

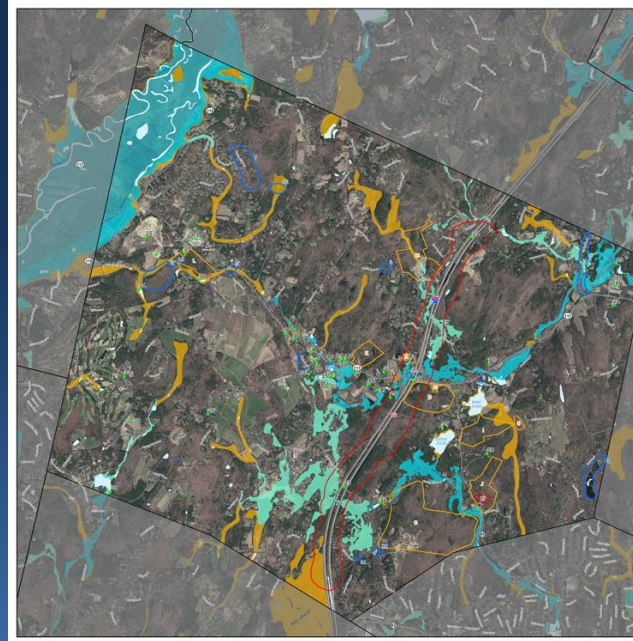


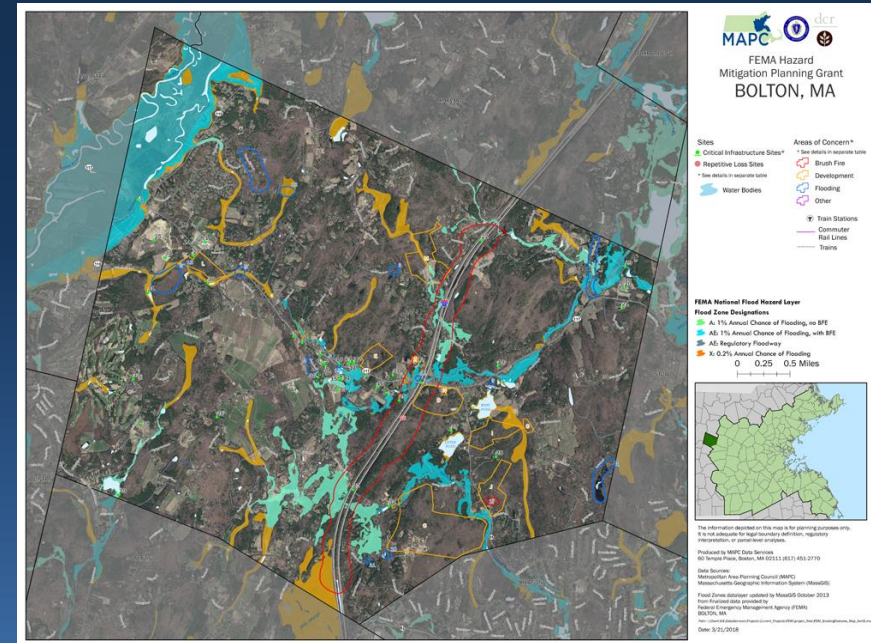
Bolton Natural Hazards Mitigation Plan 2018 Update

**Bolton Local Hazard Mitigation Team
Public Meeting
Board of Selectmen
July 12, 2018**

Martin Pillsbury
Joe Sacchi
Metropolitan Area Planning Council

1: Why is Bolton doing this Plan Update?

- The **Federal Disaster Mitigation Act** requires towns to adopt a Hazard Mitigation Plan to be eligible for FEMA mitigation grants.
 - Bolton's first plan was adopted in 2010 and now must be updated
 - This Plan Update will meet FEMA's requirement and help the Town make good use of its resources
- 
- An aerial photograph of a town area, likely Bolton, Massachusetts, overlaid with a hazard mitigation plan. The map shows various colored regions: blue areas likely representing water bodies or flood zones, yellow areas possibly indicating high-risk or developed regions, and red lines or boundaries that might represent specific hazard zones or property lines. The terrain is a mix of brown (bare earth or forest) and green (vegetation).



