

Rochester, MA

# ***Hazard Mitigation Plan Update***

Public Workshop #1 – October 17, 2023

Rochester Senior Center 6:00 – 8:00 PM



Craig Pereira, CFM, NCI

# WELCOME!



# Rochester Local Hazard Mitigation Committee

- Schoen Morrison – Village at Plumb Corner Child Care
- Paul Ciaburri – Select Board
- Scott Weigel – Fire Chief/Emergency Manager
- Jeff Eldredge – Highway Supervisor
- Andrew Daniel – Facilities Director
- Robert Small – Police Chief
- Donald Kemmett – Detective, Police Department
- Paul Boucher – Building Commissioner
- Nancy Durfee – Town Planner
- Craig Pereira – Project Manager, Horsley Witten Group, Inc.
- Kellie King – Environmental Planner, Horsley Witten Group, Inc.



# Why Hazard Mitigation Planning?

Disaster Mitigation Act of 2000, Interim Final Rule, 44 CFR Parts 201 and 206 states, “All communities must have an approved Multiple Hazards Mitigation Plan in order to qualify for future federal disaster mitigation grants”.

## **Hazard Mitigation:**

*“Reduction or elimination of long-term risk to life, property, and the environment”*

## **Natural Hazard:**

*“Any event or physical condition that has the potential to cause fatalities, injuries, property damage, infrastructure damage, and agricultural loss, damage to the environment, interruption of business, or other types of harm and/or loss”*



# Mitigation Process

- **Assess Risks**
- Establish Goals
- Identify Projects/Actions
- Update/Maintain Plan



# Assess Risks

## Natural Hazards Affecting Rochester, MA

### **Flood-Related Hazards**

- Riverine/Flash Flooding
- Inland/Urban Flooding/Heavy Rain
- Dam Failures
- Coastal Flood Hazards

### **Winter-Related Hazards**

- Blizzards/Snow/Nor' easters
- Ice
- Extreme Cold

### **Wind-Related Hazards**

- Hurricanes/Tropical Storms
- Tornadoes
- High Winds
- Lightning/Thunderstorms
- Hail



# Assess Risks

## Natural Hazards Affecting Rochester, MA

### **Geologic-Related Hazards**

- Earthquakes
- Landslides

### **Extreme Heat-Related Hazards**

- Extreme Heat

### **Drought-Related Hazards**

- Drought

### **Climate Change:**

*As an overarching hazard affecting all hazard types, each hazard profile will include a 'climate change impacts on' section*

### **Brushfire/Wildfire-Related Hazards**

- Brushfires/Wildfires

### **Invasive Species-Related Hazards**

- Multiple (aquatic)



# Assess Risks

## Natural Hazard Profiles/Hazard Index

### Flood-Related Hazards

- Riverine/Flash Flooding: High
- Inland/Urban Flooding/Heavy Rain: High
- Dam Failures: High
- Coastal Flood Hazards: Low

### Winter-Related Hazards

- Blizzards/Snow/Nor' easters: High
- Ice: High
- Extreme Cold: High

### Wind-Related Hazards

- Hurricanes/Tropical Storms: High
- Tornadoes: Moderate
- High Winds: High
- Lightning/Thunderstorms: Moderate
- Hail: Low





