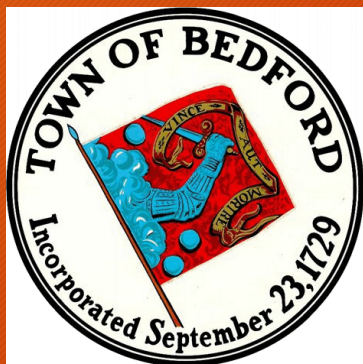


Town of Bedford Municipal Vulnerability Preparedness and Hazard Mitigation Plan

Presented By:



BEALS+THOMAS

Public Listening Session #1
March 4, 2020

Welcome and Introduction

- Jeanette Rebecchi, AICP, Transportation Program Manager



2014 Microburst, Julie Loncich/WCVB-TV

Municipal Vulnerability Preparedness (MVP) Program

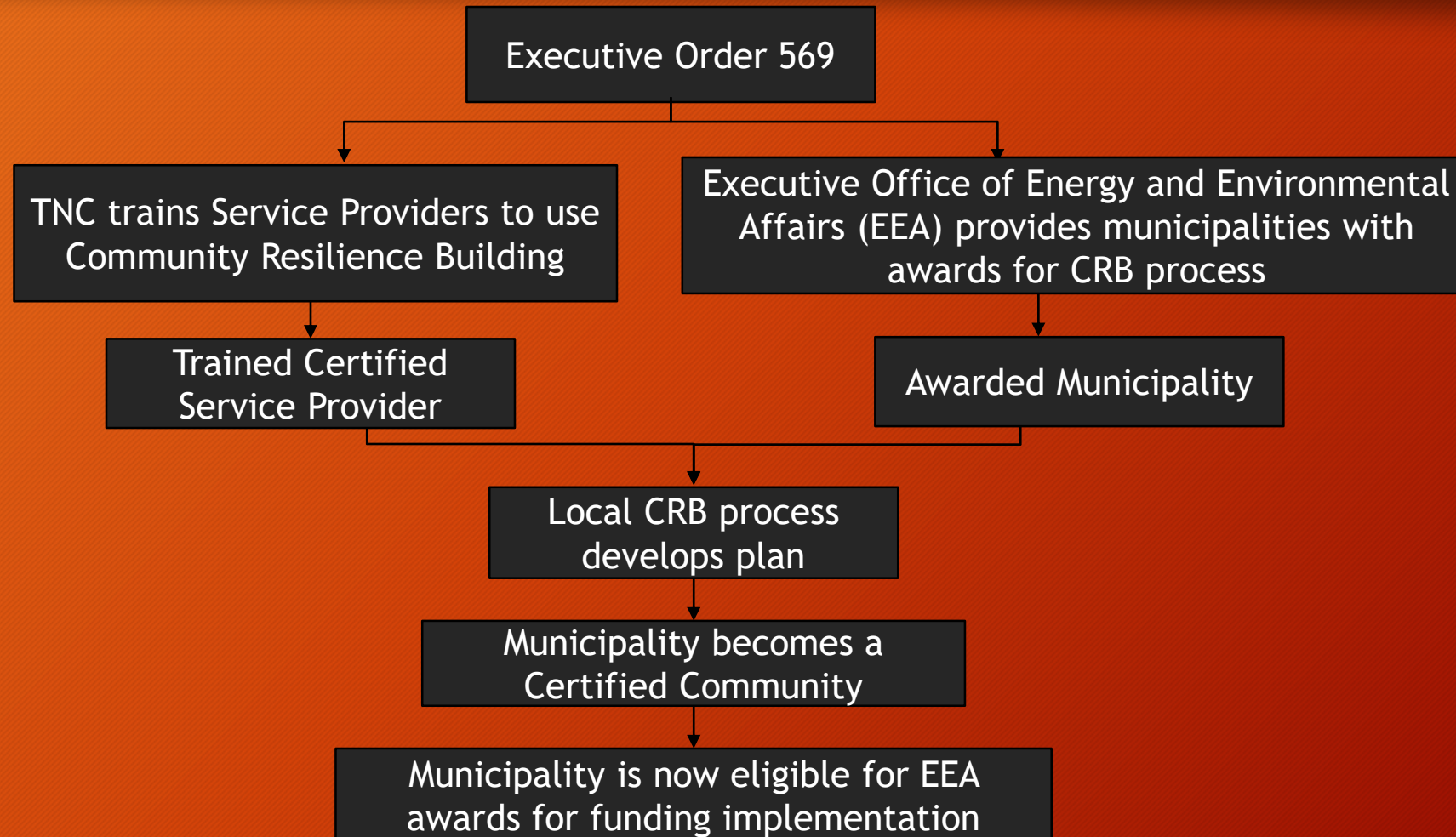


The Nature
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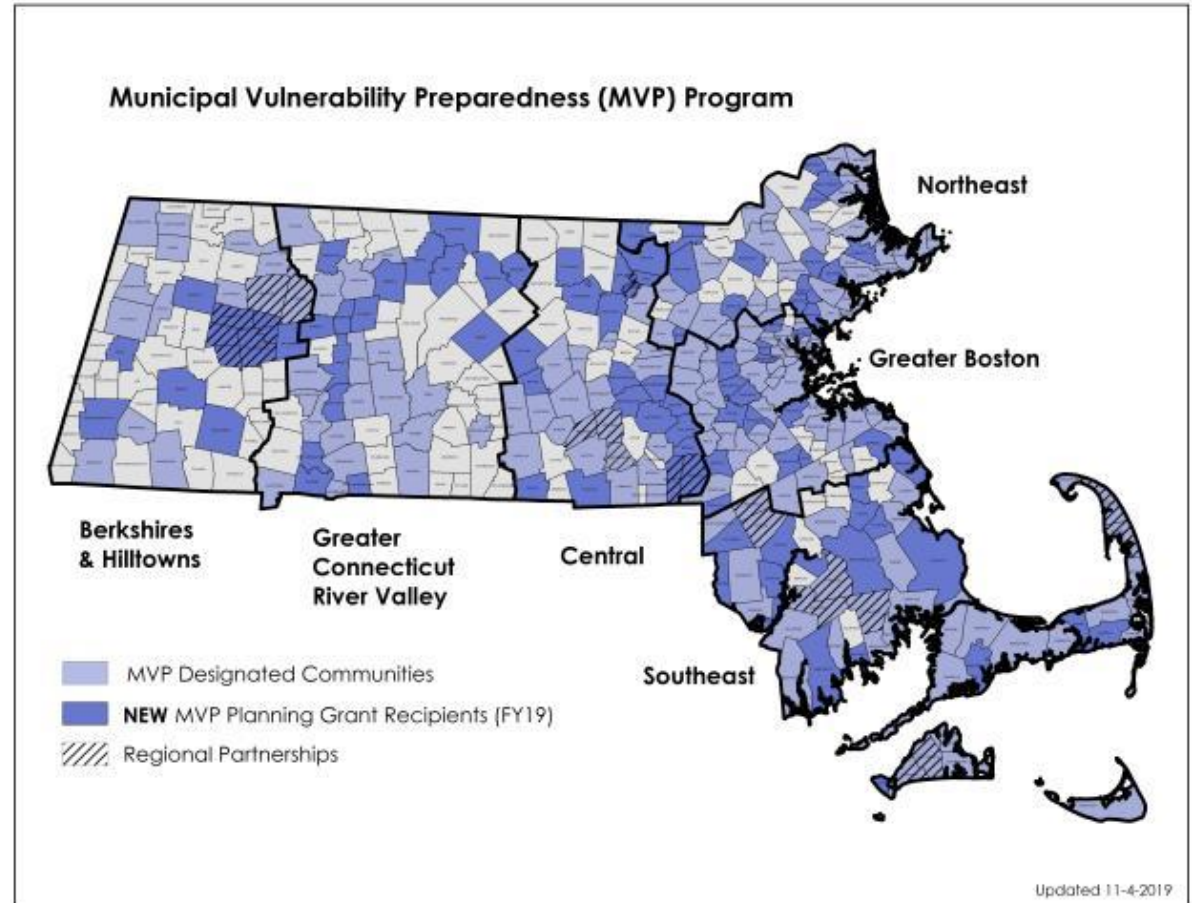
www.CommunityResilienceBuilding.org

MVP Overview



State's Vision for the MVP Program

1. Engage community
2. Identify climate change impacts and hazards
3. Complete assessment of vulnerabilities and strengths
4. Develop and prioritize actions
5. Take action!



