

# Municipal Vulnerability Preparedness and Hazard Mitigation Plan



MVP Core Team presentation to the  
Hanover Planning Board  
December 5, 2022

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Metropolitan Area  
Planning Council

# Hanover MVP & HMP Project

## Natural Hazards and Climate Resilience:

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### Hazard Mitigation Plan

Current and *Historic Weather Events and Hazards*

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### Municipal Vulnerability Preparedness

*Future Climate Change Projections*

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***Hanover Community Resilience***

# MVP Program Summary

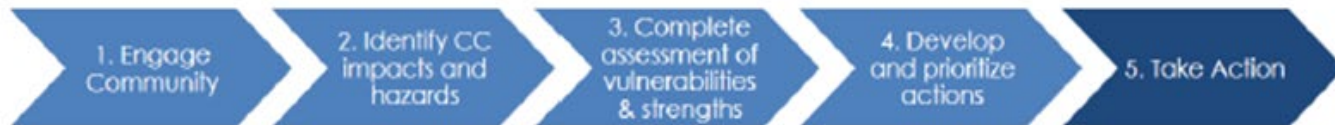


## Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs

Municipal Vulnerability Preparedness Program

*State and local partnership to build resiliency to climate change*



The Municipal Vulnerability Preparedness (MVP) program helps communities in Massachusetts to:

- Define extreme weather and natural and climate related hazards
- Identify existing and future vulnerabilities and strengths
- Develop and prioritize actions for the community
- Identify opportunities to take action to reduce risk and build resilience

# MVP: Community Resilience Building

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The MVP project will address Hanover's climate risks:

- Inland flooding
- Extreme Heat
- Winter storms
- Drought

Identify community strengths and weaknesses and recommend actions:

- Infrastructure
- Environment
- Society

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*MVP Workshop: develop actions by hazard & sector*

*Listening Session: community outreach & engagement*



# Hanover Hazard Mitigation Plan 2023 Update

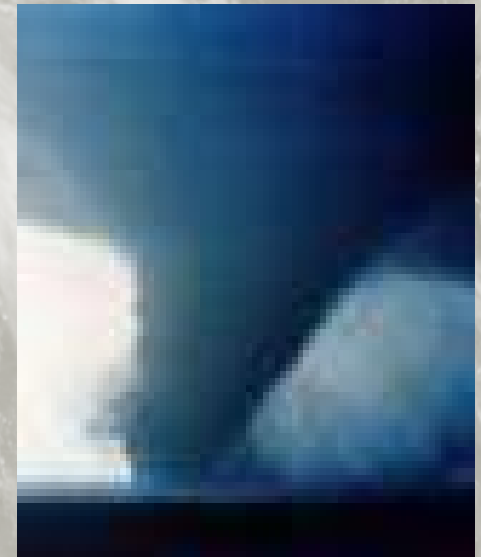


# Why is Hanover doing this 2023 Plan Update?

- The **Federal Disaster Mitigation Act of 2000** requires that cities and towns adopt and update a **Hazard Mitigation Plan** to be eligible for FEMA mitigation grants.
- Hanover's current plan was prepared in 2017 and is due to be updated.
- This Plan Update will meet FEMA's requirements and keep the Town eligible for FEMA "BRIC" Grants.

# A Plan for Mitigating Damages from *All Natural Hazards:*

- Flooding
- High winds, hurricanes, tornadoes
- Winter storms, snow and ice
- Earthquakes, landslides
- Extreme temperatures
- Brush fires
- Drought



*Not an Emergency Response Plan*

# What Is Hazard Mitigation?



Actions to reduce or prevent losses of life, injuries, and property damage using long-term strategies, both structural and non-structural

- *What preventive actions are being taken NOW to reduce future risks and damages?*
- *What additional actions can be taken in the FUTURE?*



