

Douglas, MA

# ***Hazard Mitigation Plan Update***

Public Workshop #2

Wednesday, September 10, 2025, 7:00 PM

Douglas Municipal Center – Resource Room



Craig Pereira, CFM, NCI

# WELCOME!



# Douglas Local Hazard Mitigation Team (LHMT)

- Matthew Benoit – Director, Community Development (former)
- John Charbonneau – Director, Community Development (current)
- Mark Dunleavy – Patrolman/Information Technology
- Ken Frasier – Building Commissioner
- Adam Furno – Superintendent, Highway Department
- John Furno – Fire Chief
- Kristin Harris – Board of Health
- Kelly Manning – Assistant Fire Chief/Project Manager
- Nick Miglionico – Police Chief
- Robert Sullivan – System's Manager, Water/Sewer Department
- Matt Wojcik – Town Administrator
- Gabriella Spitzer – Environmental Planner, Horsley Witten Group, Inc.
- Craig Pereira – Project Manager, 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”*



# Mission Statement and Goals

*Douglas's population and land use are changing, and climate risks are growing. In that context, the mission of the Douglas Hazard Mitigation Plan is to plan effectively to reduce risks and protect the whole community.*

1. Protect the public's health, safety, and welfare.
2. Minimize social distress and economic losses/business disruptions from hazards.
3. Reduce property damages caused by natural hazards and their downstream impacts, including dam failure.
4. Provide and ongoing forum for the education and awareness of natural hazard mitigation issues, programs, policies, projects, and resources.
5. Adapt to/mitigate for the existing and projected impacts of climate change towards a sustainable, resilient community.
6. Protect the community's assets, including the town's cultural, historical, and natural/environmental assets from hazards.



# Mitigation Process

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



# Outreach and Coordination

## **Project Webpage**

### **Local Hazard Mitigation Team**

- September 10, 2023: Project Kickoff Meeting
- April 10, 2024: LHMT Meeting #1
- September 10, 2024: LHMT Meeting #2
- May 20, 2025: LHMT Meeting #3
- June 24, 2025: LHMT Meeting #4

### **Public Workshop #1**

- February 12, 2025

### **Community Survey**

- 11 months/47 responses

### **Stakeholder Interviews**

- National Grid
- Whittin Reservoir Watershed District
- Hayward Landing Apartments/Blackstone Watershed Collaborative/Tighe & Bond



# Assess Risks... Hazard Index

**Table 2-2 2025 Douglas, MA**

<i>Natural Hazard</i>	<i>Frequency (i.e. Very Low, Low, Moderate, High, Very High)</i>	<i>Location (i.e. small, medium, large)</i>	<i>Severity (i.e. Minor; Limited; Critical; Catastrophic)</i>	<i>2025 Hazard Index (i.e. ranked by combining frequency and severity; 10 - high, 1 - low)</i>
<b>Flood-Related Hazards</b>				
- Riverine/Flash Flooding <sup>1</sup>	Low (High/4)	Medium (Small)	Minor (Minor/1)	3/Medium (Moderate/5)
- Inland/Urban Flooding/Heavy Rain <sup>1</sup>	Low (Very High/5)	Medium (Medium)	Minor (Minor/1)	3/Medium (Moderate/6)
- Dam Failures <sup>1</sup>	Very Low (Very Low/1)	Small (Medium)	Limited (Limited/2)	3/Medium (Low/3)
- Beaver Activity <sup>1</sup>	(Very High/5)	(Medium)	(Minor/1)	(Moderate/6)
<b>Winter-Related Hazards</b>				
- Snow/Blizzard/Winter Storm/Nor'easter	Very High (Very High/5)	Large (Large)	Limited (Limited/2)	2/High (High/7)
- Ice <sup>1</sup>	Very High (Very High/5)	Large (Large)	Limited (Limited/2)	2/High (High/7)
- Extreme Cold	Very High (Moderate/3)	Large (Large)	Limited (Limited/2)	4/Low (Moderate/5)
<b>Wind-Related Hazards</b>				
- Hurricanes/Tropical Storms	Low (Moderate/3)	Large (Large)	Limited (Limited/2)	3/Medium (Moderate/5)
- Tornadoes	Very Low (Low/2)	Small (Medium)	Limited (Limited/2)	4/Low (Moderate/4)
- High Winds	Moderate (Very High/5)	Small (Large)	Limited (Limited/2)	2/Medium (High/7)
- Lightning/Thunderstorms	Moderate (Moderate/3)	Small (Medium)	Minor (Minor/1)	2/High (Moderate/4)
- Hail <sup>1</sup>	(High/4)	(Medium)	(Minor/1)	(Moderate/5)
<b>Geologic-Related Hazards</b>				
- Earthquakes <sup>1</sup>	Very Low (Very Low/1)	Large (Large)	Minor (Minor/1)	5/Highest (Low/2)
<b>Extreme Heat-Related Hazards</b>				
- Extreme Heat <sup>1</sup>	Moderate (Very High/5)	Large (Large)	Limited (Minor/1)	4/Low (Moderate/6)
<b>Drought-Related Hazards</b>				
- Drought	Very Low (Moderate/3)	Large (Large)	Minor (Minor/1)	4/High (Moderate/4)
<b>Brushfire/Wildfire-Related Hazards</b>				
- Brushfire/Wildfire <sup>1</sup>	Moderate (Very High/5)	Medium (Small)	Minor (Limited/2)	4/Medium (High/7)
<b>Environmental-Related Hazards</b>				
- Aquatic Plant Invasive Species <sup>1</sup>	(Low/2)	(Small)	(Minor/1)	(Low/3)
- Vector Borne <sup>1</sup>	(Very High/5)	(Large)	(Minor/1)	(Moderate/6)
<b>Changes to Groundwater-Related Hazards</b>				
- Changes in Groundwater <sup>1</sup>	(Very Low/1)	(Small)	(Minor/1)	(Low/2)

