



Town of Hanover Municipal Vulnerability Preparedness Report

June 28, 2023



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MAPC would like to acknowledge and thank Carolyn Mecklenburg, MVP Regional Coordinator, for her guidance and support for this project, and all the other MVP projects in the MAPC region.

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Hanover MVP Workhop, April 10, 2023 at Laura's Center for the Arts, YMCA



Photos: Steve Ryerson, Hanover Communications

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Town of Hanover Community Resilience Building Workshop Summary of Findings

OVERVIEW

Recent years have seen notable weather extremes in Hanover and the surrounding region. The record rainfall of April 2010 resulted in a disaster declaration across the Commonwealth of Massachusetts. The winter of 2015 brought record-breaking snow of 110 inches. The following year, the Town and the region was under a drought warning from July to December 2016, the most severe since the 1980s. That was followed by two more drought years in 2020 and 2021. The winter of 2018 once again brought severe winter storms, including nor'easters in January and March, also resulting in a state disaster declaration. Globally, the years 2014 through 2018 were the five hottest years on record.

In 2017, the Commonwealth of Massachusetts inaugurated the Municipal Vulnerability Preparedness (MVP) program to assist municipalities in planning for and implementing strategies to adapt to predicted changes in our warming climate. The predicted changes include both increased flooding from large rain events and a greater likelihood of drought, increased extreme heat days and heat waves, and increased flooding from sea level rise.

The Town of Hanover, to advance its efforts to address present-day natural hazards as well as future climate threats, applied for an MVP Planning Grant to complete the Community Resilience Building (CRB) Workshop under the MVP program and to prepare a five-year update to its FEMA Hazard Mitigation Plan completed in 2016. Upon completion of the MVP project and obtaining FEMA approval of its 2023 updated Hazard Mitigation Plan, Hanover will be eligible to apply for state grants to address identified climate risks as well as FEMA mitigation project grants under the Building Resilient Infrastructure and Communities (BRIC) grant program.

The Town of Hanover partnered with the Metropolitan Area Planning Council (MAPC) to complete the MVP and Hazard Mitigation project. The Town also convened a Hazard Mitigation/MVP Core Team to engage key municipal staff and boards as well as community stakeholders. The HMP/MVO Core Team is coordinated by Jason Cavallaro, Fire Chief/Emergency Management Director and Ann Lee, Assistant Town Manager. Members of the team are shown on page 25 below. The team identified and recruited community stakeholders to participate in the Community Resilience Building workshop that was held on April 10, 2023. Twenty-five people representing Hanover Town staff, Town Boards and Commissions, Hanover community organizations, and regional partners gathered for the CRB workshop at the Laura's Center for the Arts, hosted by the Hanover YMCA. Workshop Participants are shown on page 24. The Workshop's central objectives were to:

- Understand extreme weather and climate related hazards
- Identify existing and future strengths and vulnerabilities
- Develop and prioritize opportunities to take action to reduce risk and build resilience

Materials provided for the CRB Workshop included local and regional data on changes in temperature, precipitation, and sea level recorded to date, as well as future projections to the

end of the century. A PowerPoint presentation provided data and mapping specific to Hanover's infrastructure, demographics, and natural resources (see Appendix A). The Workshop participants considered Hanover's strengths and vulnerabilities, focusing on three categories: infrastructure, society, and the environment. Working in three small groups and then together as a large group, the workshop participants identified and prioritized actions designed to increase Hanover's resilience to extreme weather and other climate change impacts.

TOP HAZARDS AND VULNERABLE AREAS

The Hanover HMP/MVP Core Team identified the top natural hazards for the Town to consider at the CRB workshop. Based on the recent work on the Hazard Mitigation Plan and review of Workshop materials, the Team identified flooding and intense rainfall, extreme temperatures and heat waves, intense winds and power outages, winter storms, and drought/fire hazards, as the climate hazards of greatest concern to Hanover. As mentioned above, these hazards have all affected Hanover and the metro Boston region in recent years.

Summary of Top Hazards in Hanover:

- Flooding & Intense Rainfall
- Extreme Heat, Heat Waves
- Intense Winds, Power Outages
- Winter Storms, Snow, and Ice
- Drought/Fire Hazards

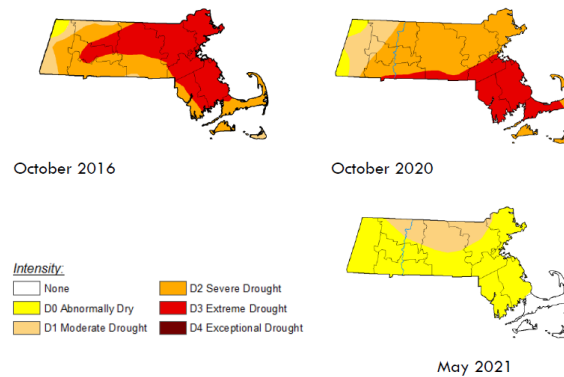
CURRENT CONCERNS AND CHALLENGES

Workshop participants in Hanover discussed these climate-related hazards, highlighting flooding, intense storms, drought, and extreme heat as the greatest concerns.

Many participants also expressed concern for water quality and quantity, as Hanover relies on local groundwater wells for all its water supply. Due to the Town's reliance on local groundwater, changing rainfall patterns and increased droughts can lead to reduced recharge of aquifers. This in turn can worsen water quality as recharge areas around wells expand with lowered water tables, potentially drawing in contaminants not normally within the area of contribution to the wells. Droughts are also harmful to aquatic species and vegetation and local agriculture.

Hanover and the metro Boston region have experienced three droughts in the last seven years, in 2016, 2020, and 2021, as illustrated by the US Drought Monitor in Figure 1. Areas in red experienced "Extreme Drought" conditions. The drought of 2016 was the worst one since 1985, with more than half of the state reaching the Extreme Drought stage for several months. This was followed by another drought in 2020, which was most severe in Southeastern Massachusetts. Finally, in the spring of 2021 a third drought was declared. Hanover is located within the areas designated with "Extreme Drought" in both the 2016 and 2020 droughts. The 2021 drought was not as severe, and Hanover was in the area designated "Abnormally Dry."

Figure 1: US Drought Monitor, 2016, 2020, and 2021

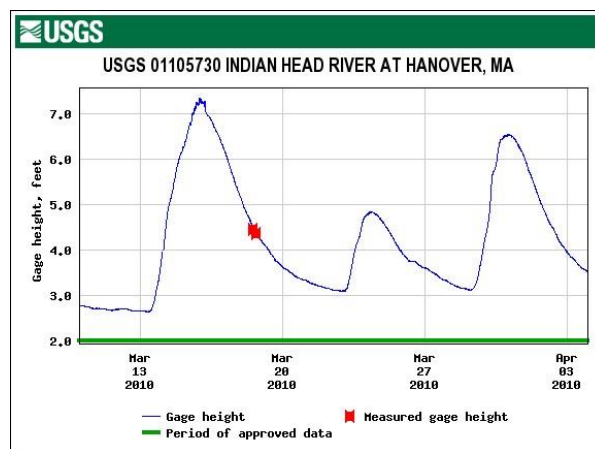


Source: US Drought Monitor

On the other end of the spectrum from drought, the workshop also discussed the increasing frequency of intense storms, including nor'easters that bring damaging winds, snowfall, and heavy rain events. The principal challenges of the nor'easters are the threat of power outages from falling trees and limbs, as well as travel restrictions due to heavy snow. Large rain events can result in flooding in several locations.

The most significant recent intense precipitation event occurred in March 2010, when 17 inches of rain fell in three sequential storm events during that month. As an indication of the severity of these rainfall events in Hanover, USGS flow gaging records show the peak flows on the river for the storms that occurred from March 13- 31, 2010. Gage height exceeded 7.0 feet after the first storm on March 16, and rose again to 6.5 feet after the third storm on March 31. Normal gage height in March is about 3 feet.

Figure 2: USGS Gage at Indian Head River, March 2010



Source: US Geologic Survey, National Water Information System

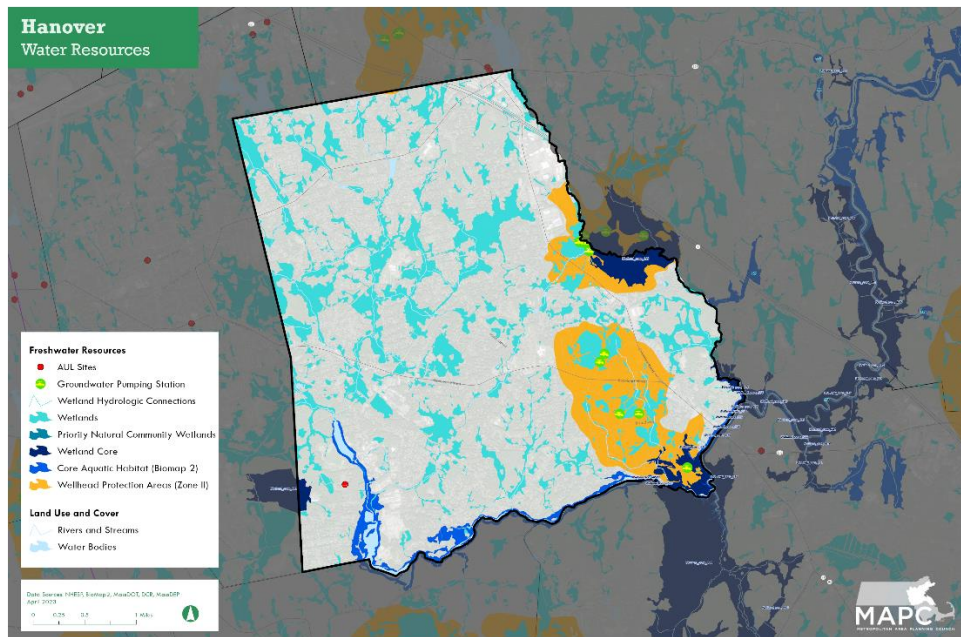
As these issues are not new to Hanover, the Town has taken steps to prepare for extreme weather and prevent harm to people and property through its emergency management activities and its FEMA Hazard Mitigation Plan, which is being updated as part of this MVP project. Workshop participants shared concerns that climate projections will heighten current challenges, particularly power outages, water supply, and public health issues related to high heat and drought.

AREAS OF CONCERN

Infrastructure

The Town of Hanover is within the North and South Rivers watershed, with the Indian head River, a tributary of the North River, flowing along its southern border. The Town operates a series of nine wells and three water treatment plants, located in the eastern and southeastern section of town. These are delineated in Figure 3 and summarized in Table 1, with the aquifer areas delineated.

Figure 3: Hanover Water Resources



Q Source: Flood Insurance Rate Maps for Plymouth County, MA

Table 1: Hanover Water Supply Infrastructure

Pond Street Water Treatment Plant
Broadway Water Treatment Plant
Beal Water Treatment Plant
Beal Well #1
Beal Well #2
Broadway #2 Well
Broadway #1 Well
Hanover St Well #1
Hanover St Well #2

Pond Street Well #1
Pond Street Well #2
Pond Street Well #3
Pond Street Lime Building
Standpipe - Union Street Old
Standpipe - Union Street New
Standpipe - Walnut Hill

Under present-day conditions, peak summer water demands put significant stress on the water system's capacity, and the town often declares restrictions on outdoor water use in the summer. This issue would be more severe if climate trends for more droughts continue in the future.

Another infrastructure issue of concern in Hanover is dams. There are four dams in town, as shown in Table 2.

Table 2: DCR Inventory of Dams in Hanover

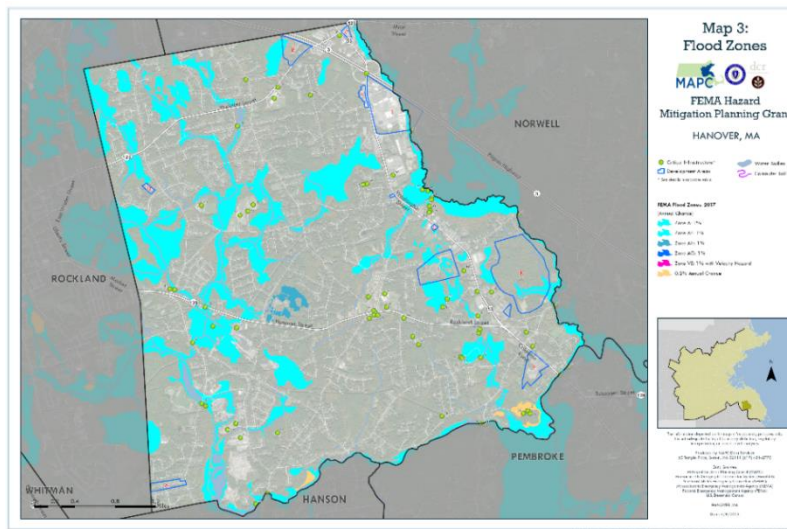
DAM NAME	RIVER	IMPPONDMENT	OWNER	HAZARD
Curtis Crossing Dam	Indian Head R.	Indian Head R	Town of Pembroke	Low
Forge Pond Dam	Drinkwater R.	Forge Pond	Town of Hanover	Low
Hackett Pond Dam	Longwater Bk.	Hackett Pond	Town of Hanover	Significant
Factory Pond Dam	Indian Head R.	Tack Factory Pond	Town of Hanover	N/A

Source: MA DCR, Office of Dam Safety, 2018

The town is involved with evaluations and plans to address the Curtiss Crossing and Forge Pond dams, as described in more detail in Section 4 of the Hazard Mitigation Plan. Two of the priority mitigation recommendations in that plan focus on Forge Pond Dam and completing a watershed hydrological/hydraulic assessment of the Indian Head River. The Town is concerned that the dams would not be able to handle the high river flows associated with a 100-year storm.

Flooding is a concern over several areas of Hanover. The FEMA’s Flood Insurance Rate Maps (FIRM) delineate Special Flood Hazard Areas along Indian Head River and other streams and tributaries throughout Hanover (see Figure 4).

Figure 4: FEMA Flood Hazard Areas



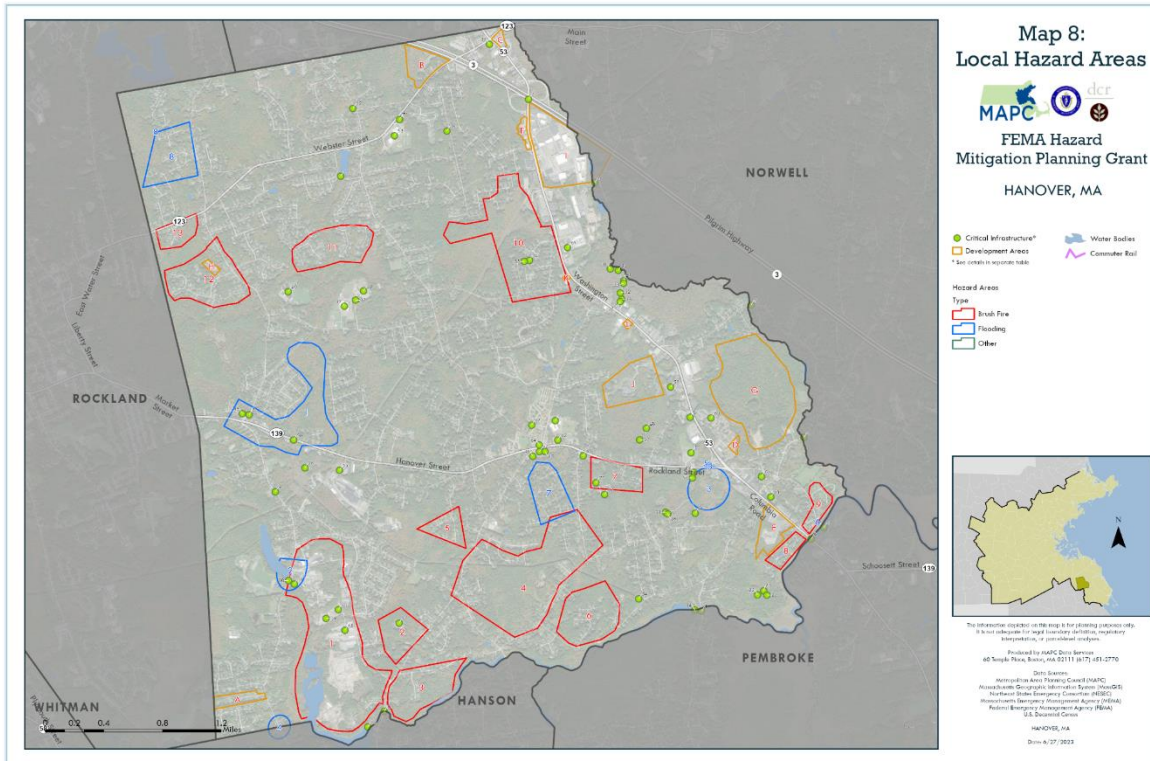
Source: Flood Insurance Rate Maps for Plymouth County, MA

Compared to many other communities in the region, there is a limited amount of development located within the flood hazard areas due to Hanover’s land use regulations, including its Flood Plain Zoning District and its local Wetlands Bylaw. However, the Town has identified several areas of concern for localized flooding and drainage problems in its Hazard Mitigation Plan, listed in Table 3 and shown as the blue sites in Figure 5. The issues related to these sites are described in detail in the flooding section of the Hazard Mitigation Plan, Section 4.

Table 3: Hanover Locally Identified Flood Areas

1. Pleasant and Circuit Streets	6. Bridge on Washington St. over the North River
2. King Street Bridge	7. Candlewood Brook
3. CVS Plaza	8. Ponderosa Drive
4. King Street	9. Drainage issue near post office
5. Intersection of Rockland St & Shaw’s access Rd.	

Figure 5 Hanover Local Hazard Areas



Source: Draft Hanover Hazard Mitigation Plan, 2023 Update

Bridges and culvers are also an infrastructure concern identified by the Hanover HMP/MVP Core Team. The team identified 11 bridges in the Hazard Mitigation Plan, shown in Table 4. The town is crisscrossed with many small to medium sized streams, and there are numerous bridges and culvers wherever roadways cross a stream.

Some bridges are a concern for being impacted during flooding events, and some, particularly culverts, can be a concern for causing drainage backups and localized flooding during high rainfall events if they are undersized or partially clogged. Some culverts are also a watershed-wide concern for impacts on fish passage and impacts on aquatic habitat.