Town of Bedford MVP Designation Schedule

Core Team Establishment of Approach:
July 25, 2019

CRB Workshop: December 11, 2019

Public Listening Session #1: March 4, 2020

Public Listening Session #2: April 2020

HMP/Summary of Findings available for
public review: May 2020

Final Report: June 2020

Overview of the MVP Process

DURING WORKSHOP

A Prepare for the Workshop

- 1 Establish a core team with goals.
- 2 Engage stakeholders.
- 3 Prepare materials for workshop.
- 4 Decide on participant arrangements.

B Characterize Hazards

- 1 Identify past, current, and future impacts.
- 2 Determine the highest-priority hazards.

C Identify Community Vulnerabilities and Strengths

- 1 Identify infrastructural vulnerabilities and strengths.
- 2 Identify societal vulnerabilities and strengths.
- 3 Identify environmental vulnerabilities and strengths.

D Identify and Prioritize Community Actions

- 1 Identify and prioritize infrastructural actions.
- 2 Identify and prioritize societal actions.
- 3 Identify and prioritize environmental actions.

E Determine the Overall Priority Actions

- 1 Identify highest-priority actions.
- 2 Further define urgency and timing.

F Put It All Together

- 1 Generate final workshop products.

G Move Forward

- 1 Continue community outreach and engagement.
- 2 Secure additional data and information.
- 3 Inform existing planning and project activities.

Community Components



Infrastructural



Societal



Environmental

December Workshop Objectives

- Define extreme weather and natural and climate-related hazards
- Identify existing and future vulnerabilities and strengths
- Develop and prioritize actions for the community and broader stakeholder networks
- Identify opportunities for the community to advance actions to reduce risks and build resilience.

Mitigation Planning Benefits

- A process for communities to identify policies, activities and tools to implement mitigation actions
 - Increases awareness of vulnerabilities
 - Promotes safety and welfare of communities and citizens
 - Cultivates community commitment to mitigation
- Lack of hazard awareness and mitigation plan could lead to unnecessary losses to infrastructure and critical facilities and potential human casualties

Hazard Mitigation Plan Update

- Required for municipalities to receive Federal Emergency Management Agency (FEMA) funding for non-emergency disaster assistance
- Updates required every 5 years
- Effective plan entitled Town of Bedford Mitigation Plan by the Metropolitan Area Planning Council in 2010
- Additional EEA funds for communities with expiring hazard mitigation plans who are undertaking MVP process
- Similar public input process to MVP program

Sample Action Grants FY20

- Chelmsford: Dunshire Drive Culvert Replacement & Deep Brook Stream Restoration: Phase I
- Harvard: Community Climate Action & Land Stewardship Plan
- Medford: Equity-Centered Process for Climate Action and Adaptation Planning
- Monson: Energy Resiliency for Town Hall-EOC-Police HQ Facility
- Worcester: Worcester Senior Center Parking Lot - Nature-Based Solutions

Hazards vs. Vulnerabilities

Hazards

Flooding

Drought

Wind

Wildfire

Vulnerabilities

Properties in flood zone

Water supply

Trees & overhead power lines

Dry vegetation

Hazards Prioritized by the CRB Workshop



- Flooding and Extreme Precipitation
- Heat, Drought, and Fire
- Winter Storms
- High Winds and Severe Storms



