

**Advisory Committee Meeting**  
**February 8, 2018**

**South Central Regional  
Multi-Jurisdiction Hazard Mitigation  
Plan Update**

# AGENDA

1. Project Status Update/Public Outreach
2. Risk Assessment/Capability Assessment
3. Mitigation Strategy
4. Plan Implementation
5. Next Steps

# TIMELINE

Tasks and Deliverables	2017								2018					
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>Task 1. Planning Process</b>														
Advisory Committee Meetings		✓		✓		✓			✓					
Municipality Meetings			✓	✓										
Public Workshops						✓			✓					
<b>Task 2. Risk Assessment</b>														
Draft Risk Assessment						✓								
<b>Task 3. Capability Assessment</b>														
Draft Capability Assessment						✓								
<b>Task 4. Hazard Mitigation Strategy</b>														
Draft Mitigation Strategy								✓						
<b>Task 5. Plan Maintenance Process</b>														
Draft Plan Maintenance Process									✓					
<b>Task 6. Adoption and Approval</b>														
Municipal and Public Review and Revisions										✓				
Final Draft of HMP Update for CT DESPP Review and Revision											✓	✓		
Final Draft of HMP Update for FEMA Review and Approval													✓	✓

# PUBLIC SURVEY

- 170 Responses
  - 35% from Branford
  - Hamden
  - Madison
- Hurricane/Tropical Storm and Severe Winter Storm/Nor'easter biggest concerns
- 87% believe storms are increasing in frequency and severity due to climate change and we should prepare accordingly
- Most effective way to receive information?
  - 60% Text or email
  - Mail
  - Website
- 33% Have a “Household Emergency Plan”

# Municipality Public Meetings

Municipality	Date of Public Meeting
Bethany	January 18, 2018
Branford	December 6, 2017
East Haven	
Guilford	October 3, 2017
Hamden	December 7, 2017
Madison	November 2, 2017
Milford	May 22, 2017 & May 24, 2017
New Haven	
North Branford	December 7, 2017
North Haven	
Orange	
Wallingford	December 5, 2017
West Haven	November 14, 2017
Woodbridge	December 5, 2017

Submit documentation if you haven't.

Plans to hold a meeting?

# Regional Public Meeting

- Thursday, February 22, 2018 in East Haven?

# RISK ASSESSMENT AND CAPABILITY ASSESSMENT

- Review Problem Statements for accuracy
- Review Capability Assessment tables for accuracy

## Primary Hazards of Concern

- **Trees-related hazards** are widespread during **hurricane/tropical storm** and **severe winter storm** events, particularly downing electrical lines, and when falling and blocking roads that isolate many rural areas throughout town and pose life/safety threat due to no emergency access. Hazardous trees on Town-owned property are also a significant and costly concern. There are many diseased trees that create an additional threat to wires. Eversource is working hard to cut the trees and upgrade the wires. They have created a system to re-route power to the Town Hall if necessary. The Town requests a back-up generator from the State if power is threatened.
- **Riverine flooding** – there is limited development in the floodplain however riverine flooding remains a concern, especially at crossings with roadways (undersized culverts).
- **Beavers** create a potential flooding risk. There is a large beaver dam on private property that can cause flooding on public land.
- Slight concern associated with **drought** related to the large number of wells across town (no town water supply), though only a few known incidents. Owners know what to do.
- **Dam failure** –The Long Hill Reservoir Dam at New Naugatuck Reservoir could affect the trailer park on northwest side of town.

## Geographic Areas of Concern

- Southwest side of town has been isolated due to downed trees across roads, particularly along Miller Road (30-40 homes became isolated during Winter Storm Alfred and Hurricane Irene). This area is also prone to flooding (noted as existing floodplain area, but also some concern with the Hopp Brook Pond Dam).
- Hop Brook Lane/Miller Road has a culvert that is 72" wide. If the stream floods this would impact the most densely populated area of Bethany.
- Miller Road Bridge is deteriorating and needs to be upgraded.
- Trees along Miller Road need to be cut-back and cleared. The road is a dead end and if trees cross the road people become isolated.