Table 4: Hanover Bridges

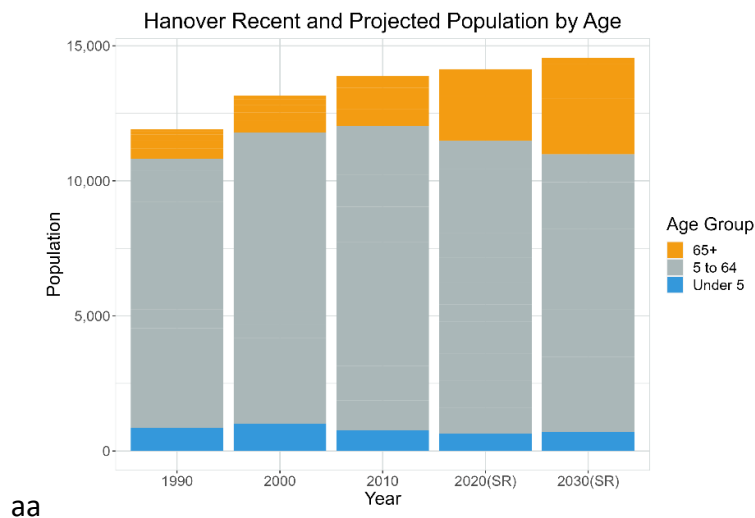
Bridge - Elm Street/Pembroke Line
Bridge - Columbia Road at Pembroke Line
Bridge - Washington Street at Pembroke Line
Bridge - Broadway at Norwell Line
Bridge - East Street at Norwell Line
Bridge - Mill Street at Norwell Line
Bridge - Washington Street over Route 3
Bridge - Pleasant St (W. Hanover)
Bridge - Circuit Street
Bridge - King Street (Forge Pond)
Bridge - Broadway at Hanson Line

Source: Draft Hanover Hazard Mitigation Plan, 2023 Update

Societal

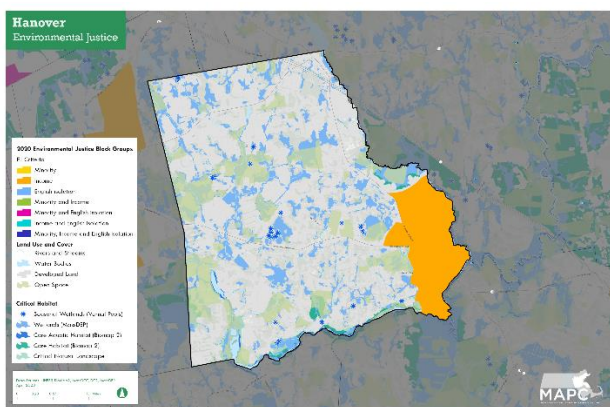
Vulnerable populations identified include seniors, people living alone, and low-income residents. Like most area towns, the population of senior citizens is expected to increase over the next several decades in Hanover (Figure 6). Currently about 18% of Hanover’s population is over 65, and about half of those, 9.8%, are over 65 living alone. The over-65 population is projected to increase to 24% percent of Hanover’s population by 2030. Many of these are more susceptible to extreme heat than the general population, which will occur more frequently in the future due to climate change. Figure 7 illustrates the projected future climate of Massachusetts to the end of the century under both lower and higher Greenhouse Gas-emission scenarios.

Figure 6: Population by Age in Hanover



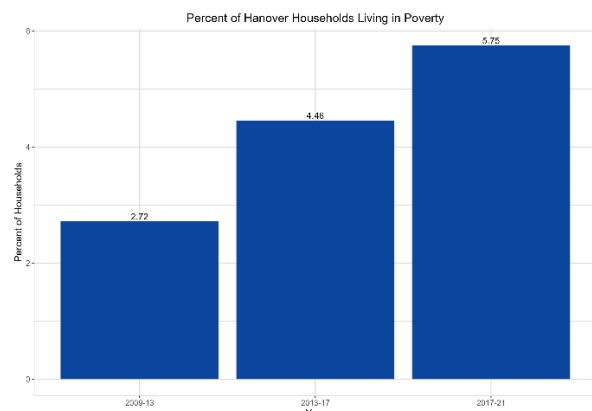
Environmental Justice populations are defined in Massachusetts by census blocks with over 25% of residents in one or more categories of vulnerable population, including low income, minority, and English isolation, or some combination of two or all three of these. There is only one census block in Hanover that meets the Environmental Justice definition, in this case for low-income population over 25%. This is shown in Figure 7, along the Route 53 corridor in the southeast part of Hanover.

Figure 7: Environmental Justice Census Tract



Source: Mass GIS Environmental Justice Mapping

Figure 8: Households Living in Poverty (%)



Source: US Census, American Community Surveys

Although that census tract has a low-income population over 25%, the Town of Hanover as a whole has a much lower rate of poverty, about 5.75%, although this percentage has increased from 2.72% since 2009, as shown in Figure 8. Other key characteristics of Hanover’s population that should be taken into consideration when planning for natural hazards and climate change are summarized in Table 5.

Table 5. Town of Hanover Characteristics

Population	
Total population	14,833
Residents under 5 years old	6.6%
Residents under 18 years old	26.2%
Residents 65 years old and over	12.1%
Race & Ethnicity	
White alone	92%
Black or African American	1%
Asian alone	2%
Other Race alone	1%
Two or More Races	4%
Households	
Total Households	4,744
Housing units built before 1960	27.1%
Renter Occupied Housing Units	9.5%
Median Household Income	\$149,048
Speak a Language other than English	4.3%
Limited English-Speaking Households	0.08%
Additional Characteristics	
Residents with a Disability	7.9%
Age 65 to 74 with a disability	6.56%
Age 75 and over with a disability	43.5%
Households with no vehicle	7.4%
Residents in Poverty	4.8%

Sources: 2020 Decennial Census and American Community Survey (ACS) 5-Year Estimates (US Census Bureau, 2021)

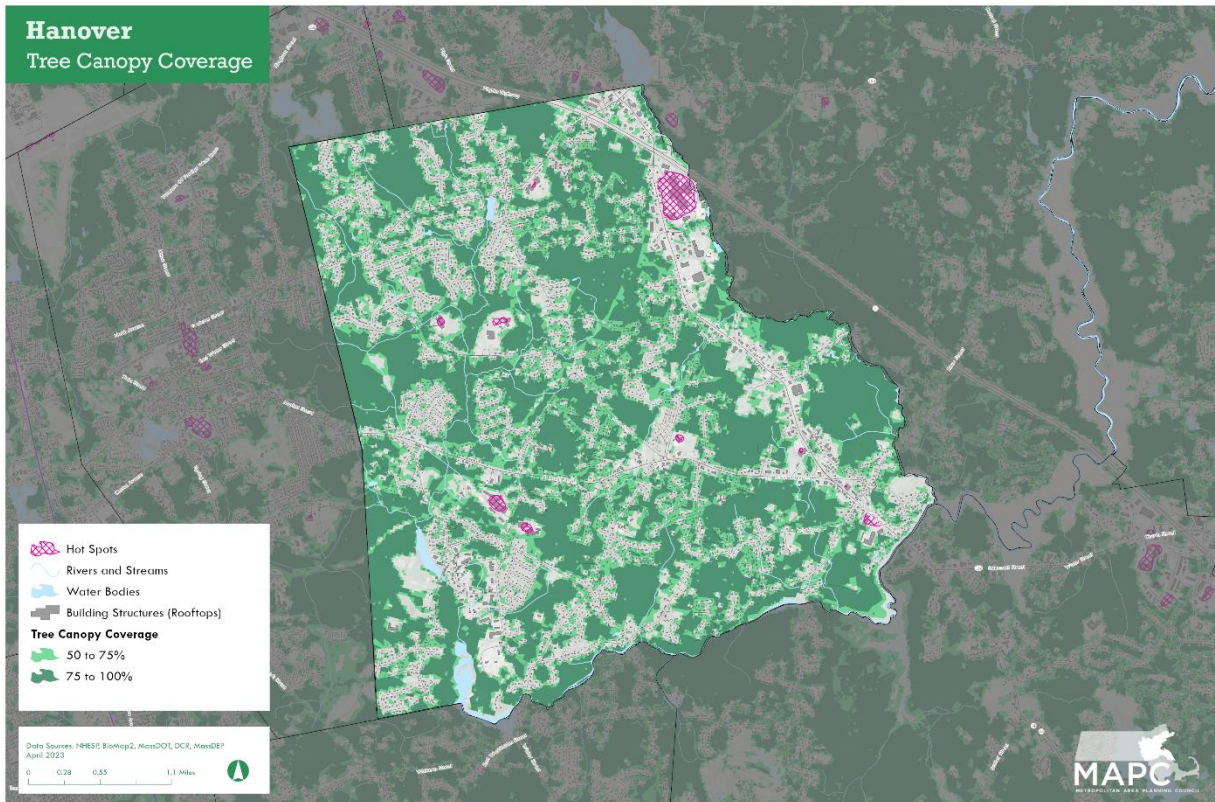
Environmental

Among Hanover’s greatest strengths are its protected open space and wetlands, and its significant forest cover (see Figure 9), which at about 34 percent of the town’s area. Forested land has multiple benefits for the town, including moderating high temperatures, absorbing large amounts of precipitation which mitigates flooding and water quality problems, sequestering carbon, and providing high quality habitat for wildlife as well as recreational resources for people.

However, there are also some important vulnerabilities associated with trees in suburban and urban communities, particularly power outages caused by falling trees and branches during high wind events as well as snow and ice storms and the potential for wildfires. The Hanover Fire Department identified 13 potential wildfire hazard areas, which are shown on the map in Figure 3. Combined with the climate trend for more drought, this hazard will likely become more significant across the region in coming years.

As the climate warms, there are also increased concerns about the health of forests, including tree diseases, pests, invasive species, and longer-term change in species composition. These impacts and trends underscore the need for more proactive management and protection of the town's valuable forest resources, as well as trees that are part of the built landscape such as street trees, parks, and trees on developed properties.

Figure 9: Hanover Forest Cover and “Hot Spots”



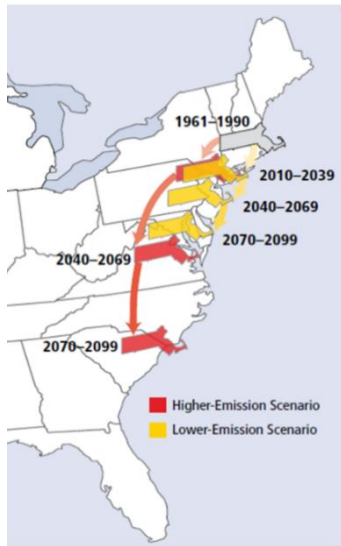
Source: MAPC Data Services/GIS Lab

Also shown on this map are the areas in Hanover more susceptible to high surface temperatures because of significant paved areas (parking lots, roadways, large roofs) combined with little or no tree cover. MAPC conducted an analysis to identify these “hot spots” using infrared satellite images across the whole region. The hot spots mapped are the hottest 10% surface temperature of all areas of the MAPC region. In Hanover there is just one significant hot spot in the commercial area at the junction of Routes 3 and 53, as shown in Figure 9.

Impacts of Climate Change

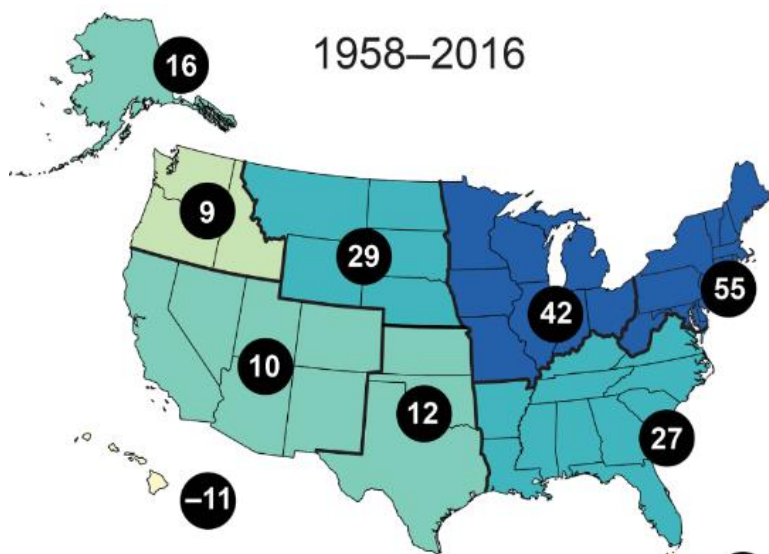
Temperatures: Projected future climate trends pose a significant challenge to the Town of Hanover. Increasing temperatures will bring an increase in the annual number of days over 90 degrees, from about 10 days currently to a range of 25 to 60 days by 2100, depending on the level of future Greenhouse Gas emissions. The resulting temperature regime by the end of the 21st century could transform Massachusetts' climate to be like present day Maryland under a low GHG emissions scenario, and like South Carolina under a high GHG scenario (Figure 10).

Figure 10: Temperature Projections



Source: Union of Concerned Scientists

Figure 11: MA Extreme Rainfall Trends



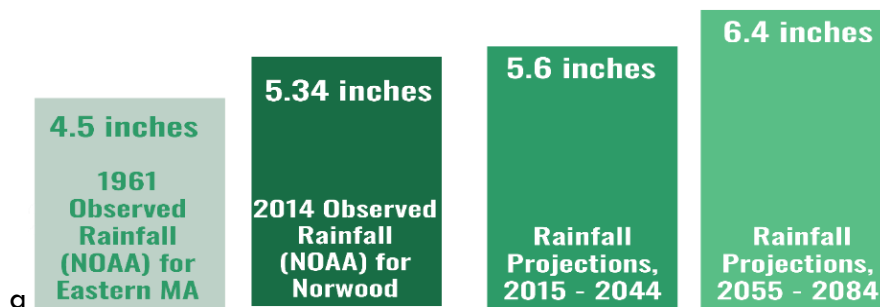
Source: When It Rains It Pours

Precipitation: Climate change will also bring changes in precipitation patterns. Figure 11 shows that from 1958 to 2016, the northeast and mid-west regions experienced a 55% increase in the amount of rain that falls in the top 1% events.

Climate projections for the Boston metro area that average annual rainfall will increase by 10 percent, but more importantly, there will be an increase in the size and intensity of storms. The typical 10-year 24-hour storm, which historically yielded 4.5 inches of rainfall, has already increased to about 5.5 inches, and could further increase to 6.4 inches by the end of the century (Figure 11). The 10-24-hour storm is considered to be the “design storm,” or the bench-mark storm used to determine the design and size of stormwater management facilities. The additional volume of stormwater runoff created by storms of one to two more inches of precipitation would stress if not overwhelm the capacity of many storm drainage systems to convey water without causing local flooding that could range from nuisance to significant damage.

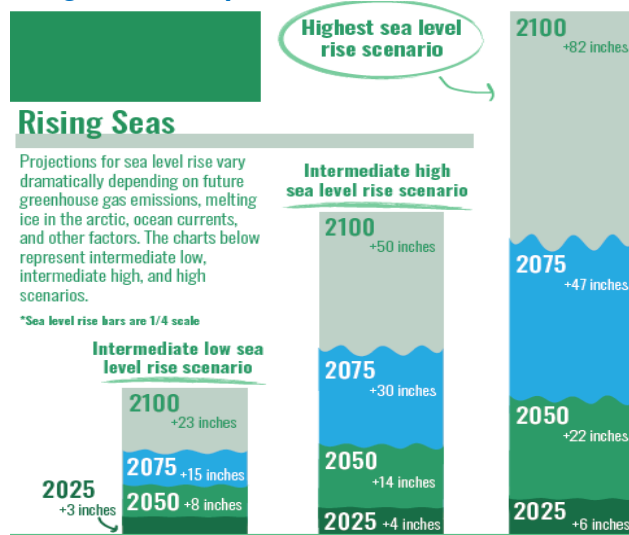
Figure 12: Projected 10-Year, 24 Hour Storms, Metro Boston

Expected size of a 10-year, 24-hour storm



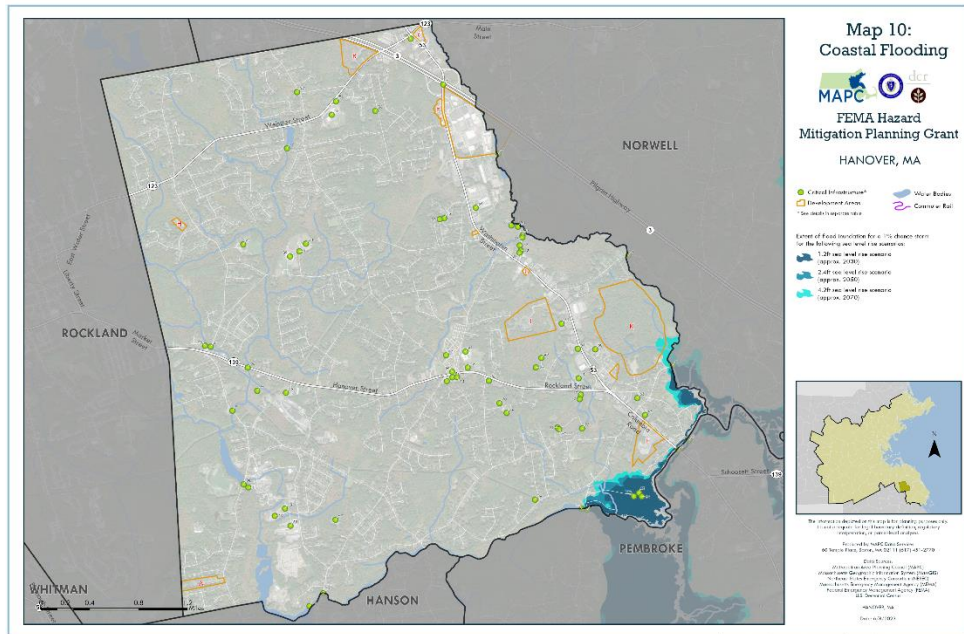
Sea Level Rise: Another climate trend that could have an impact on Hanover is sea level rise. Like other future climate trends, the projections for expected future sea level rise cover a range, depending on how much greenhouse gas emissions are reduced, or not, in the coming decades. Figure 13 summarizes three sea level rise scenarios for this region, intermediate low, intermediate high, and the highest or worst-case scenario. The range of projected sea level rise for these scenarios is from 23 inches to 50 inches, to 82 inches by 2100, underscoring the critical need to reduce GHG as much and as soon as possible.

Figure 12: Projected Sea Level Rise to 2100



Although Hanover is an inland community located about five miles from the coast, the North River is tidal where it flows along the southeastern corner of town. Projections of future Sea Level Rise conducted by the Woods Hole Group indicate that a few low-lying areas in that part of Hanover would be subject to the impacts of various levels of sea level rise in the future (see Figure 14).

Figure 12: Projected Sea Level Rise Impacts in Hanover



HANOVER CRB WORKSHOP RESULTS

The Hanover Community Resilience Building (CRB) Workshop was attended by 25 participants representing various town boards, commissions, and staff, as well as community stakeholders from a wide range of interests. The participants worked in five smaller table groups of about eight each, to first identify the town's strengths and assets with respect to the impacts of climate change, which are listed below by category.

In the second workshop session, the table groups developed proposed actions to address the Town's vulnerabilities and strengthen the Town's resilience. Each table group selected top five priority actions. In the final step, the five top actions from each of the three tables were posted at the front of the room. All workshop participants chose their four highest priority actions from among the list of atop table group priorities. These are documented in the section below.

CURRENT HANOVER STRENGTHS AND ASSETS

Workshop participants identified numerous Hanover strengths and assets that will provide resilience to future climate impacts. These are listed below, organized by categories of Infrastructure, Society, and Environment.