# Assess Risks

## Natural Hazard Profiles/Hazard Index

### **Geologic-Related Hazards**

- Earthquakes: Low
- Landslides: Low

### **Extreme Heat-Related Hazards**

- Extreme Heat: High

### **Drought-Related Hazards**

- Drought: Moderate

### **Brushfire/Wildfire-Related Hazards**

- Brushfires/Wildfires: Moderate

### **Invasive Species-Related Hazards**

- Multiple: Moderate



# Hazard Index

<i>Natural Hazard</i>	<i>Frequency (i.e. Unlikely; Possible; Likely, Highly Likely)</i>	<i>Location (i.e. small/local, medium/regional, large/multiple communities)</i>	<i>Severity (i.e. Negligible; Limited; Critical; Catastrophic)</i>	<i>Hazard Index (i.e. ranked by combining first 3 columns; 10 - high, 1 - low)</i>
<b>Flood-Related Hazards</b>				
- Riverine/Flash Flooding <sup>1</sup>	4	3	1	8
- Inland/Urban Flooding/Heavy Rain <sup>1</sup>	4	3	1	8
- Dam Failures <sup>1</sup>	3	1	3	7
- Coastal Flood Hazards <sup>1</sup>	1	1	1	3
<b>Winter-Related Hazards</b>				
- Blizzards/Snow/Nor' easter <sup>1</sup>	4	3	2	9
- Ice <sup>1</sup>	4	3	2	9
- Extreme Cold <sup>1</sup>	3	3	1	7
<b>Wind-Related Hazards</b>				
- Hurricanes/Tropical Storms	3	3	1	7
- Tornadoes <sup>1</sup>	2	1	1	4
- High Winds <sup>1</sup>	4	3	3	10
- Lightning/Thunderstorms	3	2	1	6
- Hail <sup>1</sup>	1	1	1	3
<b>Geologic-Related Hazards</b>				
- Earthquakes <sup>1</sup>	1	1	1	3
- Landslides <sup>1</sup>	1	1	1	3
<b>Extreme Heat-Related Hazards</b>				
- Extreme Heat <sup>1</sup>	3	3	2	8
<b>Drought</b>				
- Drought	3	2	1	6
<b>Brushfire/Wildfire</b>				
- Brushfire/Wildfire <sup>1</sup>	2	1	1	4
<b>Invasive Species (aquatic)</b>				
- Multiple <sup>1</sup>	2	1	2	5

Notes: 1 represents ranked by LHMC, all other rankings based on NCEI data.

# Assess Risks

## Risk and Vulnerability Assessment - Assets

### **Economic Assets**

- Businesses/Large Employers
- Historic Assets

### **Social Assets**

- Vulnerable Populations
- Cultural Locations

### **Natural Resources**

- Lifeline and Utility Systems
- Wetlands
- Conservation/Recreation Sites

### **Essential Buildings/Critical Facilities**

- Municipal Buildings
- Hazardous Facilities
- Roadways/Bridges
- GIS Mapping/Overlay Analyses



