

Appendix A:

Maps

Facility/Infrastructure/Hazard	Type	ID
Water hole - 264 Mirick Rd; Washburn's; pvc dry hydrant	CI	FD-1
Water hole - Esty Rd; Wes gates pond; pvc dry hydrant	CI	FD-2
Water hole - Hubbardston Rd; Steadman's; pvc dr hydrant	CI	FD-3
Water hole - 24 Wheeler Rd; Spark's Pond; pvc dry hydrant	CI	FD-4
Water hole - Boylston Rd: School House Pond; pvc dry hydrant	CI	FD-5
Water hole - 288 Brookstation Rd; Fife's; pvc dry hydrant	CI	FD-6
Water Hole - 42 Sterling Rd; steel dry hydrant	CI	FD-7
Water hole - Stagecoach Rd; pvc dry hydrant	CI	FD-8
Water Hold - Sharon Dr; Steel dry hydrant	CI	FD-9
Water hole - 78 Coal Kiln Rd; Stevens; steel dry hydrant	CI	FD-10
Water hole - Main St; Bridge; pvc dry hydrant	CI	FD-11
Water hole - 263 Hubbardston Rd; Gas Plant	CI	FD-12
Water hole - 59 Beaman Rd; Beaman Pond; pvc dry hydrant	CI	FD-13
Water hole - 64 Goodnow Rd; dirt road before; turbo draft	CI	FD-14
Water hole - 46 Goodnow Rd; Floating strainer	CI	FD-15
Water Hole - Scout Land Bridge: turbo draft	CI	FD-16
Water hole - 294 Worcester Rd; Zottlie's; Floating strainer	CI	FD-17
Water hole - Hobbs Rd; 1 pvc 1 steel dry hydrant	CI	FD-18
Water hole - Station 2; pvc dry hydrant and pump	CI	FD-19
Water hole - 214 E Princeton Rd; Lawson's; pvc dry hydrant	CI	FD-20
Water Hole – 10 Gates Rd; Fire Pond; floating strainer	CI	FD-21
Water hole - 294 Worcester Rd; Zottlie's; Increase capacity	CI	DR-1
Town's EOC generator replacement	CI	HU-2
Highway Dept Generator Needs	CI	HU-3
Fire Station Lightening Rod Protection and Grounding Needs	CI	ST-1
Police Station Lightening Rod Protection and Grounding Needs	CI	ST-2
Fire Dept Tornado Siren Repair	CI	ST-3

Fire Station Tornado Siren Repair	CI	ST-4
Hobbs Road Flooding	H	FL-1
Ball Hill Road Flooding	H	FL-2
Ball Hill Road Flooding	H	FL-3
Ball Hill Road Flooding	H	FL-4
Ball Hill Road Flooding	H	FL-5
Ball Hill Road Flooding	H	FL-6
Sterling Hill Flooding	H	FL-7
Mirick Road Flooding	H	FL-8
Calamint Hill Road Flooding	H	FL-9
Wildfires - Leominster State Forest	H	WF-1
Wildfires - Wachusett Mountain	H	WF-2
Wachusett Mountain Ski Area	CI	OS-1
Bridge	CI	B-1
Beaver Dams	H	FL-10

Critical Infrastructure Acronym Codes:

FD: Fire Department

B: Bridge

OS: Outdoor Space/Recreation

Hazards Acronym Codes:

FL: Flooding

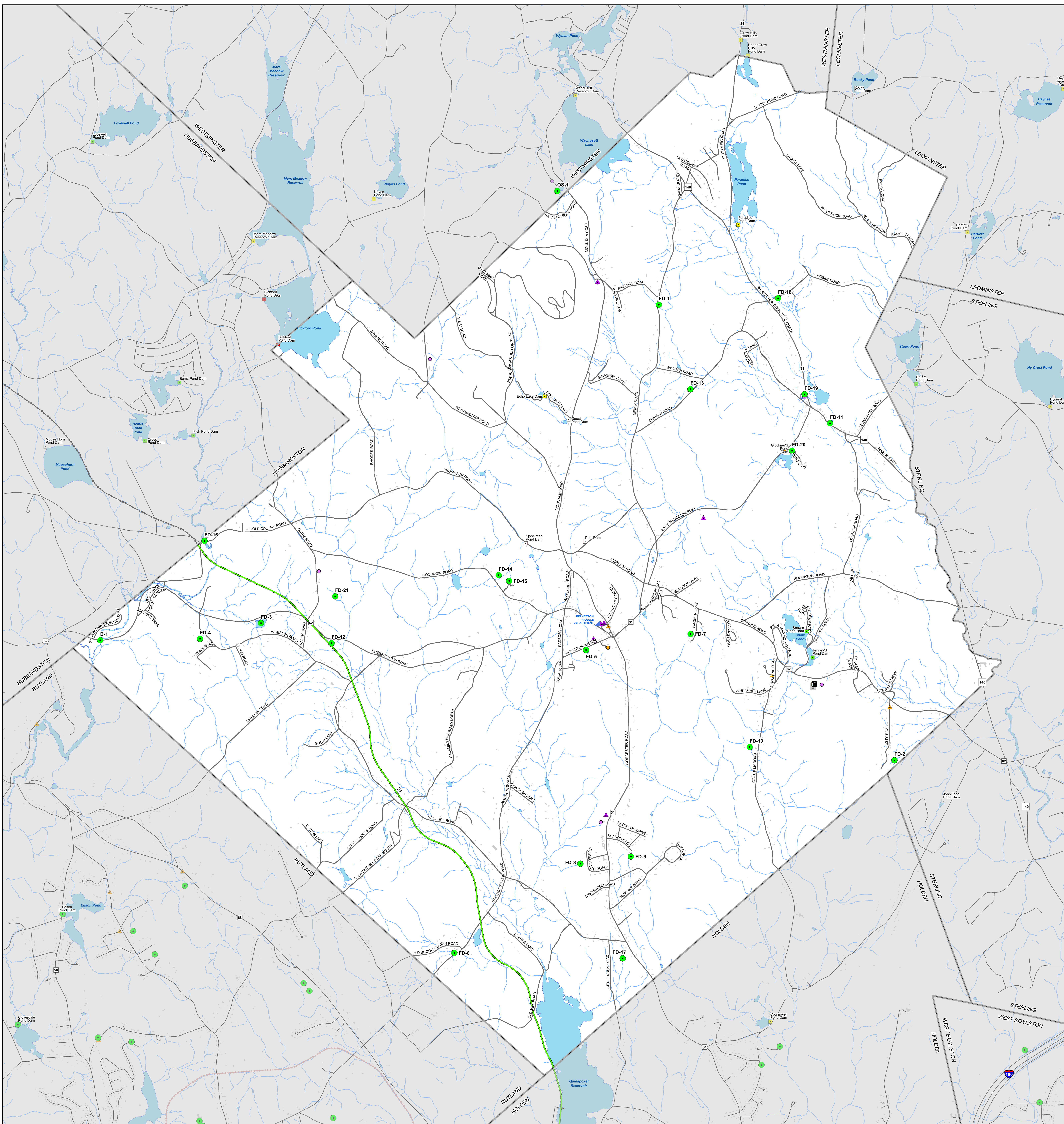
WF: Wildfire

ST: Severe Thunderstorms / Wind / Tornadoes

HU: Hurricanes

Hazard Mitigation Plan

Map 1 Critical Infrastructure and Facilities Town of Princeton, Massachusetts September 2025



Legend

- Elderly Housing
- Emergency Shelters
- Misc Data
- ▲ Daycare
- EOC
- ▲ Other Government Buildings
- Town Halls
- Local Police
- Fire Station
- Schools (Pre-K through High School)
- Active Rail Line
- Out of Service/Abandoned Rail Line

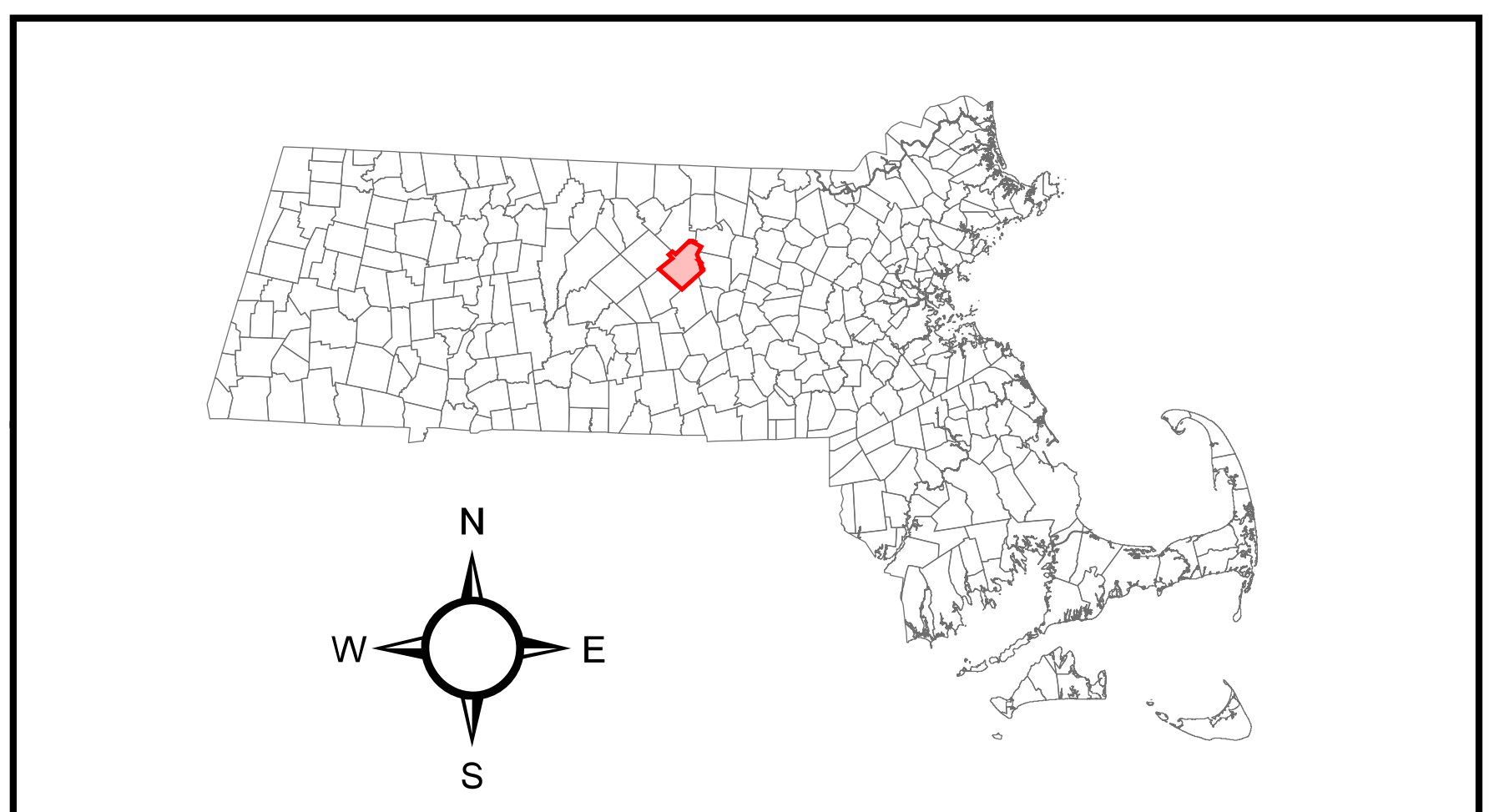
Dams

- High Hazard
- Significant Hazard
- Low Hazard
- N/A

- Town Boundaries
- Structures
- Water Bodies
- Streams
- Roads

Locally Defined

- Critical Infrastructure (Points)
- Critical Infrastructure (Arcs)
- ▨ Critical Infrastructure (Polygons)



0.65 0.325 0 0.65 1.3 Miles

Data provided by participating municipalities, CMRPC, massDOT and MassGIS.

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.

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Date: 9/19/2025 Document Path: H:\Projects\PDMPDM_01_Local_CIS_36x44.mxd



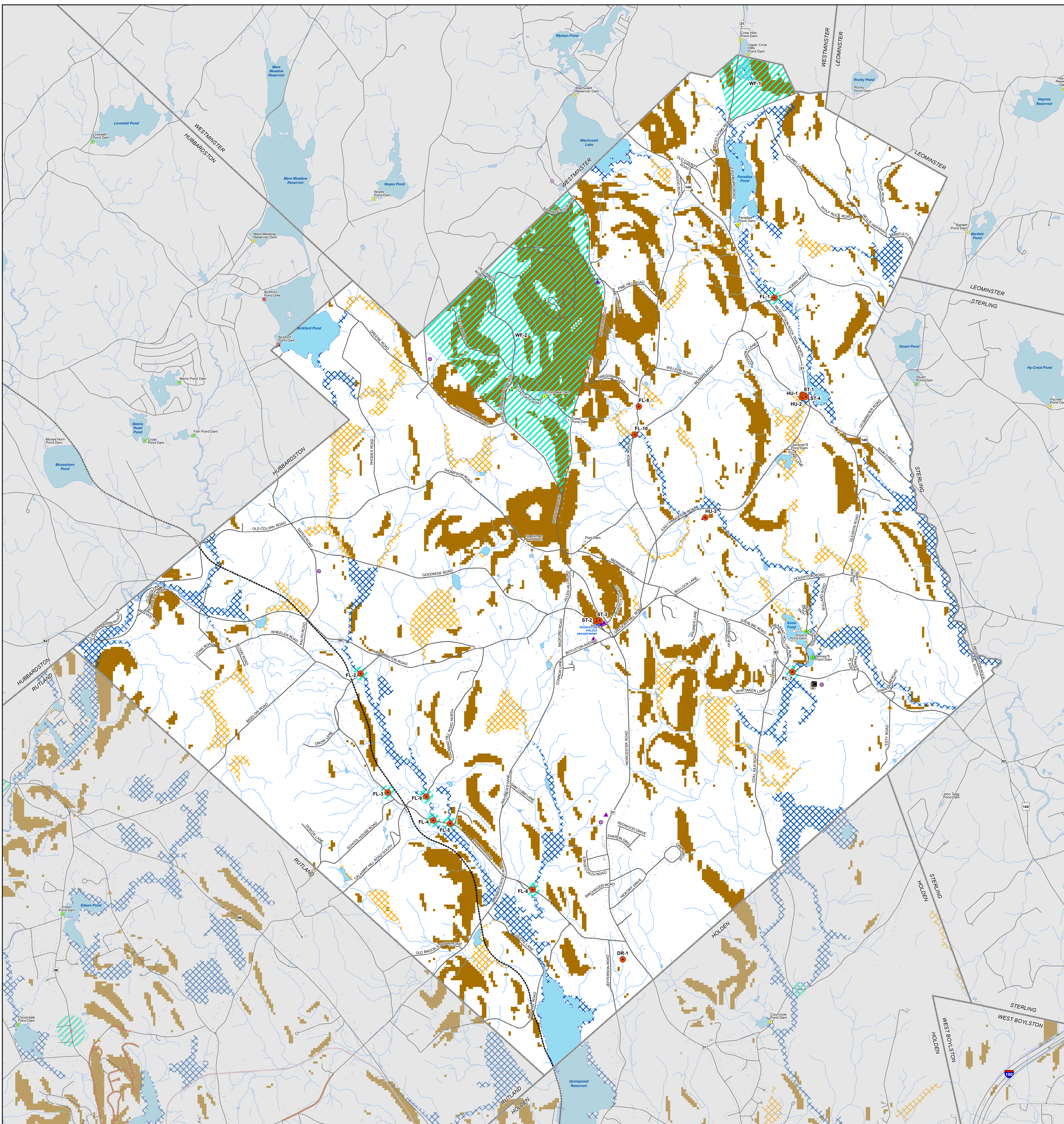
Hazard Mitigation Plan

Map 2

Hazards

Town of Princeton, Massachusetts

September 2025



Legend

● Elderly Housing	▪ Town Halls
■ Emergency Shelters	■ Local Police
● Misc Data	● Fire Station
▲ Daycare	■ Schools (Pre-K through High School)
■ EOC	— Active Rail Line
▲ Other Government Buildings	— Out of Service/Abandoned Rail Line

□ Town Boundaries	■ Water Bodies	— Roads
■ Structures	— Streams	

Hazards

■ High Hazard Dams	■ 100-year Flood Area*	■ High Slope (15% and above)
■ Significant Hazard	■ 500-year Flood Area	
■ Low Hazard		
■ N/A		

FEMA DFIRM / FEMA Q3 Flood Flood Zones / Zones

Locally Defined

● Hazards (Points)	■ Hazard (Polygon)	■ Possible Flood Area
— Hazards (Arcs)		

Data provided by participating municipalities, CMRPC, massDOT and MassGIS.