Infrastructure

- Backup Power Generators for Critical Infrastructure
- Sheltering: locations, conditions, alternate locations
- Munition Site Cleanup (Police & Fire)
- Council on Aging (cooling center/generator)
- Mall reconstruction - Hanover Crossing
- YMCA (Mill Street)
- Leaning Center/Daycare YMCA (Wash. St.)
- Permitting & Review process--redevelopment
- Senior Center-relatively new shelter
- High School relatively new -secondary shelter

Society

- Senior Citizen outreach--Meals on Wheels; transportation
- Food Pantry
- South Shore Hub - Vulnerable Population
- Water Safety - Swimming lessons; childcare; community programs
- Social Media: communication; Reverse 911
- Regional Emergency Management Response System
- Wellness and Health Centers; access to preventive care
- Cable Access for community
- Schools--communication; VO-Tech; population growth
- Local Churches/Faith Communities
- Collaborative Training for Police and Fire; response to critical events

Religious community - shelter, food, etc.
Food Pantry
Partnerships among Town departments
Council on Aging
High Risk List
Communication between town staff, businesses, especially commerce
Tobacco Coordinator
Youth Sports program
Recreation League
CERT Team
ALICE Training
Identified emergency response plans
Town has strong collaboration/teamwork/pro-active / strong inter-dept. relationships
Coordinated digital communication (website, social media); text; Pro-active calls
for residents living alone; Council on Aging (meet to compare lists);
Mental Health team (counselors)
Outbound message to life-support customers (Eversource); Emails re: storm safety and preparedness;

Environmental

Natural/Open Space--Walking trails accessibility
Dam Removal - Flooding, ecological impact; Partnerships
Electric Vehicle charging stations
South Shore Recycling Cooperative
North and South Rivers Watershed Association
Process of issuing well permits/well protection zone
Cooperation between town departments and the permitting review process
Salt alternatives for snow & ice-more environmentally friendly
Manure removal / education
Aquifer protection zone

TOP RECOMMENDATIONS TO IMPROVE RESILIENCE

Each of the three table groups prioritized their proposed actions as High, Medium, or Low and then selected their **five highest priority actions**, for a total of 15 actions across from all three tables. Several of the 15 actions from various table groups were the same or very similar, so these were grouped together for purposes of voting for the top priority actions. All participants then selected their top four priorities from among these 15 actions, using “sticky dot” voting. A review of the final participant voting reveals several actions or clusters of similar actions that garnered significantly more support than others. The actions identified as highest priorities are listed below in order of the number of votes they received, shown in parentheses. The full list of all actions is shown in the following section, organized by High, Medium, and Low priorities for each of the categories, Infrastructure, Societal, and Environmental.

Highest Priority Actions

VOTES	CATEGORY	ACTION
15	Societal	Address staff shortages/lack of manpower
11	Infrastructure	Address the Impacts of wind/severe weather on critical infrastructure
11	Environment	Improving water resources Invest in improved communications for emergencies, including vulnerable populations. Use multiple formats, all media: print, TV, sign boards, AM radio tower; leverage existing networks.
8	Societal	
7	Infrastructure	Diversify the Town's water supply; seek alternative sources Work with National Grid to trim trees aggressively near power lines; bury lines during construction projects; educate homeowners about privately owned trees.
7	Environment	Protect aquifer conservation zones, upgrade, and expand stormwater infrastructure, invest in robust treatment technologies.
4	Environment	Increase visibility of CERT Team and recruit people of younger generations; double the number of volunteers
2	Societal	
2	Infrastructure	Coordinated approach to balancing water supply and growth across Town departments. Increase building resilience such as reliable backup power in critical facilities: High School, Council on Aging, YMCA/Early Learning Center, Starland
1	Infrastructure	Improving power substations
0	Infrastructure/ Social	Provide treatment and education on PFAS in water supply in relation to public health Sustainable funding sources for infrastructure; includes additional & situational staffing for emergencies.
0	Infrastructure	

SUMMARY OF ALL ACTIONS BY PRIORITY AND CATEGORY

INFRASTRUCTURE - HIGH PRIORITY

Vulnerability/Strength Addressed	Action
General water resources: water demand; pollutants; hydrants; pumps; partnerships	Partnership with MWRA: outsourcing water sources; incentivize conservation (especially summer); additional wells (private wells)
Power Sub-stations: security; power lines/trees; future planning	The Police Dept is a critical asset - checks properties. Enhanced Security
Flooding-King Street: major road flooding impacts mobility, emergency services	Bridge/Culvert reconstruction
Transportation: increased traffic; increased routes/frequency	Traffic improvements, working with MassDOT in the center of town. Increased public transportation, School dismissal
Wind / Extreme Weather Events	Utility C339 Tree Wire project to minimize power outages; Staging sites for emergency response during weather events; Emergency Operations Center-- centralized communications; Improved tree trimming;
Roads/Traffic	Traffic studies; coordinate with MassDOT on state roads; Opticom emergency vehicles, turns traffic lights red
Munition Site Cleanup (Police & Fire)	Seek alternative funding sources for cleanup
Town buildings with generators (not all have)	Upgrade emergency power & add to Sylvester School
King Street bridge floods	Replaced & raised; expand size/location of culverts
Water infrastructure / wells	Continue to protect-aquifer / Zoning /ID new water sources--upgrade & expand / MWRA conversations
Stormwater infrastructure	Upgrade & expand / Educate - communicate with businesses on maintenance
Dams (feasibility analysis ongoing)	Expand to all dams / Educate about dam removal & its role in resiliency
Downed power lines	ID vulnerable areas / Bury lines with redevelopment
High Pressure Gas Lines	Annual maintenance program GISEP (Eversource)

Water Supply-increase infrastructure capacity/ID domestic & commercial vs. Fire Dept access	Pre-planning for fire - reduce local consumption; tap into regional supply; public outreach for water conversation; upsize mains where appropriate
Private wells & public water supply; South Shore has shared, old infrastructure / Need for diversification, need to keep pace with increasing demand--impact/strain of new development (MBTA communities)	Identify revenue sources for infrastructure upgrades / Buildout studies for development

SOCIETAL-HIGH PRIORITY

Vulnerability/Strength Addressed	Action
Water Safety - Swimming lessons; childcare; community programs	Increased accessibility to all socio-economic groups-grants, fundraising; Increased workforce childcare, improved transportation; Internship opportunities
Social Media: communication; Reverse 911	Using social media to advertise community events and job opportunities; Accessibility; Understanding limitations
Manpower/Staff shortages--opportunity for students	Improved transportation for workforce; Job training, job fairs; incentives to make jobs more attractive
Communications -- Emergency Services; 2-way radio signal increase	Transfer to digital dispatch; Upgrade radios; overall improvements
Regional Dispatch -- Challenge: regional frequencies	Going digital
Reverse 911	Increase exposure to gain sign-ups/Focus on texts & calls/make sign-up process automated
Communications during emergencies when technology fails	Increase messaging from town/AM radio station/tower /stronger neighborhood networks /Anticipate comm (seasonally)
Council on Aging	Work to develop alternate communication channels
High Risk List	Continue to build out list, review & update/ Invest in software to compile data on vulnerable people
CERT Team	Recruit people with age diversity / Increase visibility & community exposure
ALICE Training	Expand to businesses
Communications affected by frequent outages	Multiple forms of communication (not just internet); solar-powered sign boards
Limited trained staff / Volunteer-based	Compensation for volunteers; Recruit younger volunteers

Fire Dept. has expertise, resources for emergency management -- ID grant funding	Encourage legislators to fund; Tap Fire Dept. grant expertise
Town has strong collaboration/teamwork/pro-active / strong inter-dept. relationships	Continue communication & relationship building; more routine check-ins (10-minute Zooms)
Vulnerable populations located in areas with old structures, little access/egress; Special needs residential school (youth-adult); older active living communities; special needs facilities (Cushing Residence, Elmwood Farm, Benchmark); Limited but improving capacity	Procure secondary access; Communication with building maintenance; encourage all utilities to devote special attention to vulnerable populations. Eversource annual review; Liaison with utilities; Priority alignment between Town and utility

ENVIRONMENTAL-HIGH PRIORITY

Vulnerability/Strength Addressed	Action
Wind / Extreme Weather Events	Formalize relationship with other Towns DPW, more organization; MOUs for private organizations; Public/Private cooperation for weather events
Electric Vehicle charging stations	Increased prevalence trend in town
Tree trimming near powerlines	Work with National Grid / Educate homeowners about tree trimming and insurance
Fireworks site - contaminated	Make the land resilient and an asset
PFAS/Salt/Mercury contaminants	Invest in water treatment--homes, towns, private resources
Stormwater Bylaws	Update bylaw
Proximity of new construction and water resources	Overarching policy for balancing growth & water supply
PFAS (water supply, air)	Water treatment or alternative sources; public education

Medium Priority Actions

INFRASTRUCTURE - MEDIUM PRIORITY

Vulnerability/Strength Addressed	Action
Backup Power Generators for Critical Infrastructure	Preventative maintenance contracts: other municipal buildings need generators; Seek alternative funding options (grants)

Sheltering: locations, conditions, alternate locations	Transportation to/from shelters; MOUs with shelter locations; Pre-identify locations; Inventory to stock shelters
Sidewalks/Mobility	Identify alternative funding sources; Explore use of Chapter 90 funds, Complete Streets, etc.
Only one point of egress at one school	Plans for connecting road between Middle School and High School
Transfer Station - Generator, improvements	Upgrade generator
New High School - Shelter (Cedar St.)	Add generators; increase communication on shelter
Council on Aging (cooling center/generator)	Increase staffing and supplies at building
Mall reconstruction - Hanover Crossing	Theater a place to shelter in high winds--communication
Fire substation in floodplain (Circuit St.)	Update stormwater mgt; increase pervious surface, rain gardens
Lack of Fire Station in North Hanover	ID potential location for another fire station in N Hanover
Permitting & Review process--redevelopment	Continue to enforce and build on the process
Industrial Way	Contractor's time to do an inspection / Partner with owners to work on MVP grant for containment
Assisted Living facilities	Understand evacuation/emergency plans
Cell phone coverage gaps	Talk with cell companies
Generators in public buildings (some gaps)	Install/upgrade generators where needed / integration of public safety considerations in development process
Power outages - who can remove trees? Inconsistent, one side of town more heavily	Staff capacity and training for tree maintenance / Equipment / Funding for outsourcing services
Energy supply during heat events	Alternative electrical supply (collaboration with Eversource and National Grid
Population & Emergency Response--increase in Northwest area of town	Keeping up with demand for aging population; increased medical calls. Substation in underserved area.
Rockland Sewer Plan	Improved communication from Rockland; more notice; system improvements

SOCIETY—MEDIUM PRIORITY

Vulnerability/Strength Addressed	Action
Senior Citizen outreach--Meals on Wheels; transportation	Data system to track seniors and needs; constantly reevaluate ow to communicate; collaboration--High Schoolers teaching tech

Food Pantry	Easier access to those who use food pantry; Improved awareness/outreach/social media; Increased donations, volunteer database; Partnerships with farms & other food providers; Emergency backup power source
Regional Emergency Management Response System	Learning from past experiences; After-action briefings; Regional training collaboration with other towns.
Schools--communication; VO-Tech; population growth	School Committee Action Plan - Collaborate with VO Tech, Town gets services from students
Environmental Justice community	Identify opportunities
Tobacco Coordinator	Continue partnership with Board of Health
Youth Sports program	Communications channel
Recreation League	Communications channel
Domestic animals during emergencies?	Increase outreach to people with pets / Inform people about animal licensing
Identified emergency response plans	Cable spotlight on plan; public outreach & education; coordination/formalization of process (e.g., mall as staging area); Spotlight seasonal plans
Local Churches/Faith Communities	Improved communications with Senior Center; Advertise mission work to increase community involvement

ENVIRONMENT—MEDIUM PRIORITY

Vulnerability/Strength Addressed	Action
Natural/Open Space--Walking trails accessibility	Improved signage, wayfinding; Organized trail walks, tours, events opportunities in parks; Alternative funding for further development of open spaces
Tree Cover: Maintenance, tree health; Private vs. public trees	Education on why tree pruning is important, how to deal with trees; Communication between town, utility, and private individuals
Solar Energy-- Battery storage, logistics, opportunity to improve	Parking lots/fields to generate energy. Issue: environmental damage from putting out fires on battery storage; impacts to wetlands
Water Supply in Sea Level Rise area (Beal plant)	Relocate or reconstruct water treatment plant

Low Priority Actions

INFRASTRUCTURE - LOW PRIORITY

Vulnerability/Strength Addressed	Action	
YMCA (Mill Street)	Provide opportunities for sheltering	L
Leaning Center/Daycare YMCA (Wash. St.)	Provide opportunities for sheltering	L
Drainage system aging - maintenance, encroachment in outlets	Research grant opportunities for infrastructure upgrades, staffing, developing prioritized plan for water strategies	L
Stream/river encroachment	Public outreach and education	L
Aging dams-impacts fish, also slows flooding	Dam repair / Dam removal	L
Fireworks District - Contamination/explosives --Remediation	Remediation & coordination with federal/state partners	L
Accessibility of streets/parks (tree removal)	Pre-planning, cross-cutting conversations	L
Senior Center-relatively new shelter	Advance routine management; Increase volunteer participation; Secure funding for expansion	L
High School relatively new -secondary shelter	Invest in HVAC upgrades (cooling in gym, resource as cooling center)	L
Generator supply could be better monitored - ID who to rent to	MOUs with CVS to have agreement for town to use; distribute among neighborhoods	L

SOCIETAL—LOW PRIORITY

Vulnerability/Strength Addressed	Action
Cable Access for community	Awareness of asset
Expectations of recovery pace	Public outreach and communication re: ongoing effort
Unmet need for health/social services (hospitals discharge)	Build on collaboration between VNA and EMS; mobile integrated health; apply to state program

ENVIRONMENT—LOW PRIORITY

Vulnerability/Strength Addressed	Action
Dam Removal - Flooding, ecological impact; Partnerships	Funding opportunity to remove old dams, grants. Beaver management/wildlife
Fireworks District - Contamination (See I-4)	Remediation & coordination with federal/state partners
Open Space: strength-abundant; vulnerability-low maintenance and dumping	Additional volunteer or staff; neighborhood clean-ups

CRB WORKSHOP PARTICIPANTS

First Name	Last Name	Position/Agency/Organization
Town - HMP/MVP Core Team		
Ann	Lee	Assistant Town Manager
Jason	Cavallaro	Fire Chief / Emergency Management
Christine	Stickney	Town Planner
Victor	Diniak	Public Works Dept.-Director
Sandra	MacFarlane	Conservation Agent
Timothy	Kane	Police Chief
Colleen	Smith	Hanover Schools
Joseph	Stack	Building Commissioner/Assistant Health Agent
Kurt	Kelley	Hanover DPW
Town Departments, Boards, Commissions		
Joe	Colangelo	Town Manager
Steve	Ryerson	Hanover Communications
MaryAnn	Brugnoli	Planning Board
Diane	Sawin	Board of Health
Rick	Mattes	Hanover Emergency Management
Pete	Delprete	Building Dept.
Will	Barrett	Health Dept
Doreen	Zeller	Hanover Visiting Nurse, Nurse Administrator
James	Hayden	Hanover Emergency Management
Community, Business, Non-Profits		
Erin	Richardson	Hanover Chamber of Commerce
Ed	Callahan	Prep Property Group
Dan	Berry	Hanover YMCA
Samantha	Woods	North-South Rivers Watershed Association
Ryan	Earle	Utilities, Electric - Eversource
Joe	Carroll	National Grid
Carolyn	Mecklenburg	MVP Regional Coordinator

CRB WORKSHOP PROJECT TEAM

Hanover Hazard Mitigation/MVP Core Team

Jason Cavallaro	Fire Chief / Emergency Management
Ann Lee	Assistant Town Manager
Dan Berry	Hanover YMCA
Ed Callahan	Prep Property Group
Victor Diniak	Public Works Dept.-Director
Fred Freeman	Hanover Fire Dept/EMA
Timothy Kane	Police Chief
Kurt Kelley	Deputy Superintendent, Dept. of Public Works
Sandra MacFarlane	Conservation Agent
Neal Merritt	Water Superintendent, Dept. of Public Works
Colleen Smith	Hanover Schools
Christine Stickney	Town Planner
Samantha Woods	North-South Rivers Watershed Association

MAPC Facilitation Team

Martin Pillsbury	Environmental Planning Director
Rachel Bowers	GIS/Data Analysis
	Supporting Materials
MAPC Workshop Facilitators	
Abigail Bliss	Economic Development Planner II
Brad Downey	Grants Management Specialist
Kat Kobylt	Environmental Planner II

CITATION

Metropolitan Area Planning Council. 2023. Town of Hanover Municipal Vulnerability Preparedness Program. *Community Resilience Building Workshop: Summary of Findings*. Hanover, Massachusetts, published contemporaneously with the *Hanover Hazard Mitigation Plan 2023 Update*.

APPENDIX A –ACTION PRIORITIZATION

Highest Priority Actions from the CRB Workshop

VOTES	TABLE	CATEGORY	ACTION
15	Blue	Societal	Address staff shortages/lack of manpower
11	Blue	Infrastructure	Address the Impacts of wind/severe weather on critical infrastructure
11	Blue	Environment	Improving water resources
8	Red, Blue, &Green	Societal	Invest in improved communications for emergencies, including vulnerable populations. Use multiple formats, all media: print, TV, sign boards, AM radio tower; leverage existing networks.
7	Red	Infrastructure	Diversify the Town's water supply; seek alternative sources
7	Green	Environment	Work with National Grid to trim trees aggressively near power lines; bury lines during construction projects; educate homeowners about privately owned trees.
4	Green	Environment	Protect aquifer conservation zones, upgrade, and expand stormwater infrastructure, invest in robust treatment technologies.
2	Green	Societal	Increase visibility of CERT Team and recruit people of younger generations; double the number of volunteers
2	Red	Infrastructure	Coordinated approach to balancing water supply and growth across Town departments.
1	Green	Infrastructure	Increase building resilience such as reliable backup power in critical facilities: High School, Council on Aging, YMCA/Early Learning Center, Starland
1	Blue	Infrastructure	Improving power substations
0	Red	Infrastructure/ Social	Provide treatment and education on PFAS in water supply in relation to public health
0	Red	Infrastructure	Sustainable funding sources for infrastructure; includes additional & situational staffing for emergencies.

Hanover CRB Workshop, Laura's Center for the Arts, April 10,2023

Album **Town of Hanover Community Resilience Building Workshop 4/10/23**



Hanover, Massachusetts is at **Laura's Center for the Arts**.

April 21 · Hanover · 🌐



Officials from the Town of Hanover participated in a Community Resilience Building Workshop as part of the Municipal Vulnerability Preparedness Project on April 10, 2023.

Workshop participants discussed Hanover's strengths and vulnerabilities. They prioritized actions required to protect the community and build resilience against extreme weather events and changing climate trends.

The event was hosted by the Massachusetts Executive Office of Energy and Environmental Affairs... See more



👍 14

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Write a comment...