Flooding and Extreme Precipitation

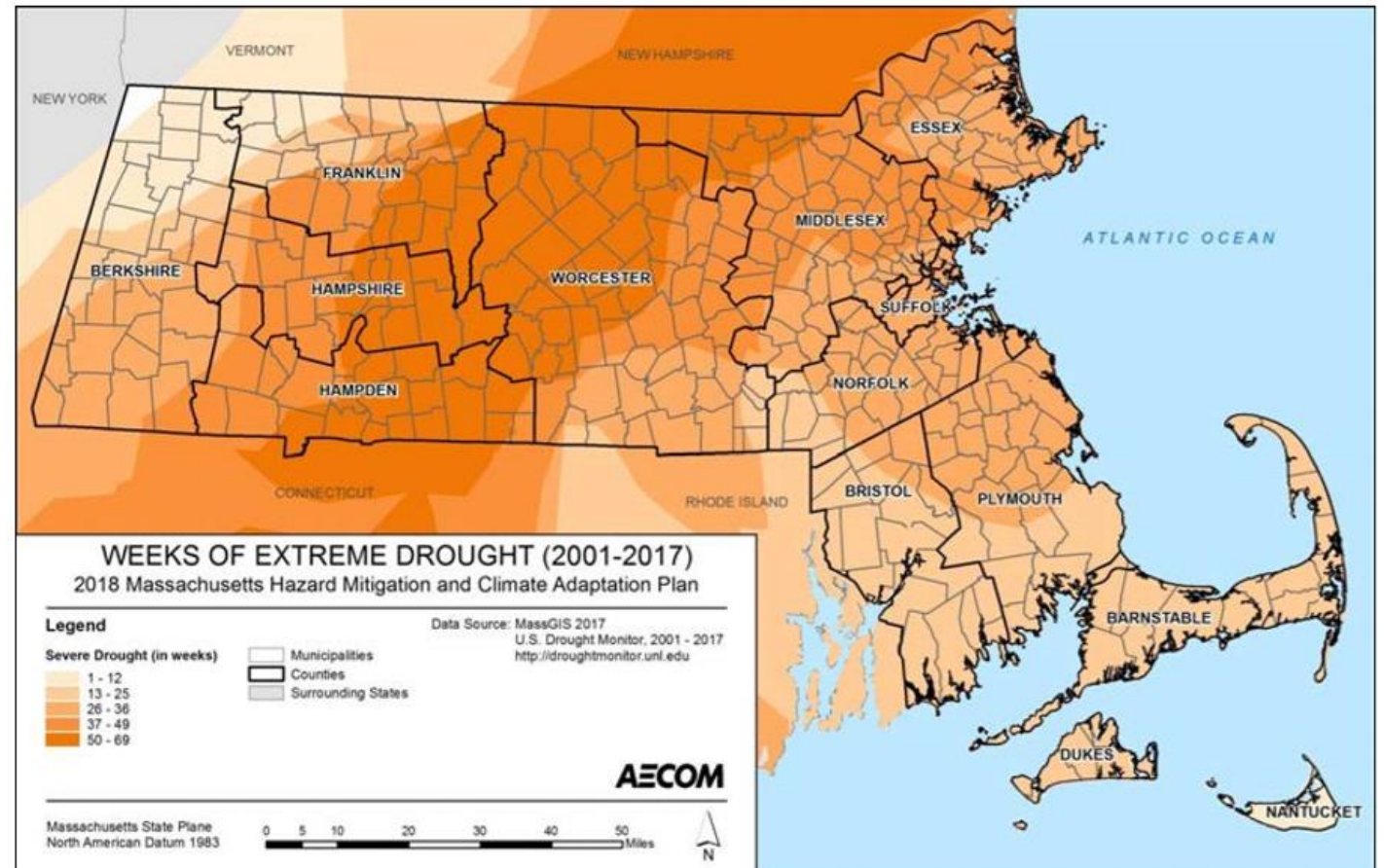
- Most prevalent natural hazard identified in 2010 HMP
- Riverine floodplain associated with following
 - Great Meadows Wildlife Refuge
 - Concord River
 - Elm Brook
 - Shawsheen River
 - Spring Brook
 - Vine Brook
 - Mongo Brook
- Drainage-related flooding issues from stormwater system capacity



Heat, Drought, and Fire

- September 2016 drought affected 52.13% of Massachusetts land.
- Major crop/pasture loss
- Widespread water shortages and restrictions

Figure 4-8: Weeks of Severe Drought (2001-2017)