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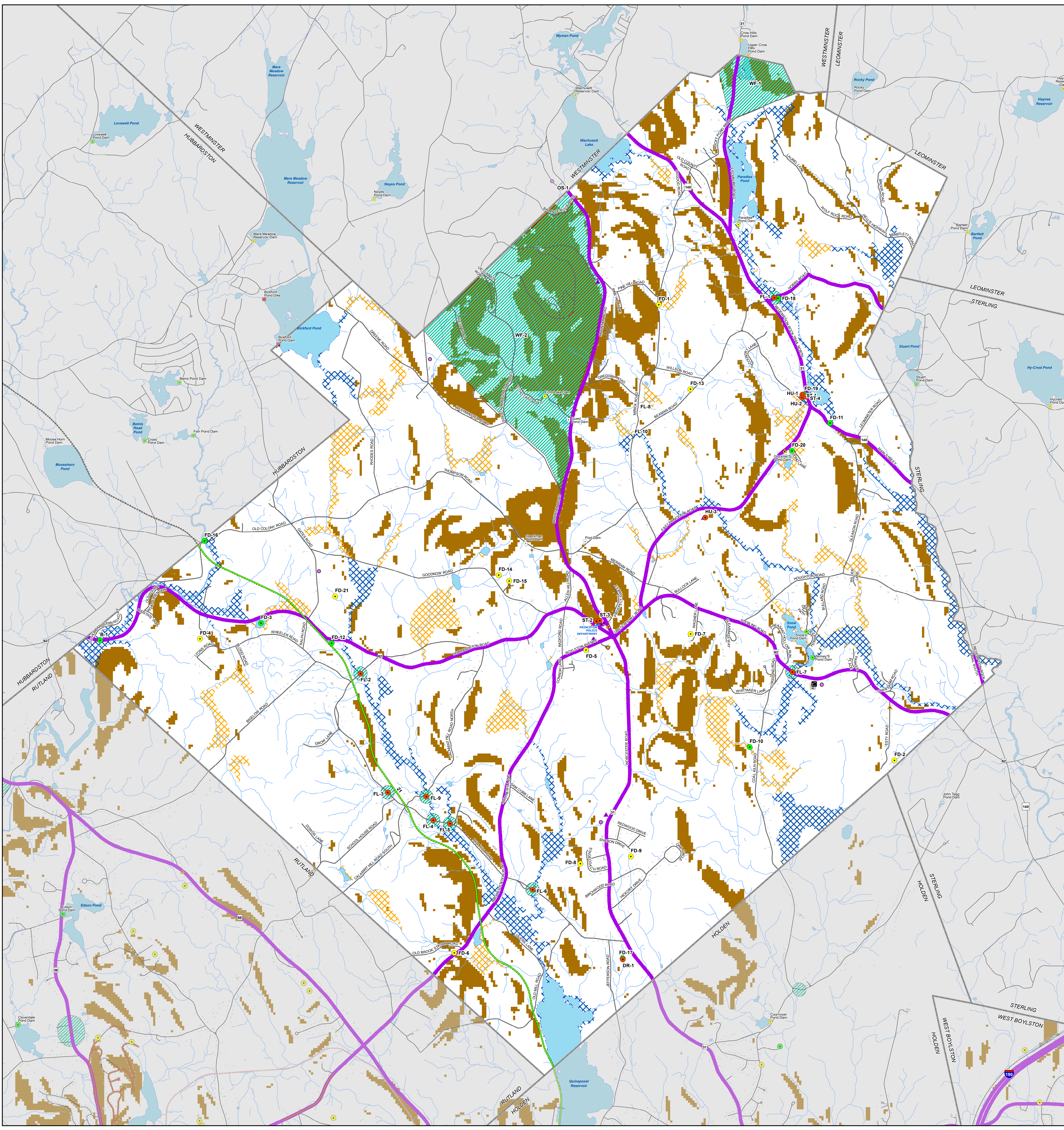
Hazard Mitigation Plan

Map 3

Vulnerable Critical Infrastructure and Facilities

Town of Princeton, Massachusetts

September 2025



Legend

● Elderly Housing	▪ Town Halls
■ Emergency Shelters	■ Local Police
● Misc Data	● Fire Station
▲ Daycare	■ Schools (Pre-K through High School)
■ EOC	— Active Rail Line
▲ Other Government Buildings	— Out of Service/Abandoned Rail Line
■ EJ/Vulnerable Population (Mobility 2040)	

▭ Town Boundaries	— Streams	— Regionwide Evacuation Routes
▭ Structures	— Roads	
▭ Water Bodies		

Hazards

■ High Hazard	▨ 100-year Flood Area*	■ High Slope (15% and above)
■ Significant Hazard	▨ 500-year Flood Area	▨ Repetitive Loss Property Areas
■ Low Hazard		
■ N/A	FEMA DFIRM Flood Zones	FEMA Q3 Flood Zones

Locally Defined

● Vulnerable Critical Infrastructure	— Vulnerable Critical Infrastructure	▨ Vulnerable Critical Infrastructure
● Non-vulnerable Critical Infrastructure	— Non-vulnerable Critical Infrastructure	▨ Non-vulnerable Critical Infrastructure
● Hazard	— Hazard	▨ Hazard
		▨ Possible Flood Area

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APPENDIX B

Public Survey Materials and Results

Appendix B helps meet the following FEMA local mitigation plan requirements:

- A1. *“Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction?” (Requirement 44 CFR § 201.6(c)(1))*
- A2. *“Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process?” (Requirement 44 CFR § 201.6(b)(2)); and*
- A3. *“Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval?” (Requirement 44 CFR § 201.6(b)(1))*

Survey Responses Needed!

The Town of Princeton is currently working with The Central MA Regional Planning Commission on the town's Hazard Mitigation Plan and we need your input!

We want to hear from you about:

- How you have been affected by natural hazards in and around Town?
- What natural hazards most concern you?
- How do you think climate change and natural hazards will affect Princeton?
- What are your suggestions for mitigating the effects of climate change and natural hazards to Princeton?

Answer the survey by February 28th, 2025 using the QR code below:



TIP: Open your phone camera, point at QR code, and click on pop-up link to take the survey, OR type the link below into your web browser:

www.surveymonkey.com/r/CVJXP2D





Princeton Hazard Mitigation Plan Community Survey

Princeton Hazard Mitigation Plan

In July 2024, the Town of Princeton started the planning process to update its Hazard Mitigation Plan (HMP). An updated HMP will help the town identify strategies to reduce its vulnerability to hazards like flooding, winter storms, and drought. Climate change may shift the extent and severity of certain natural hazards, including those that already impact Princeton.

A copy of the previous plan can be found [here](#).

By participating in this survey, you will help the Town of Princeton understand the current and future natural hazards that residents are most concerned about. Survey responses will be accepted until January 30th, 2025.

1. Check all that apply.

☐

I live in Princeton.

☐

I work in Princeton.

☐

I frequently visit Princeton.

2. Has your family, household, or property in Princeton been impacted by any of the following natural hazards? Select all that apply:

- ☐ I have not been impacted by natural hazards in Princeton
- ☐ Winter Storms / Ice
- ☐ Thunderstorms, Microbursts, and/or Extreme Wind
- ☐ Tornadoes
- ☐ Flooding
- ☐ Extreme Heat / Extreme Cold
- ☐ Drought
- ☐ Wildfire / Brushfire
- ☐ Hurricanes
- ☐ Earthquakes
- ☐ Poor Air Quality
- ☐ Invasive Species
- ☐ Changes in Well Water
- ☐ Other (please specify)

3. Where have you observed hazard impacts in Princeton, and what were those impacts?

Examples: flooding on specific roads, drought/effects on water supply, extended power outages, trees down on roads, beaver dams affecting property and septic systems due to flooding from dams.

4. How much do you think the impacts of natural hazards and climate change will threaten your personal health, safety, or property?

- ☐ I think natural hazards and climate change will negatively impact my life.
- ☐ I'm not sure how natural hazards and climate change will impact my life.
- ☐ I don't think that I personally will be impacted by natural hazards and climate change.

5. If you are concerned about impacts to your life from natural hazards and/or climate change, what impacts are you most concerned about?

Examples: basement flooding, wells drying out / contamination of wells, ability to grow food

6. How concerned are you about the impacts that natural hazards and climate change will have on the Town of Princeton (the local infrastructure, economy, environment, and/or town residents)?

- ☐ Very concerned
- ☐ Somewhat concerned
- ☐ Unsure
- ☐ Somewhat unconcerned
- ☐ Not concerned at all

7. What community assets are you most concerned about when you consider the potential impact of natural hazards and climate change on the Town of Princeton? Rank the responses below in order from most concerned (1) to least concerned (5).

-   Local natural resources and environments
-   Resident health, safety, and property
-   Local infrastructure
-   Local business and the town economy
-   Local government resources

8. Which of the following aspects of natural hazards and climate change would you like to learn how to address in your community? Select all that you are interested in.

- ☐ Impacts on well water quantity / quality
- ☐ Future flood risks
- ☐ Impacts on infrastructure
- ☐ Sustainability initiatives
- ☐ Public health impacts like increased risks of vector-borne disease (ex. Lyme disease, West Nile Virus, EEE - Eastern equine encephalitis)
- ☐ Impacts on town budget and finances
- ☐ Impacts on wildlife
- ☐ Impacts on the health of local forests
- ☐ Impacts on future development
- ☐ Other (please specify)

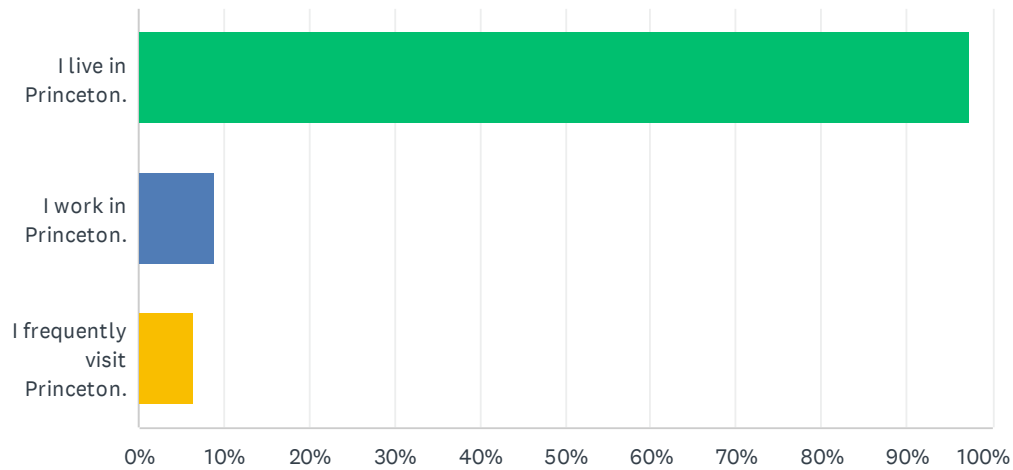
9. What actions should the Town of Princeton take to cultivate local resilience to natural hazards?

Examples: increase local capacity to apply for hazard mitigation grant funding and implement hazard mitigation projects; improve storm water management; provide more education and outreach about how climate change could impact my life; encourage planting climate-resilient tree species; encourage cutting/trimming dead trees beside/hanging over roads; etc.

10. If you would like to stay informed about other opportunities to participate in Princeton's Hazard Mitigation planning process, please enter your E-mail address below.

Q1 Check all that apply.

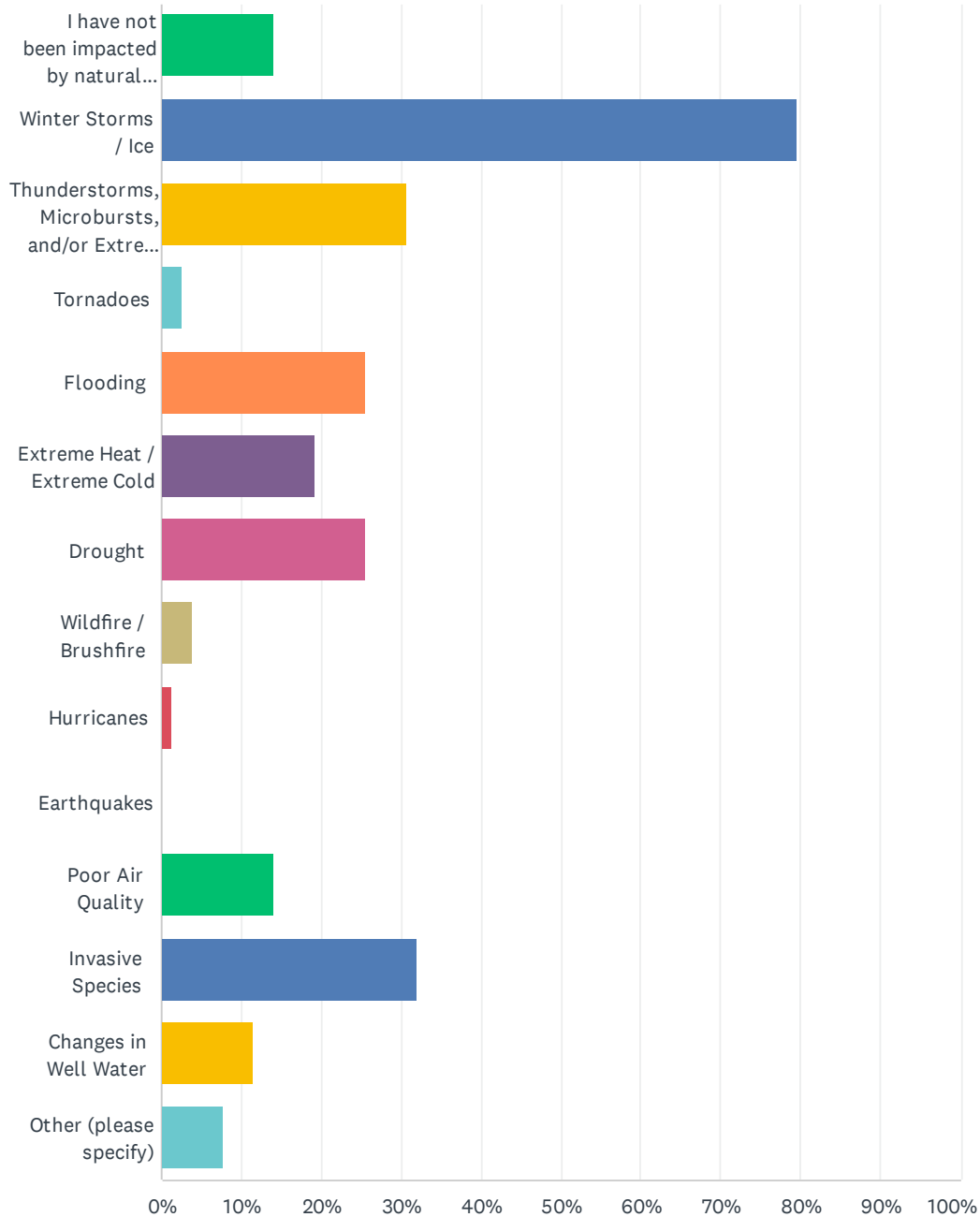
Answered: 78 Skipped: 0



ANSWER CHOICES	RESPONSES	
I live in Princeton.	97.44%	76
I work in Princeton.	8.97%	7
I frequently visit Princeton.	6.41%	5
Total Respondents: 78		

Q2 Has your family, household, or property in Princeton been impacted by any of the following natural hazards? Select all that apply:

Answered: 78 Skipped: 0



Princeton Hazard Mitigation Plan Community Survey

ANSWER CHOICES	RESPONSES	
I have not been impacted by natural hazards in Princeton	14.10%	11
Winter Storms / Ice	79.49%	62
Thunderstorms, Microbursts, and/or Extreme Wind	30.77%	24
Tornadoes	2.56%	2
Flooding	25.64%	20
Extreme Heat / Extreme Cold	19.23%	15
Drought	25.64%	20
Wildfire / Brushfire	3.85%	3
Hurricanes	1.28%	1
Earthquakes	0.00%	0
Poor Air Quality	14.10%	11
Invasive Species	32.05%	25
Changes in Well Water	11.54%	9
Other (please specify)	7.69%	6
Total Respondents: 78		

#	OTHER (PLEASE SPECIFY)	DATE
1	Extreme cold specified	4/23/2025 1:59 PM
2	adjacent property porkchopped for profit by real estate developer reduced the value of this property	1/30/2025 1:04 PM
3	uncontrollable pest populations	1/29/2025 2:41 PM
4	PFAS/PFOS. VOC's	1/29/2025 11:29 AM
5	2008 ice storm	11/12/2024 4:41 PM
6	PFAS plume growth	11/12/2024 3:43 PM

Q3 Where have you observed hazard impacts in Princeton, and what were those impacts? Examples: flooding on specific roads, drought/effects on water supply, extended power outages, trees down on roads, beaver dams affecting property and septic systems due to flooding from dams.

Answered: 59 Skipped: 19

#	RESPONSES	DATE
1	Ice on trees blocking our road, water in basement more frequently. We have invasive species in our yard, worms and plants.	4/23/2025 2:02 PM
2	Extreme weather causing power outages at home	4/23/2025 1:58 PM
3	Extended power outages (may not always be a PMLD problem, may be out of town)	2/6/2025 11:35 AM
4	Unusual 2 inches of rain in an hour (2023) caused erosion damage. Hail destroyed a fabric canopy tent. Not positive this climate related.	2/4/2025 10:37 AM
5	Flood damaged roads caused by severe rain, ice storms causing dangerous roads and tree damage	2/3/2025 6:36 PM
6	Washed out roads (Goodnow, Thompson, Sterling, others), power outages from ice storms	2/3/2025 10:52 AM
7	I moved to Princeton the day of the Big Ice Storm and was without power for 11 days.	2/2/2025 11:13 AM
8	High water table affecting septic tank, water seepage into basement (2023). Drought causing concern about well water (2024).	1/30/2025 6:14 PM
9	Flooding on Rocky Pond Rd, occasional power outages, persistent landfill gas getting blown to our property from the Fitchburg-Westminster landfill.	1/30/2025 3:15 PM
10	drought has killed and damaged established decades old hay fields.	1/30/2025 1:04 PM
11	flooding on 62 near old colony - dangerous driving, always concerned about trees falling on roads and power lines throughout town	1/30/2025 12:09 PM
12	Since the ice storm there has been a significant decrease in power outages.	1/30/2025 9:39 AM
13	poor air quality from fires in other areas, fire near railroad tracks in town, overall town drought	1/30/2025 9:36 AM
14	Lived here x5 yrs-Trees down on property several times; flooding of residential roads blocking exit & entry to house last year	1/30/2025 12:54 AM
15	Less snow, more ice. Lack of rain impacts well levels.	1/29/2025 9:50 PM
16	2008 ice storm, and a couple summer droughts killing plants in my yard.	1/29/2025 9:02 PM
17	Ice storms have impacted me throughout town with branches down, etc. The flooding that affected Miriam and Mirick Roads certainly affected some of my driving routes. In my own yard (on Worcester Road), I've had several large trees - seemingly healthy oaks - blow down during thunderstorms and wind events over the last 5 years.	1/29/2025 6:34 PM
18	flooding on roads, trees blown down	1/29/2025 4:18 PM
19	na	1/29/2025 3:51 PM
20	Flooding on Beaman Rd, odor from trash burning/dump site in Westminster	1/29/2025 3:42 PM
21	Winter storms and the application of proper mitigation measures for making sure the roadways are safe. Too often my road and other roads are still slippery days after a storm.	1/29/2025 2:58 PM
22	ice bringing down tree branches and trees and electric wires, power outages, drought killing plants, extreme cold killing plants, swarms of uncontrolled rodents eating the garden	1/29/2025 2:41 PM