# Assess Risks

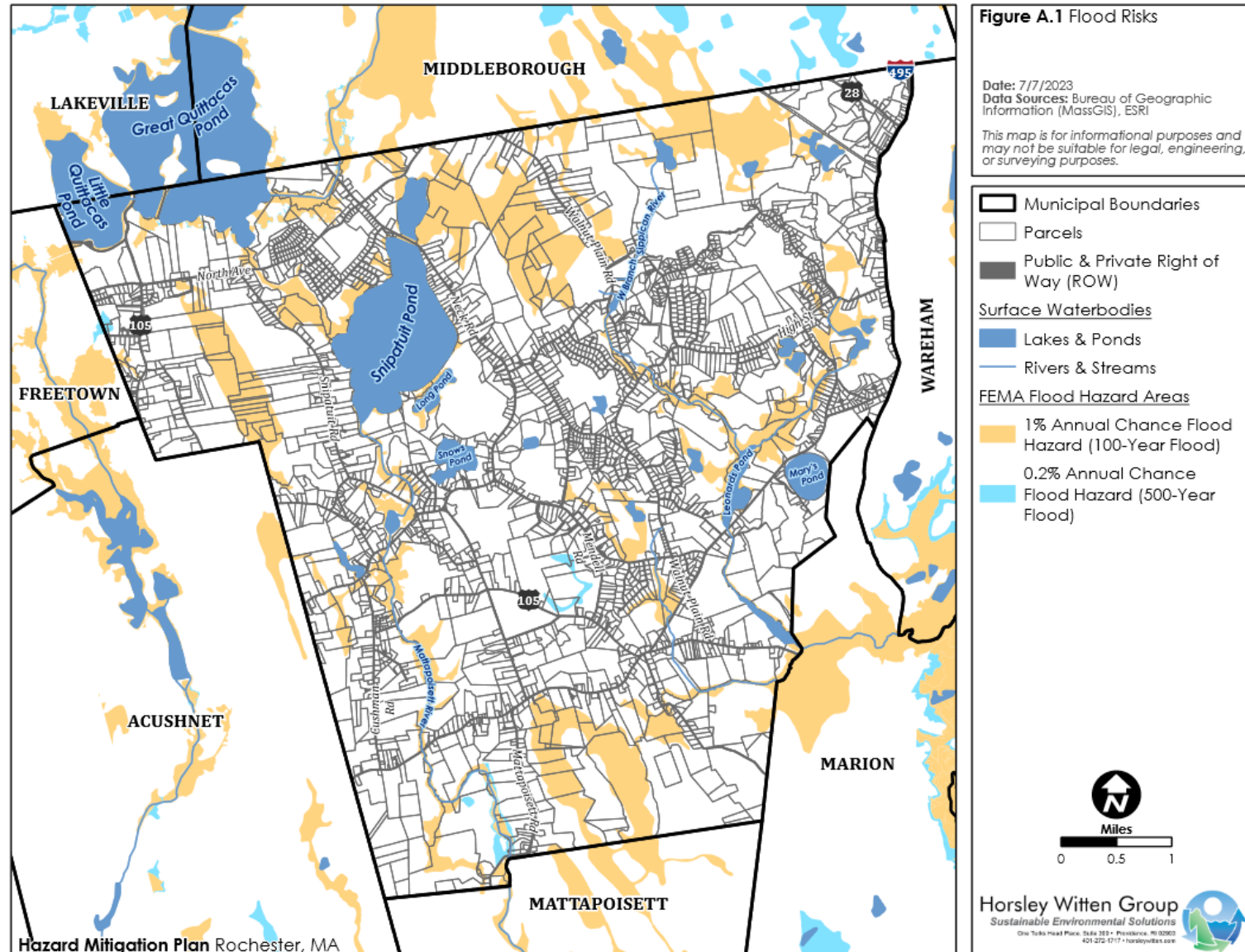
## Vulnerability Assessment – Overlay Analyses

