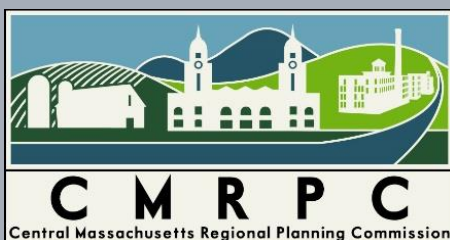
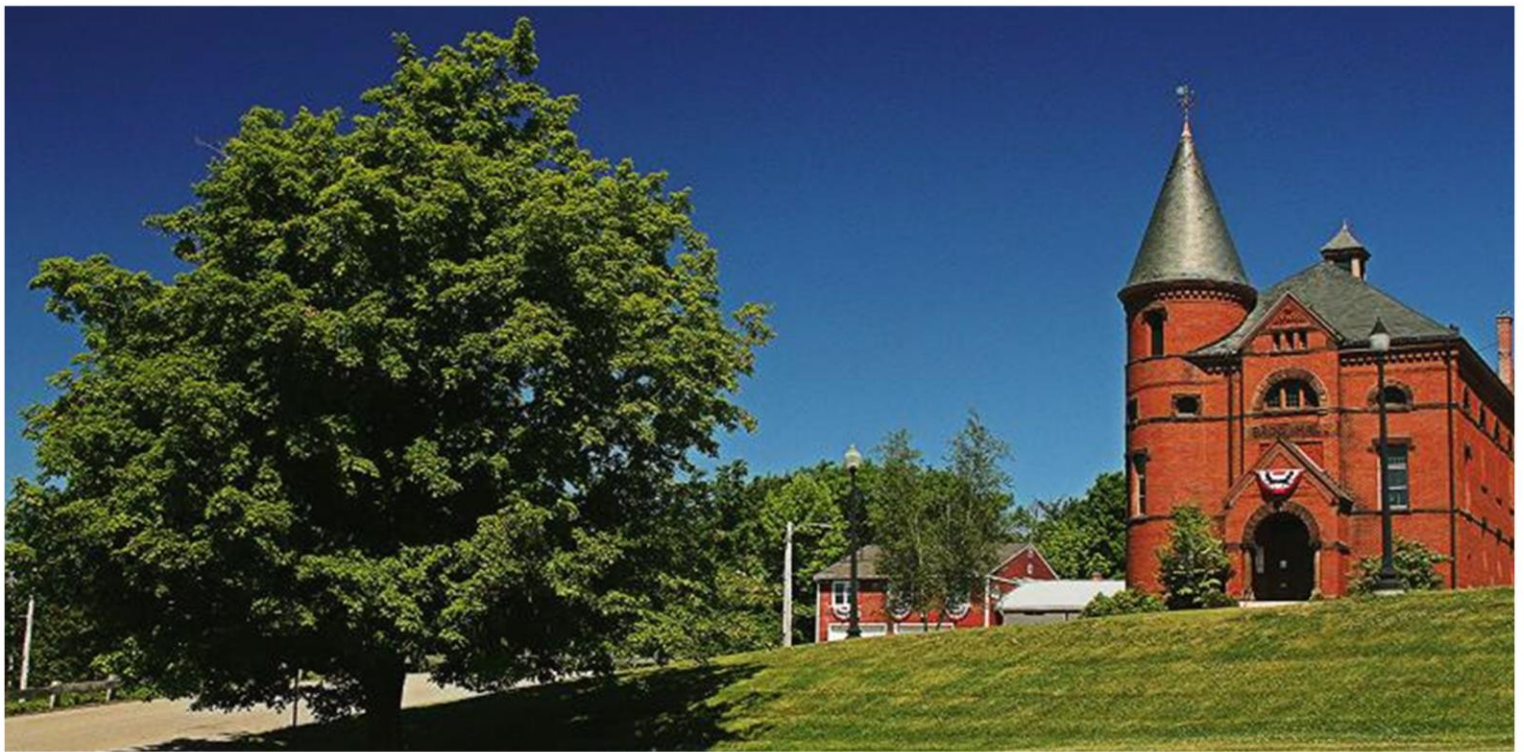




# TOWN OF PRINCETON

## Municipal Vulnerability Preparedness Summary of Findings Report 2021



## ABOUT THE AUTHORS

### CMRPC Mission

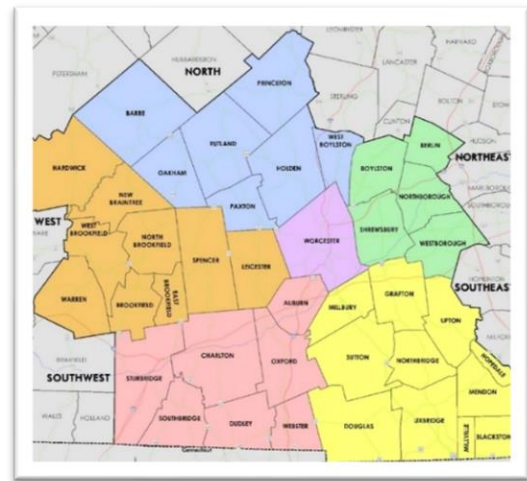
The Central Massachusetts Regional Planning Commission is a regional partnership serving the planning and development interests of 40 member communities in southern Worcester County in Massachusetts. Our primary mission is to improve the quality of life for those who live and work in our region.

We do this by (1) addressing growth and development issues that extend beyond community boundaries; (2) maintaining the region's certification for federal transportation improvement funds; (3) providing technical knowledge and resources to assist local government in addressing specific land use, economic or environmental problems resulting from growth or decline, and (4) building strong working relationships with member communities, state and federal officials, as well as the range of area stakeholders.



### Our History and Progress

Founded by the Massachusetts Legislature in 1963, the Central Massachusetts Regional Planning Commission (CMRPC) provides a variety of services to its constituencies and brings a regional perspective to planning and development. One of 13 regional planning agencies in Massachusetts, CMRPC serves the city of Worcester and 39 surrounding communities in the southern two-thirds of Worcester County. CMRPC's programs include Transportation, Regional Services, Geographic Information Systems (GIS), and Community Planning.



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The Central Massachusetts Metropolitan Planning Organization (CMMPO) hereby states its policy to operate its programs, services and activities in full compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related federal and state statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color, or national origin, including limited English proficiency, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, the Federal Transit Administration, or both prohibit discrimination on the basis of age, sex, and disability. These protected categories are contemplated within the CMMPO's Title VI Programs consistent with federal and state interpretation and administration. Additionally, the CMMPO provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with US Department of Transportation policy and guidance on federal Executive Order 13166.

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## EXECUTIVE ORDER 569 AND THE MASSACHUSETTS MUNICIPAL VULNERABILITY PREPAREDNESS PROGRAM

In September 2016, Massachusetts Governor Baker signed Executive Order 569, directing multiple state agencies to develop and implement a statewide comprehensive climate adaptation plan with the best climate-change data available. Recognizing that many adaptation solutions are local in nature, a key commitment of Executive Order 569 is to assist local governments in completing their own assessments and resiliency plans. The MVP Grant and Designation Program represents the first step in fulfilling this commitment.

The MVP program provides planning grants to municipalities to complete vulnerability assessments and develop action-oriented resiliency plans. Funding is used by cities and towns to hire an MVP-certified consultant who is trained to provide technical assistance and complete a community's vulnerability assessment and resiliency plan using the Community Resilience Building Framework. Towns and cities are free to choose the consultant of their choice from a list of certified MVP providers. The Town of Princeton invited the Central Massachusetts Regional Planning Commission to lead them in this planning effort.

Communities that complete the MVP planning process become certified "MVP Communities" and are eligible for Action Grant funding and other opportunities through the Commonwealth.



<https://www.mass.gov/news/governor-baker-signs-legislation-directing-24-billion-to-climate-change-adaptation>

## PRINCETON: A PROFILE

The Town of Princeton, Massachusetts was incorporated in 1771. Princeton is located right off of I-190, along State Route 140 and 62, 15 miles north of the City of Worcester and is largely a bedroom community. Much of Princeton lies within the Nashua River watershed, also known as the Upper Worcester Plateau or Monadnock Upland, which sees its highest point at Princeton's Wachusett Mountain (elevation 2,006 feet). Princeton is bordered by Hubbardston and Rutland on the west, Leominster and Sterling on the east, Holden on the south, and Westminster on the north. Princeton has a total area of 35.8 square miles and a population of 3,455 (2019 American Community Survey). According to the Central Massachusetts Regional Planning Commission's (CMRPC) Long Range Transportation Plan, Mobility 2040, the Town of Princeton is a low growth community, expected to stay close to its 2019 population number of 3,455.



