The Town of Southampton

2025 Hazard Mitigation Plan Update

Adopted by the Southampton Select Board on _____

Prepared by:
The Southampton Hazard Mitigation Planning Committee

with technical assistance from

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Christine Fowles, Select Board Chair
Randall Kemp, Highway Superintendent
Ian Illingsworth, Police Chief
Richard Fasoli, Fire Chief
Gerri Swanson, Public Health Director
Brett Simmons, Water Department Superintendent

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1. HAZARD MITIGATION

The Federal Emergency Management Agency (FEMA) and the Massachusetts Emergency Management Agency (MEMA) define Hazard Mitigation as any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards such as flooding, storms, high winds, hurricanes, wildfires, earthquakes, etc. Mitigation efforts undertaken by communities will help to minimize damages to buildings and infrastructure, such as water supplies, sewers, and utility transmission lines, as well as natural, cultural and historic resources.

Planning efforts, like the one undertaken by the Town of Southampton and the Pioneer Valley Planning Commission, make mitigation a proactive process. Pre-disaster planning emphasizes actions that can be taken before a natural disaster occurs. Future property damage and loss of life can be reduced or prevented by a mitigation program that addresses the unique geography, demography, economy, and land use of a community within the context of each of the specific potential natural hazards that may threaten a community.

Preparing, and updating every five years, a local natural hazard mitigation plan before a disaster occurs can save community money. Moreover, it facilitates post-disaster funding. Costly repairs or replacement of buildings and infrastructure, as well as the high cost of providing emergency services and rescue/recovery operations, can be avoided or significantly lessened if a community implements the mitigation measures detailed in the plan. FEMA requires that a community adopt a natural hazard mitigation plan as a condition for mitigation funding. The Hazard Mitigation Grant Program (HMGP) and the Flood Mitigation Assistance Program (FMA) are programs with this requirement.

Planning Process

In 2023, the Southampton Select Board agreed to begin the process of updating the Town's Hazard Mitigation Plan. The Plan update process in Southampton involved a seven-member workgroup:

- Scott Szczebak, Town Administrator
- Christine Fowles, Select Board Chair
- Randall Kemp, Highway Superintendent
- Ian Illingsworth, Police Chief
- Richard Fasoli, Fire Chief
- Gerri Swanson, Public Health Director
- Brett Simmons, Water Department Superintendent

The natural hazard mitigation planning process for the Town of Southampton included the following tasks:

- Reviewing and incorporating existing plans and other information including considering how development that has happened in last seven years since the previous Hazard Mitigation plan was approved by FEMA in 2008 might have affected the Town's vulnerability to Natural Hazards.

- Updating the documentation of natural hazards that may impact the community since the previous plan
- Conducting a Vulnerability/Risk Assessment to identify the infrastructure at the highest risk for being damaged by the identified natural hazards, particularly flooding.
- Identifying and assessing the policies, programs, and regulations currently being implemented to protect against future disaster damages.
- Identifying deficiencies in the current capabilities and strategies, and establishing goals for updating, revising and/or adopting new strategies.
- Adopting and implementing the final updated Natural Hazards Mitigation Plan.

The key product of this process is the development of an Action Plan with a list of prioritized mitigation strategies to be implemented over the next five years.

Hazard Mitigation Committee Meetings

Meetings of the Hazard Mitigation Committee, all of which took place at Town Hall were held on the dates listed below. Agendas for these meetings are included in Appendix D.

- August 15, 2024
  Mimi Kaplan from PVPC provided an overview of the HMP document and planning process. The Committee then reviewed the natural hazard risk analysis and updated the hazards and the risk levels.

- September 26, 2024
  The Committee met with a representative from Holyoke Water Works to discuss the condition, and maintenance of the Tighe-Carmody dam, as well as emergency protocols. They also updated the list of critical facilities.

- November 7, 2024
  The Committee updated the previous hazard information, reviewed the previous mitigation strategies, and identified the status of the strategies.

- December 10, 2024
  The Committee met with the municipal Eversource representative to discuss power outages and restoration, and then completed the mitigation capabilities assessment.

- January 21, 2025
  The Committee finalized the status of previous mitigation strategies and identified new mitigation strategies to implement. The Committee also updated all outstanding information in the infrastructure and critical facilities sections.

- February 25, 2025
  The Committee finished identifying new mitigation strategies to implement, and determined the responsible parties, timeline, cost, possible funding sources, and priority level for each strategy.

Agendas and sign-in sheets for each meeting can be found in the Appendix. While not all members of the Hazard Mitigation Committee were able to attend each meeting, all members collaborated on the plan and were updated on progress by fellow committee members after meetings occurred.

Participation by Stakeholders

A variety of stakeholders were provided with an opportunity to be involved in the development of the Southampton Hazard Mitigation Plan. The different categories of stakeholders that were involved, and the engagement activities that occurred, are described below.

Local and regional agencies involved in hazard mitigation activities

The involvement of the Town Administrator in the Plan update assured input and participation from all Town Departments, as he provided updates on the Hazard Mitigation planning process at his regular meetings with Town department heads, and gave department heads the opportunity to comment and provide input on the plan update process. All Town staff and departments were also informed of the public meetings on the plan update and had the opportunity to participate in those meetings as well as the meetings of the Hazard Mitigation planning committee as all meeting notices were posted per requirements of the State Open Meetings law. All input received was integrated into the plan. The kind of input received included local information not readily available through internet research, updates on the status of implementation of the previous action plan and changes in local rules and regulations as well as other updates on capabilities.

The Pioneer Valley Planning Commission is a regional planning agency for 43 towns and cities in Massachusetts' Hampden and Hampshire Counties. PVPC regularly engages with the Town of Southampton as part of its regional planning efforts, which include the following:

- Developing Our Next Future: An Action Plan for Building a Smart, Sustainable and Resilient Pioneer Valley. “Our Next Future” was created to chart a course for a more vibrant, competitive, sustainable and equitable region. It is a regional plan, designed to achieve success through promoting collaboration of communities on a regional basis.
- Developing and working to implement the Pioneer Valley Regional Land Use Plan, Valley Vision 2, which advocates for sustainable land use throughout the region and consideration of the impact of flooding and other natural hazards on development.
- Developing and working to implement the Pioneer Valley Climate Action and Clean Energy Plan, which assesses the impact that climate change will have on the region and recommends strategies for mitigation that can be implemented by local municipalities and businesses.
- Collaborating with state agencies, such as the Department of Conservation and Recreation, to maintain inventories of critical infrastructure throughout the region.
- Collaborating with the Town of Southampton on climate change mitigation, adaptation and resilience measures through the Green Communities program and technical assistance to increase resiliency through zoning bylaw updates.

All of these PVPC initiatives considered the impact of natural hazards on the region and strategies for reducing their impact to people and property through hazard mitigation activities. The facilitation of the Southampton Hazard Mitigation Plan by PVPC ensured that the information from these plans and

collaborations was incorporated into the Hazard Mitigation Planning process. PVPC staff regularly present to their Executive Committee and Commission (representatives from the 43 cities and towns that comprise the Pioneer Valley), when new projects are launched and when funding opportunities are available. As result, all the communities in the region were informed of Southampton's hazard mitigation plan development process and encouraged to comment. In addition, PVPC is facilitating hazard mitigation work in many other communities in Hampden and Hampshire counties concurrent to working with Southampton, so all of these municipalities were aware of and had the opportunity to share hazard mitigation information with each other.

Agencies that have the authority to regulate development

Southampton is a relatively small community with limited professional staff. The entities that have the authority to regulate development include the Select Board, the Planning Board, the Conservation Commission, the Board of Health and the Highway Superintendent. The Select Board was represented on the hazard mitigation planning committee by the Town Administrator and Member Charlie Kanicki, and the Planning Board was consulted by members of the hazard mitigation plan committee. The Emergency Management Director, Fire Chief, and the Highway Superintendent served on the Committee and provided input into the plan update process.

In addition, the Pioneer Valley Planning Commission, as a regional planning authority, works with all agencies that regulate development in Southampton, including state agencies, such as the Department of Conservation and Recreation and MassDOT. This regular involvement ensured that during the update of the Southampton Hazard Mitigation Plan, the operational policies and any mitigation strategies or identified hazards from these entities were incorporated into the Hazard Mitigation Plan. PVPC is regularly involved in land use, transportation, and environmental planning initiatives in Southampton and surrounding communities. Regular feedback received from these other initiatives were incorporated into the hazard mitigation planning process.

Participation in the Planning Process by Stakeholders

Participation by Neighboring Communities
Emails were sent to all neighboring communities before the public meetings, inviting them to attend and to provide input on the plan. Southampton’s neighboring communities are Easthampton, Montgomery, Northampton, Westfield and Westhampton. The press releases also encouraged citizens and municipal officials from nearby communities to comment on Southampton’s plan by e-mailing or calling staff contacts at PVPC or the Town. The Pioneer Valley Planning Commission’s regional scope ensured that residents and government officials throughout the Pioneer Valley saw the press releases and request for comments. We did not receive any comments from these neighboring municipalities on Southampton's draft plan update.

Representatives of business, academia, and other private organizations
The Eversource Community Relations Specialist attended the third committee meeting to discuss issues with power outages in the Town and to answer questions. She was also invited to the public meetings and to review the draft plan. An invitation to the second public meeting was also sent to the Chamber of Greater Easthampton, which represents Southampton, and to the Superintendent of Hampshire Regional School District.

Representatives of non-profit organizations
Staff from the First Congregational Church of Southampton were invited to the second public meeting. The Town has an MOU with the Church for use as a cooling/warming center during extreme temperature and weather events. Flyers for the public meetings were also distributed to the Council on Aging and publicized to older adults, who are a socially vulnerable population in Southampton.

General Public Involvement in the Plan
Two public planning sessions were held as part of the development of the Southampton plan – on November 12, 2024 and September 2, 2025. Both meetings occurred after the Hazard Mitigation Committee had provided input on hazards and mitigation strategies relevant to the community. Notice of both public meetings was posted at the Southampton Town Hall in compliance with the Commonwealth of Massachusetts' open meeting law. The meetings were also advertised with flyers posted on the Town website and Facebook page, and by press releases issued by PVPC to area media outlets. These documents are included in the Appendix. The meetings were held during Select Board meetings, and members of the public were invited to attend. There were seven attendees at the first public meeting, both in person and remote. Questions and comments included the following: Whether open space properties beneficial for absorbing floodwater could be identified, concerns about drought, fire, and the need for pumper truck, and if cooling centers and emergency shelter were included in the plan. The following were the comments at the second public meeting:

- A suggestion to remove the strategy about having the Fire Department monitor Tier 2 sites, as it was determined that there are no longer Tier 2 sites in Southampton
- A request to include a strategy of purchasing a pumper tanker truck for fire response. The Town has already applied for funding.

On October 28, 2024, the Pioneer Valley Planning Commission sent a press release to all area media outlets announcing that the hazard mitigation planning process was underway and that the first public outreach meeting would be held on November 12, 2024. On August 13, 2025, PVPC sent out another press release stating that the second public outreach meeting would take place on September 2 and that a draft of the final plan had been placed on PVPC's website. The press release also indicated that hard copies of the plan were available at PVPC's offices and at Southampton Town Hall, and that all residents, businesses and other concerned parties of Southampton as well as residents, municipal officials, business owners and other stakeholders in surrounding communities were encouraged to comment on the plan by e-mailing or calling staff contacts at PVPC or the Town. A list of media organizations that were sent the two press releases is provided in the Appendix.

The Pioneer Valley Planning Commission's regional scope ensured that residents and government officials throughout the Pioneer Valley saw the press release and request for comments. At the same that PVPC was working with the Town of Southampton on their Hazard Mitigation plan update, PVPC staff were also working with many other communities in Hampshire and Hampden counties on their HMP updates. This provided an opportunity to share information about Southampton's HMP with these other communities, and to let them know when the public meetings were and to invite them to review the draft plan.

Public participation will be a critical component of the Hazard Mitigation Plan maintenance process, as discussed in Chapter 6: Plan Review, Evaluation, Implementation, and Adoption. The HMP Committee will hold all meetings in accordance with Massachusetts open meeting laws and will hold an annual

review of Southampton's Hazard Mitigation Plan. In addition to these annual meetings, the Town website will contain a tab for the Hazard Mitigation Plan, where a copy of the plan will be posted. During annual review meetings, the Emergency Management Director will make attendees aware of the presence of the HMP plan on the town's website.

Incorporation of Other Planning Documents

Existing plans, studies, reports and technical information were incorporated throughout the planning process. This included a review and incorporation of significant information from the following key documents:

- ***Southampton Comprehensive Emergency Management Plan*** (particularly the Critical Infrastructure Section) – the Critical Infrastructure section was used to identify those infrastructure components in Southampton that have been identified as crucial to the function of the Town; also, this resource was used to identify vulnerable populations as well as potential emergency shortcomings.
- ***Subdivision Rules and Regulations*** – These were used to identify policies and actions the Town is already taking to reduce hazard risks and improve resiliency.
- ***Southampton Zoning Bylaw -*** The Town's Zoning Bylaw was used to identify those actions that the Town is already taking that are reducing the potential impacts of a natural hazard (i.e. floodplain regulations) and to improve climate resiliency.
- ***Massachusetts State Climate Adaptation and Hazard Mitigation Plan*** - This plan was used to ensure that the Town's HMP was consistent with the State's Plan. There was also natural hazard and climate change data that was utilized for Southampton's HMP.
- ***Southampton Open Space and Recreation Plan*** – This plan was used to provide information about natural resources in Southampton, as well as growth and development patterns.
- ***Southampton MVP Summary of Findings*** – This plan also assessed climate change impacts and natural hazards that affect the Town, as well as strategies to pursue to increase resilience. Therefore, as this plan was very pertinent to the HMP, it was reviewed closely, and the actions identified in the plan informed the actions identified for the HMP.
- ***Southampton Master Plan*** – This plan discussed the impact of natural hazards and climate change on the Town, and included strategies to increase resilience and reduce risk. Some of these strategies were incorporated into the HMP.
- ***FEMA Flood Insurance Study for Hampshire County (1979)*** - This report was released in 1979 as the most updated Flood Insurance Study (FIS) for Hampshire County. Preliminary new maps for Hampshire County were released in September 2025. The FIS revises and updates information on the existence and severity of flood hazards for Hampshire County, including for Southampton, however this report is quite outdated as the last update was 1979. The FIS and accompanying Flood Insurance Rate Maps (FIRMs) include data on flooding sources, FEMA flood zone designations, base flood elevations, and discharge rates of flooding sources. This data was reviewed and incorporated into the plan update process by informing the risk assessment for flooding.

Elements of the previous HMP were also incorporated into other Town plans and documents as well. The critical facilities list and hazard analysis informed the update of the Comprehensive Emergency Management Plan. The flooding analysis in particular informed the zoning bylaw updates and the update of the Open Space and Recreation Plan (helping to determine which parcels to target for

protection would be most valuable for flood storage). The hazard analysis, vulnerability assessment, and critical facilities list informed the Municipal Vulnerability Preparedness planning process and Summary of Findings, as well as the Master Plan.

2. LOCAL PROFILE

Community Setting

Southampton is located in Hampshire County in Western Massachusetts, just west of the Connecticut River Valley. The town center is located about 8 miles southwest of Northampton, and about 12 miles northwest of Springfield. Southampton is bordered by the towns of Westhampton and Easthampton to the north; Holyoke to the east; Westfield to the south; and Montgomery and Huntington to the west. The landscape is comprised of expansive farmlands interspersed with forested hills and ranges, which are all bisected by the Manhan River. The town covers about 29 square miles in land area, and it has a population of 6,224 as of 2020.

Town History

The land that would become the town of Southampton was part of the homeland of the Nonotuck people, who lived in the area around modern-day Easthampton, Northampton, Hadley, and Amherst. European colonists began settling here in 1730, and at the time it was the southern part of Northampton. Southampton was incorporated as a separate district in 1753, and became an independent town in 1775.

Throughout much of its history, the town's economy was largely based on agriculture. During the 19th century, the rich farmland in Southampton was used for crops such as corn, rye, oats, potatoes, and tobacco, while the less productive land was used for pastureland, which supported a prosperous dairy industry. The extensive forests in Southampton also provided a significant amount of lumber, which led to the establishment of a number of sawmills throughout the town. Aside from these sawmills, though, there was only limited industrial development in the town, consisting primarily of small-scale mills. These included a grist mill, woolen mill, tannery, and facilities for producing goods such as whips, chairs, and piano legs.

During the 1830s and 1840s, the New Haven and Northampton Canal passed through Southampton, closely following the course of the Manhan River. The canal, which was also known in Connecticut as the Farmington Canal, extended from New Haven northward to Northampton, and it functioned as an alternative to the Connecticut River for inland transportation in western New England. However, the canal soon became obsolete with the advent of railroads, and in the late 1840s the canal route was converted into the New Haven and Northampton Railroad.

The construction of the canal coincided with Southampton's 19th century peak in population. During the 1830 census, the town had 1,244 residents. As was the case in rural farming communities throughout Western Massachusetts, this number steadily declined over the course of the 19th century, eventually falling to 814 residents by 1920. However, suburbanization in the post-World War II era saw the reversal of these trends, and Southampton experienced rapid population grown during the second half of the 20th century.

Geography

Southampton is located in the valley of the Manhan River, which flows roughly southwest to northeast through the town. The river originates at the Tighe Carmody Reservoir, which provides drinking water for the city of Holyoke. From the reservoir, the river flows through a portion of Westfield and then back into Southampton, where it passes to the east of the town center and eventually into Easthampton, before emptying into the Connecticut River. A number of small tributaries flow into the Mahan River, including the North Branch, which forms a portion of the northern boundary of the town. Almost the entire town is located within the Manhan River watershed, with the exception of the southeast corner of Southampton, which drains into the Westfield River.

Aside from the Manhan River, other water resources in Southampton include Pequot Pond, Alder Pond, White Reservoir, and Lost Pond. Many other smaller bodies of water are scattered across the landscape of Southampton, primarily located along streams and in wooded areas. In total, there are about 490 acres of open water in Southampton, and about 270 acres of swamps and other wetlands.

The topography in the eastern part of the town consists of low rolling hills. To the west, the topography rises much higher, marking the beginning of the upland region between the Connecticut and Housatonic river valleys. The highest point in the town is Pomeroy Mountain, which rises 1,171 feet above sea level.

Demographics

As of the 2020 U.S. Census, Southampton had a population of 6,224. The population in 2010 was 5,792 and in 2000 it was 5,387, so the population in Southampton has been increasing slowly but steadily for the past 20 years. The population increased approximately 16% from 2000 to 2020. From 2020 to 2024, the population growth appears to have slowed, however, with an estimated 2024 population of 6,181.

Overall, 19.4% of the town's population is under the age of 18, and 22.2% of the population is 65 and older. The median age is 47.8, which is significantly higher than both the statewide (39.9 years) and countywide (38.3 years) medians. The racial composition of the population is 92.8% White, 0.9% Asian, 0.5% Black, and 0.7% of another race. A total of 5.2% of the population identified as being of two or more races, and 3.3% of the population identified as Hispanic or Latino of any race.

The U.S. Census Bureau's American Community Survey (ACS) provides additional demographic information about Southampton. According to the 2023 ACS 5-year estimates, the median household income in Southampton is $125,534, which is the highest median income of the 20 cities and towns in Hampshire County. The town also has the third-lowest poverty rate (3.3%) in the county. As is the case throughout Hampshire County, Southampton has high rates of educational attainment, with an estimated 41% of residents aged 25 or older having a bachelor's degree or higher.

Because Southampton is primarily a suburban residential community, the vast majority of residents are employed elsewhere. As of 2022, 91.3% of employed Southampton residents worked somewhere outside of the town. The largest employment destinations for Southampton commuters are Northampton and Springfield, followed by Easthampton, Westfield, and Holyoke. According to the 2023 ACS 5-year estimates, 88% of employed Southampton residents drive to work, either alone or in a carpool. Approximately 11.3% work from home, and only 0.3% commute via other means, including

walking or utilizing public transportation. The mean commute time for Southampton residents is 21 minutes.

Housing

As of the 2020 U.S. Census, there were a total of 2,551 housing units in Southampton, of which 105 were vacant at the time of the census. Of the occupied housing units, 87.2% were owner-occupied, and 12.8% were renter-occupied.

According to the Census Bureau's 2023 American Community Survey (ACS) 5-year estimates, about 85% of the occupied housing units in Southampton are single-family detached units. Another 4% of units are single-family attached, 3% of housing units are in 2-unit buildings, 4% are in 3 or 4-unit buildings, 2% are in 5 to 9-unit buildings, and 3% are in buildings with 10 or more units.

The existing housing stock primarily dates to the late 20th and early 21st centuries. Overall, 70% of occupied housing units in the town were built between 1960 and 2009, compared to just 20% built in 1959 or earlier, and 10% built in 2009 or later.

Land Use and Infrastructure

Land Use

According to the 2024 assessor's data, residential development is the single largest land use category in Southampton, comprising about 5,200 acres, or about 29% of the town's area. The vast majority of this is single-family homes, aside from about 100 acres of higher density housing, including two-family and three-family homes, apartment complexes, and condominiums.

Nearly 3,900 acres of land, or about 22% of the town, is classified as tax exempt, which primarily includes protected open space areas that are owned by state or local governments or by nonprofit organizations. An additional 2,120 acres (12% of the town) is forest land, most of which is enrolled in the Chapter 61 program, and 1,230 acres (7% of the town) is recreational land, the majority of which is in the 61B program.

The other major land use is agriculture, which comprises about 2,940 acres, or about 16% of the town. Much of this land is enrolled in the Chapter 61A program, which provides limited protection to the land.

A total of 941.5 acres (5% of the town) is classified as vacant developable or potentially developable land, and about 1,480 acres (8% of the town) is vacant residential land that is classified as undevelopable.

Commercial and industrial uses comprise only a small portion of Southampton, with about 96 acres of commercial use (0.5% of the town), and about 22 acres of industrial use (0.1% of the town).

Transportation

Roads

Southampton has approximately 70 miles of state-owned and town-owned public roads, including Route 10, which is the primary north-south transportation route through the town. Route 10, known as College Highway, passes through the town center, and it links Southampton to Westfield to the south and Easthampton and Northampton to the north.

Other major roads in Southampton include Pomeroy Meadow Road and Glendale Road, which connect the town to the western parts of Easthampton and Northampton; Cold Spring Road, which connects the town to Westhampton and other points to the northwest; and County Road North, which runs along the eastern border of the town.

Southampton has few sidewalks, with only about 3 miles of sidewalks. These segments are generally isolated from each other, and can be found on Route 10 in the town center, and also scattered throughout the town in various subdivisions.

Public Transportation

Southampton does not have any regularly scheduled public transportation, with the exception of the Nashawannuck Express. Operated by the Pioneer Valley Transit Authority, this Flex/Van service primarily serves Easthampton, but it has a stop at the Big Y in Southampton, which is located just over the border from Easthampton on Route 10.

Bicycle Trails

Southampton currently has limited bicycle infrastructure, consisting primarily of a shared-use path along Route 10 in the town center. The town also includes the southwestern terminus of the Manhan Rail Trail, which extends for about 500 feet into the town at Coleman Road. The town is currently in the process of planning an extension of this trail along the disused railroad right-of-way, with the long-term goal of eventually connecting it to the Columbia Greenway in Westfield.

Railroads

There are no active rail lines in Southampton. The town was formerly served by a railroad that ran along the alignment of the former canal, and for many years this line was operated by the New York, New Haven & Hartford Railroad. However, the line was abandoned in the second half of the 20th century, and its right-of-way is now the subject of a proposed rail trail.

Public Water and Sewer Service

Southampton's water supply system relies on two sources and serves approximately 76% of town residents. A new well (Glendale well O2) was drilled in January of 2002, replacing Glendale Well 01 which had served the town since 1963. This well is located adjacent to the intersections of Glendale Road and College Highway and draws water from the acclaimed Barnes Aquifer. Glendale Well 02 is the primary source of water for the Town of Southampton. A new treatment plant was built in 2021 to accommodate updated treatment equipment. Treatment processes includes the addition of Sodium Hypochlorite for disinfection and Potassium Hydroxide for pH adjustment. Water is treated and stored in a 750,000 gallon tank located on Little Mountain near Wolcott Road. Supplemental water is purchased from the City of Easthampton when the primary water source cannot keep up with high water demand (typically May

through September). This permanent, metered interconnection (Easthampton Booster Station) that was constructed in 2021 on donated land, just over the Town line on Main Street in Easthampton.

Southampton does not have a public sewer system nor a publicly-owned wastewater treatment plant. Town residents and businesses rely on individual septic systems. Excessive nutrient loading from surrounding on-lot septic systems pollutes Pequot Pond and contributes to weed growth. Residents have been concerned about this issue and initiated a feasibility study by Tighe and Bond for sewage service in the area.

Community Development and Development Trends

Southampton's historical development patterns have been similar to many other formerly rural farming communities in Western Massachusetts. As with the other towns in the region, this has been characterized by rapid growth in the early 19th century, followed by population decline in the second half of the century, as the regional economy shifted from agriculture to industry. This decline was then reversed with suburbanization during the post-World War II era, as widespread car ownership made it easier for people to live in small towns and commute to their workplaces in larger cities and towns.

In 1940, Southampton had a population of just 950. However, the town's population would more than quadruple over the next 40 years, reaching 4,137 by 1980. The town continued to grow at a steady pace during the late 20th and early 21st centuries. From 2010 to 2020, the town grew from 5,729 to 6,224 residents. This represents an increase of 7.5%, which made it the fastest-growing community in Hampshire County during this period.

Overall, despite the substantial growth over the past 80 years, Southampton retains much of its rural character is still intact. However, because of this and its central location, the town has become an attractive community for residential development. Some farms, predominantly dairy, still exist today, and there are many small and home-based businesses. But, the town has more recently seen a trend of single-family homes on large lots, apartment complexes, and summer cottage conversions.

Zoning

Zoning and other land use regulations constitute Southampton's blueprint for its future. Land use patterns over time will continue to look more and more like the town's zoning map until the town is finally "built out"—that is, there is no more developable land left. Therefore, in looking forward over time, it is critical that the town focus not on the current use and physical build-out today, but on the potential future uses and build-out that are allowed under the town's zoning map and zoning bylaws. Zoning is the primary land use tool that the town is using to manage development and direct growth to suitable and desired areas while also protecting critical resources and ensuring that development is in keeping with the town's character.

The Southampton Zoning Bylaw establishes six base zones, and two overlay zones:

- Three residential zones –Residential-Rural (RR), Residential-Neighborhood (RN), Residential-Village (RV);
- Two commercial zones – Commercial-Village (CV), Commercial-Highway (CH);

- One industrial zone – Industrial Park (IP);
- Two overlay zones – Floodplain(FP); and Water Supply Protection District.

Almost 98% of the town is zoned for residential, including 60% Rural Residential, 21% Rural Neighborhood, and 16% Rural Village. Industrial Park zoning covers 1.2% of the town, Commercial Highway covers 0.8%, and Commercial Village 0.3%.

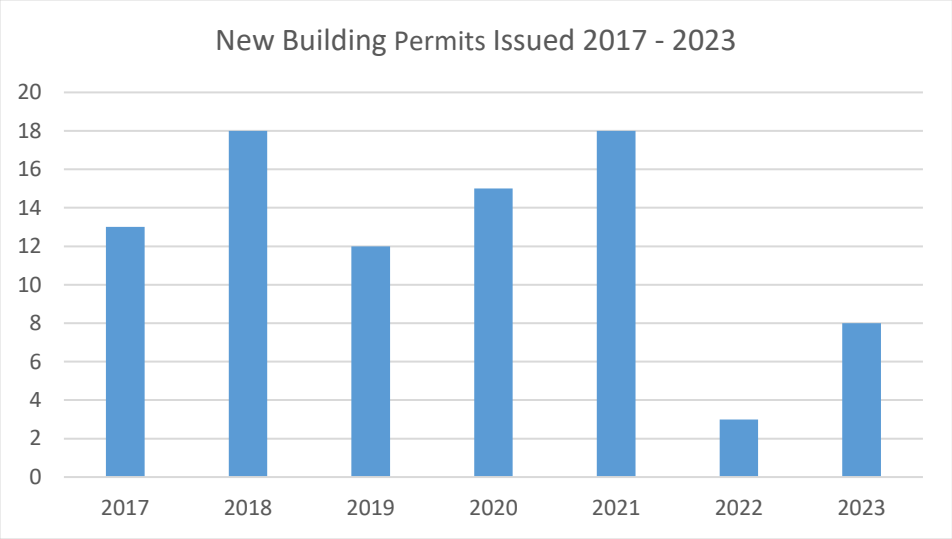
Although appropriate zoning is all relevant to protecting the health and safety of the Town residents, two of Southampton's districts are specifically relevant to natural hazard mitigation. These are outlined here:

- Floodplain - The floodplain overlay applies to those areas within the boundary of the one-hundred-year flood that are considered hazardous according to FEMA. It prohibits any new development unless proved it will not cause any increase in flood levels, and limits some uses for preventing potential flood damage.
- Water Supply Protection - The purpose of this overlay district is to protect and preserve Southampton's groundwater resources from potentially damaging pollution or environmental degradation by regulating certain uses within the district. The regulations state specific prohibited and restricted uses, regulates drainage, and details special permit procedures.

The Zoning Bylaw also establishes a Site Plan/Special Permit Approval procedure for specific uses and structures within Southampton. This review allows the Special Permit Granting Authority the ability to review development to ensure that the basic safety and welfare of the people of Southampton are protected, and includes several specific evaluation criteria that are relevant to natural hazards.

Current Development Trends

The town's moderately sloping hills, soil conditions, and reliance on private septic systems and wells have limited development potential. However, Southampton is currently zoned to encourage large areas of rural residential development on large lots (i.e. suburban sprawl). The majority of town, around 60%, is zoned Rural Residential. Since zoning can be considered a snapshot of a community's future, the town is currently planned to build out in a low-density pattern of residential sprawl. This pattern has continued in the seven years since the last plan with an average of 12 new building permits issued each year from 2017 – 2023. This is a decrease, however, from the 22 new building permits on average pulled each year from 2011-2015. Not all building permits pulled in a year result in built residences that same year. Other than residential building, there has been no major new development in Southampton since the previous Hazard Mitigation plan was completed, and none of the new building is happening in major hazard areas. The chart below shows the number of new residential building permits from 2017 – 2023.



