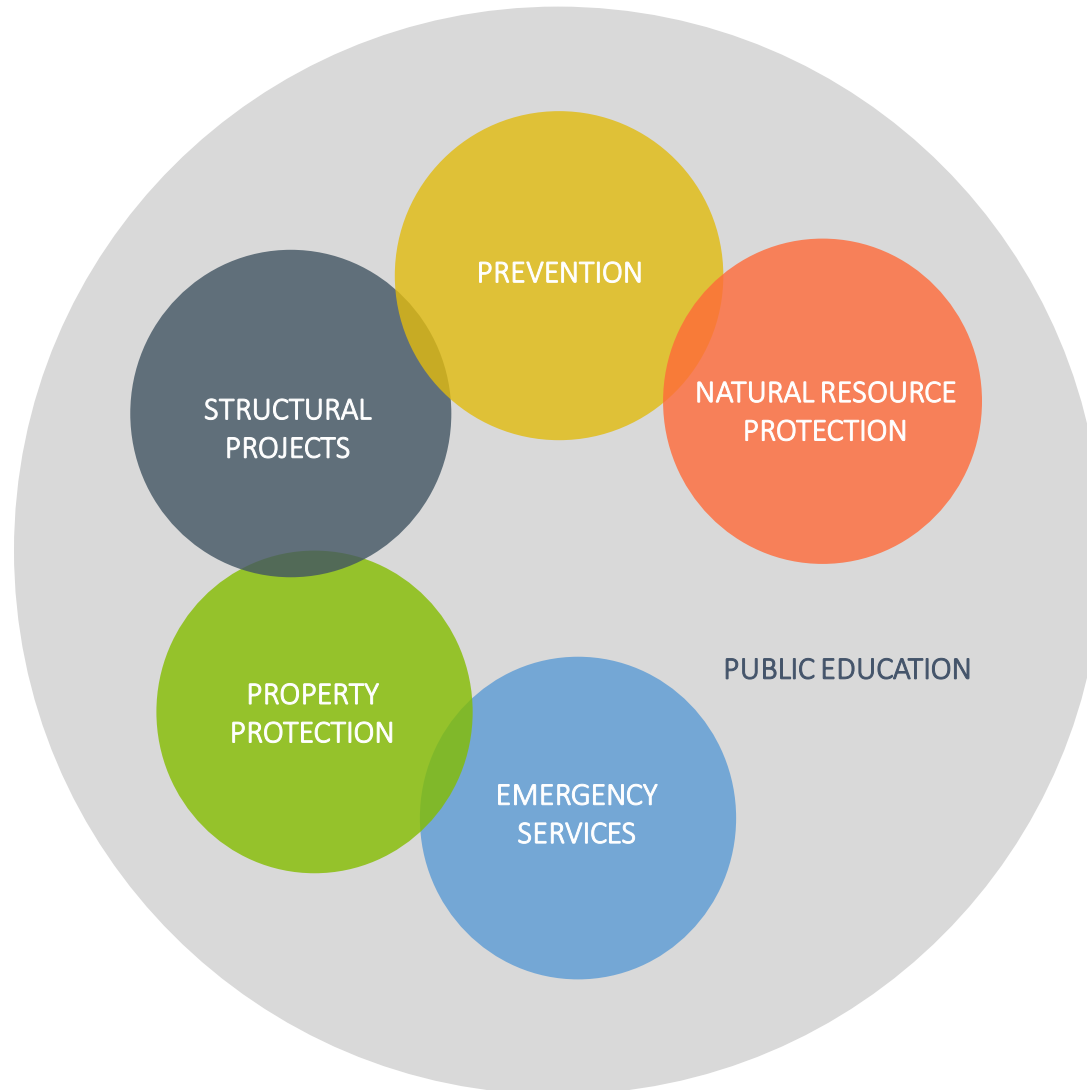
5 To minimize damage caused by high winds, **wind retrofit** enhancements are made to strengthen the roof, walls, doors and windows.

HAZARDS TO INCLUDE IN THE PLAN

- Floods
 - Hurricanes and Tropical Storms
 - Summer Storms
 - Tornadoes and High Winds
 - Severe Winter Storms
 - Dam Failure
 - Wildfire
- ↑
- CLIMATE CHANGE
- Earthquakes
 - Landslides and Sinkholes (for some towns)