2: A Plan for Mitigating Damages from *Natural Hazards*

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



Mitigation Plan, not an Emergency Response Plan

3: What is Hazard Mitigation?

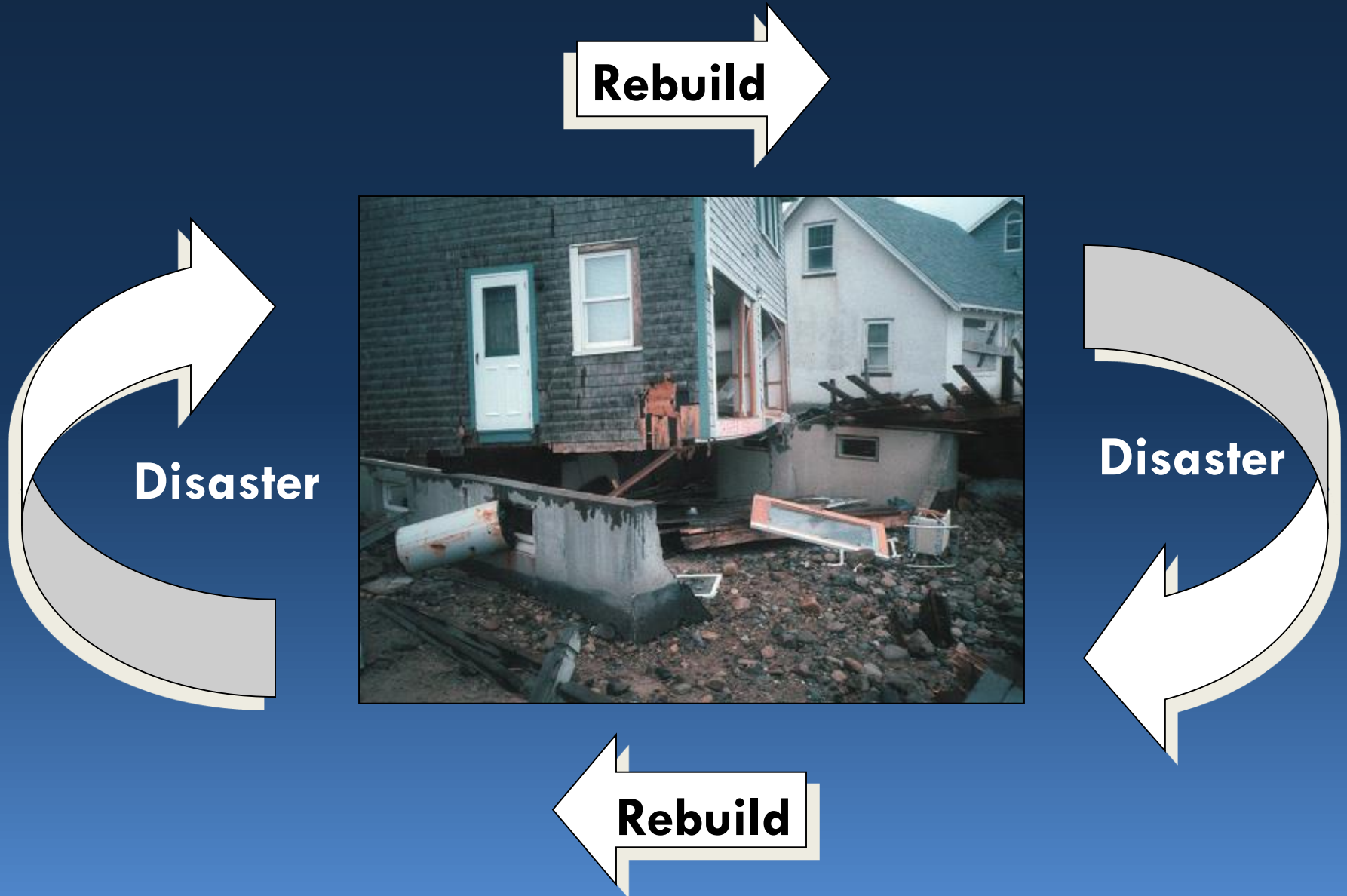


To permanently reduce or prevent losses of life, injuries and property damage by using long-term strategies

What preventive actions are being taken **NOW** to reduce the Town's vulnerability?