Notes:

1: Ranked by Douglas LHMC (all others utilized NOAA Severe Events Database).

Blue Font: MVP priorities...Red Font: 2017 Modified priorities based on existing conditions...based on second round of ranking



# Economic Vulnerability Analysis

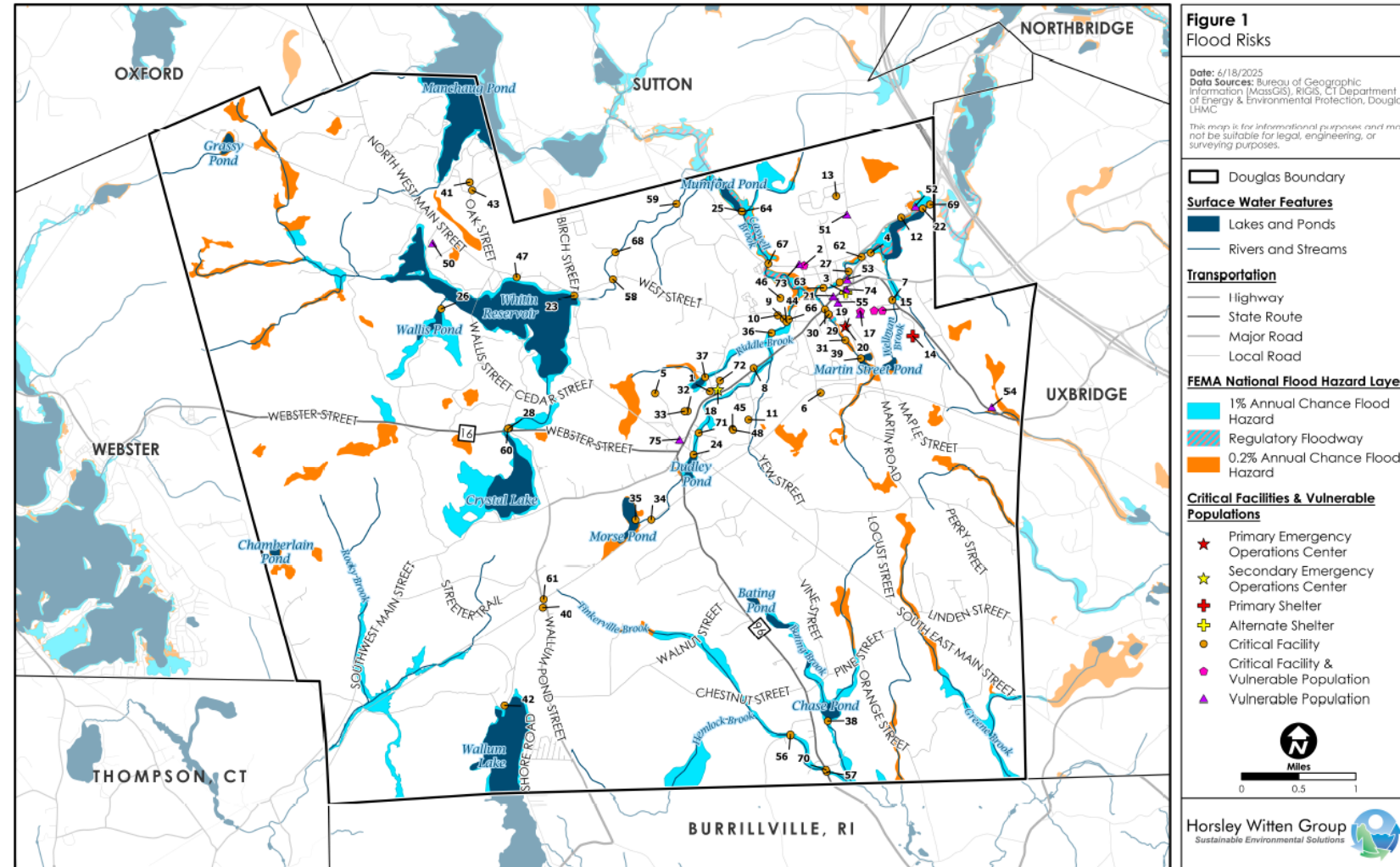
## NFIP Insured Properties

- 6 policies/\$2,055,000 value
- No Repetitive Loss Properties

## Impacts of FEMA

# Flood Hazard Zones

- 100-Year:
  - 731 parcels/\$477,210,739
- 500-Year:
  - 258 parcels/\$98,259,505



# Social Vulnerability

## **Public Infrastructure/Emergency Lifelines**

- Drinking Water/Wastewater Systems
  - Various municipal infrastructure (WWTF, bridges, dams) located in 100-/500-Year flood zones
- Transportation System
  - Various intermittent roadway segments located in 100-/500-Year flood zones
- Vulnerable Populations
  - Several large employers located in 100-/500-Year flood zones



# Mitigation Strategy

## **Mitigation Actions identified from:**

- LHMT Coordination
- Various Plans, Studies, Reports (Capability Assessment)
- Online Survey
- HWG/Consultant



# Mitigation Measures...Categories

- **Structure and Infrastructure Projects**
- **Preparedness, Coordination and Response**
- **Education and Awareness Programs**
- **Local Plans and Regulations**



# 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 Town 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/resources?



# Mitigation Actions

## Time Frames

- Short Term: less than 1 year
- Medium Term: 1 year - < 3 years
- Long Term: > 3 years - < 5 years

## Cost Ranges

- Staff Time: Municipal Personnel Time
- Low: < \$50,000
- Moderate: > \$50,000 but < \$100,000
- High: > \$100,000



# 2025 Mitigation Strategy

## STRUCTURE AND INFRASTRUCTURE

### *High Priority Actions*

#### **Action #1**

...2025 Risk Assessment