# Breaking the Cycle of Disaster & Rebuilding



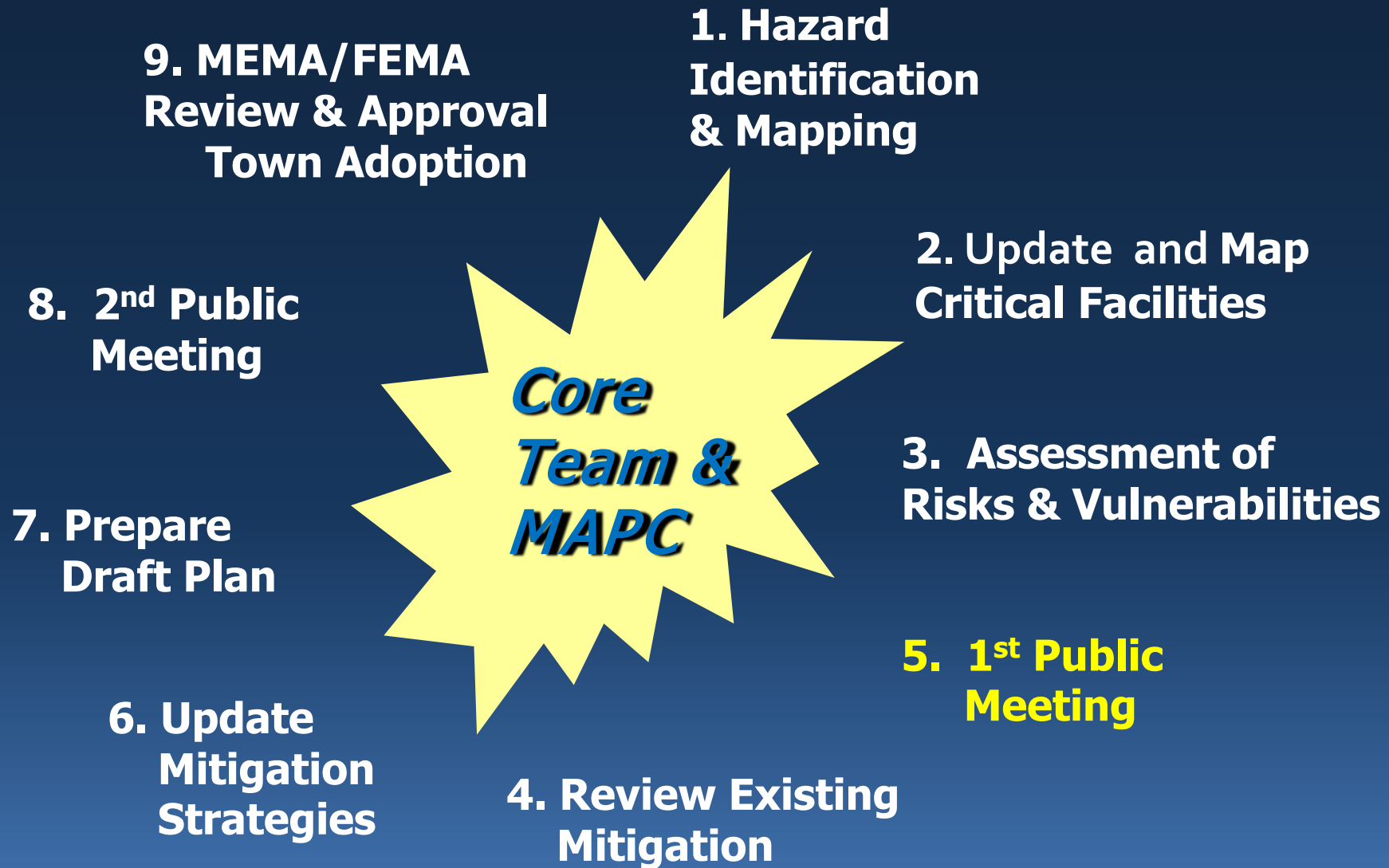
# Techniques for Hazard Mitigation



1. Prevention
2. Property Protection
3. Public Education
4. Natural Resources Protection
5. Structural Projects
6. Emergency Services Protection