### FEMA A/100-YR Flood Zone

- 568 parcels
- \$231,748,211

### FEMA X/500-YR Flood Zone

- 9 parcels
- \$7,333,047



# Assess Risks

## Vulnerability Assessment – Overlay Analyses

### MC FRM 2030 Scenario

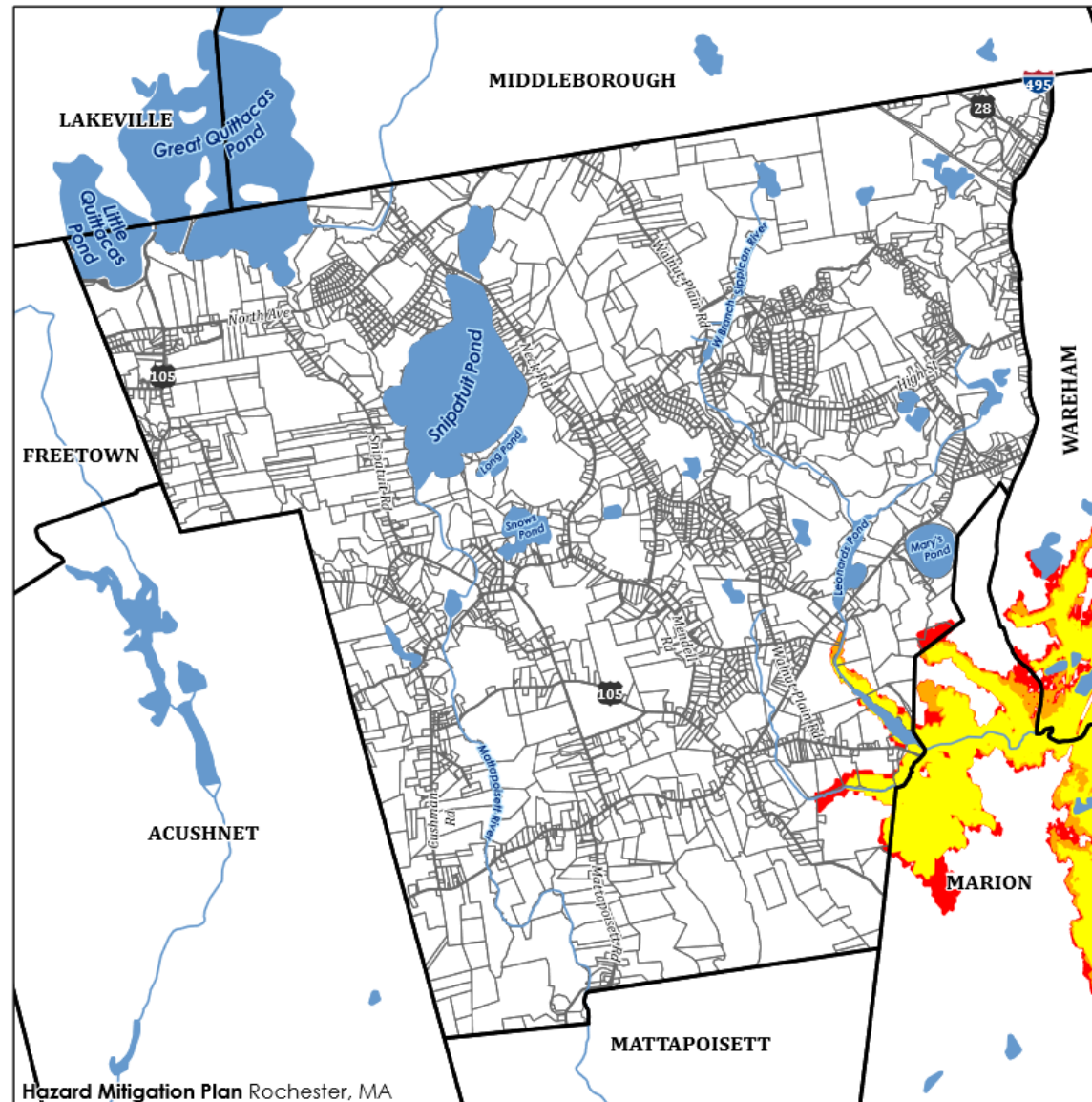
- 17 parcels
- \$5,770,228

### MC FRM 2050 Scenario

- 5 parcels
- \$2,305,810

### MC FRM 2070 Scenario

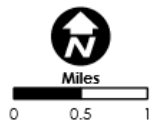
- 6 parcels
- \$795,281



**Figure A.4 MA Coast Flood Risk Model (MC-FRM) 1% Annual Exceedance Probability**

Date: 6/28/2023  
Data Sources: Bureau of Geographic Information (MassGIS), MA EEA, ESRI  
This map is for informational purposes and may not be suitable for legal, engineering, or surveying purposes.

- Municipal Boundaries
- Parcels
- Public & Private Right of Way (ROW)
- Surface Waterbodies
  - Lakes & Ponds
  - Rivers & Streams
- MC-FRM 1% Annual Exceedance Probability
  - 2030
  - 2050
  - 2070