Developable Land

As described in the Land Use section, 941.5 acres of land are classified as developable or potentially developable as of 2024. The majority of this is residential land, but there are also significant amounts of developable commercial and industrial land, as shown in the table below.

Category of Vacant Land	Acres
Residential, Developable	713.0
Residential, Potentially Developable	121.5
Commercial, Developable	41.5
Industrial, Developable	65.5

Development Trends

Since the last plan, there have been two new subdivisions built in Town, with an additional two subdivisions currently in development. There have not been any major commercial developments built, just some redevelopment of previously built-out areas. Single-family ANR development has continued at a moderate pace, with an average of 12 new building permits issued each year since 2017. However, as mentioned above, this is a decrease from the average of 22 new building permits issued yearly between 2011 and 2015.

Increase in Hazard Risk from New Development

The amount of new residential development in Southampton has slightly increased the Town's vulnerability to flooding, but not significantly affected the Town's vulnerability to other hazards. The

Building Inspector confirmed that two new houses were permitted to be built in floodplain areas, however these areas were not determined to be significantly at risk from flooding or have flooded in the past. In addition, the new residential development has increased the amount of impervious surface, resulting in increased stormwater runoff. This increased vulnerability to flooding was discussed in the HMP committee meetings, with the committee deciding to include two actions to address this risk: 1) To assess green infrastructure opportunities for stormwater management, and 2) To consider new requirements to utilize Best Management Practices to handle site drainage in order to receive subdivision approval.

Historic, Natural/Environmental and Cultural Resources

Natural Resources

Historically, the working landscapes of Southampton have shaped the physical, economic, and cultural character of the community. The town's forestlands and remaining farms continue to contribute to the economic and environmental well-being of the town.

Water Resources

There are several ponds and small lakes in Southampton including: Pequot Pond, Alder Pond, Tighe Carmody Reservoir, White Reservoir, and Lost Pond. Many other smaller bodies of water are scattered across the landscape of Southampton, primarily located along streams and in wooded areas. Most of the 425 acres of open water in Southampton are comprised of these small ponds and lakes. These water bodies offer valuable wildlife habitat, unique natural environments, and provide benefits to Southampton's human inhabitants in the form of prime recreational opportunities and water supply.

A small portion of town lies within the Westfield River watershed (957 acres). However, the majority of the town (17,568 acres) drains to the Connecticut River via the Manhan River. Many small streams in Southampton feed these two river systems.

Forests and Fields

Although most of Southampton's forests were cut during the 18th and 19th centuries for lumber and to clear agricultural land, the town now has significant amounts of secondary growth forests. In total, according to the 2016 MassGIS Land Cover/Land Use data, approximately 53% of the town is forested, particularly in the western part of the town. An additional 6% of the land is classified as palustrine forested wetland.

Although agricultural activity in Southampton has decreased over the years, it still remains an important part of the town's landscape and character. As of 2016, approximately 16% of the town's land cover is comprised of either pastureland, grassland, or cultivated land. Much of this land is found in the central part of the town, where the alluvial deposits from the Manhan River and other streams have created rich agricultural soil.

Protected Open Space

Approximately 4,174 acres of land in Southampton is permanently protected open space, representing about 22% of the town's total land area. This includes a variety of types of properties and ownership types. Approximately 2,130 acres are owned by the city of Holyoke, and this land is used for watershed protection purposes. The town of Southampton owns 473 acres of permanently protected open space, and the state owns about 184 acres. In addition, 47 acres are owned by a land trust, 890 acres are privately owned properties with agricultural protection restrictions, and 450 acres are privately owned properties with conservation restrictions.

Historic & Cultural Resources

Southampton has two historic districts that are listed on the National Register of Historic Places: the Southampton Center Historic District, which was designated in 1991; and the Lockville Historic District, which was designated as a historic district in 2001. The Southampton Center Historic District includes 76 contributing buildings located in the town center. These buildings include the First Church, the town hall, the old town library, along with a number of 18th and 19th century homes. The Lockville Historic District is located to the south of the town center, on College Highway near the intersection of Brickyard Road. It is comprised of 13 buildings and structures, most of which are associated with the New Haven and Northampton Canal. This includes the remnants of Lock 22, which is one of the few surviving stone locks from the canal.

According to the list of properties in Southampton that have been inventoried by the Massachusetts Historical Commission, there are about 25 buildings in Southampton that date to the 1700s, about 54 that were built between 1800 and 1850, and 59 that were built between 1850 and 1900.

Commerce, Industry, Academia

As described in the Land Use section, Southampton has only a limited amount of non-residential development. However, as of 2023 the town had 144 employers with an average monthly workforce of 1,249 people, according to the Department of Economic Research. Industry types included Education and Health Services (299 employees), Trade, Transportation and Utilities (289 employees), Retail Trade (236 employees), Construction (201 employees), and Health Care and Social Assistance (184 employees). The largest employers in the town are Big Y (100-250 employees) and William E. Norris School (50-99 employees).

The William E. Norris School is the only school in Southampton, serving students in grades Pre-K through 6. Southampton is part of the Hampshire Regional School District, and middle and high school students attend Hampshire Regional School in nearby Westhampton.

National Flood Insurance Program (NFIP) Participation and Community Rating System (CRS)

Southampton is a participating member of the National Flood Insurance Program, and had the following NFIP policy and claim statistics as of May of 2024:

- Flood Insurance Maps (FIRMs) are used for flood insurance purposes and are on file with the Southampton Planning Board.

- FIRMs have been effective since 12/4/79 with the current map in effect since 12/4/79. New maps are currently in development.
- Southampton has 3 in-force policies in effect for a total of $513,000 worth of insurance.
- There have been 7 claims, with 5 payments, totaling $57,123 in payments.
- As of 2024, there has been one Repetitive Loss Property in Southampton.

The Town will maintain compliance with the NFIP throughout the next 5-year Hazard Mitigation Planning cycle by monitoring its Floodplain Overlay District and ensuring that the district accurately reflects the 100-year flood plain and FEMA Flood Insurance Rate Map (FIRM).

The National Flood Insurance Program (NFIP) was created by the United States Congress in 1968. The purposes of the NFIP are to mitigate the risk of flood losses through flood insurance, and to reduce flood damages by restricting development in floodplains. Southampton is a participating member of the National Flood Insurance Program.

The following table summarizes Southampton's participation in and compliance with the NFIP:

Table 2.2: Town participation in and compliance with the NFIP

NFIP Topic	Sources of Information	Comments
Number of NFIP policies in the community and total coverage.	FEMA NFIP Services	As of May 2024, a total of 3 NFIP policies are in force for a total of $513,000 worth of insurance coverage.
History of claims and insurance payments.	FEMA NFIP Services	There have been a total of seven NFIP claims for which $57,123 has been paid. There is one repetitive loss property, which is a single-family residential structure.
Format and location of FIRMS	Community	FIRMS are on file are on file with the Town Clerk, Planning Board, Building Commissioner/Inspector, and Conservation Commission.
Date the community entered the NFIP and date of most recent FIRMS	FEMA NFIP Services	Southampton entered the NFIP on 12/4/1979. FIRMs have been effective since 1979 with the current map in effect since 12/4/1979. Preliminary new maps were released in August 2025 and are in review.
Number of structures exposed to flood risk within the community	GIS Analysis	There are an estimated 186 structures within the SFHA and thus exposed to flood risk. Some of these may be garages, barns or other outbuildings.
Areas of flood risk with limited NFIP policy coverage	GIS Analysis, FPA	There is not address-specific data available from FEMA, but it is likely that property owners in the SFHA are underinsured, based on the number of properties in flood zones and the fact that there are only 3 current NFIP policies.
NFIP Administration in the community	Community	The Town complies with the NFIP by enforcing floodplain regulations, maintaining current floodplain maps, and providing information to property owners

NFIP Topic	Sources of Information	Comments
		and developers about floodplain regulations and building requirements. Floodplain regulations are administered through the enforcement of the Town's zoning bylaws, by the Planning Board, the Conservation Commission, and the Building Inspector.
NFIP compliance	Community, FEMA NFIP program	The Town is in good standing with the NFIP, and there are no outstanding compliance issues. The Town will maintain compliance with the NFIP throughout the next 5-year hazard mitigation planning cycle by monitoring its Floodplain Zone and ensuring that this zoning district accurately reflects the 100-year floodplain and FEMA Flood Insurance Rate Map.
Adoption of NFIP minimum floodplain management criteria via local regulation.	Community	Zoning Bylaw Article VII, Section 275-7.1. (Floodplain Overlay District)
Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	Community	Zoning Bylaw Article VII, Section 275 – 7.1: "The Floodplain District is herein established as an overlay district. The district includes all special flood hazard areas designated on the most recent Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) for the Town of Southampton issued by the Federal Emergency Management Agency for the administration of the National Flood Insurance Program, These maps indicate the one-percent-chance regulatory floodplain. The exact boundaries of the district shall be defined by the one-percent-chance base flood elevations shown on the FIRM and further defined by the most recent Flood Insurance Study (FIS) report. The effective FIRM, FBFM, and FIS report are incorporated herein by reference and are on file with the Town Clerk, Planning Board, Building Commissioner/Inspector, and Conservation Commission."
Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Community	There is currently not a designated Floodplain Administrator in Southampton. The Building Inspector and Planning Department work together to implement the NFIP requirements.
Implementation and enforcement of local floodplain management regulations to	Community	Floodplain regulations are administered through the enforcement of the Town's zoning bylaws, by the Planning Board, the

NFIP Topic	Sources of Information	Comments
regulate and permit development in SFHAs.		Conservation Commission, and the Building Inspector.
Description of how participants implement the substantial improvement/substantial damage provisions of their floodplain management regulations after an event.	Community	The Town implements the SI/SD provisions of its floodplain management regulations as required per the NFIP (CFR Title 44, Parts 59 - 65) and Massachusetts State Building Code (780 CMR). The Town will also coordinate with State Flood Hazard Management Program staff to assure that proper practices are followed and that a post-disaster plan will be in place to implement all SI/SD provisions.

3. HAZARD IDENTIFICATION AND ANALYSIS

The following section includes the identification and risk assessment of natural hazards that have affected or could affect Southampton. In updating this section, the HMP committee considered the hazards identified in the previous plan, the 2018 and 2023 State hazard Mitigation and Adaptation Plan (SHMCAP), as well as the results of the Town's Municipal Vulnerability Preparedness (MVP) planning efforts undertaken in 2021. Also considered in developing this assessment was historical research, conversations with local officials and emergency management personnel, available hazard mapping and other weather-related databases. The top four natural hazards identified in the MVP planning process were extreme temperatures, severe winter storms, severe thunderstorms and other strong storms, and flooding.

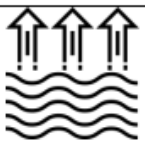
The identified hazards affecting Southampton are the following:

- Floods
- Severe snowstorms / ice storms
- Hurricanes
- Severe thunderstorms / wind / tornadoes
- Wildfires / brushfires
- Earthquakes
- Dam failure
- Drought
- Extreme Temperatures

The 2018 Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) identified the natural hazards that can occur in the state along with the climate change interaction for each, and the representative climate change impacts. The one hazard without a climate change interaction is earthquakes. These are shown in Table 3.1 below from the SHMCAP.

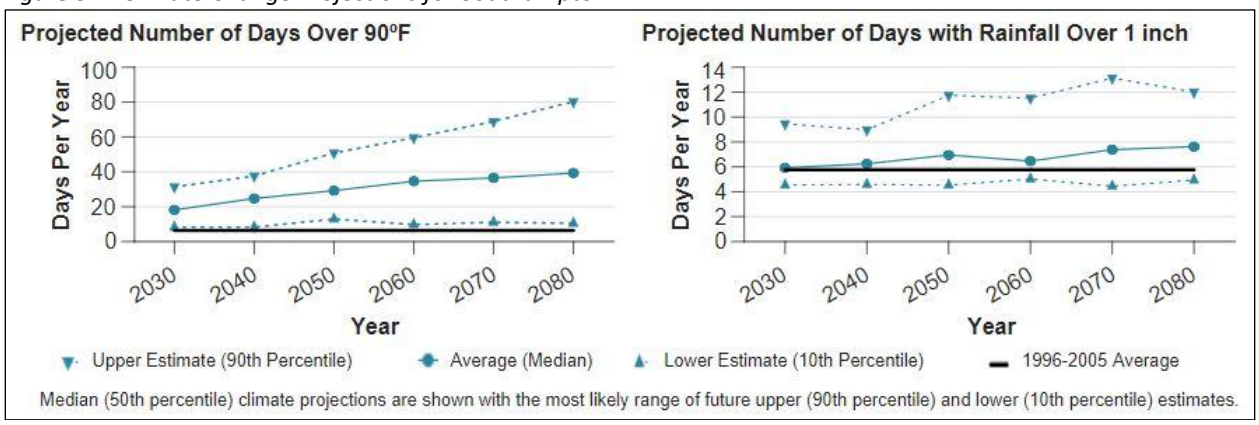
All hazards identified in the SHMCAP were considered, however, some of the hazards were not included in the plan as they do not apply to Southampton or the committee did not consider them to be significant risks. Given Southampton's inland location, coastal hazards and tsunamis would not affect the Town. The core team did not include landslides in their natural hazard inventory, as they have not previously occurred in the town. The plan also does not include invasive species as a natural hazard. While invasive species can cause some ecological damage in Southampton, the Committee did not think that they caused enough damage to be considered a natural hazard, or that they significantly increased the risks to the town from any other natural hazards. It is assumed that the entire Town of Southampton and its critical facilities are exposed to earthquakes, high wind events, hurricanes, winter storms, snow and ice, temperature extremes, and drought, to a similar extent. Flood risk from riverine flooding is elevated in the vicinity of flood zones.

Table 3.1: Natural Hazards and Climate Change Interactions

Primary Climate Change Interaction	Natural Hazard	Other Climate Change Interactions	Representative Climate Change Impacts
Changes in Precipitation	Inland Flooding	Extreme Weather	Flash flooding, urban flooding, drainage system impacts (natural and human-made), lack of groundwater recharge, impacts to drinking water supply, public health impacts from mold and worsened indoor air quality, vector-borne diseases from stagnant water, episodic drought, changes in snow-rain ratios, changes in extent and duration of snow cover, degradation of stream channels and wetland
	Drought	Rising Temperatures, Extreme Weather	
	Landslide	Rising Temperatures, Extreme Weather	
 **Sea Level Rise**	Coastal Flooding	Extreme Weather	Increase in tidal and coastal floods, storm surge, coastal erosion, marsh migration, inundation of coastal and marine ecosystems, loss and subsidence of wetlands
	Coastal Erosion	Changes in Precipitation, Extreme Precipitation	
	Tsunami	Rising Temperatures	
Rising Temperatures	Average/Extreme Temperatures	N/A	Shifting in seasons (longer summer, early spring, including earlier timing of spring peak flow), increase in length of growing season, increase of invasive species, ecosystem stress, energy brownouts from higher energy demands, more intense heat waves, public health impacts from high heat exposure and poor outdoor air quality, drying of streams and wetlands, eutrophication of lakes and ponds
	Wildfires	Changes in Precipitation	
	Invasive Species	Changes in Precipitation, Extreme Weather	
Extreme Weather	Hurricanes/Tropical Storms	Rising Temperatures, Changes in Precipitation	Increase in frequency and intensity of extreme weather events, resulting in greater damage to natural resources, property, and infrastructure, as well as increased potential for loss of life
	Severe Winter Storm / Nor'easter	Rising Temperatures, Changes in Precipitation	
	Tornadoes	Rising Temperatures, Changes in Precipitation	
	Other Severe Weather (Including Strong Wind and Extreme Precipitation)	Rising Temperatures, Changes in Precipitation	
Non-Climate-Influenced Hazards	Earthquake	Not Applicable	There is no established correlation between climate change and this hazard

The data shown in Figure 3.1 gives the projections for the annual number of days over 90°F and the number of days with rainfall over 1 inch for Southampton. This data from Resilient.mass.gov gives projections ranging from the lowest estimates (10th percentile) to the highest estimates (90th percentile) depending on emissions scenarios, as well as the average. By 2080, Southampton could experience up to 80 days per year above 90°F and up to 12 days per year with rainfall over 1 inch. While these changes in temperature and precipitation will directly impact flooding and extreme temperatures (particularly high temperatures), research indicates that temperature increases will likely increase the frequency and intensity of strong storms such as hurricanes.

Figure 3.1: Climate Change Projections for Southampton



Source: Resilient.mas.gov

Statewide and Regional Climate Change Impacts

The Massachusetts Climate Change Assessment report was issued in December 2022. This report provides region-specific data and analysis of climate change impacts for each of the seven regions of the Commonwealth. Southampton is within the "Greater Connecticut River Valley" region. The report identifies the most urgent impacts to five sectors (Human, Infrastructure, Natural Environment, Governance, and Economy) for the Greater Connecticut River Valley Region. Figure 3.2 below shows the top two or three most urgent impacts per sector.

Figure 3.2: Most Urgent Regional Climate Change Impacts

Most Urgent Impacts by Sector for the Greater Connecticut River Valley Region

Centered around the Connecticut River, this region includes rural towns and urban centers. Many of the most urgent climate impacts are already large concerns in the region (e.g., food security, agriculture, and housing). Below are the top two impacts per sector (three listed for tied scores). The bookmark icons identify unique regional priorities, meaning for each sector, impacts that are not a top three most urgent impact statewide but are a top two impact regionally.

Human

Reduction in Food Safety and Security due to production and supply chain issues, as well as spoilage during power outages.

Health Effects of Extreme Storms and Power Outages, including from injuries, food safety, and medical device failure.

Infrastructure

Damage to Inland Buildings from heavy rainfall and overwhelmed drainage systems.

Damage to Electric Transmission and Utility Distribution Infrastructure associated with heat stress and extreme events.

Natural Environment

Shifting Distribution of Native and Invasive Species as changing climate conditions favor certain species.

Freshwater Ecosystem Degradation due to warming waters, drought, and increased runoff.

Forest Health Degradation from warming temperatures, changing precipitation, extreme storms, and increasing pest occurrence.

Governance

Increase in Costs of Responding to Climate Migration, including planning for abrupt increases in local populations.

Reduction in State and Municipal Revenues, including a reduced property tax base due to inland flood risk.

Economy

Decrease in Agricultural Productivity as crop yields are impacted by precipitation patterns, extreme weather, pests, and other climate factors.

Reduction in the Availability of Affordably Priced Housing from direct damage (e.g., flooding) and the scarcity caused by increased demand.

2022 Massachusetts Climate Change Assessment

The Town of Southampton has been subject to a number of federal disaster declarations along with all of Hampshire County. Some of these disaster declarations also correspond to emergency declarations in Massachusetts that applied to all or part of the state. The following table lists all of the Massachusetts emergency declarations since 2011 in Massachusetts, along with the corresponding federal disaster declarations that applied to Southampton.

Table 3.2: Massachusetts Emergency Declarations and Federal Disaster Declarations affecting Southampton

Massachusetts Emergency	Start	Termination	Corresponding Federal Disaster Declaration	FEMA Public Assistance	Application to Southampton
Hurricane Lee	9/15/2023	9/16/2023	NA	NA	Yes
Severe Weather and Flooding	9/12/2023	9/16/2023	NA	NA	Yes
Covid-19 Pandemic	3/13/2020	5/11/2023	DR-4496-MA	All counties	Yes
Severe Winter Storm, Snowstorm, and Flooding	2/8/2013	2/9/2013	DR-4110-MA	All counties	Yes
Severe Snow and Snowstorm	10/29/2011	10/30/2011	DR-4051-MA	Middlesex, Worcester, Hampden, Hampshire, Franklin, Berkshire	Yes
Tropical Storm Irene	8/27/2011	8/29/2011	DR-4028-MA	Barnstable, Dukes, Plymouth, Bristol, Norfolk, Hampden, Hampshire, Franklin, Berkshire	Yes
Severe Storms and Tornadoes	6/1/2011	6/1/2011	DR-1994-MA	Worcester, Hampden	No

Natural Hazard Analysis Methodology

The hazard profiles were updated with information from the 2018 Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP; EEA and EOPSS, 2018), the Town's MVP community resilience building process and related report and additional research and assessment conducted by the project team. The HMP Committee provided local accounts of each hazard. The hazard analysis is organized into the following sections: Hazard Description, Location, Extent, Previous Occurrences, Probability of Future Events, Impact, and Vulnerability. A description of each of these analysis categories is provided below.

Hazard Description

The hazard description describes the hazard, its characteristics, and potential impacts. Many of these hazards result in similar impacts to a community. For example, thunderstorms, hurricanes, and tornadoes may all cause wind-related damage.

Location

Location refers to the geographic areas within the planning area that are affected by the hazard. Some hazards affect the entire planning area universally, while others apply to a specific portion, such as a floodplain or area that is susceptible to wildfires. Classifications are based on the area that would potentially be affected by the hazard, on the following scale:

Location of Occurrence, Percentage of Town Impacted by Given Natural Hazard	
Location of Occurrence	**Percentage of Town Impacted**
Large	More than 50% of the town affected
Medium	10 to 50% of the town affected
Small	Less than 10% of the town affected

Extent

Extent describes the strength or magnitude of a hazard. Where appropriate, extent is described using an established scientific scale or measurement system.

Previous Occurrences

This provides information on the history of previous hazard events for the Town and region, including some description of the impacts on people and property. Generally, the plan describes hazards and events from within the past decade (roughly 2014 – 2024), except for very significant events that occurred prior to that time period.

Probability of Future Events

This describes the likelihood of future hazard occurrences in the Town based on past occurrences as well as the latest scientific projections of climate changes for the Commonwealth. The likelihood of a future event for each natural hazard is classified according to the following scale:

Frequency of Occurrence and Annual Probability of Given Natural Hazard	
Frequency of Occurrence	**Probability of Future Events**
Very High	70-100% probability in the next year
High	40-70% probability in the next year
Moderate	10-40% probability in the next year
Low	1-10% probability in the next year
Very Low	Less than 1% probability in the next year

Impact

Impact refers to the effect that a hazard may have on the people and property in the community, including estimated potential losses. Impacts are based on the assessment of extent described above and are classified according to the following scale:

Impacts, Magnitude of Multiple Impacts of Given Natural Hazard		
Impacts	**Potential magnitude of impacts to people**	**Potential magnitude of impacts to property**
Catastrophic	Multiple injuries or deaths possible.	50 - 100% of property in affected area damaged or destroyed. Complete shutdown of facilities for 1 week or more.
Critical	Multiple injuries and health effects possible.	10 - 50% of property in affected area damaged or destroyed. Complete shutdown of facilities for 3 days or more.
Limited/Moderate	Minor injuries and health effects, if any. People may be displaced or lose access to heat, cooling, or water.	Up to 10% of property in affected area damaged or destroyed. Complete shutdown of facilities for a day or more.
Minor	No injuries or health effects.	Only minor property damage and minimal disruption on quality of life. Possible temporary shutdown of facilities.

Vulnerability

This describes the overall potential risk factor for the community. Based on the above metrics, a hazard risk index rating is determined for each hazard. The hazard index ratings are based on a scale of 1 through 5 as follows:

1 – Highest risk
2 – High risk
3 – Medium risk
4 – Low risk
5 – Lowest risk

The ranking is qualitative and is based, in part, on local knowledge of past experiences with each type of hazard. The size and impacts of a natural hazard can be unpredictable. However, many of the mitigation strategies currently in place and many of those proposed for implementation can be applied to the expected natural hazards, regardless of their unpredictability.

Vulnerability Assessment Methodology

In order to determine estimated losses due to natural hazards in Southampton, each hazard area was analyzed with results shown below. The data below was calculated using the methodology outlined in FEMA's mitigation planning guide, *Understanding Your Risks: Identifying Hazards and Estimating Losses (FEMA 386-2),* August 2001.

Total value of all structures in Southampton (Assessor's data, FY 2025): $732,955,200

Median value of an owner-occupied home in Southampton: $426, 900 (American Community Survey estimate, 2019-2023)

Average household size: 2.52 persons (across 2,464 households, ACS 2019-2023)

Human losses are not calculated during this exercise, but could be expected to occur depending on the type and severity of the hazard. Most of these figures exclude both the land value and contents of the structure. The damage calculations are rough estimates, and likely reflect worst-case scenarios. Computing more detailed damage assessment based on assessor's records is a labor-intensive task and beyond the scope of this project.

Table 3.3 Hazard Identification and Risk Analysis for Southampton

Hazard Identification and Risk Analysis Worksheet for Southampton				
Type of Hazard	**Location of Occurrence**	**Probability of Future Events**	**Impact**	**Hazard Risk Index** **Vulnerability** **Rating**
Flooding	Medium	Very High	Minor	3 – Medium risk
Severe Snowstorms / Ice Storms	Large	Very High	Critical	2/3 – High/Medium risk
Hurricanes/tropical storms	Large	Low	Moderate/Critical	3- Medium risk
Severe Thunderstorms / Winds / Tornadoes	Large Tornado-small	Moderate to High Tornadoes: Very Low	Limited Tornado-catastrophic	3 – Medium risk Tornadoes: 4 – Low risk
Wildfire / Brushfire	Medium	Moderate	Limited	3 – Medium risk
Earthquakes	Large	Very low	Minor - Critical	4 - Low risk
Dam Failure	Medium	Very low	Critical-Catastrophic	5 - Very low risk
Drought	Large	Moderate	Minor-Critical	4 - Low risk
Extreme Temperatures	Large	Very High	Limited	3/4 - Medum/Low risk

Flooding

Hazard Description

Flooding in Massachusetts is generally the result of weather events such as heavy rain, thunderstorms, snowmelt, coastal storms or nor'easters, tropical storms, and hurricanes. Some of these events occur infrequently, such as hurricanes, while others such as heavy rain, occur very frequently. In an inland community such as Southampton, flooding often occurs as a result of intense precipitation over a short period of time, or moderate to heavy precipitation over a longer period of time, such as several days. Increases in precipitation as a result of climate change are projected to cause an increase in inland flooding.

There are three major types of storms that can generate flooding in Southampton:

- Continental storms are typically low-pressure systems that can be either slow or fast moving. These storms originate from the west and occur throughout the year.
- Coastal storms, also known as nor'easters, usually occur in late summer or early fall and originate from the south. The most severe coastal storms, hurricanes, occasionally reach Massachusetts and generate very large amounts of rainfall.
- Thunderstorms form on warm, humid summer days and cause locally significant rainfall, usually over the course of several hours. These storms can form quickly and are more difficult to predict than continental and coastal storms.

Floods can be classified as one of two types: flash flooding (also described as localized flooding) and riverine flooding.

Flash floods are the product of heavy, localized precipitation in a short time period over a given location. Flash flooding events typically occur within minutes or hours after a period of heavy precipitation, after a dam or levee failure, or from a sudden release of water from an ice jam. Most often, flash flooding is the result of a slow-moving thunderstorm or the heavy rains from a hurricane. In rural areas, flash flooding often occurs when small streams spill over their banks. However, in urbanized areas, flash flooding is often the result of clogged storm drains (leaves and other debris) and the higher amount of impervious surface area (roadways, parking lots, roof tops).

Riverine floods may last for several days or weeks and are caused by precipitation over a longer time period in a particular river basin. Excessive precipitation within a watershed of a stream or river can result in flooding particularly when development in the floodplain has obstructed the natural flow of the water and/or decreased the natural ability of the groundcover to absorb and retain surface water runoff (e.g., the loss of wetlands and the higher amounts of impervious surface area in urban areas).

A floodplain is the relatively flat, lowland area adjacent to a river, lake or stream. Floodplains serve an important function, acting like large "sponges" to absorb and slowly release floodwaters back to surface waters and groundwater. Over time, sediments that are deposited in floodplains develop into fertile, productive farmland like that found in the Connecticut River valley. In the past, floodplain areas were also often seen as prime locations for development. Industries were located on the banks of rivers for access to hydropower. Residential and commercial development occurred in floodplains because of

their scenic qualities and proximity to the water. Although periodic flooding of a floodplain area is a natural occurrence, past and current development and alteration of these areas will result in flooding that is a costly and frequent hazard.

Location

The location of occurrence is classified as "medium," with 10 – 50% of the area of the Town affected. There are approximately 5,643 acres of land within the FEMA mapped 100-year floodplain and approximately 2,226 acres of land within the 500-year floodplain in the Town of Southampton

The 100-year floodplain is located in areas including and surrounding the Manahan River, Red Brook, and Moose Brook. Parts of the Manahan River empty into the 500-year floodplain, specifically where it is crossed by Gilbert Road. Riverdale Road, Fomer Road, Pomeroy Meadow Road, Cottage Avenue, Freyer Road, and Mountain Road are encompassed by the 100-year flood zone and have experienced intermittent flooding. Furthermore, Pequot Pond, Potash Brook, White Reservoir, Tighe-Carmody Reservoir, Blue Meadow Brook, Alder Meadow Brook, Red Brook, and Broad Brook place adjacent areas in the 100 year and 500 year floodplain. The majority of the land within the floodplains is comprised of natural open space, along with a small amount of residential development. There are 186 structures located within the 100-year floodplain, although some of these may be barns or other outbuildings. There are an additional 35 structures located just in the 500-year floodplain. In the winter months, snow accumulation and ice may disrupt the flow of these waterways and result in minor flooding. Additionally, accelerated snow melt increases the risk of flooding in these areas, which include a number of dirt roads susceptible to damage.

Specific locations and structures vulnerable to flooding within the areas mentioned above include the following:

100-Year Floodplain

- Riverdale Road- three residences have flooded regularly and required evacuation during one flood. Flooding also results in the closure of the road. The electric service connection is located in the basement of each of these residences and creates a risk of electrocution to residents and rescue workers during flood events.
- Fomer Road- the western end of the road is in the 100-year flood zone. Dirt segments of this road tend to wash out and flood during significant storm events. Problem areas include eroded ditches and cross pipes along this road. The Highway and Water Department are located on Fomer Road near the intersection with Route 10.
- Pomeroy Meadow Road- this road connects to Easthampton through the 100-year flood zone for the Manhan River.
- Maple Street, Moose Brook Road and Brickyard Extension
- East Street- A tributary to Moose Brook flows parallel to East Street.
- The Fire Department has experienced a wet floor on the first floor during high groundwater periods.
- Cottage Ave, Freyer and Mountain Roads- Occasional (rare) flooding has resulted in road washouts on these dirt roads (Mountain is only dirt road and part of Freyer). The City of Westfield operates a sewer pumping station on Cottage Avenue at the town line.

