



# Sudbury, MA 2010 Hazard Mitigation Plan Update Public Workshop

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Project Manager – Horsley Witten Group

May 30, 2019 8:00 PM  
Sudbury Grange Hall – Meeting Room



# 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”.

Reduction or elimination of long-term risk to life, property, and the environment.



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# Sudbury

## Local Hazard Mitigation Committee

- John Whalen, Sudbury Fire Chief
- Beth Suedmeyer, Environmental Planner
- Adam Duchesneau, Director of Planning and Community Development
- Dan Nason, Director of Public Works
- Bill Murphy, Health Director
- Bill O'Rourke, Deputy Director of Public Works
- Bill Barletta, Facilities Director
- Mark Herweck, Building Inspector
- Vin Roy, Executive Director Sudbury Water District
- Marie Royea, Citizen's Emergency Response Team
- Heather Tecce, MEMA
- Craig Pereira, Project Manager – Horsley Witten Group



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# Mitigation Process

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



# Assess Risks...

## Risk and Vulnerability Assessment

### ***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”.



# Hazards Affecting Sudbury (2010 Plan)

- Flood Related

- Riverine, Inland/Urban, Heavy Rain

- Sudbury River Floodplain (Water Row area)

- Sudbury River (Concord Road)

- Concord Road at Nashawtuc Country Club

- Hickory Road culvert

- Dam Failures

- Division of Fish & Wildlife Pantry Brook Dam

- Wayside Inn Grist Mill Dam

- Town-owned Carding Mill Dam

- Town-owned Stearns Mill Dam





# Hazards Affecting Sudbury (2010 Plan)

- Winter Related
  - Blizzards/Snow
  - Ice Storms
  - Extreme Cold
  
- Wind Related
  - Hurricanes
  - High/Strong Winds
  - Tornadoes
  - Lightning/Thunderstorms
  - Hail



# Hazards Affecting Sudbury (2010 Plan)

- Geologic Related
  - Earthquakes
  - Landslides
  
- Drought Related
  - Drought
  - Extreme Heat
  
- Wildfire
  - Boy Scout Reservation
  - Sudbury Valley Land Trust/Town Forest Land
  - MA DEM/USFW land near Tenneco natural gas pipeline





# Hazard Index (2020 Plan)

The Horsley Witten Group has evaluated each of the hazards affecting Sudbury to establish a **Hazard Index** – the natural hazards posing the most risk to the community, based on historical frequency and severity. Findings from the evaluation include the following top hazards:

- Inland/Urban Flooding, Heavy Rain
- Blizzards/Snow
- Hurricanes
- High/Strong Winds
- Drought



# Sudbury's Hazard Risk Index

	<u>Frequency</u>	<u>Severity</u>
• Flood-Related Hazards		
- Riverine/Flash Flooding	Low	Serious
- <b>Inland/Urban Flooding, Heavy Rain</b>	High	Extensive
- Dam Failures	Low	Serious
• Winter-Related Hazards		
- <b>Blizzards/Snow</b>	High	Extensive
- Ice	Low	Serious
- Extreme Cold	Low	Serious



# Sudbury's Hazard Risk Index

• Wind-Related Hazards	<u>Frequency</u>	<u>Severity</u>
- Hurricanes	High	Extensive
- High/Strong Winds	High	Serious
- Tornadoes	Low	Catastrophic
- Lightning/Thunderstorms	High	Minor
- Hail	High	Minor
• Geologic-Related Hazards		
- Earthquakes	Low	Extensive





# Sudbury's Hazard Risk Index

- Drought-Related Hazards

- Drought

- Extreme Heat

Frequency

High

Low

Severity

Serious

Serious

- Wildfire

- Brush Fires

Medium

Minor

- Landslides

- Landslide

Low

Minor



# Assess Risks...

## Risk and Vulnerability Assessment - Assets

### ▪ **Economic Assets**

- Businesses/major employers
- Tourist destinations

### ▪ **Social Assets**

- Vulnerable populations
- Cultural locations



# Assess Risks...

## Risk and Vulnerability Assessment - Assets

### ■ **Natural Resources**

- Lifeline and utility systems
- Wetlands
- Conservation and recreation lands

### ■ **Essential Buildings and Critical Facilities**

- Municipal buildings
- Hazardous facilities
- Roadways





# Mitigation Process

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



# Establish Goals...

## Mitigation Goals (2010 Plan)

- Prevent and reduce loss of life, injury, public health impacts and property damages resulting from all major natural hazards.
- Identify and seek funding for measures to mitigate or eliminate each known significant flood hazard area.
- Integrate hazard mitigation planning as an integral factor in all relevant municipal departments, committees and boards.
- Prevent and reduce the damage to public infrastructure resulting from all hazards.



# Establish Goals...

## Mitigation Goals (2010 Plan)

- Encourage the business community, major institutions and non-profits to work with the Town to develop, review and implement the hazard mitigation plan.
- Work with surrounding communities, state, regional and federal agencies to ensure regional cooperation and solutions for hazards affecting multiple communities.
- Ensure that future development meets federal, state and local standards for preventing and reducing the impacts of natural hazards.
- Take maximum advantage of resources from FEMA and MEMA to educate Town staff and the public about hazard mitigation.





# Establish Goals... Mitigation Measures

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



# Mitigation Process

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



# Identify Projects/Actions...

## Identification of Mitigation Actions

Mitigation actions to be developed based on review of the Town's identified risks and vulnerabilities to natural hazards.