***The Town will ensure the completion of recommended improvements identified in the most recent Phase I Inspection Report and to also develop an Operations and Maintenance Manual for Gilboa Pond Dam.***

#### **Action #2**

...Town of Douglas Sewer Asset Management Plan CWSRF No. 7070 Draft

***Implement the recommendations from the Town of Douglas Sewer Asset Management Plan CWSRF No. 7070 Draft associated with operations at the Town's Wastewater Treatment Facility/Sewer Pump Stations.***

- Improvements to Sludge Pump Station
- Replace the Colonial Street Pump Station
- GIS expansion
- CCTV Inspections
- Updates to Asset Management Plan

#### **Action #3**

...2017 Plan/2025 Risk Assessment

***Ensure the continuity of electrical services for the town's critical facilities.***

- Water Booster Station (portable 60 kw generator)
- Water Pump (Turbine) Station (portable generator for chemical feed and monitoring equipment/genset)



# 2025 Mitigation Strategy

## STRUCTURE AND INFRASTRUCTURE

### *High Priority Actions*

#### **Action #4**

...2025 Risk Assessment

**Ensure the continuity of electrical services for the town's critical facilities (shelter/food pantry).**

- Adult Social Center (also secondary shelter location)
- Douglas Food Pantry (St. Denis Church)

### *Medium Priority Actions*

#### **Action #5**

...2025 Risk Assessment/Blackstone Watershed Collaborative coordination

**Insufficient drainage infrastructure at the Fire Station and DPW Garage is causing severe flooding which affects emergency vehicle response ability to enter/exit the Fire Station and causes road closures and also directs significantly sedimented stormwater into Centerville Brook and its associated wetlands where the stormwater ends up. The Town will continue to partner with the Blackstone Watershed Collaborative towards this effort, as well as other non-profits to accomplish the goals of the community. This project seeks to:**