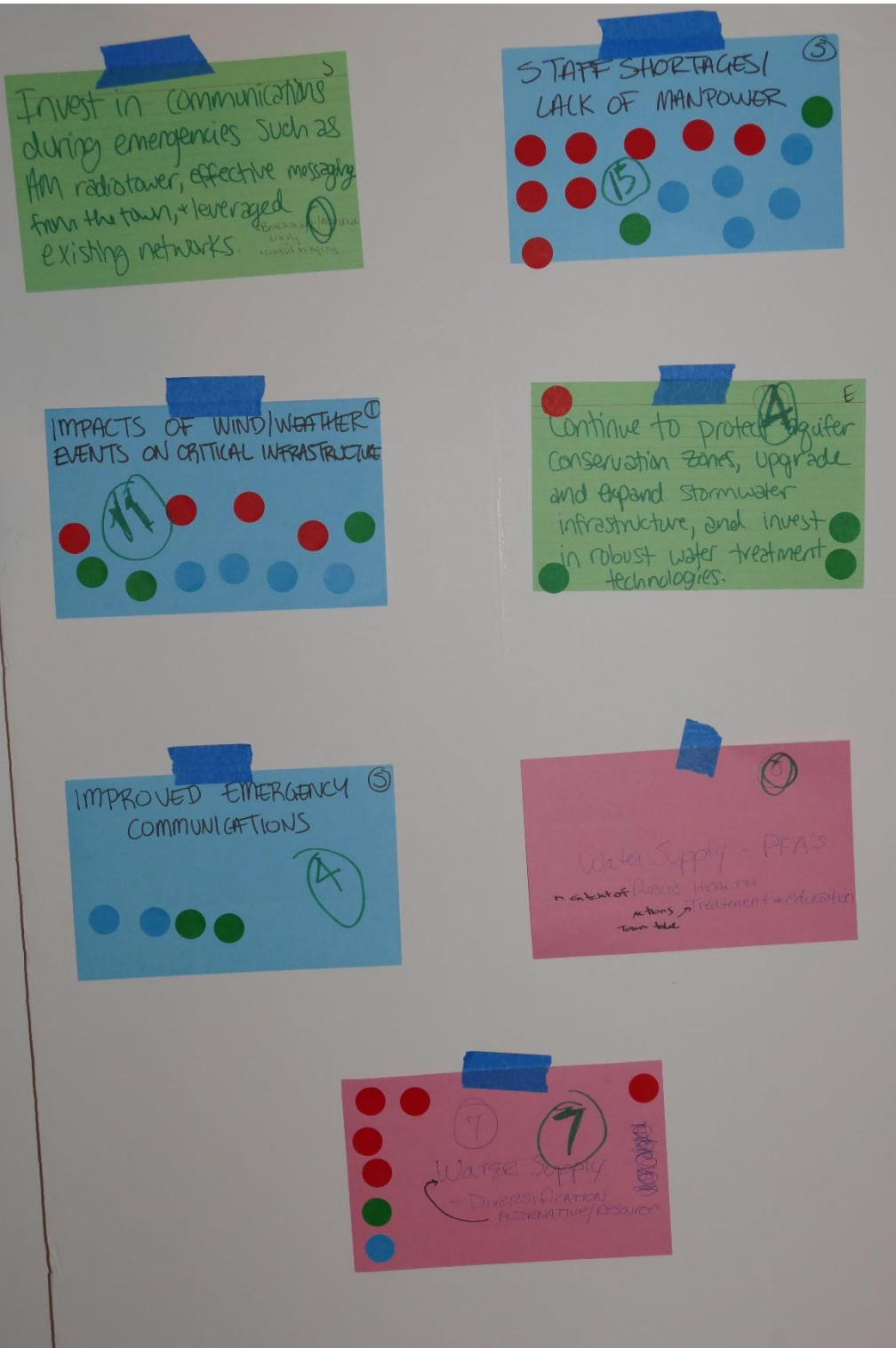


Photos: Steve Ryerson, Hanover Communications

Action Prioritization **Highest Priority Actions from the Workshop**



**Action Prioritization
Highest Priority Actions from the Workshop**



APPENDIX B –HANOVER CRB WORKSHOP MAP

Hanover Critical Infrastructure

Critical Facilities

- Schools (PK - High School)
- Dams
- Police Stations
- Fire Stations
- Town Halls
- Libraries

Hazards

- Hot Spots*
- FEMA National Flood Hazard Layer**
 - A: 1% Annual Chance of Flooding
 - X: 0.2% Annual Chance of Flooding
- Extent of flood inundation for a 1% chance storm for the following sea level rise scenarios:**
 - 1.2ft sea level rise scenario (approx. 2030)
 - 2.4ft sea level rise scenario (approx. 2050)
 - 4.2ft sea level rise scenario (approx. 2070)
- Locally Identified Hazard Areas**
 - Brush Fire
 - Flooding

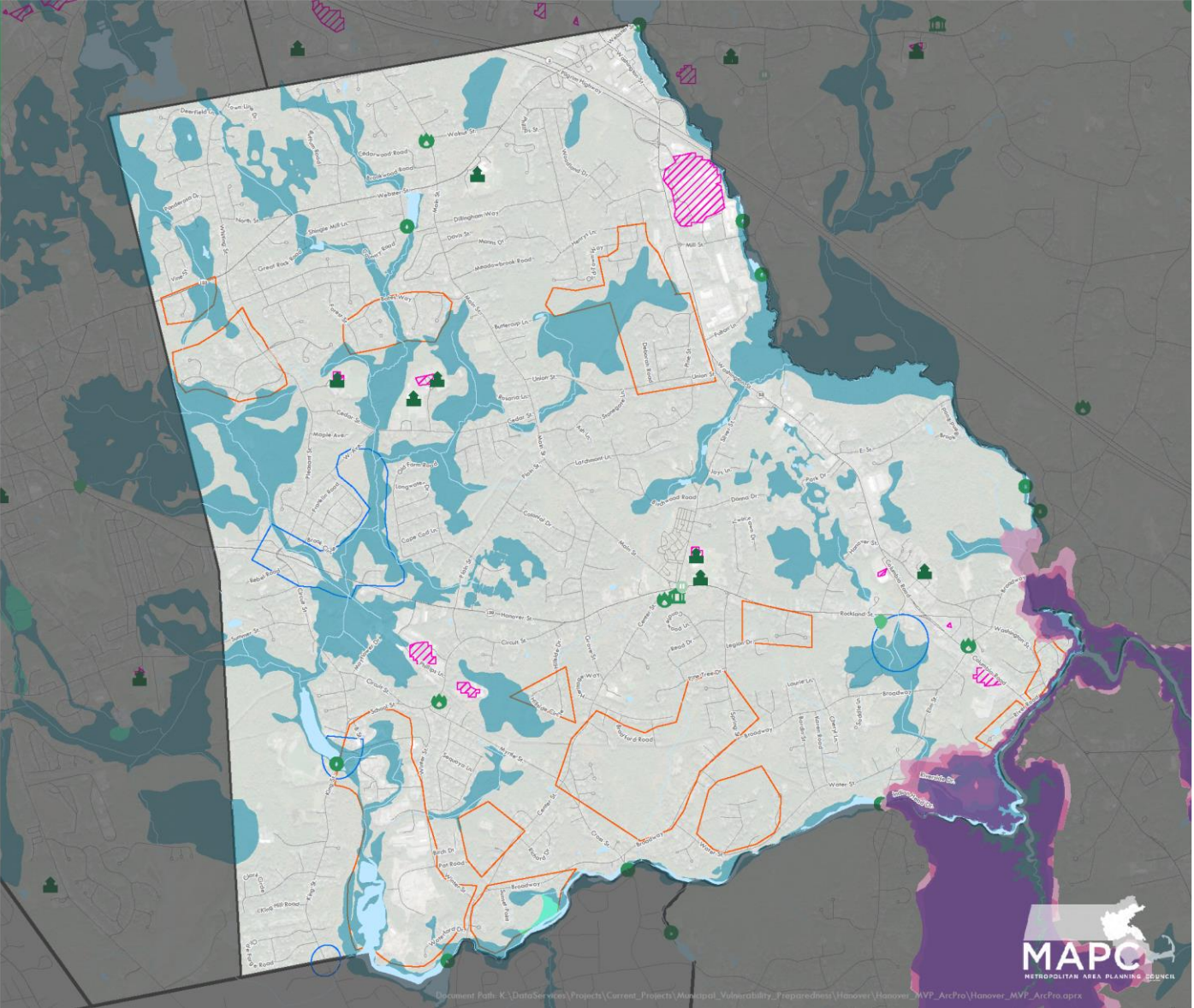
*Hot Spots are areas identified by MAPC as the fastest 5% of land areas in the MAFC region. Data from 2016.

Other Features

- Rivers and Streams
- Water Bodies

Data Sources:
 Metropolitan Area Planning Council (MAPC)
 Massachusetts Geographic Information System (MassGIS)
 Massachusetts Department of Transportation (MassDOT)
 Federal Emergency Management Agency (FEMA)

April 2023



Document Path: K:\DataServices\Projects\Current_Projects\Municipal_Vulnerability_Preparedness\Hanover\Hanover_MVF_ArcPro\Hanover_MVF_ArcPro.aprx

Invitation Letter from the Town Manager



TOWN OF HANOVER
550 HANOVER STREET, SUITE 120
HANOVER, MASSACHUSETTS 02339
781-826-5000 ext. 1084

Joe Colangelo
Town Manager

March 10, 2023

Dear Hanover residents and stakeholders,

The Town is engaged in an initiative to address natural hazards and severe weather events that can cause damage to residents, business, etc. in the Town of Hanover. Our recent work to revise our Comprehensive Emergency Management Plan and recognition by the National Weather Service as a Storm Ready Community are proactive steps we have taken to increase our resilience to natural hazards. The Town has obtained grant funding to improve our Municipal Vulnerability and Hazard Mitigation Planning. We are seeking your input during the process.

In order to be proactive in preparing and protecting our Town, I would like to personally invite you to join me at a **Community Resilience Building Workshop**, to be held at Laura's Center for the Arts, 97 Mill Street, Hanover on **Monday, April 10** from 9:30 AM to 4:00 PM. Morning coffee and lunch will be provided.

The Town has partnered with the Metropolitan Area Planning Council (MAPC), our regional planning agency, to offer this timely workshop which will bring together diverse community members to improve Hanover's resilience to natural hazards. The Town is conducting this initiative with support from the state's **Municipal Vulnerability Preparedness (MVP)** program, which has provided similar assistance to nearly every city and town in Massachusetts.

The workshop objectives are as follows:

- **Identify the strengths and vulnerabilities** of Hanover's infrastructure, natural resources, and social resilience.
- **Identify local actions** that town officials, businesses, and community groups can take to reduce the town's vulnerability to natural disasters.
- **Consider opportunities to advance these actions** to increase the resilience in the Town of Hanover.

This is a *by-invitation event* and I hope you will join us in this important effort. Please RSVP by **Monday, April 3** by contacting Martin Pillsbury from MAPC at HanoverMVP@mapc.org.

I hope to see you at this important workshop. Thank you for your consideration!

Sincerely,

Joseph Colangelo
Town Manager

Workshop Agenda

Hanover Community Resilience Building Workshop
Monday, April 10
Laura's Center for the Arts, 97 Mill Street, Hanover MA

~ **Workshop Objectives and Agenda** ~

1. *Identify and map strengths and vulnerabilities of the town's infrastructure, its people, and its natural resources.*
2. *Identify and prioritize actions that reduce vulnerabilities and reinforce strengths.*
3. *Identify opportunities to advance actions that reduce the impact of natural hazards and increase climate resilience in Hanover.*

	ACTIVITIES and OBJECTIVES	WHO
9:30	Registration: Sign-in, get name tag and sticky dots, refreshments, find table	All Attendees with MAPC Staff
10:00	Welcome, Introductions	Town of Hanover MAPC Facilitator
10:10	Overview of the Mass. MVP Program	Carolyn Mecklenburg MVP Region. Coord.
10:30	Introduction to Climate Change, MVP Workshop process	MAPC Facilitator
11:00	<u>Small Group Exercise #1 - Identify Vulnerabilities and Strengths</u> <i>(Left side of matrix, first 4 columns, ~25 minutes per category)</i>	Small Groups with MAPC Facilitators
12:15	Lunch Break	
1:00	<u>Small Group Exercise #2 - Identify Climate Actions / Priorities</u> <i>(Right side of matrix, ~25 min per category)</i>	Small Groups with MAPC Facilitators
2:15	Chose the Top 5 Priority Climate Actions in your group <i>Each table selects its top 5 priority Actions.</i>	Small Groups with MAPC Facilitators
2:30	Small Groups Report Out their Top Priority Actions <i>Table spokespersons report out their group's top 5 Actions.</i>	Small Group Spokespersons
2:45	Choose your top 3 Action priorities from all groups <i>All participants use sticky dots to vote for their top 3 Actions</i>	All attendees
3:15	Review Results, Discussion, Next Steps (Fill out Survey)	MAPC Facilitator
4:00	Adjourn – Please leave survey – Thank you!	Town of Hanover

**Town of Hanover
Community Resilience
Building Workshop**

**Municipal Vulnerability Preparedness Project
April 10, 2023**



CRB Workshop PowerPoint

Agenda for the day



10:00	Welcome, Introductions	Town of Hanover MAPC Facilitator
10:10	Overview of the Mass. MVP Program	Carolyn Meklenburg MVP Regional Coordinator
10:30	Introduction to Climate Change, MVP Workshop process	MAPC Facilitator
11:00	<u>Small Groups #1 Identify Vulnerabilities and Strengths</u>	Small Groups & Facilitators
12:15	Lunch Break	
1:00	<u>Small Groups #2 Identify Resilience Actions & Priorities</u>	Small Groups & Facilitators
2:15	Small Groups: Chose top 5 Priority Actions in your group	Small Groups & Facilitators
2:30	Small Groups: Report Out Top 5 Priority Actions	Small Group Spokespersons
2:45	Each person: choose your top 3 Actions (sticky dot vote)	All attendees
3:15	Review Results, Discussion, Next Steps	MAPC Facilitator
4:00	Adjourn – Please leave survey-- Thank you!	Town of Hanover

CRB Workshop PowerPoint



Commonwealth of Massachusetts

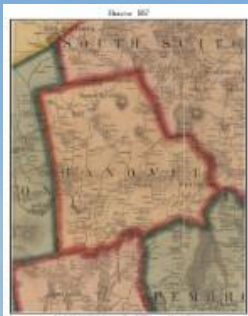
Executive Office of Energy and Environmental Affairs
Municipal Vulnerability Preparedness Program
State Service-Provide Training

Workshop Objectives

- Understand extreme weather and climate related hazards
- Identify existing and future vulnerabilities and strengths
- Develop and prioritize opportunities to take action to reduce risk and build resilience

MVP Workshop PowerPoint

Agenda for the day



10:00	Welcome, Introductions	Town of Hanover MAPC Facilitator
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MVP Workshop PowerPoint



Municipal Vulnerability Preparedness Program

Carolyn Meklenburg
Greater Boston Regional Coordinator
MA Executive Office of Energy and Environmental Affairs

MVP Workshop PowerPoint



Dedham FY19 MVP Action Grant

Climate resilience is the ability of a community to **understand the needs** of its built, social and natural environment **to anticipate, cope with, and rebound stronger** from events and trends related to **climate change hazards**.

Resilient communities don't just recover—they *continuously build capacity* to reduce the impacts of future climate events.

What does the climate data look like?

 **Rising Temperatures**

Photos: Warm February day in Worcester




The New York Times <https://nyti.ms/2d320aK>


Scenes From New England's Drought: Dry Wells, Dead Fish and Ailing Farms

By Jess Bidgood
Sept. 26, 2016



 **Heavy Precipitation**



 **Sea Level Rise**

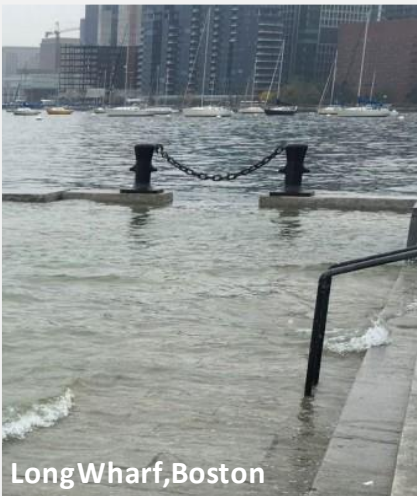



Image Sources: <https://www.telegram.com/news/20200223/worcesterfebruary-thaw-to-continue>; City of Medford; New England Aquarium

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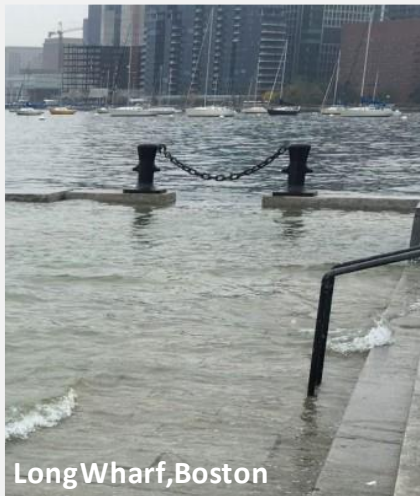


Image Sources: <https://www.telegram.com/news/20200223/worcesterfebruary-thaw-to-continue>; City of Medford; New England Aquarium

How will climate change impact Hanover?

By 2090:

 **RISING TEMPERATURES**

9°F increase in avg annual temp.
60 fewer days/year with min. temperatures < 32° F
27 more > 90°F days/year

 **CHANGES IN PRECIPITATION**

40% increase in days with > 1 in. rainfall
12% increase in total precipitation

 **SEA-LEVEL RISE**

3.4 – 8.4 feet along the MA coast

 **EXTREME WEATHER**

Increase in frequency and magnitude

Increases/decreases calculated from baseline data collected from 1950-2013

How will climate change impact Hanover?

By 2090:



RISING TEMPERATURES

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60 fewer days/year with min. temperatures < 32° F
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CHANGES IN PRECIPITATION

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SEA-LEVEL RISE

3.4 – 8.4 feet along the MA coast



EXTREME WEATHER

Increase in frequency and magnitude

Increases/decreases calculated from baseline data collected from 1950-2013

MVP Workshop PowerPoint

Six Years of MVP

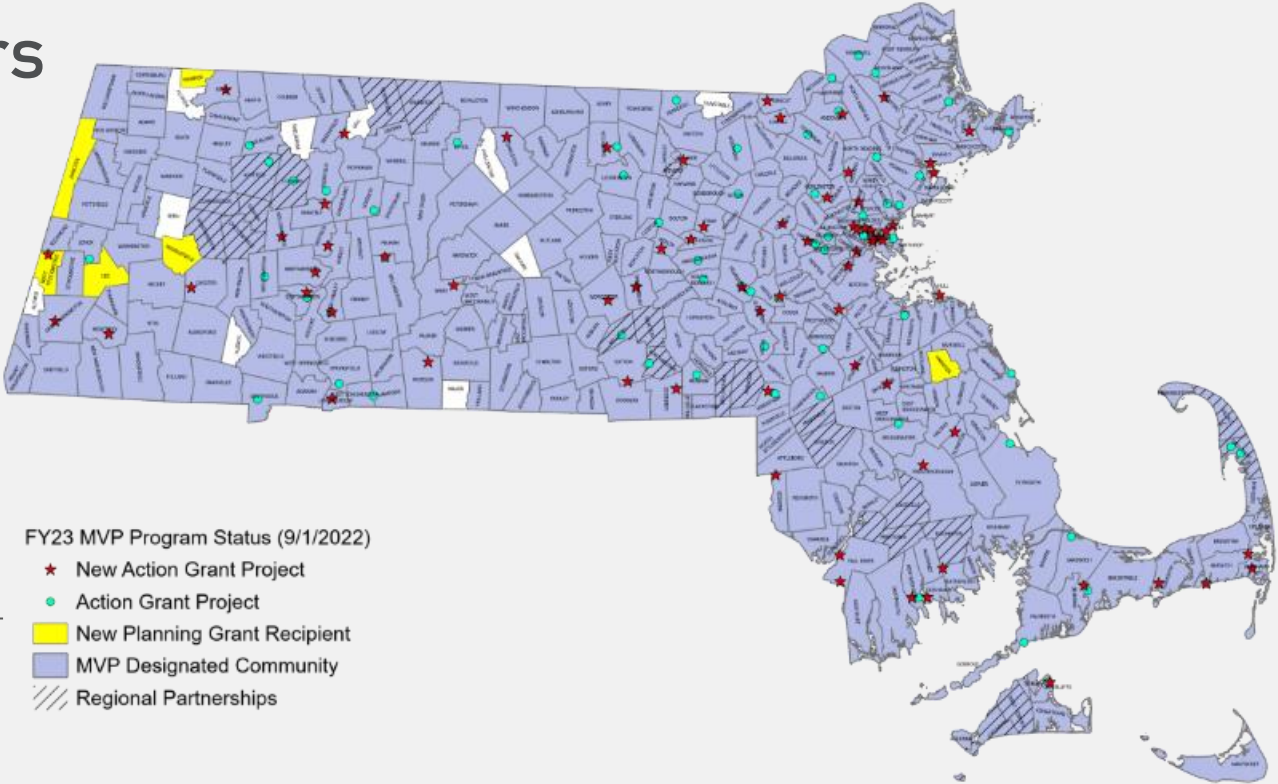
Total Awards
Planning &
Action
\$100M to date

MVP Planning Grant
Process

97% participation
341 communities

Action Grant Projects

FY 18: 37
FY 19: 36
FY 20: 53
FY 21: 41
FY 22: 66
FY 23: 73 (\$32.6M)



MVP Core Principles

A community-led project that:

 Furthers a community identified priority action to address climate change impacts.	 Employs Nature -based solutions (NBS).
 Increasing equitable outcomes for Environmental Justice (EJ) and other priority populations and addressing the root causes of social vulnerability.	 Achieves broad and multiple community benefits.
 Builds community capacity for climate resilience.	 Commits to monitoring project success and maintaining the project into the future.
 Conducts robust community engagement and supports strong partnerships with EJ and other priority populations.	 Utilizes regional solutions for regional benefit.
 Utilizes climate change data for a proactive solution.	 Pursues innovative, transferable approaches.