The number of residents has grown from 3,189 in the 1990 US Census to 3,353 in 2000 to the currently (2019) estimated 3,455. Approximately 96% of the population is White. The median age for the town is 49, with 21.4% of the population under the age of 19 and 22.4% of the population over the age of 65. The median household income resides at \$136,083, with only 4.8% of the community below the poverty line.

The Town of Princeton actively involves the community through a variety of recreational and social programs for children, adult, and senior populations. The Princeton Senior Center and Public Library host weekly youth and adult programming including senior fitness classes, public readings, and monthly socials. The town promotes outdoor activities through its expansive bike and hiking trails and park facilities. Aside from recreational activities, the town of Princeton houses fully staffed Police and Fire Departments. Princeton is affiliated with both the Wachusett Regional School District and Montachusett Regional Vocational Technical School.

## COMMUNITY RESILIENCE BUILDING WORKSHOP

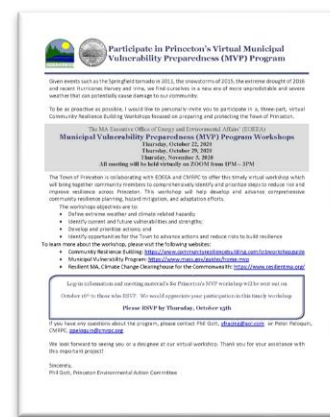
The Town of Princeton contracted with the Central Massachusetts Regional Planning Commission (CMRPC) in January 2020 to serve as the MVP provider, including completing the Community Resiliency Building (CRB) workshop. Through the Community Resilience Building (CRB) process, stakeholders actively engaged in an ongoing discussion to determine the top hazards related to climate change that currently impact or have the potential to impact Princeton. A small group of town officials and Board Members convened on January 29, 2020 to form the 'Core Team' which, together with CMRPC staff, organized and planned the CRB Workshop over the course of three meetings.

The Town of Princeton's CRB workshop was scheduled to be held on April 2, 2020 at the Town Annex. On March 23, 2020, Governor Baker ordered all non-essential businesses to cease in person operation through April 7, 2020. It was decided to reschedule and revisit the meeting and workshop dates as events unfolded. On March 31, 2020, Governor Baker ordered all non-essential businesses to remain closed and limitations on gatherings to not more than 10 people to remain in effect through May 4, 2020. On April 28, 2020 that order was extended to May 18, 2020. During this time of uncertainty, Princeton's Core Team continued to discuss possible alternatives in the case no extension was granted. Once extensions were granted, the Core Team decided to put the project on hold while still checking in monthly via email.

Princeton's Core Team and the staff at CMRPC reconvened on September 14, 2020 and began to create a virtual workshop. The virtual workshop would be conducted in a similar format as an in-person workshop with some slight differences. The Core Team decided that the workshop would be held virtually on ZOOM. The workshop would take place over the course of three separate meetings. The first meeting would be held for two and a quarter hours. The first quarter hour would be dedicated to familiarizing all participants with all of ZOOM's functions and introductions. The remaining two hours would be dedicated to a brief overview, identifying features, location, ownership and vulnerabilities and strengths. The remaining two meetings were reserved for completion of the prior meetings work and to develop actionable items to improve resiliency throughout the Town of Princeton.

### Workshop Overview

The virtual workshop was held on Thursday, **October 22<sup>nd</sup>, 29<sup>th</sup>, and November 5, 2020** from 1:00 PM – 3:00 PM. To prepare participants for the workshop all presentations were pre-recorded by the Core Team and the staff at CMRPC. Upon completion of the Core Team intro videos, MVP program overview presentation, Climate Projections presentation, Hazards presentation and Matrix/ Nature Based solutions presentation, the invitation was put together. The invitation was complete with links to each presentation, table maps, excerpt from the Princeton Hazard Mitigation Plan, two-page MVP program overview, CRB Workbook, how to use ZOOM information,



Online mapping tool and an agenda with ZOOM log-in information for each of the three meetings. Participants were instructed to watch all presentations at their leisure prior to the workshop.

The Workshop's goal was to identify the four top natural hazards that impact Princeton and develop strategies to enhance the town's resiliency related to climate change. Following the CRB work plan process, the Town, CMRPC facilitators and planners pre-recorded five presentations:

- Town introduction
- Overview of the CRB process
- Overview of the MVP program
- A summary of climate change projections, impacts and mitigation strategies
- A detailed profile of natural hazards in the Town of Princeton, including the top four hazards perceived by the core team.

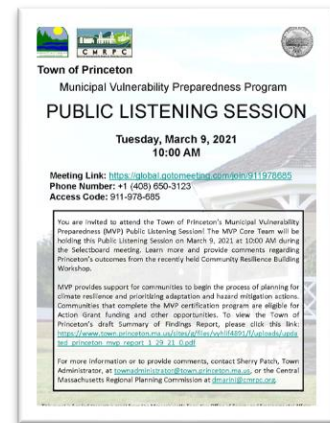
During the first virtual workshop meeting date, the group discussed the top four hazards that affect Princeton. There was agreement between the Core Team and all participants that--in no particular order-- **flooding, wind events, winter storms** and **Drought/Heat** have the greatest effects and potential impacts on the Town. Having identified these hazards, workshop attendees were then asked to work through the CRB program's matrix and mapping exercise. Table facilitators, along with CMRPC staff guided stakeholders in four small group to examine the resources throughout the Town and to identify the town's most serious concerns regarding natural and climate-related hazards that threaten their community.

The group then reconvened one week later to build upon the first day's work. The goal of the second session was to continue to identify features and begin to identify actionable items to reduce or mitigate the projected impacts of climate change. The following week, the group used the remaining time to complete the matrix. Once the group had completed the matrix, the groups gave a summary of findings by the table reporters.

Upon completion of the three virtual workshop meetings, CMRPC compiled all information from the matrix into survey form. The survey was then distributed to all attendees of the workshop from November 17, 2020 through November 23, 2020. The attendees' participation in the survey helped to prioritize what they believed to be the top project in the infrastructure, society, and environmental categories. Participants also voted for their top five actionable items. Results of the survey were used to prioritize and organize the matrix and report.

Thirty-three (33) stakeholders attended the virtual CRB Workshop, including representatives from Town government, emergency services, the MVP Core team, Municipal Department Heads, Conservation Commission, Agriculture, Churches, local contractors and concerned citizens of Princeton.

A public listening session to discuss MVP results and recommendations for future actions was held virtually on March 9, 2021. The listening session was properly promoted across several avenues, with twenty (20) people in attendance. Between the two meetings, a total of fifty-three (53) people participated in the MVP process. Immediately following the listening session, the recorded ZOOM meeting, along with the draft report was posted on the Town's website for further comment. The comment period was open from Wednesday, March 3, 2021 through Wednesday, March 17, 2021.



### Summary of Findings

Overall, the workshop was received positively by all in attendance. Following the presentations, participants were asked if they agreed with the core team's identification of, in no particular order, flooding, wind events, drought and extreme temperatures, and winter storms as the primary hazards facing Princeton. All the participants agreed that these four hazards were the most relevant for Princeton.

The Town's public buildings and emergency management systems were described as strengths, along with the open spaces and recreation opportunities. Relationships between the Town and local community businesses and organizations were considered to be an overall strength for the town. Communication access and validity were considered a vulnerability and a barrier to information distribution. Dams, culverts, and bridges were also considered vulnerable safety hazards. The lack of a public water supply was considered a vulnerability, and many private wells are at risk of runoff contamination.

Another area that was widely seen as a hazard to the Town is the inaccessibility of the existing fire ponds. Widespread and uncontrolled invasive species have overrun many of the fire ponds and forested areas, increasing the risks of wildfires, and limiting the ability to fight future fires. Other vulnerable areas mentioned were roadway flooding, runoff contamination from salting and sanding operations, and beaver activity. There was conversation regarding the need to enhance the capacity at the emergency shelter and to provide a facility for pet sheltering in times of evacuation.

Having only one power line in Town was discussed by all tables as a top vulnerability. Many agreed that the Town needs to study the feasibility of securing additional power and energy supplies. It was also discussed that there is a need to establish a series of public education campaigns regarding stormwater management, wetlands, rainwater collection, and invasive species management.



All four tables identified specific vulnerable locations that are already in need of attention and will likely face worsening impacts due to climate change. These include forested areas, fire ponds, power grid, senior residents, and dams.