500-Year Floodplain

Gilbert Road crosses the Manhan River in the 100- and 500-year flood zones. Gilbert Road experiences flooding during storm events greater than 1”. Flooding at the crossing of the Manhan River means that there is approximately 1 ½ hours before flooding occurs downstream at Riverdale Road. The City of Holyoke’s water pump station for their transmission line from the Tighe-Carmody (Manhan) Reservoir is located on Gilbert Road just outside of the 500-year flood zone

Extent

Water levels in Southampton’s rivers, streams and wetlands rise and fall seasonally, and during high rainfall events. High water levels are typical in the spring due to snowmelt and ground thaw, which is when flood hazards are normally expected. Low water levels generally occur in summer due to high evaporation and plant uptake (transpiration). At any time, heavy rainfall may create conditions that raise water levels in rivers and streams above bank full stage, which then overflow adjacent lands.

The average annual precipitation for Southampton and surrounding areas in western Massachusetts is approximately 45 inches. Climate change is projected to result in higher average levels of precipitation, with more falling as rain and less as snow, and more intense periods of rainfall.

The frequency and severity of flooding are measured using a discharge probability, which is the probability that a certain river discharge (or flow) will be equaled or exceeded in a given year. Flood studies use historical records to determine the probability of occurrence for the different discharge levels. A “100-year discharge” has a 1 percent chance of being equaled or exceeded in any given year, meaning that a “100-year flood” has a 1 percent chance of occurring in any given year. These probabilities reflect statistical averages; it is possible for two or more “100-year” floods to occur in the same year or even within the same month.

The “100-year flood” is the standard used by the National Flood Insurance Program (NFIP) to guide floodplain management and determine the need for flood insurance. The extent of flooding associated with a 1% annual probability of occurrence is called the 100-year floodplain, which is considered the regulatory boundary by most state and federal agencies. The 100-year floodplain is also referred to as the Special Flood Hazard Area (SFHA), and is used as a tool for assessing vulnerability and risk in flood-prone areas. A “500-year flood” is a flood that has a 0.2% chance of being equaled or exceeded each year. Base flood elevations and the boundaries of the 100-year floodplains (1% annual probability) and the 500-year floodplains (.2% annual probability) are shown on Flood Insurance Rate Maps (FIRMs), which are the primary tools for identifying the extent and location of flood hazards.

The National Weather Service classifies flooding events as minor, moderate, or major, depending on the extent of the impacts. The following definitions of minor, moderate, and major flooding describe the possible extent of flooding events:

Minor Flooding is defined to have minimal or no property damage, but possibly some public threat. A Flood Advisory product is issued to advise the public of flood events that are expected not to exceed the minor flood category. Examples of conditions that would be considered minor flooding include:

- water over banks and in yards
- no building flooded, but some water may be under buildings built on stilts (elevated)
- personal property in low lying areas needs to be moved or it will get wet
- water overtopping roads, but not very deep or fast flowing
- water in campgrounds or on bike paths
- inconvenience or nuisance flooding
- small part of the airstrip flooded, and aircraft can still land
- one or two homes in the lowest parts of town may be cut off or get a little water in the crawl spaces, basements, or homes themselves if they are not elevated

Moderate Flooding is defined to have some inundation of structures and roads near the stream. Some evacuations of people and/or transfer of property to higher elevations may be necessary. A Flood Warning is issued if moderate flooding is expected during the event. Examples of conditions that would be considered moderate flooding include:

- several buildings flooded with minor or moderate damage
- various types of infrastructure rendered temporarily useless (i.e. fuel tanks cannot be reached due to high water, roads flooded that have no alternates, generator station flooded)
- elders and those living in the lowest parts of the village are evacuated to higher ground
- access to the airstrip is cut off or requires a boat
- water over the road is deep enough to make driving unsafe
- gravel roads likely eroded due to current moving over them
- widespread flooding, but not deep enough to float ice chunks through town
- water deep enough to make life difficult, normal life is disrupted and some hardship is endured
- airstrip closed
- travel is most likely restricted to boats

Major Flooding is defined to have extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations are necessary. A Flood Warning is issued if major flooding is expected during the event. Examples of conditions that would be considered major flooding include:

- many buildings flooded, some with substantial damage or destruction
- infrastructure destroyed or rendered useless for an extended period of time
- multiple homes are flooded or moved off foundations
- everyone in threatened area is asked to evacuate
- National Guard units assist in evacuation efforts
- erosion problems are extreme
- the airstrip, fuel tanks, and the generator station are likely flooded
- loss of transportation access, communication, power and/or fuel spills are likely
- fuel tanks may float and spill and possibly float downstream
- ice chunks floating through town that could cause structural damage
- high damage estimates and high degree of danger to residents

The flood categories for the Connecticut River at the Northampton station are:

- Major flood stage: 120 feet
- Moderate flood stage: 115 feet

- Flood stage: 112 feet
- Action stage: 110 feet

The previous occurrences of these flooding categories being reached by the Connecticut River in Northampton are as follows:

Table 3.4: Historic crests of the Connecticut River

Crest (feet)	Date	Stage
129.4	3/19/1936	Major flood
125.0	9/22/1938	Major flood
120.8	5/31/1984	Moderate flood
119.9	4/06/1960	Moderate flood
118.6	01/01/1949	Flood

Source: National Weather Service

Previous Occurrences

The major floods recorded in Southampton have been the result of rainfall alone or rainfall combined with snowmelt.

During the Patriots Day flood in April 2007, the section of Pomeroy Meadow Road in the flood zone flooded in Easthampton necessitating the evacuation of several Easthampton residents. Because the properties were not accessible from the Easthampton side of the road, Southampton performed the evacuation. This road was rebuilt in 2015.

Gilbert Road and Riverdale Road frequently experience minor flooding from the Manhan, and the roads have to be closed once or twice per year. Fomer Road at Red Brook occasionally floods. Crooked Ledge at Blue Meadow Brook has overtopped the road. Valley Road at Moose Brook has flooded as well. Brickyard Road Extension at the Manhan River has experience minor flooding.

In addition to the floodplains mapped by FEMA for the 100-year and 500-year flood, Southampton often experiences minor flooding at isolated locations due to drainage problems or problem culverts.

While the areas prone to flooding listed here were identified due to known past occurrences in the respective area, there are many areas with no record of previous flood incidents that could be affected in the future by heavy rain and runoff.

Probability of Future Events

Based upon previous data, there is a “very high” chance (between 70 and 100 percent in the next year) of flash flooding or general flooding occurring in Southampton. Flooding frequencies for the various floodplains in Southampton are defined by FEMA as the following:

- 10-year floodplain – 10 percent chance of flooding in any given year
- 25-year floodplain – 2.5 percent chance of flooding in any given year

- 100-year floodplain – 1 percent chance of flooding in any given year
- 500-year floodplain – 0.2 percent chance of flooding in any given year

Climate scientists predict that in the next few decades, climate change will increase the frequency and intensity of all storms that can cause flooding. Currently, floods are the most costly natural hazard in the United States, and climate change will only increase this damage. Resilientma.org projects that Southampton will see an eight percent increase in total annual precipitation by the year 2050, and an almost 10% increase in the 99th percentile storm rainfall, meaning 24-hour periods in which the depth of rainfall exceeds 99% of all 24-hour periods of rainfall during an average year.[1] With increases in precipitation, there will likely be greater impacts from flooding in Southampton. Future floodplains may be larger than the currently FEMA modeled floodplains, and the Town will need to consider these changes in regulations and permitting of new development.

Vulnerability Assessment

Built Environment Impacts

According to the HMP Committee, the Town of Southampton faces a "minor" impact in flooding scenarios, with small amounts of property damage possible.

There are approximately 5,643 acres of land within the FEMA mapped 100-year floodplain and approximately 2,226 acres of land within the 500-year floodplain in the Town of Southampton. Some of that area is in both the 100 and 500 year floodplains. According to the assessor's GIS data, there were 186 residential structures (including condos) located within the 100-year floodplain, and 221 structures located in either or both of the 100 and 500 year floodplains in Southampton as of November 2024.

Utilizing the total value of all residential structures within the 100-year floodplain, and assuming 10% damage to 25% of structures, up to $1,985,085 worth of damage could occur to these structures. The damage estimate is a rough estimate and obviously could vary based on the location and severity of the flooding. Damage to critical infrastructure such as roads and bridges was not included as part of this analysis.

Population Impacts

The most vulnerable groups in Southampton may be more seriously impacted by flooding – this includes seniors, low-income individuals, and disabled residents. These individuals may be unable to physically or financially prepare for or respond to hazard events and require additional assistance. The Town will need to ensure that the vulnerable individuals in Southampton have information about flooding, can adequately prepare, and can be reached after a flooding event in the event that evacuation is necessary.

Based on recent trends, the population of the Town is not likely to increase significantly over the next 5-10 years. Over time, there is the possibility of climate migrants from coastal areas and other highly vulnerable areas of the country settling in Southampton and surrounding towns and cities, and that is a

[1] https://resilientma-mapcenter-mass-eoeea.hub.arcgis.com/#ClimateDashboard

scenario that the Town should prepare for. In the near term, however, this is not a population change that will significantly impact hazards in Southampton.

Changes in Land Use/Development

There has been a moderate amount of residential development and very little commercial development in Southampton since the last plan. This development has not significantly increased flooding risks in Southampton. However, the Committee feels that in order to better mitigate future flooding risks, some stronger regulations are needed, particularly for the subdivision regulations. This could include requiring Best Management Practices for stormwater management, such as implementation of green infrastructure strategies and features.

Hazard Risk Index Rating
Based on the above analysis, Southampton has a hazard risk index rating of “3 - Medium risk” for flooding.

Severe Snow/Ice Storm

Hazard Description

Severe winter storms can pose a significant risk to property and human life. Severe snowstorms and ice storms can involve rain, freezing rain, ice, snow, cold temperatures and wind. Snow is characterized as frozen precipitation in the form of six-sided ice crystals. In order for snow to occur, temperatures in the atmosphere (from ground level to cloud level) must be at or below freezing. The strongest form of a severe snow storm is a blizzard. Blizzards are characterized by frequent wind gusts above 35 miles per hour, limited to no visibility due to falling snow and extreme cold that lasts longer than three hours.

Ice storms are liquid rain that falls and freezes upon contact with cold objects. There must be an ice build-up of greater than ¼ inch for it to be considered an ice storm. When more than a ½ inch of ice build-up is forecasted a winter storm warning can be triggered.

Severe snow and ice storms can cause the following hazards:

- Disrupted power and phone service
- Unsafe roadways and increased traffic accidents
- Infrastructure and other property are also at risk from severe winter storms and the associated flooding that can occur following heavy snow melt.
- Tree damage and fallen branches that cause utility line damage and roadway blockages
- Damage to telecommunications structures
- Reduced ability of emergency officials to respond promptly to medical emergencies or fires.

Location

The entire Town of Southampton is susceptible to severe snowstorms. Because these storms occur regionally, they impact the entire town. Based on this assessment, the location of occurrence from snow storms and ice storms in Southampton is “large.”

The following areas have been identified by the Hazard Mitigation Committee as areas where ice may build up on the roads during winter ice storm events:

- Top of Center Street
- Intersection of Middle Street and Whiteloaf Road.
- Moose Brook Extension
- Crooked Ledge Road

Additionally, higher elevations tend to be more susceptible to ice damage to trees causing power outages. The Town is working with Eversource Electric Company to remove trees near utility lines and identify lines to be buried to prevent storm induced power outages.

Many of the farms and open meadows and fields throughout town can cause snow drifts in travel lanes that become hazards. The following areas have been identified by the Hazard Mitigation Committee as areas where snow drifts often form during winter storm events: County, Glendale, Pomeroy Meadow and Russellville Roads; Line and Pleasant Streets; and, Route 10 by the Fish and Game Club.

Extent

Southampton generally experiences at least one or two severe winter storms each year with varying degrees of severity. Severe winter storms typically occur during January and February; however, they can occur from October through April.

The Northeast Snowfall Impact Scale (NESIS) developed by Paul Kocin of The Weather Channel and Louis Uccellini of the National Weather Service (Kocin and Uccellini, 2004) characterizes and ranks high-impact Northeast snowstorms. These storms have large areas of 10-inch snowfall accumulations and greater. NESIS has five categories: Extreme, Crippling, Major, Significant, and Notable. The index differs from other meteorological indices in that it uses population information in addition to meteorological measurements. Thus NESIS gives an indication of a storm's societal impacts.

NESIS scores are a function of the area affected by the snowstorm, the amount of snow, and the number of people living in the path of the storm. The aerial distribution of snowfall and population information are combined in an equation that calculates a NESIS score which varies from around one for smaller storms to over ten for extreme storms. The raw score is then converted into one of the five NESIS categories. The largest NESIS values result from storms producing heavy snowfall over large areas that include major metropolitan centers.

Table 3.5: Northeast Snowfall Impact Scale

Northeast Snowfall Impact Scale Categories		
Category	**NESIS Value**	**Description**
1	1—2.499	Notable
2	2.5—3.99	Significant
3	4—5.99	Major
4	6—9.99	Crippling
5	10.0+	Extreme

Source: http://www.ncdc.noaa.gov/snow-and-ice/rsi/nesis

The Sperry-Piltz Ice Accumulation (SPIA) Index, shown below in Table 3.6, is a prediction tool (algorithm) that can be used in conjunction with National Weather Service data to predict the impact of winter weather in terms of ice damage.

Table 3.6: Sperry-Piltz Ice Accumulation (SPIA) Index

Ice Damage Index	Damage and Impact Descriptions
0	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
2	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
3	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1-5 days.

4	Prolonged and widespread utility interruptions with extensive damage to main distribution feeder lines and some high voltage transmission lines/structures/ Outages lasting 5-10 days.
5	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.

Source: http://www.spia-index.com/images/SPIAIndexDescription.png

Previous Occurrences

Southampton's recent history has not recorded any loss of life due to the extreme winter weather, but there are usually several incidents of property damage or personal injury each winter. On October 30, 2011, an early winter storm dumped more than 1 foot of heavy wet snow. Because many trees still had leaves, the snow load caused trees and limbs to fall, downing power and phone lines, and crippling travel. A town wide power outage left many without electricity for up to 5 days. While there have been occasional power outages due to winter storms since then, none have lasted for more than a few hours.

An ice storm on December 11, 2008 caused extensive damage and widespread power outages across much of Massachusetts, including in Southampton. Almost an inch of ice as well as high winds resulted in many downed trees, limbs, and power lines, leaving many roads impassable and causing power outages in town.

Southampton's rugged topography creates some steep grades, sometimes making plowing difficult and causing snow and ice hazards. With climate change, there have been increasing ice storms events rather than snowstorms, and this can create even more hazardous road conditions.

Based on data available from the National Oceanic and Atmospheric Administration, there are 15 winter storms since 2010 that have registered on the NESIS scale. These storms are listed in Table 3.6 below, in order of their NESIS severity.

Table 3.7: Winter Storms with Over 10 inches of Snow in the Pioneer Valley, 2010–2024

Date	NESIS Value	NASIS Category	NESIS Classification
12/16/2022	8.52	4	Crippling
2/23/2010	5.46	3	Major
1/29/2015	5.42	3	Major
1/9/2011	5.31	3	Major
2/11/2014	5.28	3	Major
3/12/2017	5.03	3	Major
1/31/2021	4.93	3	Major
2/7/2013	4.35	3	Major
3/5/2018	3.45	2	Significant
3/4/2013	3.05	2	Significant
1/25/2015	2.62	2	Significant
3/11/2018	3.16	2	Significant

Date	NESIS Value	NASIS Category	NESIS Classification
10/29/2011	1.75	1	Notable
1/3/2018	1.65	1	Notable
2/8/2015	1.32	1	Notable

Source: http://www.ncdc.noaa.gov/snow-and-ice/rsi/nesis

Probability of Future Events

Based upon the availability of records for Hampshire County, the likelihood that a severe snowstorm will affect Southampton is very high (between 70 and 100 percent in the next year).

Research on climate change indicates that there is great potential for stronger, more frequent storms as the global temperature increases. While there may be lower annual snowfall amounts as more precipitation falls as rain, the snowstorms that do occur may be more severe. There is also the likelihood that the occurrence of ice storms and sleet will increase.

Vulnerability Assessment

Built Environment Impacts

The Town faces a potentially critical impact, or up to 25 percent or more of total property damaged, from snowstorms. To estimate the potential impact, the total value of all structures in Southampton, $732,955,200, is used. It is estimated that 10% of damage could occur to up to 25% of Southampton's structures, resulting in potentially $18,323,880 worth of damage. The cost of repairing roads, bridges, utilities and contents of structures is not included in this estimate.

The weight from multiple snowfall events can test the load ratings of building roofs and potentially cause significant damage. Multiple freeze-thaw cycles can also create large amounts of ice and make for even heavier roof loads. Tree limbs can fall and cause damage to utility lines and power outages, as well as possibly damage buildings and vehicles.

The Hazard Mitigation Committee did not feel that any critical facilities would be significantly impacted by snow and ice storms, however, the town's energy and communication infrastructure could be compromised. Evacuation routes in town including, Fomer Road, Russellville Road, Pomeroy Meadow Road, County Road and College Highway, could all be impacted by snow and ice limiting their ability to function as evacuation routes if need be.

Population Impacts

Traffic accidents associated with severe snow and ice storms are a primary impact that can affect all Southampton residents, as well as blocked roadways and power outages. As with all hazards, vulnerable populations in Southampton are more likely to be impacted by severe winter storms. These individuals may be physically or financially less able to both prepare for and respond to hazard impacts such as power outages, poor roads, lack of public transportation, heavy snow or ice loads damaging buildings, an inability to clear snow, and extreme cold, among others. It is important for Emergency Management,

the Council on Aging, and other Town departments to have strategies in place to provide assistance to vulnerable individuals impacted by severe snow and ice storms.

Changes in Land Use/Development

The limited amount of new residential and commercial development is not likely to impact the Town's vulnerability to severe snow and ice storms.

Hazard Risk Index Rating

Based on the above assessment, Southampton has a hazard index rating of "2/3 — high/medium risk" from snowstorms and ice storms.

Hurricanes/Tropical Storms

Hazard Description

Hurricanes are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. The primary damaging forces associated with these storms are high-level sustained winds and heavy precipitation. Hurricanes are violent rainstorms with strong winds that can reach speeds of up to 200 miles per hour and which generate large amounts of precipitation. Hurricanes generally occur between June and November and can result in flooding and wind damage to structures and above-ground utilities.

Location

Because of the hazard's regional nature, all of Southampton is at risk from hurricanes, meaning the location of occurrence is "large." Ridgetops are more susceptible to wind damage. Areas susceptible to flooding are also likely to be affected by heavy rainfall.

Extent

As an incipient hurricane develops, barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricane intensity is further classified by the Saffir-Simpson Hurricane Wind Scale, which rates hurricane wind intensity on a scale of 1 to 5, with 5 being the most intense. A description of the damages that could occur due to a hurricane is described by the Saffir-Simpson scale, as shown below.

Table 3.8: Saffir-Simpson Hurricane Wind Scale

Hurricane Damage Classifications			
Storm Category	**Damage Level**	**Description of Damages**	**Wind Speed (MPH)**
1	MINIMAL Very dangerous winds will produce some damage	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage. An example of a Category 1 hurricane is Hurricane Dolly (2008).	74-95
2	MODERATE Extremely dangerous winds will cause extensive damage	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings. An example of a Category 2 hurricane is Hurricane Francis in 2004.	96-110
3	EXTENSIVE Devastating damage will occur	Some structural damage to small residences and utility buildings, with a minor amount of curtain wall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland. An example of a Category 3 hurricane is Hurricane Ivan (2004).	111-129
4	EXTREME Catastrophic damage will occur	More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland. An example of a Category 4 hurricane is Hurricane Charley (2004).	130-156
5	CATASTROPHIC Catastrophic damage will occur	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required. An example of a Category 5 hurricane is Hurricane Andrew (1992).	157+

Source: National Hurricane Center, 2024

Previous Occurrences

Hurricanes that have affected the region in which Southampton is located are shown in the following table.

Table 3.9: Major Hurricanes in the Pioneer Valley 1930 - 2024

Major Hurricanes in the Pioneer Valley		
Hurricane/Storm Name	**Year**	**Saffir/Simpson Category (when reached MA)**
Great Hurricane of 1938	1938	3
Great Atlantic Hurricane	1944	1
Carol	1954	3
Edna	1954	1
Diane	1955	Tropical Storm
Donna	1960	Unclear, 1 or 2
Groundhog Day Gale	1976	Not Applicable
Gloria	1985	1
Bob	1991	2
Floyd	1999	Tropical Storm
Irene	2011	Tropical Storm
Sandy	2012	Super Storm
Henri	2021	Tropical Storm

Source: National Hurricane Center, 2024

Probability of Future Events

Southampton's location in western Massachusetts reduces the risk of extremely high winds that are associated with hurricanes, although it does experience some high wind events. Based upon past occurrences, it is reasonable to say that there is a "low" probability of hurricanes in Southampton, or between a 1 - 10 percent chance, in any given year. Climate change is projected to result in more severe weather, including increased occurrence of hurricanes and tropical storms. Because of this, the probability of hurricanes occurring in the future will likely increase.

Vulnerability Assessment

Built Environment Impacts

The Town faces a "moderate - critical" impact from hurricanes, depending on the severity. From 5 – 25 percent of property in Southampton could be affected, with the possibility of injuries occurring as well.

To approximate the potential impact to property and people that could be affected by this hazard, the total value of all property in town, $732,955,200, is used.

Wind damage of 20 percent to 10 percent of structures damaged could result in an estimated $14,659,104 of damage. Estimated flood damage to 20 percent of structures with 10 percent damage to each structure could also result in $14,659,104 of damage. The cost of repairing or replacing the roads, bridges, utilities, and contents of structures is not included in this estimate.

Population Impacts

Damage to homes and property and power outages are impacts from high wind events that could affect all Southampton residents. Flooding from excessive rainfall with hurricanes would impact Southampton residents as well. As with all hazards, underserved and vulnerable populations in Southampton are more likely to be impacted by damages from wind and flooding. These individuals may be physically or financially less able to both prepare for and respond to this hazard. It is important for Emergency Management, the DPW, the Council on Aging, and other Town departments to have strategies in place to provide assistance to vulnerable individuals impacted by hurricanes and tropical storms.

Changes in Land Use/Development

The limited amount of new residential and commercial development is not likely to impact the Town's vulnerability to hurricanes and tropical storms.

Hazard Risk Index Rating

Based on the analysis, Southampton possesses a rating of "3-Medium Risk" for hurricanes on the hazard index.

Severe Thunderstorms/Wind/Tornados/Microburst

Hazard Description

A thunderstorm is a storm with lightning and thunder produced by a cumulonimbus cloud, usually producing gusty winds, heavy rain, and occasional hail. Effective January 5, 2010, the NWS modified the hail size criterion to classify a thunderstorm as 'severe' when it produces damaging wind gusts in excess of 58 mph (50 knots), hail that is 1 inch in diameter or larger (quarter size), or a tornado (NWS, 2023).

Wind is air in motion relative to surface of the earth. For non-tropical events over land, the NWS issues a Wind Advisory (sustained winds of 31 to 39 mph for at least 1 hour or any gusts 46 to 57 mph) or a High Wind Warning (sustained winds 40+ mph or any gusts 58+ mph). For non-tropical events over water, the NWS issues a small craft advisory (sustained winds 25-33 knots), a gale warning (sustained winds 34-47 knots), a storm warning (sustained winds 48 to 63 knots), or a hurricane force wind warning (sustained winds 64+ knots). For tropical systems, the NWS issues a tropical storm warning for any areas (inland or coastal) that are expecting sustained winds from 39 to 73 mph. A hurricane warning is issued for any areas (inland or coastal) that are expecting sustained winds of 74 mph. Effects from high winds can include downed trees and/or power lines and damage to roofs, windows, etc. High winds can cause scattered power outages. High winds are also a hazard for the boating, shipping, and aviation industry sectors.

Tornadoes are swirling columns of air that typically form in the spring and summer during severe thunderstorm events. In a relatively short period of time and with little or no advance warning, a tornado can attain rotational wind speeds in excess of 250 miles per hour and can cause severe devastation along a path that ranges from a few dozen yards to over a mile in width. The path of a tornado may be hard to predict because they can stall or change direction abruptly. Within Massachusetts, tornadoes have occurred most frequently in Worcester County and in communities west of Worcester, including towns in eastern Hampshire County. High wind speeds, hail, and debris generated by tornadoes can result in loss of life, downed trees and power lines, and damage to structures and other personal property (cars, etc.).

Microbursts are sudden down bursts of air that that funnel air directly down until it hits the ground and disperses outwards. Microbursts most commonly occur during strong thunderstorms. The scale and suddenness of microbursts make them difficult to predict with certainty, but it is possible to forecast the conditions that make microbursts much more likely. The high winds associated with microbursts can knock over full grown trees, damage buildings and are especially problematic for aircrafts.

Location

As per the SHMCAP, the entire town of Southampton is at risk of high winds, severe thunderstorms, and tornadoes. The plan also identifies Southampton and the surrounding communities as being at high risk of tornado occurrence within Massachusetts. The location of occurrence of thunderstorms and severe wind is large, with over 50 percent of the town affected. The location of occurrence for tornadoes and microbursts is "small," with less than 10 percent of the town affected.

Extent

An average thunderstorm is 15 miles across and lasts approximately 30 minutes; severe thunderstorms can be much larger and last longer. As per the SHMCAP, there are on average 10 to 30 days of thunderstorm activity in the state each year. Thunderstorms can cause hail, wind, and flooding. Thunderstorm winds in Massachusetts typically range from 20 – 55 mph, but they can producing damaging gusts of over 58 mph and potentially extreme gusts of up to 100 mph. Straight-line winds (non-rotating) over 58 mph are considered severe and can cause significant property and infrastructure damage.

Microbursts are typically less than three miles across. They can last anywhere from a few seconds to several minutes. Microbursts cause damaging winds up to 170 miles per hour in strength and can be accompanied by precipitation.

Tornadoes are measured using the enhanced F-Scale, shown below with the intensity categories and corresponding descriptions of damage. The strongest tornado on record to affect western Massachusetts was the 2011 Springfield tornado, rated as EF3. The more typical strength tornado seen in Massachusetts in EF1.

Table 3.10: Fujita Scale for Tornadoes

Enhanced Fujita Scale Levels and Descriptions of Damage			
EF-Scale Number	**Intensity Phrase**	**3-Second Gust (MPH)**	**Type of Damage Done**
EF0	Gale	65–85	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign boards.
EF1	Moderate	86–110	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
EF2	Significant	111–135	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
EF3	Severe	136–165	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
EF4	Devastating	166–200	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.

Previous Occurrences

There has been one tornado and multiple microburst events since the 1970s based on the recollection of the project advisory committee. These include:

- A tornado on Gilbert Road in the early 1970s, damage assessments unavailable;
- A microburst in the early 1990s causing damage on Pleasant Street and College Highway. Approximately 15-20 large pine trees came down on Pleasant Street during this event and other tree damage occurred on College Highway.
- Five microbursts have occurred in the last approximately 10 years. A Microburst in 2014 (the same event that caused severe wind damage on Mt. Tom in Easthampton) on Gilbert Road took down many trees and wires.

Severe wind events have occurred most years, with the committee observing that they are occurring more frequently than in the past, most likely due to climate change. A wind shear occurred in April, 2007 on Glendale, Cold Spring and White Loaf Roads causing mostly tree damage estimated around $20,000 on residential property and required roughly $10,000 of town funds for damage to infrastructure.

Probability of Future Events

One measure of tornado activity is the tornado index value. It is calculated based on historical tornado events data using USA.com algorithms. It is an indicator of the tornado level in a region. A higher tornado index value means a higher chance of tornado events. Data was used for Hampshire County to determine the Tornado Index Value as shown in the table below.

Tornado Index for Hampshire County	
Hampshire County	138.23
Massachusetts	87.60
United States	136.45

Source: USA.com, http://www.usa.com/Hampshire-county-ma-natural-disasters-extremes.htm

Based upon the available historical record, it is reasonable to estimate that there is a “moderate to high” probability of severe thunderstorms and high winds (40 – 70 percent chance in any given year), and a “low” probability of tornado occurrence (1 to 10 percent chance in any given year) in the town.

Vulnerability Assessment

Built Environment Impacts

Overall, the Town faces a “limited” impact from severe thunderstorms and winds with 5-10 percent or more of damage in the affected area, and a potentially “catastrophic” impact from tornadoes and microbursts with more than 50% of property damaged in the affected area.

The potential for locally catastrophic damage is a factor in any severe weather event. In Southampton, a tornado that hit residential areas would leave much more damage than a tornado with a travel path that ran along the town’s forested areas, where little settlement has occurred. Most buildings in town have

not been built to Zone 1, Design Wind Speed Codes. The first edition of the Massachusetts State Building Code went into effect on January 1, 1975, with much of the town's housing built before this date.

To approximate the potential impact to property and people that could be affected by thunderstorms, tornadoes, or wind, the total value of all property in town, $732,955,200 is used.

For a tornado, an estimated 100 percent of damage could occur to 1 percent of structures, resulting in a total of $7,329,552 worth of damage. For a severe thunderstorm or wind, an estimated 10 percent of damage could occur to 10 percent of structures, resulting in a total of $7,329,552 worth of damage. The cost of repairing or replacing the roads, bridges, utilities, and contents of structures is not included in this estimate.