## Vulnerable Community Assets

- Miller Road has suffered damage/washout in past due to flooding and blown culvert (culvert was replaced to same standard under FEMA Public Assistance – Mitigation under Section 406 deemed too costly).
- Three possible shelters exist in Bethany. The Elementary School has a generator but it does not power the entire building. The Middle School has a generator that only powers heat and refrigeration it does not power lights. The Old Airport Hangar is becoming a shelter but it currently does not have a generator.
  - A generator is needed for the Old Airport hangar.
- Town hall – no generator for backup power. Transfer switches are being installed at the Town Hall (summer 2017). The Town usually borrows a generator from the State when a power outage is imminent.
  - A permanent solution would be to have a generator on site.
- Laticrete is one of the Town's major employers (approximately 125 employees), along with the schools.
- One critical facility is within proximity to a significant hazard dam. Further study is necessary to determine if a dam failure could potentially impact this facility.

## Changes/Improvements since 2014

- Town also has concerns related to serving as a host community for evacuees from coastal areas during major storms.
- This is not a legitimate threat because Ansonia is the designated shelter, and Bethany cannot accommodate additional people.
- Cellular towers that are not connected to backup generator power (communication problem in the past).
- Verizon added a generator so this is no longer an issue.
- Homebound elderly residents, including some who are oxygen-dependent, are a particularly vulnerable segment of the population when isolated and/or suffering power outages from severe winter storms and other events.
- Human Services maintains a list of oxygen dependent people and this list is included in the EOC and coordinated with the Fire Department.

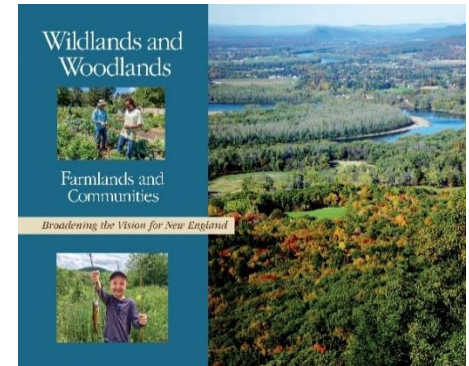
# MITIGATION GOALS

Goal Categories	Mitigation Plan Goals
Community Planning	1. Reduce the impact of natural hazards by integrating natural hazard mitigation policies and practices into local community planning.
Flood Hazards	2. Minimize flood hazards in the region by maintaining continued compliance with the National Flood Insurance Program, adopting higher regulatory standards for new floodplain development, and implementing flood mitigation projects for existing flood prone structures.
Trees	3. Limit the impact of fallen trees due to natural hazards by collaborating with electric utility companies and property owners (private and public) to cut limbs and remove hazardous trees that pose threats to buildings, infrastructure and utility lifelines.
Regional Collaboration	4. Build capacity for natural hazard mitigation and climate adaptation at the local level through regional collaboration.
Public Awareness and Preparedness	5. Increase public awareness and preparedness for natural hazards by implementing community-based public education programs across the region.



# TREES

- Diane Hoffman, Hamden Alliance for Trees:
  - A Harvard University report recently released says that *“Connecticut is losing about 3,700 acres of forest a year to development and New England as a whole is seeing its woodlands disappear at a rate of 65 acres a day.”*
  - A United Illuminating report states that of 1,460 trees removed in Hamden in 2016, 137 were hazard trees.
  - “I see that extensive tree pruning is called for in the plan and I believe there should also be a voice for increased tree planting and proper tree maintenance in the plan.”
  - “What actions do you think HAT and the Tree Commission could take to influence a greater green approach to addressing the problem of growing storms and resulting flooding and other environmental challenges?”
  - “This is an opportunity to put our understanding of the essential services that trees provide, into action through a more comprehensive Hazard Mitigation Plan.”