- Maintain and expand an existing bioretention area at the Fire Station
- Design/Install two new bioretention areas at the Fire Station (one with a swale leading to it)
- Address sediment at the DPW Garage by paving an existing impervious packed dirt parking lot
- Cover an existing sand pile
- Install a subsurface infiltration trench under the parking area through a sediment vault and perforated pipes
- Include public education by designing and installing signage at this highly-visible site explaining nature-based solutions and co-benefits





# 2025 Mitigation Strategy

## STRUCTURE AND INFRASTRUCTURE

### *Medium Priority Actions*

#### **Action #6**

...2025 Risk Assessment

***Ensure that critical facilities are adequately protected against flood-related hazards (WWTF/Bridges/Dams).***

#### **Action #7**

...2025 Risk Assessment/MVP Summary of Findings (North St. bridge area)

***Develop an implementation strategy to address property and streets subject to flooding.***

#### **Action #8**

...2025 Risk Assessment

***Ensure that vulnerable populations are adequately protected against flood-related hazards (large employers).***

- Classic Envelope
- Open Sky Community Services



# 2025 Mitigation Strategy

## STRUCTURE AND INFRASTRUCTURE

### Medium Priority Actions

#### Action #9

...2025 Risk Assessment/MVP Summary of Findings 2020/Blackstone River Watershed Needs Assessment Report

**Conduct a townwide culvert capacity study to identify improvements and prepare for projected increases in precipitation/flooding. As a starting point, the Town should consider the 25 culverts previously assessed/entered into the NAACC database via technical assistance provided in 2024 by the Blackstone Watershed Collaborative.**

Create a priority list of those in need of 'rightsizing' and replacement:

- Along the Whitin Reservoir causeway
- Wallis Street (between Whitin Reservoir and Bad Luck Pond)
- Charles Street at Wellman Brook
- Walnut Street and Tinkerville Brook
- North Street

#### Action #10

...2025 Risk Assessment/Tighe & Bond Coordination/Blackstone River Watershed Needs Assessment Report

**The Town will continue to partner with the Blackstone Watershed Collaborative for the creation of 60% permit-ready design for the replacement of the Webster Street and Wallis Street culverts (Division of Ecological Restoration/MA Dept. of Fish and Game Culvert Replacement Municipal Assistance Grant Program).**

#### Action #11

...2017 Plan

**The Town will establish a private/ham radio frequency to communicate available resources, evacuation, and other pertinent information to residents quickly and effectively if power goes down.**



# 2025 Mitigation Strategy

## STRUCTURE AND INFRASTRUCTURE

### *Medium Priority Actions*

#### **Action #12**

...2025 Risk Assessment

***The Town will coordinate with the private dam owners for the Morse Pond Dam and Riddle Road Pond Dam accordingly:***

- Morse Pond Dam
  - Recommended improvements identified in the January 17, 2020 Phase I Inspection Report
  - Operations and Maintenance Manual
- Riddle Road Pond Dam
  - Determine if purchase of the site is the preferred alternative, followed by the next steps (remove/replace, repair/maintain, or decommission)
  - If the Town's decision is not to purchase, coordinate with the private dam owner to ensure the recommended improvements from the 2009 Phase I Inspection Report are completed.

#### **Action #13**

...2025 Risk Assessment/MVP Summary of Findings 2020

***The Town will coordinate with MA DCR ODS to ensure the completion of recommended improvements identified in the most recent Phase I Inspection Reports/Follow-Up Inspection Reports for the Wallis Pond Dam.***

#### **Action #14**

...2025 Risk Assessment

***Upgrade the Mechanic Street Bridge.***



# 2025 Mitigation Strategy

## STRUCTURE AND INFRASTRUCTURE

### *Low Priority Actions*

#### **Action #15**

...2025 Risk Assessment/MVP Summary of Findings 2020

***The Town will coordinate with the Whitin Reservoir Watershed District to ensure the completion of recommended improvements identified in the most recent Phase I Inspection Report, to annually update the Emergency Action Plan (EAP) and to encourage the Whitin Reservoir Watershed District to collaborate on a range of specific actions that address reducing risk to/from Whitin Reservoir Dam, including:***

- Rehabilitating/Removing the dam
- Adopting/Enforcing land use ordinances in inundation zones
- Elevating structures in inundation zones
- Adding flood protection such as berms, floodwalls or floodproofing in inundation zones

#### **Action #16**

...2025 Risk Assessment/Tighe & Bond coordination call

***Old Mill Pond Dam and Douglas Mill Pond Dam recently had a Dam Breach Feasibility Study completed to evaluate considerations for removal of both dams (January 2024). The private owners wish to have both dams removed and are currently working with various partners to obtain funding necessary to do so. The Town will continue to collaborate with the private dam owners to secure funding for the removal of both dams.***



# 2025 Mitigation Strategy

## PREPAREDNESS, COORDINATION, AND RESPONSE

### *High Priority Actions*

#### **Action #17**

...2025 Risk Assessment

***Evaluate the uses of snow fences or 'living fences' (e.g., rows of trees or shrubs), to limit blowing and drifting snow over the following roadways:***

- Main St./West St./Bigelow Rd./Church St./NW Main St./Wallis St./Riedell Rd.