Source: U.S. Drought Monitor, 2017

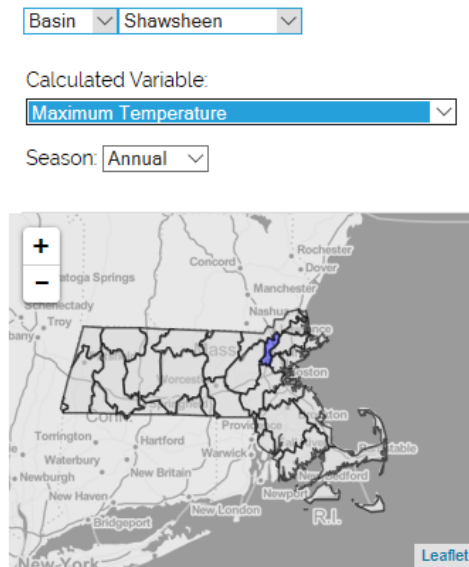
Winter Storms

- Winter Storms: heavy snow, freezing rain, extreme wind, extreme cold
 - Severe Winter Storm defined as 6 inches or more of snow in 24 hours
 - Regional record for winter snowfall: 126.5 inches in 1995

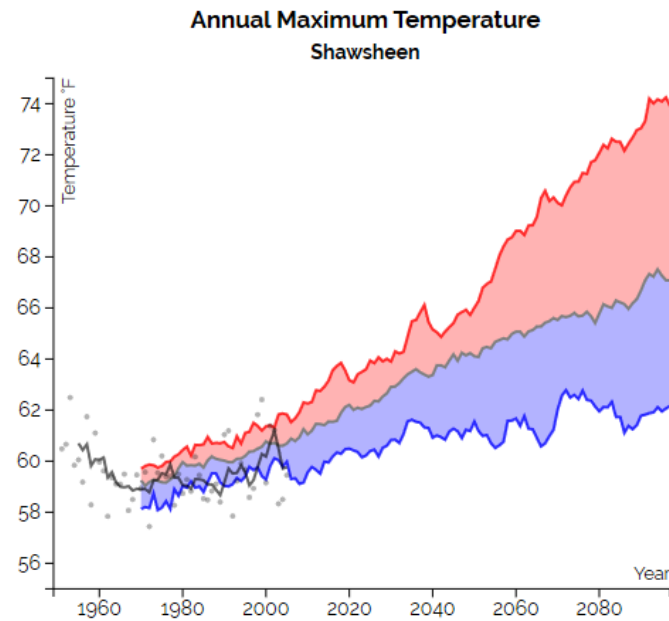
High Winds and Severe Storms

- Severe Storms: wind, hail, lightning
 - 2014 microburst downed 50 - 70 trees in Bedford
- Hurricanes: heavy rain, high winds
 - 39 hurricanes with significant wind or rain impacts in New England since 1938
 - Most recent was Hurricane Sandy in 2012





Massachusetts Climate Change Projections (Shawsheen Basin)



Add Chart



Download Data

Observed	
5-yr Mean	
Modeled °F	
Max	
Median	
Min	
Changes from 1971-2000 for:	
2020 -	4.01°F
2049 -	5.24°F
2069 -	6.35°F
2080 -	6.98°F

About the Source
Data

Massachusetts Climate Change Projections (Shawsheen Basin)

- Temperature
 - Increased average temperatures and number of days with maximum temperature above 90°F
 - Annually - 10 to 32 more days with temperatures above 90°F by 2050s
 - Decrease in number of days with minimum temperature below 32°F
 - Winter - 4 to 14 fewer days with temperatures below 32°F by 2050s
- Precipitation
 - Increase in number of days with greater than 1” precipitation and total precipitation
 - Annually - approximately 1 to 3 more days with precipitation greater than 1” by 2050s
- Drought
 - Increase in consecutive dry days
 - Summer - potential increase of 1 to 2 more consecutive days with less than 1mm of precipitation

December Workshop: Top Priorities

- Infrastructure: Communications and Electrical Infrastructure
 - Aboveground utilities, transformers, green energy projects
- Societal: Vulnerable Populations and Isolated Residents
 - Including the VA hospital, isolated groups, elderly, persons with disabilities
- Environmental: Floodplains, Rivers, and Streams

Communications + Electrical Infrastructure Action Items

- Research feasibility of constructing a redundant underground electrical system under the control of the Town.
- Enhance tree trimming practices with all overhead utility companies, specifically targeting telecom companies that do not currently conduct tree trimming in the area.
- Convert municipal facilities to solar power and incentivize private development of renewable energy.