# How the MVP/HMP is Being Developed

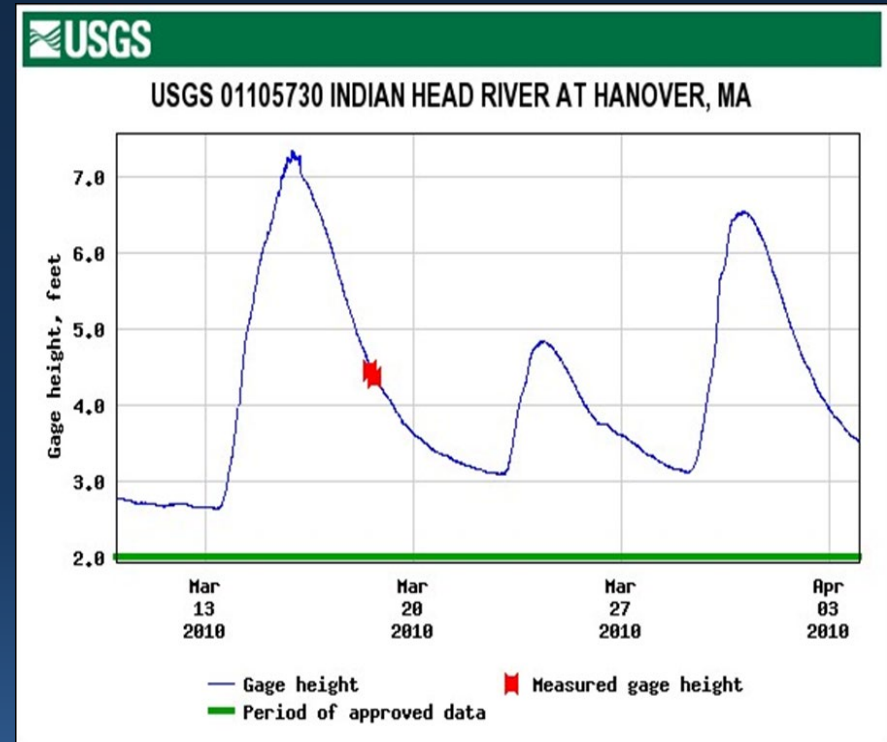
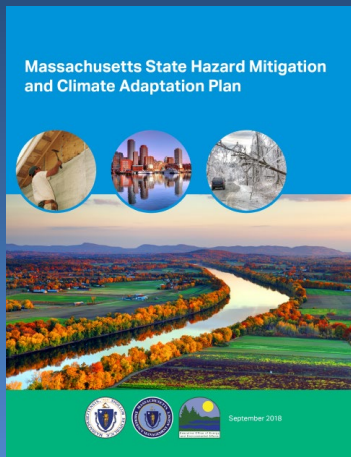
- The Town is coordinating the MVP/HMP project through its Core Team, with multiple Town departments and stakeholders.
- MAPC provides technical assistance to prepare the HMP and MVP report under an MVP grant
- The Town will host a Community Resilience Building workshop and an MVP Listening Session
- MAPC facilitates two public meetings, during HMP development and review of the draft plan
- Draft Plans submitted to EEA, MEMA and FEMA