Population Impacts

Damage to homes and property and power outages are impacts from high wind events that could affect all Southampton residents. Flooding from excessive rainfall with severe thunderstorms would impact residents as well. As with all hazards, vulnerable populations in Southampton are more likely to be impacted by damages from wind and flooding. These individuals may be physically or financially less able to both prepare for and respond to this hazard. It is important for Emergency Management, the DPW, the Council on Aging, and other Town departments to have strategies in place to provide assistance to vulnerable individuals impacted by severe thunderstorms, high wind events, or a tornado or microburst.

Land Use/Development Impacts

The limited amount of new residential and commercial development is not likely to impact the Town's vulnerability to severe thunderstorms, high wind events, tornadoes and microbursts.

Hazard Risk Index Rating

Based on the above assessment, Southampton has a hazard index rating of "3- medium risk" from severe thunderstorms and winds, and a "4 – low risk" from tornadoes.

Wildfires/Brushfire

Hazard Description

Wildland fires are typically larger fires, involving full-sized trees as well as meadows and scrublands. Brushfires are uncontrolled fires that occur in meadows and scrublands, but do not involve full-sized trees. Both wild-land fires and brushfires can consume homes, other buildings and/or agricultural resources. Typical causes of brushfires and wildfires are lightning strikes, human carelessness, and arson.

FEMA has classifications for 3 different classes of wildland fires:

- Surface fires are the most common type of wild-land fire and burn slowly along the floor of a forest, killing or damaging trees.
- Ground fires burn on or below the forest floor and are usually started by lightning.
- Crown fires move quickly by jumping along the tops of trees. A crown fire may spread rapidly, especially under windy conditions.

The wildfire and brushfire season in Massachusetts usually begins in late March and typically culminates in early June, corresponding with the driest live fuel moisture periods of the year. April is historically the month in which wildfire danger is the highest. However, wildfires can occur every month of the year. Drought, snow pack, and local weather conditions can expand the length of the fire season. The early and late shoulders of the fire season usually are associated with human-caused fires. In 2024, severe drought conditions in late summer and fall resulted in the most active wildfire and brushfire season in Massachusetts on record.

Location

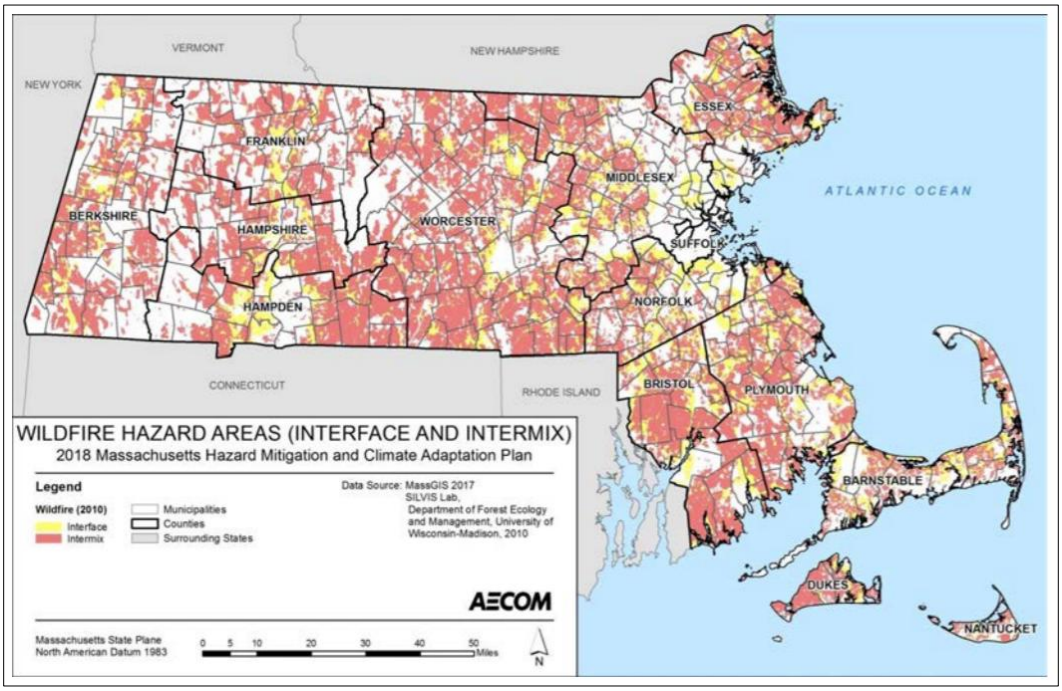
Hampden and Hampshire County have approximately 469,587 acres of forested land, which accounts for 62 percent of total land area. In Southampton, approximately 69% of the land, 12,800 acres, is forested and therefore at risk of fire. A large wildfire could damage almost all of the town's land mass in a short period of time. However, Massachusetts typically receives more than 40 inches of rain per year and much of the landscape is fragmented, and together these two traits make wildfires relatively uncommon in Massachusetts. However, the risk for wildfires is increasing along with the increased frequency of drought. In drought conditions, a brushfire or wildfire would be a matter of concern. There are forested areas very near all areas of Southampton, making the entire Town susceptible to wildfire and brushfire, and meaning the location of occurrence from this hazard is "large," or affecting more than 50 percent of the town.

The State Hazard Mitigation and Climate Adaptation Plan (EEA and EOPPS, 2018) states:

> Portions of the Commonwealth susceptible to wildfire, particularly at the urban-wildland interface…, are defined as those in the vicinity of contiguous vegetation, with more than one house per 40 acres and less than 50 percent vegetation, and within 1.5 miles of an area of more than 500 hectares (approximately 202 acres) that is more than 75 percent vegetated."

Figure 3.1 below shows wildland-urban interface and hazard areas in the state. According to this map, approximately 60% of Southampton is located in this interface and hazard area and most at risk of wildfire and brushfire. The western portion of town is most vulnerable to wildfires. This area of town has protected watershed land for the Tighe Carmody and White Reservoirs. Critical facilities most likely to be impacted by a wildfire include a water pump station on Dilbert Road, the Town Hall, the Police Station, the Fire Station, the Larabee School, and a town well on Glendale Road. Damage to these structures could severely impede the town's ability to operate or respond to events. Route 10, College Highway and Russellville Road, three major evacuation routes, could also be impacted depending on where the burn were to occur.

Figure 3.1: Wildland-Urban Interface and Hazard Areas in Massachusetts



Extent

Wildfires can cause widespread damage to the areas that they affect. They can spread very rapidly, depending on local wind speeds and be very difficult to get under control. Fires can last for several hours up to several days. There are approximately 12,800 acres of forested land, comprising 69% of the town's total land mass. The overall extent of wildfires is shown in the table below:

Table 3.11 Extent of Wildfires

Rating	Basic Description	Detailed Description
CLASS 1: Low Danger (L) Color Code: Green	Fires not easily started	Fuels do not ignite readily from small firebrands. Fires in open or cured grassland may burn freely a few hours after rain, but wood fires spread slowly by creeping or smoldering and burn in irregular fingers. There is little danger of spotting.
CLASS 2: Moderate Danger (M) Color Code: Blue	Fires start easily and spread at a moderate rate	Fires can start from most accidental causes. Fires in open cured grassland will burn briskly and spread rapidly on windy days. Woods fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel – especially draped fuel -- may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
CLASS 3: High Danger (H) Color Code: Yellow	Fires start easily and spread at a rapid rate	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High intensity burning may develop on slopes or in concentrations of fine fuel. Fires may become serious and their control difficult, unless they are hit hard and fast while small.
CLASS 4: Very High Danger (VH) Color Code: Orange	Fires start very easily and spread at a very fast rate	Fires start easily from all causes and immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high-intensity characteristics - such as long-distance spotting - and fire whirlwinds, when they burn into heavier fuels. Direct attack at the head of such fires is rarely possible after they have been burning more than a few minutes.
CLASS 5: Extreme (E) Color Code: Red	Fire situation is explosive and can result in extensive property damage	Fires under extreme conditions start quickly, spread furiously and burn intensely. All fires are potentially serious. Development into high-intensity burning will usually be faster and occur from smaller fires than in the Very High Danger class (4). Direct attack is rarely possible and may be dangerous, except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions, the only effective and safe control action is on the flanks, until the weather changes or the fuel supply lessens.

Previous Occurrences

In 2024, Southampton's Fire Department reported 9 brush fires and 15 unauthorized burns. There were 229 burn permits issued for the 2024 season. The Fire Department responded to the fires and none of the fires grew larger or burned out of control. However, with the increase in drought conditions these unauthorized burns and small brush fires are a concern and create additional risk of wildfires in Southampton.

During the past 100 years, there have not been many wildfires occurring in the Pioneer Valley. However, several have occurred during the past 20 years, as shown in the list below. The drought in November 2024 has resulted in a significant number of wildfires and brushfires across Massachusetts, including many in the Pioneer Valley.

- 1995 – Russell, 500 acres burned on Mt. Tekoa
- 2000 – South Hadley, 310 acres burned over 14 days in the Lithia Springs Watershed
- 2001 – Ware, 400 acres burned
- 2010 – Russell, 320 acres burned on Mt. Tekoa
- 2012 – Eastern Hampshire County, dry conditions and wind gusts created a brush fire in Brimfield, and burned 50 acres
- 2016 –Montgomery, 60 acres burned on Mt. Tekoa
- 2019 – Russell and Montgomery, 200 acres burned on Mt. Tekoa
- 2024 - Northampton, 55 acres burned in Fitzgerald Lake conservation area
    - Monson- 44
    - Great Barrington – 1,670
    - Montgomery - 65

Probability of Future Events

In accordance with the Massachusetts Hazard Mitigation Plan, the Town Hazard Mitigation Committee found it is difficult to predict the likelihood of wildfires in a probabilistic manner due to the number of variables involved. While wildland fires have not been a significant problem in Southampton, it is possible that changing land use patterns and climate conditions will increase the Town's vulnerability. Increased temperatures and periods of drought could result in more incidences of wildfires. Climate change is also predicted to bring increased wind damage from major storms, as well as new types of pests to the region. Both increased wind and the introduction of new pests could potentially create more debris in wooded areas and result in a larger risk of fires. However, given the occurrence of previous wildfires as well as the chance of wildfires increasing in the next five years, the Hazard Mitigation Workgroup identified the likelihood of a future wildfire or brushfire to be "moderate," or between 10 - 40 percent in any given year.

Vulnerability Assessment

Built Environment Impact

Wildfires can result in widespread damage to the natural environment, the built environment and can cause injuries and death. The estimated impact from wildfires and brushfires was determined by the HMP Committee to be "limited," with up to 10 percent of property in affected area damaged or destroyed.

To approximate the potential impact to property and people that could be affected by this hazard, the total value of all property in town, $732,955,200 is used. An estimated 100 percent of damage could occur to 1 percent of structures, resulting in a total of $7,329,552 worth of damage. The cost of repairing or replacing the roads, bridges, utilities, and contents of structures is not included in this estimate.

Population Impacts

Damage to homes and property are impacts from wildfires that could affect Southampton residents, particularly the small percentage that live in the wildland-urban interface area. Additionally, all Southampton residents could be impacted by smoke from wildfires in the Town or in the region. As Hampshire County residents learned in 2022 and 2023, it is possible to be significantly impacted by poor air quality from wildfires from as far away as western Canada. Vulnerable populations in Southampton, such as the elderly, small children, outdoor laborers, and anyone with respiratory issues or compromised immune systems are more likely to be impacted by smoke from wildfires. It is important for Emergency Management, the Board of Health, the Council on Aging, and other Town departments to have strategies in place to provide assistance to vulnerable individuals impacted by wildfires and poor air quality events due to wildfire smoke.

Land Use/Development Impacts

The limited amount of new residential and commercial development in Southampton will not have a significant impact on the Town's vulnerability to wildfire. This is particularly true as development in the wildland-urban interface would be most vulnerable, and relatively little development has occurred in these areas.

Hazard Risk Index Rating

Based on the above assessment, Southampton has a hazard risk index of "3- Medium Risk" from wildfires.

Vulnerability

Based on the above assessment, Southampton has a hazard risk index of "3 – medium" from wildfires.

Earthquakes

Hazard Description

An earthquake is a sudden, rapid shaking of the ground that is caused by the breaking and shifting of rock beneath the Earth's surface. Earthquakes can occur suddenly, without warning, at any time of the year. New England experiences an average of 30 to 40 earthquakes each year although most are not noticed by people.[2] Ground shaking from earthquakes can rupture gas mains and disrupt other utility service, damage buildings, bridges and roads, and trigger other hazardous events such as avalanches, flash floods (dam failure) and fires. Un-reinforced masonry buildings, buildings with foundations that rest on filled land or unconsolidated, unstable soil, and mobile homes not tied to their foundations are at risk during an earthquake.[3]

Location

Because of the regional nature of the hazard, the entire town is equally susceptible to earthquakes and the location of occurrence is "large" with over 50 percent of land affected.

Extent

The magnitude of an earthquake is measured using the Richter Scale, which measures the energy of an earthquake by determining the size of the greatest vibrations recorded on the seismogram. On this scale, one step up in magnitude (from 5.0 to 6.0, for example) increases the energy more than 30 times. The intensity of an earthquake is measured using the Modified Mercalli Scale. This scale quantifies the effects of an earthquake on the Earth's surface, humans, objects of nature, and man-made structures on a scale of I through XII, with I denoting a weak earthquake and XII denoting a earthquake that causes almost complete destruction.

Table 3.12: Richter Scale for Earthquakes

Richter Scale Magnitudes and Effects	
Magnitude	**Effects**
< 3.5	Generally not felt, but recorded.
3.5 - 5.4	Often felt, but rarely causes damage.
5.4 - 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1 - 6.9	Can be destructive in areas up to about 100 kilometers across where people live.
7.0 - 7.9	Major earthquake. Can cause serious damage over larger areas.
8 or >	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

[2] Northeast States Emergency Consortium Web site: *www.nesec.org/hazards/earthquakes.cfm.*
[3] Federal Emergency Management Agency Web site: *www.fema.gov/hazards/earthquakes/quake.shtm.*

Table 3.13: Modified Mercalli Scale for Earthquakes

Modified Mercalli Intensity Scale for and Effects			
Scale	**Intensity**	**Description Of Effects**	**Corresponding Richter Scale Magnitude**
I	Instrumental	Detected only on seismographs.	
II	Feeble	Some people feel it.	< 4.2
III	Slight	Felt by people resting; like a truck rumbling by.	
IV	Moderate	Felt by people walking.	
V	Slightly Strong	Sleepers awake; church bells ring.	< 4.8
VI	Strong	Trees sway; suspended objects swing, objects fall off shelves.	< 5.4
VII	Very Strong	Mild alarm; walls crack; plaster falls.	< 6.1
VIII	Destructive	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged.	
IX	Ruinous	Some houses collapse; ground cracks; pipes break open.	< 6.9
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread.	< 7.3
XI	Very Disastrous	Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards.	< 8.1
XII	Catastrophic	Total destruction; trees fall; ground rises and falls in waves.	> 8.1

Source: US Federal Emergency Management Agency

Previous Occurrences

The most recent earthquakes to affect Southampton are shown in the table below. There is no record of any damage to the Town of Southampton as a result of these earthquakes.

Table 3.14: Largest Earthquakes in the Northeast in the past 100 years

Largest Earthquakes Affecting the Region, 1924 – 2024		
Location	**Date**	**Magnitude**
Ossipee, NH	December 20, 1940	5.5
Ossipee, NH	December 24, 1940	5.5
Dover-Foxcroft, ME	December 28, 1947	4.5
Kingston, RI	June 10, 1951	4.6

Portland, ME	April 26, 1957	4.7
Middlebury, VT	April 10, 1962	4.2
Near NH Quebec Border, NH	June 15, 1973	4.8
West of Laconia, NH	Jan. 19, 1982	4.5
Plattsburg, NY	April 20, 2002	5.1
Bar Harbor, NH	October 3, 2006	4.2
Hollis Center, ME	October 16, 2012	4.6
New Bedford, MA	November 8, 2020	3.6
Tewksbury, NJ	April 5, 2024	4.8

Source: Northeast States Emergency Consortium website, www.nesec.org/hazards/earthquakes.cfm

Probability of Future Events

One measure of earthquake activity is the Earthquake Index Value. It is calculated based on historical earthquake events data using USA.com algorithms. It is an indicator of the earthquake activity level in a region. A higher earthquake index value means a higher chance of earthquake events. Data was used for Hampshire County to determine the Earthquake Index Value as shown in the table below.

Earthquake Index for Hampshire County	
Hampshire County	0.17
Massachusetts	0.70
United States	1.81

Based upon existing records, there is a "very low" frequency of earthquakes in Southampton, with less than a 1 percent chance of an earthquake occurring in any given year.

Vulnerability Assessment

Built Environment Impact

Most earthquake-related property damage and deaths are caused by failure and collapse of structures due to ground shaking. The level of damage depends upon the extent and duration of the shaking. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock, and liquefaction.

Massachusetts introduced earthquake design requirements into their building code in 1975 and improved building code for seismic reasons in the 1980s. However, these specifications apply only to new buildings or to extensively-modified existing buildings. Buildings, bridges, water supply lines, electrical power lines and facilities built before the 1980s may not have been designed to withstand the forces of an earthquake. Aside from residences, the majority of Southampton's buildings have been built after 1975. The seismic standards have also been upgraded with the 1997 revision of the State Building Code.

A significant earthquake, estimated to be approximately of magnitude 6.1 or higher, would cause the impact described above. Thus the HMP committee determined that the town could face a "critical" impact from earthquakes, with more than 25 percent of structures in the affected area damaged or destroyed. To approximate the potential impact to property and people that could be affected by this hazard, the total value of all property in town, $732,955,200, is used. Older buildings are particularly vulnerable to earthquakes because their construction pre-dates building codes that included strong seismic considerations. The Hazard Mitigation Committee currently lacks the information on how severe damage to critical facilities could be if an earthquake were to happen. They believe that all facilities will be impacted on some scale.

An estimated 50 percent of damage would occur to 25 percent of structures, resulting in a total of $91, 619,400 worth of damage. The cost of repairing or replacing the roads, bridges, utilities, and contents of structures is not included in this estimate.

Population Impacts

Damage to homes and property are the primary impacts from earthquakes that could affect Southampton residents. As with all hazards, vulnerable populations are more likely to be impacted by damages from earthquakes. These individuals may be physically or financially less able to both prepare for and respond to this hazard. It is important for Emergency Management, the Board of Health, the Council on Aging, and other Town departments to have processes in place to provide assistance to vulnerable individuals who could be in need in the event of an earthquake.

Land Use/Development Impacts

The limited amount of new residential and commercial development in Southampton will not have a significant impact on the Town's vulnerability to earthquakes.

Hazard Risk Index Rating

Based on the above analysis, Southampton has a hazard index rating of "4 – low risk" from earthquakes.

Dam Failure

Hazard Description

Dams and their associated impoundments provide many benefits to a community, such as water supply, recreation, hydroelectric power generation, and flood control. However, they also pose a potential risk to lives and property. Dam failure is not a common occurrence, but dams do represent a potentially disastrous hazard. When a dam fails, the potential energy of the stored water behind the dam is released rapidly. Most dam failures occur when floodwaters above overtop and erode the material components of the dam. Often dam breaches lead to catastrophic consequences as the water rushes in a torrent downstream flooding an area engineers refer to as an "inundation area." The number of casualties and the amount of property damage will depend upon the timing of the warning provided to downstream residents, the number of people living or working in the inundation area, and the number of structures in the inundation area.

Many dams in Massachusetts were built during the 19th Century without the benefit of modern engineering design and construction oversight. Dams of this age can fail because of structural problems due to age and/or lack of proper maintenance, as well as from structural damage caused by an earthquake or flooding.

The Massachusetts Department of Conservation and Recreation Office of Dam Safety is the agency responsible for regulating dams in the state (M.G.L. Chapter 253, Section 44 and the implementing regulations 302 CMR 10.00). To be regulated, these dams are in excess of 6 feet in height (regardless of storage capacity) and have more than 15 acre feet of storage capacity (regardless of height). Dam safety regulations enacted in 2005 transferred significant responsibilities for dams from the State of Massachusetts to dam owners, including the responsibility to conduct dam inspections.

Dam safety regulations enacted in 2005 transferred significant responsibilities for dams from the State of Massachusetts to dam owners. The financial burden associated with these responsibilities can vary greatly, depending on the number of dams for which an owner is responsible, and the dam's condition and hazard index rating. A hazard index rating (see description of this rating in "Extent" section below) brings with it different requirements related to frequency of inspections by engineers and the need for development of emergency action plans. With these inspections, a dam determined to be in poor or unsafe condition can involve very costly repairs.

In January 2013, the Governor signed into law additional provisions to promote greater dam safety by:

1. extending the requirement of emergency action plans to significant hazard dams (in addition to high hazard dams);
2. strengthening the authority of the Office of Dam Safety by increasing fines for noncompliance; and
3. establishing the Dam and Sea Wall Repair and Removal Fund, an annual grant and loan program available to dam owners.

Location

According to the Office of Dam Safety and confirmed by the Hazard Mitigation Committee, Southampton has six (6) dams within its boundaries. The location of occurrence for a dam failure has been determined to be "medium" with between 10 and 50 percent of the land area affected.

Table 3.15: Dams in Southampton

National ID Number	Dam Name	Primary Owner	Hazard Potential	Date of Most Recent Formal Phase I Inspection	Condition	Dam Purpose	Regulatory Authority	Date of most recent EAP
MA00499	Tighe Carmody Reservoir Dam	City of Holyoke, Water Works	High	10/12/2022	Satisfactory	Water Supply	ODS	12/01/22
MA00606	White Reservoir Dam	City of Holyoke, Water Works	Significant	10/30/2018	Fair	Water Supply	ODS	12/21/22
MA00498	Alder Pond Dam	Barry L. Searle Declaration of Trust	Low	10/23/2015	Poor	Recreati on	ODS	N/A
MA00500	Removed – Lyman Mill Pond Dam							

Extent

Often dam breaches lead to catastrophic consequences as the water ultimately rushes in a torrent downstream flooding an area engineers refer to as an "inundation area." The number of casualties and the amount of property damage will depend upon the timing of the warning provided to downstream residents, the number of people living or working in the inundation area, and the number of structures in the inundation area.

Dams in Massachusetts are assessed according to their risk to life and property. The state has three hazard classifications for dams:

- *High Hazard*: Dams located where failure or improper operation is likely to cause loss of life and serious damage to homes, industrial or commercial facilities, important public utilities, main highways, or railroads.
- *Significant Hazard*: Dams located where failure or improper operation may cause loss of life and damage to homes, industrial or commercial facilities, secondary highways or railroads or cause interruption of use or service of relatively important facilities.
- *Low Hazard*: Dams located where failure or improper operation may cause minimal property damage to others. Loss of life is not expected.

Previous Occurrences

To date, there have been no dam failures Southampton.

Probability of Future Events

Currently, the frequency of dam failures is very low with a less than 1 percent chance of a dam failing in any given year.

As described in the Massachusetts Hazard Mitigation Plan, dams are designed partly based on assumptions about a river's flow behavior, expressed as hydrographs. Changes in weather patterns can have significant effects on the hydrograph used for the design of a dam. If the hygrograph changes, it is conceivable that the dam can lose some or its entire designed margin of safety, also known as freeboard. If freeboard is reduced, dam operators may be forced to release increased volumes earlier in a storm cycle in order to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream. Throughout the west, communities downstream of dams are already seeing increases in stream flows from earlier releases from dams. Dams are constructed with safety features known as "spillways." Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Spillway overflow events, often referred to as "design failures," result in increased discharges downstream and increased flooding potential. Although climate change will not increase the probability of catastrophic dam failure, it may increase the probability of design failures.

As Southampton's dams age, and if maintenance is deferred, the likelihood of a dam failure will increase. With the more frequent extreme precipitation events and larger storm events in the northeastern United States due to climate change, dams will be tested, and the likelihood of dam failure may increase. The extreme storm flows produced by Tropical Storm Irene in 2011, for example, led to the failure of at least two dams in the Pioneer Valley region. An unnamed private dam in Blandford failed, sending a surge of water downstream to inundate and damage nearby roads. At the Granville Reservoir Dam owned by the Town of Westfield, the spillway failed when waters overwhelmed and then undermined the structure. Since then, the Town of Westfield has had to spend $3 million in repairs and improvements to the dam and spillway.

These storm events raise questions about dams and their current capacity to pass more frequent extreme flows. Poor condition dams in the region—as may have been the case in Blandford—will certainly be tested, but so will other dams—such as the Granville Reservoir Dam, which was reportedly in fair condition at the time of the storm.

Vulnerability Assessment

Built Environment Impact

A vulnerability assessment was done for the inundation area below the one high risk, Manhan Dam, and the one significant risk, White Reservoir Dam based on the Tighe-Carmody Reservoir Dam Emergency

Action Plan by Tighe and Bond[4]. A major flood caused by a sudden breach of the Tighe-Carmody Reservoir Dam is estimated to inundate numerous homes and roadways in Southampton, Easthampton and Westfield. The inundation area as determined by Tighe and Bond is provided on the attached map. The following streets and number of residences and businesses are in the inundation zone in Southampton:

- Brickyard Road - 52 residences
- Brickyard Road Extension – 3 residences
- Buchanan Circle – 7 residences
- College Highway – 17 residences; 3 businesses
- Coolidge Drive – 2 residences
- East Street – 11 residences
- Fomer Road – 1 residence
- Garfield Circle – 4 residences
- Gilbert Road – 6 residences
- Gunn Road – 16 residences
- Madison Avenue – 3 residences
- Manhan Road – 14 residences
- Moosebrook Road – 3 residences
- Pleasant Street – 18 residences; 1 business
- Pomeroy Meadow Road – 2 residences
- Riverdale Drive Extension – 1 residence
- Riverdale Drive – 3 residences
- Strong Road – 8 residences
- Wyben Road – 5 residences

Therefore, up to 183 structures could be impacted by a failure of the Tighe-Carmody Dam in Southampton. It is assumed that 100% damage would occur to 100% of the structures within this inundation zone. Using the median home value, $426,900 in the calculation, the losses incurred are estimated at $78,122,700. Expenses relating to transmission lines, utilities, and infrastructure repairs are not factored into this estimate.

The Hazard Mitigation Committee indicated that the following critical facilities could be the most vulnerable: the water pump station at Gilbert Road, Town Hall, the Police Station, the Fire Station, the Larabee School, and a town well on Glendale Road. Route 10, College Highway and Russellville Road are designated evacuation routes that could be impacted. Damage or destruction to these facilities or evacuation routes could significantly impede the town's ability to operate.

Population Impacts

Flood damage to property from a dam failure is the primary impact that could affect Southampton residents in the inundation zones shown above, assuming that all residents were able to evacuate in time. If not all residents were able to evacuate, there is the possibility of injury or death. The most vulnerable residents would be those whose mobility is impaired, including those who are disabled or elderly. The EAP has clear procedures in place for alerting residents in harm's way of an imminent dam

[4] *Tighe Carmody Reservoir Dam Emergency Action Plan*, Tighe and Bond, September 2024.

failure, and the Town and Holyoke Water Works should also conduct tabletop exercises to be prepared for various emergency scenarios. The Town should ensure that the vulnerable individuals who could be impacted by dam failures would be assisted with evacuation in the unlikely event that it would be needed.

Land Use/Development Impacts

The limited amount of new residential development in Southampton within the dam inundation zone will not have a significant impact on the Town's vulnerability to dam failure. However, it is important for any new homes and residents in that area to be added to the list to be contacted in event of a dam emergency.

Hazard Risk Index Rating

Based on this analysis, Southampton has a hazard index rating of "5 – very low risk" from dam failure.

Drought

Hazard Description

Drought is a normal, recurrent feature of climate. It occurs almost everywhere, although its features vary from region to region. In the most general sense, drought originates from a deficiency of precipitation over an extended period of time, resulting in a water shortage for some activity, group, or environmental sector. Reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitat are a few examples of the direct impacts of drought. Of course, these impacts can have far-reaching effects throughout the region and even the country.

Location

Because of this hazard's regional nature, a drought would impact the entire town, meaning the location of occurrence is "large" or over 50 percent of the Town affected.

Extent

The severity of a drought would determine the scale of the event and would vary among town residents depending on whether the residents' water supply is derived from a private well or the public water system. The U.S. Drought Monitor also records information on historical drought occurrence. The U.S. Drought Monitor categorizes drought on a D0-D4 scale as shown below.