Each action incorporates a brief description of the intended action, who the responsible parties are, a proposed time frame for completion and potential funding sources.





# Identify Projects/Actions...

## Prioritization of Actions

- **Social**
- **Technical**
- **Administrative**
- **Political**
- **Legal**
- **Economic**
- **Environmental**



# Identify Projects/Actions... Implementation

- Town Capability
- Plan Adoption/Incorporation into Existing Plans



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# Mitigation Process

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



# 2010 Plan Report Card

## High Priority Mitigation Measures

- Enhance Flood Plain Bylaw enforcement assistance. (Not completed, carry forward)
- Revise wetlands bylaw to provide better wildlife habitat protection and comply with new DEP Stormwater regulations. (Completed, ongoing)
- Increase Town emergency response to imminent storms and during winter storms.  
(Completed, ongoing)
- Elevate the grade of Concord Road two feet (between Lincoln Road to Old Sudbury Rd.). (Not completed, carry forward)
- Elevate Concord Road two feet (eastern end of Concord Rd.). (Not completed, carry forward)
- Remove beaver dam and conduct beaver trapping/removal as needed.  
(Completed, ongoing)





# 2010 Plan Report Card

## High Priority Mitigation Measures

- Develop inspection/maintenance plans: Carding Mill and Stearns Mill Dams.  
(Completed)
- Establish a regular tree inventory and maintenance plan. (Not completed, carry forward)
- Establish microwave link communications system with repeater at Nobscot Mountain. (Completed)
- Establish a municipal HAM radio station and provide training/licensing for operators.  
(Not completed, remove)



# 2010 Plan Report Card

## High Priority Mitigation Measures

- Build a municipal Emergency Operations Center as part of the redesign of Fire Dept. or new Police Station. (Completed)
- Reconfigure generators at Lincoln-Sudbury High School to include heating capability. (Not completed, carry forward)
- Install a large-capacity, multi-fuel generator at the Curtis Middle School.  
(Not completed, carry forward)
- Acquire a large, mobile diesel generator for the Fire Dept. (Completed)



# 2010 Plan Report Card

## Measures to Ensure Compliance with NFIP

- Adopt new regulations for the Water Resource Protection District bylaw.  
(Not completed, carry forward)
- Develop/Adopt new Stormwater bylaw in conjunction with MAPC. (Completed)
- Develop/Adopt new Earth Removal Bylaw. (Not completed, carry forward)
- Acquire wetlands parcels in the Sudbury River floodplain. (Completed)
- Increase funding for preventative practices on drainage infrastructure.  
(Not completed, carry forward)



# 2010 Plan Report Card

## Medium Priority Mitigation Measures

- Continue ongoing education for town residents on stormwater and wetland resources. (Completed, ongoing)
- Complete repairs and develop Operations and Management Plan for Pantry Brook Dam. (Not completed, carry forward)
- Elevate Concord Rd. near Nashawtuc Country Club. (Not completed, carry forward)
- Upgrade older drainage systems in town. (Not completed, carry forward)
- Beaver dam removal, beaver trapping/removal as needed. (Completed, ongoing)
- Establish more frequent maintenance schedules for town-owned drainage facilities. (Completed)
- Acquire Soft Suction pond water drafting system. (Completed)





# 2010 Plan Report Card

## Medium Priority Mitigation Measures

- Devote more resources to privately-owned drainage facilities. (Not completed, carry forward)
- Relocate overhead electrical/cable utility lines underground. (Not completed, carry forward)
- Conduct feasibility study to investigate options for all public buildings to be earthquake proof. (Not completed, carry forward)
- Add manpower to the Fire Dept. and provide homeowner education on fire prevention using building/landscaping best management practices.. (Completed, ongoing)

## Low Priority Mitigation Measures

- Increase outreach and education on subsidence, erosion, stormwater and BMPs to landscapers and contractors. (Completed, ongoing)



# High Priority Actions

- Tree and Forest Management
  - Preserve existing tree canopy/Plan for future species changes
    - Identify/remove dead/failing trees
    - Develop plan for re-planting (native species/size/shape/placement)
  - Purchase bucket truck for DPW
  - Public education around trimming/planting
- Power/Utility Lines
  - Bury lines underground as roads are repaved
  - Establish tree/buffer management
  - Evaluate resources
    - Rate-payer funding
    - MA Surcharge Program
    - Solar facilities



# High Priority Actions

- Emergency response planning and communication
  - Increase capacity and support for CERT and MRC (recruitment)
  - Training/communication protocol for hospitals and home care agencies
  - Educate community on Reverse 911
  - Assess needs of vulnerable populations to understand sheltering needs/'know your neighbor'
  - Maintain database of vulnerable populations, address data privacy/sharing challenges
- Update existing regulations
  - Stormwater regulations to reduce flooding/water quality impacts
  - Incorporate latest science/climate change projections
  - Private well restrictions/water bans during drought events



# High Priority Actions

- Stormwater Infrastructure Capacity
  - Stormwater Infrastructure Assessment
    - Retrofits, replacement, Low Impact Development/Green Infrastructure
  - Culvert Replacement
    - Repair, replace, engineering/design
- Strengthen emergency shelters (schools, libraries, Community Center)
  - Generators
  - Air-conditioning
  - Charging stations





# Project Schedule

Draft Update available for public comment – **December 2019**

Draft Update to MEMA – **February 2020**



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# Contact Us...

**Questions and/or comments about the Hazard Mitigation Plan Update, please contact:**

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**Thank You!**



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