TYPES OF HAZARD MITIGATION ACTIONS

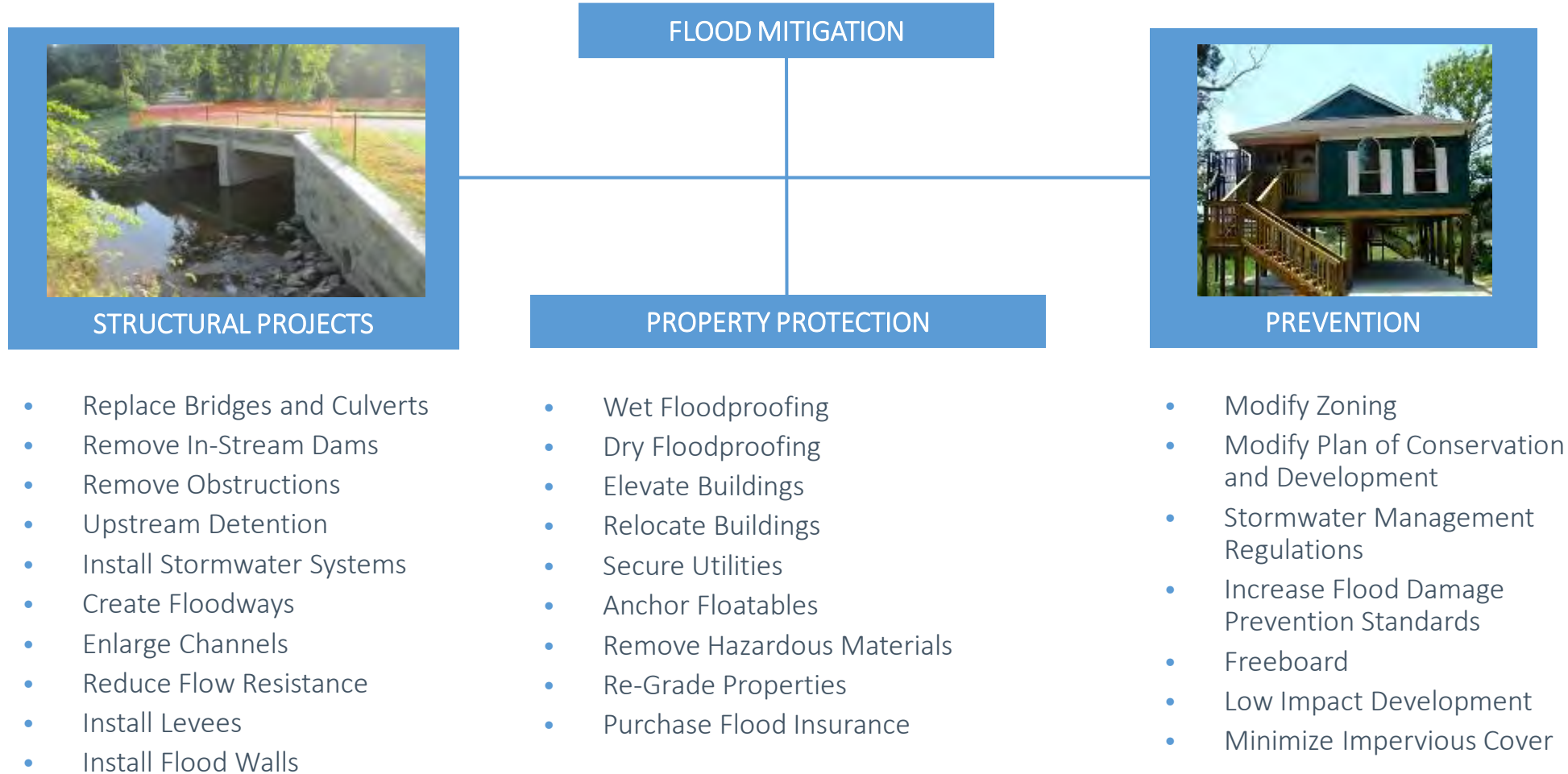


Structural Project

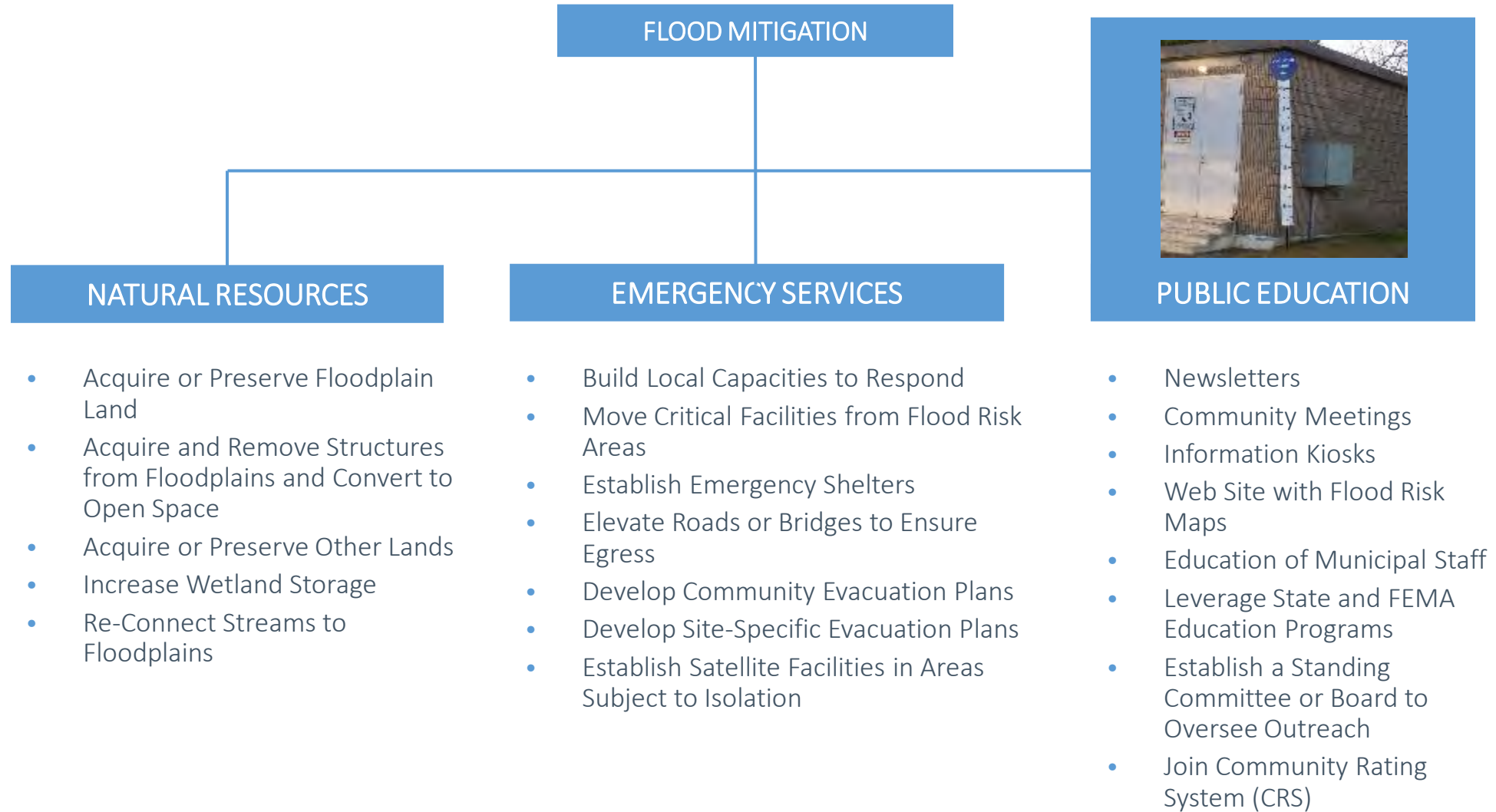


Property Protection

EXAMPLES OF HAZARD MITIGATION ACTIONS

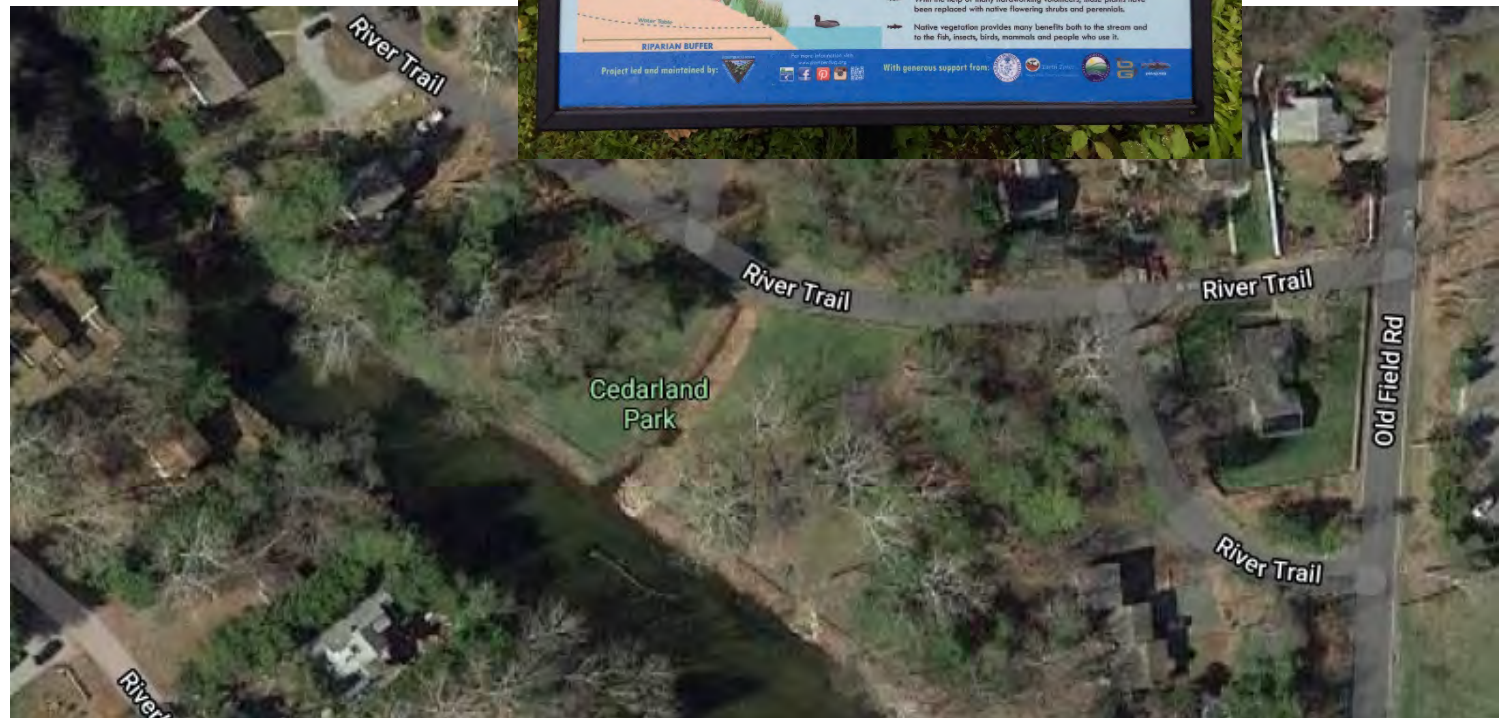


EXAMPLES OF HAZARD MITIGATION ACTIONS



EXAMPLES OF HAZARD MITIGATION ACTIONS

PROPERTY ACQUISITIONS LIKE THOSE IN SOUTHBURY



EXAMPLES OF HAZARD MITIGATION ACTIONS

DRAINAGE PROJECT IN BROOKFIELD

- Brookfield
 - Meadowbrook Manor
 - \$1.3 M