## TOP HAZARDS

Following the presentations at the beginning of the workshop, a full-group discussion was held for approximately fifteen minutes to determine the top four hazards for breakout groups to further assess solutions. Taking climate change projections, critical infrastructure, and other considerations into account, workshop participants chose to focus on the four following hazards. They are presented in no particular order: **drought (wildfire and extreme heat), wind events, flooding, and winter storms (snow and ice).**

In 2016, Princeton experienced extreme droughts along with most of the state of Massachusetts. Severe storms, including high winds and intense rainfall, have been increasing in frequency and impact. All of these have caused disruption to the town, including localized flooding, power outages, and calling upon mutual aid agreements. With climate change, all of these natural events are expected to increase in severity and frequency.



### EXTREME TEMPERATURES

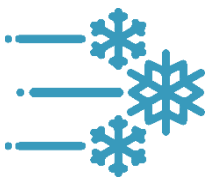
Projecting an increase of consecutive dry days, with the driest periods in the summer and fall. This leads to increased risk and stress on drinking water systems and wildfire potential.



### FLOODING

Expected increase in precipitation across all seasons. Heavy rainfall will become more frequent, increasing the risk for flash floods. Also increases non-point source pollution.

### Flooding.



### WINTER STORMS

Annual days below freezing will decrease, winter precipitation falling as rain or freezing rain. This increases risk for ice storms and flash flooding when rain falls on frozen ground.



### HIGH WIND

Intensity of storm events is expected to increase due to the warmer atmosphere. This will lead to increased severe thunderstorm and hurricane activity with higher wind speeds.

**Flooding.** Extreme weather in recent years demonstrates how the various hazards impact the town. There have been numerous flooding events over the years, and this threat is only going to increase as the climate continues to change. Local dams, undersized culverts, and beaver activity have all contributed to flooding throughout Town.

**Winter Storms.** Winter ice storms, a regional problem, are expected to be more intense and include more mixed precipitation which is highly damaging to trees, power lines and other infrastructure.

**Extreme Temperatures.** Wildfires are expected to increase due to the impact of prolonged droughts and extreme heat. Drier forests and wooded areas will be more combustible in drought conditions. Drought will also lead to water shortages that will impact the entire town whether or not residents and businesses are on town water or have wells.

**High Wind.** Heavy wind events are a serious concern. The town and the surrounding area have experienced a recent uptick in storms with hurricane-level winds. While this phenomenon can be linked to extreme temperatures and rising precipitation rates, workshop participants felt it was serious enough to be singled out as a hazard. Thus, the fourth hazard is focused primarily on the winds associated with these storms, leaving heavy rain events to be discussed under flooding.

The workshop participants agreed that different hazards affect the town at different times of the year. Flexibility and comprehensive response by town officials is needed to ensure the safety of the citizens in different hazard situations exacerbated by climate change.

These concerns, which are largely inter-related, are based on data provided by the Massachusetts Climate Clearinghouse as well as watershed-specific data from the Northeast Climate Adaptation Science Center at the University of Massachusetts at Amherst. For the Nashua River Basin, where Princeton is located, projections show an expected increase in precipitation overall, with the greatest increase during winter. The number of days with more than 2" of rainfall, potentially leading to inland flooding, is also expected to increase with the average expected to be close to 15 days by the year 2100 compared with approximately 10 days now. Consecutive dry days and days above 90 degrees Fahrenheit are expected to increase, leading to drought. Days at the wintery-mix level of cold are also expected to increase, leading to a greater likelihood of freezing rain in the winter. Higher wind in the summer and storm severity increases with warmer temperatures.

### Vulnerable Areas

The areas in Princeton identified by workshop participants during discussion as vulnerable to the hazards discussed include:

**Forested areas** throughout town are vulnerable to increasing pressures from heat, drought, and invasive insect species. The aging tree population is of concern for the overall health of the forested area covering most of the Town. Roadside trees are also a vulnerability due to a lack of a sustainable tree trimming programs and remove and replace program.

### VULNERABLE AREAS

- Forested Areas
- Fire Ponds
- Power Grid
- Senior Residents
- Dams

**Fire ponds** throughout Town were identified as being compromised and inaccessible. Many of the fire ponds in Town are overrun with invasives or are over silted. Those fire ponds of particular concern are located off of Hickory Drive, Worcester Road, Sharon Drive, and Stagecoach Road.

**Power grid** vulnerability was a major concern as there is only one power line that supplies electricity to the Town. This leaves the Town more susceptible to high wind and intense storm events than other Towns.

**Senior residents** were considered vulnerable by all groups during the breakout sessions. High concentrations of senior citizens living in condensed areas were viewed as a risk in the event of evacuation. A lack of back of backup power was concerning for many due to the projected longer period of higher temperatures. In addition to better emergency planning, the availability of transportation for, and communications with, the senior population during these times is considered to be a key aspect of resiliency that needs upgrading and rethinking.

**Town-wide dams** were of concern to many in attendance as a number of dams in town are designated as High Hazard, Significant Hazard, or are at-risk. Dams in particular to be concerned with include the Chimney Pond Dam, Echo Lake Pond Dam, Paradise Pond Dam, and Tenny's Pond Dam.



## CURRENT CONCERNS AND CHALLENGES PRESENTED BY HAZARDS AND CLIMATE CHANGE

CMRPC, the MVP planning provider, had the unique advantage of preparing Princeton's Hazard Mitigation Plan (HMP), which was adopted by the Town's Board of Selectmen and approved by FEMA in April 2016. Meetings with the MVP Core Team prior to the workshop as well as the HMP helped to identify past climate-related events that significantly impacted the Town. Disaster events of concern included frequent major winter storms (as in 2015 and 2018), ice storms (2008), severe rain events (2005, 2010, 2016), tropical storms (Irene, Sandy), infestations of invasive and otherwise undesirable species (Asian Longhorn Beetle, gypsy moths, aquatic invasive species, ticks), and extended periods of drought (2015 to 2016). Princeton does not have a public water supply in place. Advisedly, it will be important for the town to secure a backup drinking water supply and response plan in the event that private wells are damaged by drought or storm and cannot be replenished at the prescribed rate of use.

At the workshop, CMRPC staff presented downscaled climate change data provided by Massachusetts's Executive Office of Energy and Environment Affairs (EEA) and the Northeast Climate Science Center at the University of Massachusetts, Amherst. Princeton lies within the Nashua River Basin, and should projections for the watershed hold true, by mid-century, annual average temperatures will increase in the range of 3 to 6.4 degrees from the historical baseline. Hot days over 90 degrees will increase from 8 to 29 days annually; days below freezing will fall from 19 to 38 days annually; annual precipitation will increase 1.2 to 6.3 inches. Seasonal drought conditions will become more frequent as precipitation becomes more concentrated in extreme intensity events and winter snowpack is reduced. Some of the challenges of these projected changes – many of which are already being observed – were discussed in a presentation at the workshop focused on specific hazards in the Princeton area.

Challenges highlighted in the presentations and/or discussed as a group or in the breakout groups included the following concerns:

- Issues associated climate change will exacerbate problems that are already apparent, and the town lacks the resources to address comprehensively – flooding and storm water management, vulnerable roads, ecological damage, and vulnerable populations, all within the context of a small community.
- An increase in hot and warm days and decrease in cold days will mean greater need for cooling and less need for heating, especially among vulnerable groups such as children and seniors.
- Increased temperatures can also be expected to cause changes in the water cycle, leading to more intense rain events. Increased precipitation rates will lead to more frequent and severe flooding in areas outside of designated flood zones defined using historical data –

particularly around Sterling Road, Thompson Road, East Princeton Road, Worcester Road, Merriam Road, and Route 62.

- Increased storm intensity will likely cause more tree damage leading to power outages and road closures, higher peak river flows requiring new approaches to storm water management, and increased erosion of river and brook banks and nearby infrastructure. Severe storms will still likely damage and impact the power lines throughout the town and especially the overhead transmission lines owned and maintained by the Princeton Municipal Light Department. Tree damage will occur from intense wind storms such as recent tornadoes or from heavy snow and ice storms.
- More frequent and severe droughts will challenge water supplies and increase risks from wildfire. Increased risk of wildfire can lead to a wide-range of ecological outcomes including increased damage to human property and life, removal of suitable habitat space, and changes in ecosystem services made available by forest cover.
- Invasive plant and animal species can impact public health through increasing numbers of disease carrying pests (e.g., ticks and mosquitoes) and by damaging key ecosystems such as forests and wetlands, thereby increasing wildfire and flood risks.