# Plan Update Development Steps

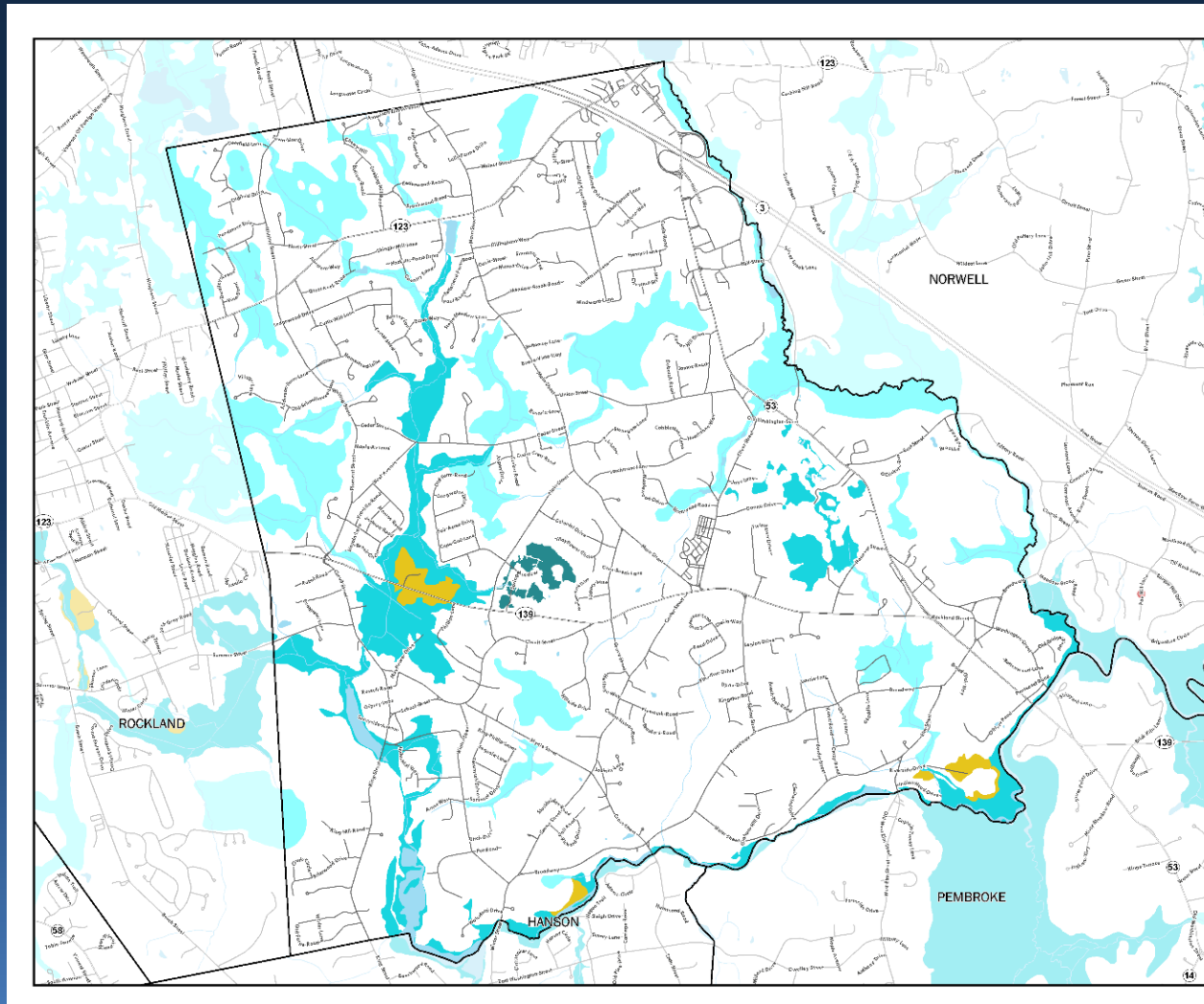
# Hazard Identification & Mapping

- State & Federal data on floodplains, stream flow, snowfall, winds, hurricanes, earthquake risk, etc.
- Review the Mass. State Hazard Mitigation and Climate Adaptation Plan



**Coordinate with the Hanover  
Core Team to identify and map  
Local Hazard Areas**

# Hazard Identification and Mapping



FEMA Special Flood Hazard Areas

# Locally-Identified Hazard Areas

## Flooding hazard sites

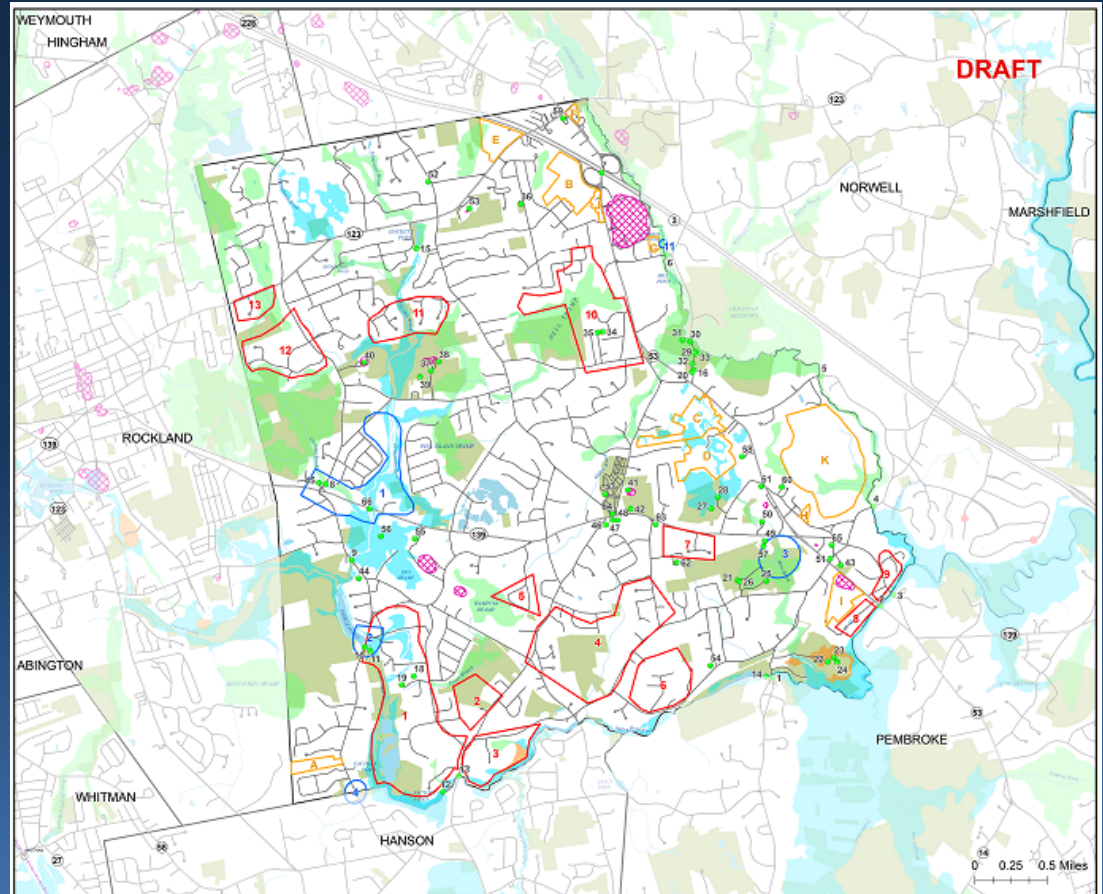
- 1. Pleasant and Circuit Streets
- 2. King Street Bridge
- 3. CVS Plaza
- 4. King Street
- 5. Rockland Street
- 6. Washington St and River Rd
- 7. Candlewood Lane
- 8. Oldfield to Ponderosa