# MITIGATION GOALS (REVISION OPTION #1)

Goal Categories	Mitigation Plan Goals
Community Planning	1. Reduce the impact of natural hazards by integrating natural hazard mitigation policies and practices into local community planning.
Flood Hazards	2. Minimize flood hazards in the region by maintaining continued compliance with the National Flood Insurance Program, adopting higher regulatory standards for new floodplain development, and implementing flood mitigation projects for existing flood prone structures.
Trees	3. Limit the impact of fallen trees due to natural hazards by <b>promoting the preservation, maintenance, and enhancement of a healthy tree canopy</b> and collaborating with electric utility companies and property owners (private and public) to cut limbs and remove hazardous trees that pose threats to buildings, infrastructure and utility lifelines.
Regional Collaboration	4. Build capacity for natural hazard mitigation and climate adaptation at the local level through regional collaboration.
Public Awareness and Preparedness	5. Increase public awareness and preparedness for natural hazards by implementing community-based public education programs across the region.

# MITIGATION GOALS (REVISION OPTION #2)

Goal Categories	Mitigation Plan Goals
Community Planning	1. Reduce the impact of natural hazards by integrating natural hazard mitigation policies and practices into local community planning.
Flood Hazards	2. Minimize flood hazards in the region by maintaining continued compliance with the National Flood Insurance Program, adopting higher regulatory standards for new floodplain development, and implementing flood mitigation projects for existing flood prone structures.
Trees	3. Support increased planting and proper care of healthy, native trees across the region to increase its resilience to natural hazards including severe storms, flooding, erosion, and extreme heat. Limit the impact of fallen and other hazardous trees by collaborating with utility companies and property owners to cut limbs and remove trees that pose threats to buildings, infrastructure and utility lifelines.
Regional Collaboration	4. Build capacity for natural hazard mitigation and climate adaptation at the local level through regional collaboration.
Public Awareness and Preparedness	5. Increase public awareness and preparedness for natural hazards by implementing community-based public education programs across the region.

# SCRCOG MITIGATION PLAN OBJECTIVES

Objective Category	Mitigation Plan Objectives
Mitigation Planning	1. Stay actively involved in mitigation planning for the SCRCOG region.
Multi-Jurisdiction Collaboration	2. Facilitate multi-jurisdiction collaboration between the SCRCOG jurisdictions.
Education	3. Provide education regarding natural hazards, grant opportunities, and mitigation and preparedness techniques.
Floodplain Management	4. Assist the SCRCOG jurisdictions with floodplain management and lessening the impact of flooding to the region.

# PROGRESS OF LOCAL MITIGATION EFFORTS

- Status updates provided for *nearly* all prior mitigation actions, for all jurisdictions (*THANK YOU!*)

## PROGRESS OF LOCAL MITIGATION EFFORTS

The purpose of this section is to document and demonstrate the current status and progress made in achieving the goals outlined in the previous plan's mitigation strategy, and more specifically in completing prior mitigation actions as adopted by each participating jurisdiction. This section includes a tabular report for each jurisdiction, listed in alphabetical order, that includes a brief summary of the current status of each action and whether it has been carried over into the updated plan. For the four (4) jurisdictions that joined this regional plan update in 2017 (East Haven, Guilford, Milford, and New Haven), this report includes the status of mitigation actions as identified in their most recently adopted plan.

For any actions that have been carried over into the updated plan, the new action number is provided for reference under the last column in the table ("Keep for Plan Update?"). For those actions that were not carried over, a narrative explanation for why not is provided in the column titled "Status Description / Explanation." All new/updated mitigation actions for 2018-2023, including those that have been carried over from a previous plan, can be found for each jurisdiction under the subsection titled "Comprehensive Range of Mitigation Actions."