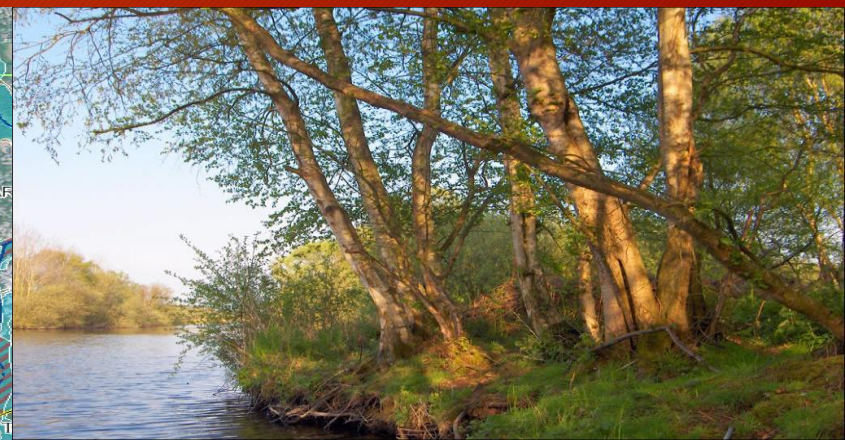
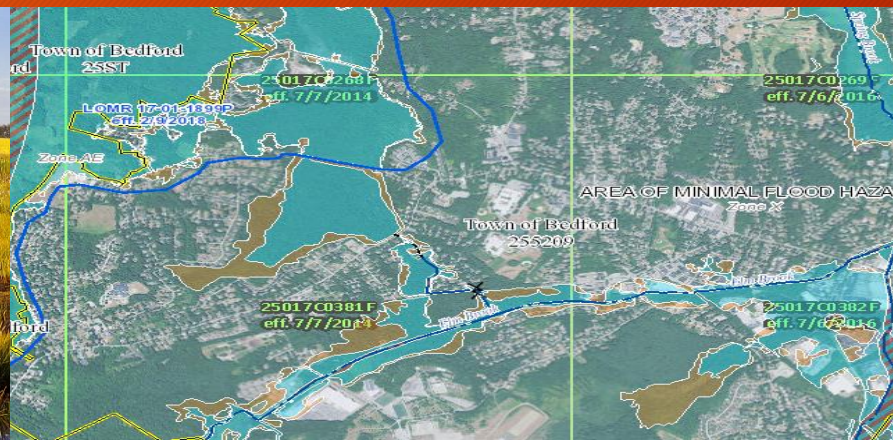
Vulnerable Populations and Isolated Residents Action Items

- Establish a team to identify vulnerable households and assess level of risk and preparedness. Identify ways in which the Town can provide them support.
- Continue to fund and support existing outreach programs.



Floodplain, Rivers, and Streams Action Items

- Study the acquisition of private property located in the floodplain.
- Research grant opportunities and provide educational outreach to homeowners located in floodplains to increase resiliency to flooding.
- Identify wellfield vulnerabilities.
- Identify and maintain hazard trees along banks.
- Evaluate opportunities for wetland restoration projects with a flood control element.



Small Group Exercises



Refinement of Priorities

- 5-10 minutes at each table: review lists of high priority action items for categories
 - Infrastructural
 - Societal
 - Environmental
- Provide facilitators with input regarding actions
- Vote on top three priorities across any category via upcoming electronic survey

Next Steps

- Hold listening session #2 to present final list of priority actions to Board of Selectmen: April 2020, TBD
- Incorporate workshop results into summary report/HMP
- Provide draft summary report/HMP for public review
- Submit final summary report/HMP to EEA to receive MVP designation, and to MEMA and FEMA for review and comment
- Incorporate MEMA/FEMA comments on HMP