MVP Workshop PowerPoint

Example MVP Action Grant Projects

DEDHAM & NEPRWA	MEDFORD	NORWOOD & NEPRWA
-----------------	---------	------------------

FY23: \$389,457

Develop a **regional flood model** to evaluate solutions that reduce flood impacts, and create a **strategic framework for regional collaboration** on climate adaptation priorities

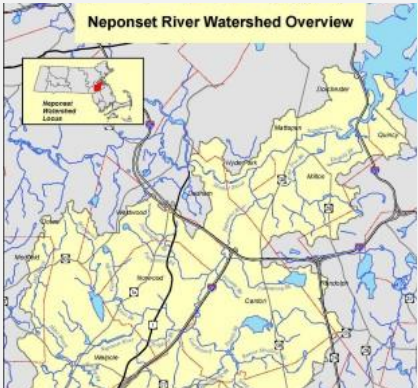


Photo Credits: Brad Chase (MA Dept. of Marine Fisheries), City of Northampton, City of Boston/Stoss Landscape Urbanism

FY23: \$416,738

Create a centralized digital platform that connects residents with social services to **build adaptive capacity** and formalize a **community partner network** focused on climate resilience



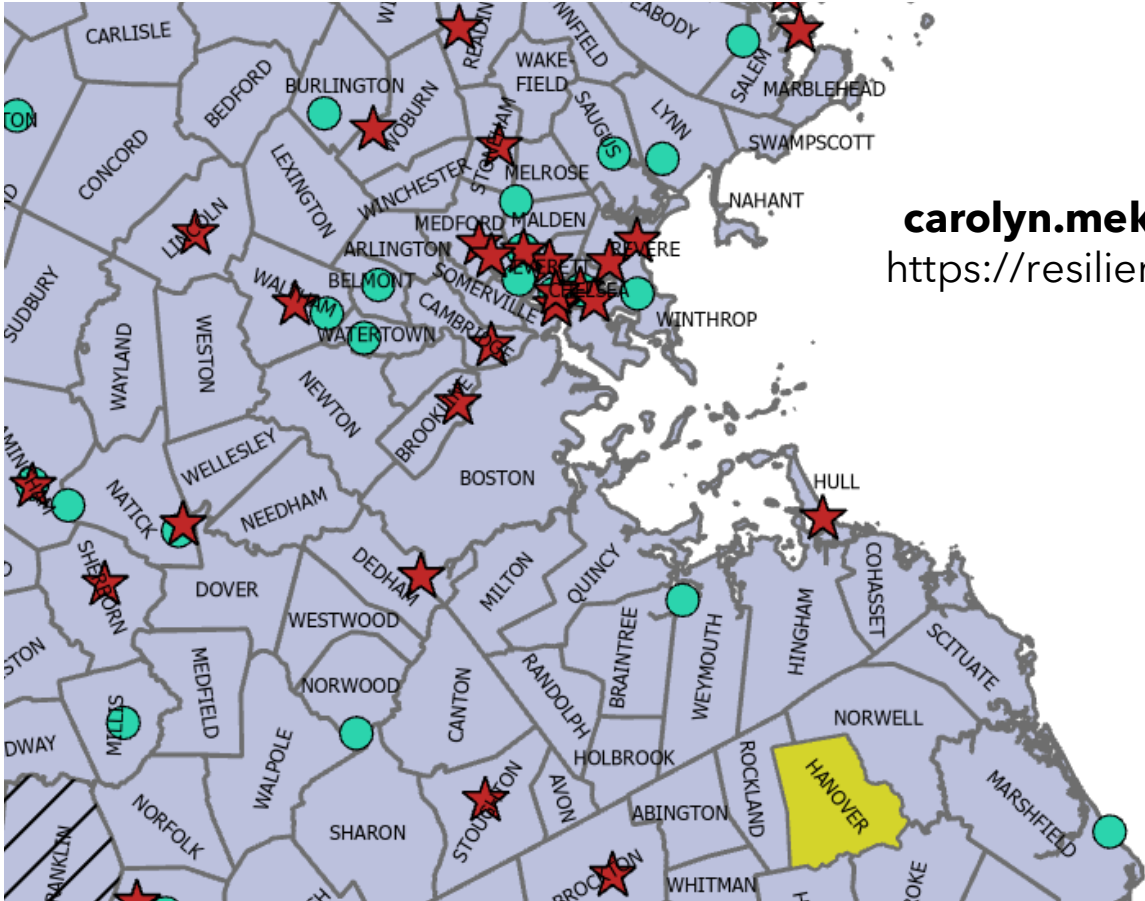
FY21 – FY22: \$1,060,632

Removed the obsolete and hazardous Mill Pond Dam, **restored** Traphole Brook, and **educated neighbors** on climate change and their local ecosystem



13

MVP Workshop PowerPoint



carolyn.meklenburg@mass.gov
<https://resilientma.mass.gov/mvp/>



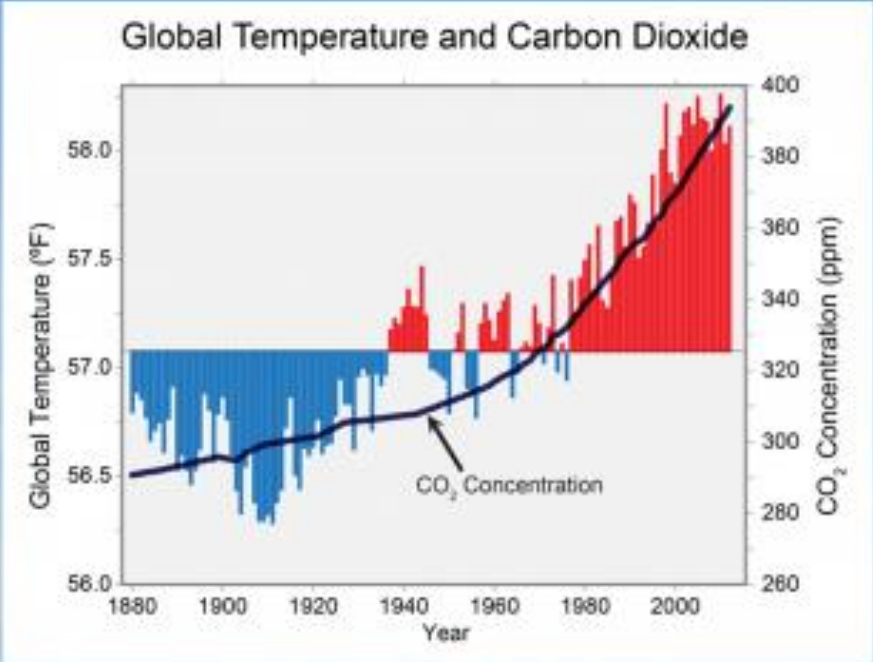
MVP

Municipal Vulnerability Preparedness

Climate Change Trends



Our Warming Planet

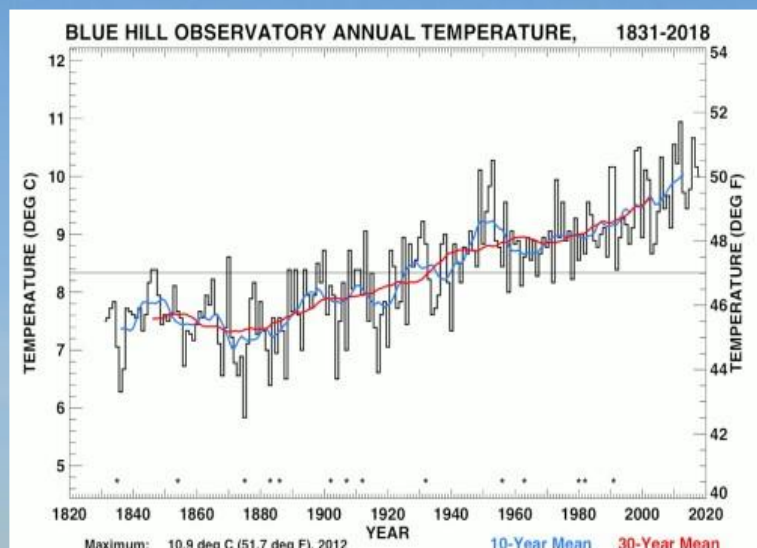


US National Climate Assessment 2018

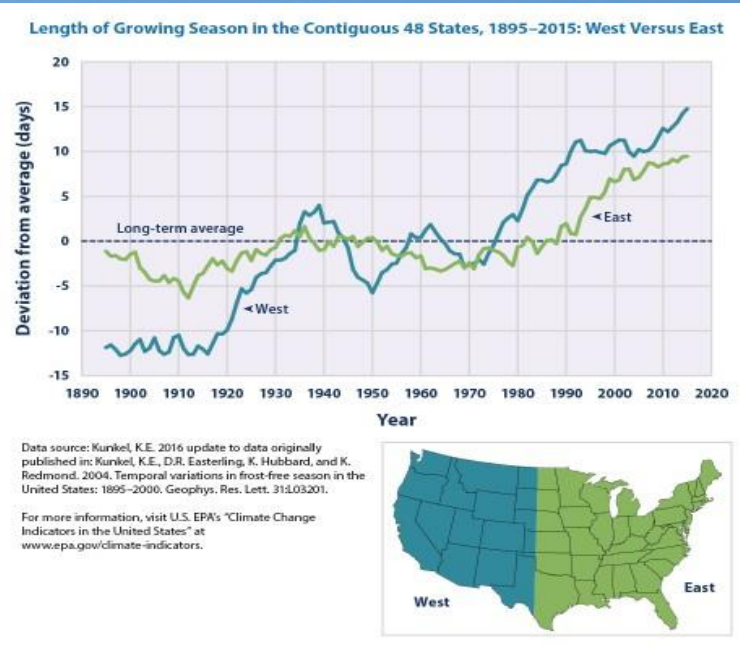
Temperature change: *Observed*

Boston: + 3° F since 1831

Longer Growing Season

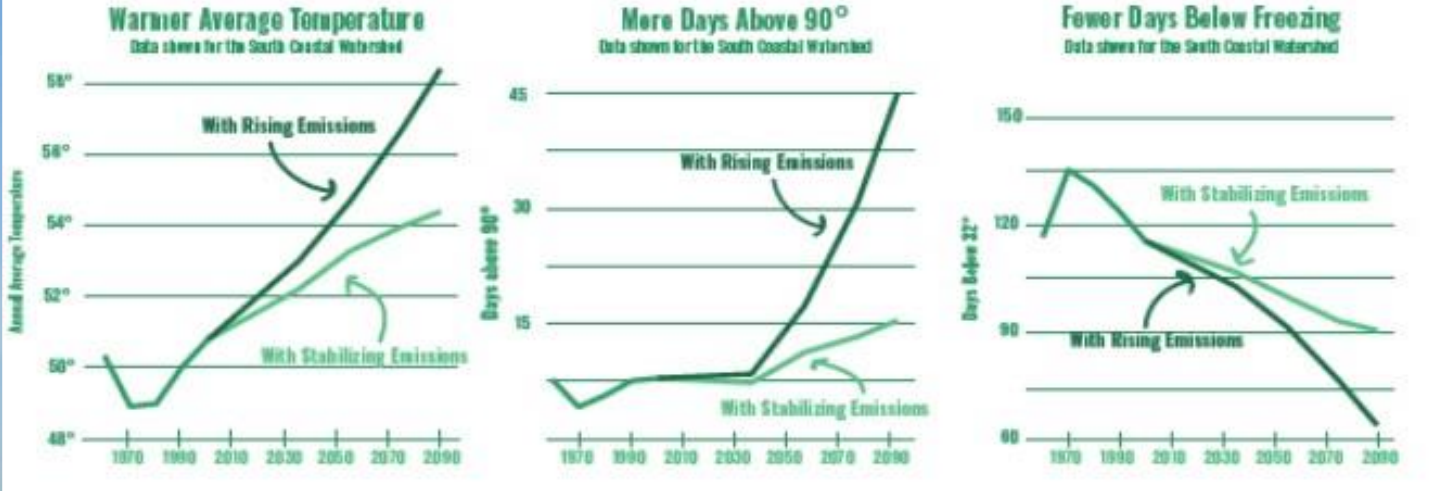


Blue Hill Observatory Annual Temperature



Temperature Change: *Projected*

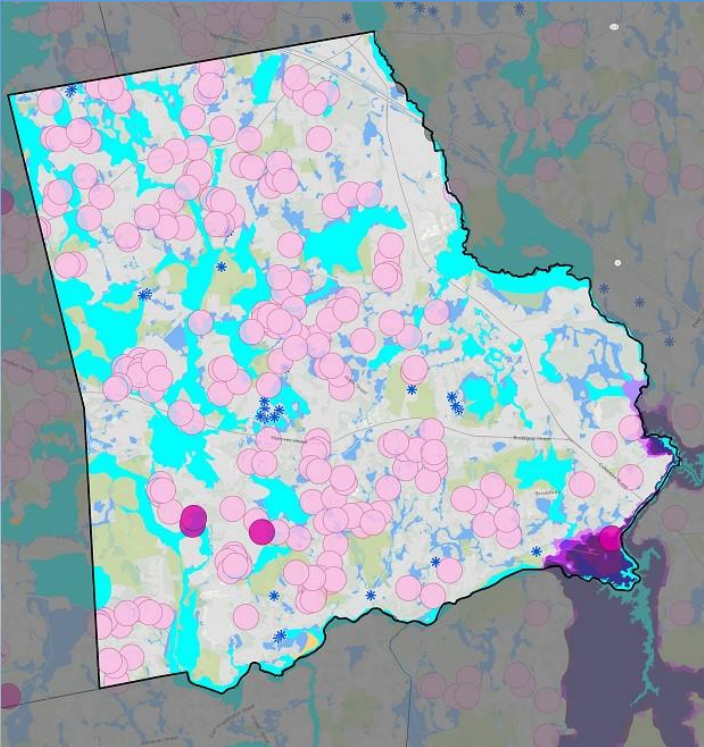
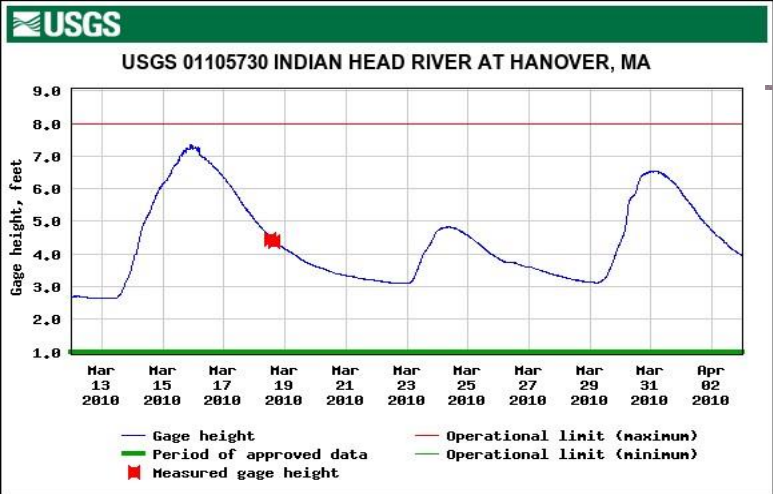
Higher Temperatures



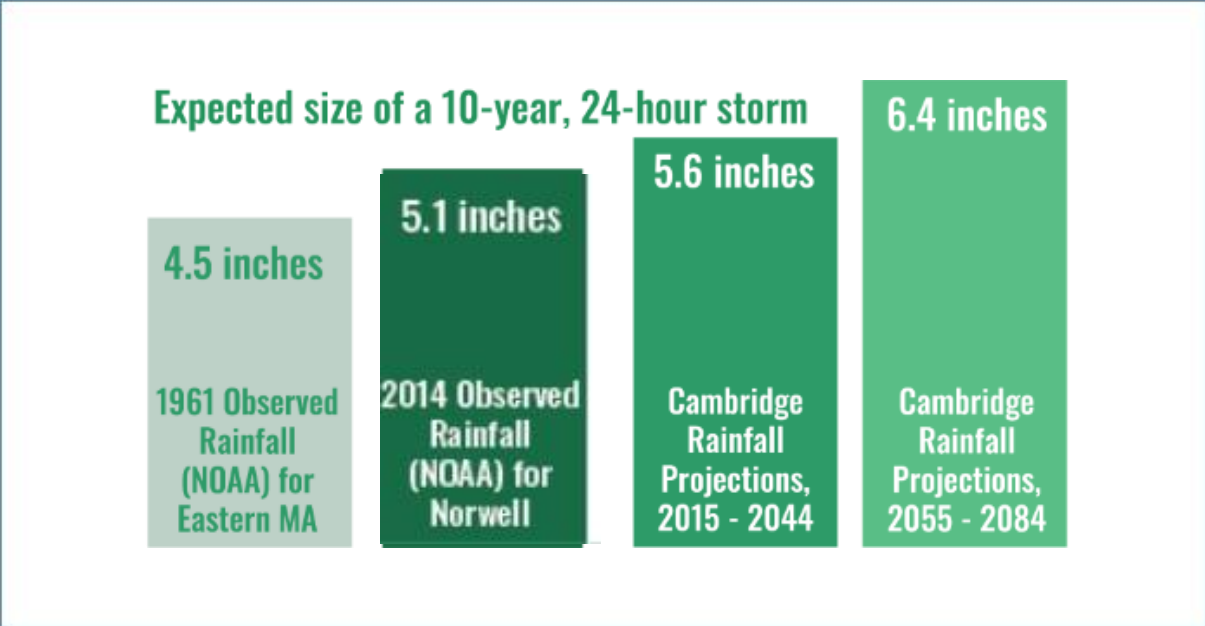
Source: the Northeast Climate Adaptation Science Center