## Dams

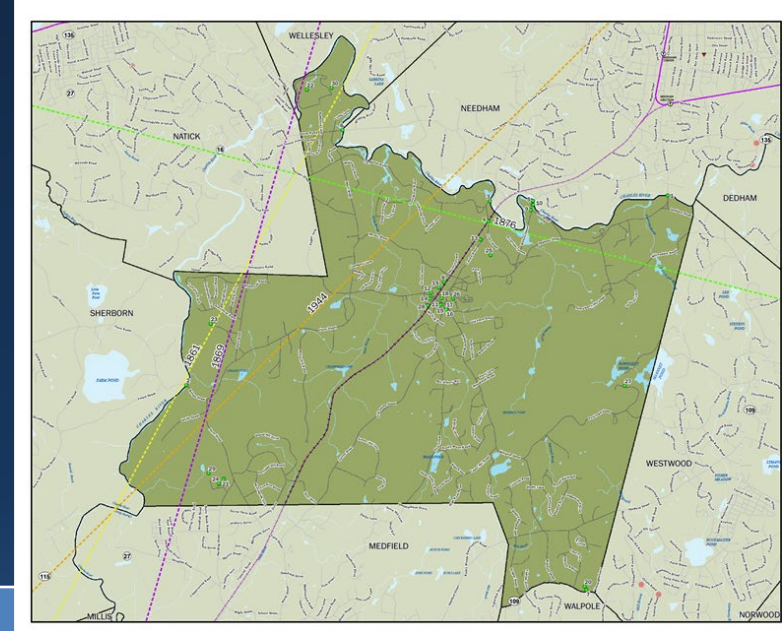
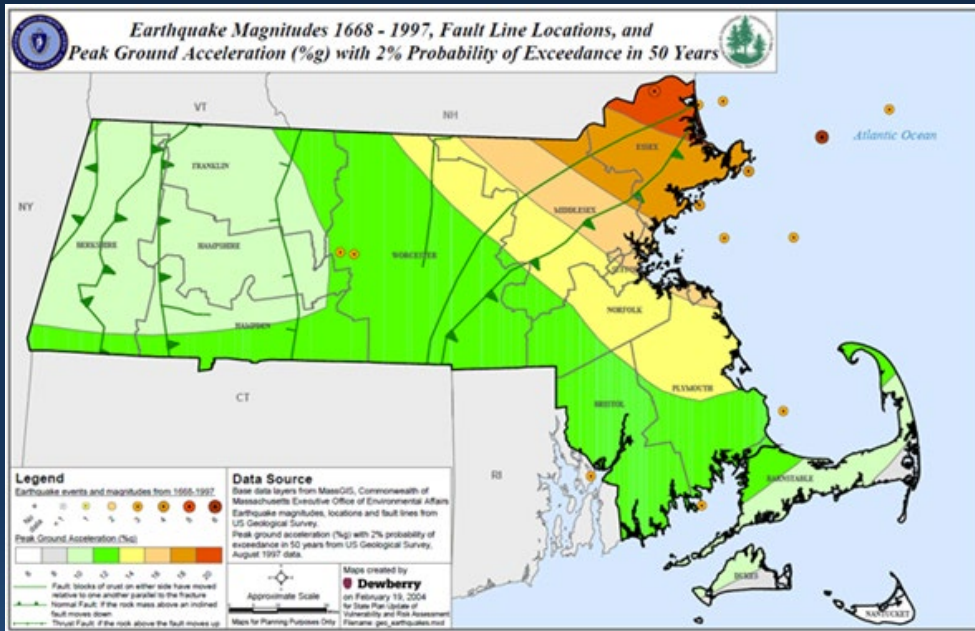
- 1. Hackett's Pond Dam
- 2. Forge Pond Dam
- 3. Factory Pond Dam
- 4. Curtiss Crossing Dam