# Assess Risks

## Vulnerability Assessment – Overlay Analyses

## SLOSH Category 1

- 9 parcels
- \$2,477,015

## SLOSH Category 2

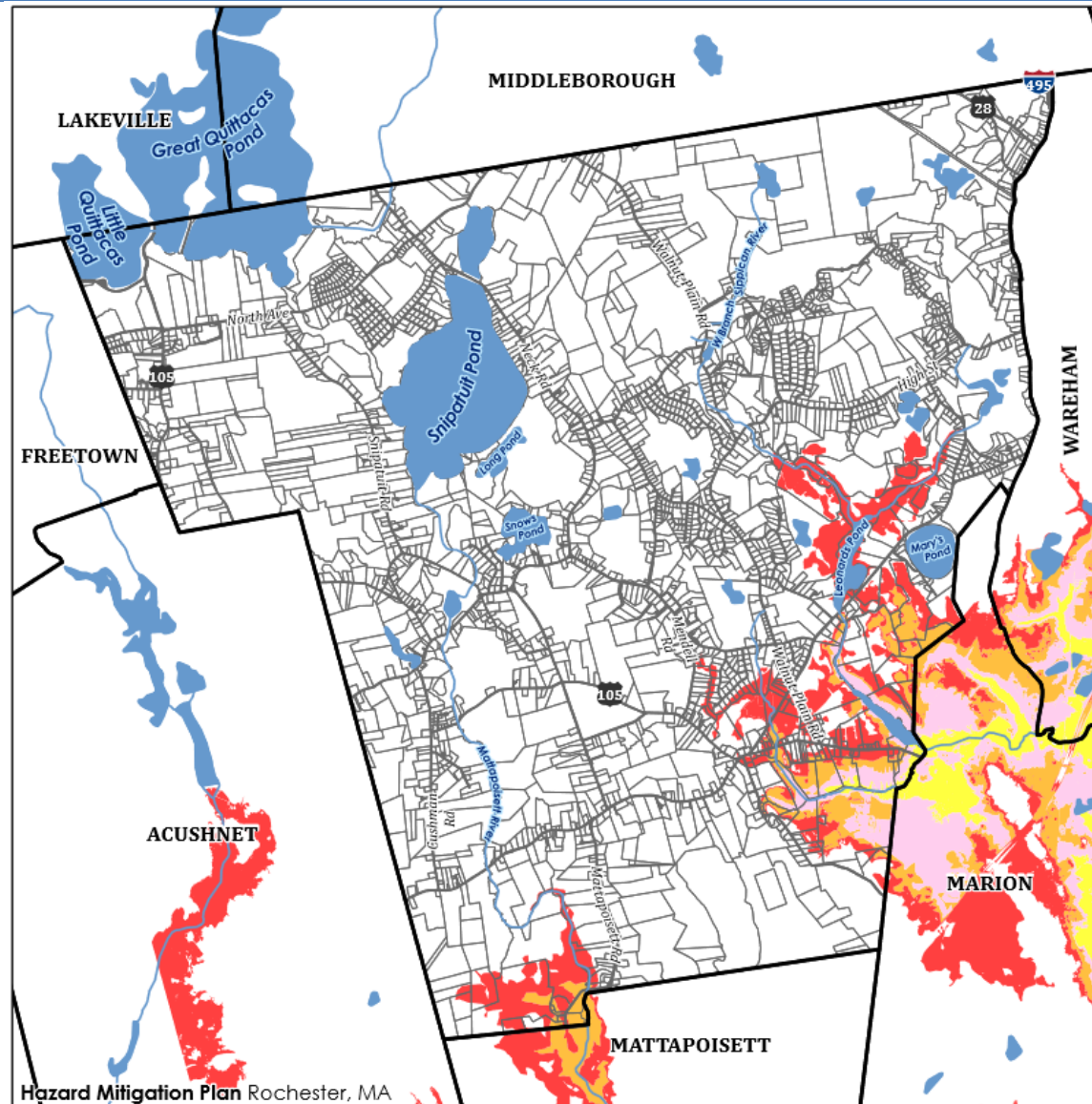
- 20 parcels
- \$7,830,361

## SLOSH Category 3

- 49 parcels
- \$14,797,496

## SLOSH Category 4




- 165 parcels
- \$66,583,836




**Figure A.3** Sea, Lake, and Overland Surges from Hurricanes (SLOSH)

**Date:** 6/2/2023  
**Data Sources:** Bureau of Geographic Information (MassGIS), ESRI

*This map is for informational purposes and may not be suitable for legal, engineering or surveying purposes.*