Precipitation Change: Observed - Floods of 2010

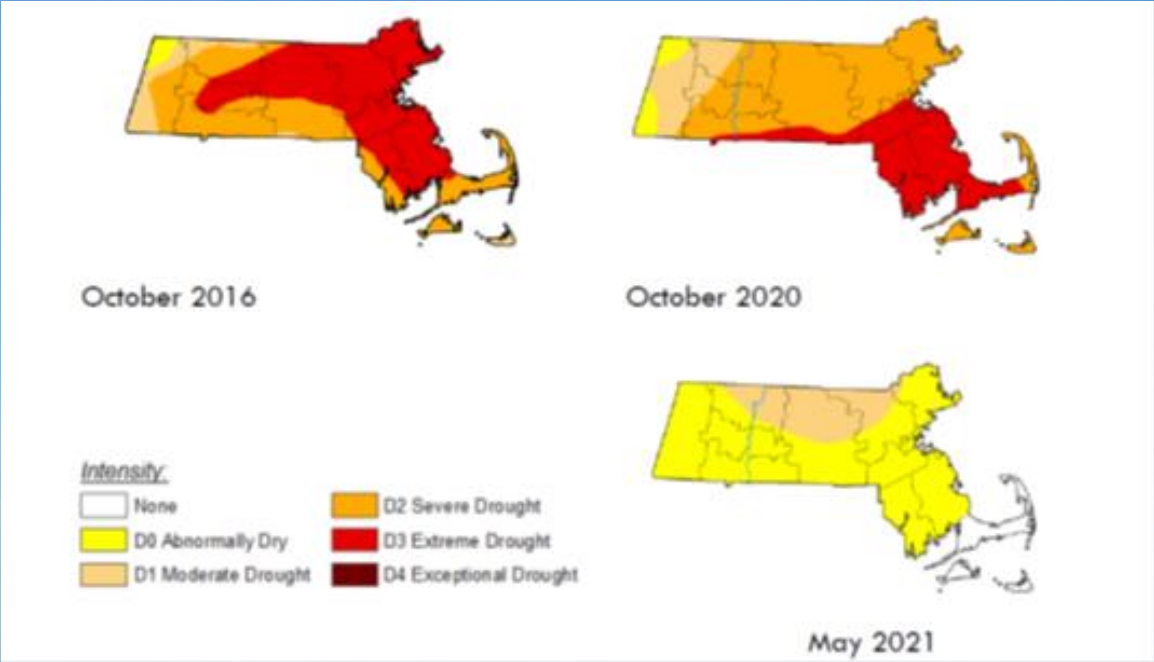
17.7 inches of rain, 3 storms from March 13 to 31. Federally declared disaster with 3 Flood Insurance claims and 212 Disaster Claims in Hanover, 98% of which are outside of FEMA flood hazard zones



Precipitation Change: *Projected Design Storm*

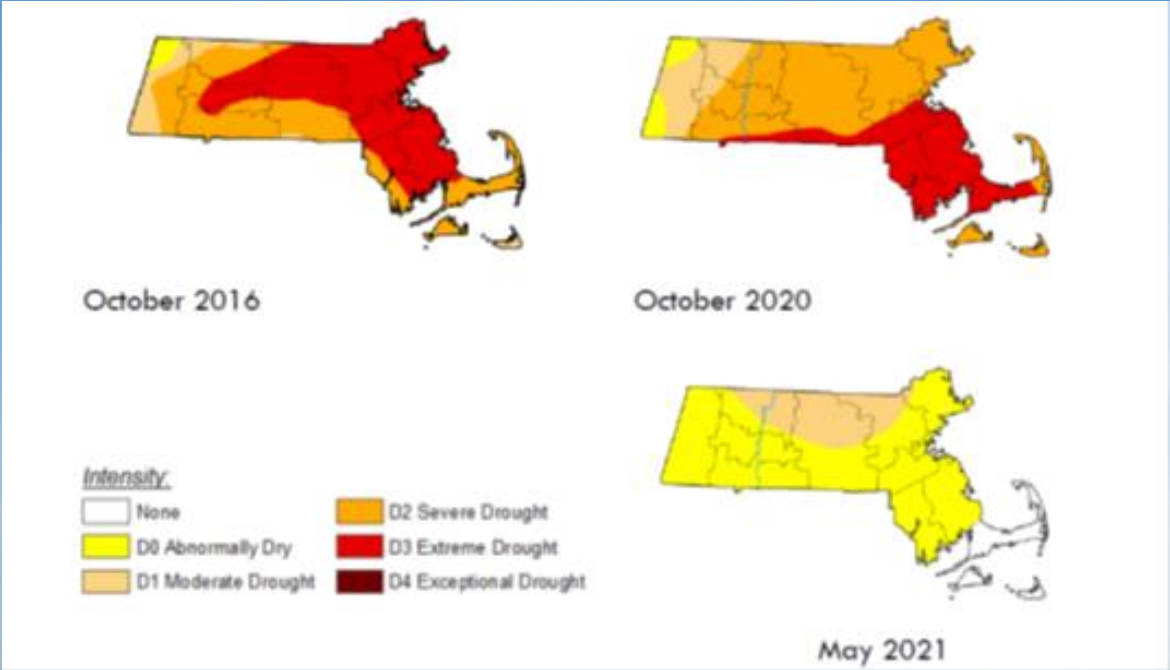


Precipitation Change: *Drought Observed*



**The drought of 2016 was the worst in 35 years.
It was followed by two more droughts in 2020 & 2021**

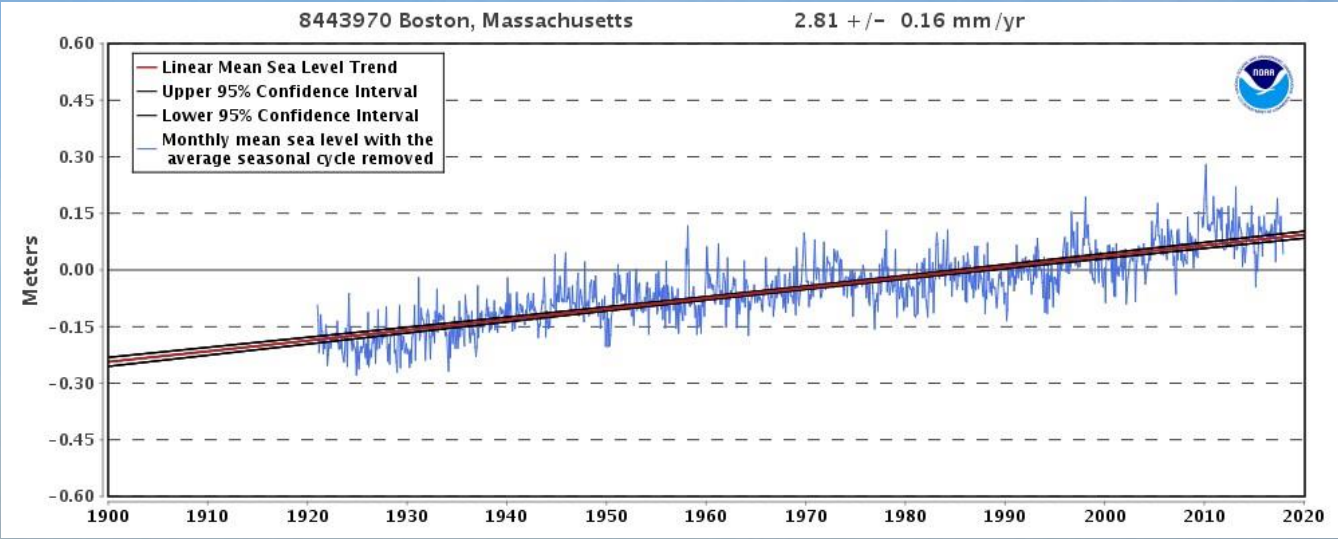
Precipitation Change: *Drought Observed*



The drought of 2016 was the worst in 35 years.
It was followed by two more droughts in 2020 & 2021

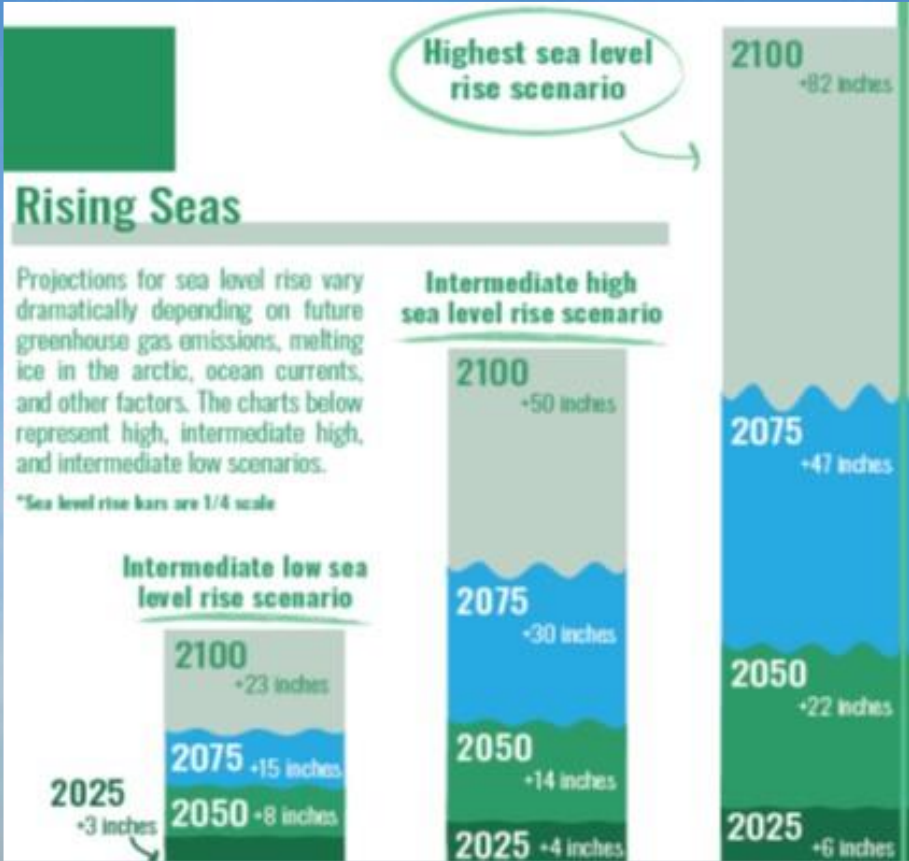
Sea Level Rise: Observed

- Boston tide station records since 1921
- 11 inch increase in 100 years



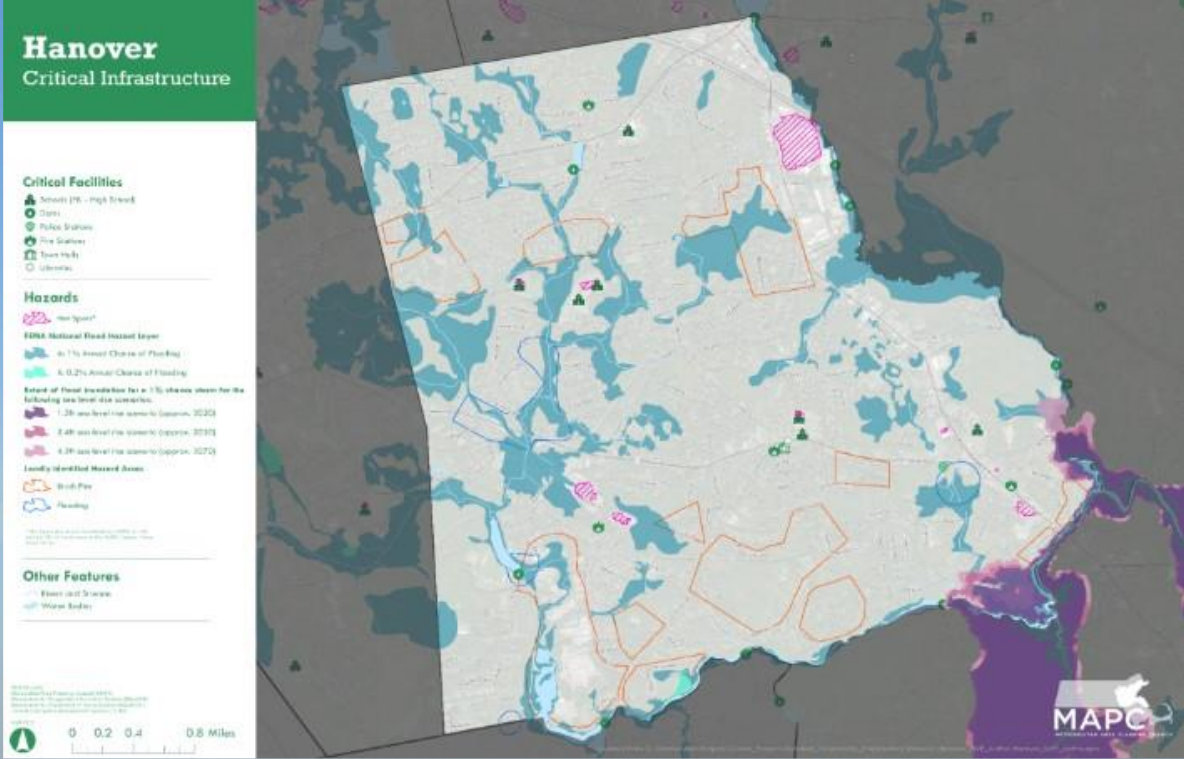
Sea level rise: *Projected*

Boston Harbor 2030-2100

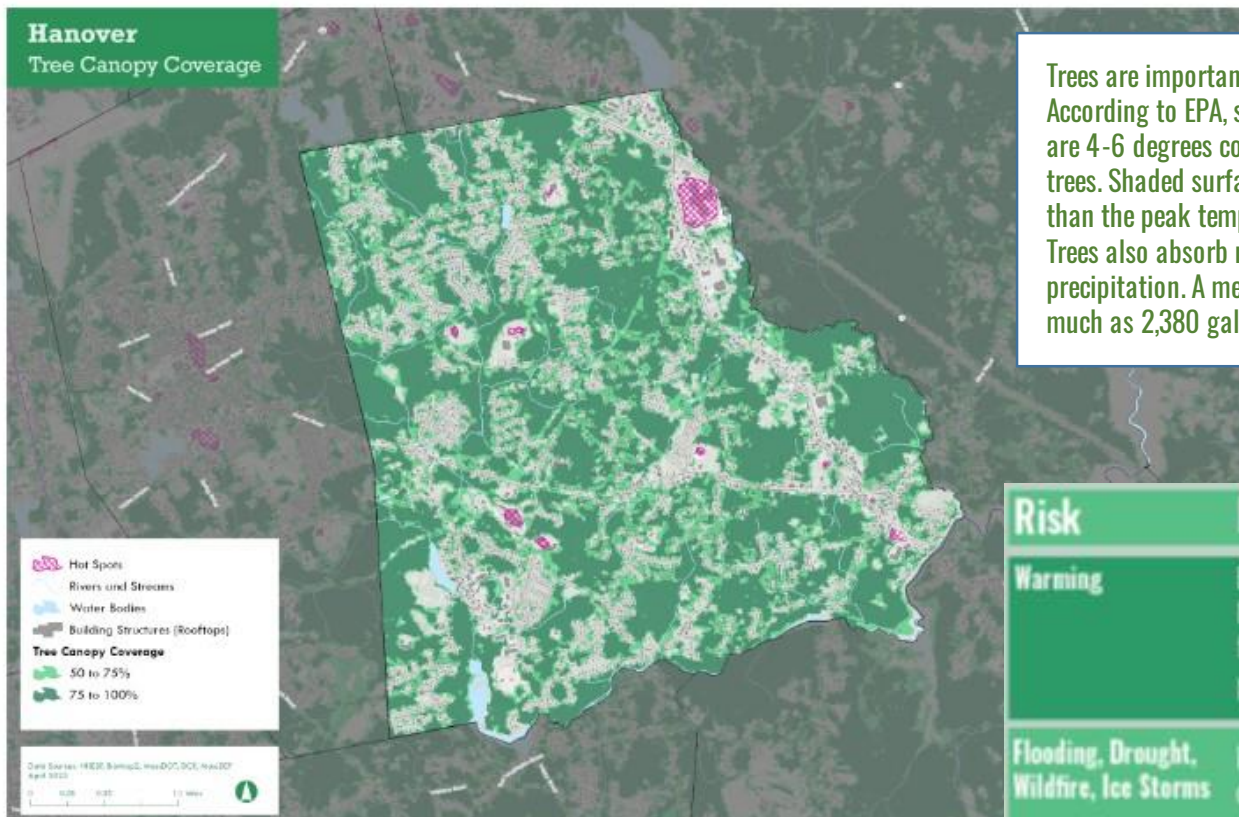


Source: Northeast Climate Adaptation Science Center and MAPC

Hanover Vulnerabilities: Hazard Areas



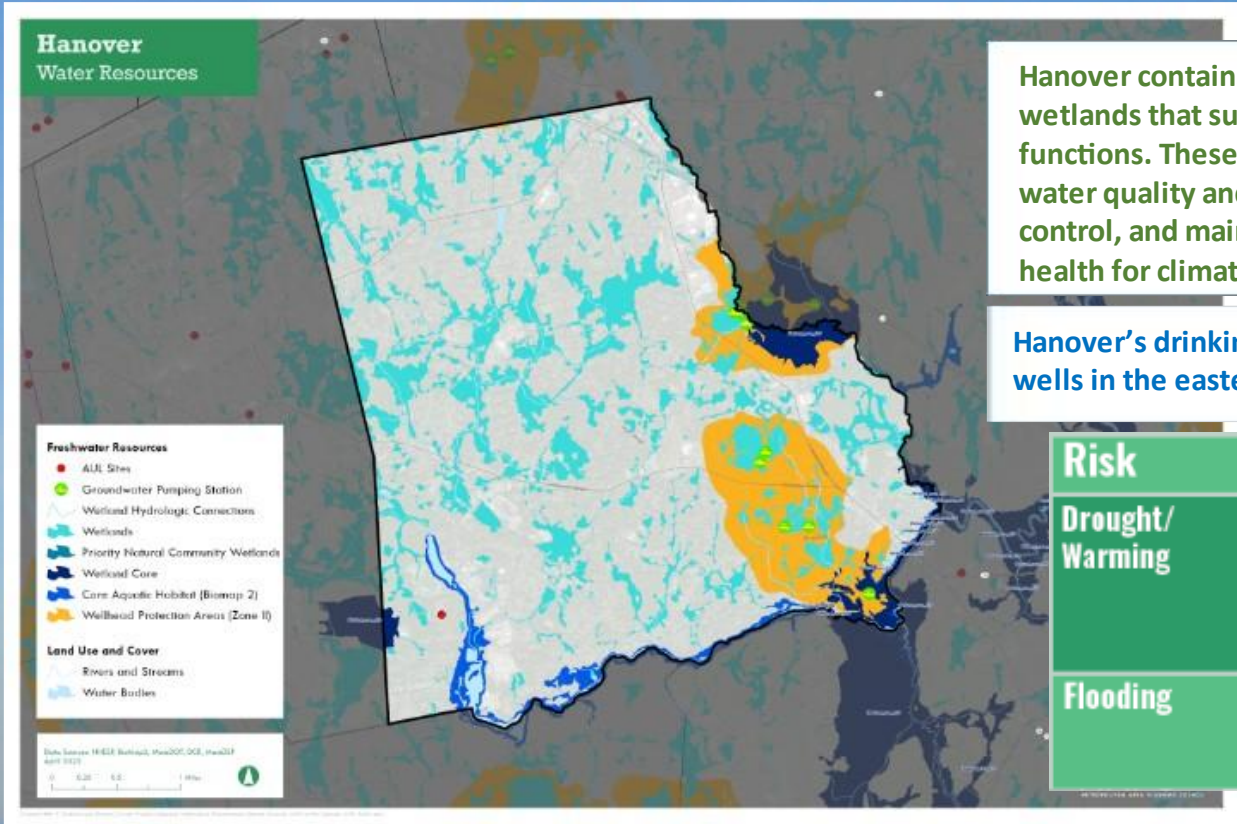
Hanover Resources: *Tree Canopy Coverage*



Trees are important in mitigating the impact of heat. According to EPA, suburban areas with mature trees are 4-6 degrees cooler than new suburbs without trees. Shaded surfaces can be 25 -40 degrees cooler than the peak temperatures of unshaded surfaces. Trees also absorb remarkable quantities of precipitation. A medium -sized tree can intercept as much as 2,380 gallons of rain per year.