## Brushfire Potential

- 13 Sites Identified



# Geologic, Wind, & Snow Hazards



Severe Winter Storm and Snowstorm	March 2018
Severe Winter Storm, Snowstorm, and Flooding	January 2015
Severe Winter Storm, Snowstorm, and Flooding	February 2013
Hurricane Sandy	October/November 2012



# Other Natural Hazards

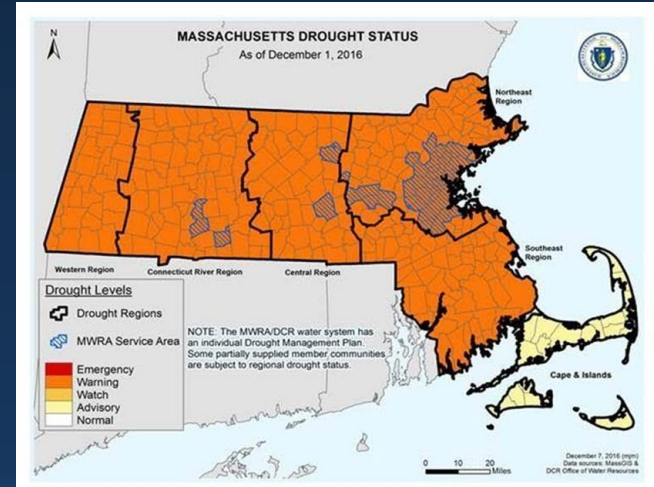
## Extreme Heat

		Temperature (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
Relative Humidity (%)	40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
	45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
	50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
	55	81	84	86	89	93	97	101	106	112	117	124	130	137			
	60	82	84	88	91	95	100	105	110	116	123	129	137				
	65	82	85	89	93	98	103	108	114	121	128	136					
	70	83	86	90	95	100	105	112	119	126	134						
	75	84	88	92	97	103	109	116	124	132							
	80	84	89	94	100	106	113	121	129								
	85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131										
95	86	93	100	108	117	127											
100	87	95	103	112	121	132											

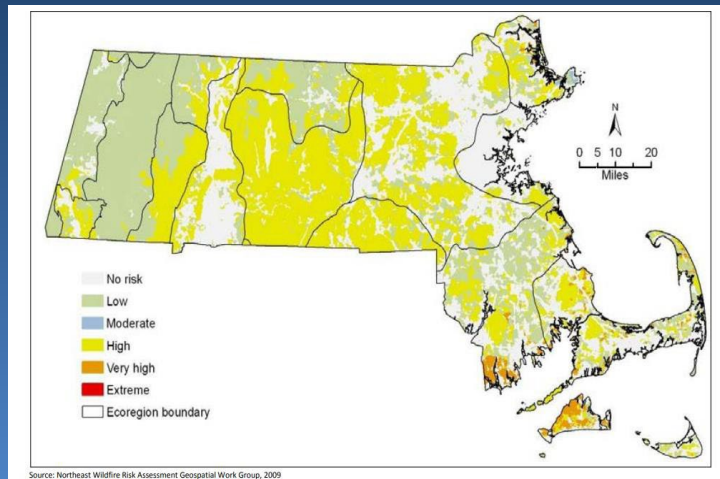
  

Category	Heat Index	Health Hazards
Extreme Danger	130 °F – Higher	Heat Stroke or Sunstroke is likely with continued exposure.
Danger	105 °F – 129 °F	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.
Extreme Caution	90 °F – 105 °F	Sunstroke, muscle cramps, and/or heat exhaustions possible with prolonged exposure and/or physical activity.
Caution	80 °F – 90 °F	Fatigue possible with prolonged exposure and/or physical activity.