# PROGRESS OF LOCAL MITIGATION EFFORTS

## NEW HAVEN

### City of New Haven – Status of Prior Mitigation Actions

Action #	Action Title	Action Description	Current Status	Status Description / Explanation	Keep for Plan Update?
1	Extension of Pardee Seawall in Morris Cove	Installation of seawall in front of private homes on Townsend Avenue for flood prevention.	Partially Completed / In Progress	Conceptual design of project has been reviewed by DEEP. Design is scheduled for 2017 and construction is scheduled for 2018.	YES (see Action #1)
2	Brewery Square Bulkhead (public)	Installation of sheet piling 18 inches outside of the existing seawall and restoration of the public walk area along the shore.	Partially Completed / In Progress	Project has been designed and approved by the State DEEP. It is currently under construction.	YES (see Action #2)
3	River Street Bulkhead	Shoreline stabilization along city property to prevent further erosion along the Quinnipiac River including sections of steel bulkhead and revetments with public access.	Partially Completed / In Progress	Concept plan developed by Roberge Associates. Study completed. Awaiting grants and permits for implementation. Lloyd Street project has permits. Design sketches were completed.	YES (see Action #3)
4	Long Wharf Park Shoreline Restoration	Repair damage to park from Superstorms Irene and Sandy. Restore to pre- Irene conditions.	Completed	Project completed.	NO (see explanation at left)
5	Long Wharf Park Shoreline Enhancement	Design a living shoreline to reduce wave energy and retain sediment while providing enhanced habitat value. This will be situated waterward of the restored shoreline.	Cancelled	Preliminary concept has been developed. Design funds will be sought from CIRCA or other entity. This project is now merged with Long Wharf Flood Protection Study listed below.	NO (see explanation at left)
6	Long Wharf Park Shoreline Enhancement	Construct a living shoreline to reduce wave energy and retain sediment while providing enhanced habitat value. This will be situated waterward of the restored shoreline.	Cancelled	Preliminary concept has been developed. Design funds will be sought from CIRCA or other entity. Construction will follow. This project is now merged with Long Wharf Flood Protection Study listed below.	NO (see explanation at left)
7	Long Wharf Flood Protection	A study to prepare storm surge and sea level rise model for the Long Wharf area to assess risk and propose protection and resilience strategies.	Completed	Study completed in March 2017. Four alternatives were proposed including hard and soft solutions. City prefers the living shoreline solution for the short term.	NO (see explanation at left)
8	Long Wharf Flood Protection	Implement flood protection recommendations from Long Wharf Flood Protection study.	Delayed	Study completed but no funds identified yet for implementation.	YES (see Action #4)

# UPDATED/NEW MITIGATION ACTIONS

- Updated/new actions for 2018-2023 identified for all jurisdictions
  - Most are prior actions being carried over from previous plan, and/or from Coastal Resilience Plans
  - Need to update/affirm implementation information (e.g., ***Estimated Cost, Funding Source, Lead Department***)
  - Need to assign ***Implementation Schedule*** and ***Priority***
  - Additional draft ideas for “new” actions have been noted (**in red font**) in the updated action table for each jurisdiction



# UPDATED/NEW MITIGATION ACTIONS

## Hamden Mitigation Actions

Town of Hamden – Updated Mitigation Actions (2018-2023)

Action #	Action Title	Action Description	Estimated Cost	Potential Funding Source	Lead Department	Implementation Schedule	Priority
1	Tree Pruning	Tree pruning adjacent to power distribution wires.	\$50,000	United Illuminating and its contractors	United Illuminating		
2	FEMA Flood Study Update - Part II	Update FEMA flood study for Hamden using LIDAR technology.	\$55,000	FEMA	FEMA		
3	Snow Load Study	Study town buildings to determine snow removal criteria.	\$30,000	Local Capital Budget	Town of Hamden		
4	Raise Paradise Avenue South of Howard Drive	Raise Paradise Avenue south of Howard Drive.	\$500,000 - 1,000,000	Local Capital Budget	Town of Hamden		
5	Skiff Street Bridge Replacement	Replace Skiff Street bridge with a wider one that will reduce upstream flooding.			Hamden Engineering	September 2017 - September 2019	
X	Replace Mill River Pump Station		\$15,000,000				
X	Replace pipe on Tom Swamp Road?	Replace existing 60" pipe that's crushed with a 4' concrete pipe					
X	Emergency Vehicle for Winter Storms?	Acquire vehicle to help responders access people in heavy snow					
X	Higher Regulatory Standards for Floodplain Development	Impose additional requirements on new construction in Special Flood Hazard Areas					
X	Expand Storm Water Drainage Improvements						
X	Develop Public Education Programs	Specific programs include: (1) Encourage citizens to keep streams and culverts on their property clear of debris; (2) Instruct schoolchildren and adults what to do if a disaster strikes; (3) Encourage people to enroll in the emergency warning system.					