Risk	Impact
Warming	Expected to shift forest type from Maple/Birch/Beech forest to Oak/Hickory forest similar to New Jersey. New pests and diseases
Flooding, Drought, Wildfire, Ice Storms	Impaired waters, toxic exposure, contaminant leaching

Hanover Resources: *Water Resources*



Hanover contains healthy freshwater wetlands that sustain critical ecosystem functions. These ecological assets protect water quality and quantity, provide flood control, and maintain overall ecosystem health for climate resilience.

Hanover’s drinking water comes from wells in the eastern part of town.

Risk	Impact
Drought/ Warming	Seasonal no-flow/ low-flow, reduced absorption capacity, diminished fish habitat, algal blooms, low dissolved oxygen, reduced drinking water supply
Flooding	Impaired waters, toxic exposure, contaminant leaching

Social Vulnerabilities to Climate Change

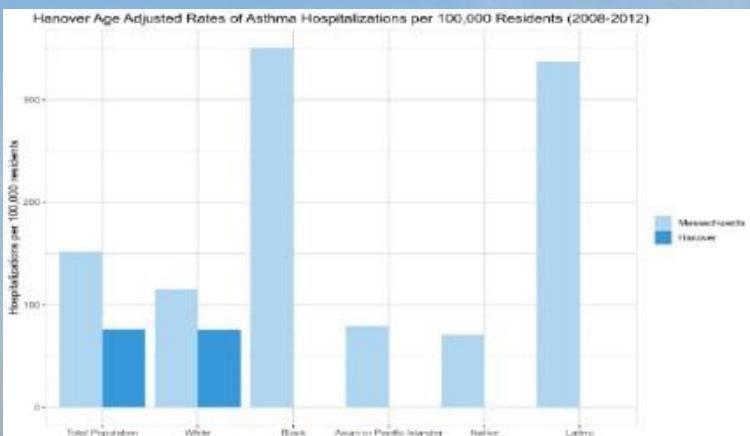
Social Vulnerability

Social vulnerability refers to social, economic, demographic, or health factors that may make groups of people less resilient to climate change impacts. Certain vulnerabilities tend to be correlated; for example, older adults are more likely to have a disability and live alone than younger adults.

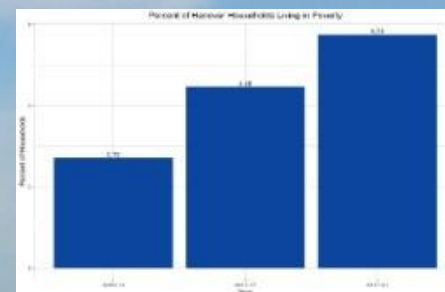
People Who Work Outside



People who primarily work outside, such as parcel delivery people, construction workers, or landscapers, may be at added risk from extra exposure to high heat and poor air quality.

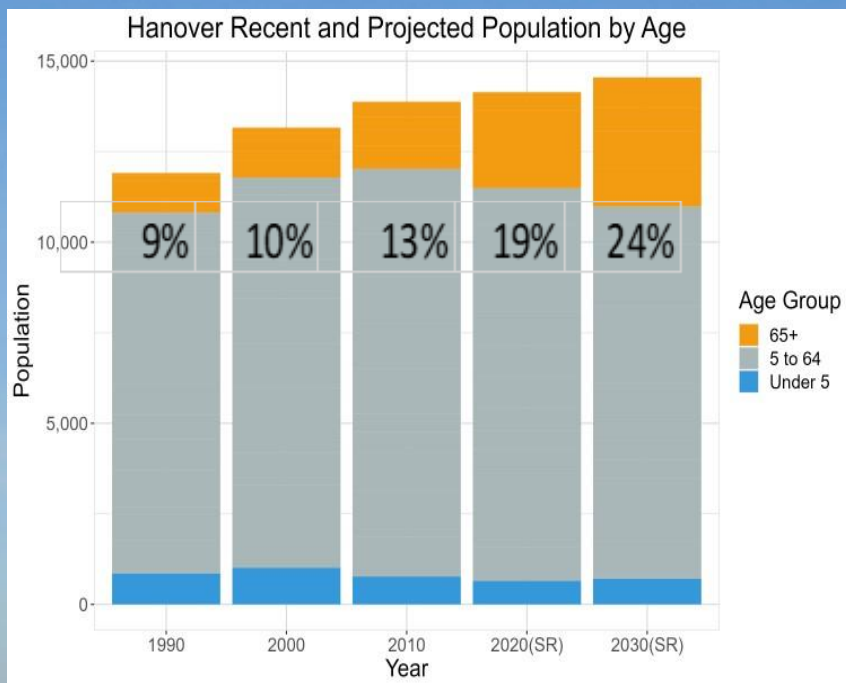


MA & Hanover Rates of Asthma Hospitalizations/100,000



2009-13 2013 -17 2017 -21
Percent of Households in Poverty

Social Vulnerability: *Population Over 65*



1990 2000 2010 2020 2030

Older Adults and Young Children

Adults over 65 and children under 5 are more likely to develop health problems on very hot days or during heat waves. Older adults are also more likely to have disabilities or mobility constraints and may need additional assistance during emergencies. They are also more likely to live alone than younger adults.

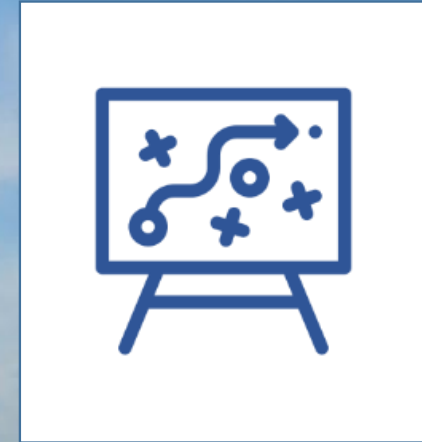
People Living Alone



Over 65 Households Living Alone: 9.9%

Seniors living alone

Workshop Exercises



Community Resilience Building Workshop

Consider Climate Hazards

- **Flooding; Intense Rain**
- **Extreme Heat**
- **Intense Wind**
- **Winter Storms/Snow/Ice**
- **Drought/Fire Hazard**




From the perspectives of:

- **Infrastructure**
- **Society**
- **Environment**


Session 1: Identify Hanover Vulnerabilities & Strengths

1. Identify features **vulnerable** to climate-related hazards
2. Identify features that are community **strengths**
3. Note **Ownership** (Town, other), **Location** (mark up map)

Hanover Community Resilience Building Risk and Actions Matrix-GROUP 					Top Priority Hazards					Priority	
ITEM #	Matrix 1: Infrastructure Features	Location Describe/Map or note TW Townwide	Ownership Town, State, NGO, Private, etc.	V and/or S	Hazard Type(s) FR, EH, WI, WS, DF	FR Flooding Intense Rainfall	EH Extreme Heat, Heat Waves	WI Intense Winds, Power Outages	WS Winter Storms Snow/Ice	DF Drought /Fire	H - M - L
					ACTIONS - list below						
I-1											
I-2											

Session 2: Identify and Prioritize Actions

1. Identify **Actions** to reduce vulnerability or reinforce strengths
2. **Prioritize** actions: high, medium, or low priority
3. Each table --select your group's overall **TOP 5 Actions**

Hanover Community Resilience Building Risk and Actions Matrix-GROUP											
V = Vulnerability S = Strength H- M- L = Priority for action					Hazard Type(s) FR, EH, WI, WS, DF	Top Priority Hazards					Priority H- M- L
ITEM #	Matrix 1: Infrastructure Features	Location Describe/Map or note TW Townwide	Ownership Town, State, NGO, Private, etc.	V and/or S		FR	EH	WI	WS	DF	
					Flooding Intense Rainfall	Extreme Heat, Heat Waves	Intense Winds, Power Outages	Winter Storms Snow/ice	Drought /Fire		
ACTIONS - list below											
I-1											
I-2											

Workshop Guidelines

- *Everyone has an equal opportunity to contribute.*
- *Please respect others' points of view.*
- *Respect limited time.*
- *Please work to complete the worksheet. Your input is important!*



Thank you for your participation!



INFRASTRUCTURE

Examples

Strength: Critical town facilities have backup generators

Vulnerability: The DPW is in a flood zone and has flooded in the past

Potential Actions: Relocate the DPW
Flood proof the DPW
Move equipment when flooding is predicted

MVP Workshop PowerPoint



SOCIETY

Examples

- Strength:** The town keeps a list of older adults in need of support during emergencies
- Vulnerability:** Some residents are not fluent in English and may not understand emergency notices
- Potential Actions:** Translate emergency materials
Partner with community organizations that can help



ENVIRONMENT

Examples

Strength: The town has extensive protected lands that provide a buffer to wetland resources

Vulnerability: The town relies on aquifers for drinking water and had to restrict water use during the last drought

Potential Actions: Provide incentives for water conservation
Encourage rain gardens to infiltrate stormwater
Restrict impervious surfaces

APPENDIX D – HANOVER CRB WORKSHOP TABLE MATRIX RESULTS

CRB Workshop participants were divided into three table groups identified as Blue, Green, and Red. Vulnerabilities and strengths were categorized as Infrastructure, Societal, or Environmental. Participants identified climate-related strengths and vulnerabilities for Hanover in each of the three categories. Potential actions were then proposed by each table group to address the vulnerabilities, and in some cases to augment a strength. Actions were then prioritized as High, Medium, or Low, and each table was asked to identify their top five priorities. The information was recorded on charts for each table and is summarized in the matrix below. **Actions in bold text** were selected as the highest priority by the entire workshop.

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
BLUE TABLE - INFRASTRUCTURE					
1	Infrastructure	Rockland Sewer Plan	V	Improved communication from Rockland; more notice; system improvements	M
2	Infrastructure	General water resources: water demand; pollutants; hydrants; pumps; partnerships	V	Partnership with MWRA: outsourcing water sources; incentivize conservation (especially summer); additional wells (private wells)	H
3	Infrastructure	Power Sub-stations: security; power lines/trees; future planning	S/V	The Police Dept is a critical asset - checks properties, enhanced security	H
4	Infrastructure	Flooding-King Street: major road flooding impacts mobility, emergency services	V	Bridge/Culvert reconstruction	H
5	Infrastructure	Population & Emergency Response-- increase in Northwest area of town	V	Keeping up with demand for aging population; increased medical calls. Substation in underserved area.	M/H
6	Infrastructure	Transportation: increased traffic; increased routes/frequency	V	Traffic improvements, working with MassDOT in the center of town. Increased public transportation, School dismissal	H

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
7	Infrastructure	Wind / Extreme Weather Events	V	Utility C339 Tree Wire project to minimize power outages; Staging sites for emergency response during weather events; Emergency Operations Center-- centralized communications; Improved tree trimming;	H
8	Infrastructure	Backup Power Generators for Critical Infrastructure	S	Preventative maintenance contracts: other municipal buildings need generators; Seek alternative funding options (grants)	M
9	Infrastructure	Sheltering: locations, conditions, alternate locations	S	Transportation to/from shelters; MOUs with shelter locations; Pre-identify locations; Inventory to stock shelters	M
10	Infrastructure	Sidewalks/Mobility	V	Identify alternative funding sources; Explore use of Chapter 90 funds, Complete Streets, etc.	M
11	Infrastructure	Roads/Traffic	V	Traffic studies; coordinate with MassDOT on state roads; Opticom emergency vehicles, turns traffic lights red	H
12	Infrastructure	Munition Site Cleanup (Police & Fire)	S	Seek alternative funding sources for cleanup	H
13	Infrastructure	Only one point of egress at one school	V	Plans for connecting road between Middle School and High School	M
14	Infrastructure	Transfer Station - Generator, improvements	V	Upgrade generator	M
BLUE TABLE - SOCIETY					

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
1	Society	Senior Citizen outreach--Meals on Wheels; transportation	S	Data system to track seniors and needs; constantly reevaluate how to communicate; collaboration--High Schoolers teaching tech	M
2	Society	Food Pantry	S	Easier access to those who use food pantry; Improved awareness/outreach/social media; Increased donations, volunteer database; Partnerships with farms & other food providers; Emergency backup power source	M
3	Society	South Shore Hub - Vulnerable Population	S		
4	Society	Water Safety - Swimming lessons; childcare; community programs	S	Increased accessibility to all socio-economic groups--grants, fundraising; Increased workforce childcare, improved transportation; Internship opportunities	H
5	Society	Social Media: communication; Reverse 911	S	Using social media to advertise community events and job opportunities; Accessibility; Understanding limitations	H
6	Society	Regional Emergency Management Response System	S	Learning from past experiences; After-action briefings; Regional training collaboration with other towns.	M
7	Society	Wellness and Health Centers; access to preventive care	S		H
8	Society	Cable Access for community	S	Awareness of asset	L

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
9	Society	Schools--communication; VO-Tech; population growth	S	School Committee Action Plan - Collaborate with VO Tech, Town gets services from students	M
10	Society	Manpower/Staff shortages-- opportunity for students	V	Improved transportation for workforce; Job training, job fairs; incentives to make jobs more attractive	H
11	Society	Local Churches/Faith Communities	S	Improved communications with Senior Center; Advertise mission work to increase community involvement	M/L
12	Society	Communications -- Emergency Services; 2-way radio signal increase	S/V	Transfer to digital dispatch; Upgrade radios; overall improvements	H
13	Society	Regional Dispatch -- Challenge: regional frequencies	V	Going digital	H
14	Society	Collaborative Training for Police and Fire; response to critical events	S		H
BLUE TABLE - ENVIRONMENT					
1	Environment	Wind / Extreme Weather Events	V	Formalize relationship with other Towns DPW, more organization; MOUs for private organizations; Public/Private cooperation for weather events	H
2	Environment	Natural/Open Space--Walking trails accessibility	S	Improved signage, wayfinding; Organized trail walks, tours, events opportunities in parks; Alternative funding for further development of open spaces	M

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
3	Environment	Tree Cover: Maintenance, tree health; Private vs. public trees	S/V	Education on why tree pruning is important, how to deal with trees; Communication between town, utility, and private individuals	M
4	Environment	Dam Removal - Flooding, ecological impact; Partnerships	S	Funding opportunity to remove old dams, grants. Beaver management/wildlife	L
5	Environment	Solar Energy-- Battery storage, logistics, opportunity to improve	S/V	Parking lots/fields to generate energy. Issue: environmental damage from putting out fires on battery storage; impacts to wetlands	M
6	Environment	Electric Vehicle charging stations	S	Increased prevalence trend in town	H
GREEN TABLE - INFRASTRUCTURE					
1	Infrastructure	New High School - Shelter (Cedar St.)	S	Add generators; increase communication on shelter	M
2	Infrastructure	Council on Aging (cooling center/generator)	S	Increase staffing and supplies at building	M
3	Infrastructure	Mall reconstruction - Hanover Crossing	S	Theater a place to shelter in high winds-- communication	M
4	Infrastructure	Town buildings with generators (not all have)	S/V	Upgrade emergency power & add to Sylvester School	H
5	Infrastructure	Fire substation in floodplain (Circuit St.)	V	Update stormwater mgt; increase pervious surface, rain gardens	M
6	Infrastructure	King Street bridge floods	V	Replaced & raised; expand size/location of culverts	H
7	Infrastructure	Broken windmill (Pond Street)	V	Remove - Alternate energy source?	L
8	Infrastructure	Water infrastructure / wells	V?	Continue to protect-aquifer / Zoning /ID new water sources--upgrade & expand / MWRA conversations	H
9	Infrastructure	YMCA (Mill Street)	S	Provide opportunities for sheltering	L

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
10	Infrastructure	Leaning Center/Daycare YMCA (Wash. St.)	S	Provide opportunities for sheltering	L
11	Infrastructure	Stormwater infrastructure	V	Upgrade & expand / Educate - communicate with businesses on maintenance	H
12	Infrastructure	Dams (feasibility analysis ongoing)	V	Expand to all dams / Educate about dam removal & its role in resiliency	H
13	Infrastructure	Downed power lines	V	ID vulnerable areas / Bury lines with redevelopment	H
14	Infrastructure	Lack of Fire Station in North Hanover	V	ID potential location for another fire station in N Hanover	M
15	Infrastructure	Permitting & Review process-- redevelopment	S	Continue to enforce and build on the process	M
16	Infrastructure	Industrial Way	V	Contractor's time to do an inspection / Partner with owners to work on MVP grant for containment	M
17	Infrastructure	Assisted Living facilities	S/V	Understand evacuation/emergency plans	M
17	Infrastructure	Cell phone coverage gaps	V	Talk with cell companies	M
GREEN TABLE - SOCIETY					
1	Society	Reverse 911	S	Increase exposure to gain sign-ups/Focus on texts & calls/make sign-up process automated	H
2	Society	Religious community - shelter, food, etc.	S		M
3	Society	Food Pantry	S		M
4	Society	Communications during emergencies when technology fails	V	Increase messaging from town/AM radio station/tower /stronger neighborhood networks /Anticipate comm (seasonally)	H
5	Society	Partnerships among Town departments	S		M
6	Society	Council on Aging	S	Work to develop alternate communication channels	H
7	Society	High Risk List	S	Continue to build out list, review & update/ Invest in software to compile data on vulnerable people	H

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
8	Society	Communication between town staff, businesses, especially commerce	S		M
9	Society	Environmental Justice community	V	Identify opportunities	M
10	Society	Tobacco Coordinator	S	Continue partnership with Board of Health	M
11	Society	Youth Sports program	S	Communications channel	M
12	Society	Recreation League	S	Communications channel	M
13	Society	CERT Team	S	Recruit people with age diversity / Increase visibility & community exposure	H
14	Society	Domestic animals during emergencies?	V	Increase outreach to people with pets / Inform people about animal licensing	M
15	Society	ALICE Training	S	Expand to businesses	H
GREEN TABLE - ENVIRONMENT					
1	Environment	Tree trimming near powerlines	V	Work with National Grid / Educate homeowners about tree trimming and insurance	H
2	Environment	Sizes of culverts and maintenance	V	Identify and prioritize culvers to upgrade	
3	Environment	Fireworks site - contaminated	V	Make the land resilient and an asset	H
4	Environment	FEMA Flood re-mapping			
5	Environment	SSRC	S		
6	Environment	Vector-borne / animal-borne diseases	V	Educate people on how to protect themselves	
7	Environment	NSRWA	S		
8	Environment	Education on tree health	V/S		
9	Environment	High water tables	V		
10	Environment	Drinkwater River	V	Education	
11	Environment	Process of issuing well permits/well protection zone	S		
12	Environment	Well impact on streams / Drinking water management	V	Conserving water and relieving stress points	