## Drought

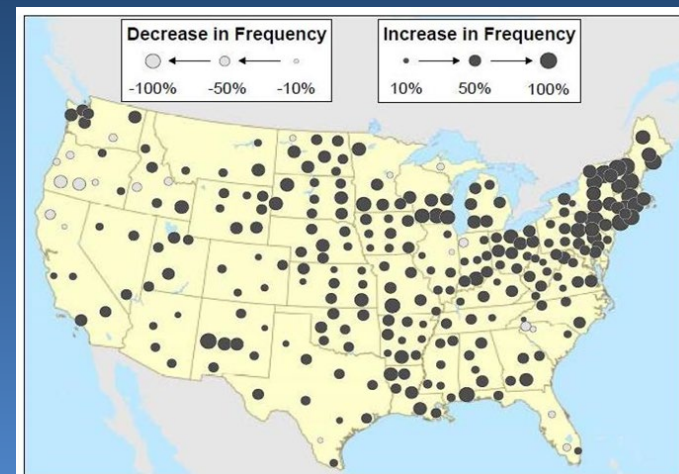


## Wildfires



Source: Northeast Wildfire Risk Assessment Geospatial Work Group, 2009

## Extreme Precipitation

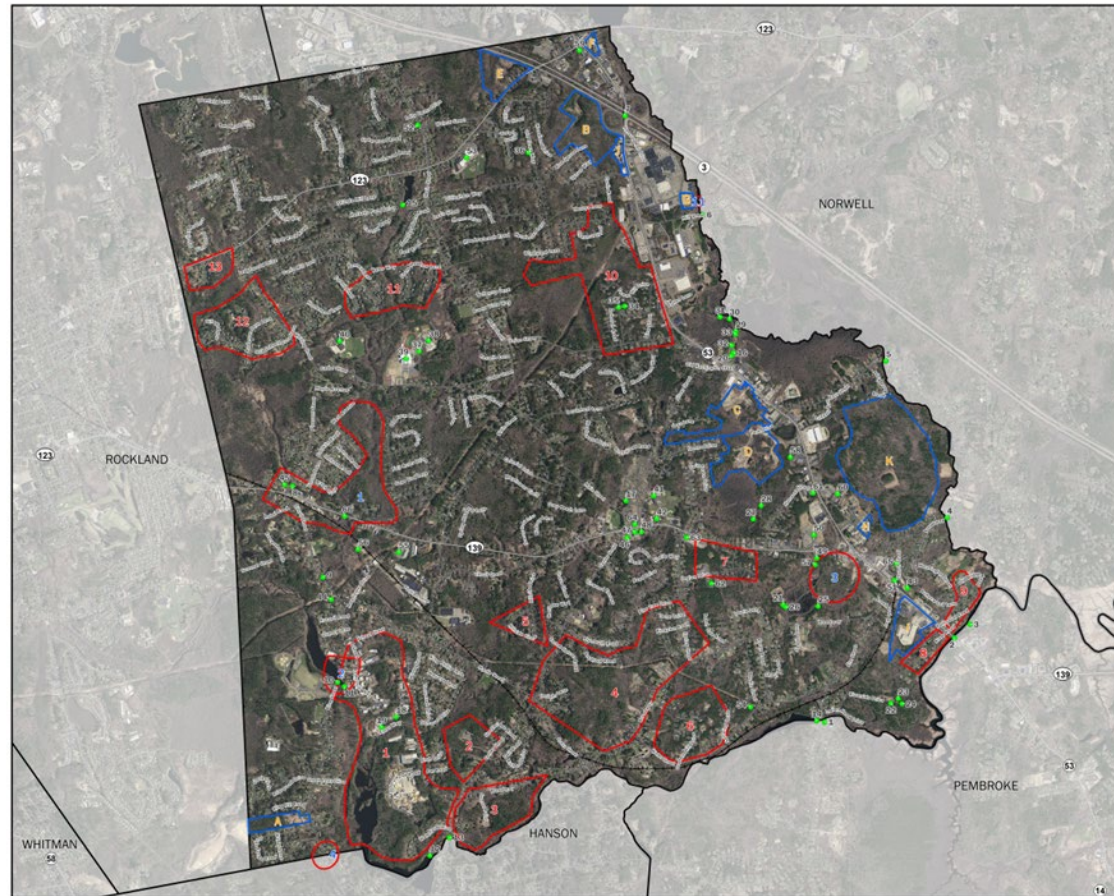


# Identify and Map Critical Facilities

## Database & GIS maps of critical facilities, infrastructure

### 54 Sites identified including:

- Disaster response sites such as fire and police stations
- Sites requiring assistance such as elderly housing
- Places of assembly
- Critical infrastructure (Dams, pump stations, communications)