Table 3.16: Drought Classifications

U.S. Drought Monitor		
Classification	**Category**	**Description**
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered
D1	Moderate Drought	Some damage to crops, pastures; streams, reservoirs, or wells low, some water shortages developing or imminent; voluntary water-use restrictions requested
D2	Severe Drought	Crop or pasture losses likely; water shortages common; water restrictions imposed
D3	Extreme Drought	Major crop/pasture losses; widespread water shortages or restrictions
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies

Source: US Drought Monitor, http://droughtmonitor.unl.edu/classify.htm

Previous Occurrences

Southampton had limited experience with severe drought conditions in the past, although this is changing as drought conditions related to climate change become more frequent. Massachusetts has suffered significant droughts several times in the last century, with four major droughts within the last 10 years (2016-2017, 2020, 2022, and 2024). Other major droughts occurred in 1929-1932, 1939-1944, 1961-1969, and 1980-1983. While these droughts affected Southampton as well, they were more impactful in other areas of the state and in communities with less reliable water supplies. The following table indicates previous occurrences of drought since 2004, based on the US Drought Monitor:

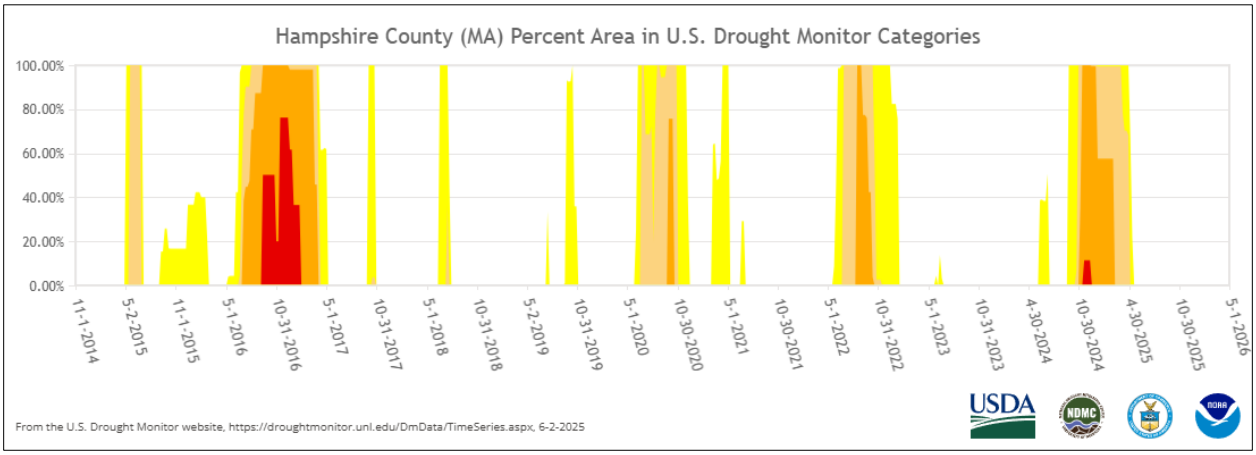
Table 3.17: Annual Drought Status in Hampshire County, 2043 - 2024

Year	Maximum Severity	Percent of County Affected
2004	D0	57.36%
2005	D1	1.79%; D0 conditions in 100%
2006	D0	100%
2007	D1	73.05%; D0 conditions in 100%
2008	D0	0.55%
2009	D0	73.49%
2010	D1	46.15%; D0 conditions in 100%
2011	None	
2012	D2	100%
2013	D1	99.87%
2014	D1	100%
2015	D1	100%
2016	D3	76.31%; D2 conditions in 100%
2017	D3	61.64%; D2 conditions in 98.04%
2018	D1	35.46%; D0 conditions in 100%
2019	D0	93.15%
2020	D2	75.73%; D1 conditions in 100%
2021	D0	100%
2022	D2	100%
2023	D0	82.46%
2024	D3	11.35%; D2 conditions in 100%

Source: US Drought Monitor

Figure 3.4 below shows the incidences of drought in Hampshire County in a time series model from 2014 – 2024. As can be seen on this graph, the drought in 2016-2017 was the most extreme and significant for the county. The droughts in 2020, 2022 and 2024 were significant as well, falling into the severe category in 2020 and 2022, and a short period of extreme drought in 2024. The drought in the fall of 2024 led to the occurrence of a large number of brushfires in western Massachusetts.

Figure 3.4: Incidences of drought in Hampshire County from 2015 – 2025



Probability of Future Events

Based on previous occurrences of drought, as well as the likelihood of future droughts due to changes in temperature and precipitation related to climate change, the HMP Committee suggested that the probability of drought occurring in Southampton is "moderate," (10 - 40% in a given year).

According to Resilientma.org, there could be up to 2 more consecutive dry days per year by the middle of the century in the lower Connecticut River watershed. However, many factors, such as water supply sources, population, economic factors, and infrastructure, may affect the severity and length of a drought event.

Vulnerability Assessment

Built Environment Impacts

The impacts of drought are categorized by the U.S. Drought Monitor to include:

- Slowing or loss of crops and pastures
- Water shortages of restrictions
- Low water levels in streams, reservoirs, and wells
- Increased fire risk

Due to the water richness of western Massachusetts, Southampton is unlikely to be adversely affected by anything other than a major, extended drought. While such a drought would require water saving measures to be implemented, there would be no foreseeable damage to structures or loss of life resulting from the hazard. The main impact would be to any residents with shallow wells who might

have well failures. There would also be an impact to agricultural operations in the Town, although there are a small number of farms in Southampton that could be affected. Thus, the Hazard Mitigation Committee has determined the impact from this hazard to be "minor-critical," with a range of minimal damage to property to more serious damage if wells were to fail and if agricultural operations were severely impacted.

Population Impacts

Most residents and businesses in Southampton (67%) are on Town water, with the remainder of households on private wells. The town water supply is dependable but water levels could be reduced during an extreme drought. A permanent interconnection with the Town of Easthampton was established in 2021 to address that issue. The Easthampton interconnection is only operated when the Glendale Road well cannot meet demand. The larger impact would be on any residents with shallow private wells. There are likely a small number of these, and according to the HMP Committee, there is no record of well failures due to previous droughts. However, the water department did issue restrictions on watering during the 2020 and 2022 droughts.

Land Use/Development Impacts

The limited amount of new residential development in Southampton will not have a significant impact on the town's vulnerability to drought.

Hazard Risk Index Rating

Based on the above assessment, Southampton has a hazard index rating of "4 – low risk" from drought. No loss of property, or damages to people or property is expected due to this hazard.

Extreme Temperatures

Hazard Description

Massachusetts has four clearly defined seasons. Extreme temperatures are considered outliers, or temperatures that fall outside the typical range for each season. Extreme temperatures can last from an afternoon to three days or more. Day and nighttime temperature fluctuations also factor into the overall effects of temperature. For example, when the temperature does not cool off at night during an extreme heat wave, the risk of heat related illnesses is intensified.

Extreme cold does not have a threshold temperature, but rather is defined as prolonged periods of excessively cold weather. This may vary by region based on average temperatures in the region. In Massachusetts, where temperatures regularly go below freezing during winter months, the community is often used to these temperatures. However, this does not lessen the risk. Extremely cold temperatures can create dangerous conditions for homeless populations, stranded travelers, and residents without sufficient insulation or heat in their homes. The homeless, the elderly, and people with disabilities are often most vulnerable. In Southampton, 21% of the population is over 65 years old, so a quarter of the town's population. Cold weather events can also have significant health impacts such as frostbite and hypothermia. Furthermore, power outages during cold weather may result in inappropriate use of combustion heaters, cooking appliances, and generators in poorly ventilated areas, which can lead to increased risk of carbon monoxide poisoning. During extreme cold, pipes may freeze and burst in many buildings with unreinforced masonry.

Extreme heat is considered to occur when the maximum temperature reaches above 90°F during the day. A heat wave is defined as three consecutive days with temperatures above 90°F. Projected heat days and heat waves can have an increased impact in areas with a greater amount of impervious surface, such as buildings, roads, parking lots, and driveways. These can become "heat islands" as dark asphalt and roofs store the heat from the sun. Impacts from heat stress can exacerbate pre-existing respiratory and cardiovascular conditions.

Extent

What constitutes "extreme cold" or "extreme heat" can vary across different geographies, based on what the population of a particular place is accustomed to. According to the Massachusetts State Hazard Mitigation and Climate Adaptation Plan, extreme heat for Massachusetts is usually defined as a period of 3 or more consecutive days above 90 degrees Fahrenheit (°F), but more generally as a prolonged period of excessively hot weather, which may be accompanied by high humidity. Extreme cold is also considered relative to the normal climatic lows in a region. More broadly, extreme temperatures can be defined as those that are far outside the normal ranges. The average highs and lows of the hottest and coolest months at Westover Air Force Base, 15 miles from Westhampton, the closest site for which data was available, are provided in the table below.

Monthly Temperature Averages

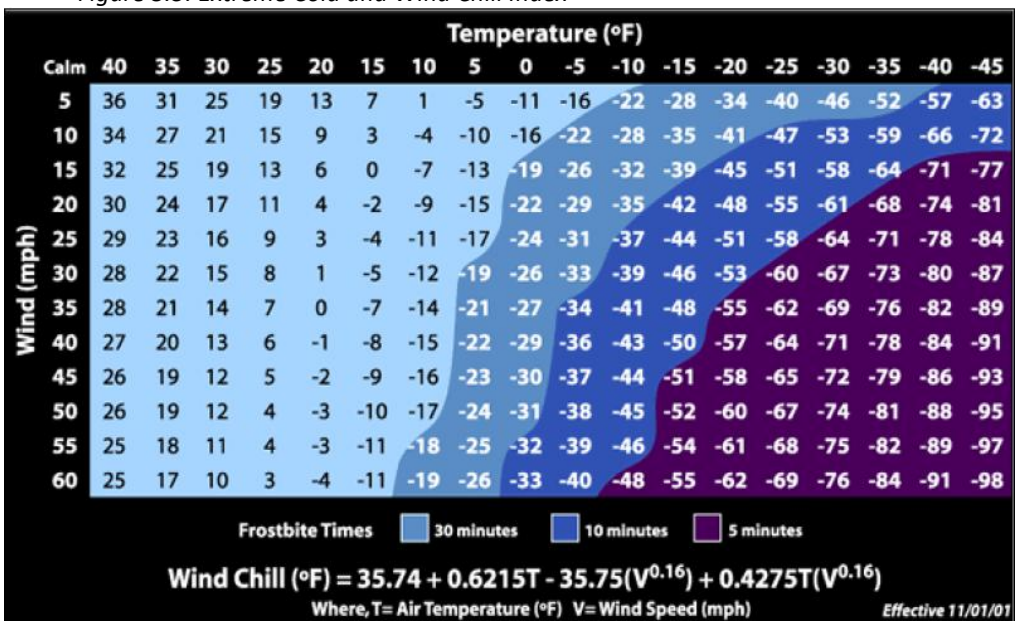
	July (Hottest Month)	January (Coldest Month)
Average High (°F)	84	34
Average Low (°F)	62	17

Source: NOAA NWS, 2020. Monthly Climate Normals (2006 – 2020) Westover Air Force Base, MA

Projected temperature extremes will shift with climate change, according to research conducted by the Massachusetts Executive office for Energy and Environmental Affairs and the University of Massachusetts, Amherst. By 2050, summer maximum temperatures (including the presumed hottest month of July) are expected to reach as high as 87.7°F in the Connecticut River Basin, as opposed to a 1971-2000 baseline of 80.2°F (resilientma.org).

Extremely cold temperatures are measured using the Wind Chill Temperature Index provided by the National Weather Service (NWS). The updated index was implemented in 2001 and helps explain the impact of cold temperatures on unexposed skin. Figure 3.5 below provides more information. According to NOAA's National Centers for Environmental Information Storm Events Database, between 1/2000 and 12/2024, Massachusetts experienced 37 extreme cold and wind chill events. None of these events were reported for Hampshire County, however.[5]

Figure 3.5: Extreme Cold and Wind Chill Index



Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph) Effective 11/01/01

Source: National Weather Service

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5 https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Cold%2FWind+Chill&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2000&endDate_mm=12&endDate_dd=31&endDate_yyyy=2024&county=ALL&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=25%2CMASSACHUSETTS

July is generally the hottest month in Southampton, with an average daytime high temperature of approximately 85°F (NEIC, 2021). The NWS issues a Heat Advisory when the Heat Index is forecast to reach 100-104˚ F for two or more hours (NOAA, n.d.). The NWS issues an Excessive Heat Warning if the Heat Index is forecast to reach 105˚+F for two or more hours. The Heat Index chart below indicates the relationship between heat index and relative humidity.

Figure 3.6: Heat Index Chart

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Category	Heat Index	Health Hazards
Extreme Danger	130 °F – Higher	Heat Stroke or Sunstroke is likely with continued exposure.
Danger	105 °F – 129 °F	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.
Extreme Caution	90 °F – 105 °F	Sunstroke, muscle cramps, and/or heat exhaustions possible with prolonged exposure and/or physical activity.
Caution	80 °F – 90 °F	Fatigue possible with prolonged exposure and/or physical activity.

Most heat-related illnesses and deaths occur during the summer. Municipalities and community organizations should be aware of who is at greatest risk and what actions can be taken to prevent a heat-related illness or death. According to the Centers for Disease Control and Prevention, the populations most vulnerable to extreme heat impacts include the following:

- People over the age of 65
- Children under the age of five
- Individuals with pre-existing medical conditions that impair heat tolerance
- Individuals without proper cooling
- Individuals with respiratory conditions
- Individuals that work outside and/or overexert themselves during extreme heat events

Location

Because of this hazard's regional nature, extreme temperatures would impact the entire town, resulting in a "large" location of occurrence, or more than 50 percent of total land area affected.

Previous Occurrences

NOAA's National Centers for Environmental Information Storm Events Database provides data on excessive heat. Between 2000 and 2024, Massachusetts experienced 16 heat or excessive heat days,

however none of these were reported for Hampshire County.[6] Extreme temperatures are classified as medium frequency events. As defined by the 2013 State Hazard Mitigation and Climate Adaptation Plan, these events occur from once in 5 years to once in 50 years or have a chance of occurrence of 2% to 20% per year. According to the 2018 Massachusetts State Hazard Mitigation and Climate Adaptation Plan, between four and five heat waves (3 or more consecutive days of 90˚+F temperatures) occur annually in Massachusetts.

According to the HMP Committee, there has been some use of cooling centers (the Senior Center and the Library) on extreme heat days, however it has been difficult to track the exact use because there are residents there for regular use as well as for cooling.

Probability of Future Events

The probability of future extreme heat and extreme cold occurring in Southampton is considered by the HMP committee to be “very high," or between 70 – 100% in the next year. Given the impacts of climate change, the probability of extreme heat occurring in particular will increase over time.

Extreme heat events that can result in illness or loss of life have been relatively rare in Southampton, although the probability of such events is increasing due to the impacts of climate change. The average temperature for the Lower Connecticut River watershed is projected to increase by up to 3 - 8°F by 2050, depending on greenhouse gas emissions, and the number of days above 90°F could increase by up to 12 - 41 days.[7] Figure 3.7 below from Resilient MA shows the projected annual days with maximum temperatures above 90 degrees for the Connecticut River watershed.

While there may not have been a great need for air conditioning in the past, as the occurrence of high heat days over 90° increases, the need for cooling centers for residents without air conditioning will increase, or for whom running air conditioners is cost prohibitive. This will particularly be an issue for vulnerable populations such as seniors, low-income residents, and renters.

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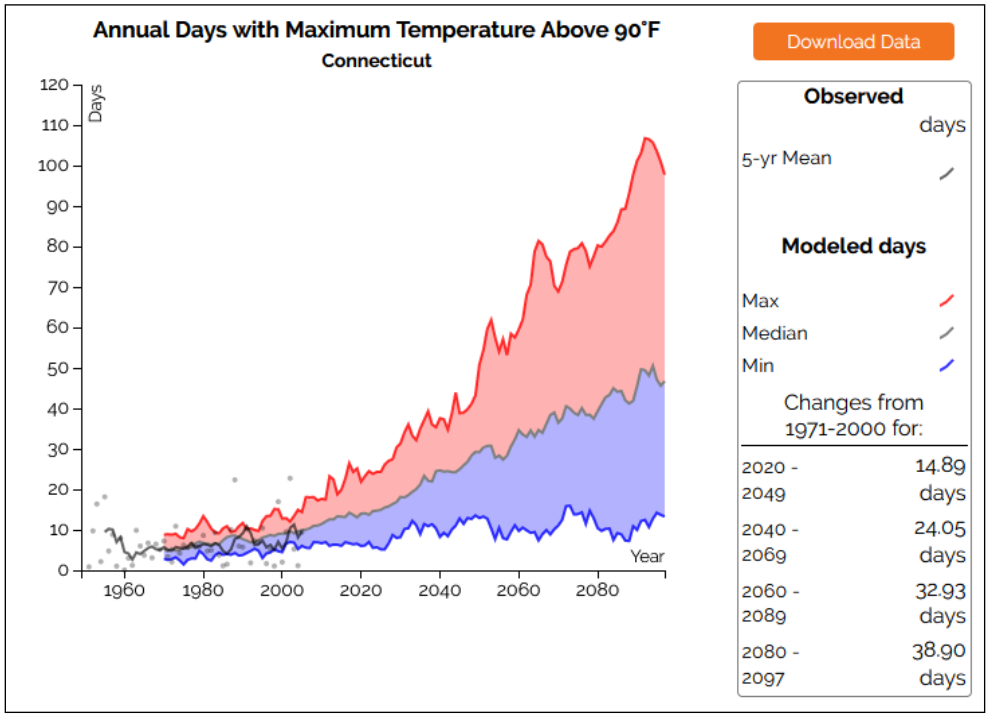
[6]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Excessive+Heat&beginDate_mm=11&beginDate_dd=01&beginDate_yyyy=1999&endDate_mm=11&endDate_dd=30&endDate_yyyy=2021&

[7] Resilientma.org

Figure 3.7: Projected annual days with maximum temperatures above 90°F.



Vulnerability Assessment

Built Environment Impacts

The impact of extreme heat or cold in Southampton is considered to be "limited," with no property damage and limited effect on humans. Extreme heat is unlikely to impact physical structures, although it can negatively affect agricultural operations and can contribute to drought conditions. Extreme cold can cause water pipes to freeze and burst. Increased temperature fluctuations in the winter can cause more freeze-thaw issues with roads and other infrastructure.

Population Impacts

The largest concern in Southampton during heat waves is older adults (over 65) that make up 21.8% of the population and are more likely to have pre-existing health conditions. There are also individuals with medical conditions who are vulnerable to extreme heat, and even young adults and healthy individuals can succumb to heat if they participate in strenuous physical activities during hot weather. Other vulnerable individuals include the homeless, and renters and households with lower incomes, who are less likely to have air conditioning or may not use it due to the cost. The primary concern during extreme cold events is residents who may also have lost power due to a snow or ice storm, especially vulnerable groups such as older adults. During both extreme heat and cold events, the Town opens cooling/warming centers for any residents who don't have adequate cooling or warmth at home. It is important for Emergency Management, the Board of Health, the Council on Aging, and other Town departments to have

processes in place to provide assistance to vulnerable individuals who might need assistance during both extreme heat and extreme cold events.

Land Use/Development Impacts

The limited amount of new residential and commercial development in Southampton will not have a significant impact on the Town's vulnerability to extreme heat or cold events.

Hazard Risk Index Rating

Southampton's vulnerability from extreme heat and cold is considered by the HMP Committee to be "3/4 – Medium/low risk."

4. CRITICAL FACILITIES

A Critical Facility is defined as a building, structure, or location which:

- is vital to the hazard response effort.
- maintains an existing level of protection from hazards for the community.
- would create a secondary disaster if a hazard were to impact it.

Critical Facilities within Hazard Areas

Hazards identified in this plan are regional risks and, as such, all critical facilities fall into the hazard area. The exception to this is flooding. There are several critical facilities that fall within the 100-year floodplain as shown in the table at the end of this section.

The Critical Facilities List for the Town of Southampton has been identified utilizing a Critical Facilities List provided by the State Hazard Mitigation Officer. Southampton's Hazard Mitigation Committee has broken up this list of facilities into four categories:

- The first category contains facilities needed for Emergency Response in the event of a disaster.
- The second category contains Non-Emergency Response Facilities that have been identified by the Committee as non-essential. These are not required in an emergency response event, but are considered essential for the everyday operation of Southampton.
- The third category contains Facilities/Populations that the Committee wishes to protect in the event of a disaster.
- The fourth category contains Potential Resources, which can provide services or supplies in the event of a disaster.

The critical facilities and evacuation routes potentially affected by hazard areas are identified in Table 4-1, following this list. The Past and Potential Hazards/Critical Facilities Map (Appendix C) identifies these facilities.

Category 1 – Emergency Response Services

The Town has identified the Emergency Response Facilities and Services as the highest priority in regards to protection from natural and man-made hazards.

1) Emergency Operations Center
    - Primary: Police Department, 8 East Street
    - Secondary: Town Hall
    - Tertiary: DPW/highway Department Headquarters, 8 Fomer Road

2) Fire Station
   Southampton Fire Department – College Highway

3) Police Station
   Southampton Town Police Department – 8 East Street

4) Highway Department
   Highway Department – 8 Fomer Road

5) Water Supply
   Primary: Town Well at Glendale Road and College Highway (Barnes Aquifer)
   Secondary: Easthampton Booster Station

6) Emergency Fuel Stations
   Highway Department – 8 Fomer Road (Diesel only)

7) Emergency Electrical Power Facility

There are generators for the following facilities:

- Town Hall
- Police Department
- Fire Station
- Highway Department
- 1 portable generator at the DPW
- 1 portable generator (low power) at the Water Department

8) Emergency Shelters/Warming and Cooling Centers
   There is no designated shelter in Town. For overnight sheltering, the Town sends residents to the regional shelter at Smith Vocational school in Northampton. The buildings listed below may be used for warming/cooling centers, and those with generators could be used in cases of power outages for residents to charge phones and access cooling or heating. During extreme heat, some residents also use the Library or Senior Center for cooling.

- William E. Norris School, 34 Pomeroy Meadow Road (No generator)
- Southampton Town Hall, Route 10, College Highway
- First Congregational Church, 126 College Highway (No generator)

9) Transfer Station
   Moose Brook Road

10) Helicopter Landing Sites
    Conant Park
    Town Hall Parking Lot
    Labrie Field, 28 Strong Road

11) Communications
    College Highway North – cell tower
    College Highway South – cell tower

Cell tower College Highway (Middle)
Cell tower Westfield Road (Route 202) in Holyoke
Police and Fire Repeater - Holyoke Gas and Electric Shed on Mt. Tom

12) Primary Evacuation Routes
Brickyard Road
Cold Spring Road
College Highway
County Road
East Street
Fomer Road
Middle Road
Pleasant Street
Pomeroy Meadow Road
Russellville Road

13) Bridges/Culverts Located on Evacuation Routes
College Highway at Manhan River
East Street at Manhan River
Fomer Road at Alder Meadow Brook and Manhan River
Pomeroy Meadow Road at North Branch Manhan River
Russellville Road at Alder Meadow Brook

Category 2 – Non Emergency Response Facilities

The town has identified these facilities as non-emergency facilities; however, they are considered essential for the everyday operation of Southampton.

1. Problem Culverts

Brickyard Extension
Cottage Ave
Crooked Ledge Road
Fomer Road
Freyer Road
Gilbert Road
Maple Street
Moose Brook Road
Pomeroy Meadow Road
Riverdale Road

2. Drinking Water Supply
Storage Tank (700,000 gallons), Little Mountain near Wolcott Road

Category 3 – Facilities/Populations to Protect

The third category contains people and facilities that need to be protected in the event of a disaster.

1) Special Needs Population
   Southampton Meadows, 128 College Highway
   Berkshire Group Homes, located at:
   98 Valley Road
   314 College Highway
   120 East Street
   33 Pequot Road
   46 Coleman Road

2) Elderly Housing/Assisted Living
   Hillside Meadows Assisted Living, 39 Hillside Meadow Ave

3) Schools
   William E Norris Elementary School, 34 Pomeroy Meadow Road
   Peanuts Preschool, 7 College Highway
   Clown Around Preschool, 31 Gunn Road

4) Churches
   First Congregational Church, College Highway

5) Historic Buildings/Sites
   Historic district – Southampton Town Center

6) Apartment Complexes
   Greenbriar Estates, 114 College Highway
   Long Hill Gardens, 134 College Highway
   Southampton Meadows, 128 College Highway

7) Employment Centers
   Red Rock Shops, 15 College Highway (retail plaza)
   Big Y Plaza, 10 College Highway (retail plaza)

Category 4 – Potential Resources

Contains facilities that provide potential resources for services or supplies.

1) Food/Water
   Big Y, College Highway, Pure Food, College Highway, Mini Mart-College Highway, Cumberland Farms-College Highway

2) Hospitals/Medical Supplies
   Walgreens, College Highway

Big Y, College Highway
Southampton Rehab Clinic (Cooley-Dickinson Hospital), College Highway
Cooley Dickinson Hospital, Northampton
Baystate Noble Hospital, Westfield
Baystate Medical Center, Springfield

3) Gas
None with cooperative agreement with town
Retail:
Cumberland Farms, 130 College Highway
Sunoco, 247 College Highway

4) Building Materials Suppliers
Fluery's Lumber, Easthampton, Home Depot-West Springfield and Westfield
Hathaway Construction, Easthampton (gravel)
Hilltown Sand and Gravel, Huntington (gravel)

Table 4.1: Critical Facilities and Evacuation Routes Potentially Affected by Hazard Areas			
Hazard Type	**Hazard Area**	**Critical Facilities Affected**	**Evacuation Routes Affected**
Flooding (100-year)	Gilbert Road	Southampton water main pump station	None
	Riverdale Road	none	none
	Pomeroy Meadow Road	none	Pomeroy Meadow Road
	Fomer Road	none	Fomer Road
	Maple Street	none	none
	Moose Brook Road	none	none
	Brickyard Extension	none	Brickyard Road
Flooding (localized)	Cottage Ave	none	none
	Crooked Ledge Road	none	none
	Mountain Road	none	none
	East Street	Town Hall/Police Station-electrical and heating systems as well as jails located in basement that floods	
Severe Snow/Ice Storm	Glendale Road	none	None
	Fomer Road	none	Fomer Road
	Russellville Road	none	Russellville Road
	Pomeroy Meadow Road	none	Pomeroy Meadow Road
	Line Street	none	none
	County Road North and South	none	County Road
	Pleasant Street	none	none
	Rte 10, College Highway by F&G Club	none	College Highway
Hurricane	Entire town equally susceptible	All	All
Severe Thunderstorm/ Wind/ Tornado/ Microburst	Entire town equally susceptible	All	All
Wildfire/Brushfire	Tighe Carmody and White Reservoirs watershed	Holyoke water main	Fomer Road

Earthquake	Entire town equally susceptible	All	All
Dam Failure	Below Manhan and White Reservoir Dams	Water pump station, Gilbert Road; Town Hall and Police Station, Larabee School, Fire Station Town well at Glendale Road	Rte 10, College Highway, Russellville Road
Drought	Entire town equally susceptible	All	All
Hazardous Materials	Southampton Highway Department	Highway Department	Fomer Road

5. MITIGATION CAPABILITIES AND STRATEGIES

One of the steps of this Hazard Mitigation Plan is to evaluate all of the town's existing policies and practices related to natural hazards and identify potential gaps in protection. Once these gaps in protection are identified, future mitigation strategies can be crafted and recommended. This is done by evaluating existing and future measures in comparison to the Town's goal statement for natural hazard mitigation. The Southampton Hazard Mitigation committee used the FEMA Capability Assessment tool to assess existing capabilities. This assessment is included in the Appendix to this plan.

Southampton has many no cost or low-cost hazard mitigation capabilities in place. Land use zoning and subdivision regulations contain specific policies and regulations that include hazard mitigation best practices, such as limitations on development in floodplains, stormwater management, tree maintenance, etc. Southampton does have plans in place, such as a Master Plan, an Open Space and Recreation Plan, and a Comprehensive Emergency Management Plan, that have all been developed within the last five years. While Southampton has staff that can address hazard mitigation in their work, including an Emergency Management Director, a Highway Superintendent, a Building Inspector, and a Tree Warden, the town would benefit from additional staff, such as a Town Planner and Town Engineer. These positions could possibly be shared with another community, or covered by part-time consultants.

The Town has very committed and dedicated volunteers who serve on Boards and Committees and in Volunteer positions. The Town collaborated closely with surrounding communities and is party to Mutual Aid agreements through the MEMA. Southampton is also an active community of the Pioneer Valley Planning Commission (PVPC) and can take advantage of no-cost local technical assistance as needed provided by the professional planning staff at the PVPC.

Southampton's most obvious hazard mitigation need is for federal and state funds to implement prioritized actions. While Southampton is a well-managed fiscally sound Town and has relatively well-off residents, with state constraints on municipalities raising their own funds, Southampton has limited financial resources to invest in costly hazard mitigation measures. Southampton is, however, committed to locally matching all HMGP grants received.

After reviewing the community's existing policies and mitigation capabilities, as well as the hazard identification and assessment, the Hazard Mitigation Committee developed a set of hazard mitigation strategies it will work to implement over the next five years. The committee also agreed to adhere to the following goal statement , which will serve as a framework for mitigation of the hazards identified in this plan.

Goal Statement

To minimize the loss of life, damage to property, and the disruption of governmental services and general business activities due to the following natural hazards: Flooding, severe snowstorms/ice storms, severe thunderstorms, hurricanes, tornadoes, wildfires/brushfires, earthquakes, dam failures, drought, and extreme temperatures.

Existing Capabilities

The Town of Southampton currently has a variety of mitigation capabilities in place. These capabilities/strategies are listed in the following pages and have been evaluated in the "Effectiveness" column.