What other actions can be taken in the **FUTURE?**

4: Breaking the Cycle of Disaster & Rebuilding

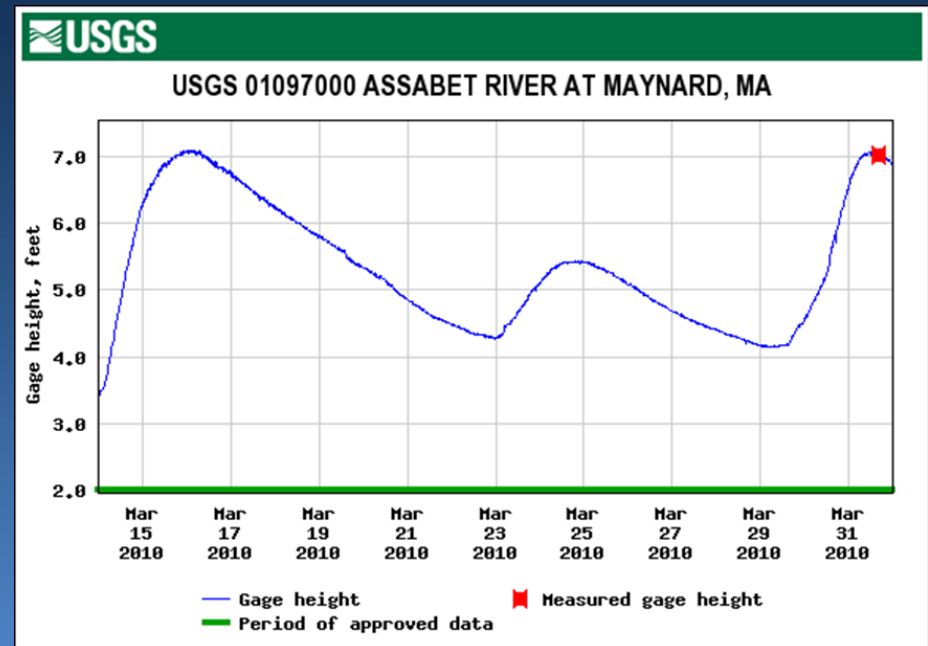
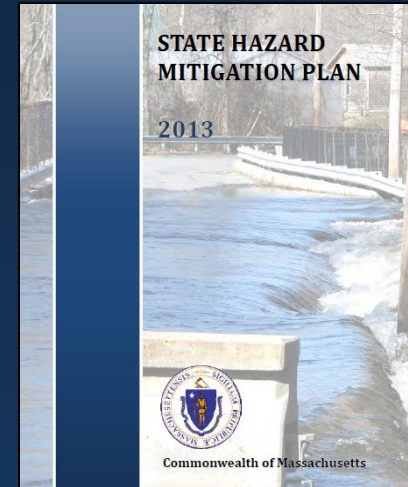


5: How the Plan Update Is Developed

- MAPC provided technical assistance to prepare the plan under a MEMA grant
- The Town coordinated through its *Local Hazard Mitigation Team*; 3 meetings held
- Two public meetings, one during plan development (March 2018) and one to present the draft plan (July 2018)
- The plan will be submitted to MEMA and FEMA for review and approval

6: Hazard Identification & Mapping

- State & Federal data on floodplains, hurricanes, earthquake risk, etc.
- Review *Mass. State Hazard Mitigation Plan*
- Consulted the Bolton Local Team for local information on hazard areas



The map shows the proposed rail line (indicated by a thick black line) and the locations of the 12 stations (indicated by blue circles labeled A through L). The map also shows the locations of the 12 stations (A through L) and the locations of the 12 stations (A through L). The map includes labels for surrounding cities like Lancaster, Harvard, Boston, and Roxbury, as well as the locations of the 12 stations (A through L).