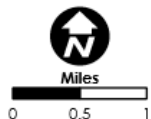
-  Municipal Boundaries  
 Parcels  
 Public & Private Right of Way (ROW)

### Surface Waterbodies

-  Lakes & Ponds  
 Rivers & Streams

### Potential Hurricane Storm Surge

-  Category 1
-  Category 2
-  Category 3
-  Category 4



# Assess Risks

## FEMA Disaster Grant Assistance

### **January 2015 Severe Winter Storm/Snow/Flooding (DR-4214)**

- \$17,959.50 for snow removal

### **March 2017 Severe Winter Storm**

- \$16,650.71 for snow removal

### **March 2018 Severe Winter Storm/Snow/Flooding (DR-4372)**

- \$49,238.14 for snow removal

### **January 2022 Snowstorm**

- \$56,506.25 for snow removal



# Mitigation Process

- Assess Risks
- **Establish Goals**
- Identify Projects/Actions
- Update/Maintain Plan





# Establish Goals

## Mission Statement & Goals

Rochester Local Hazard Mitigation Committee will develop a mission statement for the 2024 update...

*“To reduce the loss of life, property, infrastructure and cultural resources throughout the community from natural disasters through a multiple hazard mitigation program that involves increased coordination, planning, education, and capital improvements”*

Rochester Local Hazard Mitigation Committee will develop overarching goals to support the mission statement



# Mitigation Process

- Assess Risks
- Establish Goals
- **Identify Projects/Actions**
- Update/Maintain Plan



# Identify Projects/Actions

## Mitigation Measures (Categories)

- Planning and Prevention
- Property Protection
- Natural Resource Protection
- Structural Projects
- Emergency Services
- Public Education and Awareness



# Identify Projects/Actions

## Mitigation Actions

Mitigation actions will be developed based on:

- Review of existing plans, studies, and reports
- The Town's identified risks and vulnerabilities
- Public input
- Municipal coordination

Mitigation actions will include:

- Brief description of the intended action
- Responsible party
- Proposed time frame for completion
- Potential funding mechanism



# Identify Projects/Actions

## Prioritization of Actions – STAPLEE Method

- **Social:** is the action socially acceptable?
- **Technical:** is the action technically feasible and provide appropriate level of protection?
- **Administrative:** does the Town have the capability to complete the action?
- **Political:** will the community support or oppose the action?
- **Legal:** does the Town have the legal authority to complete the action?
- **Economic:** is the action cost-effective?
- **Environmental:** will the action affect the natural environment?



# Mitigation Process

- Assess Risks
- Establish Goals
- Identify Projects/Actions
- **Implementation/Update/Maintain Plan**



# Implementation/Update/Maintain the Plan

- Town's Capability
- Plan Adoption
- Incorporation into other Municipal Documents
- Annual Review/Meeting
- Update after Disaster/5 Years (planning horizon)



# Rochester, MA

## MVP/Community Resilience-Building Workshop (2019)

### Top Priority Actions

- Multi-Hazard Mitigation Planning: General communications enhancements
  - Streamline municipal record keeping. Recommendations include storing information digitally and by property address, such that they're readily available for first responders.
  - Identify all currently existing information channels in town and encourage communication and collaboration between all residents about important town issues.
  - Implement a reverse 911 or other system to spread information and explore a text message system for alerts.





# Rochester, MA

## MVP/Community Resilience-Building Workshop (2019)

### Top Priority Actions

- Multi-Hazard Mitigation Planning: Infrastructure upgrades
  - Conduct engineering studies at the Hathaway Pond Dam and High Street-Walnut Plain Dam. Eventually rebuild and replace fish ladders.
  - Replace the Mary's Pond Road Bridge and Millers Bridge and Dam.
  - Replace undersized culverts at Mattapoissett River and New Bedford Road, Mattapoissett River and Wolf Island, and Doggett's Brook.
  - Replace outdated Fire Station on new site.
  - Purchase a backup generator for the Annie Maximum House and take measures to increase flood resilience at that site.