Princeton Hazard Mitigation Plan Community Survey

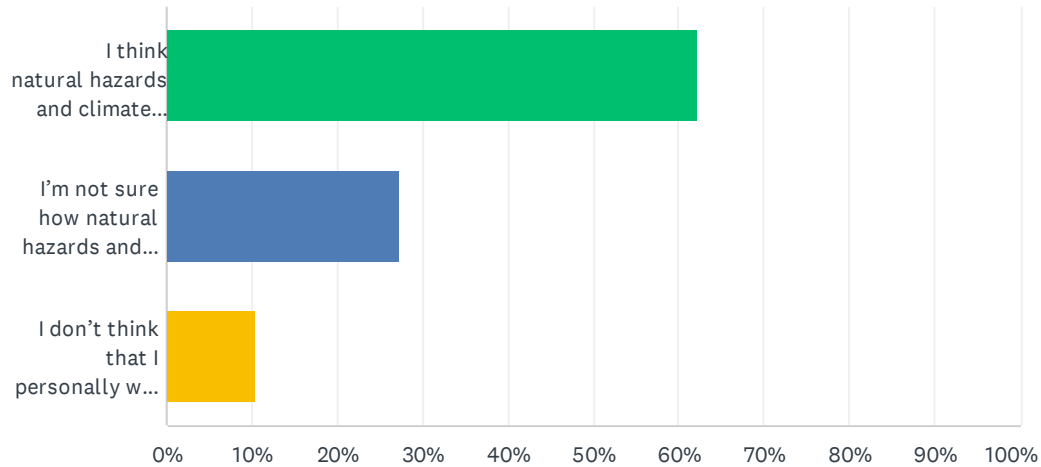
23	Town wide, naturally occurring weather events	1/29/2025 2:31 PM
24	We are in a forest in an an extremely dry period. Fire should be a concern.	1/29/2025 2:26 PM
25	Ball Hill Road, Wheeler Road.	1/29/2025 1:59 PM
26	Road flooding. Downed trees	1/29/2025 1:50 PM
27	Flooding: Mirick Rd; Ice Storm: whole town power outage; trees blocking many roads Invasive species: many properties throughout town	1/29/2025 1:41 PM
28	Downed branches, damage to the house and cars during the ice storm, Overloaded with bitter, sweet and mustard plant	1/29/2025 12:53 PM
29	1989 tornado (Coal Kiln Rd), 2008 ice storm, drought	1/29/2025 12:53 PM
30	Flooding on Mirick; Trees down on Willson, Mirick, Beaman +; Well water sediment	1/29/2025 12:48 PM
31	nine	1/29/2025 12:26 PM
32	The Ice storm of 10 plus years ago Flooding and road damage on Thompson Rd and also Goodnow Rd but fixed successfully by the Princeton Highway Dept	1/29/2025 12:20 PM
33	Tree damage, ice storms	1/29/2025 12:19 PM
34	Roads with large areas of washout from heavy rain.	1/29/2025 12:16 PM
35	Poor air quality from the land fill near Westminster. Invasive species are everywhere, especially the roadsides and around new construction. Winter storms and ice storms have caused multi-day power outages around my house in the Rocky Pond Rd. area.	1/29/2025 11:57 AM
36	Flooding in street due to failed culvert and lack of drainage, numerous dead trees due to drought and invasive species, dead trees falling into the street, ice storm resulting in 11 days of power outage during the winter time, which resulted in the failure of several house systems.	1/29/2025 11:48 AM
37	- gravel road washout/town unwilling to maintain gravel road / town lack of skills/equipment/personnel to maintain drainage ditches due to heavy rains causing ice-ups on paved roads. -	1/29/2025 11:41 AM
38	Ice storm, road flooding on Hobbs road	1/29/2025 11:41 AM
39	My basement flooded on a few occasions	1/29/2025 11:34 AM
40	My home 15 Hubbardston Rd	1/29/2025 11:29 AM
41	Beaman road, East Princeton road	12/11/2024 10:47 AM
42	flood of 9/11/23 washed out sections of Gleason Rd, Mirick Rd, Beaman Rd. We had an exceptional amount of water running through our backyard down the road on Hobbs Rd. In December 2008 we had no power for 12 days following The Ice Storm. That storm also took down the top half of nearly every tree on our property and elsewhere. Then the ice melted just enough to graft the trees (mostly pine) to the driveway making it much harder to lift off the ground. We've had many trees fall during an ice storm in 2022 and/or 2023.	11/15/2024 8:02 PM
43	Myrick Road; Worcester Road	11/14/2024 5:48 PM
44	Flooding ruined several roads after a major rainfall / storm.	11/14/2024 12:43 PM
45	Tree and property damage from the 2008 ice storm.	11/14/2024 11:17 AM
46	flooding and driveway damage due to drainage during heavy storms	11/14/2024 8:27 AM
47	Sam Cobb Lane, Matthews Lane has frequent washouts of road, flooding and icing hazards. Extended Power outages, severe drought, trees down from storms and/or high winds, well water changes.	11/13/2024 2:47 PM
48	flooding in 2023 on gleason road, extended power outages in 2010 and other years	11/13/2024 10:53 AM
49	7 day power outage from the 2008 ice storm. Also a few shorter (<8hrs) outages caused by storms, although since the ice storm these have been infrequent. Although our property was not directly impacted, I'm aware of the road damage from last year's flooding that temporarily closed 31.	11/13/2024 8:06 AM

Princeton Hazard Mitigation Plan Community Survey

50	Poor drainage in my area causing basement flooding.	11/13/2024 7:01 AM
51	Pests in woods; other selected hazards throughout town	11/13/2024 6:13 AM
52	Route 31 near Krashes field	11/12/2024 9:45 PM
53	Basement flooded due to saturated ground. Tree across drive prohibited exit from house when power was out for 24 hours..	11/12/2024 8:44 PM
54	Flooding Bullard Rd. Wash out Gleason Rd.washout Westminster Rd. THE Ice Storm 2009!	11/12/2024 7:40 PM
55	road flooding after heavy rains summer 2023	11/12/2024 5:09 PM
56	Lost power for several days; fallen and damaged trees	11/12/2024 4:41 PM
57	Culvert between 62 and Wheeler on Ball Hill backs up during major rain events. I expect this year's drought will claim several species in my garden.	11/12/2024 4:20 PM
58	Loss of power, loss of internet, water pressure, loss of electrical equipment due to lightning strikes, water well testing and abandoned gardening due to water sourcing, increased use of salt rusting out vehicles/shortening their useful life	11/12/2024 3:43 PM
59	2008 ice storm, knocked out power for @11 days.	11/12/2024 2:19 PM

Q4 How much do you think the impacts of natural hazards and climate change will threaten your personal health, safety, or property?

Answered: 77 Skipped: 1



ANSWER CHOICES	RESPONSES	
I think natural hazards and climate change will negatively impact my life.	62.34%	48
I'm not sure how natural hazards and climate change will impact my life.	27.27%	21
I don't think that I personally will be impacted by natural hazards and climate change.	10.39%	8
TOTAL		77

**Q5 If you are concerned about impacts to your life from natural hazards and/or climate change, what impacts are you most concerned about?
Examples: basement flooding, wells drying out / contamination of wells, ability to grow food**

Answered: 62 Skipped: 16

#	RESPONSES	DATE
1	We're nervous about well supply and quality	4/23/2025 2:02 PM
2	Drought's impact on wells and wildfire potential, invasive species changing ecosystems	4/23/2025 1:58 PM
3	Minor concern, as I've taken precautions for flooding, by rebuilding the damaged dirt road, and house has extensive protection from flooding.	2/4/2025 10:37 AM
4	Damage to property by severe wind/rain, drought impacting food production, extreme heat, impacts on wildlife	2/3/2025 6:36 PM
5	Wildfires, extreme weather like tornadoes, drought drying up wells, road destruction from floods, power outages	2/3/2025 10:52 AM
6	My house is built on fill and requires a sump to stay dry. Extended outages can result in a wet basement.	2/2/2025 11:13 AM
7	Lack of rain and snow, and extreme heat resulting in drought. Our well, lawn + gardens, and animals will be affected. Extreme storms (snow and/or rain) on dry ground will cause flooding.	1/31/2025 10:03 AM
8	Basement flooding, well drying out, ability to grow food	1/30/2025 6:14 PM
9	Ability to grow food, wildfire risk, power outages/flooding/hazardous travel conditions from extreme weather events.	1/30/2025 3:15 PM
10	loss of agricultural productivity	1/30/2025 1:04 PM
11	Trees falling due to ice in winter, or high winds in summer, basement flooding/water damage, ice buildup damaging power lines	1/30/2025 12:09 PM
12	All of the above. I have 3 sump pumps in my basement. I am also concerned about homeowners who have many cars and junk stored in their yards.	1/30/2025 9:39 AM
13	Snow/ice storms, severe thunder & windstorms, drought, fire	1/30/2025 9:36 AM
14	Private wells drying out	1/30/2025 8:29 AM
15	Basement flooding; issues with the well or septic system	1/30/2025 12:54 AM
16	Less rain, higher temps in the winter gives us more ice storms.	1/29/2025 9:50 PM
17	Flooding from the nearby creek, or well drying out.	1/29/2025 9:02 PM
18	Basement flooding is certainly a concern; right now, my basement has water issues because I'm apparently on a damp lot. It will only worsen if we get more intense storms or periods of rain.	1/29/2025 6:34 PM
19	fire	1/29/2025 4:18 PM
20	contamination of wells	1/29/2025 3:51 PM
21	Na	1/29/2025 2:58 PM
22	wells drying out and contamination of wells	1/29/2025 2:50 PM
23	basement flooding, contamination of wells, ability to grow food, ability to spend time outside	1/29/2025 2:41 PM

Princeton Hazard Mitigation Plan Community Survey

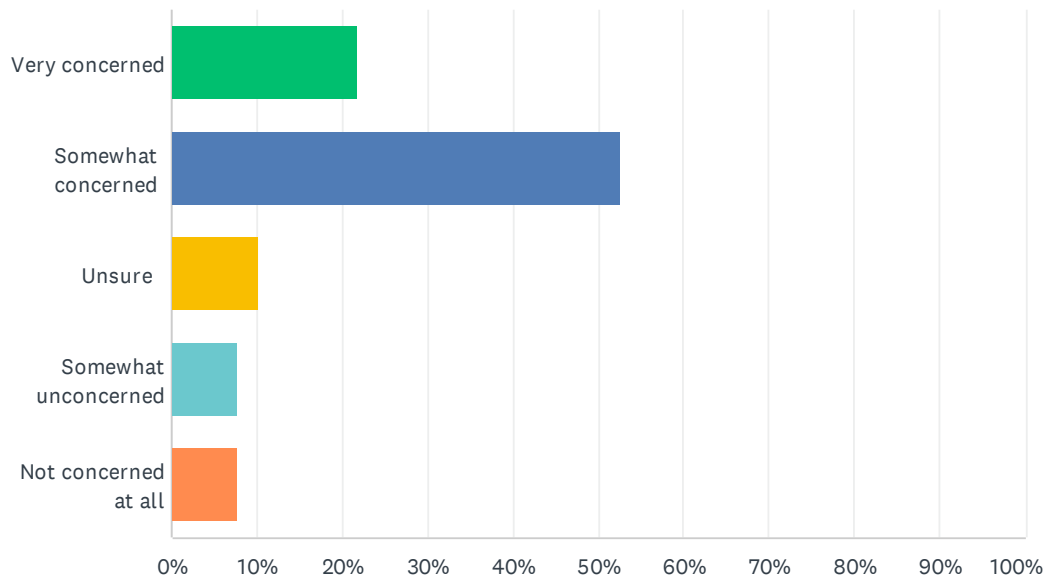
24	Loss of electricity to power well and furnace.	1/29/2025 2:31 PM
25	Fire	1/29/2025 2:26 PM
26	Wildfires	1/29/2025 2:25 PM
27	Contaminated well	1/29/2025 1:50 PM
28	Drought- well capacity; gardens Flooding: travel: basement Ice: travel; electricity Wildfires: property loss; air quality Insect borne diseases	1/29/2025 1:41 PM
29	Stress on aquifer	1/29/2025 12:56 PM
30	Damage from downed branches	1/29/2025 12:53 PM
31	power outages, loss of well water, inability to water gardens	1/29/2025 12:53 PM
32	well water, fires	1/29/2025 12:48 PM
33	wells drying up; roads flooding for extreme rainstorms	1/29/2025 12:32 PM
34	contamination of well	1/29/2025 12:26 PM
35	power outages due to temperature extremes and the need for electricity to heat and cool wells drying out, wells contaminated roads being washed out and unpassable	1/29/2025 12:20 PM
36	none	1/29/2025 12:19 PM
37	Basement flooding and fires during droughts	1/29/2025 12:16 PM
38	Drought related well drying out, wildfires burning my home down, killing trees and causing them to fall on my home or cause power outages. Longer term I think we will be dealing with refugees.	1/29/2025 11:57 AM
39	Water quality and quantity, fire protection, proper tree maintenance (i.e. cutting of dead trees near the side of the road), upgrades of culverts	1/29/2025 11:48 AM
40	spread of the pfas plume and the town being a laggard about the issue, hoping it washes through the watershed. Shame on leaders for risking public health and depressing home values. Hypocrites when they state they care about public welfare and health.	1/29/2025 11:41 AM
41	Contaminated well	1/29/2025 11:41 AM
42	Well drying out	1/29/2025 11:34 AM
43	Water contamination	1/29/2025 11:29 AM
44	I expect more ice storms replacing snow storms, resulting in more damage to roads and water supplies, which in turn will negatively affect the economy, homeowners insurance and tax rates. I expect more extreme rain events to uproot trees and flood basements and roads and crops. As the warm season expands I think that some insects and invasive crops will become more destructive.	11/15/2024 8:02 PM
45	basement flooding; wells drying out or becoming contaminated; radon; roads washing out	11/14/2024 5:48 PM
46	n/a	11/14/2024 12:43 PM
47	heavy rain runoff from the mountain crossing our property. Loss of diseased trees.	11/14/2024 8:27 AM
48	Well drying out and/or contamination; severe drought; negative impacts on food production and ability to farm both produce and livestock, not to mention wildlife impacts.	11/13/2024 2:47 PM
49	contamination of wells, extended power outages causing loss of stored/frozen food in summer and loss of heat/livability in winter, high winds causing property damage	11/13/2024 10:53 AM
50	Air and water quality	11/13/2024 9:40 AM
51	Most worried about losing power due to downed power lines	11/13/2024 8:06 AM
52	Not attributing the hazards to climate change but do worry about basement flooding and power outages	11/13/2024 7:01 AM
53	Where to begin? More concerned about impacts globally than locally, e.g. rising sea levels.	11/13/2024 6:13 AM

Princeton Hazard Mitigation Plan Community Survey

54	Drought Well drying out Well contamination	11/12/2024 9:45 PM
55	Ability to escape during downed trees, potentially basement flooding (although we have initiated mitigation), downed trees	11/12/2024 8:44 PM
56	Well contamination. Damage from Ice storms, hurricanes. Heating and cooling of home.	11/12/2024 7:40 PM
57	wells drying out	11/12/2024 5:09 PM
58	Flooding, drought drying out wells,	11/12/2024 4:41 PM
59	Basement flooding during an extended power outage.	11/12/2024 4:20 PM
60	Wells drying out or contamination of water sources.	11/12/2024 4:00 PM
61	town increased use of chemicals for roads and fires, that eventually work their way into our bodies through waterways, wells, and air quality...and the town lack of priority for citizen safety first over town being sued for negligence.	11/12/2024 3:43 PM
62	High avg temperatures affecting storm frequency and severity.	11/12/2024 2:19 PM

Q6 How concerned are you about the impacts that natural hazards and climate change will have on the Town of Princeton (the local infrastructure, economy, environment, and/or town residents)?

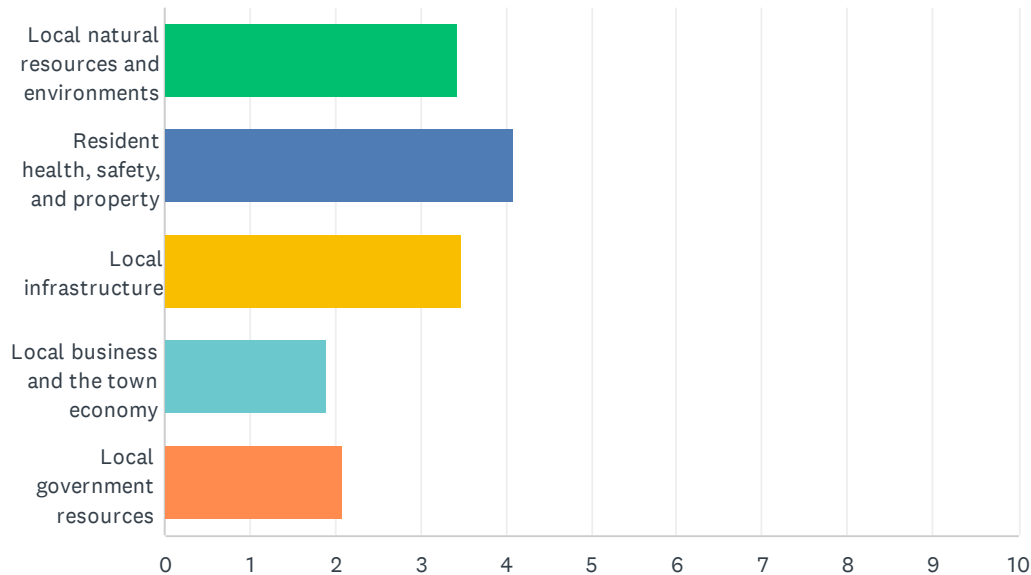
Answered: 78 Skipped: 0



ANSWER CHOICES	RESPONSES	
Very concerned	21.79%	17
Somewhat concerned	52.56%	41
Unsure	10.26%	8
Somewhat unconcerned	7.69%	6
Not concerned at all	7.69%	6
TOTAL		78

Q7 What community assets are you most concerned about when you consider the potential impact of natural hazards and climate change on the Town of Princeton? Rank the responses below in order from most concerned (1) to least concerned (5).