Table 5.1: Existing Mitigation Capabilities for the Town of Southampton

Existing Mitigation Capabilities				
Capability	**Action Type**	**Description**	**Hazards Mitigated**	**Effectiveness**
Flood Control Structures	Capital Construction	There are seven dams in Southampton	Flooding	Effective
Aquifer Protection District Overlay	Zoning bylaws	Areas delineated as primary recharge areas for groundwater aquifers, and watershed areas for reservoirs are protected by strict use regulations	Flooding	Effective
Floodplain District Overlay	Zoning bylaws	Areas delineated as part of the 100-year floodplain are protected by strict use regulations	Flooding	Effective
Wetlands Regulations	Zoning bylaws	Proposed development where wetlands are located must meet minimum upland acreage, erosion control, and storm water management requirements	Flooding	Effective
Submission Requirements	Subdivision regulations	Subdivisions must meet requirements of Wetlands Protection Act as well as Floodplain Overlay District Subdivisions within the Floodplain District are governed by additional regulations	Flooding	Somewhat effective, could have stricter stormwater guidelines
Design Standards	Subdivision regulations	Requirements for sufficient drainage and protection of natural features	Flooding	Somewhat effective, could have more requirements for green infrastructure
River and Stream Protection	Subdivision regulations	Required enforcement of standards established by the Wetlands Protection Act.	Flooding	Effective

Existing Mitigation Capabilities				
Capability	**Action Type**	**Description**	**Hazards Mitigated**	**Effectiveness**
Southampton Master Plan and Open Space and Recreation Plan	Planning document	Identifies potential issues for Southampton's water supply needs in the future Inventories natural features and promotes natural resource preservation in the Town, including areas in the floodplain; such as wetlands aquifer recharge areas, farms and open space, rivers, streams and brooks.	Floods Severe Thunderstorm Hurricanes Tornadoes Wildfire / Brushfire Earthquakes Dam Failure	Effective, but need to continue to implement high priority actions
Participation in the National Flood Insurance Program	Operational Strategy	As of May 2024, a total of 3 NFIP policies were in force for a total of $513,000 worth of insurance coverage.	Flooding	Effective for policy holders, could encourage more participation in program or purchase of private flood insurance
Design Standards for Roads	Subdivision regulations	Standards include street grade regulations (six to ten percent maximum)	Severe Snowstorms/ Ice Storms	Effective

Existing Mitigation Capabilities				
Capability	**Action Type**	**Description**	**Hazards Mitigated**	**Effectiveness**
State Building Code	State regulation	The Town of Southampton has adopted the Massachusetts State Building Code which promotes construction of buildings that can withstand hazards to a certain degree	Floods Severe Snowstorms / Ice Storms Severe Thunderstorm Hurricanes Tornadoes Wildfire / Brushfire Earthquakes Dam Failure	Effective
Height Restrictions	Zoning bylaws	The Town restricts height of development based on the use and zoning district	Flooding Severe Thunderstorm Hurricanes Tornadoes	Effective
Utilities	Operational Strategy	Work with Eversource and other utility providers to place utility lines underground in new subdivisions	Severe Snowstorms / Ice Storms Severe Thunderstorms Hurricanes Tornadoes	Effective

Existing Mitigation Capabilities				
Capability	**Action Type**	**Description**	**Hazards Mitigated**	**Effectiveness**
Shelters and Warming/Cooling Centers	Operational strategy	The town can use Smith Vocational HS as an overnight shelter. The Town Hall can be used as a warming/cooling center and has a generator. The Norris School, First Congregation Church, Senior Center and Library can also be used as warming/cooling centers, but have no generators.	Floods Severe Snowstorms / Ice Storms Severe Thunderstorm Hurricanes Tornadoes Wildfire / Brushfire Earthquakes Dam Failure Drought	Somewhat effective. Need to install cooling at the Norris School (cafeteria) and a generator. Also need to renew MOU with church.
Burn Permits	Regulation	Residents obtain burn permits from the Southampton Fire Department which provides information on safe burn practices	Wildfire / Brushfire	Effective
Subdivision Review Fire Safety	Subdivision regulations	The Fire Department is involved in the review of subdivision plans	Wildfire / Brushfire	Effective
Public Education / Outreach	Operational strategy	The Fire Department has ongoing educational programs in the schools and senior center	Wildfire / Brushfire	Effective
New Dam Construction Permits	Regulation	State law requires a permit for the construction of any dam	Flooding Dam Failure	Effective
Dam Inspections	Operational strategy	DCR has an inspection schedule that is based on the hazard rating of the dam (low, medium, high hazard)	Flooding Dam Failure	Effective

Existing Mitigation Capabilities				
Capability	**Action Type**	**Description**	**Hazards Mitigated**	**Effectiveness**
Evacuation Plans	Operational strategy	Comprehensive evacuation plans are required for High Hazard Dams and ensure the safety of citizens in the event of a dam failure	Flooding Dam Failure	Effective, but need to update regularly, including household contact information
CodeRed for Reverse 911 alerts	Operational strategy	Residents must sign up to receive CodeRed alerts about hazards and emergencies	All Hazards	Somewhat effective, should increase participation

Flooding

The key factors in flooding are the water capacity of water bodies and waterways, the regulation of waterways by flood control structures, and the preservation of flood storage areas and wetlands. As more land is developed, more flood storage is demanded of the town's water bodies and waterways. A summary of existing flood mitigation measures is below.

Management Plans

The Comprehensive Emergency Management (CEM) Plan for Southampton lists the following measures related to flood planning:

- Identify areas in the community that are vulnerable and prone to flooding in order to define methods of risk minimization. Review National Flood Insurance Maps.
- Disseminate emergency information and instructions concerning flood preparedness and safety to the public
- Ensure community leaders continue Southampton's participation in the National Flood Insurance Program.
- Monitor town for strict adherence to land use and building codes, such as the Wetlands Protection Act, to discourage new construction in flood-prone areas.
- Ensure that flood control works are in good operating condition at all times.
- Preserve natural water storage areas
- Maintains plans for managing all emergency response activities, including addressing potentially hazardous dams, in the case of a scenario that may result in flooding.

Evacuation Options

The majority of the land subject to the 100-year and 500-year floodplain is located along the full extent of the Manahan River and its tributaries, Pameroy Brook, and Pequot Pond. Additional locations are Potash Brook, White Resevoir, Tighe-Carmody Reservoir, Blue Meadow Brook, Alder Meadow Brook, Red Brook at the intersection of Fomer Road and Russelville Road, and Broad Brook. Emergency management personnel should assess existing floodplain and dam failure data to determine a geographically appropriate evacuation route. Southampton possesses bridges situated near or in the 100-year flood plain, which could complicate evacuation efforts. Some roads that residents would most likely take to reach safety travel through flood-affected areas.

Land Use Regulations that Mitigate Impacts from Flooding

The Town of Southampton has adopted several land use regulations that serve to limit or regulate development in floodplains, to manage storm water runoff, and to protect groundwater and wetland resources, which provide essential flood storage capacity. The zoning ordinances of the town contain several proactive measures taken to mitigate the implications of flooding.

Flood Plain Overlay District: Prohibits new construction and substantial modifications of existing structures within the 100-year floodplain, including the excavation of parcels or any substantial alterations of existing topsoil and vegetation. The district encircles 100-year flood plains in Southampton, according to the Southampton Flood Rate Maps.

Permitted cluster development in residential districts maintains at least 20% open space with vegetation, which absorbs and filters runoff before it penetrates the groundwater. Grades/slopes cannot exceed 10%, limiting the rate of storm water runoff.

Planned industrial development must offset impervious surfaces with at least 10% open space, grades/slopes less than 10%, and 20' vegetated buffers to absorb and filter runoff.

Site Plan Review process for planned multi-unit development requires the replacement of excavated topsoil (at least 4"), and the delineation of adjacent topography and natural water formations.

The Water Supply Protection District preserves the town's natural hydrology while preventing disruptions to and contaminations of sources of water, which act as natural flood-control infrastructure.

Erosion and Sediment Control Bylaw and Performance Standards minimizes the volume, rate, and direction of runoff by ensuring all development installs functioning stormwater management systems, refrains from disrupting an area's natural topography, and limits erosion by replacing sedimentation that may have been excavated during construction.

Subdivision Regulations

The Town of Southampton maintains subdivision regulations which remediate the environmental impacts of development. As previously referenced, developers are required to preserve open space, existing grades, and topography. Stormwater management performance standards are set forth by the town. Additionally, all development is required, under the Land Restoration Ordinance, to submit a Land Restoration Plan for the redevelopment or future development for a site that underwent substantial excavation, either during its past use or during construction. The Town will work on strengthening the subdivision regulations to mitigate stormwater flows and flooding over the next five years.

River and Stream Protection

The Town of Southampton adheres to the standards set forth by the Wetlands Protection Act, incorporating the legislation into its existing zoning ordinances in order to protect bodies of water and wetlands. The town also maintains a Water Supply Protection District and erosion and sediment control ordinances, which are referenced in the previous paragraph. Additionally, the town's zoning bylaws limit the use of septic tanks, leach fields, and the storage of hazardous materials in environmentally-sensitive areas that may harm the water supply and wetlands.

Southampton is a participating member of the National Flood Insurance Program. Further information on participation in the NFIP and claim statistics can be found on pgs. 19-22.

Severe Snow/Ice Storm

Winter storms can be challenging for emergency management personnel, especially when the temperature is near the freezing mark. The resulting precipitation can range from rain to sleet to snow, and it can change from one to the other during the course of the storm. All three could also possibly be present in Town at one time, depending on the elevation and resulting temperature. The Massachusetts Emergency Management Agency (MEMA) serves as the primary coordinating entity in the statewide

management of all types of winter storms and monitors National Weather Service (NWS) alerting systems when winter storms are expected.[8]

Management Plans

The CEM Plan for Southampton lists the following generic measures for severe winter storms:

- Develop and disseminate emergency public information concerning winter storms, especially material which instructs individuals and families how to stock their homes, prepare their vehicles, and take care of themselves during a severe winter storm.
- Local governments should assume that winter will occur annually and budget fiscal resources with snow management in mind
- Maintain plans for managing all winter storm emergency response activities.

To the extent that some of the damages from a winter storm can be caused by flooding, all of the flood protection mitigation measures described in Table 5.1 can also be considered as mitigation measures for severe snowstorms/ice storms.

The CEM Plan for Southampton lists the following generic preparedness and response measures for severe winter storms:

- Ensure that warning/notification, and communications systems are in readiness.
- Ensure that appropriate equipment and supplies, (especially snow removal equipment), are in place and in good working order.
- Review mutual aid agreements.
- Designate suitable shelters throughout the community and make their locations known to the public.
- Implement public information procedures during storm 'warning' stage.
- Prepare for possible evacuation and sheltering of some populations impacted by the storm (especially the elderly and special needs).

Restrictions on Development

There are no restrictions on development that are directly related to severe winter storms. The Town of Southampton Subdivision Rules and Regulations set grade limits on streets as part of its Section 4000 Required Improvements, and restrictions on utility placement (Section III. Procedure for the Submission and Approval of Plans, Sub-Section V, Design Standards), which, although not specified as weather hazard mitigation, can serve to minimize accident potential and power loss from severe winter storms.

State Building Code

For new or recently built structures, the primary protection against snow-related damage is construction according to the State Building Code, which addresses designing buildings to withstand snow loads. The Town of Southampton has measures in place for building inspections.

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[8] Comprehensive Emergency Management Plan for the Town of Southampton, 2001.

Hurricanes/Tropical Storms/Severe Wind

Of all the natural disasters that could potentially impact Southampton, hurricanes provide the most lead warning time because of the relative ease in predicting the storm's track and potential landfall. MEMA assumes "standby status" when a hurricane's location is 35 degrees North Latitude (Cape Hatteras) and "alert status" when the storm reaches 40 degrees north Latitude (Long Island). The flooding associated with hurricanes can be a major source of damage to buildings, infrastructure and a potential threat to human lives. Therefore, all of the flood protection mitigation measures described can also be considered hurricane mitigation measures. High winds that oftentimes accompany hurricanes can also damage buildings and infrastructure. Southampton has a 500-year wind probability rating of 120 m.p.h.

Management Plans

The CEM Plan for Southampton includes the following mitigation measures for hurricane planning and response:

- Develop and disseminate emergency public information and instructions concerning hurricane preparedness and safety.
- Community leaders should ensure that Southampton remains enrolled in the National Flood Insurance Program.
- Develop and enforce local building codes to enhance structural resistance to high winds and flooding. Build new construction in areas that are not vulnerable to direct hurricane effects.
- Maintain plans for managing all hurricane emergency response activities.

The CEM Plan for Southampton includes the following preparedness and response measures for hurricanes:

- Ensure that warning/notification systems and equipment is ready for use at the 'hurricane warning' stage.
- Review mutual aid agreements.
- Designate suitable wind and flood resistant shelters in the community and make their locations known to the public.
- Prepare for coordination of evacuation from potentially impacted areas including alternate transportation systems and locations of special needs facilities.
- Activate warning/notification systems to inform public of protective measures to be taken including evacuation where appropriate.
- Conduct evacuation of affected populations.
- Open and staff shelters and reception centers.
- Dispatch search and rescue teams.
- Dispatch emergency medical teams.
- Activate mutual aid activities.
- Take measures to guard against further danger from downed trees and utility lines, debris, etc.

Evacuation Options

According to the Southampton CEM plan, local officials have stated that the regional shelter at Smith Vocational High School in Northampton is the appropriate shelter for residents in the case of a hurricane.

Restrictions on Development

The only restrictions on development that are wind-related are the provisions in the zoning bylaw related to telecommunications facilities.

Mobile Homes

According to the Town of Southampton Zoning Bylaws, 4.22, Mobile homes are prohibited in all districts unless located in a mobile home park; and According to Section 4.430, *"A mobile home may be placed on the site of a residence which has been rendered uninhabitable by accident provided it is used for a period not to exceed 12 months as the primary residence of the owners of the residence which has been rendered uninhabitable."*

State Building Code

For new or recently built structures, the primary protection against wind-related damage is construction that adheres to the State Building Code, which, when followed, results in buildings that withstand high winds. The Town of Southampton provides building inspection services, assuring that all buildings are up to code.

Tornadoes

Worcester County and areas just to its west, including portions of Hampshire County, have been dubbed the "tornado alley" of the state because the majority of significant tornadoes in Massachusetts's weather history have occurred in that region. According to the Institute for Business and Home Safety, the wind speeds in most tornadoes are at or below design speeds that are used in current building codes.[9] Like earthquakes, the location and extent of potential damaging impacts of a tornado are completely unpredictable. Most damage from tornadoes comes from high winds that can fell trees and electrical wires, generate hurtling debris and, possibly, hail.

Management Plans

The CEM Plan for Southampton includes the following generic mitigation measures for tornado planning and response:

- Develop and disseminate emergency public information and instructions concerning tornado safety, especially guidance regarding in-home protection and evacuation procedures, and locations of public shelters.
- Strict adherence should be paid to building code regulations for all new construction.

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[9] *www.ibhs.org.*

- Maintain plans for managing tornado response activities. Refer to the non-institutionalized, special needs and transportation resources listed in the Resource Manual.

The CEM Plan for Southampton includes the following generic preparedness and response measures for tornadoes:

- Designate appropriate shelter space in the community that could potentially withstand tornado impact.
- Periodically test and exercise tornado response plans.
- Put Emergency Management on standby at tornado 'watch' stage
- At tornado 'warning' stage, broadcast public warning/notification safety instructions and status reports.
- Conduct evacuation, reception, and sheltering services to victims.
- Dispatch search and rescue teams.
- Dispatch emergency medical teams.
- Activate mutual aid agreements.
- Take measures to guard against further injury from such dangers as ruptured gas lines, downed trees and utility lines, debris, etc.
- Acquire needed emergency food, water, fuel, and medical supplies.
- Take measures relating to the identification and disposition of remains of the deceased.

Evacuation Plans

According to the Southampton CEM plan, local officials have stated that the regional shelter at Smith Vocational High School in Northampton is the appropriate shelter for residents in the case of a tornado.

Wildfire/Brushfire

In Southampton approximately 62 percent of the town's total land area is in forest, or about 15, 789 acres, and is therefore at risk of fire.

Regulatory Measures

Burn Permits

The Southampton Fire Department is the sole agency responsible for issuing burn permits in Southampton.

Subdivision Review

Once a subdivision has been approved, no lot shall be built upon without adequate provision of on-site water and fire fighting supplies. Furthermore, the Board of Health may require on-site provision of water and fire fighting supplies to the extent required by the Fire Chief.

Public Education/Outreach

The Southampton Fire Department has an outreach program in place that allows the Southampton Fire Department to partner with the senior center to inspect and replace smoke detectors. The Southampton Fire Department also has an active Triad program and conducts fire safety programs in the Elementary School.

Restrictions on Development

All industrial development must have fire-fighting and fire-suppression located on-premise when the use has storage facilities for inflammable and explosive materials.

Earthquake

Although there are five mapped seismological faults in Massachusetts and none in Southampton (a known fault line does pass through the abutting town of Belchertown), there is no discernible pattern of previous earthquakes along these faults nor is there a reliable way to predict future earthquakes along these faults or in any other areas of the state. Consequently, earthquakes are arguably the most difficult natural hazard to plan for.

Earthquakes can involve several potentially devastating secondary effects including:

- The collapse of buildings, bridges, roads, dams, and other vital structures;
- Rupture of utility pipelines;
- Flooding caused by dam failure;
- Landslides;
- Major transportation accidents, (railroad, chain highway crashes, aircraft, and marine);
- Extended power outage;
- Fire and/or explosion;
- HAZMAT accident; and,
- Water contamination.

Management Plans

The Southampton CEM Plan lists the following mitigation measures for earthquakes:

- Community leaders in cooperation with Emergency Management Personnel should obtain local geological information and identify and assess structures and land areas that are especially vulnerable to earthquake impact and define methods to minimize the risk.
- Strict adherence should be paid to land use and earthquake resistant building codes for all new construction.
- Periodic evaluation, repair, and/or improvement should be made to older public structures.
- Emergency earthquake public information and instructions should be developed and disseminated.
- Earthquake drills should be held in schools, businesses, special care facilities, and other public gathering places.

The Southampton CEM Plan lists the following generic preparedness and response measures for earthquakes:

- Earthquake response plans should be maintained and ready for immediate use.
- All equipment, supplies and facilities that would be needed for management of an earthquake occurrence should be maintained for readiness.
- Emergency Management personnel should receive periodic training in earthquake response.
- If the designated Emergency Operations Center (EOC) is in a building that would probably not withstand earthquake impact, another building should be chosen for an earthquake EOC.
- Mass Care shelters for earthquake victims should be pre-designated in structures that would be most likely to withstand earthquake impact.
- EOC will be activated and response will immediately be engaged to address any and all earthquake effects listed.
- Emergency warning/notification information and instructions will be broadcast to the public.
- Search and rescue teams will be dispatched.
- Emergency medical teams will be dispatched.
- Firefighters will address fires/explosions, and HAZMAT incidents.
- Law enforcement personnel will coordinate evacuation and traffic control.
- Reception centers and shelters will be opened and staffed.
- Animal control measures will be taken.
- Law enforcement personnel will protect critical facilities and conduct surveillance against criminal activities.
- Immediate life-threatening hazards will be addressed such as broken gas lines, downed utility wires, and fire control resources.
- Emergency food, water, and fuel will be acquired.
- Activate mutual aid.
- Measures will be taken relating to identification and disposition of remains of deceased by the Chief Medical Examiner.

Evacuation Options

According to the Southampton CEM plan, local officials have stated that the regional shelter at Smith Vocational High School in Northampton is the appropriate shelter for residents in the event of an earthquake.

State Building Code

State and local building inspectors are guided by regulations put forth in the Massachusetts State Building Code. The first edition of the Massachusetts State Building Code went into effect on January 1, 1975 and included specific earthquake resistant design standards. These seismic requirements for new construction have been revised and updated over the years and are part of the current, 6th Edition of the Massachusetts State Building Code. Given that most structures in Massachusetts were built before 1975, of many buildings and structures do not have specific earthquake resistant design features. According to the 2000 U.S. Census, 59 percent of the housing in Southampton was built before 1970. In addition, built areas underlain by artificial fill, sandy or clay soils are particularly vulnerable to damage during an earthquake.

Restrictions on Development

There are no seismic-related restrictions on development.

Dam Failure

The primary mitigation measures in place are the state regulations that control the construction and inspection of dams.

The Southampton CEM plan states that there are three categories of dam failure or overspill and that action should be taken according to hazard rating:

Type 1: Slowly developing condition

- Activate EOC
- Activate all communication networks
    - Establish communications with Command Post
    - On a 24-hour basis.
- Release public information
- Notify
    - MEMA Region Headquarters
    - American Red Cross
    - Downstream communities
- Review Plans for evacuation and sheltering
    - Evacuation
        - Routes
        - Notification
    - Sheltering
        - Availability and capacity
        - Food, supplies and equipment
        - Shelter owners and managers
        - Other communities (if out of town sheltering is required)
- Require "Stand By" status of designated emergency response forces.

Type 2: Rapidly developing condition

- Establish a 24-hour communications from dam site to EOC.
- Assemble, brief and assign specific responsibilities to emergency response forces.
- Release public information.
- Obtain and prepare required vehicles/equipment for movement.
- Prepare to issue warning.

Type 3: Practically instantaneous failure

- Issue warning
- Commence immediate evacuation.

- Commit required resources to support evacuation.
- Activate shelters or coordinate activation of shelters located outside the community.
- Notify:
    - MEMA Region Headquarters
    - Red Cross
- Initiate other measures as required to protect lives and property.

Management Plans and Regulatory Measures

The Southampton CEM Plan contains the following generic mitigation measures for dam failure:

- Develop and conduct public education programs concerning dam hazards.
- Maintain up-to-date plans to deal with threat and actual occurrence of dam over-spill or failure.
- Emergency Management and other local government agencies should familiarize themselves with technical data and other information pertinent to the dams, which impact Southampton. This should include determining the probable extent and seriousness of the effect to downstream areas.
- Dams should be inspected periodically and monitored regularly.
- Repairs should be attended to promptly.
- As much as is possible burdens on faulty dams should be lessened through stream re-channeling.
- Identify dam owners.
- Determine minimum notification time for downstream areas.

The Southampton CEM Plan contains the following generic preparedness and response measures for dam failure:

- Pre-place adequate warning/notification systems in areas potentially vulnerable to dam failure impact.
- Pre-place procedures for monitoring dam site conditions at first sign of any irregularity that could precipitate dam failure.
- Identify special needs populations, evacuations routes, and shelters for dam failure response.
- Have sandbags, sand, and other items to reinforce dam structure or flood proof flood prone areas.
- Disseminate warning/notification of imminent or occurring dam failure.
- Coordinate evacuation and sheltering of affected populations.
- Dispatch search and rescue teams.
- Coordinate evacuation and sheltering of affected populations.
- Activate mutual aid if needed.
- Acquire additional needed supplies not already in place, such as earth moving machinery.
- Establish incident command post as close to affected area as safely possible.
- Provide security for evacuated public and private property.

Evacuation Options

The Southampton CEM Plan identifies the Tighe Carmody Reservoir (Manhan Dam) as a High Hazard dam with the greatest potential impact on persons and property in town. College Highway is not projected to be inundated, so it would remain a primary evacuation route.

Permits Required for New Dam Construction

Massachusetts State Law (M.G.L. Chapter 253 Section 45) regulates the construction of new dams. A permit must be obtained from the Department of Conservation and Recreation (DCR), as well as all local permits, before construction can begin.

Dam Inspections

The DCR requires that dams rated as Low Hazards are inspected every ten (10) years; that dams rated as Medium/Significant Hazards are inspected every five (5) years; and that dams rated as High Hazards be inspected every two (2) years. As of 2005, it is the responsibility of the dam owner to make sure he or she is in compliance with DCR's rules and regulations for inspecting their property. For this reason, the town must work with landowners and DCR to ensure that inspections are occurring in a timely, efficient and safe manner.

Zoning

There is no mention made regarding the construction of new dams in the Town of Southampton zoning or subdivision regulations.

Restrictions on Development

There are no town restrictions on dam locations. The DCR issues permits for new dams and does have the authority to deny a permit if it is determined that the design and/or location of the dam is not acceptable

Previously Identified and New Mitigation Strategies

After reviewing existing mitigation capabilities and the hazard identification and risk assessment, the Town HMP Committee developed a set of hazard mitigation strategies to implement over the next five years. Several of the action items previously identified in the 2016 Hazard Mitigation Plan are being carried over or continuing, either because they require more time to secure funding or to implement. The HMP Committee also identified new strategies to implement based on the hazard risks and needs identified in the planning process.

Status of 2016 Mitigation Strategies

Table 5.2 below provides the status of the mitigation strategies from the 2016 Hazard Mitigation Plan. The Status column on the far left indicates whether each strategy has been completed or not, and an explanation is provided for all of the strategies that were not completed. Some of the mitigation actions, those indicated, have been carried over into the 2025 Hazard Mitigation Plan Update.

Prioritization Methodology

Some of the Committee's and towns priorities have changed since the last plan, and this is reflected in the newly identified strategies. Some hazards have occurred more frequently since the last plan, particularly drought and wildfire, resulting in a greater emphasis on mitigation strategies for these. Flooding has also become more frequent, especially from intense precipitation events not necessarily associated with storms. Thus, flooding mitigation measures are an even higher priority than previously. In addition to these updated priorities, the continuing and new mitigation strategies were prioritized according to the following methodology:

Application to multiple hazards – Strategies are given a higher priority if they assist in the mitigation of several natural hazards.

Time required for completion – Projects that are faster to implement, either due to the nature of the permitting process or other regulatory procedures, or because of the time it takes to secure funding, are given higher priority.

Estimated benefit – Strategies which would provide the highest degree of reduction in loss of property and life are given a higher priority. This estimate is based on the Hazard Identification and Analysis Chapter, particularly with regard to how much of each hazard's impact would be mitigated.

Cost effectiveness – in order to maximize the effect of mitigation efforts using limited funds, priority is given to low-cost strategies. For example, regular tree maintenance is a relatively low-cost operational strategy that can significantly reduce the length of time of power outages during a winter storm. Strategies that have identified potential funding streams, such as the Hazard Mitigation Grant Program, are also given higher priority.

Eligibility Under Hazard Mitigation Grant Program – The Hazard Mitigation Grant Program (HMGP) provides grants to states and local governments to implement long-term hazard mitigation measures

after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Funding is made available through FEMA by the Massachusetts Emergency Management Agency. Municipalities apply for grants to fund specific mitigation projects under MEMA requirements.
The following categories are used to define the priority of each mitigation strategy:

Low – Strategies that would not have a significant benefit to property or people, address only one or two hazards, or would require funding and time resources that are impractical

Medium – Strategies that would have some benefit to people and property and are somewhat cost effective at reducing damage to property and people

High – Strategies that provide mitigation of several hazards and have a large benefit that warrants their cost and time to complete

Very High – extremely beneficial projects that will greatly contribute to mitigation of multiple hazards and the protection of people and property. These projects are also given a numeric ranking within the category.

Cost Estimates

Each of the following implementation strategies is provided with a cost estimate. Projects that already have secured funding are noted as such. Where precise financial estimates are not currently available, categories were used with the following assigned dollar ranges:

- **Low** – cost less than $50,000
- **Medium** – cost between $50,000 – $100,000
- **High** – cost over $100,000

Cost estimates take into account the following resources:

- Town staff time for grant application and administration
- Consultant design and construction cost
- Town staff time for construction, maintenance, and operation activities

Project Timeline

Each strategy is provided with an estimated length of time it will take for implementation. Where funding has been secured for the project, a specific future date is provided for when completion will occur. However, some projects do not currently have funding and thus it is difficult to know exactly when they will be completed. For these projects, an estimate is provided for the amount of time it will take to complete the project once funding becomes available.

Table 5.2: Status of Strategies from 2016 Plan

Action Status	Action Type	Description	Hazards Mitigated	Agency	Priority	Cost	Funding Source	Timeframe
Completed. Done with the OSC and through the OSRP	Land purchase, possible regulatory change	Implement the strategies of the Southampton Community Development Plan dealing with protection of floodplain, forests, and farmland, specifically using the CPA to purchase land currently serving hazard mitigation purposes. Will require a community process to review and prioritize parcels for protection.	Flooding and flood-related hazards, hurricanes, severe wind and storms, tornadoes, wildfire	Conservation Commission Planning Board DPW Town Mgr	med	med	Town Funds Self Help Grant	Start prioritization process in Jan 2017-June 2017, then work to secure funds and after securing funding, anticipate July 2018-June 2019 for purchase if lands are available.
Not completed due to lack of staff capacity. Carry over to new plan.	Regulation change	For subdivision approval, include more requirements to utilize BMPs to handle site's drainage.	All	Planning Board Highway Department	med	low	Town Funds DLTA, UPWP	Jan 2018-Dec 2019
Not completed due to lack of staff capacity. Carry over to new plan.	Implement ation	Increase site visits by Fire Department for potential Tier 2 Hazardous Materials sites storing hazardous materials.	Fire	Fire Department	med	low	Town Funds	July 2017-June 2018
Completed	Capital	Purchase Portable generator	All	EMD	med	low	HMGP or Town funds	As funds are available will take 6 weeks for procurement July 2017-August 2017

Completed. Town Hall and DPW were updated and generators purchased.	Capital	Update town buildings (town hall, school, DPW) to work with generator	All	EMD, Town Mgr, Bldg Inspector	low	low	Town funds	As funds are available for generator, concurrent with procurement process Aug 2017-Oct 2017
Not completed due to lack of funding, although participated in training. Carry over to new plan.	Planning	If funding is provided by EOPS and DHS, participate in a Regional Debris Management Plan	All	EMD, Town Mgr, DPW	low	med	Homeland Security	Jan 2020-2021
Not completed. Determined not to be necessary because building codes address this.	Regulation, practice	Research and pending research results, prepare a new policy or regulation that will discourage flat roofs	Severe winter weather, snow and ice	Building Inspector, Town govt, DPW	low	low	Town funds DLTA for PVPC staff support as needed	Jan 2018-Dec 2018
Not completed. Determined not to be necessary because building codes address this.	Retrofit	Research and if funds allow and it is warranted, retrofit public buildings to withstand snow loads and prevent roof collapse	Severe winter weather, snow and ice	Building Inspector, Town govt, DPW	low	med	Town funds and possibly HMGP	Start research in Jan 2017-June 2017, secure funds as needed and start retrofit, as needed, Jan 2018-Dec 2018.