# Rochester, MA

## MVP/Community Resilience-Building Workshop (2019)

### Top Priority Actions

- Power Grid: Proactive forestry management
  - Develop a Forest Management Plan to address tree death from invasive species and resulting hazards; include utility resilience planning for private and public property.
  - Couple Forest Management Plan with a utility infrastructure vulnerability study, prioritizing tree assessment along power corridors. Recommend power line undergrounding where feasible.
  - Increase municipal budgets for Tree Warden, Fire Department, and pest control.
  - Purchase bucket truck, chipper, and equipment to replace lost trees, and/or hire external contractor to do consistent tree trimming. Prioritize replanting of native trees.



# Rochester, MA

## MVP/Community Resilience-Building Workshop (2019)

### Top Priority Actions

- Power Grid: Communications best practices
  - Investigate options for improved communications practices during power outages, both internally and with Verizon and Eversource.
  - Update and share priority infrastructure and list of high priority residents (especially those in critical care) with Eversource liaison.
  - Increase public education and awareness around forest management and tree fall risks.
  - Update Town website to include a section with 'Information for New Residents' covering emergency procedures and contacts, in addition to other information noted throughout this recommendations section.



# Rochester, MA

## MVP/Community Resilience-Building Workshop (2019)

### Top Priority Actions

- Water Issues: Advocacy and public education
  - Continue advocating for sustainable water management in Rochester with regional neighbors and the state.
  - Secure an independent water source for Old Colony Vocational School to address access and fire suppression concerns.
  - Conduct a vulnerability assessment for Rochester's private wells, especially related to water quality, security, and the risk of landfill leaching.
  - Develop a proactive long range water supply plan for the Town in collaboration with regional partners.
  - Increase the number of fire hydrants in town to enhance fire suppression capacity.



# Rochester, MA

## MVP/Community Resilience-Building Workshop (2019)

### Top Priority Actions

- Land Use Patterns and Zoning: Energy infrastructure zoning and bylaws
  - Amend local bylaws and regulations to require undergrounding of utilities wherever possible.
  - Amend the solar bylaw to prioritize underground transmission as much as possible.
  - Review bylaws for opportunities to protect cranberry farmers from solar development pressures.
  - Consider rezoning changes to facilitate desirable commercial development, that is commercialism that will not negatively impact local traffic.



# Rochester, MA

## MVP/Community Resilience-Building Workshop (2019)

### Top Priority Actions

- Land Use Patterns and Zoning: Roadway and traffic concerns
  - Continue collaborating and planning with SRPEDD, consistent with the recently produced accident plan, to prioritize reconfiguration of dangerous intersections. Focus on traffic increases along route to Wareham Mall.
  - Conduct a traffic flow assessment of local schools, exploring alternative drop-off options to enhance circulation and reduce safety risks and barriers to first responders in case of emergency.
  - Improve signage for emergency evacuation routes in town.



# 2004 Plan Report Card

## CAPITAL/STRUCTURAL

Objective 1: Identify and prioritize capital/structural mitigation projects that are cost-effective and technically feasible as they are submitted in local Annexes (drainage, dams, seawalls, beach nourishment).

- N/A to Rochester

Objective 2: Increase the number of local communities that utilize Hazard Mitigation Grant or Pre-Disaster Mitigation Grant funds.

- N/A to Rochester



# 2004 Plan Report Card

## ADMINISTRATION/ENFORCEMENT/COORDINATION

Objective 3: Identify implementing body and pursue funding that builds local capacity and supports grant-writing for mitigation actions identified in the regional and local PDM plans.

- N/A to Rochester.

Objective 4: Increase communication/coordination between federal, state, regional, county, municipal, private, and non-profit agencies in the area of pre-disaster mitigation. In particular, coordinate planning around prisons, colleges, and large employers.

- Not completed, carry forward into 2024 update.