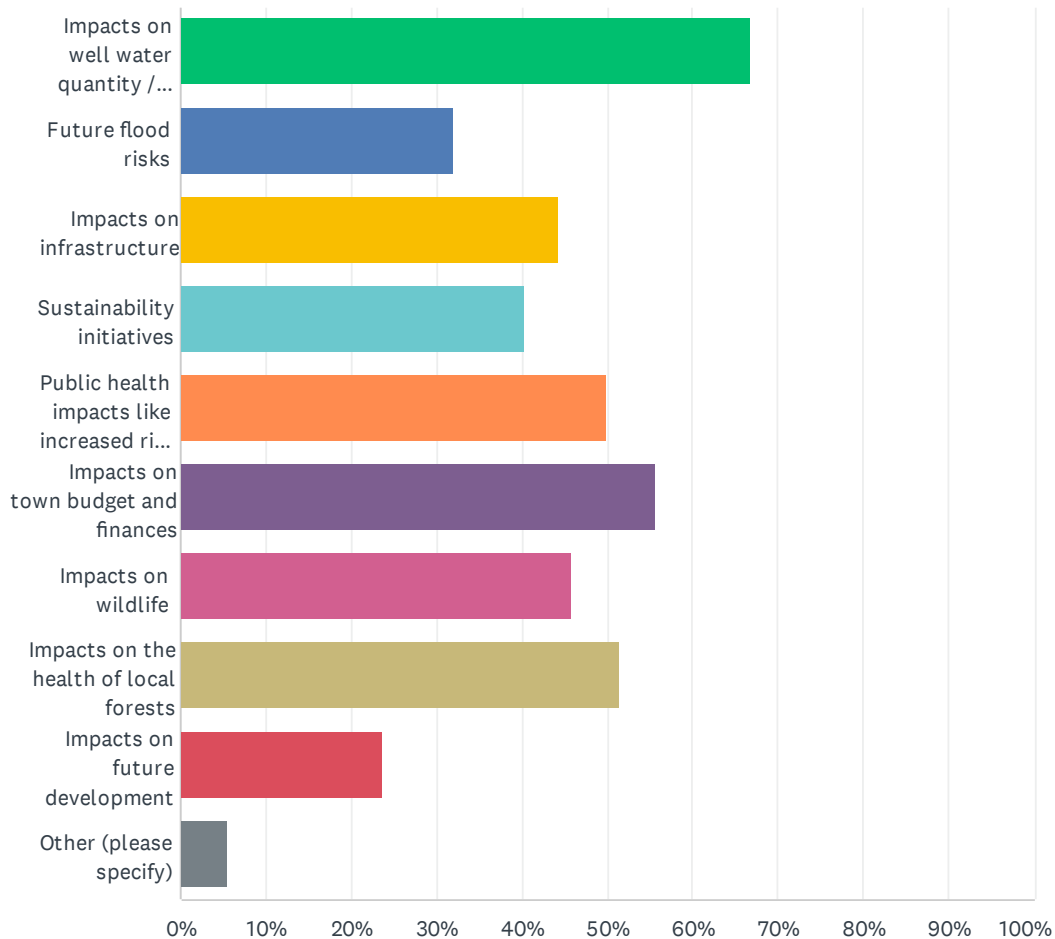
Answered: 73 Skipped: 5



	1	2	3	4	5	TOTAL	SCORE
Local natural resources and environments	30.14% 22	24.66% 18	17.81% 13	13.70% 10	13.70% 10	73	3.44
Resident health, safety, and property	49.32% 36	26.03% 19	10.96% 8	12.33% 9	1.37% 1	73	4.10
Local infrastructure	16.44% 12	31.51% 23	36.99% 27	13.70% 10	1.37% 1	73	3.48
Local business and the town economy	0.00% 0	5.48% 4	17.81% 13	38.36% 28	38.36% 28	73	1.90
Local government resources	4.11% 3	12.33% 9	16.44% 12	21.92% 16	45.21% 33	73	2.08

Q8 Which of the following aspects of natural hazards and climate change would you like to learn how to address in your community? Select all that you are interested in.

Answered: 72 Skipped: 6



Princeton Hazard Mitigation Plan Community Survey

ANSWER CHOICES	RESPONSES	
Impacts on well water quantity / quality	66.67%	48
Future flood risks	31.94%	23
Impacts on infrastructure	44.44%	32
Sustainability initiatives	40.28%	29
Public health impacts like increased risks of vector-borne disease (ex. Lyme disease, West Nile Virus, EEE - Eastern equine encephalitis)	50.00%	36
Impacts on town budget and finances	55.56%	40
Impacts on wildlife	45.83%	33
Impacts on the health of local forests	51.39%	37
Impacts on future development	23.61%	17
Other (please specify)	5.56%	4
Total Respondents: 72		

#	OTHER (PLEASE SPECIFY)	DATE
1	Forest fire	1/29/2025 2:26 PM
2	None	1/29/2025 12:19 PM
3	Forest fires	1/29/2025 12:16 PM
4	none	11/14/2024 12:43 PM

Q9 What actions should the Town of Princeton take to cultivate local resilience to natural hazards? Examples: increase local capacity to apply for hazard mitigation grant funding and implement hazard mitigation projects; improve storm water management; provide more education and outreach about how climate change could impact my life; encourage planting climate-resilient tree species; encourage cutting/trimming dead trees beside/hanging over roads; etc.

Answered: 53 Skipped: 25

#	RESPONSES	DATE
1	Have town properties adopt a climate resilient landscape management plan re: local/native species, climate change tolerant species	4/23/2025 1:58 PM
2	Increase tree trimming/removal before it becomes a problem.	2/6/2025 11:35 AM
3	More important and more accurate than my opinion is the professional opinion of qualified scientists and climate modeling (that has not been edited or redacted). Finding and dissemination this information will help us adapt. New England is at less risk than many other areas in the US, and most severe New England impacts are predicted on the coasts.	2/4/2025 10:37 AM
4	Have a plan and be prepared instead of reacting after the fact. Maintain and improve infrastructure. Utilize available grants	2/3/2025 6:36 PM
5	Improve storm water management, assess forest mgmt techniques to prevent wildfires, more drought outreach/water conservation	2/3/2025 10:52 AM
6	Princeton currently has no residences built in the flood plan. Draft a bylaw to prevent such construction. Princeton road traverse watersheds that serve 10s of thousands. Upgrade water crossings to meet expected deluges.	2/2/2025 11:13 AM
7	All of the above	1/31/2025 10:03 AM
8	Increase local capacity to apply for hazard mitigation grant funding and implement hazard mitigation projects; improve storm water management; encourage minimizing human impacts on environment; encourage cutting/trimming dead trees beside/hanging over roads; convert to less polluting town vehicles	1/30/2025 6:14 PM
9	All of the above are good ideas, but a robust public safety building and well-funded emergency and road maintenance services would make the biggest difference.	1/30/2025 3:15 PM
10	Keep on top of the fire pond situation and ff water supplies.	1/30/2025 1:04 PM
11	protecting power lines from ice buildup and falling trees. In the winter, a house can freeze and be damaged very quickly when power goes out. That is my highest concern	1/30/2025 12:09 PM
12	I'm concerned about the many invasive plants killing my trees. Town clearing of dead trees beside roads and planting native trees would make a great impact on our environment.	1/30/2025 9:39 AM
13	continue to educate, apply for grants & implement mitigation projects.	1/30/2025 9:36 AM
14	All of the above	1/30/2025 12:54 AM
15	Storm water to feed fire ponds to ensure a water supply in case of home or brush fires.	1/29/2025 9:50 PM
16	Increase culvert size to accommodate flood waters.	1/29/2025 9:02 PM
17	improve storm water management/culverts, education on wildfire safety measures that homeowners can take	1/29/2025 4:18 PM

Princeton Hazard Mitigation Plan Community Survey

18	Apply for hazard waste grant funding	1/29/2025 3:51 PM
19	Improve storm water management	1/29/2025 3:42 PM
20	Just salt the roads properly and make sure drainage is clear for heavy rains	1/29/2025 2:58 PM
21	continuing to trim and cut dead trees be beside roads, monitor ground water quality And keep citizens informed about water quality	1/29/2025 2:41 PM
22	Continue proactive tree trimming and pursuing reinforcing our electric supply lines.	1/29/2025 2:31 PM
23	Emphasize best practices to fight fire.	1/29/2025 2:26 PM
24	All of the examples	1/29/2025 2:25 PM
25	Keep trimming the trees, mowing along the main arteries.	1/29/2025 1:59 PM
26	Regional partnerships; increased funding for public safety and hazard mitigation; native plantings; invasive species removal; climate resilience outreach;	1/29/2025 1:41 PM
27	?	1/29/2025 12:53 PM
28	all of the above	1/29/2025 12:53 PM
29	All of the examples.	1/29/2025 12:48 PM
30	trimming trees over roads improve storm water management education and out reach	1/29/2025 12:26 PM
31	all of those examples make sense to me- apply for grants that are available but also do what we can with what we have in terms of education and outreach about steps we can all help with	1/29/2025 12:20 PM
32	Force the PMLD to offer tree cutback to private roads, as they had been doing for 40 years until they changed the policy. We all pay the same amount for our usage, why don't we all benefit fairly from the services? I know PMLD is "independent" but they can be influenced on how best to serve its citizens.	1/29/2025 12:19 PM
33	I believe fires with all the forests are our biggest concern. Looking at options to burn undergrowth and remove dead wood is something I'd be curious to explore	1/29/2025 12:16 PM
34	More outreach on how climate change can impact everyones lives. We need to reduce our dependence on outside energy sources and have a more resilient energy infrastructure. As newer growth trees (most of the area) get older dead and dying individuals and their branches need to be removed.	1/29/2025 11:57 AM
35	Upgrade culverts where needed, cutting of dead trees near road, availability of water in case of fire, drainage next to roads	1/29/2025 11:48 AM
36	use science and data to drive any town spend, not popularity votes and it feels good to be doing something (that can be a waste of limited town money)	1/29/2025 11:41 AM
37	Encourage planting climate resilient species, cut or trim dead trees beside and hanging over roads	1/29/2025 11:34 AM
38	improve storm-water drainage from existing roads	12/11/2024 10:47 AM
39	We have an outstanding Environmental Action Committee and I think giving them more resources and authority (if they want that) to bring these issues to the forefront of residents' thoughts is very important.	11/15/2024 8:02 PM
40	prune trees that overhang wires; improve drainage on roads	11/14/2024 5:48 PM
41	nothing	11/14/2024 12:43 PM
42	Regularly trim trees along power lines to prevent outages.	11/14/2024 11:17 AM
43	grants; road drainage solutions	11/14/2024 8:27 AM
44	All of the above	11/13/2024 2:47 PM
45	increase capacity for hazard mitigation grant funding, improve storm water management, encourage cutting/trimming trees beside power lines including financial assistance (grants?) to help residents on shared drives pay for this service which is no longer covered by PMLD.	11/13/2024 8:06 AM

Princeton Hazard Mitigation Plan Community Survey

46	Keeping the electric lines clear from falling limbs etc.	11/13/2024 7:01 AM
47	I am not informed enough to weigh in. However, planting climate -resilient trees sounds like a good idea.	11/13/2024 6:13 AM
48	Not sure, not familiar with MA options	11/12/2024 8:44 PM
49	The above suggestions are all pertinent. Easiest and most direct is the trimming/cutting of trees to keep roads and power lines safe.	11/12/2024 7:40 PM
50	Inform residents of what they can do to protect their property, what to do in emergencies	11/12/2024 4:41 PM
51	Increase municipal capacity!	11/12/2024 4:20 PM
52	first, solve current pfas by buying the effected property and capping it...instead of letting a plume grow forever. Setup more ground water remediation/filtering huts to contain what is already an environmental disaster.	11/12/2024 3:43 PM
53	Encouraging air pollution sources be reduced via legislation support.	11/12/2024 2:19 PM

Q10 If you would like to stay informed about other opportunities to participate in Princeton's Hazard Mitigation planning process, please enter your E-mail address below.

Answered: 22 Skipped: 56

#	RESPONSES	DATE
1	beebootoo@gmail.com	4/23/2025 2:00 PM
2	f.c.lwanik@gmail.com	4/23/2025 1:58 PM
3	rys@r2controls.com	2/4/2025 10:37 AM
4	mhoreanopoulos@gmail.com	1/30/2025 6:14 PM
5	pbabadoo@aol.com	1/30/2025 12:09 PM
6	mcmastermarlene@gmail.com	1/30/2025 12:54 AM
7	farreal@gmail.com	1/29/2025 6:34 PM
8	kking@kkinglawoffice.com	1/29/2025 2:50 PM
9	drdmcl9@gmail.com	1/29/2025 2:41 PM
10	kelly.john.r@gmail.com	1/29/2025 2:26 PM
11	dunbarcyn@gmail.com	1/29/2025 12:56 PM
12	chelsealpeoples@gmail.com	1/29/2025 12:48 PM
13	no	1/29/2025 12:26 PM
14	dcary@massaudubon.org	1/29/2025 12:20 PM
15	stanwoodesign@gmail.com	1/29/2025 11:57 AM
16	all set with other forms of town communications being adequate for this topic	1/29/2025 11:41 AM
17	jnfoss12@gmail.com	1/29/2025 11:29 AM
18	Hahaha...no thank you! :)	11/15/2024 8:02 PM
19	CAMILULU2@YAHOO.COM	11/13/2024 2:47 PM
20	kyvoyageur@gmail.com	11/12/2024 8:44 PM
21	aneuburg@gmail.com	11/12/2024 4:20 PM
22	asentkowski@gmail.com	11/12/2024 4:00 PM

1:07

79



Princeton Police Department

1d · 🌐



🔴 We Need Your Input! 🔴

The Town of Princeton is working with the Central MA Regional Planning Commission to update our Hazard Mitigation Plan, and your feedback is essential!

Take a few minutes to complete our survey and help us identify potential hazards and ways to make our community more resilient.



Deadline: February 28, 2025



Survey Link: www.surveymonkey.com/r/CVJXP2D



Or scan the QR code on the flyer!

Your input makes a difference—thank you for helping keep Princeton safe!

Survey Responses Needed!

The Town of Princeton is currently working with The Central MA Regional Planning Commission on the town's Hazard Mitigation Plan and we need your input!

We want to hear from you about:

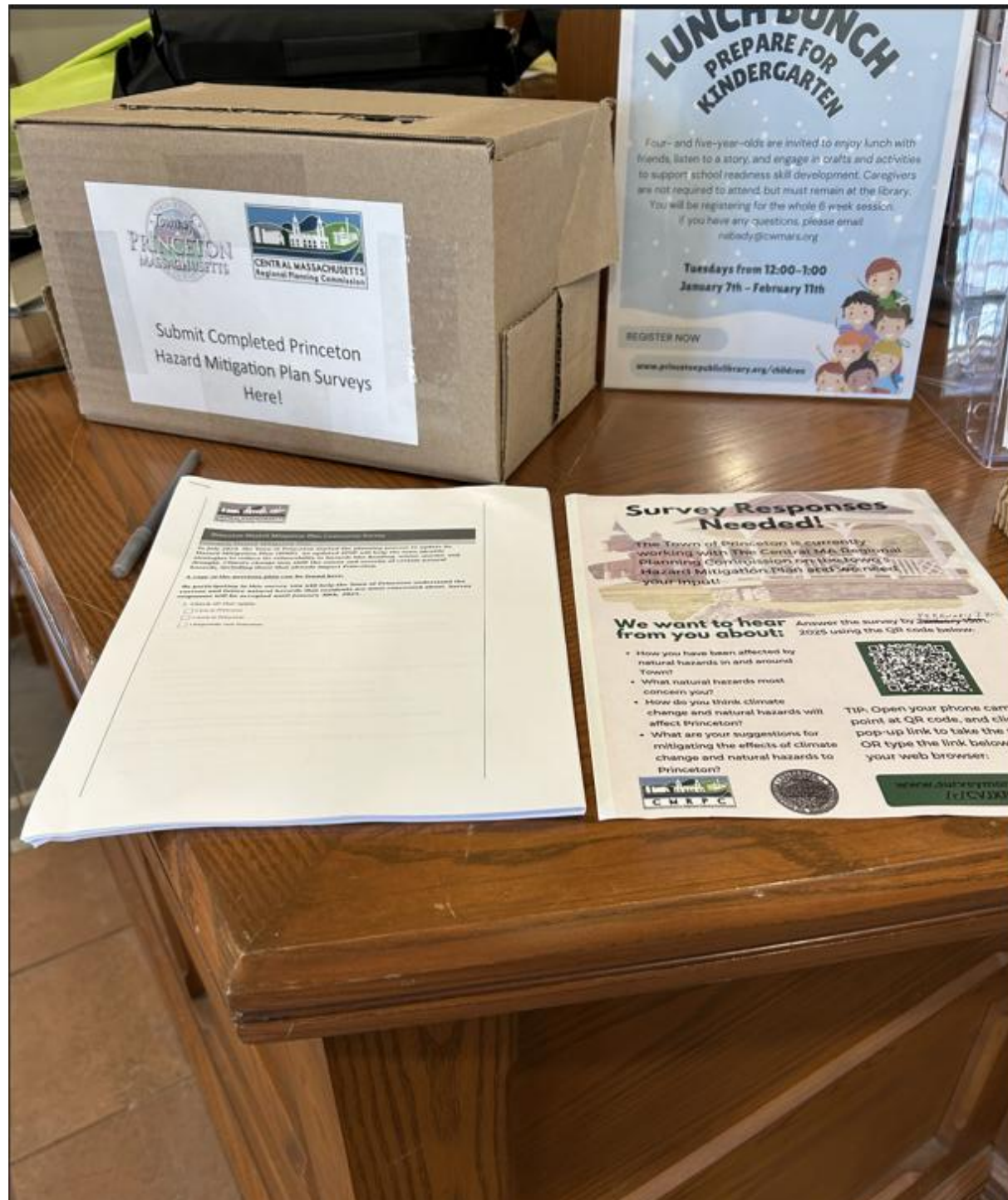
- How you have been affected by natural hazards in and around Town?
- What natural hazards most

Answer the survey by February 28th, 2025 using the QR code below:



Write a comment...






Submit Completed Princeton
Hazard Mitigation Plan Surveys
Here!