As the climate continues to change and natural disasters increase in frequency and strength there will be a greater need to communicate with residents, businesses, and other institutions. Changing climate will dictate the need for enhanced communications systems and related infrastructure and flexible emergency response and evacuation plans. These flexible response and evacuation plans will be particularly important for the senior citizens who live alone and do not have access to a vehicle.

## SPECIFIC CATEGORIES OF CONCERNS AND CHALLENGES

The following topics were identified by workshop attendees as concerns or challenges related to Princeton's changing climate and natural hazards.

### Infrastructure Concerns



#### *Dams, Culverts, and Bridges*

According to the Massachusetts Office of Dam Safety, there are nine dams located within Princeton. Of those nine dams, one is designated as a High Hazard, two are designated as a Significant Hazard, and two are designated as Low Hazard. Dams designated as High Hazard are those where failure or improper operation will likely cause loss of life and serious damage to homes, industrial or commercial facilities, important public utilities, main highways, or railroads. Those that are designated as Significant Hazard indicate that failure or improper operation may cause loss of life and damage to homes, industrial or commercial facilities, secondary highways or railroads, or cause interruption to use or service of relatively important facilities. The Chimney Pond Dam located in the western part of Town is rated as a High Hazard Dam. However, participants noted that this dam may be misnamed and identified incorrectly within the Office of Dam Safety database. According to the database, the High Hazard dam is named Bickford Pond Dam. The Town should plan to contact the private dam owners to ensure that the dam is labeled and evaluated properly. The Department of Conservation and Recreation owns and manages three dams in Town: Echo Lake Dam, Paradise Pond Dam, and Tenny's Pond Dam. Echo Lake Dam is located in the center of Town and is rated a Significant Hazard. Paradise Pond Dam is also rated a Significant Hazard. There was concern regarding the flooding risks that the dam could impose on Route 140, an evacuation route through Town.

### INFRASTRUCTURE

- Dams, Culverts, and Bridges
- Power Grid
- Roadways
- Town Facilities and Services

There was also concern about the condition of culverts and bridges town wide. The Town of Princeton has around 200 culverts, many of which are old, crumbling, or undersized. Areas of particular concern include Sterling Road, Thompson Road, East Princeton Road, Worcester Road, and Meriam Road. These major roads have faced many flooding and drainage issues. Mirick Road has experienced flooding and icing from clogged storm drains, limiting access to the emergency shelter. Similarly, many bridges in town are undersized and in poor shape. The bridges in Town need to be evaluated and upgraded. With the increase in annual precipitation in the form of heavier and increasingly frequent storms inundating these natural resources beyond their capacity, the town will be faced with greater flooding. The increased volume of storm water runoff will render most culverts inadequate to handle the amount of water and could cause dam and bridge failure. Spillage onto the roads and into developed areas will make streets impassable and cause property damage.

### *Power Grid*

Each table expressed concern about the vulnerability of the power grid. The Town of Princeton only has one power line owned by the Princeton Municipal Light Department (PMLD) that runs from Westminster to Princeton. This single line provides the only municipal power supply in Princeton. If that line were to go down in a storm, then the entire town would be without power. The streets in Town are lined with trees that pose a risk to the power line. Many of these trees are large, old, and could fall during intense storm and wind events. The PMLD trims these trees, but a majority of tables determined that a more concerted effort between the Town and the PMLD is desired to maintain the stability of the power line.

### *Roadways*

From flooding to steep slopes and erosion issues, there are a wide array of issues that limit access to roadways in Town. Gregory Hill Road, Pine Hill Road, Merriam Road, Allen Hill, Thompson Road, and Westminster Road all have steep slopes that lend to perennial icing. To make matters worse, the Town of Princeton lacks a winter road policy. Without a winter road policy, there is no guidance on when and where to use salt or sand on roads. Salt or sand use can have a detrimental impact to wells and other water resources, so it would be beneficial to explore alternative ice treatments. There are also a number of dirt and gravel roads in Town that are susceptible to erosion, icing, and require frequent maintenance. During the ‘mud season’ these roads face many complications and can be inaccessible. And with a lack of sidewalks throughout Town, icy, flooded, or mudding roads create dangerous walking conditions for pedestrians.

### *Town Facilities and Services*

The Town of Princeton is fortunate to have many facilities in Town that offer a variety of services and utilities. However, an increase in the number of climate change-related disasters could damage the Town’s infrastructure and could interrupt these services. The community will need buildings and command centers that can effectively store equipment, sustain shelters, and maintain important departments and services.

Many municipal buildings, while beautiful, are old and are in need of repairs to maintain their functionality. The Princeton Public Library, located at 2 Town Hall Drive, is prone to flooding in the basement. The Public Safety Building, located at 8 Town Hall Drive and home to both the Police and Fire Departments, is also prone to flooding. It is also not up to OSHA standards and has a steep roof. This creates hazards from falling snow and ice, can prevent access to ambulances, and creates a dangerous walking environment for pedestrians. The Thomas Prince School located at 170 Sterling Road serves as the emergency shelter for the Town. While the school has backup generators, it cannot hold the entire Town and roadway flooding limits access to the shelter. The Wachusett House Corporation, located at 13 Boylston Avenue, serves as an affordable and senior housing facility. While this provides a benefit to the town, the facility does not have a generator and is vulnerable to losing power. As many senior residents might rely on access to medical equipment, a lose of power could prove detrimental to those residents.



## Societal Concerns



### *Transportation*

Transportation, or lack thereof, was viewed as a vulnerability by participants during the workshop, especially with the projected increases in climate-based disasters. There are no public transportation options in Town. This severely limits mobility access for senior and low-income residents in Princeton who may not be able to drive themselves or do not have access to their own vehicle. While the Wachusett House Corporation does provide some transportation to their elderly residents through vans, there is no emergency transportation plan established for times of disaster. If evacuation is necessary, senior and low-income residents could be left stranded.

### SOCIETAL

- Transportation
- At-Risk Populations
- Communication

### *At-Risk Populations*

Participants identified several groups of people at higher risk from the effects of climate change. Senior residents will feel the effects of climate change more than other residents in town. Due to their age, they will be more vulnerable to extreme temperatures and a limited drinking water supply that will accompany drought and hot days. In addition, older residents are more susceptible to disease, particularly EEE and other insect-borne diseases, many of which will increase with the changing climate. And as noted above, older residents will be more defenseless and vulnerable in times of emergency when evacuation is necessary due to their reduced ability to mobilize quickly. There is only one senior housing facility in town – the Wachusett House – so many seniors are living independently throughout Town. And participants noted that Princeton has an aging population, so it will be imperative for the Town to develop a more coordinated effort to get support and necessary resources to these individuals.

There was also concern regarding the number of tourists who visit the town. Mass Audubon's Wachusett Meadow Wildlife Sanctuary and Wachusett Mountain are two tourism hotspots in Town, both located in Northern Princeton. These attraction areas create a bottleneck in Northern Princeton and can create a drastic influx in population. This is significant because it increases the number of people in Princeton who both lack a knowledge of the town and do not have a means to access emergency notifications. Other vulnerable groups discussed included low-income individuals and families, and persons with disabilities. These two demographics are more vulnerable in times of extreme heat or drought and during intense storm events because they often have limited incomes and lack access to critical resources.

### *Communication*

The current communication system in Princeton is in need of upgrades. As noted above in the Infrastructure Vulnerabilities section, there is only one power line through Town. This makes communication lines very susceptible to power outages. Along with this, there are many dead zones in Town where there is no cell coverage. The Town of Princeton does utilize CodeRED to send out emergency alerts to those residents who have opted in, but this system still lacks a town

wide reach. Town staff have turned to social media as a means for communication of important town information, but workshop participants viewed this method as a blessing and a curse. While more and more residents are turning to social media pages to gather information, there is a lot of misinformation being given on Next Door and other non-Town affiliated social media pages.

In addition to the system concerns, there was also discussion about inclusion and addressing the communication needs of non-English speakers. While 9-1-1 operators can provide translation services, the Town does not have any other translation options established in their communication lines. Without translation options, non-English speaking residents and visitors do not have sufficient access to emergency notifications or understanding of the evacuation protocols.