# 2004 Plan Report Card

## ADMINISTRATION/ENFORCEMENT/COORDINATION

Objective 5: Maintain and enhance working relationships with the utilities including the annual meetings with emergency personnel, and satellite spaces within each community for temporary emergency headquarters.

- Not completed, carry forward into 2024 update.

Objective 6: Improve hazard warning systems and notification to vulnerable populations.

- Remains ongoing, carry forward into 2024 update.



# 2004 Plan Report Card

## EDUCATION

Objective 7: Combat complacency and foster appropriate individual responsibility for mitigating disaster impacts by educating all parts of the community including: school children, elderly, employers, school administrators, and municipal employees.

- Not completed, carry forward into 2024 update.

Objective 8: Promote use of full range of federal and state resources related to disaster mitigation such as educational materials, training, and National Weather Service forecasts.

- Not completed, carry forward into 2024 update.



# 2004 Plan Report Card

## EDUCATION

Objective 9: Develop a means for sharing information on a regional basis about successful disaster mitigation planning and programs & create a feedback loop to improve pre-disaster planning by establishing a formal post-disaster assessment that asks what could have been done better?

- Not completed, carry forward into 2024 update.

## PLANNING

Objective 10: Find funding to review and update the regional and local disaster mitigation plans on a five-year cycle.

- In progress, remove.



# 2004 Plan Report Card

## PLANNING

Objective 11: Incorporate disaster mitigation actions into appropriate local and regional plans – Master Plans, land use, transportation, open space, and capital programming.

- Remains ongoing move to Capability Assessment.

Objective 12: Integrate disaster mitigation concerns into transportation projects (e.g., drainage improvements, underground utilities, etc.).

- Not completed, carry forward into 2024 update.



# 2004 Plan Report Card

## PLANNING

Objective 13: Increase the number of local communities that undertake Capital Improvement Programs.

- N/A to Rochester.

Objective 14: Identify PDM actions that are consistent with the objectives of other interest groups and reach out to collaborate on achieving these initiatives. (For example, conservation or environmental groups that support wetlands protection, river corridor acquisition, or reducing runoff.)

- Not completed, carry forward into 2024 update.



# 2004 Plan Report Card

## PLANNING

Objective 15: Improve the information available on at-risk properties and repetitive loss structures, in order to refine strategies.

- Not completed, carry forward into 2024 update.

Objective 16: Work with SRPEDD's Transportation Department on computer modeling for evacuation planning & re-routing post-disaster.

- Not completed, carry forward into 2024 update.

## REGULATORY

Objective 17: Encourage the adoption of underground utility requirements in local subdivision regulations and floodplain zoning for Carver.

- N/A to Rochester.



# 2004 Plan Report Card

## REGULATORY

Objective 18: Incorporate disaster mitigation concerns into the MEPA review process.

- Completed, remove.

Objective 19: Integrate disaster mitigation concerns into subdivision, site plan review, 40B reviews, and other zoning reviews. In particular require the consideration of downstream flooding impacts caused by new projects – even if the impacts cross town lines – and urban/wildland interface concerns in high-risk areas.

- Completed, remove.



# 2004 Plan Report Card

## EMERGENCY RESPONSE PREPAREDNESS

Objective 20: Ensure that each community has a Unified Incident Command program in place, with special attention to communities that have federal, state, or county facilities within their borders.

- N/A to Rochester.





# Online Community Survey

<https://www.surveymonkey.com/r/RochesterHMP>



# Project Schedule

Draft update available for public comment: **early 2024**

Draft update to MEMA: **mid-March 2024**



# Contact Us

## **Nancy Durfee, Town Planner**

- [NDurfee@townofrochester.com](mailto:NDurfee@townofrochester.com)
- (508) 763-5421 Ext. 208

## **Craig Pereira, Project Manager**

- [cpereira@horsleywitten.com](mailto:cpereira@horsleywitten.com)
- (401) 263-6048

**THANK YOU!**