LUNCH BUNCH
PREPARE FOR
KINDERGARTEN

Four- and five-year-olds are invited to enjoy lunch with friends, listen to a story, and engage in crafts and activities to support school readiness skill development. Caregivers are not required to attend, but must remain at the library. You will be registering for the whole 6 week session. If you have any questions, please email nobody@owmms.org

Tuesdays from 12:00-1:00
January 7th - February 11th

REGISTER NOW
www.princetonpubliclibrary.org/children



Princeton Hazard Mitigation Plan Survey

The Town of Princeton is currently working with the Central MA Regional Planning Commission on the Hazard Mitigation Plan. We need your input!

Answer the survey by January 15th, 2025 using the QR code below.

We want to hear from you about:

- How you have been affected by natural hazards in and around Town?
- What natural hazards most concern you?
- How do you think climate change and natural hazards will affect Princeton?
- What are your suggestions for mitigating the effects of climate change and natural hazards to Princeton?



Survey Responses Needed!

The Town of Princeton is currently working with the Central MA Regional Planning Commission on the Hazard Mitigation Plan. We need your input!

Answer the survey by January 15th, 2025 using the QR code below.

We want to hear from you about:

- How you have been affected by natural hazards in and around Town?
- What natural hazards most concern you?
- How do you think climate change and natural hazards will affect Princeton?
- What are your suggestions for mitigating the effects of climate change and natural hazards to Princeton?



Survey Responses Needed! | Princeton, MA

town.princeton.ma.us/home/news/survey-responses-needed

All Bookmarks



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PRINCETON
MASSACHUSETTS



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Home

Survey Responses Needed!

POSTED ON: JANUARY 29, 2025 - 11:16AM

The Town of Princeton is currently working with The Central MA Regional Planning Commission on the town's Hazard Mitigation Plan and we need your input! Please see the attached flyer.

Attachment	Size
 princeton_hazant_mitigation_plan_flyer.pdf	638.16 KB

DOW
+0.08%

Search



12:59 PM
1/31/2025



APPENDIX C:

Meetings

- *Appendix C helps meet the following FEMA local mitigation plan requirements:*
- *A1. “Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction?” (Requirement 44 CFR § 201.6(c)(1))*
- *A2. “Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process?” (Requirement 44 CFR § 201.6(b)(2)); and*
- *A3. “Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval?” (Requirement 44 CFR § 201.6(b)(1))*



Princeton Hazard Mitigation Plan Update
Local Planning Team Meeting #1

Date/Time: Wednesday, July 31st, 2024 at 10:00 am
Location: Princeton Town Hall, 6 Town Hall Drive, Princeton, MA

AGENDA

I. Introductions

II. Plan Background

- Review of the Contract with Princeton
- Planning Efforts by Princeton to incorporate into the HM Plan
 - Municipal Vulnerability Preparedness Plan
 - Master Plan
 - Open Space and Recreation Plan
 - Comprehensive Emergency Management Plan
 - Other Planning Efforts?
- NFIP Overview
- Updates required by FEMA
- Inclusion of Optional High Hazard Potential Dam Appendix
 - Princeton has 2 Significant Hazard Dams in town as well as nearby Bickford Pond Dam, a HHPD owned by the City of Fitchburg (according to Office of Dam Safety)

III. Project Phases & Preliminary Schedule

- | <u>Phase</u> | <u>Completion (est.)</u> |
|---|--------------------------|
| ○ Assembly of local planning team, kickoff | August 2024 |
| ○ Information gathering <ul style="list-style-type: none">▪ Natural hazards▪ Critical infrastructure and facilities▪ Development in Town from 2016 onward, and planned developments | |
| ○ Mitigation strategy development | |
| ○ Stakeholder and public involvement | |
| ○ Plan narrative development | |
| ○ Plan submission (initial) | |
| ○ Plan adoption | |

IV. Local Planning Team Meetings/Council Presentations

- Meeting #1 (kickoff)
- Meeting #2-3 (hazards and critical infrastructure/facilities)
- Meeting #3-4 (mitigation strategies)
- Meeting#4-5 (Existing protection measures, Community Survey Review)

V. Review Of Mitigation Strategies from the 2016 HMP

VI. Next Meeting

- Date/location
- What to prepare

Meeting 1
7/31/24
Princeton
Town Hall
Annex
Princeton, MA

PRINCETON HMP

Sign in Sheet

Name	e mail	Phone	Role
Marc Granato	mgranato@cmrpl.org	508 459-3374	CMRPL Planner - Leg
LOUISE Bowen	Admin ASST@ TOWN.Princeton, MA, US	978-464 2118	Admin ASST
Shannon Sullivan	ssullivan@cmrpl.org	508-459-3307	CMRPL ASST - planner
Ken Micallef	highwaydept@town.princeton.ma.us		Highway Supt.
Sherry Patch	Town Administrator		
Pull Connors	Budg Mgmt Super		



Princeton Hazard Mitigation Plan Update
Local Planning Team Meeting #2

Date/Time: Friday, September 13th, 2024, 9:00 AM

Location: Princeton Town Hall, 6 Town Hall Drive, Princeton, MA

AGENDA

I. Introductions

II. Meeting #1 Recap

- Finish reviewing 2016 mitigation strategies (pp. 68-9)

III. Community Lifelines

- When should we start including them in the planning process?

IV. Reference Documents

V. Natural Hazards Review

- a. Flooding
- b. Severe Snowstorms, Ice Storms, and Nor'easters
- c. Hurricanes
- d. Severe Thunderstorms, Wind, and Tornadoes
- e. Wildfires and Brushfires
- f. Earthquakes
- g. Dam Failure
- h. Drought
- i. Extreme Temperatures
- j. Landslides and Other Hazards

VI. Break

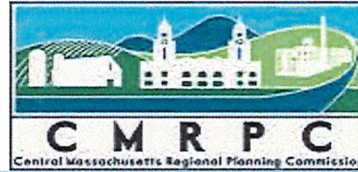
VII. Critical Infrastructure/Facilities and Vulnerable Populations Review

Review previous CI/F/P lists and update as necessary

- Category 1 – Emergency Response Facilities
- Category 2 – Non-Emergency Response Facilities
- Category 3 – Dams
- Category 4 – Populations and Facilities to Protect

VIII. Next Meeting – Existing Protections Measures Review, Public Forum and Community Survey Planning

- a) Date/location
- b) What to prepare



Meeting Name: Princeton Hwp meeting 2		Community: Princeton	
Location: Princeton town hall annex		Date: 9/13/24	Meeting Time: 9:00 am
Participant Name	Organization	Title	E-Mail
MGR G. G. G. G.	CMRPC	Emergency Rep. of town	mgcrato@cmrpc.org
Shannon Sullivan	CMRPC	Asst. Community Development Planner	ssullivan@cmrpc.org
Pam Connors	TOWN OF PRINCETON	Bldg Maint Supvr	BLODMANT@TOWN. PRINCETON.NJ.US
Paul PATRIARCA	Town of Princeton - Police	Police Chief	PLATUARCA@princetonpolice.org
Ricky Thebeau	Princeton Police	Police Sergeant	rthebeau@princetonpolice.org
Sen McKeon (online)	GM of Princeton Light		
Ace Thompson (online)	Principal, Hones Prince School		
Sherry Patch (online)	Town Clerk		
Tom Sullivan	TOWN TREE WARDEN		tesforester@gmail.com
Carry Burnham-Howard	Town Environmental Action Center - chair Town Planning Board - member		cburnhamhoward@gmail.com



Princeton Hazard Mitigation Plan Update
Local Planning Team Meeting #3: Mitigation Strategies

Date/Time: Thursday, November 7, 2024, 10:00 AM

Location: Princeton Town Hall Annex, 6 Town Hall Drive, Princeton, MA

- I. Natural Hazards and Critical Infrastructure Meeting Recap**
- II. Reference Documents**
- III. Mitigation Strategies Review**
 - Review of 2016 plan's mitigation strategies
 - Development of new mitigation strategies
 - Discussion of vulnerable populations and facilities
- IV. Community Lifelines**
- V. Community Survey**
 - Updates
 - Launch
- VI. Next Meeting – Existing Protection Measures**
 - Date/time/location
 - What to prepare



Date: November 7th, 2024

[illegible]



Princeton Hazard Mitigation Plan Update
Local Planning Team Meeting #4

Date/Time: Thursday, January 16, 2025, 10:00 AM

Location: Princeton Town Hall Annex, 6 Town Hall Drive, Princeton, MA/Hybrid

I. Introductions

II. Mitigation Strategies Meeting Recap

- CMRPC master list of mitigation strategies

III. Community Lifelines

- They will have the opportunity to comment on a draft copy of the plan

IV. Existing Protection Measures Review

- Review/Update the Existing Protection Matrix

V. Community Survey Updates

- Town Census mailing, online, hard copies at Town facilities

VI. Next Meeting – Public Presentation and Community Survey Results

- Date/time/location
- What to prepare
- Plan must be complete by 7/31/2025



Town of Princeton: HMP Planning Team Meeting #4 – Existing Protection Measures

Date: January 28th, 2025

Name:	Role:	Email:
Louise Bowen	ADMIN ASST TO TOWNADMIN	ADMINASST@TOWN.PRINCETON.MA.US
For: D. Metcalf	Highway Superintendent	highwaydept@town.princeton.ma.us
Paul PATRIARLA	Chief of Police	PPATRIARLA@princetonpolice.org
Sherry PATCH	TOWN ADMINISTRATOR	
Corey Burnham-Howard		
John Bennett	Fire Chief	
Ace Thompson		
Shannon Sullivan	CMRPC	SSULLIVAN@cmrpc.org
Marc Granato	CMRPC	mgranato@cmrpc.org



Princeton Hazard Mitigation Plan Update
Local Planning Team Meeting #5

Date/Time: Thursday, March 6, 2025, 10:00 AM

Location: Princeton Town Hall Annex, 6 Town Hall Drive, Princeton, MA/Hybrid

I. Introductions

II. Existing Protection Strategies Meeting Recap and Remaining Tasks

- We are in the process of writing the draft plan. We will have an initial draft for the team's review before the public presentation.
- We typically do the presentation at a select board meeting. After the presentation, the draft plan will be open for public comment for 2 weeks. It will also be sent to the identified community lifelines.
- We will then meet virtually to go over comments and any final edits from the town.
- MEMA/FEMA submission and plan adoption are expected to be in June/July 2025.

III. Community Lifelines

- Town-specific community lifelines spreadsheet

IV. Community Survey Results Review

V. Plan Amendments and Final Ideas

- All current and planned development from 2016 – now

VI. Public Presentation Planning

- Purpose
- Format
- Date/Time

VII. Next Meeting

- Date/time
- What to prepare

Princeton HMP Meeting #5: Community Survey and Public Presentation

Date: March 11th, 2025

[illegible]

APPENDIX D:

Selectboard Meeting Public Presentation - Materials

Appendix D helps meet the following FEMA local mitigation plan requirements:

A1. “Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction?” (Requirement 44 CFR § 201.6(c)(1))

A2. “Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process?” (Requirement 44 CFR § 201.6(b)(2)); and

A3. “Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval?” (Requirement 44 CFR § 201.6(b)(1))

**TOWN OF PRINCETON
HAZARD MITIGATION PLAN 2025**



Hazard Mitigation Community Forum

The Town of Princeton is working with the Central
Massachusetts Regional Planning Commission
(CMRPC) to update its Hazard Mitigation Plan
and we need your input!

**Wednesday
June 11th**

**Princeton Selectboard
Meeting**

3:00 PM

**Town Hall Annex
4 Town Hall Drive
Princeton, MA 01541**

**Remote
Option:**

Please visit
town.princeton.ma.us/selectboard to access the
virtual meeting link



TOWN OF PRINCETON

NOTICE OF MEETING

Posted in accordance with the provisions of M.G.L. Ch30 (a) Sections 18-25

BOARD/COMMITTEE: Selectboard

DATE: Wednesday, June 11, 2025 TIME: 3:00 PM

LOCATION: Town Hall Annex & Virtual Via GoToMeeting

Please join my meeting from your computer, tablet or smartphone.

<https://meet.goto.com/866312949>

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Access Code: 866-312-949

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Join from a video-conferencing room or system.

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"The listings of matters are those reasonably anticipated by the Chair 48 hours before said meeting, which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law."

LIST OF TOPICS TO BE DISCUSSED

Announcements

This meeting is being recorded

Call to Order

Presentation Marc Granto CMRPC Hazard Mitigation Plan Update

Princeton Arts Society, Jean Strock & Judy Dino

Re: Request for Fee Reduction for Use of Community Center for Small Works & Holiday Market Place Event

Approval of Minutes

- 5/28/2025

Approval of Treasury Report -Warrant # 24

Public Comment

Residents may address the Selectboard on matters of interest to the public for up to three (3) minutes.

FY 26 Appointments

Council On Aging
Jane Guimette
Barbara Guthrie

Conservation Commission
Holly Palmgren
Jennifer Vuona

Environmental Action Committee
Richard Bisk
Claire Golding
Mark Horenopoulos
Corey Burnham Howard

Parks & Recreation Committee
Addison Barwise
Ed Harley

Planning Board Alt.
Ann O'Connor

New Business

- One Day Liquor License Request Seven Saws Brewing Vote to Approve
Friday, June 13, 2025 from 3PM to 7PM
Friday, June 20, 2025 from 3PM to 7PM
Friday, June 27, 2025 from 3PM to 7PM
- FY 26 Highway Superintendent Contract Renewal
- Schedule Selectboard Focus/Planning Meeting
- Vote to Approve FY 26 Tighe & Bond Agreements
- Board of Health Notification of Amended Trash Hauler Regulations
- Vote to Approve MOA for Rapid Flashing Beacon
- Vote to Approve HR Counsel Service and Fee Agreement

Correspondence and Communications

Deb Faucher, Parks & Rec Chair

Re: Request for Removing Center School from Parks & Rec Responsibility and
Recommendation to Remove Playground Equipment.

Randi Jacobs, WRSD-Approval of Municipal Rep for WRSD Negotiations Leah Whitman

Old Business

Update & Discussion Regarding Community Heart & Soul Project

Bid Awards

Grant Opportunities and Status of Existing Grants

Town Administrator Report & Update on Working Groups

Selectboard Report

Executive Session

To discuss strategy with respect to collective bargaining if an open meeting may have a detrimental effect on the government's bargaining position and the Chair so declares. Pursuant to the provisions of; of G.L. c. 30A, §21, ¶3. (Police Union Negotiations)



Town of Princeton: Natural Hazard Mitigation Plan

Public Presentation: June 11th, 2025

What is a Hazard Mitigation Plan?

- Identify natural hazards and their risks and reducing impacts before a disaster occurs
- Identifies projects, policies, education, and procedures for reducing risks now and in the future
- Seeks to break the cycle of disaster damage, reconstruction, and repeated damage

Why should Princeton complete and adopt this kind of plan?

- A road map for achievable actions that can substantially reduce risks
- A requirement of the Federal Emergency Management Agency (FEMA)
- Unlock an array of funding opportunities at the state and federal levels to reduce hazard risks

What natural hazards pose the greatest risks to Princeton?

- Largest risks: Drought, Wildfires/Brushfires, Invasive Species
- Moderate risks: Flooding, Extreme Temperatures, Winter Storms
- Lower risks: Hurricanes, Dam Failure, Tornadoes, Earthquakes

Local partners

Local knowledge is essential to the mitigation planning process. Partners in Princeton to date include:

- Sherry Patch, Town Administration, Town Administrator
- Louise Bowen, Town Administration, Administrative Assistant
- Ben Metcalf, Highway Department, Highway Superintendent
- Tom Sullivan, Town Tree Warden
- John Bennett, Fire Department, Fire Chief
- Paul Patricia, Police Department, Police Chief
- Ricky Thebeau, Police Department, Lieutenant
- Corey Burnham-Howard, Town Planning Board and Environmental Action Committee Chair
- Sean McKeon, Princeton Municipal Light Department, General Manager
- Ace Thompson, Thomas Prince School, Principal
- Phil Connors, Town Resident

Planning Timeline

Task	Timeline
Information gathering (mapping, research, and local input) and community survey	August 2024 – present
Draft plan development	March – June 2025
Public Presentation	June 11, 2025
Public Comment on the Draft Plan	July 15 – July 29, 2025
MEMA & FEMA review	Anticipated August 2025
FEMA approval and local adoption	Anticipated September 2025
Next 5-year update	2030



Selected recent and ongoing mitigation activities from the 2016 plan include:

- Drainage and culvert upgrades at Hobbs Road and Ball Hill Road (in various stages)
- Paving and drainage reconstruction of Calamint Hill Road (complete)
- Fire Station 2 generator upgrade and roof replacement (complete)
- Maintaining adequate fire roads on Wachusett Mountain and at Leominster State Forest in coordination with the Department of Conservation and Recreation (DCR)
- Snow plan and snow removal policy
- Local Bylaw updates (Wetlands Protection Act; Stormwater Management/Erosion Control)

Recommended high priority mitigation strategies in the 2025 DRAFT plan

A. Structure and Infrastructure Strategies

- Replace the cistern downtown with an underground water tank
- Implement upgrades to both fire stations, including sleeping quarters, a new hose tower, new gutters, and cooking space (ideally a new public safety complex)
- Full replacement of warning sirens throughout town
- Installation of lightning rods for municipal facilities and critical communication infrastructure

B. Preparedness, Coordination, and Response Strategies

- Complete a wildfire management plan for Mount Wachusett (pending FY26 MVP Action Grant)
- Write and implement a town-wide snow plan and snow removal plan, which should include coordination and planning steps for snow removal
- Repair and establish policies for use of town wide tornado warning sirens

C. Education and Awareness Strategies

- Build a water use dashboard for the town and fire dept. websites, spearheaded by the Princeton Environmental Action Committee (EAC)
- Enhance the provision of information to residents and businesses on conserving water through reduction in use, low-impact landscaping, and other low-cost measures; in part, an impetus for this strategy is to conserve water for firefighting
- Educate the public about strategies for preventing basement flooding, such as with rain gardens or other nature-based and small-scale mitigation strategies

D. Local Plan and Regulation Strategies

- Write and implement a wildfire management plan for Wachusett Mountain and Leominster State Forest
The town has begun the process of seeking funds for this plan
 - Write and implement a debris management plan. A previous ice storm resulted in branches, leaves, etc. blocking critical evacuation routes
-



The draft plan with the full list of mitigation strategies will be available shortly on Princeton's town website.