# Review Existing Mitigation Measures

## MULTIHAZARD

Comprehensive Emergency  
Management Plan (CEMP)  
Massachusetts State Building Code  
Participation in the Local Emergency  
Planning Committee (LEPC)

## FLOOD RELATED HAZARDS

National Flood Insurance Program  
Floodplain District zoning  
Street sweeping  
Catch basin cleaning  
Long-term stormwater plan  
Wetlands Protection  
Open Space & Land Preservation  
Subdivision Rules and Regulations  
and Site Plan Review

## WIND-RELATED HAZARDS

Tree trimming program

## WINTER-RELATED HAZARDS

Snow removal operations; restricted salt  
Snow & ice disposal bylaw  
Public education on roof snow loads

## BRUSH FIRE RELATED HAZARDS

Permits for outdoor burning  
Fire Dept. Subdivision Review for fire safety

## DAM SAFETY

State permits for dam construction  
DCR dam safety regulations

# Review Existing Mitigation Measures

## **MULTI-HAZARD**

Comprehensive Emergency Management Plan (CEMP)  
Massachusetts State Building Code  
Designation of a Local Emergency Planning Committee (LEPC)

## **FLOOD RELATED HAZARDS**

National Flood Insurance Program  
Street Sweeping/Catch basin cleaning  
Floodplain Zoning District  
Subdivision regulations that address drainage

## **DAM FAILURES**

State permits for dam construction  
DCR dam safety regulations  
Phase I Assessment: Forge Pond Dam

## **WIND-RELATED HAZARDS**

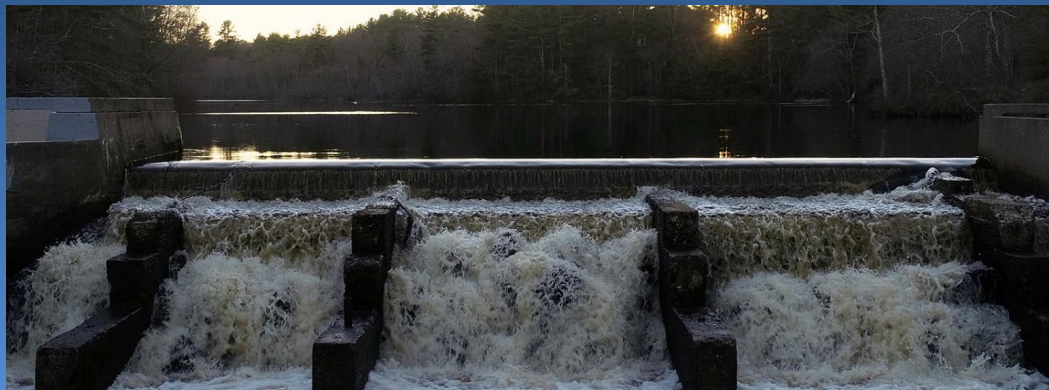
MA State Building Code

## **WINTER-RELATED HAZARDS**

Salting and sanding of roads and plowing

## **BRUSH FIRE RELATED HAZARDS**

Permits for outdoor burning  
Subdivision Review



## Next Steps for the HMP:

# Update Mitigation Recommendations

- ❖ *Review mitigation measures in previous Hazard Mitigation Plan*
- ❖ *Which measures have been implemented, which have not?*
- ❖ *What mitigation measures does the MVP project identify?*
- ❖ *What mitigation actions will further reduce vulnerability?*
- ❖ *Identify mitigation priorities, costs, timelines for implementation*

# Final Steps for MVP & HMP: Plan Approval and Adoption

- **Community Resilience Building Workshop – Feb. 2023**
- **Public Listening Session – March 2023**
- **2<sup>nd</sup> public meeting for the HMP – April 2023**
- **Draft plan submitted to EEA, MEMA, & FEMA**
- *After review and approval of plans, Hanover will be eligible for MVP Action Grants and FEMA BRIC grants.*



# Questions?



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