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
13	Environment	PFAS/Salt/Mercury contaminants	V	Invest in water treatment--homes, towns, private resources	H
14	Environment	Walking trails / emergency access	S/V	ATV for Fire Dept.	
15	Environment	Hybrid coyotes	V		
16	Environment	Cesspools	V		
17	Environment	Cooperation between town departments and the permitting review process	S		
18	Environment	Water quality & quantity	V	Look for ways to conserve	
19	Environment	Stormwater Bylaws	V/S	Update bylaw	H
20	Environment	Salt alternatives for snow & ice-more environmentally friendly	S		
21	Environment	Manure removal / education	S		
22	Environment	Aquifer protection zone	S		
RED TABLE - INFRASTRUCTURE					
1	Infrastructure	Drainage system aging - maintenance, encroachment in outlets	V	Research grant opportunities for infrastructure upgrades, staffing, developing prioritized plan for water strategies	L
2	Infrastructure	Stream/river encroachment	V	Public outreach and education	L
3	Infrastructure	Aging dams-impacts fish, also slows flooding	V/S	Dam repair / Dam removal	L
4	Infrastructure	Fireworks District - Contamination/explosives -- Remediation	V	Remediation & coordination with federal/state partners	L
5	Infrastructure	Generators in public buildings (some gaps)	S/V	Install/upgrade generators where needed / integration of public safety considerations in development process	M
6	Infrastructure	High Pressure Gas Lines	V	Annual maintenance program GISEP (Eversource)	H

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
7	Infrastructure	Closest regional station in Brockton / updated on annual basis (Eversource)	V		H
8	Infrastructure	Power outages - who can remove trees? Inconsistent, one side of town more heavily	V	Staff capacity and training for tree maintenance / Equipment / Funding for outsourcing services	M
9	Infrastructure	Accessibility of streets/parks (tree removal)	S/V	Pre-planning, cross-cutting conversations	L
10	Infrastructure	Water Supply-increase infrastructure capacity/ID domestic & commercial vs. Fire Dept access	S/V	Pre-planning for fire - reduce local consumption; tap into regional supply; public outreach for water conversation; upsize mains where appropriate	H
11	Infrastructure	Energy supply during heat events	V	Alternative electrical supply (collaboration with Eversource and National Grid)	M
12	Infrastructure	Senior Center-relatively new shelter	S	Advance routine management; Increase volunteer participation; Secure funding for expansion	L
13	Infrastructure	High School relatively new -secondary shelter	S	Invest in HVAC upgrades (cooling in gym, resource as cooling center)	L
14	Infrastructure	Generator supply could be better monitored - ID who to rent to	S/V	MOUs with CVS to have agreement for town to use; distribute among neighborhoods	L
15	Infrastructure	Private wells & public water supply; South Shore has shared, old infrastructure / Need for diversification, need to keep pace with increasing demand--impact/strain of new development (MBTA communities)	S/V	Identify revenue sources for infrastructure upgrades / Buildout studies for development	H
RED TABLE - SOCIETY					
1	Society	Communications affected by frequent outages	V	Multiple forms of communication (not just internet); solar-powered sign boards	H
2	Society	Expectations of recovery pace		Public outreach and communication re: ongoing effort	L

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
3	Society	No tree removal/recovery team in Town	V		L
4	Society	Identified emergency response plans	S	Cable spotlight on plan; public outreach & education; coordination/formalization of process (e.g., mall as staging area); Spotlight seasonal plans	M
5	Society	Limited trained staff / Volunteer-based	V	Compensation for volunteers; Recruit younger	H
6	Society	Unmet need for health/social services (hospitals discharge)	V	Build on collaboration between VNA and EMS; mobile integrated health; apply to state program	L
7	Society	Fire Dept. has expertise, resources for emergency management -- ID grant funding	S/V	Encourage legislators to fund; Tap Fire Dept. grant expertise	H
8	Society	Town has strong collaboration/teamwork/pro-active / strong inter-dept. relationships	S	Continue communication & relationship building; more routine check-ins (10-minute Zooms)	H
9	Society	Vulnerable populations located in areas with old structures, little access/egress; Special needs residential school (youth-adult); older active living communities; special needs facilities (Cushing Residence, Elmwood Farm, Benchmark); Limited but improving capacity	V	Procure secondary access; Communication with building maintenance; encourage all utilities to devote special attention to vulnerable populations. Eversource annual review; Liaison with utilities; Priority alignment between Town and utility	H
10	Society	Coordinated digital communication (website, social media); Reverse 911, text; Pro-active calls for residents living alone; Council on Aging (meet to compare lists);	S	Continue to maintain updated contact list; Multi-modal communications; Establish communications with those not using digital communications/without internet use; Compare/distribute emergency contacts	
11	Society	New apartments will have on-call staff member, other facilities may have less clear contact	S/V		L

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
12	Society	Mental Health team (counselors)	S	More education on these services; solidifying services (currently ARPA supported)	
13	Society	Outbound message to life-support customers (Eversource); Emails re: storm safety and preparedness;	S		M
RED TABLE - ENVIRONMENT					
1	Environment	Fireworks District - Contamination (See I-4)	V	Remediation & coordination with federal/state partners	L
2	Environment	River sediment	S/V	Volunteer river cleanup; public education	
3	Environment	Tree coverage--impacts to infrastructure/power outages (climate impacts) - See I-8	S/V		M
4	Environment	Open Space: strength-abundant; vulnerability-low maintenance and dumping	S/V	Additional volunteer or staff; neighborhood clean-ups	L
5	Environment	Proximity of new construction and water resources	V	Overarching policy for balancing growth & water supply	H
6	Environment	Water Supply in Sea Level Rise area (Beal plant)	V	Relocate or reconstruct water treatment plant	M
7	Environment	Gas leaks - upcoming efforts to address	V		
8	Environment	PFAS (water supply, air)	V	Water treatment or alternative sources; public education	H
9	Environment	Solid Waste - lack of outlets (not local) & cost / Strength: can handle waste	S/V		
10	Environment	Regional effort to create hazardous waste disposal program	S/V		

APPENDIX E –HANOVER COMMUNITY FORUM (LISTENING SESSION)

The Town of Hanover held its MVP Public Listening Session on June 14 2023, at an in-person Community Forum titled “Hazard-Ready Hanover” at Hanover Town Hall. An overview presentation was given on climate trends and vulnerabilities facing Hanover, highlights of the town’s strengths, and a summary of the highest priority actions identified by the Community Resilience Building workshop. The forum also served to present the town’s Draft Hazard Mitigation Plan 2023 Update, which was also prepared as part of this MVP grant project.

**Social Media Card for the Hazard-Ready Hanover Community Forum
Posted on Hanover’s Facebook, Twitter, and Instagram Accounts**



Floods? Blizzards? Hurricanes?

*Are you concerned about Natural Hazards like
Flooding, Heat Waves, and Extreme Storms?*

Hanover has a plan to prepare for natural hazards!

**We want to hear from you!
Please Join us at a
Public Forum
Refreshments served!**

**Wednesday, June 14, 7 PM
Hanover Town Hall
1st Floor Hearing Room
550 Hanover St, Hanover
Info: HanoverMVP@mapc.org**

Flyer Announcing the Hazard-Ready Hanover Community Forum
Posted on the Hanover Website and Distributed by Email and Hard Copy

Hazard-Ready Hanover!

Please Join Us for a Community Forum

Wednesday, June 14, 2023, 7:00-8:30 PM
Hanover Town Hall, 500 Hanover Street
1st Floor Hearing Room
Refreshments will be served!

Hanover is preparing a **Hazard Mitigation and Municipal Vulnerability Plan** to prepare for natural hazards such as flooding, heat waves, drought, and extreme storms. Come hear about the Town's plans to prepare, and add your suggestions. The plan will be online for review after the forum at www.mapc.org/resource-library/hanover-mvp/



For more information or to submit
comments on the plan, send an email to
HanoverMVP@mapc.org



Media Advisory for the Hazard-Ready Hanover Community Forum

MEDIA ADVISORY TO WATD, 99.5 AM RADIO, MARSHFIELD, MA

From: Pillsbury, Martin
Sent: Friday, June 2, 2023 11:38 AM
To: mreed@959watd.com
Cc: Linehan, Amanda <ALinehan@mapc.org>
Subject: "Hazard-Ready Hanover" Community Forum, June 14 at 7 PM

Good morning,

The Town of Hanover has a Community Forum, "Hazard-Ready Hanover," coming up on Wednesday, June 14 at 7:00 PM in Town Hall. The forum will present the draft Natural Hazards Mitigation Plan, which helps the Town prepare for hazards like flooding, extreme storms, winter hazards, and drought. The forum will also present the highlights of a day-long workshop held on April 10 as part of the town's "Municipal Vulnerability Preparedness" project funded by a state grant.

The presentation will be made by the Metropolitan Area Planning Council (MAPC), which assisted the Town in preparing the plan and the MVP Workshop (MAPC is the Regional Planning Agency for greater Boston, which includes communities on the South Shore from Quincy to Duxbury).

Attached are a meeting flyer (PDF file) and a social media card (JPG file). Any questions from the public can be directed to the project email, HanoverMVP@mapc.org

If you have any questions for me, my contact information is:

Martin Pillsbury
Director of Environmental Planning
Metropolitan Area Planning Council
60 Temple Place, Boston, MA 02111
617-939-3896 (cell)
mpillsbury@mapc.org

Best regards,
Martin Pillsbury




Hanover website post for the Hazard-Ready Hanover Community Forum

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Online Payments



Town Calendar and Events



Permits and Forms



Maps and GIS




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Town Projects



Town Meeting



Public Safety


Transfer Station



Bylaws & Regulations


Lost/Found Animals


Motor Vehicle Excise



Selling Your Home



Online Permitting



Community Television


Fireworks Site Cleanup



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Hazard-Ready Hanover Community Forum, June 14, 2023 »
Join the Town of Hanover and the Metropolitan Area Planning Council for a Community Forum at the Hanover Town Hall on...



Controlled Detonation Notification for June 8, 2023 »
A controlled detonation is scheduled at the former National Fireworks Site in Hanover, Massachusetts, for Thursday,...




Hanover Water Restriction Information 6/7/23 »
In accordance with Hanover's Water Management Act Permit (9P3- 4-21-122.01) and to ensure adequate and sustainable...



The Third Annual Don't Hide the Pride Event is One Week Away! 6/3/23 »
June is Pride Month! Join the Town of Hanover and Hanover Pride on Saturday, June 10, 2023, for the Third Annual "Don't..."



Hanover 2023 State of the Town Breakfast Tickets 6/1/23 »
Join the Town of Hanover and the Hanover Chamber of Commerce at the annual State of the Town Breakfast, on ...



Former National Fireworks Site Cleanup Update 5/31/23 »
On May 31, 2023, at approximately 2:00 pm, as part of the regular on-going cleanup efforts at the former National...

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Hanover website post for the Hazard-Ready Hanover Community Forum

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Massachusetts

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Hazard-Ready Hanover Community Forum, June 14, 2023

POSTED ON: JUNE 10, 2023 - 11:25AM

Join the Town of Hanover and the Metropolitan Area Planning Council for a Community Forum at the Hanover Town Hall on Wednesday, June 14, 2023, from 7:00 to 8:30 pm. The Town Hall is located at 550 Hanover Street, Hanover, MA.

Hanover is preparing a Hazard Mitigation and Municipal Vulnerability Plan to prepare for natural hazards such as flooding, heat waves, drought, and extreme storms. Hear about the Town's plans to prepare, and add your suggestions.

The plan will be online for review *after the forum* at mapc.org/resource-library/hanover-mvp.

Refreshments will be served!

For more information or to submit comments on the plan, email HanoverMVP@mapc.org.



Floods? Blizzards? Hurricanes?

Are you concerned about Natural Hazards like Flooding, Heat Waves, and Extreme Storms?

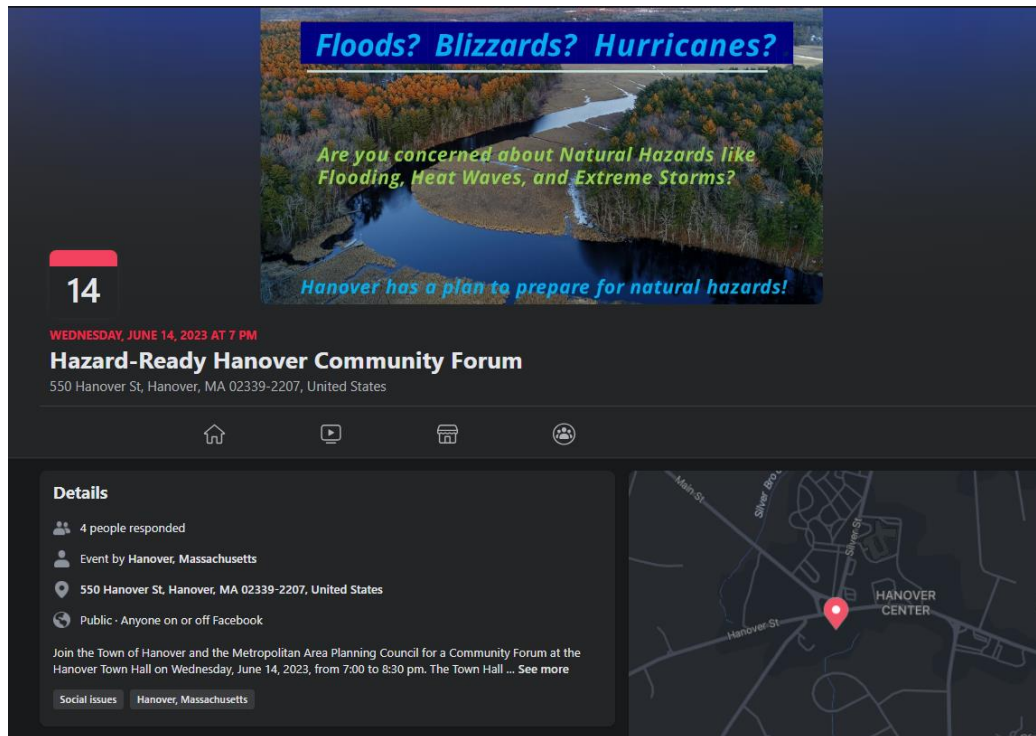
Hanover has a plan to prepare for natural hazards!

We want to hear from you! Please join us at a Public Forum. Refreshments served!

Wednesday, June 14, 7 PM
Hanover Town Hall
1st Floor Hearing Room
550 Hanover St, Hanover
Info: hanover@mapc.org

Town of Hanover • 550 Hanover Street, Hanover, MA 02339 • 781.826.5000
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Town of Hanover Facebook Post



Floods? Blizzards? Hurricanes?

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Hanover has a plan to prepare for natural hazards!

14

WEDNESDAY, JUNE 14, 2023 AT 7 PM

Hazard-Ready Hanover Community Forum

550 Hanover St, Hanover, MA 02339-2207, United States


Home Video Live Location Friends

Details



- 4 people responded
- Event by Hanover, Massachusetts
- 550 Hanover St, Hanover, MA 02339-2207, United States
- Public · Anyone on or off Facebook

Join the Town of Hanover and the Metropolitan Area Planning Council for a Community Forum at the Hanover Town Hall on Wednesday, June 14, 2023, from 7:00 to 8:30 pm. The Town Hall ... See more

[Social Issues](#) [Hanover, Massachusetts](#)



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Hanover, Massachusetts created an event. 3h · 🌐



Are you concerned about Natural Hazards like Flooding, Heat Waves, and Extreme Storms?

Hanover has a plan to prepare for natural hazards!

We want to hear from you! **Wednesday, June 14, 7 PM**

WED, JUN 14 AT 7 PM

Intro

Official Town of Hanover, Massachusetts

Twitter: @hanoverma
Instagram: @hanovermassachusetts

Hanover, Massachusetts

550 Hanover St, Hanover, MA, United States, Massachusetts

(781) 826-5000

communications@hanover-ma.gov

Write a comment...

Hanover, Massachusetts ✓ 18h · 🌐

Town of Hanover Twitter Post



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Town of Hanover, Massachusetts, United States of America

📍 Hanover, MA [🔗 hanover-ma.gov](https://www.hanover-ma.gov) 📅 Joined February 2011

44 Followers 2,167 Followers



Hanover MA

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Hanover MA @HanoverMA · 2h



Join the Town of Hanover and the Metropolitan Area Planning Council for a Community Forum at the Hanover Town Hall on Wednesday, June 14, 2023, from 7:00 to 8:30 pm. Learn more at bit.ly/3qAGsIB

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Refreshments served!

Wednesday, June 14, 7 PM
Hanover Town Hall
1st Floor Hearing Room
550 Hanover St, Hanover
Info: HanoverMVP@mapc.org



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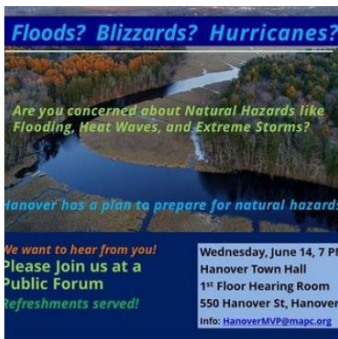
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hanover-ma.gov

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Town of Hanover
HAZARD-READY HANOVER COMMUNITY FORUM

**Hazard Mitigation Plan and
Municipal Vulnerability Preparedness
Public Listening Session**

**June 14, 2023, 7:00 PM\
Hanover Town Hall**

AGENDA

Welcome
MVP and Hazard Mitigation Overview
Climate Change Observations and Projections
Climate Impacts on Hanover
Hanover Strengths and Action Priorities from the MVP Workshop
Feedback: Share your questions, observations, and priorities

MVP PUBLIC LISTENING SESSION AND HMP DRAFT PLAN PRESENTATION

Wednesday, June 14, 2023, 7:00 PM
Hanover Town Hall

Attendees

Timothy Kane	Hanover Fire Department
Victor Diniak	Department of Public Works
Christine Stickney	Town Planner'
Ann Lee	Assistant Town Manager, CDMI Director
Jason Cavallaro	Hanover Fire Dept/Emergency Management Director
David Ladd	Hanover Citizen
Becky Malamut	North and South Rivers Watershed Association
Doreen Zeller	Hanover VNI
Martin Pillsbury	Metropolitan Area Planning Council

Questions and Discussion

David Ladd discussed approaches to emergency management and described the difference between tactics and logistics. He emphasized the need to focus on logistics when considering how the town can respond to hazardous events in the immediate aftermath as well as addressing ongoing longer-term needs. A few examples include logistical issues during emergency events such as:

- Health Care – lack of access to medications,
- Keeping roads open to allow for emergency access
- Supplying fuel
- Emergency generation at critical facilities such as the town's fuel pump

Mr. Ladd also addressed emergency communication, discussing various modes (UHF/VHF and Simplex/Multiplex), deployable antennas, and internet connectivity (hard line only vs. backup to Wi-Fi / Satellite).