 - New system to alleviate drainage and conveyance problems from Lime Kiln Brook. Flooding has led to flooded septic systems, wells, and homes.



MITIGATION ACTIONS IDENTIFIED BY NVCOG TOWNS

PREVENTION

- Flood study
- Stormwater regulations
- Repetitive loss property buyouts
- Riverbank stabilization
- Dam safety upgrades
- Road and drainage repairs
- Culvert upgrades
- Expand public water service

PROPERTY PROTECTION

STRUCTURAL PROJECTS

- Stream daylighting & restoration
- Increased tree management budget
- EOC & Shelter improvements
- Flood warning system
- Critical facility generators
- Evacuation Planning
- “We’re good”

NATURAL RESOURCE PROTECTION

EMERGENCY SERVICES

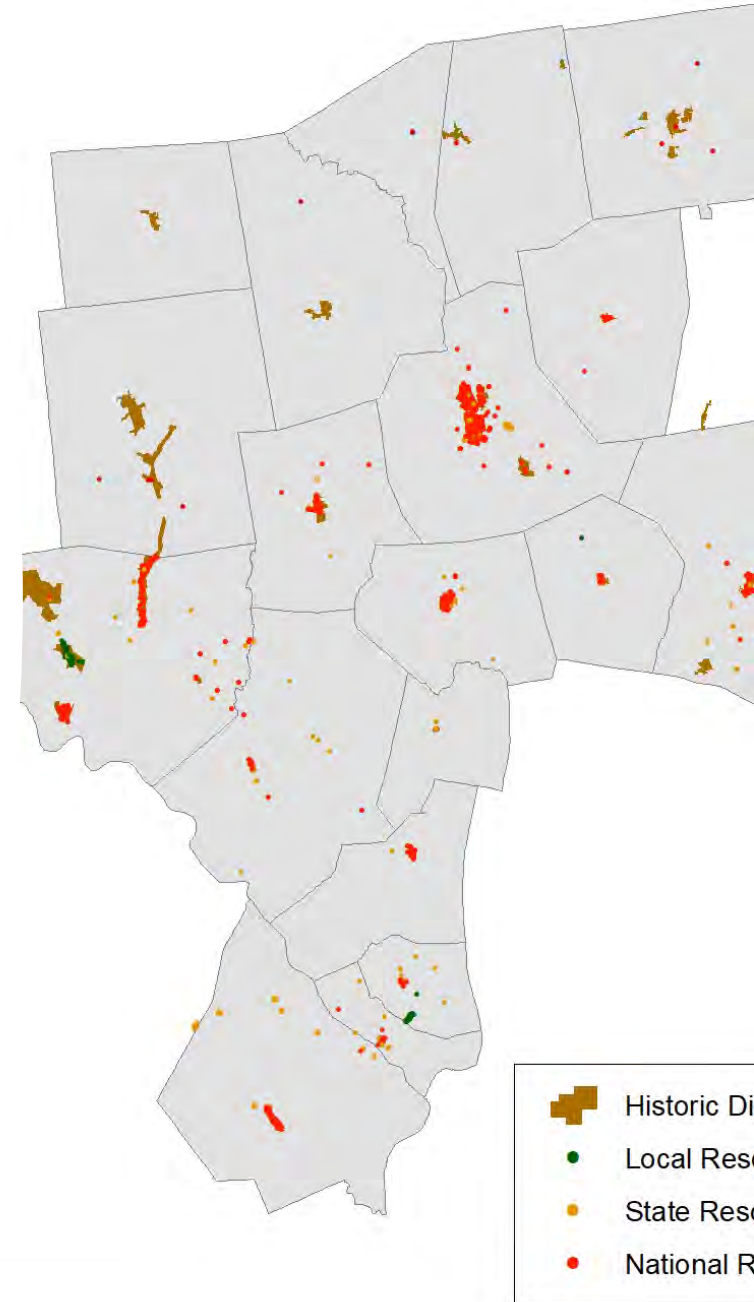
PUBLIC EDUCATION

REGIONAL AND STATE INITIATIVES

- Historic & Cultural Resources
- Repetitive Loss Properties
- State Building Code & Flood Regulations
- Small Businesses Chemical Management
- “Sustainable CT”
- “Resilient Connecticut”
- Low Impact Development (LID) Handbook for Rural Communities