Not completed due to lack of staff/volunteer capacity. Carry over but revise.	Regulation	Mitigate future losses by regulating development in wildfire hazard areas through land use planning including using zoning and/or a special wildfire overlay district to designate high-risk areas and specify the conditions for the use and development of specific areas.	wildfire	Fire Chief, TA, Planning Board, DPW	low	low	Town funds and if outside assistance needed, state DLTA funds for PVPC staff time	July 2018-June 2019 Zoning changes require 2/3 vote at Town Meeting and Town prefers to hold zoning votes at Annual TM which is in May

Table 5.3: New Mitigation Strategies to Implement

Action Status	Action Type	Description	Hazards Mitigated	Agency	Priority	Cost	Funding Source	Timeframe
Carried over from previous plan	Land purchase, possible regulatory change	Consider additional protection of floodplain, forests, and farmland, specifically using the CPA to purchase land currently serving hazard mitigation purposes.	Flooding and flood-related hazards, hurricanes, severe wind and storms, tornadoes, wildfire	Conservation Commission Planning Board (PB), Highway Department, Town Administrator (TA)	Med	Med-High	LAND Grant, Land and Water Conservation Fund	2028-2029
Carried over from previous plan.	Regulation change	Zoning bylaw modifications. For subdivision approval, include more requirements to utilize BMPs to handle site's drainage.	All hazards	PB, Building Department, Highway Department	Med	Low	Planning and Building Budgets, DLTA	2026-2027
Carried over from previous plan.	Regulation	Mitigate future losses by regulating development in wildfire hazard areas through land use planning. Use zoning and/or a special wildfire overlay district to designate high-risk areas and specify the conditions for the use and development of specific areas.	Wildfire	Fire Chief, TA, PB, Building Department	Low	Low	Planning and Building Department budgets, DLTA	2026-2027 Zoning changes require 2/3 vote at Town Meeting and Town prefers to hold zoning votes at Annual TM in
Carried over from previous plan.	Planning	Research funding sources to set up and participate in a Regional Debris Management Plan	All	EMD, TA, Highway Department	Low	Med	FEMA – HMGP, BRIC, MEMA, DHS	Jan 2027-2028
New	Implementation	Purchase generator for Elementary School	Snow and ice storms, hurricanes, tornadoes, wind, extreme	EMD, Select Board	High	High	Town meeting approval, emergency management	2025-2027

Action Status	Action Type	Description	Hazards Mitigated	Agency	Priority	Cost	Funding Source	Timeframe
New	Implementation	Install additional cooling in Elementary School building, including cafetorium.	Extreme heat	Select Board, School Board	High	High	Green Communities	2026-2027
New	Planning and assessment	Assess green infrastructure opportunities for stormwater management	Flooding	PB, Highway	High	Low	Planning and DPW budgets	2025-2027
New	Emergency Communication	Evaluate technology used for emergency communications, interoperability.	All hazards	Police and Fire Departments	High	Low	Police and Fire Budgets, MEMA	2025-2027
New	Education and outreach	Purchase pumper tanker truck for the town for fire response	Wildfire	Fire Department	High	High	FEMA Assistance to Firefighters grant program	2025-2027
New	Education and Outreach	Provide outreach and education on mitigating for extreme heat and cold. Include information about avoiding frozen pipes, and MassSave rebates for insulation, weatherization, and mini splits.	Extreme heat and cold	EMD, Health Department, Council on Aging (COA)	Medium	Low	Emergency management and health department budgets	2026 and ongoing
New	Outreach and communication , regulation	Ensure communication about drought conditions and restrictions; Encourage water conservation practices; explore implementation of pricing program.	Drought	Water Department	Medium	Low	Water Department budget	2025-2027

Action Status	Action Type	Description	Hazards Mitigated	Agency	Priority	Cost	Funding Source	Timeframe
New	Regulation	Require use of water sensors for lawn sprinkler systems. Consider developing a bylaw requiring permit for sprinklers.	Drought	Water Department, PB, Bylaw Committee	Medium	Low	Water and Planning Dept budget	2025-2027
New	Planning	Communicate with Holyoke Water Works (HWW) about managing water levels at Tighe-Carmody during extreme precipitation events. Collaborate with HWW to conduct tabletop exercise for Tighe-Carmody Dam breach. Ensure that emergency notification system is updated and feasible.	Dam Failure	EMD, Holyoke EMD and Water Works	Medium	Low	Emergency management budget, Holyoke Water Works	2027-2028
New	Implementation	Implement ongoing tree maintenance and ensure regular communication with Eversource about priority areas for mitigating power outages.	Severe snow and ice storms, thunderstorms, wind, tornadoes, hurricanes	Highway Department	Medium	Low-Medium	Highway Dept Budget	2026 and ongoing
New	Assessment, implementation	Evaluate critical facilities for earthquake resistance. Use FEMA evaluation tool and seismic rehabilitation	Earthquakes	Building Department	Low	Low	Building Dept budget	2028

6. PLAN REVIEW, EVALUATION, IMPLEMENTATION, AND ADOPTION

Plan Adoption

Upon completion of the draft 2025 Hazard Mitigation Plan update, a public meeting was held by the Town staff and the Pioneer Valley Planning Commission on September 2, 2025 to present and request comments from town officials and residents. No one attended this meeting. The Hazard Mitigation Plan was then submitted to the Massachusetts Emergency Management Agency (MEMA) and the Federal Emergency Management Agency for their review. Upon receiving conditional approval of the plan by FEMA, the plan was presented to the Town's Select Board and adopted.

Plan Implementation

The implementation of this plan begins upon its formal adoption by the Town Select Board after approval by MEMA and FEMA. Those Town departments and boards responsible for ensuring the development of policies, bylaw revisions, and programs as described in this plan will be notified of their responsibilities immediately following approval. The Town's Hazard Mitigation Committee will oversee the implementation of the plan. They will meet yearly at a minimum to ensure the implementation of the mitigation actions.

Incorporation with Other Planning Documents

During yearly update meetings for the Hazard Mitigation Plan, the Hazard Mitigation Committee will review whether any of the plans or documents listed below are in the process of being updated or revised, as well as whether any new plans are being developed. If so, the Hazard Mitigation Committee will provide the Hazard Mitigation Plan to relevant Town staff and brief them on the contents of the Plan, and work with them on incorporating the data and actions from the plan into their planning efforts. The Hazard Mitigation Committee will also review current Town programs and policies to ensure that they are consistent with the mitigation strategies described in this plan.

- *Comprehensive Emergency Management Plan*
- *Zoning Bylaws and Subdivision Regulations*
- *Open Space and Recreation Plan*
- *Master or Comprehensive Plan*

After this plan has been approved by both FEMA and the local government, links to the plan will be emailed to all Town staff, boards, and committees, with a reminder to review the plan periodically and work to incorporate its contents, especially the action plan, into other planning processes and documents.

The Hazard Mitigation Committee will also review current Town programs and policies to ensure that they are consistent with the mitigation strategies described in this plan.

Plan Monitoring and Evaluation

Monitoring is *tracking the implementation of the plan over time.* ***Evaluating*** *is assessing the effectiveness of the plan at achieving its purpose and goals.* ***Updating*** *means reviewing and revising the plan at least once every five years.*

The Town's Emergency Management Director will call meetings of all responsible parties to review plan progress on an annual basis and as needed, based on occurrence of hazard events. The public will be notified of these meetings in advance through posting of the agenda at Town Hall. Responsible parties identified for specific mitigation actions will be asked to submit their reports in advance of the meeting.

Meetings will involve evaluation and assessment of the plan, regarding its effectiveness at achieving the plan's goals and stated purpose. The following questions will serve as the criteria that is used to evaluate the plan:

Plan Mission and Goal

- Is the Plan's stated goal and mission still accurate and up to date, reflecting any changes to local hazard mitigation activities?
- Are there any changes or improvements that can be made to the goal and mission?

Hazard Identification and Risk Assessment

- Have there been any new occurrences of hazard events since the plan was last reviewed? If so, these hazards should be incorporated into the Hazard Identification and Risk Assessment.
- Have any new occurrences of hazards varied from previous occurrences in terms of their extent or impact? If so, the stated impact, extent, probability of future occurrence, or overall assessment of risk and vulnerability should be edited to reflect these changes.
- Is there any new data available from local, state, or Federal sources about the impact of previous hazard events, or any new data for the probability of future occurrences? If so, this information should be incorporated into the plan.

Existing Mitigation Strategies

- Are the current strategies effectively mitigating the effect of any recent hazard events?
- Has there been any damage to property since the plan was last reviewed?
- How could the existing mitigation strategies be improved upon to reduce the impact from recent occurrences of hazards? If there are improvements, these should be incorporated into the plan.

Proposed Mitigation Strategies

- What progress has been accomplished for each of the previously identified proposed mitigation strategies?
- How have any recently completed mitigation strategies affected the Town's vulnerability and impact from hazards that have occurred since the strategy was completed?
- Should the criteria for prioritizing the proposed mitigation strategies be altered in any way?

- Should the priority given to individual mitigation strategies be changed, based on any recent changes to financial and staffing resources, or recent hazard events?

Review of the Plan and Integration with Other Planning Documents

- Is the current process for reviewing the Hazard Mitigation Plan effective? Could it be improved?
- Are there any Town plans in the process of being updated that should have the content of this Hazard Mitigation Plan incorporated into them?
- How can the current Hazard Mitigation Plan be better integrated with other Town planning tools and operational procedures, including the zoning bylaw, the Comprehensive Emergency Management Plan, and the Capital Improvement Plan?

Following these discussions, it is anticipated that the committee may decide to reassign the roles and responsibilities for implementing mitigation strategies to different town departments and/or revise the goals and objectives contained in the plan. All changes to the plan will be tracked by saving the plan with new dates when updated or amended. The committee will review and update the Hazard Mitigation Plan every five years. The process to update the plan will begin the year before it is due to expire. At that point, the Emergency Management Director and the HMP Committee may decide to undertake the plan update themselves or to hire a consultant to assist with the process. They will familiarize themselves with current hazard mitigation planning guidelines and begin the process of applying for funding from FEMA for the update.

Public participation will be a critical component of the Hazard Mitigation Plan maintenance process. The Hazard Mitigation Committee will hold all meetings in accordance with Massachusetts open meeting laws and the public invited to attend. The public will be notified of any changes to the Plan via the meeting notices board at Town Hall, and copies of the revised Plan will be made available to the public at Town Hall.

7. APPENDICES

Appendix A – Technical Resources

1) Agencies

Massachusetts Emergency Management Agency (MEMA)……508/820-2000
Hazard Mitigation Section ……617/626-1356
Federal Emergency Management Agency (FEMA) ……617/223-4175
MA Regional Planning Commissions:
Berkshire Regional Planning Commission (BRPC)……413/442-1521
Cape Cod Commission (CCC)……508/362-3828
Central Massachusetts Regional Planning Commission (CMRPC)……508/693-3453
Franklin Regional Council of Governments (FRCOG)……413/774-3167
Martha's Vineyard Commission (MVC)……508/693-3453
Merrimack Valley Planning Commission (MVPC)……978/374-0519
Metropolitan Area Planning Council (MAPC)……617/451-2770
Montachusett Regional Planning Commission (MRPC)……978/345-7376
Nantucket Planning and Economic Development Commission (NP&EDC)……508/228-7236
Northern Middlesex Council of Governments (NMCOG)……978/454-8021
Old Colony Planning Council (OCPC)……508/583-1833
Pioneer Valley Planning Commission (PVPC)……413/781-6045
Southeastern Regional Planning and Economic Development District (SRPEDD)……508/823-1803
MA Board of Building Regulations & Standards (BBRS)……617/227-1754
MA Coastal Zone Management (CZM)……617/626-1200
DCR Water Supply Protection……617/626-1379
DCR Waterways……617/626-1371
DCR Office of Dam Safety……508/792-7716
DFW Riverways……617/626-1540
MA Dept. of Housing & Community Development……617/573-1100
Woods Hole Oceanographic Institute……508/457-2180
UMass-Amherst Cooperative Extension……413/545-4800
National Fire Protection Association (NFPA)……617/770-3000
New England Disaster Recovery Information X-Change (NEDRIX – an association of private companies & industries involved in disaster recovery planning)……781/485-0279
MA Board of Library Commissioners……617/725-1860
MA Highway Dept, District 2……413/582-0599
MA Division of Marine Fisheries……617/626-1520
MA Division of Capital & Asset Management (DCAM)……617/727-4050
University of Massachusetts/Amherst……413/545-0111
Natural Resources Conservation Services (NRCS)……413/253-4350
MA Historical Commission……617/727-8470
U.S. Army Corps of Engineers……978/318-8502
Northeast States Emergency Consortium, Inc. (NESEC)……781/224-9876
National Oceanic and Atmospheric Administration: National Weather Service; Taunton, MA……508/824-5116
US Department of the Interior: US Fish and Wildlife Service ……413/253-8200
US Geological Survey ……508/490-5000

2) Mitigation Funding Resources

The identification of funding sources is the initial step in seeking funds and may vary depending on numerous factors. These factors include, but are not limited to, if a mitigation measure is conceptual or has been studied, evaluated, or designed. In most cases, the measure will require a combination of funding sources. The funding sources identified are not a guarantee that a specific project will be eligible for, or receive, funding. Upon adoption of this plan, the local representatives responsible for implementation should begin to explore potential funding sources in more detail.

Traditional funding sources within the Town of Southampton, such as funding from the operating and capital budgets, may be able to cover some of the costs associated with the action items. State revolving funds and other no- or low-interest loans may also be of interest. There is a great variety of funding available for Massachusetts municipalities, both through the state and federal governments. A full list of funding opportunities can be found on the Community Grant Finder webpage. The Community Grant finder provides a streamlined interface where municipalities can easily learn about grant opportunities. Specific funding options related to action items developed by Southampton are listed in the table below.

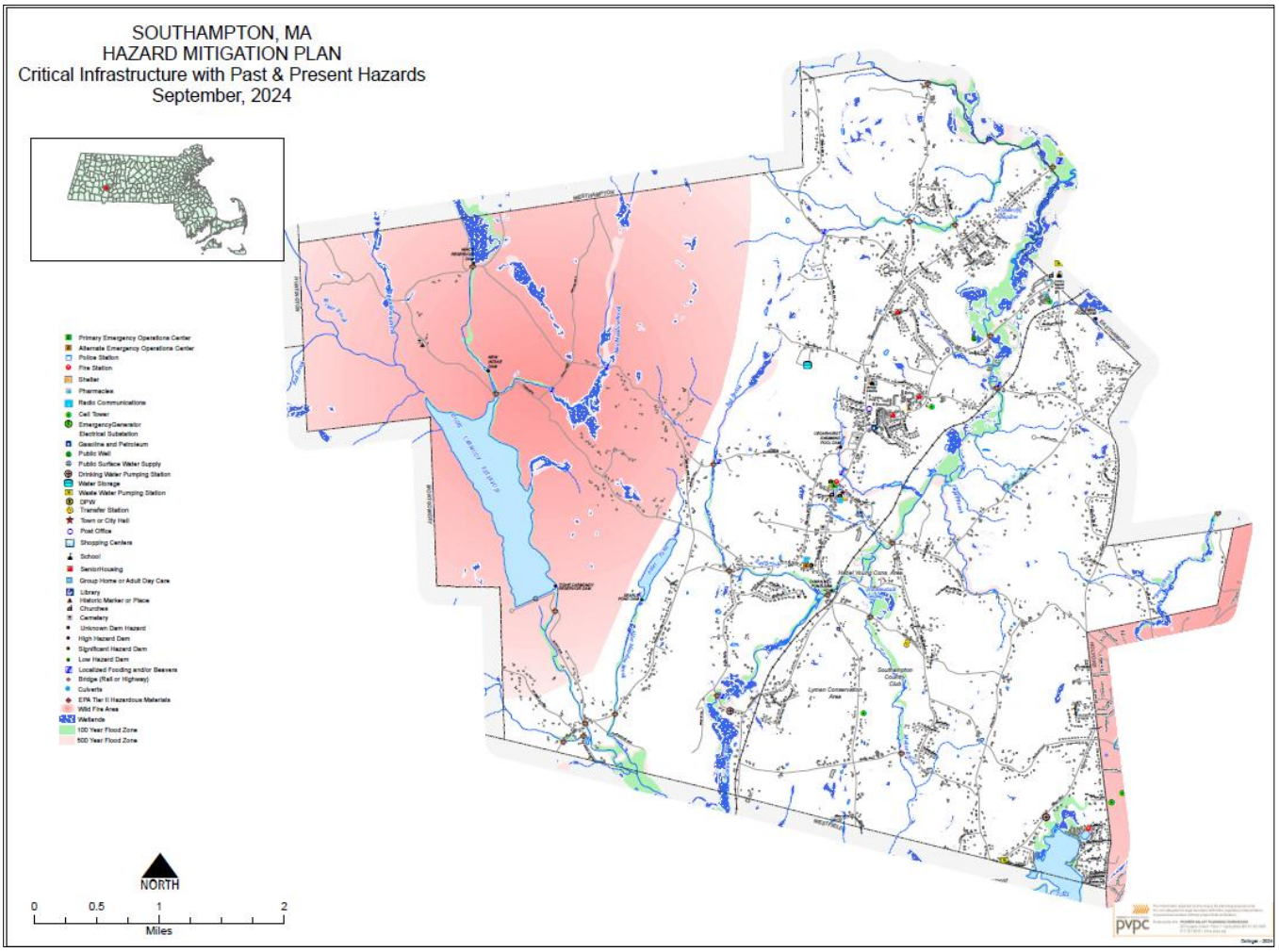
Category	Agency/Grant	Description	Limitations & Stipulations
Community Development	MassWorks Infrastructure Program	Provides grants to communities to help them prepare for success and contribute to the long-term strength and sustainability of the Commonwealth.	None
Dam Repair and Removal	Dam and Seawall Program, EOEEA	Provides funding for repair or removal of dams	None
Dam Removal	Division of Ecological Restoration (DER)	Provides funding to remove dams and restore river processes.	Must provide a high enough ecological benefit
Drinking Water Supply Protection	Drinking Water Supply Protection (DWSP) Grant Program, MassDEP	Financial assistance for the purchase of land for protection of existing DEP-approved public drinking water supplies; protection of planned future public drinking water supplies; or groundwater recharge	For public water systems and municipal water departments
Emergency Management and Planning	Flood Mitigation Assistance Grant Program (FMA)	Implement cost-effective measures that reduce or eliminate the long-term risk of flood damage.	For buildings and other structures insured under the NFIP
Emergency Management and Planning	Hazard Mitigation Grant Program (HMGP)	Provides funding after a disaster to significantly reduce or permanently eliminate future risk to lives and property from natural hazards.	Requires a Cost-Benefit Analysis
Emergency Management and Planning	Building Resilient Infrastructure & Communities (BRIC)	Provides funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event, with a focus on infrastructure projects and "community lifelines." Replaced FEMA's Pre-Disaster Mitigation (PDM) Program.	Required a Cost-Benefit Analysis
Emergency Management and Planning	MEMA Citizen Corps Program (CCP) Grant	Supports local Community Emergency Response Teams (CERT) and Volunteers in Police Service (VIPS) in preparing for all-	None

		hazards. Can be used for planning activities, equipment, training, and exercises.	
Energy	Department of Energy Resources (DOER)	The DOER provides grant funding for clean energy-related programs.	None
Energy	Green Communities Designation and Grant Program	Provides a road map along with financial and technical support to municipalities that pledge to cut municipal energy and meet other criteria.	Towns must be designated Green Communities in order to apply for funding.
Environment	Community Forest Grant Program	Funding to establish community forests.	None
Environment, Flood Mitigation	Culvert Replacement Municipal Assistance Grant Program	Grant to replace undersized, perched, and/or degraded culverts located in an area of high ecological value.	Culvert replacements must meet Massachusetts Stream Crossing Standards to the maximum extent feasible.
Environment	US Forest Service Community Forest Grant Program	Funding to acquire private forest land threatened by conversion and establish community forests.	None
Environment	Conservation Assistance Grant Program	Provides funding for property appraisals, OSRPs, other land conservation planning.	Towns with 6,000 residents or fewer
Environment	604b Grant Program	Water quality assessment and management planning.	None
Environment	Land Use Planning Grants	Support effort to plan, regulate, and act to conserve and develop land consistent with the Massachusetts' Sustainable Development Principles.	None
Environment	LAND Grant Program (Division of Conservation Services)	Helps cities and towns acquire land for conservation and passive recreation.	Municipality must have an approved OSRP
Environment	Federal Land & Water Conservation Fund (DCS)	Funding for the acquisition, development, and renovation of parks, trails, and conservation areas.	Municipality must have an approved OSRP
Environment	MassTrails Program	Trail protection, construction, and stewardship projects.	None

Appendix B – List of Acronyms

FEMA	Federal Emergency Management Agency
MEMA	Massachusetts Emergency Management Agency
PVPC	Pioneer Valley Planning Commission
EPA	Environmental Protection Agency
DEP	Massachusetts' Department of Environmental Protection
NWS	National Weather Service
HMGP	Hazard Mitigation Grant Program
FMA	Flood Mitigation Assistance Program
SFHA	Special Flood Hazard Area
CIS	Community Information System
DCR	Massachusetts Department of Conservation and Recreation
FERC	Federal Energy Regulatory Commission
TRI	Toxics Release Inventory
FIRM	Flood Insurance Rate Map
NFIP	National Flood Insurance Program
CRS	Community Rating System
BOH	Board of Health
LEPC	Local Emergency Planning Committee
EMD	Emergency Management Director
COA	Council on Aging
Con Com	Conservation Commission
EOC	Emergency Operations Center
CEM Plan	Comprehensive Emergency Management Plan
HAZMAT	Hazardous Materials

Appendix C – Past & Potential Hazards/Critical Facilities Map



Appendix D– Documentation of the Planning Process

Media Distribution List					
Outlet	**First name**	**Last name**	**Email**	**Notes**	
New England Public Media	Adam	Frenier	adam_frenier@nepm.org		
The Reminder	Chris	Maza	cmaza@thereminder.com		
Country Journal	Ellenor	Downer	countryjournal@turley.com		
Mass Live	Dave	Canton	dcanton@repub.com		
Hampshire Franklin Daily Voice	News Desk		HampshireFranklinMA@dailyvoice.com		
Western Mass News	Hugh	Zeitlin	hugh.zeitlin@westernmassnews.com		
WTAG	Jim	Polito	JamesPolito@iheartmedia.com		
WAMC Northeast Public Radio	Jim	Levulis	jlevulis@wamc.org		
WAMC Northeast Public Radio	James	Paleologopoulos	jpaleo@wamc.org		
The Berkshire Edge	Emily	Thurlow	localloislane@gmail.com		
Western Mass Politics and Insight	Matt	Szafranksi	matt@wmasspi.com		
CBS # Springfield	News Desk		news@cbs3springfield.com		
News10	News Desk		news@news10.com		
The Reminder	News Desk		news@thereminder.com		
WAMC Northeast Public Radio	News Desk		news@wamc.org		
WRGB Albany	News Desk		news@wrgb.com		
WWLP	News Desk		news@wwlp.com		
The Republican	News Desk		newsdesk@repub.com		
Daily Hampshire Gazette	News Desk		newsroom@gazettenet.com		
New England Public Media	Nirvani	Williams	nirvani_williams@nepm.org		
Mass Live	Namu	Sampath	nsampath@repub.com		
Quaboag Current	News Desk		pouimette@turley.com		
Quaboag Current/Ware River News	Paula	Ouimette	pouimette@turley.com		

Westfield News	News Desk		pressreleases@thewestfieldnews.com		
WAMC Northeast Public Radio	Paul	Tuthill	ptuth@wamc.org		
WWLP	News Desk		ReportIt@wwlp.com	News Director Mike Garreffi	
Spectrum News 1			spectrumnews1ma@charter.com		
Western Mass News	News Desk		tips@westernmassnews.com		
New England Public Media	Tony	Dunne	Tony_Dunne@nepm.org		
Ware River News	News Desk		warerivernews@turley.com		
Country Journal	News Desk		countryjournal@turley.com		
iBerkshires			marty@boxcarmedia.com		
iBerkshires	News Desk		info@iberkshires.com		
Greenfield Recorder	News Desk		newsroom@recorder.com		

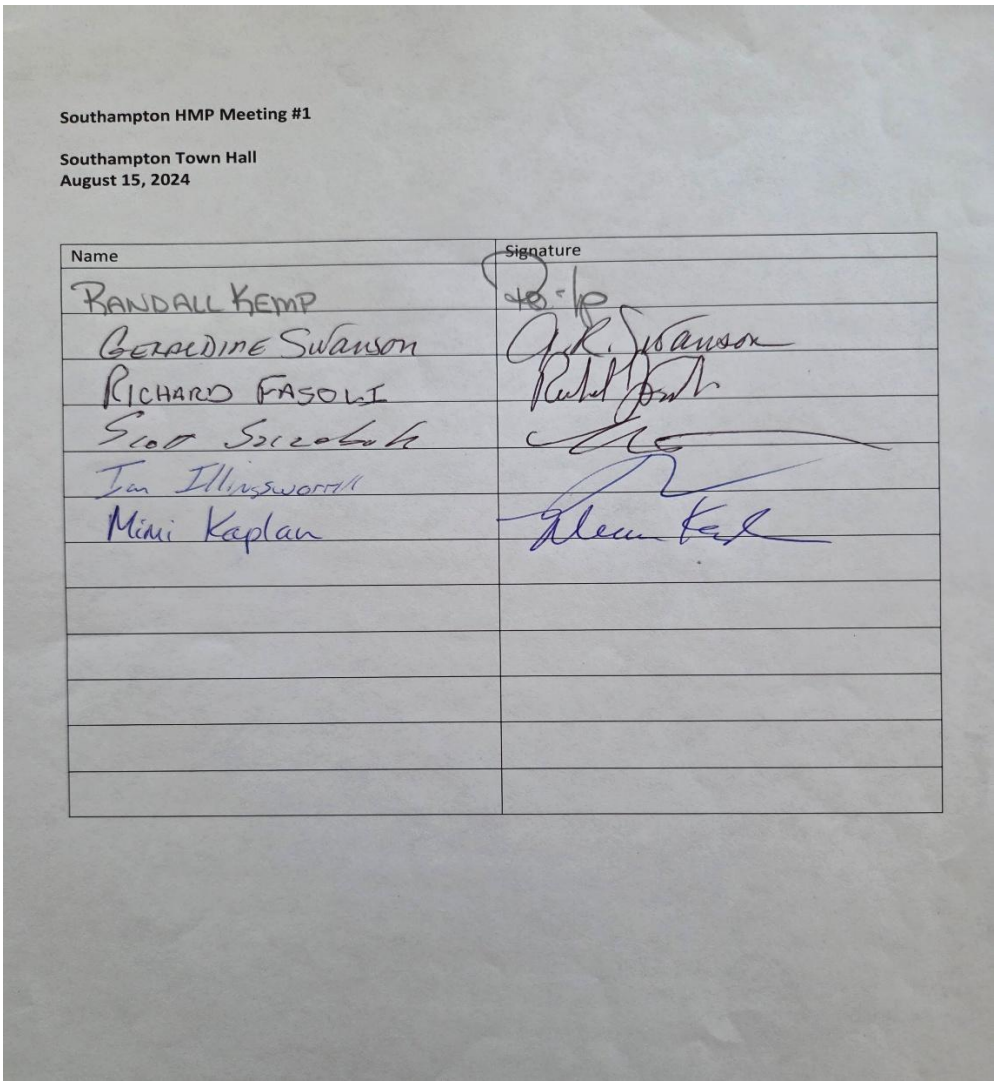
HMP Committee Meetings - Documentation

Southampton Hazard Mitigation Plan Update Committee - Meeting #1 Agenda

August 15, 2024, 2 pm

Southampton Town Hall

1. Introductions
2. Overview of Hazard Mitigation Planning Process
    a. Purpose and Benefits
    b. Plan Components
    c. Planning Process Steps and Schedule
3. Review/Update Hazards and Hazard Risk Assessment for Town
4. Update Critical Facilities if time
5. Schedule next meeting and first public meeting



Southampton HMP Meeting #1

Southampton Town Hall
August 15, 2024

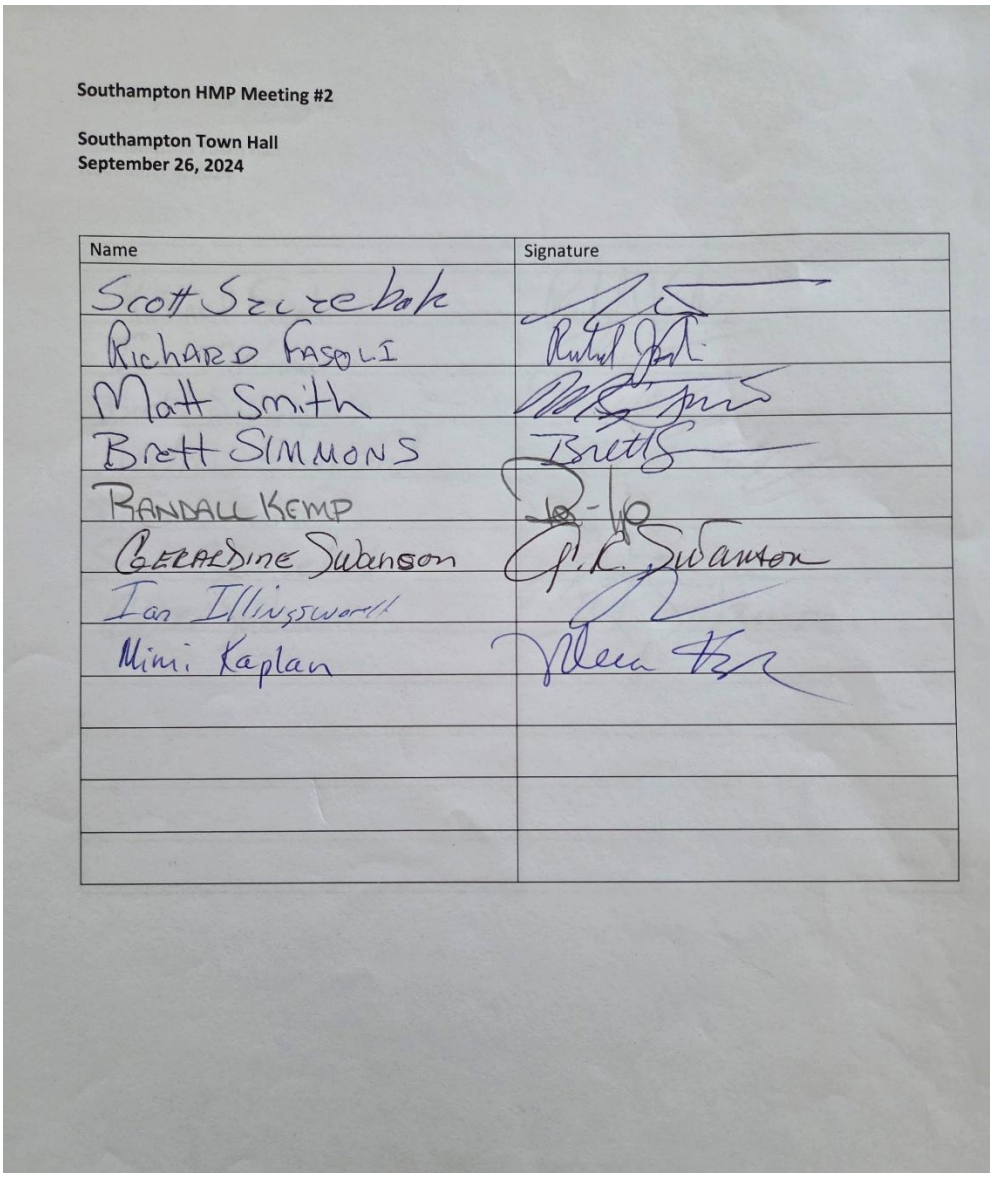
Name	Signature
RANDALL KEMP	
GERALDINE SWANSON	
RICHARD FASOLI	
SCOTT SZCZEBAK	
Ian Illingsworth	
Mimi Kaplan	