## Environmental Concerns



### *Invasive and Nuisance Species*

Climate change will bring a shift in flora and fauna of the region. Plants and animals that have adapted to warmer and drier climates will increase in Massachusetts, and native species that are better adapted to cooler weather will decrease. When a non-native species invades an area, it can often outcompete the native species. And without a predator to manage population numbers, invasive species can dominate an ecosystem very quickly. This is especially detrimental to forest ecosystems. Attendees noted the gypsy moth and the Emerald ash borer as invasive insect concerns. While these insects typically do not have direct harmful effects to humans, they do have disastrous effects on native tree species in Massachusetts. The gypsy moth prefers to feed on oak and birch trees among other species, while the emerald ash borer feeds on ash trees. Trees that are impacted by invasive insects are much more vulnerable to damage during intense storm events as well as drought. Participants were just as concerned with invasive plant species. Invasive plants can choke out native species and contribute to leaf debris. This leaf debris can increase the risk of wildfires. It was noted that the Town of Princeton lacks a Landscape Management Plan and a Pest Policy. Without these kinds of policies in place, there is no guidance for how to properly manage for and reduce the number of invasive species on Town land.

## ENVIRONMENTAL

- Invasive and Nuisance Species
- Runoff Contamination
- Insect-Borne Disease
- Fire Prevention

### *Runoff Contamination*

The Town of Princeton lacks a public water supply or treatment facility, so the town is dependent on privately owned wells and sewer systems. Workshop attendees discussed the runoff and contamination risks that these private wells face. There have been instances where the water wells have been contaminated with Per- and polyfluoroalkyl substances (PFAS), a chemical that is difficult to filter out, leaving the water unsafe to drink. Fluoride, arsenic, and iron have also caused issues with the drinking water supply and have been costly to the Town and private residents.

In addition to well water contamination, wetland resources have also experienced runoff pollution from salt and sand operations. When sand runs off into wetlands, it can cause damage to the ecosystem and can clog catch basins and other important stormwater infrastructure. Salt can dramatically rise the level of sodium in tributaries, disrupting the nutrient balance of the ecosystem. As flooding events become more frequent, these harmful substances can move to other water resources and get into the groundwater. The Town of Princeton does not currently have a Wetlands Protection Bylaw which leaves some wetlands unprotected from these contamination risks.

### *Insect-Borne Disease*

Risk of insect-borne diseases, especially EEE and Lyme disease, will worsen as the climate warms and periods of flood and drought increase. Mosquitos carry EEE and West Nile Virus (WNV). They tend to lay their eggs in and around standing water, so populations of mosquitos will likely increase in times of flooding. Mosquitos are also more aggressive on hot, dry days, and will feed more frequently during those periods, causing greater instances of contracting those diseases. In Massachusetts, deer ticks (*Ixodes scapularis*) can carry Lyme disease. Typically, deer ticks will die out during the cold winter months, controlling the deer tick population and managing the spread of Lyme disease. However, climate change will result in milder and warmer winters, causing fewer disease-carrying ticks to die out during those winter months. With fewer ticks dying, the overall tick population will increase, creating a greater chance of contracting Lyme-disease. Children and senior citizens are more susceptible to the effects of insect-borne diseases, and those living near open water or flood-prone areas could be more exposed to insect-borne diseases. It was noted during the workshop that the Town of Princeton does not have a tick or mosquito control plan and that it does not spray town-owned lands. Residents have hired independent contractors to spray their private homes, but a town wide spraying effort has not been supported in the past. Education and prevention measures of insect-borne disease should be taught, and their use encouraged across Princeton.

### *Fire Prevention*

According to the most recent land use data, 77% of lands in Princeton are forested, and another 5% of lands are labeled as other vegetation. All but a few buildings in the Town of Princeton are located either within forested areas or within the wildland urban interface – the 200-ft buffer zone between forest and development. Wildfire risks are elevated within these two zones. With an increase in temperatures and the number of consecutive hot days, drought, and consequently more wildfires, will be an ongoing hazard. Workshop attendees expressed concern regarding sparking from the railroad off of Ball Hill Road, Gates Road, and Calamint Hill. Clearing brush and leaf debris along the railway will be necessary to limit wildfire risks. There was also concern that a large number of forests in Princeton are privately owned. This means that maintenance and prevention largely fall on the public who may not have an awareness or knowledge of the fire risks in their own backyards. Widespread education regarding drought and wildfire awareness is needed to mitigate these risks.

The need to maintain fire ponds was also widely discussed during the workshop. Currently, there are fire ponds off of Hickory Drive, Worcester Road, Sharon Drive, and Stagecoach Road that are

all in poor condition. The fire ponds in these locations are overgrown with invasive species, over silted, and are largely inaccessible. These fire ponds could be a valuable resource to improve Princeton's wildfire resilience, but without a dedicated maintenance schedule, these fire ponds remain inadequate.



## CURRENT STRENGTHS AND ASSETS

Princeton has taken some steps to address natural hazards and climate change over recent years. Public opinion holds that public safety is an “infrastructural strength” that will protect and strengthen the Princeton community. Perceived environmental strengths focused mainly on the large and diverse number of natural resources and recreation opportunities that Princeton residents can take advantage of.

### Infrastructure Strengths



#### *Road Maintenance*

Maintenance of the town’s public roads and streets is one of the Town of Princeton’s leading infrastructural strengths. The Town uses both salt and sanding operations to reduce icing and maintain traction on public roads during the winter. Thorough salting and sanding operations are a significant strength for Princeton, ensuring safety for drivers during the icy winter months. Additionally, the Princeton Department of Public Works also provides an essential Tree Limb Maintenance Plan. Under this plan, tree limbs across the town are trimmed periodically. This Tree Limb Maintenance Plan takes preventative action to avoid tree limbs falling onto roads after storms and other events. The Municipal Light Plant also offers tree trimming and removing services in Princeton. Their efforts aim to protect the town’s power line and prevent any tree limbs from disrupting it.

### INFRASTRUCTURE

- Road Maintenance
- Public Safety
- Municipal Buildings

#### *Public Safety*

The Town of Princeton also has numerous public safety strengths within the police, fire, and paramedicine departments. The Princeton Police Department has recently improved their radio system, with new ultra-high frequency radios. This improvement increases public safety by improving the communication and efficiency of the local police. In addition, the Princeton Police have a Repeater stationed on Wachusett Mountain, to further clarify and improve communication between Town Police. This shows the Princeton police working to keep the town as safe as possible, as well as showing the Police Department’s strong relationship with the Massachusetts Department of Conservation and Recreation. Princeton also has community paramedics, providing local and fast emergency medical assistance.

Princeton’s Fire Department has also found new ways to increase public safety. The department and the Town have designated more than twenty fire ponds throughout Princeton to help aid firefighting efforts. Fire ponds are local ponds that are utilized exclusively for firefighting efforts. These ponds are especially important in areas where access to fire hydrants is limited or non-existent.

The Town of Princeton also offers expansive coverage for the CodeRED program for its residents. Upon signing up for CodeRED, Princeton residents are enrolled to automatically receive

emergency alerts to their mobile device or home phone. In emergencies, such as evacuation notices, missing child alerts, boil water notices and more, residents of Princeton in the CodeRED program will be automatically alerted by local authorities (Community Notification Enrollment, 2020). The Town of Princeton also has excellent Broad Band WIFI service through Spectrum, allowing emergency communication such as CodeRED and other information sharing platforms, to have reliable communication for residents.

### *Municipal Buildings*

The Town buildings, schools, housing units, and library are other infrastructural strengths for Princeton. First, the Thomas Prince School, as part of the Wachusett Regional School District, serves the town as an emergency shelter with backup generators. Located on Sterling Road in Princeton, Thomas Prince is just off Route 140 and Route 62 (Thomas Prince School, Home, 2020). The emergency shelter in the school is a strength for the town because it is an easily accessible shelter for Princeton during an emergency.

Along with the Thomas Prince School, are many other Town buildings in Princeton that provide essential services to residents of Princeton. The Town Hall, is a historic and beautiful building, serving as a solid foundation for local government. It serves as the home base location for many Town services, such as the Building Department, Parks and Recreation Department, Veterans Services, and more (Departments | Princeton, MA, 2020).

Senior and affordable housing are another integral piece of a prosperous and equitable society. The Wachusett House Corporation is located at 13 Boylston Ave in town. It serves the community with 48 bedroom units designated for very low, low, and moderate income families, as well as the elderly, and those with disabilities (Wachusett House Corporation in Princeton, Massachusetts, 2020). This is a strength for Princeton, providing equity for housing opportunities for marginalized populations, such as the elderly, those with lower income and disabilities.