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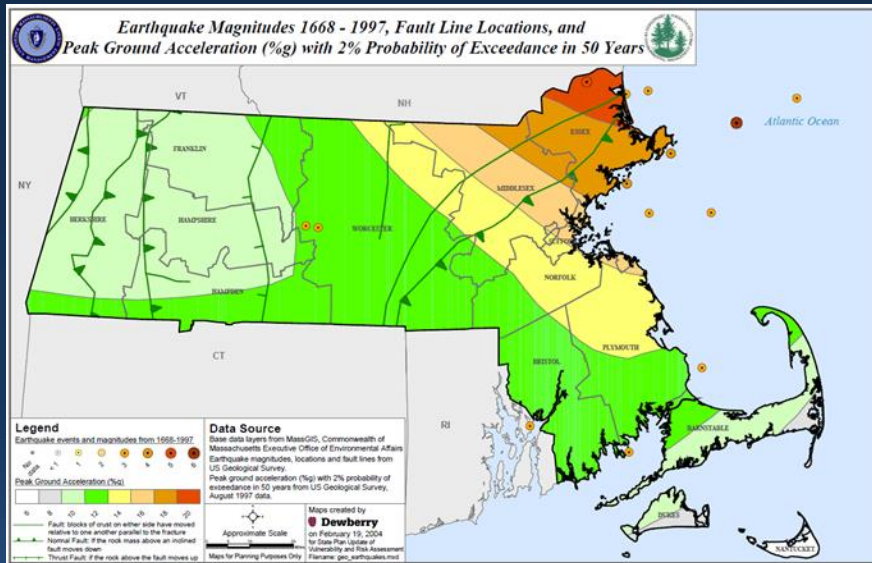
Teele Road	Long Hill Road
East End Road	Spectacle Hill
Golden Run Road	South Bolton Road
Manor Road	Vaughn Hill at Green Road
Forbush Mill Road	LIS Pond, along Forbush Hill Road
Vaughn Hill Road	Sugar Road
Main Street	Corner of Main and Mechanic

495 Corridor

Hudson Road and Danforth Lane

8

8: Other Hazards: Hurricanes, Blizzards, Earthquakes, Drought

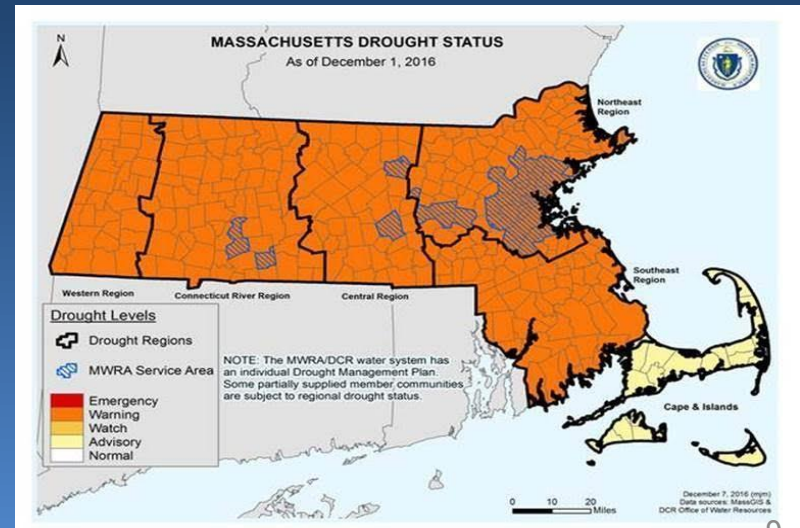


Hurricanes

Disaster	Title	Dates
DR-751	Hurricane Gloria	9/27/1985
DR-914	Hurricane Bob	8/19/1991
EM-3252	Hurricane Katrina Evacuation	8/29/2005-10/1/2005
EM-3315	Hurricane Earl	9/1/2010-9/4/2010
EM-3350	Hurricane Sandy	10/29/12-10/30