Comments and questions should be directed to Marc Granato (mgranato@cmrpc.org) at CMRPC within two weeks of the draft plan being posted on the town website.

This natural hazard mitigation planning activity is funded by an FY 2020 BRIC Hazard Mitigation Grant from the Federal Emergency Management Agency through the Mass. Emergency Management Agency



TOWN OF PRINCETON HAZARD MITIGATION PLAN

June 11, 2025

Marc Granato, Emergency Preparedness Planner

Shannon Sullivan, Community Development Planner

Andrew Loew, Director, Community Development &

Resiliency Planning

Central Massachusetts Regional Planning Commission

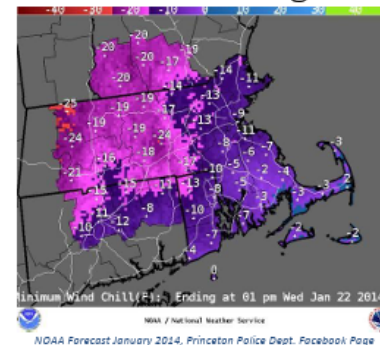


WHY IS PRINCETON COMPLETING THIS PLAN?

- The Federal Emergency Management Agency (FEMA) requires that cities and towns adopt and update a natural Hazard Mitigation Plan to be eligible for various state and federal grants.
- This plan will meet FEMA's requirements and help the town make good use of its resources.
- Princeton's last HMP update was adopted in December 2016 and expired in December 2021.



Princeton Hazard Mitigation Plan



Certified by the Board of Selectmen December 27, 2016

Prepared by the **Central Massachusetts Regional Planning Commission**
2 Washington Square, Union Station
Worcester, MA 01604
www.cmrpc.org

&

Local Hazard Mitigation Team
Town of Princeton, Massachusetts

PLAN FOR MITIGATING DAMAGES FROM NATURAL HAZARDS

- Flooding
- Severe Snowstorms / Ice Storms / Nor'easters
- Hurricanes
- Severe Thunderstorms / Wind / Tornadoes
- Wildfires / Brush Fires
- Earthquakes
- Dam Failure
- Drought
- Extreme Temperatures
- Invasive Species
- Other Hazards (Landslides, Changes in Groundwater)

Not an Emergency Response Plan

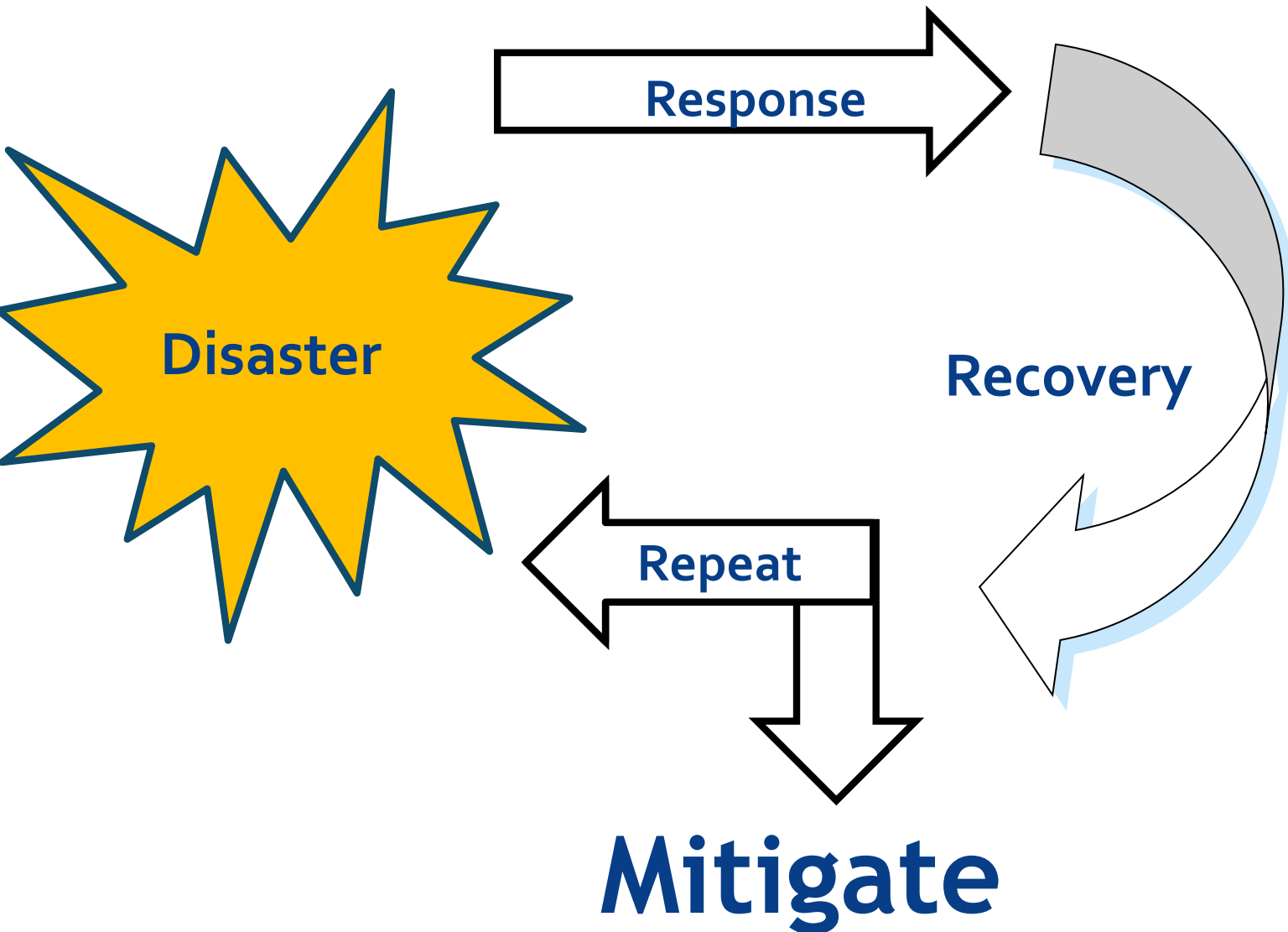
WHAT IS HAZARD MITIGATION?

- *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 future risks and damages?*
- *What additional actions can be taken in the FUTURE?*
- *According to the National Institute of Building Sciences Natural Hazard Mitigation Saves: 2019 Report, on average between 4 to 6 dollars is saved for every dollar spent on hazard mitigation*

THE BENEFITS OF MITIGATION

National Benefit-Cost Ratio (BCR) Per Peril <i>*BCR numbers in this study have been rounded</i>		Beyond Code Requirements	Federally Funded
Overall Hazard Benefit-Cost Ratio		\$4:1	\$6:1
	Riverine Flood	\$5:1	\$7:1
	Hurricane Surge	\$7:1	Too few grants
	Wind	\$5:1	\$5:1
	Earthquake	\$4:1	\$3:1
	Wildland-Urban Interface Fire	\$4:1	\$3:1

Breaking the Cycle of Risk



Four Tools & Techniques for Hazard Mitigation



1. Structure & Infrastructure Projects
2. Preparedness, Coordination & Response Actions
3. Education & Awareness Programs
4. Local Plans & Regulations

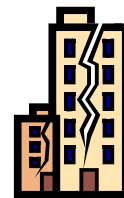
PLANNING PROCESS

- CMRPC provides technical assistance to the town for plan development
- The town coordinates through its local hazard mitigation team
- Public survey
- Public presentation (tonight) during plan development and review of the draft plan
- Submittal of the draft plan to MEMA and FEMA for review, revision, and approval
- Selectboard plan adoption

DEVELOPMENT OF THE PLAN

CMRPC assisted the Princeton
Local Hazard Mitigation Planning Team to:

- Identify & map critical facilities
- Identify & map locally-identified hazard areas
- Identify & review existing mitigation measures
- Identify and prioritize new mitigation strategies
- Gather feedback & input from the public

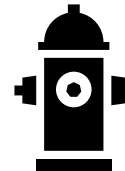
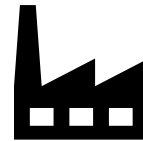


IDENTIFY CRITICAL FACILITIES

Database & GIS maps of critical facilities, infrastructure

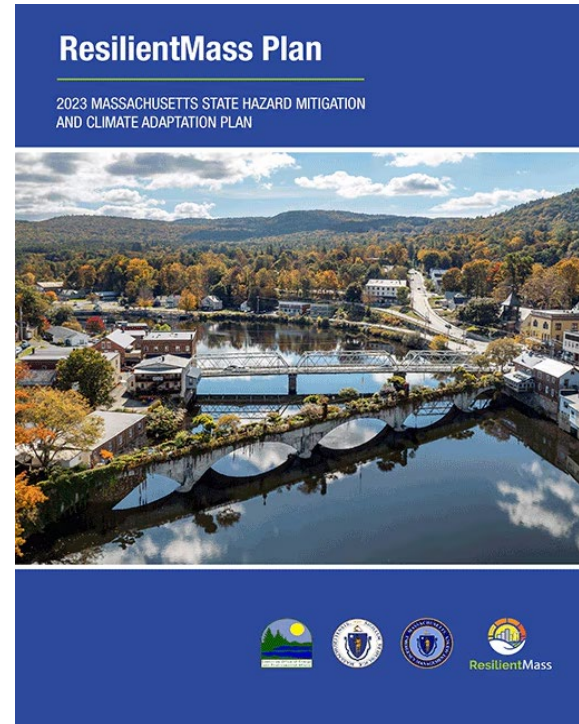
Sites identified include:

- Emergency Response Facilities
- Water Supply and Sewer Facilities, Town Facilities, and Utilities
- Dams
- Facilities and populations to protect



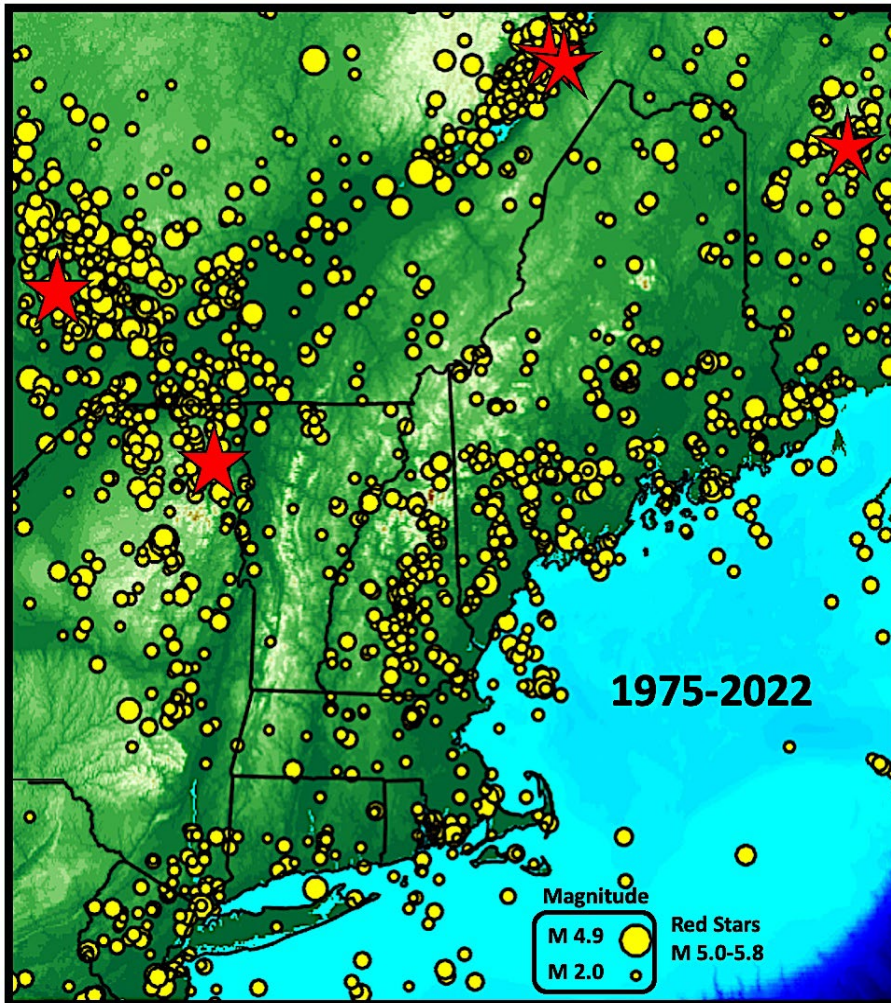
HAZARD IDENTIFICATION & MAPPING

- State & federal data on floodplains, snowfall, wind speeds, hurricanes, earthquake risk, etc.
- Review Mass. State Hazard Mitigation Plan
- Coordinate with the local team to get local information on hazard areas and potential future developments



OTHER HAZARDS – GEOLOGIC, WIND, & SNOW

Earthquakes from 1975 to 2022 2+ Magnitude



Recent Declared Hurricanes & Snow Disasters

Disaster	Declaration Date	Incident Period	FEMA ID
Hurricane Lee	09/15/23	09/15/23 - 09/17/23	EM-3599-MA
Mashpee Wampanoag Tribe Tropical Storm Henri	08/22/21	8/20/21 -	3566-EM-Mashpee Wampanoag Tribe

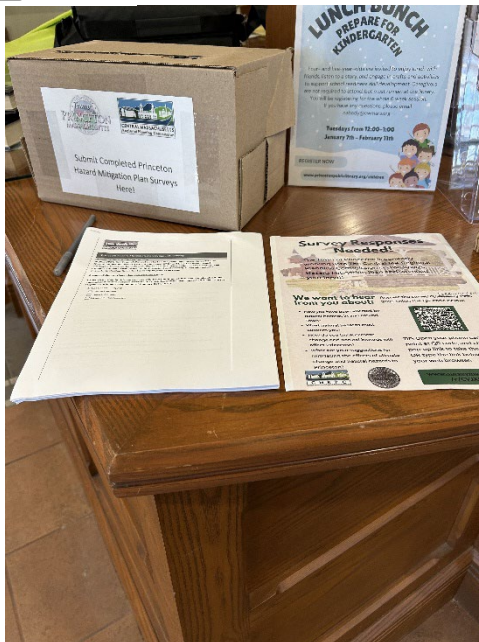
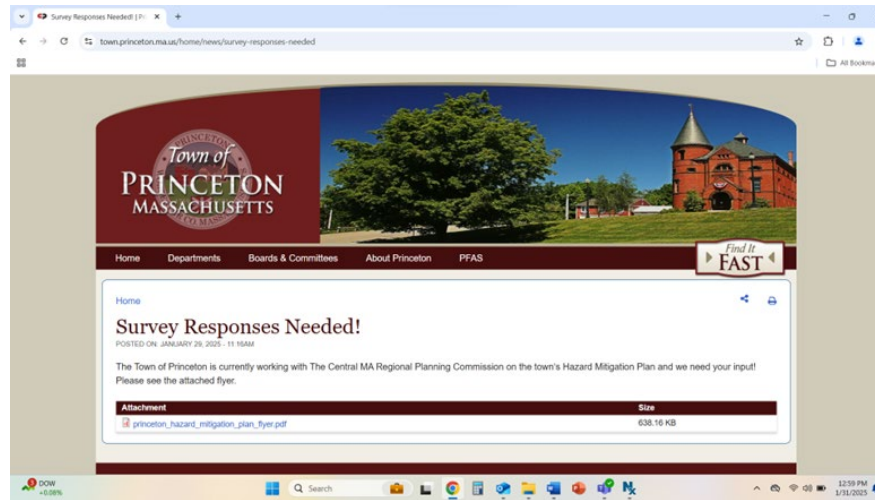
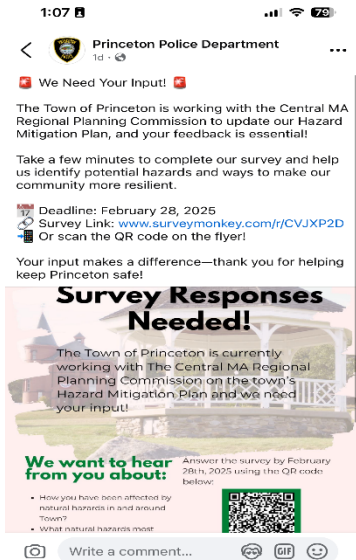
Disaster	Declaration Date	Incident Period	FEMA ID
Massachusetts Severe Winter Storm and Snowstorm	04/18/22	01/28/22 - 01/29/22	DR-4651-MA
Massachusetts Severe Winter Storm and Snowstorm	07/19/18	03/13/18 - 03/14/18	DR-4379-MA

SELECT LOCALLY-IDENTIFIED HAZARD AREAS

- Brushfires/Wildfires
 - Wachusett Mountain
 - Leominster State Forest
 - Other forested land
- Severe Snowstorms and Ice Storms
 - Power Outages
 - Steep Road Conditions
- Drought
 - Fire Ponds and Draft Sites
 - Private Well Water
- Severe Thunderstorms
 - Highway Department
 - Lightning Strikes on Municipal Facilities
- Invasive Species



PUBLIC SURVEY – Winter 2025



- 78 total responses
- Hazards of greatest concern:
Winter storms / ice,
thunderstorms / microbursts /
extreme wind, flooding
- The survey was promoted through
the town website and the town
and police department Facebook
pages
- Survey flyers and paper copies
were also posted at town hall, the
library, and senior center.

EXISTING MITIGATION MEASURES

MULTIHAZARD

- Education and outreach
- Hazard warning systems and notifications
- Plans, regulations, and studies

FLOOD RELATED HAZARDS

- National Flood Insurance Program
- Street sweeping
- Catch basin cleaning
- Stormwater Management policy and regulations in place
- Drainage preventive practices to reduce clogging
- Subdivision Rules and Regulations
- Zoning Regulations

DAM FAILURES

- State permits for dam construction
- DCR dam safety regulations
- Code Red System

WIND-RELATED HAZARDS

- Tree trimming program

WINTER-RELATED HAZARDS

- Salting and sanding of roads and plowing

BRUSH FIRE RELATED HAZARDS

- Permits for outdoor burning

PRINCETON MITIGATION STRATEGIES



- Where are the GAPS?
- What actions will further reduce vulnerability?
- Where are the PRIORITIES?