STATE INITIATIVE

Historic & Cultural Resources



REGIONAL AND STATE INITIATIVES

Historic & Cultural Resources

Historic & Cultural Resources Action 1

Coordinate with CT SHPO to conduct historic resource surveys, focusing on areas within natural hazard risk zones (flood zones, wildfire hazard zones, steep slopes) to support the preparation of resiliency plans across the state.



All towns

Historic & Cultural Resources Action 2

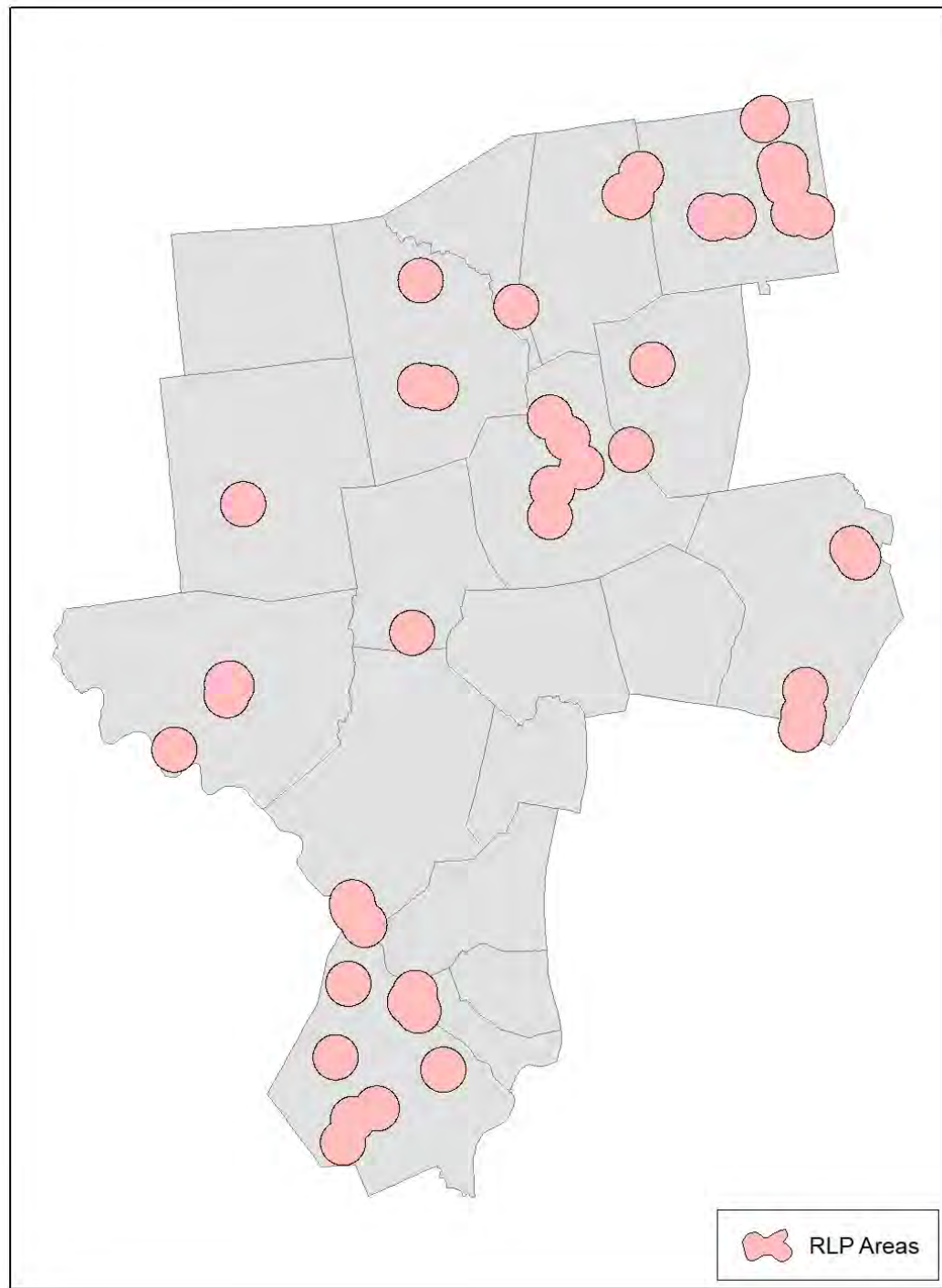
Coordinate with CT SHPO to conduct outreach to owners of historic properties to educate them on methods of retrofitting historic properties to be more hazard-resilient while maintaining historic character.