Southampton Hazard Mitigation Plan Update Committee - Meeting #2 Agenda

September 26, 2024, 2 pm

Southampton Town Hall

1. Discussion with representative from Holyoke Water Works
2. Develop survey questions
3. Update Critical Facilities
4. Schedule next meeting/first public meeting



Southampton HMP Meeting #2

Southampton Town Hall
September 26, 2024

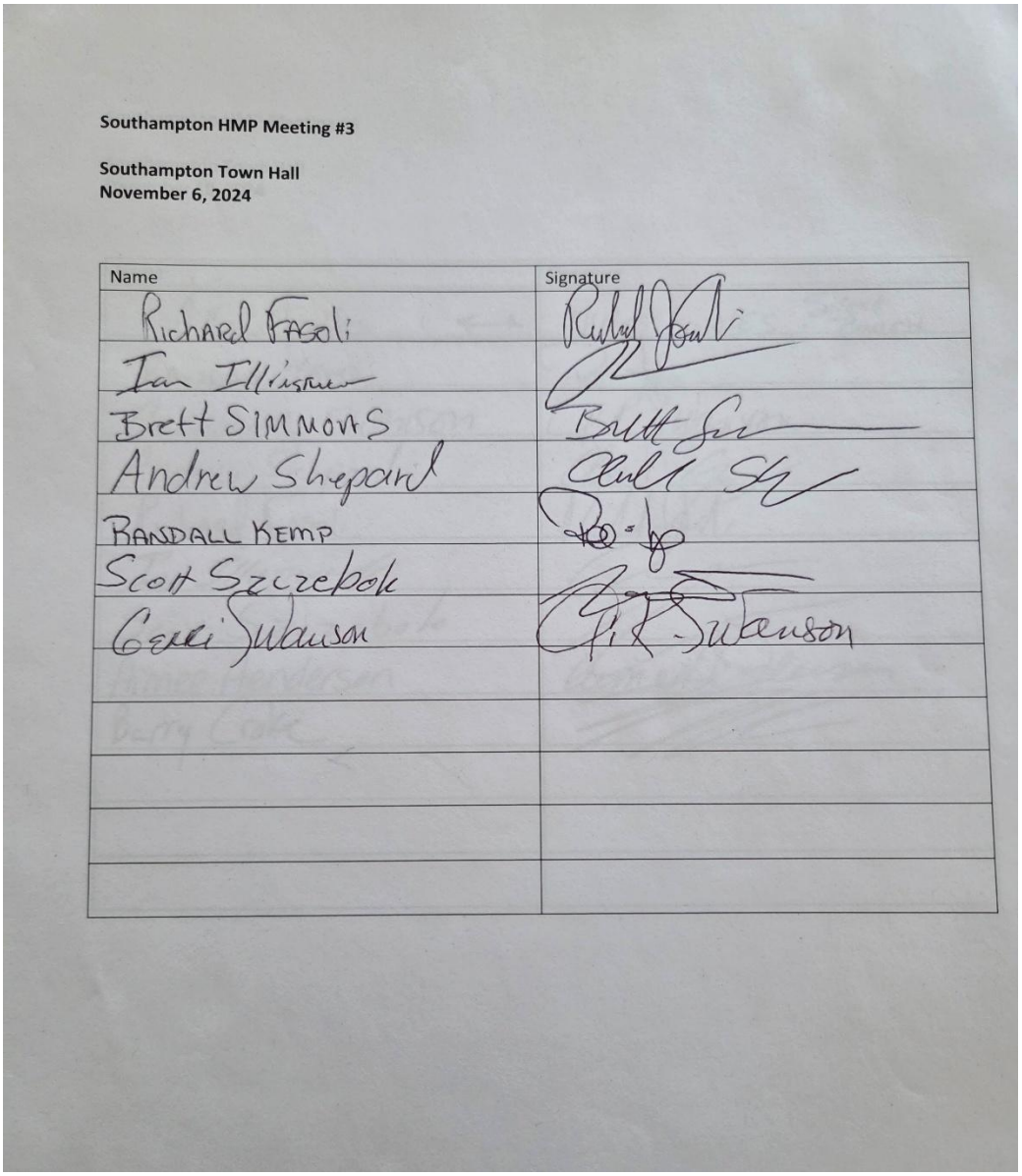
Name	Signature
Scott Szurebak	
Richard Fasoli	
Matt Smith	
Brett Simmons	
Randall Kemp	
Geraldine Swanson	
Ian Illingsworth	
Mimi Kaplan	

Southampton Hazard Mitigation Plan Update Committee - Meeting #3 Agenda

November 7, 2024, 2 pm

Southampton Town Hall

1. Review and update hazard information and the Hazard Risk Analysis
2. Review HMP map
3. Start Mitigation Capabilities Assessment
4. Schedule next meeting



Southampton HMP Meeting #3

Southampton Town Hall
November 6, 2024

Name	Signature
Richard Fasoli	
Ian Illingsworth	
Brett Simmons	
Andrew Shepard	
Randall Kemp	
Scott Szczepek	
Gerri Sulanson	

Southampton Hazard Mitigation Plan Update Committee - Meeting #4 Agenda

December 10, 2024, 1:30 pm

Southampton Town Hall

1. Discussion with Aimee Henderson, Eversource Rep
2. Complete Mitigation Capabilities Assessment
3. Identify new mitigation actions if time
4. Schedule next meeting

Southampton HMP Meeting #4

Southampton Town Hall
December 10, 2024

Name	Signature
Chris Fowles	CHRIS FOWLES - Select Board
RANDALL KEMP	
GERALDINE SWANSON	G.R. Swanson
Andrew Shepard	
Richard Frisoli	
Ian Illingsworth	
Scott Szczebak	
Aimee Henderson	Aimee Henderson
Barry Croke	

Southampton Hazard Mitigation Plan Update Committee - Meeting #5 Agenda

January 21, 2025, 1 pm

Southampton Town Hall

1. Go over information needed in Section 2 and remaining information for Capability Assessment (with PB Chair and ZEO).
2. Identify new mitigation actions for each hazard.
3. Assign priority level and responsible parties, and identify timeline, cost, and funding sources.
4. Schedule next meeting if necessary and review next steps.

Southampton HMP Meeting #5

Southampton Town Hall
January 21, 2025

Name	Signature
Ron Lavin	
Geraldine R. Swanson	
Randall Kemp	
Ian Illingsworth	
Eric Fowlies	
Scott Szczebak	
Rich Fasoli	

Southampton Hazard Mitigation Plan Update Committee - Meeting #6 Agenda

February 25, 2025, 1 pm

Southampton Town Hall

1. Finish identifying new mitigation actions for each hazard.
2. Assign priority level and responsible parties, and identify timeline, cost, and funding sources.
3. Review next steps.

Southampton HMP Meeting #6

Southampton Town Hall
February 25, 2025

Name	Signature
Chris Cowles	
Scott Szczebak	
Rich Fasolo	
Gerri Swanson	Gerri Swanson
Ian Illingsworth	
Ron Lauria	
Randall Kemp	

MEDIA RELEASE

FOR IMMEDIATE RELEASE
October 25, 2024

Contact: Kate Norton, publicaffairs@pvpc.org, 617-838-6083

Town of Southampton to hold Public Engagement Event for Hazard Mitigation Plan

SOUTHAMPTON – Residents, businesses, and surrounding community members are invited to learn about and provide input on the Town of Southampton Hazard Mitigation Plan. This public meeting will be held during the Select Board meeting on Tuesday, November 12 at 7 p.m. It is also possible to attend remotely with this link.

The purpose of the Hazard Mitigation Plan (HMP) is to assess Southampton's risks from natural hazards and climate change impacts, and provide an action plan to reduce the Town's vulnerabilities. The Hazard Mitigation Plan is being completed by the Town with assistance from the Pioneer Valley Planning Commission (PVPC) and is funded by the Federal Emergency Management Agency (FEMA). Upon completion, the plan will be submitted to the Massachusetts Emergency Management Agency (MEMA) and FEMA for review and approval. A FEMA-approved HMP makes the community eligible for federal and state mitigation grant funding.

The meeting will include a discussion of natural hazards and climate impacts in Southampton, and the hazard mitigation planning process. Municipal officials and PVPC staff will be available to answer questions and respond to input about this project. The meeting provides an opportunity for community members to share feedback that will be incorporated into the plan. All members of the public, representatives from surrounding communities, and other interested parties are invited to attend the event.

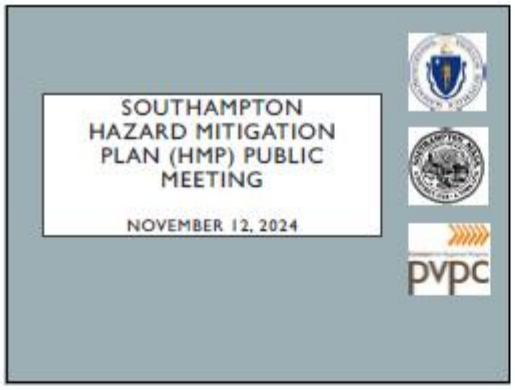
For more information about this event, please contact PVPC's Mimi Kaplan at mkaplan@pvpc.org or (413) 781-6045.

Town of Southampton
Hazard Mitigation Plan Public Meeting

Tuesday, November 12, 7:00 pm
Southampton Town Hall
(Select Board Meeting)
Attend in person or over Zoom with this Link.

Are you concerned about the impacts of Natural Hazards and Climate Change? Learn about how the Town is preparing and share your concerns and suggestions.

We want to hear from you!


SOUTHAMPTON HAZARD MITIGATION PLAN (HMP) PUBLIC MEETING
NOVEMBER 12, 2024
pvpc

1

THANK YOU TO THE COMMITTEE
Scott Szczebak, Town Administrator
Christine Fowles, Select Board Chair
Richard Fasoli, Fire Chief
Ian Illingsworth, Police Chief
Randall Kemp, Highway Superintendent
Geraldine Swanson, Public Health Director
Brett Simmons, Water Department Superintendent

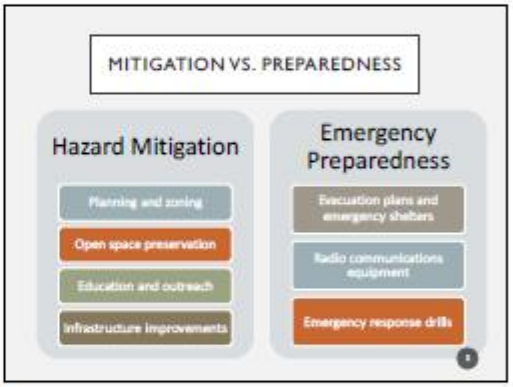
2

WHAT IS HAZARD MITIGATION?
FEMA
"Any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards."
Examples:
Limiting development in high-risk areas
Retrofitting structures to protect them from floods, high winds, etc.
Drainage and flood control projects in areas of localized flooding
Fire safety education

3

BENEFITS OF UPDATING THE HAZARD MITIGATION PLAN
Makes communities eligible to apply for Hazard Mitigation funds from FEMA
Identifies cost-effective actions to reduce risk
Helps communities prevent future losses and save money on disasters
Makes communities more resilient to natural hazards and impacts of climate change
Increases awareness of hazards and risks
Can save lives!
SMART INVESTING
MITIGATION SAVES

4


MITIGATION VS. PREPAREDNESS
Hazard Mitigation
Planning and zoning
Open space preservation
Education and outreach
Infrastructure improvements
Emergency Preparedness
Evacuation plans and emergency shelters
Radio communications equipment
Emergency response drills

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COMPONENTS OF A HAZARD MITIGATION PLAN
Hazard identification and description
Risk Assessment - how hazards impact buildings, property, and residents, especially vulnerable populations
Identification/mapping of critical infrastructure
Assessment of Town's mitigation capabilities
Review of previous mitigation strategies and identification of new mitigation strategies

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HMP UPDATE STEPS

- 5 Committee Meetings (approx. 1 per month)
- First Public Meeting
- PVPC Completes Draft Plan
- Second Public Meeting
- Submit Plan to MEMA/revise as needed
- Submit Plan to FEMA/Revise as needed
- FEMA Approval
- Select Board adopts
- Town eligible to apply for funds from FEMA

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PROJECT TIMELINE

- August – Kick off meeting
- September – Committee meeting #2
- November – Committee meeting #3; Public Meeting #1; PVPC drafts Chapters 2 and 3, develops HMP map
- December/January – Committee meeting #4, review previous mitigation actions and develop new mitigation actions
- February – Committee meeting #5, finalize mitigation action plan
- March – June, PVPC completes draft plan
- June – Hold 2nd public meeting, committee and public review plan
- June/July – Submit plan to MEMA for review
  3-6 months for MEMA and FEMA reviews

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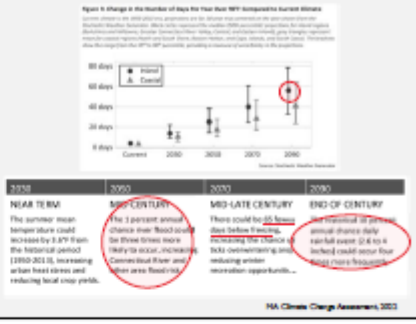
NATURAL HAZARD RISK ANALYSIS

Type of Hazard	Location of Occurrence	Probability of Future Events	Impact	Hazard Risk Index Vulnerability Rating
Flooding	Medium	Very High	Minor	4 – Low risk
Severe Snowstorms / Ice Storms	Large	Very High	Critical	213 – High/Medium risk
Severe Thunderstorms / Winds / Tornadoes	Large Tornado-cutoff	Moderate to High Tornadoes: Very Low	Minor Tornado-catastrophic	3 – Medium risk Tornadoes: 4 – Low risk
Hurricanes/tropical storms	Large	Low	Moderate/Critical	3-Medium risk
Wildfire / Brushfire	Medium	Moderate	Limited	3 – Medium risk
Earthquakes	Large	Very low	Minor - Critical	4 – Low risk
Dam failure	Medium	Very low	Critical-Catastrophic	3 – Very low risk
Drought	Large	Moderate	Minor-Critical	4 – Low risk
Extreme Temperatures	Large	Very High	Limited	3/4 – Moderate/Low risk

9

IMPACTS OF CLIMATE CHANGE



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MOST URGENT IMPACTS OF CLIMATE CHANGE FOR THE CONNECTICUT RIVER VALLEY

11

CRITICAL FACILITIES AND POPULATIONS/ASSETS TO PROTECT

- Fire and Police Stations, Emergency Operations Centers, Emergency Response Teams, Emergency Shelters
- Utilities – Water supply, wastewater treatment, power
- Communication facilities
- Health care facilities, Custodial care facilities, Schools
- Vulnerable population housing
- Historic structures
- Large places of employment

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PREVIOUS HIGHER PRIORITY
MITIGATION STRATEGIES

13

PUBLIC COMMENT/BRAINSTORM
NEW ACTIONS
What are your concerns about natural hazards and climate change impacts in Southampton?
Suggestions for mitigation actions?
Other questions or comments?

14

THANK YOU!
CONTACT INFORMATION:
MIMI KAPLAN
PIONEER VALLEY PLANNING
COMMISSION
MKAPLAN@PVPC.ORG
413-285-1188

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Press Release for Public Meeting #2:

MEDIA RELEASE

FOR IMMEDIATE RELEASE
August 8, 2025

Contact: Kate Norton, publicaffairs@pvpc.org, 617-838-6083

Town of Southampton to hold Public Engagement Event for Hazard Mitigation Plan

SOUTHAMPTON – Residents, businesses, and surrounding community members are invited to learn about and provide input on the Town of Southampton Hazard Mitigation Plan. This public meeting will be held during the Select Board meeting on September 2, 2025 at 6 p.m. at the Southampton Town Hall, 210 College Highway.

The purpose of the Hazard Mitigation Plan (HMP) is to assess Southampton's natural hazard risks and provide an action plan to reduce the Town's vulnerabilities. The Hazard Mitigation Plan is being completed by the Town with assistance from the Pioneer Valley Planning Commission (PVPC) and is funded by the Federal Emergency Management Agency (FEMA). Upon completion, the plan will be submitted to the Massachusetts Emergency Management Agency (MEMA) and FEMA for review and approval. A FEMA-approved HMP makes the community eligible for federal and state mitigation grant funding.

The meeting will include a discussion of natural hazards and climate impacts in Southampton, the draft plan, and the proposed mitigation actions. Municipal officials and PVPC staff will be available to answer questions and respond to comments about the plan and planning process. The meeting provides an opportunity for community members to share thoughts and provide input. All members of the public, representatives from surrounding communities, and other interested parties are invited to attend the event.

The draft Hazard Mitigation Plan can be viewed on the Town's website here.

For more information about this event, please contact PVPC's Mimi Kaplan at mkaplan@pvpc.org or (413) 781-6045.

Flyer for Public Meeting #2

Town of Southampton Hazard Mitigation Plan Public Meeting

September 2, 6:00 pm
Southampton Town Hall – 1st Floor Meeting Room
210 College Highway, Southampton

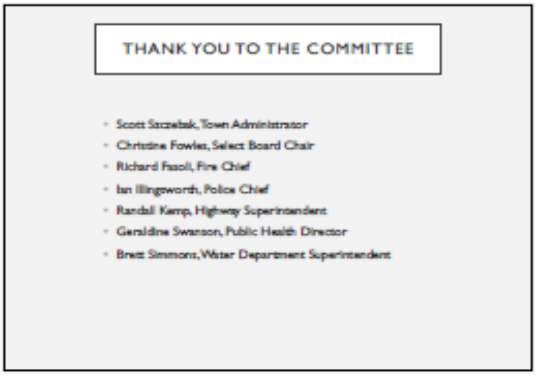
Are you concerned about natural hazards like flooding, strong storms, snow and ice, and extreme temperatures?

Learn what the Town is doing to prepare and share your questions and concerns. We want your input! View the draft plan here.

Photo Credit: MassLive

Public Meeting #2 Presentation

1



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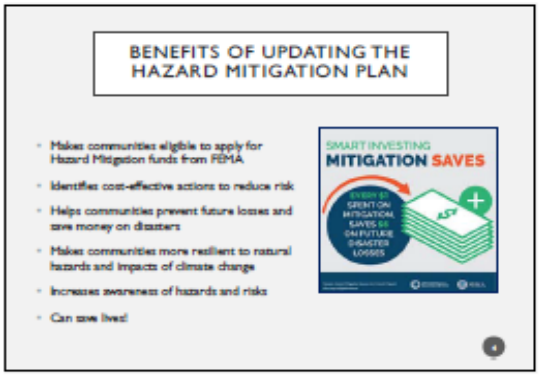

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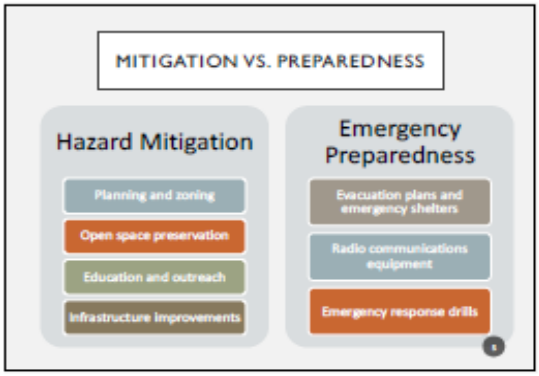

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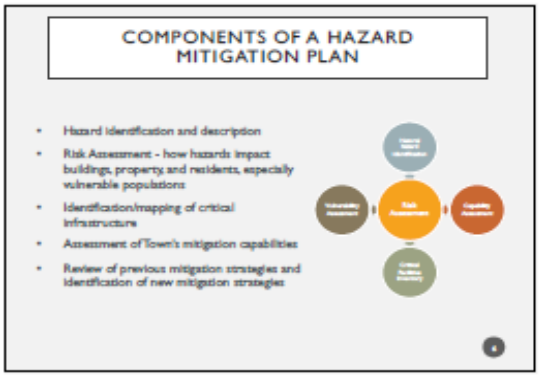

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Flooding	Medium	Very High	Minor	4 – Low risk
Severe Storms (ice / ice, heavy	Large	Very High	Critical	1/3 – High/Medium risk
Severe Thunderstorm / Wind / Tornadoes	Large Tornado - small	Moderate to High Tornadoes: Very Low	Minor Tornado - catastrophic	3 – Medium risk Tornadoes: 4 – Low risk
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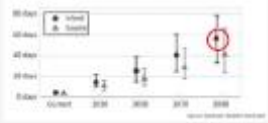

2030	2050	2070	2090
NEAR TERM	MID-CENTURY	MID-LATE CENTURY	END OF CENTURY
The summer mean temperature could increase by 1.6°F from the historical period (1986-2015), increasing urban heat stress and	The 1 percent annual chance river flood could be three times more likely to occur, increasing Connecticut River and other area flood risk	There could be 45 fewer days below freezing, increasing the chance of ice storm warning and reducing winter recreation opportunities	The historical 10 percent annual chance daily rainfall event (2.6 to 4 inches) could occur four times more than today

MA Climate Change Assessment, 2022

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TOP HAZARD CONCERNS IN SOUTHAMPTON

- Power outages from high wind and snow/ice storms
- Risk of Wildfire with more frequent and severe droughts
- Impact of extreme heat on residents, especially older residents and other vulnerable populations
- Localized flooding in floodplain areas:
  - Riverdale Rd
  - Forner Rd
  - Pomeroy Meadow Rd
  - Maple St, Moose Brook Rd, Brickyard Ext.
  - East St
  - Gilbert Rd

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HAZARD MITIGATION STRATEGIES TO IMPLEMENT

Action Status	Action Type	Description	Hazards Mitigated	Agency	Priority	Cost	Funding Source	Timeframe
Carried over from previous plan	Land use/Rules, possible regulatory change	Consider additional land use/rules of floodplain, forests, and riverfront, specifically using the CPA to purchase land currently serving hazard mitigation purposes.	Flooding and Flood related hazards, hurricanes, severe wind and storms, tornadoes, wildfire	Conservation Commission, Planning Board, CPAC, Tax	Med	Med-High	CPAC Grant, Local and Water Conservation Fund	[illegible]
Carried over from previous plan	Planning	Research funding sources to set up and participate in a Regional Debris Management Plan	All	EMD, Town Administrator, Highway Department	Low	Med	FEMA – HMGP, BRIC, MPMA, DHS	Apr 2017-2018
Carried over from previous plan	Regulation change	Zoning bylaw modification for subdivision approval, include more requirements to utilize BMPs to handle site's drainage.	All hazards	Planning Board, Building Department, Highway Department	Med	Low	Planning and Building Budget, CCTV	2016-2017
Carried over from previous plan	Implement plan	Increase vulnerability for Fire Department for potential Tier II Hazardous Materials sites storing hazardous materials.	Wildfire	Fire Department	Med	Low	Fire Department Budget	2015-2016
Carried over from previous plan	Regulation	Mitigate future losses by regulating development in wildfire-hazard areas through land use planning, requiring and/or a special wildfire zoning district to designate high-risk areas and specify the conditions for the use and development of specific areas.	Wildfire	Fire Chief, Town Administrator, Planning Board, Building Department	Low	Low	Planning and Building Department Budgets, CCTV	2016-2017 Zoning changes require 2/3 vote at Town Meeting and Town prefers to hold zoning votes at Annual Elect May

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NEW HAZARD MITIGATION STRATEGIES TO IMPLEMENT

Action Status	Action Type	Description	Hazards Mitigated	Agency	Priority	Cost	Funding Source	Timeframe
New	Implementation	Purchase generator for Hampshire House	Snow and ice storms, hurricanes, tornadoes, wind, potential	EMD, Select Board	High	High	Town meeting approval, emergency	2020-2021
New	Implementation	Install additional cooling in elementary school building, including cafeterium	Extreme heat	Select Board, School Board	High	High	Town Construction	2020-2021
New	Planning and assessment	Assess green infrastructure opportunities for stormwater management	Flooding	Planning Board, Highway	High	Low	Planning and DPW budgets	2020-2021
New	Outreach and communication	Evaluate and develop wildfire emergency communications, vulnerabilities	Wildfire	Police and Fire Departments	High	Low	Police and Fire Budgets, Ad Hoc	2020-2021
New	Education and Outreach	Provide outreach and education on mitigating the extreme heat and cold. Include information about existing town plans, and Weather Radios for installation.	Extreme heat and cold	EMD, Health Department, CEA	Medium	Low	Emergency management and health department budgets	2020 and ongoing
New	Outreach and communication, regulation	Create communication about drought conditions and restrictions. Encourage water conservation practices, explore implementation of pricing program.	Drought	Water Department	Medium	Low	Water Department Budget	2020-2021
New	Regulation	Require use of water sensors for lawn sprinkler systems. Consider developing a bylaw requiring permit for sprinklers.	Drought	Water Department, Planning Board, Bylaw committee	Medium	Low	Water and Planning Department	2020-2021

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NEW HAZARD MITIGATION STRATEGIES TO IMPLEMENT

Action Status	Action Type	Description	Hazards Mitigated	Agency	Priority	Cost	Funding Source	Timeframe
New	Planning	Collaborate with Holyoke Water Works to conduct tabletop exercise for Tighe-Cannody Dam breach. Ensure that emergency notification system is updated and feasible.	Dam Failure	EMD, Holyoke EMD and Water Works	Medium	Low	Emergency management budget, Holyoke Water Works	2027-2028
New	Implementation	Implement ongoing tree maintenance and create regular communication with Eversource about priority areas for mitigating power outages.	Severe snow and ice storms, thunderstorms, wind, tornadoes, hurricanes	Highway Department	Medium	Low-Medium	Highway Dept Budget	2026 and ongoing
New	Assessment, Implementation	Evaluate critical facilities for earthquake resistance. Use FEMA evaluation tool and assess rehabilitation	Earthquakes	Building Department	Low	Low	Building Dept budget	2028

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PUBLIC COMMENT PERIOD

- Concerns about natural hazards and climate change impacts in Southampton?
- Feedback about the mitigation actions?
- Other questions or comments?

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THANK YOU!

CONTACT INFORMATION:
MIMI KAPLAN
PIONEER VALLEY PLANNING COMMISSION
MKAPLAN@PVPC.ORG
413-285-1188

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Appendix E– Capability Assessment

Worksheet 4.1 Capability Assessment Worksheet

Worksheet 4.1
Capability Assessment Worksheet

Capability Assessment Worksheet

Jurisdiction: _____

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes	Not Really Chron Energy Possibly –
Capital Improvements Plan	In Dept.	Indiv. Dept. Working on Tonnmile Yes
Economic Development Plan	No	Chapter w/in MP, Does Not add haz
Local Emergency Operations Plan	Yes	Yes
Continuity of Operations Plan	Yes	Yes
Transportation Plan	No	Reg. evac. plan – PVPC or MEMA
Stormwater Management Plan	Yes	Hwy Dept webpage – MS4 Yes + Bylaw But not regulation
Community Wildfire Protection Plan	No	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		MVP OSRP – Yes

Generator for School so it can be official shelter

A-17

Worksheet 4.1
Capability Assessment Worksheet

Capability Assessment Worksheet

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Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		MVP OSRP - Yes

Generator for School so it can be official shelter

A-17

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	Friends of OSC + OSC Hamp. Public Health ~~Emerg~~. Prep. Coal.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	On Website Fire Safety FB Effective
Natural disaster or safety related school programs	Yes	Fire
StormReady certification	No	
Firewise Communities certification	No	
Public-private partnership initiatives addressing disaster-related issues	Yes	Malls w/church, rest., groc, Stores
Other		

How can these capabilities be expanded and improved to reduce risk?

Update Malls w/Church, stores, restaurants

Worksheet 4.1

Capability Assessment Worksheet

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	yes
Authority to levy taxes for specific purposes		Only Thru Town Mtg
Fees for water, sewer, gas, or electric services	yes - only water	yes ~~yes~~
Impact fees for new development	No	
Storm water utility fee	No	Discussion, Possib.
Incur debt through general obligation bonds and/or special tax bonds	yes	Thru Town Mtg
~~Incur debt through private activities~~	No	
Community Development Block Grant	No	Do not qualify
Other federal funding programs		Ch. 90 – Transp. rel., ARPA
State funding programs		Ch. 70 PARC MassDOT MVP, MassTrails, MassWorks
Other		

How can these capabilities be expanded and improved to reduce risk?
Enact a Stormwater Utility Fee

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Yes	Code Red - Chief will check
Hazard data and information	Yes	Website + FB Pretty effective
Grant writing	Yes	Grant committee - volunteer Effective MVP Admin grant
Hazus analysis	No	Yes Thru PVPC
Other		

How can these capabilities be expanded and improved to reduce risk?

Need Land Use/ Planning Staff

Worksheet 4.1

Capability Assessment Worksheet

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Yes	Yes
Mitigation Planning Committee	Yes	Yes
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	veg. mngmt - Good but limited. Depend on Eversource Catchbasins - Undersized, clearing only does so much
Mutual aid agreements	yes	yes
Staff	**Yes/No FT/PT[1]**	**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	yes FT	Enforc. reg. not adequate
Floodplain Administrator	No	Should prob. be zoning enforce. officer
Emergency Manager	Yes	yes
Community Planner	No	
Civil Engineer	No	Use consult.
GIS Coordinator	No	use consult.
Other		PT Cons. agent

1 Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Adopting 10th Edition in July
9th Edition
MA Bldg Code

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	✓	Version/Year: Yes MA 2021 IBC 2021 IRC
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	Score:
Fire department ISO rating	yes	Rating: 5
Site plan review requirements	yes	

Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Y	Yes + Yes, although more staffing could allow for more enforcement when necessary
Subdivision ordinance	Y	Yes, although could be strengthened with more requirements for GI
Floodplain ordinance	Y	Yes, yes
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	
Flood insurance rate maps	yes	Need to be updated by FEMA
Acquisition of land for open space and public recreation uses	Yes	Yes. More could still be acquired.
Other		

How can these capabilities be expanded and improved to reduce risk?

Generator for School
For updates, include hazard risks.
More Green Infrastructure requirements in Subdivision Reqs.