DRAFT PLAN SELECT HIGH PRIORITY MITIGATION MEASURES

- Prioritize repairs and upgrades at the East Princeton Fire Station, including sleeping quarters, gutters, and a hose tower.
- Replace the cistern in the center of town with an underground water tank and fire hydrant
- Develop an all-hazards education and outreach program (Princeton Environmental Action Committee)
- Create a wildfire management plan for Wachusett Mountain (FY26 Municipal Vulnerability Preparedness (MVP) Action grant application is pending)

PLAN APPROVAL AND ADOPTION

- The Draft plan will be reviewed by MEMA.
- FEMA will review the plan and is the agency that issues conditional approval.
- A Selectboard resolution to adopt the plan can occur after FEMA conditional approval.
- FEMA issues final plan approval.
- The plan will be in effect for 5 years.



IMPLEMENTING THE PLAN

WHAT HAPPENS AFTER THE PLAN IS APPROVED?

- Establish a local implementation group.
- Prepare a timeline for implementation
- Integrate the plan's recommendations with other local plans and policies
- Seek FEMA and other funding sources and other resolutions for plan mitigation measures
- Meet at least yearly to review progress of plan implementation
- Update the plan every 5 years

DRAFT PLAN

The full draft plan will be available on the
Princeton town website.

Please send any comments on
or questions about the plan to Marc at
mgranato@cmrpc.org within two weeks
of the draft plan being posted on
the town website.

APPENDIX E:

Public Comment Period and Community Lifeline Comment Period Materials

Appendix E helps meet the following FEMA local mitigation plan requirements:

- *A1. “Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction?” (Requirement 44 CFR § 201.6(c)(1))*
- *A2. “Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process?” (Requirement 44 CFR § 201.6(b)(2)); and*
- *A3. “Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval?” (Requirement 44 CFR § 201.6(b)(1))*

Princeton HMP: Synopsis of Comments Received

Key Points

- Importance of actionable strategies where implementation can be measured
- A smaller list of strategies would be more realistic for the town to achieve in the next 5 years versus a longer “nice to have” list
- The town should not be responsible for addressing Wachusett Mountain and communications facilities noted in section 4, as they are state-owned.
- Culverts and other stormwater mitigation measures should be the highest priority. Cistern, town facility improvements, and emergency management upgrades (e.g., purchase of a heavy rescue vehicle) are not high needs and don’t have a benefit to the town.
- Floodplain Zoning Bylaw District and 100yr floodplain bylaw strategies – commenters pointed out these contradict each other, so the town cannot have both at the same time. We can clarify the town can choose which works best in the future; both are listed so the town can apply for funding for whichever one they choose. We can take the 100yr floodplain bylaw out as well.
- It is physically impossible to wholly reduce or eliminate long-term risks to human life and property.
- It is highly unlikely that roads will be impassible, that tree maintenance will lessen the impact of wildfires, that roads and facilities might flood, etc. This is based on past historical data for Princeton.
- Commenters noted the statewide plan overview should include Princeton-specific items and relevance to Princeton versus a statewide overview
- Princeton is highly forested – possible commercial and industrial development and their impacts are not relevant to Princeton
- Phenomena such as wind and heat that cut across various hazards should be discussed first and therefore only once.
- This report is very tedious with so much repetitive verbage.
- Discussions of related hazards should be discussed together and with the most severe manifestation of the hazard discussed first because preparation for the most severe automatically covers all the rest (prep for Tornadoes will mitigate any other wind-related hazard.) Those most likely to get worse due to climate change should be discussed first.
- Forecasted numerical values, as in the MVP Summary of Findings, are necessary.
- Given realistic changes in federal policy, is it realistic to list federal funding as a viable potential source of funding?

Specific questions that came up in comments:

1. P. 19: Is the Highway Department fuel pump still inoperable due to a lightning strike?
2. P. 27: Historical sites identified by the core team as critical facilities of infrastructure

July 10, 2025

1. It is important to recognize the standard definition of terms related to the Princeton Hazard Mitigation Plan.
 - a. Hazard – a source of potential harm or a situation that could cause damage, injury, or other negative consequences.
 - b. Risk Assessment – a prediction of a probable outcome based on evidence from previous experience (i.e. determining who or what might be harmed by a hazard).
 - c. Risk Control – Once hazards and affected parties are identified, assessing the probability and severity of a risk.
 - d. Disaster – a non-routine event that exceeds the capacity of the affected area to respond to it in such a way as to save lives; to preserve property; and to maintain the social, ecological, economic, and political stability of the affected region.
 - e. Significant – Important and deserving of attention.
2. Page 2 – The concept of “hazard mitigation” is only pertinent or meaningful if the hazard has been used to compute **risk** (assessment and control) to human health, personal property and/or the environment.
3. Page 7 – The entire page: “You cannot live in a risk-free society, Plus, there is no mention of cost-benefit analysis with respect to risk mitigation.
4. Page 7 – Why should Princeton address Mount Wachusett? It is State-owned property and the State should address any risk mitigation. The same applies to other parties that control lands in Princeton and are not on the tax rolls (e.g., Leominster State Forest, watershed protection lands for Quinapoxet and Wachusett reservoirs, Massachusetts Audubon, Princeton Land Trust, etc.).
5. Page 8 – Regarding High-Priority mitigation strategies.
 - a. **Wildfire Management Plan for Wachusett Mountain – This is not Town owned land and should not be the responsibility of the Town.**
 - b. **Improvements to culverts – This is the highest priority along with improvements to catch basins and road erosion control.**
 - c. **Improvements to cisterns and Town facilities are not high needs, and mainly unsubstantiated desires.**

- d. **All-hazards education campaign – Probably a good idea once realistic hazard and mitigation measures are agreed upon.**
 - e. **Purchase of a heavy rescue vehicle – There is no substantiated cost/benefit associated with this desire purchase.**
6. Page 9, Section 1.1 – This section states: “In the context of natural hazard planning, Pre-Disaster Mitigation refers to any action that permanently reduces or eliminates long-term risks to human life and property.”

It is physically impossible to permanently reduce or eliminate long-term risks to human life and property. Unless you want to re-write the 2nd law of thermodynamics.

7. Page 9, Section 1.2, 2nd Paragraph – This section states: “Central Massachusetts is susceptible to New England weather patterns, like late summer hurricanes, major winter blizzards, and summer droughts. These natural hazards occur frequently enough to be familiar scenes to residents of Princeton. The negative effects of these natural hazards on the built environment can lead to these events being classified as natural disasters. As climate change continues to progress, the severity and frequency of natural hazards will increase.”

What is the basis for these statements.

- a. **How can anyone state that the Central Massachusetts is susceptible to the same weather patterns found in Cape Cod, the coastal areas of southern New England, Downeast Maine, northern Vermont and New Hampshire, or Aroostook County Maine? After 45 years living in Central Massachusetts, and 70 years living in New England, the major hurricanes of the 20th and 21st centuries have been; “unnamed” in 1938, Carol in 1954, and Bob in 1991. Almost all the impact from these storms was in the south coastal regions of New England. There were no disasters in Central Massachusetts from these events.**
- b. **A blizzard is defined as; “a severe snow storm characterized by strong winds causing blowing snow that results in low visibilities.” The difference between a blizzard and a snowstorm is the strength of the wind, not the amount of snow. To be a blizzard, a snow storm must have sustained winds or frequent gusts that are greater than or equal to 56 km/h (35 mph) with blowing drifting snow which reduces visibility 400 m or 0.25 miles or less and must last for a prolonged period – typically three hours or more. From 1960 through January 2025 there have only been 13 blizzards affecting Central Massachusetts. While**

there were inconveniences associated with these blizzards, there were no disasters resulting from these events.

- c. **The presumptions on Page 9, Sec 1.2, 2nd Paragraph stating: “These natural hazards occur frequently enough to be familiar scenes to residents of Princeton. The negative effects of these natural hazards on the built environment can lead to these events being classified as natural disasters.” are unsubstantiated.**
- 8. Page 14, 3rd Paragraph – This section states: “Massachusetts has a humid continental climate” **What relevance does this have to the Town of Princeton, that has a median elevation of 1,175 ft above sea level?**
 - 9. Page 14, 3rd Paragraph – This section states: “Approximately 50 miles from the Atlantic coast, Princeton and its neighboring communities are subject to a variety of types of severe storms including hurricanes, nor’easters, thunderstorms, and blizzards.” **This is a very misleading statement. As mentioned above in comments 7a. and 7b., there have been a paucity of hurricanes and blizzards (severe storms?) impacting Central Massachusetts. Furthermore, nor’easters and thunderstorms have been part of the Central Massachusetts climate for centuries. Even with the purported increase in precipitation intensity due to climate change, what is new about these meteorological events?**
 - 10. Page 18, 2nd Paragraph – This section states: “If there are proper resilience measures in construction, new development can be more resilient to natural hazards. For instance, the clearing of brushes and trees lessens the chance of wildfires near new development.....”
 - a. **This statement should be removed. Trees, especially those with large biomass, are known for their significant carbon dioxide (CO₂) sequestration capacity.”**
 - b. **What are the natural hazards? Trees and dry brush are not natural hazards by themselves. There have been few, if any, lightning strikes in Princeton to serve as a source of ignition. The source(s) of ignition representing possible hazards are not natural.**
 - c. **More importantly, home or property owners should determine what risks they are willing to accept. Such determination must not be dictated by local or State governments if existing codes are followed.**
 - 11. Page 18, 2nd Paragraph through the end of Page 19.
 - a. **This entire section should be excised from the report. The educated and experienced citizens comprising the pertinent Boards and committees in**

Princeton have already demonstrated an excellent appreciation for protecting the Town's natural resources as reflected in various by-laws. The wording in this report implies that the Town is derelict in the protection of its natural resources. PRINCETON IS PROBABLY FAR AHEAD OF MOST TOWNS, AND FEMA.

12. Page 21, Table 4 –

- a. **The Communications Facilities noted in Table 4 that are located on State-owned property and not under the control of the Town of Princeton should not be the responsibility of the Town. The State should be responsible for protecting receptors from any perceived risks, as negligible as they are.**

13. Page 22, Table 4 – Thomas Prince School

- a. **When was the last time the Thomas School area and/or the school flooded? Where are the data? This is an example of the report authors/advisors desperately reaching to identify an entity to “fill-in-a box”.**
- b. **There is no relevancy to the lack of air conditioning at Thomas Prince School.**

14. Page 22, Table 4 – Primary Evacuation Routes

- a. **Primary evacuation routes include Route 62 East and West (Hubbardston Road/Sterling Road), Route 31 North and South (not mentioned), Mountain Road, Brooks Station Road, and Coal Kiln Road. What is the probability that more than one of these routes are going to be unusable at any one time? Close to zero.**

15. Page 23, Table 5 – Non-Emergency Response Facilities – Water Supply. It is stated that these facilities are essential for everyday operation of Princeton.

- a. **The historical data show that fires, especially structure fires, are a very infrequent event in Princeton and characterizing such non-emergency response facilities as being required for everyday operation of Princeton is unsubstantiated and erroneous.**
- b. **Furthermore, the Schoolhouse Pond entity on Boylston Avenue is contaminated with PFAS and cannot be used.**

16. Page 24, Table 5 – Town Facilities. Earthquake risk to the Town Hall, Library and Building Department?

- a. **Really? Who quantified or estimated the risk to these buildings from an earthquake? This is another example of making a desperate attempt to “fill—in-a-box”.**

17. Page 25, Table 5 – Utilities.

- a. **Where is the dam, that if it fails, represents a hazard to the Municipal Light Department at 168 Worcester Road?**
- b. **Again, what sources of ignition represent a hazard to result in wildfires that would impact the Municipal Light Department at 168 Worcester Road?**

18. Page 26, Table 6 – Dams

- a. **If a dam in Princeton is owned or under the control of entities outside of Princeton, such entities should be responsible for any risk mitigation.**
- b. **What is the relevance of a dam (e.g. Echo Lake Dam), supposedly holding back a source of water, being in a wildfire area?**
- c. **It appears compounded risk analyses have been ignored in preparing the list in Table 6. Using Paradise Pond as an example, what is the compounded probability of 1) this dam being in a 1% flood zone and not being able to retain all water reaching the dam, 2) flood water not being able to be attenuated by natural outlets, and 3) the simultaneous need for using Route 140 as the only means of evacuating residents of Princeton?**

19. Page 33, Last Paragraph – This section states: “...were used to develop the following list of the most significant identified natural hazards which affect Princeton.”

- a. **Using an accepted definition of “significant” as delineated in Section 1.e, the following events cannot be classified as significant natural hazards:**
 - i. **Hurricanes - There have been a paucity of hurricanes [3] impacting Central Massachusetts during the past 87 years**
 - ii. **Tornadoes – There has been 1 recorded tornado in Princeton since 1950.**
 - iii. **Wildfires/Brushfires – While wildfires/Brushfires may be considered hazards due to being a source of danger, the risk (or probability) or the danger materializing is dependent on other events occurring (i.e. sources of ignition).**
 - iv. **Earthquakes – A reading of 5.5 or greater on the Richter scale is normally required for an earthquake to possibly cause slight damage to**

buildings. In the last 122 years there have been no earthquakes above 2.5 in Princeton, and the last damaging earthquake in Massachusetts occurred in 1755.

- v. Dam Failure – These are not significant hazards. What is the basis for labeling them as such? Furthermore, even if they were a hazard they are not “natural”, they are “man-made”.**
- vi. Drought – Droughts by themselves are not hazards.**
- vii. Extreme Temperatures – What is the basis for including this item as a “significant hazard”?**
- viii. Invasive Species – No data have been presented to include this item as a significant hazard in Princeton.**
- ix. Other Hazards – Such as? Meteor strikes? This catch-all term is indicative of the lack establishing the basis for any true natural hazards in Princeton. The Report even admits that landslides are a low risk. The Town topography does not support landslide being mentioned.**

20. Page 35 – Section 4.1: State-wide Overview of State-wide Hazards

- a. Why is so much space dedicated to State-wide hazards that are of little or no relevance to Princeton?**
- b. Many of the State-wide hazards are centered on urban areas with the resulting risks (e.g.; food insecurity) higher due to people choosing to live in such areas.**
- c. The purported risk of food insecurity is extremely locale specific. Princeton has the ability to be self-sufficient with respect to the essential nutrients for the proper functioning of a human body, if forced to do so. This assumes that the population remains at a sustainable level, and not forced by socialistic dictums to exceed such level.**

21. Page 40 – Sec. 4.1.3 – Table 9: Previously Declared Disasters in Worcester County

- a. This is a misleading table and should be revised for the following reasons:**
 - i. Hurricane Lee passed east of Massachusetts and tropical storm winds did not reach Central Massachusetts, let alone Princeton. Just because the Governor declared all of Massachusetts a disaster area does not signify a technical basis for such a declaration, but more of a political basis.**

- ii. **What is the relevancy of listing a “Shelter Capacity Crisis”?**
- iii. **The Covid-19 Pandemic was not in the least a natural hazard, but a hazard caused by a technopolitical undertaking. It was no more a natural hazard than if a chemical warfare device was set-off in a large metropolitan area.**

22. Page 42 – Section 4.2.1: Hazard Description

- a. **The purported hazards in the list of this section have already been addressed in Comment 20, above.**

23. Page 46 – Section 4.2.11 – Natural Hazard Impacts from Changes in Future Conditions

- a. **The population numbers and percentages are incorrect.**

24. Pages 45 through 51 – Tables 13 and 14: Hazard Risk Assessment etc. and Natural Hazard Impacts etc.

- a. **The general comments regarding Table 13 are:**
 - i. **There is a great amount of bias in the classifications, and an absence of any quantitative support for the rankings.**
 - ii. **There is no attempt at compounded risk assessment analyses in the Risk Index Ratings.**
- b. **The specific comments for each “Type of Hazard” are:**
 - i. **Flooding – The Hazard Risk Assessment is characterized as “Very Low” yet the wording in Table 14 implies a different, more egregious risk. What are the specific areas in Town that 1) substantiate the Table 14 wording, and 2) are not currently wetlands?**
 - ii. **Severe Snowstorms, etc. –**
 - 1. **How does an increase in the Town’s population translate in a higher compounded risk from these events? Where are the basic calculations?**
 - 2. **The assumption of structures being built with flat roofs in the future is outrageous. This is a high elevation of rural Massachusetts with centuries of severe snow storms, ice storms and nor’easters. Roofs with steep slopes are a given!**

3. Where are the simple quantitative analyses that support the need for more sheltering? Give an example of the frequency of such events in the past.
- iii. Hurricanes – If these events are characterized as “Low Risk” why is space taken up proposing stormwater “resilience” measures? In the unlikely event stormwater mitigation measures are required, such measures would involve diverting and capturing runoff from paved surfaces (i.e. roads). Changing the Town’s zoning by-laws is not justified based on the vegetative, geological, and hydrogeological characteristics of the Town.
 - iv. Severe Thunderstorms/Wind –
 1. The Hazard Risk Index Rating of 2 (High Risk) is inconsistent with the other comments in Table 13 pertaining to these events, and should be lower.
 2. Zone 1 is defined by a maximum wind speed of 70 mph and cover a large portion of the U.S. including New England. Homes built to Wind Zone 1 standards are generally suitable for areas where hurricanes and strong storms are less frequent (Princeton compared to the Midwest).
 3. If a home owner elects to build to a lower standard, then they accept the risk, not the other residents of the Town. Consequently, the need for “more sheltering” is unnecessary.
 - v. Tornadoes –
 1. Again, the Hazard Risk Index Rating of 2 (High Risk) is inconsistent with the other comments in Table 13, especially the very low probability of these events.
 2. The same Wind Zone 1 comments apply as state in comment b.iv.2, above.
 3. The number of days with tornadoes may decrease but the number of tornadoes per day may increase? Plus, a concomitant admission that more research needs to be done. This box should simply be labeled “UNKOWN”.
 - vi. Wildfire –