Towns with known, listed historic resources in flood zones

STATE INITIATIVE

Repetitive Loss Properties



REGIONAL AND STATE INITIATIVES

Repetitive Loss (RL) Properties

Repetitive Loss Properties Action 1

Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.



Any Municipality with at least 1 RL property

Repetitive Loss Properties Action 2

Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.



Towns with 2 or more RL properties

STATE INITIATIVE

State Building Code & Flood Regulations

CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

MODEL FLOODPLAIN MANAGEMENT REGULATIONS NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

Inland/Riverine Community (AE and A Zones only) Level "D" Community

October 2018

Effective October 1, 2018, the Connecticut Office of the State Building Inspector ended the current state building code to adopt the 2015 International Residential Code (IRC). Please see the OSBI website for more information on this change, which can be found at <https://portal.ct.gov/DAS/Office-of-State-Building-Inspector/Building-and-Fire-Code-Process> and the 2015 IRC, Chapter 3, Section R322, "Flood-Resistant Construction" at <https://codes.iccsafe.org/public/document/toc/553/>.

The adoption of the 2015 IRC has made significant changes to the elevation and construction requirements for new construction and substantially improved structures in both coastal and inland floodplains. Section R322.2 contains the elevation requirements for A and AE Zones. Section R322.3 contains the elevation requirements for VE Zones and Coastal AE Zones. A summary of these new requirements:

AE and A Zone – Lowest floor elevated to Base Flood Elevation (BFE) plus 1 foot.

AO and AH Zones – Lowest floor elevated to Highest Adjacent Grade (HAG) as the depth number specified on the flood insurance rate map plus 1 foot or not less than 3 feet if no depth number is specified.

VE Zone and Coastal AE Zone – Bottom of the lowest horizontal member supporting the lowest floor elevated to the BFE plus one foot, with structure built on pier, post or pile foundation utilizing breakaway walls. Breakaway walls in Coastal AE zones must also contain hydraulic flood vents.

The adoption of the 2015 IRC will make significant changes to the elevation requirement for new construction and substantially improved structures in coastal floodplains that may be different than the standards currently contained in your local floodplain zoning regulations or ordinance. There are also other changes. **Bold red text** in this model highlights the changes that need to be made to floodplain zoning regulations or ordinances to match the new state building code standards.



REGIONAL AND STATE INITIATIVES

State Building Code & Flood Regulations

Revised State Building Code Action 1

Revise floodplain zoning regulations to reflect the new State Building Code requirements for one foot of freeboard for construction in the 1% annual-chance flood zone.

Towns with floodplain regulations that do not require freeboard.

Revised State Building Code Action 2

Compare local floodplain regulations with Revised State Model Flood Regulations to identify any remaining opportunities for improvement

All other Towns

STATE INITIATIVE

Small Business
Chemical
Management



REGIONAL AND STATE INITIATIVES

Small Business Chemical Management

Small Business Chemical Management Action 1

Provide information on the Town website about CT DEEP training and information around small business chemical management for hazard resilience.

Small Business Chemical Management Action 2

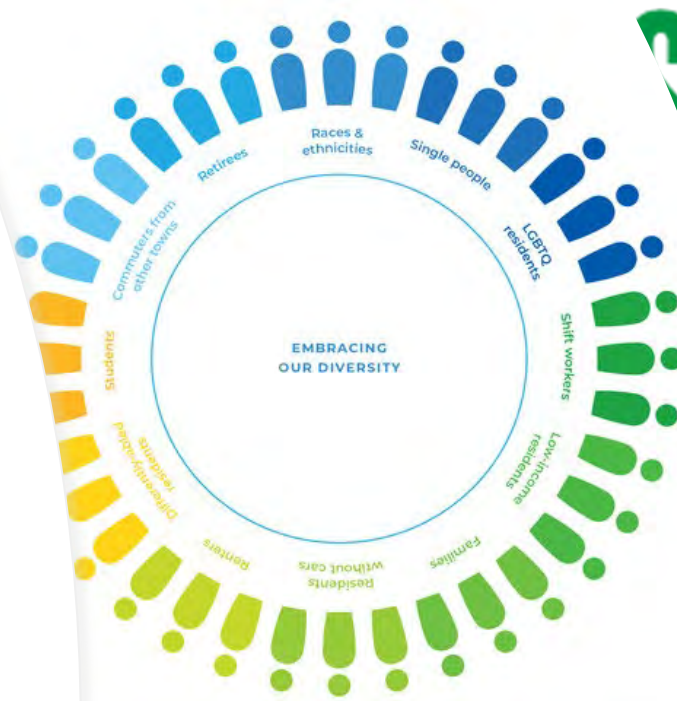
Use the CT Toxics Users and Climate Resilience Map to identify toxic users located in hazard zones within your community. Contact those users to inform them about the CT DEEP small business chemical management initiative.

Small Business Chemical Management Action 3

Host a CT DEEP presentation for municipal staff and local businesses about business chemical management for hazard resilience.

STATE INITIATIVE

Sustainable CT



Sustainable T

Local Actions.
Statewide Impact.