Finally, the Princeton Public Library is another strength for the town. The library offers books along with e-books, e-audiobooks, e-magazines, Ancestry.com services, Universal Class courses on many different subjects, and the Boston Public Library's e-card (Princeton Library, 2020). These services enrich the community with knowledge for children and adults, as well as local entertainment for all residents.

## Society Strengths



### *Community*

The residents of Princeton are a close-knit community that understand how to adapt to serve all its residents. Organizations such as NEADS World Class Service Dogs for seeing eye dogs, plans for community gardens, as well as Wachusett House are each examples of ways

## SOCIETAL

- Community
- Town Services and Personnel
- Communication Systems

Princeton practices community awareness. These organizations provide services for the community, serving as strengths for the town.

The churches in Princeton are often used for various community events and gatherings. The Heritage Bible Chapel is located at 182 Brooks Station Road in Princeton (Heritage Bible Chapel, 2020). The chapel serves as a place for residents to strengthen their sense of community through practice of their faith. Also, the Princeton First Congregational Church, on 14 Mountain Road, serves the community through programs such as Sunday school and nurse care. Finally, the Prince of Peace Parish, just off of Route 62 on Worcester Road in town, provides a historical New England aesthetic for Catholic worship in Princeton (Google Maps, 2020). The Heritage Bible Church has the potential to be used as a backup shelter, in a case of an emergency.

#### *Town Services and Personnel*

Each of the Town departments and committees in Princeton also are strengths to the prosperity of the town. Boards and committees such as the Road Advisory, Open Space Committee, and Environmental Action Committee, work particularly diligently to maintain open communication and stay proactive. The Highway Department is integral to maintaining safe conditions on roads throughout town. Often the department can arrive and fix problem roads in around 2-3 hours, depending on the situation and conditions. Through the Police Department, Princeton also offers a service to help new residents moving into town. By filling out the New Residents Form, the police are informed of the new residents' needs and vulnerabilities, allowing the new residents to be better equipped for emergencies.

The Town of Princeton also consistently works to meet the needs of its senior population. Though there is only one senior housing facility in Town, the Wachusett House on Boylston Avenue does offer its residents safe and comfortable housing. Vans visit this facility regularly, providing transportation services to its senior residents. The Town also provides many services to seniors in private homes. The Senior Center, located at 206 Worcester Road, produces a monthly newsletter, providing seniors with important information pertaining to the elderly population (Senior Center | Princeton, MA, 2020). In addition, the Council on Aging in Princeton also has a list of elderly citizens in town that might need additional assistance during emergencies, allowing the Town to help seniors that live in private housing as well.

#### *Communication Systems*

Princeton recognizes that efficient and effective communication to all residents throughout the Town is necessary and is striving to achieve that. In addition to CodeRED as mentioned above, Princeton also provides 9-1-1 translation services to residents. This allows non-English speakers to have full utilization of emergency services via dialing 9-1-1. Residents of Princeton also look to Town's social media presence for information. The Town's website and Facebook page are successful modes of communication for many residents of town. Communication potential has also been recently been further improved with the expansion of internet services in Princeton.

## Environmental Strengths



### *Tourism and Recreation*

Tourism and local use of recreational spaces is a major environmental strength for Princeton. Frequent visitors to the parks contribute to economic growth for the Town, allowing for and encouraging the maintenance of all of these recreational areas. For example, the Wachusett Meadow, at 113 Goodnow Road in town, offers beautiful scenery, abundant wildlife, and Colonial historical landmarks. Tourist attractions along the trails include beaver ponds, ancient trees, the Glacier Boulder, and the Brown Hill Summit. Along with trails that open all day every day, the Wachusett Meadow also offers homeschool programs, and adult recreation programs, such as seasonal snowshoeing, through a partnership with Mass Audubon (Wachusett Meadow Wildlife Sanctuary, 2020). These attractions are a strength for Princeton because they contribute to economic growth for the town.

## ENVIRONMENTAL

- Tourism and Recreation
- Forests and Trees
- Bylaws and Policies

Wachusett Mountain is another attraction and recreation area for tourists and local alike. Managed by the Massachusetts Department of Conservation and Recreation, Wachusett Mountain is a largely popular location for skiing in the winter months. The windmills on the mountain also offer historical scenery and entertainment for visitors. The mountain's attracts tourists from across New England and the country, increasing economic development for Princeton. Along with skiing, the mountain offers terrain hiking, ski racing, as well as food courts with new food options (Home | Wachusett Mountain, 2020). As the home of these tourist and local attractions, Princeton's recreational destinations can be considered a strength, specifically contributing to economic growth.

### *Forests and Trees*

The forests in Princeton are another environmental strength of the town. Princeton's large number of forests provide wildlife habitats, protection for soils, carbon safety, water resources, and recreational opportunities. There are expansive trail systems, many small ponds, and scenic hills at the Leominster State Forest (Leominster State Forest Paradise Pond and Wolf Rock Loop | Princeton, MA, 2020). With loop trails that are well marked and an abundance of wildlife to observe, Leominster State Forest is a publicly owned attraction for nature-lovers both near and far.

Appropriate tree removal is also a strength for Princeton. With proactive efforts for removing trees, more direct sunlight is exposed to main roads. With more solar insolation, the Town is able to reduce the amount of salt or sand needed to defrost roads that have frozen over. With less salt and sand distributed throughout the Town roads, there is less salt and sand runoff into catch basins, and therefore less contamination in wetlands and other water resource areas. Therefore, the Town's effort to increase sunlight on roads through tree removal, can help protect the Princeton's clean water supply.



### *Bylaws and Policies*

The zoning bylaws in Princeton preserve the resources and character of the town. For example, the Open Space Residential Design Bylaw requires a certain amount of open space in all development designs for the town. Similarly, the Rural Preservation Overlay Bylaw decreases the amount of forest and tree removal during any new development or constructions. The Earth Removal Zoning Bylaw also assists in the regulation of any de-vegetation occurring throughout town.

In addition, under the Wetlands Protection Act, Princeton practices strict preservation procedures to regulate permits for work areas on any town wetlands (310 CMR 10.00, 2020). The Town is also considering adopting a Wetlands Protection Bylaw for additional protections. Finally, Princeton remains “farming friendly” under the Town’s Farm Preservation Bylaw, permitting chickens and other animals in residential areas (Residential-Agricultural District, Town of Princeton, 2020).

## RECOMMENDATIONS TO IMPROVE RESILIENCE

Workshop attendees at each table took the next step in completing the CRB Matrix by suggesting actions that would address vulnerabilities, or further bolster strengths they identified. The following actions are compiled from the matrices from all three tables at the Princeton MVP Workshop. The completed Matrix for each table can be found in the Appendix at the end of this document.

### Infrastructure Actions



Improved **management of water** within town will be critical in building resilience. A stormwater, flooding, and drainage assessment that addresses culverts, dams, and bridges should be performed. That assessment should map culverts, identify those that need to be replaced or upgraded, utilize environmentally friendly alternatives, and adopt a maintenance policy. Dams and bridges should be evaluated to maintain safety, and relationships with private dam owners should be established to ensure compliance with dam safety standards. A town-wide water assessment should also be performed, exploring options for a backup source of clean drinking water. Locations where runoff could be used to create parklike areas with water features and floodwater storage for firefighting should be identified. All fire ponds and water supply features should be mapped, and plans should be developed to improve existing retention ponds through an Adopt-A-Fire Pond program.

### INFRASTRUCTURE

- Water Management
- Alternative Power Sources
- Access

**Alternative sources of power** should be secured to maintain critical services to vulnerable populations, especially considering there is only one power line through Town. A power redundancy feasibility study should be completed to determine the possibility of constructing additional power lines or utilizing alternative energy sources. Back-up generators or alternative power supplies should be secured for buildings and infrastructure most vulnerable to power outages, such as at the Wachusett House.

With increased flooding, storm events, and other crises become more prevalent, **maintaining access to key resources** was identified as a major concern. A town-wide vulnerability assessment should be utilized to map and identify vulnerable areas in Town and to analyze potential impacts to undeveloped properties. Ice management and road safety should be evaluated, and the high-risk transformers should be located and replaced. Additionally, sheltering options in town should be improved. The town should explore alternative shelter locations, such as at churches, Wachusett Mountain Lodge, or the Mass Audubon Wachusett Meadow Wildlife Sanctuary. Pet shelter locations should also be identified and an inventory analysis on pets and pet needs of residents in town should be performed.