1. The risk associated with wildfires is primarily dependent on the risks (especially the probability) associated with sources of ignition (sparks from CSX trains, wood-burning stoves, unacceptable burning of brush by property owners, etc.). Consequently, the Hazard Index Rating of 1 is grossly overstated.
2. Regarding Table 14;
 - a. Impact from Changes in Population: This statement should be deleted. The Town has limited developable land; therefore, the rate of growth will decrease. There is no urban interface/intermix in Princeton.
 - b. Impact from Land Use and Development: This statement should be deleted. There has not been an increase in commercially-zoned land in Princeton. Even though there is a very small percentage of land in Princeton zoned commercial/industrial, there is no industrial activity in the Town, nor is there any expected due to the current Master Plan.
 - c. Impact from Climate Change: There is no substantiation for these comments. Water shortfall due to drought, if it occurs, would be offset by increased precipitation. There is no atmospheric basis for the air quality presumptions.
- vii. Earthquakes – There has not been a recorded earthquake affecting Princeton. Why should it even be suggested that developments (not sure what developments are being envisioned) be built to Massachusetts State Building Code Seismic Standards. **THIS IS A PRIME EXAMPLE OF AN OVERKILL, AND COMPLETELY IGNORES COST/BENEFIT ANALYSIS.**
- viii. Dam Failure
 1. Again, what are these developments that are mentioned? What is the definition of the term “development” constantly being used in this Report? The current by-laws make it difficult for “developments” to be constructed.
 2. In the unlikely event that 1) these purported developments are built in 2) a potential inundation zone, and 3) the dam fails, the

**risk will be borne by the property owner(s), not the Town.
Another example of compounded risk being ignored.**

ix. Drought

- 1. These comments completely ignore 1) the types of aquifers (vadose zone, artesian, flowing artesian, etc.) that service the residents of Princeton, 2) the mechanism and rate of recharge of these aquifers and the private wells they serve, and 3) the realistic population growth that is limited by the Town's developable land area. AS SUCH THIS IS A VERY LOW RISK AND THE REPORT SHOULD BE REVISED ACCORDINGLY.**

x. Extreme Temperatures

- 1. There is no quantitative analysis provided that supports a significant change in the Town's age demographics.**
- 2. Impacts from Changes in Land Use and Development – THIS STATEMENT IS NOT DECIPHERABLE.**

xi. Invasive Species

- 1. Control of invasive species due to changes in land use and development? Really? Provide a current example for Princeton.**
- 2. Impacts from Climate Change – This is an extremely hypothetical statement.**

25. Page 51 – Last Paragraph

- a. This statement suggests that the Town of Princeton should “close up shop.” The authors should realize that we do not, and will not, live in a risk-free society.**

26. Pages 53 through 114 –

- a. All the comments above cover the purported hazards in these pages.**

27. Page 115 – Changes in Groundwater

- a. The seepage of groundwater (vadose zone groundwater) into a basement is a problem for the home owner, not the Town.**
- b. The unlikely probability of a well running dry is, again, a problem for the home owner, not the Town.**

28. Page 116, Last Paragraph

- a. **The purported increase and frequency of drought conditions only considers one variable associated with groundwater availability. Any risk assessment must consider the purported increase in frequency and intensity of precipitation events, as well as the recharge capacity of the various aquifers.**

29. Page 125, Regarding Mitigation Measures

- a. **The only mitigation measures 1) for which a tangible cost/benefit can be estimated or computed, and 2) fall under the category of needs as opposed to desires are related to stormwater management. The Princeton Highway Department has undertaken commendable efforts to upgrade drainage and culverts with the limited resources provided. Additional funds to continue these undertakings as well as install catchment basins is the highest priority with respect to future hazard mitigation.**
- b. **While the Hazard Risk Index Rating for wildfires is overstated, any mitigation efforts should go to attenuating ignition sources as opposed to spending funds on overnight bunking, etc. Such attenuation measures include, requiring CSX to clear brush from their railroad right-of-way, enforcing residents to abide by the prohibition of residents to conduct open burning during dry periods, and requiring proof of inspection of chimneys serving wood burning stove/furnaces.**

;

Public Comments Received: Princeton Hazard Mitigation Plan

Comment #1:

"- Power interconnection between Princeton and Sterling - to my knowledge, this project is not proceeding. PMLD is having preliminary discussions with Holden for a possible interconnection.

- Installation of a rescue communication center via a vehicle with radios - why is this needed when we will be building an EOC at the proposed public safety building?

- Generator upgrade for HW Department - to my knowledge, the HW Department installed a generator, which does not service the fuel pump. Funding was approved to install an additional generator for the fuel pump. There was a lot of discussion regarding this request and we were told that this was the only option. Why do we now ask for an upgrade?

- Install micro-grids - rooftop solar on various municipal buildings to include our non-existent public hospital, brownfields and closed fuel facilities. Further, a solar facility on our capped landfill has already been ruled out. I have no knowledge that microgrids were discussed with the public or PMLD.

- Installation of rain gardens etc to address Heat Island Effect. Princeton is not an urban environment with heat island issues. Further, the architect for the PSB has indicated that rain gardens are "high maintenance" and should only be installed if a designated group is in place to maintain such gardens. This item should be deleted as we do not have the resources to maintain such gardens.

- Retrofit municipal buildings to strengthen resilience to natural hazards and increase energy efficiency. This item lacks specificity and implementation can not be measured.

- Install traffic lights as Princeton's roads are evacuation routes for the Town "as well as from the Boston area". The latter part of the sentence does not make sense.

- Install air conditioning in emergency shelters. Princeton only has one shelter.

- 100 year floodplain bylaw suggestion - this was not approved at ATM

- Floodplain Zoning District - this suggestion is in contradiction to the prohibition of building in floodplains. Either we have no building in flood hazard areas or regulate the building in flood zones.

- In general, the plans/strategies have been expanded from six pages to 12 pages. This makes implementation less realistic or feasible. It is easy to create a long list of "nice to have" items versus a realistic assessment of what can be achieved in the next five years.



FW: HMP report review

From Sherry Patch <townadministrator@town.princeton.ma.us>

Date Thu 7/17/2025 8:35 AM

To Marc Granato | CMRPC <mgranato@cmrpc.org>

Cc Shannon Sullivan | CMRPC <ssullivan@cmrpc.org>

 1 attachment (4 MB)

Princeton HMP Draft 1.15 Town Copy _ PG.docx;

CAUTION: This email originated from **outside of the organization**. DO NOT click links or open attachments unless you recognize the sender and know the content is safe. Thanks.

Comments and from Selectboard member Philip Gott

Sherry A. Patch
Town Administrator
6 Town Hall Drive
Princeton, MA 01541
(978) 464-2102

From: Phil Gott <philgottslct@aol.com>

Sent: Wednesday, July 16, 2025 04:11 PM

To: Sherry Patch <townadministrator@town.princeton.ma.us>

Subject: HMP report review

Hi Sherry;

My detailed comments on the draft are in the attached. As an overview to my comments I can offer the following:

This report is very repetitive and should be re organized to be more concise and logically organized

- Phenomena such as wind and heat that cut across various hazards should be discussed first and therefore only once. This report is very tedious with so much repetitive verbage.
- Discussions of related hazards should be discussed together and with the most severe manifestation of the hazard discussed first because preparation for the most severe automatically covers all the rest (prep for Tornadoes will mitigate any other wind-related hazard.)

In many places there is a statement that Princeton-specific hazards or impacts "MAY BE" listed in a particular section or table of the report. This report will not be complete until all those Princeton-specific hazards or impacts are indeed included.

Discussion of the impacts of climate change, specifically with respect to drought, temperature extremes and wildfire are not well developed compared to available information in the Princeton MVP and likely many other places, including those referenced in the report. A much more rigorous discussion is needed to give this phenomenon its proper level of importance. General statements as opposed to forecast numerical values are not acceptable, especially when those forecast numbers are readily available.

Detailed comments are in the margin, some changes in wording have been made and can be seen in Track changes.

My copy of the draft did not include an executive summary. The copy with an Executive Summary apparently came out later but I had already started my comments, so I kept going using this copy.

Kindness Matters

philgottslct@aol.com

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Feedback needed on draft of hazard mitigation plan

POSTED ON: JUNE 16, 2025 - 9:50AM

The Town has been working with the Central Mass Regional Planning Commission on an update to our Hazard Mitigation Plan. Eligibility for some types of grants depends upon having this plan in place. The Selectboard encourages you to review the attached draft and give any feedback to Sherry Patch at townadministrator@town.princeton.ma.us.

Attachment	Size
 princeton_hmp_draft_1.15_town_copy_with_executive_summary.pdf	3.39 MB

Princeton Hazard mitigation Plan Community Lifelines Outreach

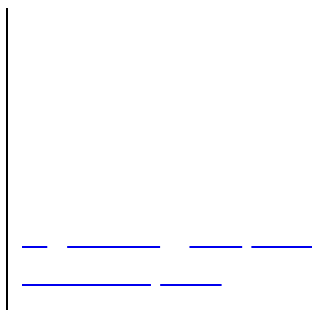
Good Afternoon,

If you are receiving this message it is because you have been identified as a community lifeline for the Town of Princeton. A community lifeline “...enables the continuous operation of critical government and business functions and is essential to human health and safety or economic security.”

Subsequently, we would appreciate if you would review the initial draft of the Hazard Mitigation Plan and provide comments to us for improving it based on your experiences:

[Princeton HMP Draft - Public Comment.pdf](#)

Please send any comments to my email address provided below.



Community Lifeline	Entity	Point of Contact	Phone	Email
1. Safety and Security	Local Planning Team			
1. Safety and Security	Princeton Fire Department			
1. Safety and Security	Princeton Police Department			
1. Safety and Security	Princeton Emergency Management			
1. Safety and Security	Mass. Audubon Society			
1. Safety and Security	Princeton Land Trust			
1. Safety and Security	Mass. DCR			
1. Safety and Security	Town of Westminster			
1. Safety and Security	Town of Leominster			
1. Safety and Security	Town of Hubbardston			
1. Safety and Security	Town of Rutland			
1. Safety and Security	Town of Holden			
1. Safety and Security	Town of Sterling			
2. Food, Hydration, Shelter	Thomas Prince School			
2. Food, Hydration, Shelter	WRSD Central Office			
2. Food, Hydration, Shelter	Wachusett Regional High School			
2. Food, Hydration, Shelter	Princeton Senior Center			
2. Food, Hydration, Shelter	Grocery Store			
2. Food, Hydration, Shelter	Wachusett Food Bank			
2. Food, Hydration, Shelter	American Red Cross			
2. Food, Hydration, Shelter	Worcester County Food Bank			
3. Health and Medical	St. Vincents (Worcester)			
3. Health and Medical	Umass Medical (Worcester)			
4. Energy	Princeton Municipal Light Department			
4. Energy	National Grid			
4. Energy	Sterling Municipal Light Department			
5. Communications	Holden Regional Dispatch Center			
6. Transportation	School Buses			
6. Transportation	Sterling Regional Airport			
6. Transportation	Worcester Regional Airport			
6. Transportation	Central Mass EMS AMBU Bus			
6. Transportation	MassDOT			
7. Hazardous Material	MassDEP			
7. Hazardous Material	State Haz Mat Team			
8. Water Systems	DPW/Highway			

APPENDIX F:

Glossary of Terms

APPENDIX F

GLOSSARY OF TERMS

As used in the plan, these terms are defined as follows:

Blizzard – Issued for sustained or frequent gusts to 35 mph or more for an hour or greater and considerable falling and/or blowing snow. These conditions frequently occur alongside reduced to or below one-quarter mile. These conditions must be the predominant condition over a 3-hour period.

Blizzard warning - Sustained winds or frequent gusts of 35 mph or higher, occurring in combination with considerable falling and/or blowing snow. When proclaimed, these conditions are expected to prevail for a period of at least three (3) hours. Visibilities will frequently be reduced to less than one-quarter mile.

Blowing snow - Wind driven snow that reduces visibility to six (6) miles or less causing significant drifting. Blowing snow may be snow that is falling and/or loose snow on the ground picked up by the wind.

Community Lifelines – The most fundamental services in the community that, when stabilized, enable all other aspects of society to function. (Definition from FEMA).

Conflagration - A large destructive fire which attains such intensity that it creates and sustains its own wind system. It is most commonly a natural phenomenon, created during some of the largest bushfires, forest fires, and wildfires.

Drifting snow - Uneven distribution of snowfall caused by strong surface winds. Drifting snow is usually associated with blowing snow.

Flurries – Intermittent light snow with no measurable accumulation; a light dusting is all that is expected.

Exposure - The people, property, systems, or functions that could be lost to a hazard. Generally, exposure includes what lies in the area that the hazard could affect.

Freeze - Occurs when the surface air temperature is 32 degrees Fahrenheit or below over a widespread area for a climatologically significant period of time. The term “freeze” is usually restrictive to advective situations or occasions when wind or other conditions prevent frost.

Freezing rain or drizzle – Rain that falls as a liquid but freezes into an icy glaze when it hits the ground or other surfaces such as trees, cars, and roads.

Frost - The formation of thin ice crystals on the ground or other surfaces in the form of scales, needles, feathers, or fans. Frost develops when the temperature of the earth's surface falls below 32 degrees Fahrenheit, but because frost is primarily an event that occurs due to radiation cooling, it frequently occurs with air temperatures in the middle 30s.

Graupel - Small pellets of ice created when super-cooled water droplets coat or rime, a snowflake. The pellets are cloudy or white, not clear like sleet, and are often mistaken for hail. Same as snow pellets or small hail.

Gustnado - A whirlwind of dust or debris at or near the ground with no condensation funnel. Typically forms as an eddy in thunderstorm outflows.

Hail - A form of showery precipitation in the form of irregular pellets or balls of thin ice that occur when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice.

Heavy snow - This definition depends on the region of the USA. In Massachusetts, heavy snow means that six (6) or more inches of snow have fallen in 12 hours, or eight (8) inches in 24 hours. Heavy snow is also observed when snow is falling at a rate of one (1) inch per hour.

Heavy Snow Warning - Snow accumulations are expected to approach or exceed six (6) inches in 12 hours or eight (8) inches or more in 24 hours but will not be accompanied by significant wind. During a heavy snow warning, freezing rain and sleet are not expected.

Hurricane - An intense tropical cyclone in the Atlantic, Caribbean Sea, Gulf of Mexico, or eastern Pacific, which the maximum 1-minute sustained surface wind is 74 mph or greater.

Ice Storm - An ice storm is used to describe occasions when damaging accumulation of ice are expected during freezing rain situations. Significant accumulations of ice are recognized to pull down trees and utility lines, resulting in power loss; they are defined as one-quarter inch or greater.

Ice Storm Warning – Predicted significant coating of freezing rain; one-quarter inch or more is expected to accumulate in an area.

Invasive Species - A species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (definition from the Invasive Species Advisory Committee of the U.S. Department of the Interior).

Mitigation - The process of reducing the severity of the impact of natural hazards through planning. Each hazard requires a specific type of mitigation. In some cases, we can use engineering solutions (such as an earthquake-resistant building) to at least temporarily reduce the impact of a natural hazard. In other cases, the only form of mitigation that is guaranteed to be successful is to limit or not allow human activities where the hazard occurs (such as in floodplains).

Natural Disaster - A hazard event caused by nature or the natural process of the earth, such as a flood or tornado. Natural disasters result in widespread destruction or death to the lives of individuals, damaging their property, causing economic loss and/or the inability for a population to rebuild.

Natural Hazard - An act or phenomenon that has the potential to produce harm or other undesirable consequences to a person or thing.

Risk - Depends on all three factors: hazard, vulnerability, and exposure. Risk is the estimated impact that a hazard would have on people, services, facilities, and structures in a community. It refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.

Sleet – Pellets of ice composed of frozen or mostly frozen rain drops or refrozen partially melted snowflakes. Sleet usually bounces when hitting the surface and does not stick to objects. However, it can accumulate like snow and cause a hazard to motorists. Heavy sleet occurs when a half of an inch of sleet accumulates.

Snow Showers - Snow falling at varying intensities for brief periods of time. Some accumulation is possible.

Snow Squalls - Intense, but of limited duration, periods of moderate to heavy snowfall, accompanied by strong, gusty surface winds and possible lightning.

Storm Surge – An abnormal rise in sea level, accompanying a hurricane or other intense storm, whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the cyclone. Storm surge is usually estimated by subtracting the normal or astronomic tide from the observed storm tide. Storm surges can reach 25' high and 50-100 miles wide. This can cause severe erosion, major flooding and extensive damage to coastal areas.

Sustained Wind - Two-minute average wind measured at about 33' above the surface. BB.
Technological Disaster - A disaster that results from a technological or man-made hazard event.

Technological Hazard - A hazard that originates in accidental or intentional human activity (oil spill, chemical spill, building fires, terrorism, etc.)

Tropical Depression - A tropical cyclone in which the maximum 1-minute sustained surface wind is 38 mph or less.

Tropical Storm - A tropical cyclone in which the maximum 1-minute sustained surface wind ranges from 39-73 mph.

Vulnerability - Susceptibility to physical injury, harm, damage, or economic loss. It depends on an asset's construction, contents, and economic value of its functions. Vulnerability assessment provides the extent of injury and damages that may result from a hazard event of a given intensity in a given area.

Wind Chill Warning - Life-threatening wind chills reaching minus 50 degrees Fahrenheit or lower. Criterion varies state-by-state.

Watch (Storm) - A watch is used when the risk of hazardous weather events has increased significantly, but the occurrence, location and timing are still uncertain.

Warning/Advisory (Storm) - These products are issued when a hazardous weather event is occurring, is imminent, or has a very high probability of occurrence. A warning is used for conditions posing a threat to life or property. Advisories are for less serious conditions

that causes significant inconvenience and, if caution is not exercised, could lead to situations that may threaten life and property.

Whiteout - A condition caused by falling and/or blowing snow that reduces visibility to nothing or zero miles; typically, only a few feet. Whiteouts can rapidly occur, blinding motorists and creating chain-reaction crashes involving multiple vehicles. Whiteouts are most frequent during blizzards.

Wind Chill - The wind chill is based on the rate of heat loss from exposed skin caused by the combined effects of wind and cold. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature. This temperature is the reading the body "feels" given the combination of wind and air temperature. At wind speeds of four (4) mph or less, the wind chill temperature is the same as the actual air temperature. The threshold for potentially dangerous wind chill conditions is about negative 20 degrees Fahrenheit.