REGIONAL AND STATE INITIATIVES

Sustainable CT

Sustainable CT Action 1

Register as a Sustainable CT community and make progress with the hazard mitigation goals associated with registration.



Towns not currently in the program

Sustainable CT Action 2

Take one of the following actions that will mitigate natural hazard risks while also meeting Sustainable CT objectives:

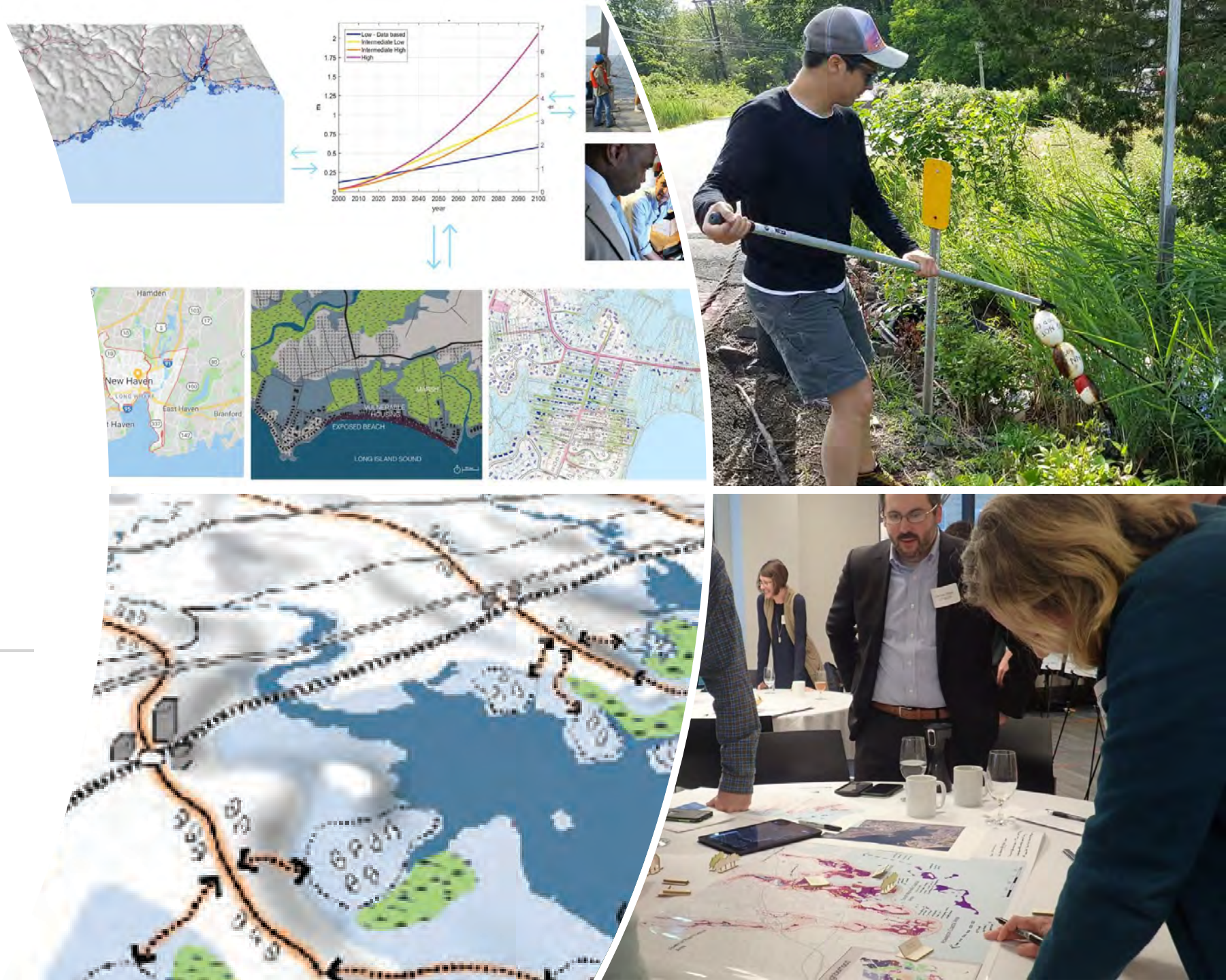
1. Disseminate a toolkit for pre-disaster business preparedness.
2. Revise regulations to promote Low Impact Development.
3. Include the goals of this Hazard Mitigation Plan, and at least three other sustainability concepts, in your next POCD update.