## Societal Actions



**Investing in and fostering partnerships** was discussed in order to build more unity and support. As railroad sparking was a concern, it was suggested that the Town form a Railroad Coalition with other communities along the Providence-Worcester railroad line to encourage regular maintenance of brush and trees along to rail lines for fire prevention. Additionally, the Town should appoint a Tree Maintenance Committee to coordinate tree trimming and removal efforts of the Town and the Princeton Municipal Light Department.

As the burden of many risks fall on the shoulders of the public, participants felt it will be important to **enhance community preparedness and awareness** of climate-related vulnerabilities. It was recommended that the Town establish a series of educational campaigns to improve public knowledge and awareness of stormwater management, rainwater collection, well maintenance, insect-borne illness, invasive species, drought and wildfire risks, and water conservation. Additionally, it was suggested that the Town improve access to and use of the CodeRED system. A mailing and information campaign should be utilized to encourage residents to sign up for the CodeRED system. And to improve the preparedness of Princeton's senior residents, the Town should coordinate with the Council on Aging in helping to maintain the list of senior residents in town and their needs. Establishing an Adopt-A-Senior program could encourage engagement with the senior community and build their resilience network.

With the risks and vulnerabilities that the Town of Princeton will face as the climate changes, it will be important to **assess and address the resources** that they are lacking. Establishing a transportation plan for times of emergency was suggested in order to provide mobility, evacuation, and shelter access to the senior and disabled community. Transportation could be accomplished through the use of shuttle buses or trolleys. Additionally, it was recommended that the Town identify a location for a community garden in order to improve access to food. Developing a strategy to share and bring food to shelters during evacuation events was discussed at length to improve food access as well.

### SOCIETAL

- Utilize Partnerships
- Enhance Community Preparedness
- Assess Resources

## Environmental Actions



The vulnerability to the power grid and the risk of wildfire led participants to focus on **forest and tree management**. Performing a Tree Inventory Assessment was recommended to identify compromised trees in the street line and beyond. Establishing a Tree Removal and Replacement Program that utilizes the planting of understory, drought resistant trees could also improve the

### ENVIRONMENTAL

- Forest Management
- Environmental Policy
- Outreach

tree health. Developing Forestry Management Plans and securing necessary fire management equipment was also recommended to aid in the clearing of access roads.

Participants felt that natural resource protection could be improved by **strengthening environmental policies** in Town. Adopting a series of policies that address environmental and safety issues will establish a standard for residents to follow. A Landscape Manual and Policy for all Town-owned lands could encourage the use of native drought resistant plants and nature-based solutions. And Integrated Pest Control Plan could aid in the identification and management of invasive pests and plants throughout Town. Implementing a Water usage Policy could encourage residents to conserve water during periods of drought. And a Winter Maintenance Road Plan could reduce the usage of sand and salt in vulnerable environmental areas. Adopting a Stormwater Management Bylaw, a Wetlands Protection Bylaw, and a Wildlife Corridor Overlay District could provide stronger legal protections to natural resources in Town as well.

Conservation lands, forests, farms, and trails were viewed as environmentally strengths in Princeton, and it is believed that **expanding outreach** to these areas will maintain these assets. The Town should establish a partnership with DCR in order to coordinate forestry management of Wachusett Mountain. This partnership could also develop best practice management techniques as it regards to salt, sand, and pesticide usage within environmentally vulnerable areas. Improving access and knowledge of recreation opportunities in Town could be accomplished by establishing a paid recreation position within Town. Seeking LAND and PARC grant funding could be utilized to acquire land and build additional recreation opportunities. And it was recommended that the Central Massachusetts Regional Planning Commission map the existing trails in Princeton.

## Top Recommendations




Following the three-day virtual workshop, these actions were placed into a survey on the Survey Monkey platform so that participants could prioritize their top recommendations. Participants answered survey questions on: 1) what hazards they were most concerned with; 2) whether an action was high, medium, or low priority; 3) whether an action was a short, long, or ongoing project; and 4) which actions they would like to see Princeton complete. A copy of the survey questions and the survey results can be found in the Appendix at the end of this document.






### TOP RECOMMENDATIONS




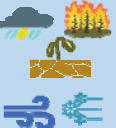




















- Power Redundancy Feasibility Study
- Stormwater and Drainage Study
- Educational Campaigns
- Forest Access Plans
- Water Supply Assessment
- Environmental Policies

The majority of participants, approximately 57.14%, indicated that they were most concerned with the possibility of increased winter storms as the climate changes. Winter storms will bring more high wind events and ice, increasing tree damage and power outages. Consequently, as the vulnerability of the power grid was discussed at each table, one of the top priority recommendations with a total of eight points was to **perform a power redundancy feasibility study** to determine the possibility of constructing additional power lines. Also with eight votes, the next top recommendations were to **perform a stormwater and drainage assessment study**, and to **establish a series of education campaigns to improve public knowledge of climate resilience topics**. Other highly favored recommendations include development of **forest access plans**, a **Town-wide water assessment** to explore a backup source of clean drinking water, and **adoption of a series of environmental policies** that will establish a standard for residents to follow. These actions received seven, six, and six votes, respectively.

















At the end of the three-day virtual workshop, Peter Peloquin thanked attendees for giving their time and attention, and commended the town for their willingness and flexibility to utilize a virtual platform giving the current public health conditions. The top recommendations on the following pages were compiled based on those actions reported out voted on by participants. Actions are organized by priority and project type. The key below describes the Category and Hazard types found in the top priority action table.

Category	Key
Infrastructural	
Societal	
Environmental	

Hazard	Key
Severe Storms/Flooding	
Winter Storms	
Wind	
Drought	
Wildfires	

Project Type	Category	Issue	Recommended Actions	Hazards
<b>High Priority</b>				
Power/Energy		Alternative Energy	Power Redundancy Feasibility Study to determine the possibility of constructing additional power lines or utilizing alternative energy sources.	
Education and Outreach		Public Awareness	Establish a series of educational campaigns to improve public knowledge and awareness of the following topics: 1) Stormwater Management; 2) Rainwater Collection and Storage; 3) Well Maintenance and Upkeep; 4) Tick and Mosquito Risks; 5) Invasive Species Control; 6) Water Conservation and Contamination; 7) CodeRED; and 8) Drought and Wildfire Risks/Prevention. Utilize partnerships with schools and youth engagement to advance these education campaigns.	
Resource Management		Wildfires	Develop Forest Access Plans and secure appropriate fire management equipment to aid in the clearing of access roads.	
Water	  	Stormwater	Stormwater, Flooding, and Drainage Assessment that addresses culverts, dams, and bridges. Map culverts, identify those that need to be replaced or upgraded, utilize environmentally friendly options, and adopt a maintenance policy. Evaluate dams and bridges to maintain safety, and contact private dam owners to ensure compliance.	
		Water Supply	Perform a Town-wide Water Assessment. Explore options for a backup source of clean drinking water, utilizing retention wells, tanks, and filtration strategies. Identify locations where runoff could be used to create parklike areas with water features and floodwater storage for firefighting. Map fire ponds and water supply features, and develop plans to improve existing retention ponds through an Adopt-A-Fire Pond program. Create a pressurized system using gravity to bring water from Echo Lake to other areas of town. And partner with schools and colleges nearby to develop pond management plans to improve water and habitat quality of ponds in Town.	
Policy	 	Natural Resource Protection	Adopt a series of policies to address environmental and safety issues that will establish a standard for residents to follow such as: 1) A Landscape Manual and Policy for all Town-owned lands that emphasizes native, drought resistant plants and nature based solutions; 2) Integrated Pest Control Plan to aid in the identification and management of invasive pests and plants throughout Town; 3) Water Usage Policy to encourage water conservation during periods of drought; and 4) Winter Maintenance Road Plan to reduce sand and salt usage in vulnerable environmental areas. Utilize the assistance of DCR, MWRA, and other professionals to develop these environmentally friendly policies.	
<b>Medium Priority</b>				
Power/Energy		Alternative Energy	Acquire generators or alternative power supplies for buildings and infrastructure most vulnerable to power outages, such as at the senior housing facilities or the Wachusett House.	
Emergency Preparedness		Senior Population	Improve the preparedness of Princeton's senior residents through 1) coordinating with the Council on Aging to maintain a list of senior residents in town and their needs; 2) establishing an Adopt-A-Senior Program to encourage engagement with the senior community; 3) utilizing the Senior Center Newsletter and other community organizations as a network of information sharing for senior residents; and 4) coordinating with first responders and the Montachusett Regional Transit Authority to respond to and provide medical care to seniors with mobility issues.	
Resource Management		Vulnerable Areas	Town-wide Vulnerability Assessment to map and identify vulnerable areas and analyze potential impacts to undeveloped properties. Evaluate ice management and road safety. Locate and replace highest risk transformers.	
		Tree Health	Tree Inventory Assessment to identify compromised trees in the street line and beyond. Establish a Tree Removal and Replacement Program that utilizes the planting of understory trees that are drought and pest resistant. Utilize downed trees or branches as Fuel.	
Communication		Inter-Town Communication	Improve communication town-wide. Encourage communication lines between different boards and committees, and update contact information on Town website as needed. Establish a contact list or phone tree for power outage notification. Transform the Police Department's "New Resident" form into a fillable PDF and encourage residents to fill it out to identify their needs.	
		CodeRED	Improve access and use of the CodeRED system. Encourage residents to sign up by sending a pamphlet with information on how to sign up and use the system in town-wide mailings, such as the census. Expand language options and different levels of interactions that residents using the system can use.	