### *Medium Priority Actions*

#### **Action #18**

...MVP Summary of Findings 2020

***Improve management of forested lands throughout the Town, whether DCR, Town, or privately-owned.***

- Develop/enact forest management plans including brush and dead-wood clearing programs, including public outreach to encourage action on private lands, to reduce fuel load in forested areas. Study the potential for controlled burns.
- Increase the tree trimming budget. Document street tree conditions throughout the Town and create a prioritized list for removal or pruning based on hazard level. Develop plan for storage and use of removed trees.



# 2025 Mitigation Strategy

## LOCAL PLANS AND REGULATIONS

### *High Priority Actions*

#### **Action #19**

...2017 Plan

***Use MA Drought Management Plan as a template for the Town's own drought plan and integrate State's recommendations and actions according to the Town's needs.***

#### **Action #20**

...Resource Management Plan Douglas State Forest

***Implement management recommendations to protect the natural resources located within the Douglas State Forest.***

- Review/Implement MassDEP Wellhead Protection Tips and Guidance (MassDEP 1995, MassDEP 2011) within the Forest's Zone I Wellhead Protection Areas.
- Investigate relocating picnic facilities outside the Zone I Wellhead Protection Area at Wallum Lake Recreation Area or relocating well outside of high-use recreation areas.
- Install a secured perimeter fence around the wellhead at the Wallum Lake Recreation Area.
- Replace the existing privy at the Mid-State Trail shelter with a conforming on-site sewage disposal system, as permitted by Douglas Health Dept., NHESP, MHC, and other regulators, as appropriate.
- Meet with representatives of MassWildlife, RIDEM, CT DEEP, and Indigenous peoples to identify common interests in the conservation of natural resources at Douglas State Forest, Mine Brook Wildlife Management Area, and Buck Hill Wildlife Management Area.
- Survey/Map the state endangered plant population and develop/implement a Habitat Management Plan to protect this species within Douglas State Forest.
- Implement recommendations in the Program Accessibility Assessment (IHCD 2019).
- Fill or cap the open well adjacent to the campsite entrance.



# 2025 Mitigation Strategy

## LOCAL PLANS AND REGULATIONS

### *Medium Priority Actions*

#### **Action #21**

...Town of Douglas Open Space and Recreation Plan 2023/MVP Summary of Findings 2020

#### **Build the climate resilience of the Town.**

- Reduce flooding and stormwater concerns:
- Install bioswales at sidewalks in new construction/developments.
  - Assess the culverts near the Town's open space and recreation facilities and upgrade as necessary using stormwater best management practices.
  - Educate the public on building within flood hazard areas.
  - Educate the public on impacts of fertilizer runoff from properties within a certain distance of water resources.
- Strengthen the awareness of extreme temperatures and drought impacts:
  - Develop a public education campaign about insect-borne diseases and prevention (EEE and Lyme).
  - Develop a public education campaign about drought and wildlife awareness.
  - Install a local weather station to monitor temperature and precipitation changes.



# 2025 Mitigation Strategy

## LOCAL PLANS AND REGULATIONS

### *Medium Priority Actions*

#### **Action #22**

...Drinking Water System Risk and Resilience Assessment, 2021

***Implement recommendations from the Town's Drinking Water System Risk and Resilience Assessment to help increase their Utility Resilience Index (URI):***

- Update the Emergency Response Plan and conduct annual trainings and functional exercises.
- Join the MA Water/Wastewater Agency Response Network (MAWARN).
- Determine methods to receive critical parts/equipment in the event of a failure within 24 hours.
- Conduct cross-training of employees to have at least 75% of staff response-capable in critical operations and maintenance positions and available as backup in the event of a pandemic illness.
- Consider the development of a Business Continuity Plan (BCP).
- Conduct a formal asset management program assessment of the drinking water system infrastructure according to the Government Accounting Standards Board (GASB) asset management standards.





# Project Schedule

**Comments to Craig Pereira ([cpereira@horsleywitten.com](mailto:cpereira@horsleywitten.com)) by September 12, 2025**

**Draft Update to MEMA: by September 22, 2025**



# Contact Us

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**THANK YOU!**