# EVALUATING & PRIORITIZING MITIGATION ACTIONS

- Evaluating Actions
  - Revisit problem statements and consult with other municipal staff to identify and evaluate NEW actions
  - Focus on *actionable, measurable* projects or activities
  - Consider cancelling/deleting actions that have become an “existing capability or ongoing activity” (e.g., routine maintenance, SOPs, or other regularly occurring actions)
- Prioritizing Actions
  - Classify each action as either *High, Medium, or Low* priority

# EVALUATING & PRIORITIZING MITIGATION ACTIONS

Criterion	Description / Questions to Consider
Benefit-Cost Review	Are the total estimated costs to implement the action (including any maintenance or operations costs) reasonable when compared to the probable long-term benefits (including future losses avoided and other anticipated benefits such as improved quality of life, environmental benefits, and achieving other community goals)?
Life Safety	How effective will the action be at protecting lives and preventing injuries?
Property Protection	How significant will the action be at eliminating or reducing damage to structures and infrastructure?
Technical	Is the mitigation action technically feasible? Is it a long-term solution? Actions that, from a technical standpoint, will not meet the goals should be eliminated.
Political	Is there overall public support for the mitigation action? Is there the political will to support it?
Legal	Does the community have the authority to implement the action?
Environmental	What are the potential environmental impacts of the action? Will it comply with environmental regulations?
Social	Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income and/or minority populations?
Administrative	Does the community have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?
Local Champion	Is there a strong advocate for the action or project among local departments and agencies that will support the action's implementation?
Other Community Objectives	Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of the comprehensive plan?

# MITIGATION PRIORITIES

- **Very High** – extremely beneficial projects that will greatly contribute to mitigation of multiple hazards and the protection of people and property. These projects are also given a numeric ranking within the category.
- **High** – Strategies that provide mitigation of several hazards and have a large benefit that warrants their cost and time to complete.
- **Medium** – Strategies that would have some benefit to people and property and are somewhat cost effective at reducing damage to property and people.
- **Low** – Strategies that would not have a significant benefit to property or people, address only one or two hazards, or would require funding and time resources that are impractical.

# REGIONAL MITIGATION PRIORITIES (2014)

Goal Categories	Regional Mitigation Priorities
Community Planning	<ul style="list-style-type: none"><li>• Local zoning regulation changes (e.g. reducing allowable lot coverage and floor area)</li><li>• Revise building codes</li></ul>
Flood Hazards	<ul style="list-style-type: none"><li>• Elevate roads</li><li>• Floodgates on drainage systems</li><li>• Erosion protection</li><li>• Raise/elevate/floodproof buildings</li><li>• Raise homes in floodplain</li></ul>
Trees	<ul style="list-style-type: none"><li>• Limit hazards to utility infrastructure</li><li>• Clear trees off power lines</li></ul>
Regional Collaboration	<ul style="list-style-type: none"><li>• Regional coordination, planning and sharing of information, approaches and outcomes</li><li>• Regional map of high-hazard places, in each town (parcel scale)</li></ul>
Public Awareness and Preparedness	<ul style="list-style-type: none"><li>• Equip all shelters with back-up power</li></ul>

# REGIONAL ISSUES RAISED BY THE RISK ASSESSMENT

- REGIONAL ISSUES: Issues that are shared by all, and could be addressed regionally. Examples:
  - **Sea Level Rise** – communities are beginning to develop their own visions, but CIRCA will be developing a statewide coastal resilience plan that focuses on patterns of TOD, redevelopment, and safe evacuation routes; some coordination is needed
  - **Historic Resources** – all communities have them; SHPO is concerned with them all but is capable of viewing values from a high level; mitigation actions should take this into account
  - **Sewer Pumping Stations** – GNHWPCA serves several communities
  - **Water Utilities** – South Central Regional Water Authority (RWA) serves several communities
  - **Power Utilities** – UI and Eversource serve multiple communities
  - **Significant Assets** such as Tweed New Haven airport – the East Haven HMP and the New Haven HMP addressed it separately