Low Priority					
Emergency Management		Shelter	Improve sheltering options in town. Explore options for alternate shelter locations (Post Office Place, churches, Wachusett Mountain Lodge, the Mass Audubon Wachusett Meadow Wildlife Sanctuary, etc.). Develop an agreement with these alternative shelter locations to formalize arrangement. Identify potential pet shelter locations (NEADS) and perform an inventory analysis of pets and needs of residents in town.		
		Transportation	Establish a transportation plan for emergencies to move vulnerable populations (senior/disabled residents) to shelters via shuttle busses. Explore purchasing trolleys to provide additional transit options.		
Recreation		Knowledge and Access	Improve access and knowledge of recreation opportunities in Town by: 1) establishing a paid recreation position with the town; 2) adding more facilities and programs; 3) improving outreach and education; 4) seeking state grant funding; and 5) having CMRPC map trails.		
Access		Food	Improve food access by identifying a location for a community garden and developing a strategy to share food/bring food to shelters during evacuation events.		
Resource Management		Beavers	Research sustainable solutions to limit beaver activity in areas of town that are vulnerable to flooding (beaver deceivers). Consult a DCR biologist for guidance with this.		
		Tree Health	Develop a Tree Maintenance Committee to coordinate the efforts of the Town and the Princeton Municipal Light Department (PMLD) in tree trimming and wire protection.		
Policy		Housing and Community Development	Analyze existing bylaws and plans, and update regularly. Develop a Housing Production Plan to address the needs for senior housing in town. Update the Master Plan focusing on zoning, land use, and tax base.		
		Natural Resource Protection	Assess the need for additional natural resource protections and consider adopting the following: 1) Stormwater Management Bylaw; 2) Wetlands Protection Bylaw; and 3) Wildlife Corridor or Overlay District.		
Partnership Building		State Property	Establish partnership with DCR to coordinate forest management plan of Wachusett Mountain and develop best management practices within watershed for salt, sand, and pesticide usage. Install a zip line on Wachusett Mountain for recreation and to aid in rescue.		
		Railroad	Form a Railroad Coalition with other communities along the Providence-Worcester railroad line to encourage regular maintenance of brush and trees along the rail lines in order to prevent fire.		

## Public Comments

During the March 9, 2021 Public Listening Session, and during the March 3- March 17, 2021 Public Comment Period, the below comments were received:

- Language should be added to the Summary of Findings Report to allow the Town access to provide a generator and access to a hut.
- Lessons were learned during the 2008 ice storm, and the PMLD is updating a document for Surviving the Next Storm. This document will address losing power for a long period of time, frozen pipes, generators not lasting, and carbon monoxide poisoning. During this ice storm, residents experienced 4 to 6 hours of power for internet, and 2 to 4 hours of energy for cellular power. The storm resulted in an 8-day outage.
- A fire hazard exists with some creosote soaked railroad ties that have been lying around for a while near the railroad tracks.
- There is a significant regulatory obstacle of testing water holes as it costs approximately \$20,000 - \$30,000 to do.
- The existing Public Safety Complex puts the Town and its public safety officials at risk because they are inadequate to provide essential workplace safety features. The Town will face a very high expense in the next few years when it replaces the outdated Town Center and Police/Fire Complex.

## Next Steps

This planning process and list of prioritized recommendations is only the first step in building a more resilient community. The intent of the Summary of Findings Report is to identify the strengths and vulnerabilities of a Town, and to brainstorm potential actions that could help the Town build climate resilience. Once the State accepts the Summary of Findings report and deems the Town of Princeton an MVP Designated Community, the Town should begin identifying projects that they would like to complete from the list of Recommended Actions. Based on Town interests and capabilities, should begin developing action plans to pursue these projects, and should utilize MVP Action Grants, Town resources, or other grant programs and funding opportunities to explore these ideas further.

## CRB WORKSHOP PARTICIPANTS

Name	Affiliation	Attended	Table #
Karen Cruise	Board of Selectmen Member	Y	1
Brian Keevan	Conservation Commission	Y	1
Rick Gardner	Open Space	Y	1
Sean Conway	Local Construction Co.	Y	1
Chris Courville	Tree Warden	Y	1
Ricky Thebeau	Princeton Police Department	Y	1
Phil Gott	EAC	Y	1
Melissa Hawthorne	Assistant Treasurer Collector	Y	1
Karen Rossow	Open space Committee	Y	1
Ben Metcalf	Highway Dept.	Y	2
Kelly Freada	DCR	Y	2
Deb Carey	Mass Audubon	Y	2
Kelton Burbank	Recreation Committee	Y	2
Claire Golding	EAC	Y	2
Andrew Santry	Highway Dept.	Y	2
Charlie Cary	Waste Wood Utilization	Y	3
Michelle Powers	Police Chief	Y	3
Gary Harrington	Power Company	Y	3
Kim Ferguson	State Rep.	Y	3
Sherry Patch	Town Manager	Y	3
Corey Burnham-Howard	EAC	Y	3
Diane Lemon	Admin. Secretary	Y	4
Susan Priest	Building Inspector	Y	4
John Bennett	Fire Chief	Y	4
Erin Redihan	Library	Y	4
Holly Palmgren	MBTA/WRTA	Y	4
Hilary King	MVP Regional Coordinator	Y	4
Sarah Adams	Principal Planner, CMRPC	Y	1
Ian McElwee	Associate Planner, CMRPC	Y	2
Dani Marini	Assistant Planner, CMRPC	Y	3
Mimi Kaplan	Associate Planner, CMRPC	Y	4
Matt Franz	Project Manager, CMRPC, IT Support	Y	ALL
Peter Peloquin	Associate Planner, CMRPC	Y	ALL

## CITATION

Town of Princeton (2020) Community Resilience Building Workshop Summary of Findings.  
Central Massachusetts Regional Planning Commission. Princeton, Massachusetts.

## CRB WORKSHOP PROJECT TEAM

Name	Affiliation	Role
Phil Gott	Town of Princeton	Environmental Action Committee
Brian Keegan	Town of Princeton	Conservation Commission Chair
Ben Metcalf	Town of Princeton	Highway Department Superintendent
John Bennett	Town of Princeton	Fire Chief/EMD
Michelle Powers	Town of Princeton	Police Chief
Terry Thompson	Town of Princeton	Road Advisory Committee
Larry Greene	Town of Princeton	Board of Health
Karen Cruise	Town of Princeton	Board of Selectman
Aimee Kindorff	Town of Princeton	Senior Center, Director
Sherry Patch	Town of Princeton	Town Administrator
Pete Peloquin	CMRPC	Associate Planner, Lead Coordinator
Sarah Adams	CMRPC	Principal Planner

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Sherry Patch, Princeton Town Administrator

John Bennett, Princeton Fire Chief/EMD

Michele Powers, Princeton Police Chief

Phil Gott, Environmental Action Committee

Terry Thompson, Road Advisory Committee

Ben Metcalf, Highway Superintendent

Larry Green, Board of Health

Brian Keeven, Conservation Commission

Karen Cruise, Selectboard

Aimee Kindorf, Senior Center, Director

The following individuals were directly and personally involved in planning and conducting the Princeton Community Resilience Building Workshop:

Peter Peloquin, Associate Planner, CMRPC

Sarah Adams, Principal Planner, CMRPC

Dani Marini, Assistant Planner, CMRPC

Matt Franz, Project Manager, CMRPC

Hillary King, Regional Coordinator, EOEAA

## APPENDIX

- I. Agendas and Sign-In Sheets
- II. Workshop Meeting Materials
  - a. Invitation
  - b. Maps
  - c. Table Matrix
  - d. Survey
- III. Workshop Presentation
- IV. Listening Session Presentation