Source: Federal Emergency Management agency (FEMA)

Severe Winter Storm Event	Date
Blizzard of 1978	February 1978
Blizzard	March 1993
Blizzard	January 1996
Severe Snow Storm	March 2001
Severe Snow Storm	December 2003
Severe Snow Storm	January 2004
Severe Snow Storm	January 2005
Severe Snow Storm	April 2007
Severe Snow Storm	December 2010
Severe Snow Storm	January 2011
Blizzard of 2013	February 2013
Blizzard of 2015	January 2015



10: Vulnerability Analysis: Estimated Damages

HURRICANE Estimated Damages

100-year Storm property damage: **\$3,464,220**

500-year Storm property damage: **\$11,818,820**

EARTHQUAKE Estimated Damages

Magnitude 5 total property damage: **\$93,260,000**

Magnitude 7 total property damage: **\$564,780,000**

FLOODING: Areas subject to localized flooding:

100-year Flood property damage: **\$3,490,000**

500-year Flood property damage: **\$4,840,000**

11: Review Mitigation Strategies

Update mitigation measures recommended in the Plan:

- Review existing mitigation
- Where are the gaps?
- What actions will further reduce vulnerability?
- What are the priorities?



12: Bolton Existing Mitigation Measures

MULTI-HAZARD

- Comprehensive Emergency Management Plan (CEMP)
- Massachusetts State Building Code
- Local Emergency Planning Committee

FLOOD RELATED HAZARDS

- National Flood Insurance Program (NFIP)
- Street sweeping & catch basin cleaning
- Beaver mitigation and management
- Zoning and Subdivision regulations
- Open space preservation

WIND-RELATED HAZARDS

- Tree maintenance and removal program
- Massachusetts State Building Code
- Comprehensive Emergency Management Plan

DAM FAILURES

- Comprehensive Emergency Management Plan
- Permits required for construction
- DCR dam safety regulations

WINTER-RELATED HAZARDS

- Snow removal operations
- Sand/salt roadway application

GEOLOGIC HAZARDS

- Massachusetts State Building Code

BRUSH FIRE RELATED HAZARDS

- Permits for outdoor burning
- Subdivision Review
- Public education

13: Update Mitigation Strategies

Examples: Flooding Mitigation

1. Complete inventory of all drainage infrastructure in town and use inventory to develop a priority maintenance plan
2. Assessment of country drainage systems: Identify areas which inundate and pool water frequently
3. Spectacle Hill Road Improvements: Establish formal drainage area and divert overflow to pond on private land.
4. Drainage upgrades to area of Golden Run and Quail Run
5. Drainage upgrades to Forbush Mill Road
6. Century Mill Dam Assessment: Physical assessment and conclusive research about ownership and legal responsibility for any needed repairs
7. Century Mill Dam Repairs

14: Update Mitigation Strategies

Winter Storms

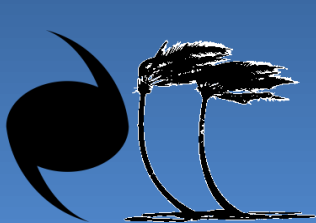
1. Tree Maintenance Program Funding
2. Assess municipal and school building roofs for snow load capacity

Brushfires

1. Equipment for Fire Department to Better Respond to Brush Fires
2. Public Education Regarding Brush Fires

Drought

1. Research field management practices to conserve water and determine under what conditions to reduce watering of public spaces



15: Next Steps: Plan Approval and Adoption

- Draft plan reviewed by MEMA and FEMA, revisions if needed
- FEMA issues notice of “Approval Pending Adoption”
- Board of Selectmen vote to adopt the plan
- FEMA issues formal Plan Approval
- Approved plan in effect for 5 years
- Town is eligible for FEMA mitigation grants