Registered and Certified Towns

REGIONAL INITIATIVE

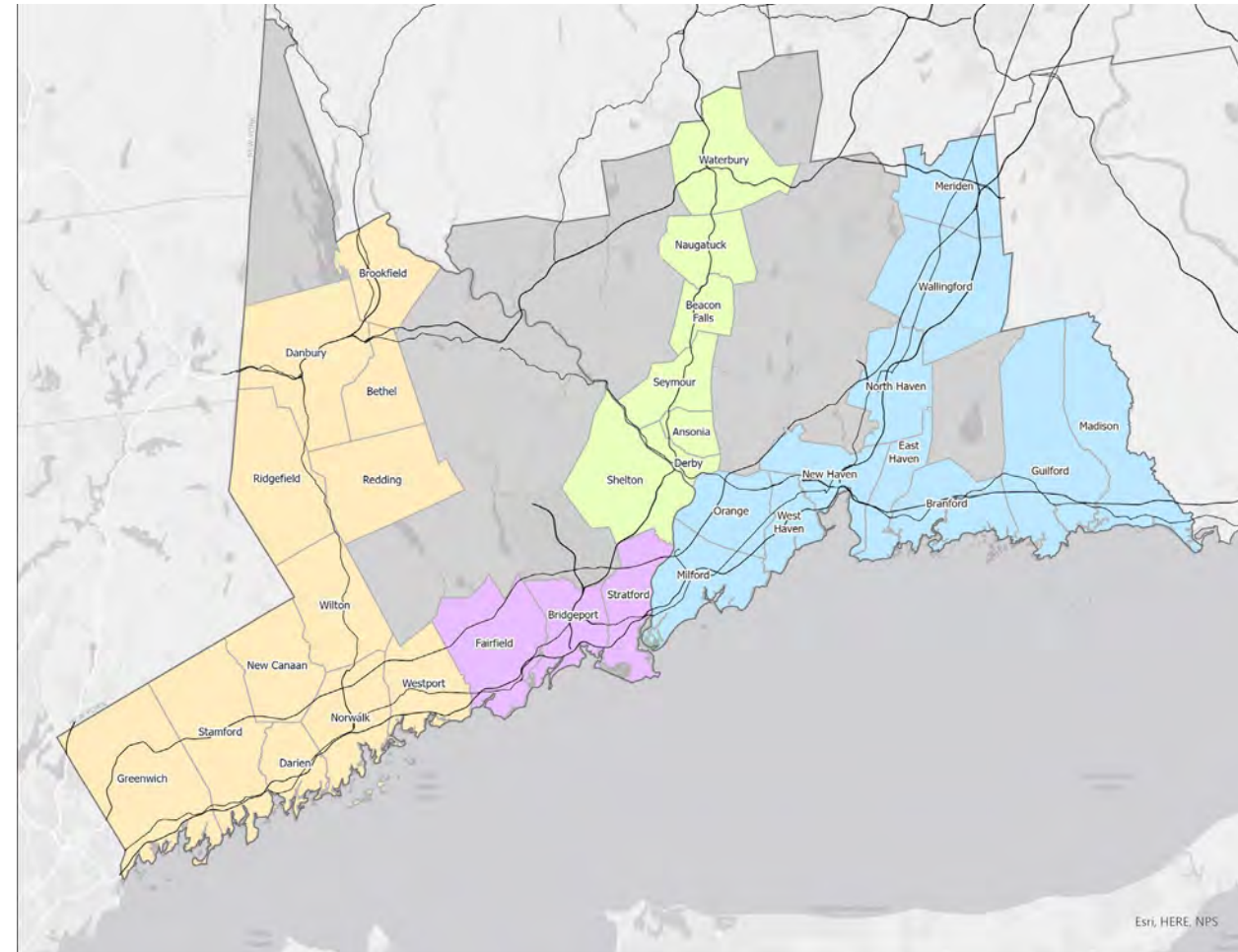
Resilient
Connecticut



REGIONAL AND STATE INITIATIVES

Resilient Connecticut Target Communities

- Communities with major highways and passenger rail lines
- Communities with transit-oriented (TOD) potential
- Able to accommodate the resilient corridor concept linking “zones of shared risk” with resilient hubs
- “Pilot projects” will be developed



REGIONAL AND STATE INITIATIVES

Resilient Connecticut Target Communities

Resilient Connecticut Action 1

Participate in Resilient Connecticut.

NVCOG Communities with TOD
Potential

Resilient Connecticut Action 2

Support CIRCA in the advancement of Pilot Projects.

NVCOG Communities with Pilot
Projects

STATE INITIATIVE

Low Impact
Development

Effective Date: January 1, 2018

MORRIS

Low Impact Sustainable Development
and Stormwater Management
Design Manual



Trinkaus Engineering, LLC
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Southbury, Connecticut 06488
(203) 264-4558 (office/fax)
Email: strinkaus@earthlink.net
www.trinkausengineering.com

REGIONAL AND STATE INITIATIVES

Building Municipal Resilience and Climate Adaptation through Low Impact Development

LID Action 1

Refer to the manual in your guidance or regulations

**Towns With LID Guidance or
Requirements**

LID Action 2

Evaluate whether LID should be incorporated into practices

**Towns Without LID Guidance or
Requirements**

NEXT STEPS

- Online Survey is OPEN – can access through <https://nvcogct.gov/project/current-projects/regional-natural-hazard-mitigation-plan-update/>
- View Story Map (clip below) from the same link
- Additional public meetings hosted by each town's planning, zoning, or wetlands commission
- Prepare draft plan document for public review in March-April 2021



Discussion