# REGIONAL MITIGATION ACTIONS

- Greater New Haven WPCA
- South Central Regional Water Authority (RWA)
- Port of New Haven
- Long Wharf
- Metro North and Amtrak lines
- Tweed New Haven Airport
- Beaches of Significant Regional Importance:
  - Hammonasset Beach
  - West Haven Beach/Savin Rock Beach
- Historic Resources – ***actions that SHPO can or should take to benefit all towns***



## Mission Statement

The South Central Regional Council of Governments is dedicated to regional cooperation enabling cities and towns to **work together to accomplish projects they cannot do as efficiently or cost effectively by themselves;** creating a sense of pride in the region by aspiring to the highest quality of life and economic well being that can be achieved and greater accountability through voluntary cooperation in the region with **productive results that benefit the entire region.**



## 200+ MUNICIPAL-SPECIFIC MITIGATION ACTIONS



# REGIONAL MITIGATION PRIORITIES (2018-2023)

Goal Categories	Regional Mitigation Priorities
Community Planning	<ul style="list-style-type: none"><li>• Local zoning regulation changes (e.g. reducing allowable lot coverage and floor area)</li><li>• Revise building codes</li></ul>
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Regional Collaboration	<ul style="list-style-type: none"><li>• Regional coordination, planning and sharing of information, approaches and outcomes</li><li>• Regional map of high-hazard places, in each town (parcel scale)</li></ul>
Public Awareness and Preparedness	<ul style="list-style-type: none"><li>• Equip all shelters with back-up power</li><li>• Protect critical facilities and assets of regional significance</li><li>• Protect historic and cultural resources (with support from CT SHPO)</li><li>• Help small businesses mitigate impacts of natural hazards (with support from CT DEEP)</li><li>• <b>OTHER IDEAS?</b></li></ul>



# **Include Strategies for Small Businesses in NHMPs**

## **Sample Objective for Region**

- Improve chemical safety practices by small businesses throughout the region to prevent disruption of economic activity and protect the environment and public health.

## **Sample Objective for Municipality**

- Increase awareness by small businesses of any chemicals/toxic products they use, store, and/or sell and to use best management practices (BMPs).



# Include Strategies for Small Businesses in NHMPs

## Sample Strategic Action:

Implement an educational program for small businesses with recommendations for best management practices to prevent pollution from chemicals getting out into the environment.

For example, provide information on:

- a municipal website,
- social media, or
- a brochure/poster, or
- workshop



# Sample Details of Strategic Action

- **Lead:** Town with assistance from CT DEEP
- **Priority:** Medium
- **Status:** New Initiative
- **Potential Funding Source:** DEEP to develop information for dissemination
- **Timeframe:** Complete in Year 1.



# NEXT STEPS

- Review and approve your specific action tables
  - Status of Prior Mitigation Actions
  - Updated/New Mitigation Actions for 2018-2023
- Update and/or confirm implementation information for all new mitigation actions (*if you haven't already*)
- Please reach out to Darrin for assistance!  
P: 617-777-2001  
E: [darrin@punchardconsulting.com](mailto:darrin@punchardconsulting.com)

# PLAN IMPLEMENTATION INTEGRATION

- Plans of Conservation and Development
- Emergency Operations Plans
- Floodplain Management and Zoning Regulations
- Capital Improvement Plans
- How can your municipality integrate the hazard mitigation plan?

# PLAN IMPLEMENTATION

- Public Participation
  - SCRCOG Webpage and Meetings
- Mitigation Action Progress
  - Tracker vs. Action Sheets
- Who from each municipality is responsible?
  - Advisory Committee member/position

# NEXT STEPS

- Regional Public Meeting
- Finish and Prioritize Mitigation Actions
- Review Draft Plan
- Plan Adoption



# THANK YOU

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