Town of North Brookfield









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 an 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. CMPRC's programs include Transportation, Regional Services, Geographic Information Systems (GIS), and Community Planning.



FEDERAL TITLE VI/NONDISCRIMINATION PROTECTIONS

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.

STATE NONDISCRIMINATION PROTECTIONS

The CMMPO also complies with the Massachusetts Public Accommodation Law, M.G.L. c272§§ 92a, 98, 98a, prohibiting making any distinction, discrimination, or restriction in admission to or treatment in a place of public accommodation based on race, color, religious creed, national origin, sex, sexual orientation, disability or ancestry. Likewise, CMMPO complies with the Governor's Executive Order 526, section 4, requiring all programs, activities and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background.

CONTENTS

CMRPC Mission	1
Our History and Progress	1
Executive Order 569 and the Massachusetts Municipal Vulnerability Preparedness program	m 3
Acknowledgements	4
North Brookfield: A Profile	5
Workshop Summary	5
Workshop Invitees and Participants	ε
Core Team and Project Team	7
Top Hazards	9
Summary of Findings	11
Current Concerns and Challenges Presented by Hazards and Climate Change	12
Vulnerable Areas	14
Specific Categories of Concerns and Challenges	15
Infrastructure Concerns	15
Societal Concerns	18
Environmental Concerns	19
Current Strengths and Assets	20
Infrastructure Strengths	21
Societal Strengths	22
Environmental Strengths	23
Recommendations to Improve Resilience	23
Infrastructure Actions	23
Societal Actions	24
Environmental Actions	25
Ton Recommendations	25



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 North Brookfield 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



ACKNOWLEDGEMENTS

The Municipal Vulnerability Preparedness (MVP) program and Community Resiliency Workshop was funded by the Executive Office of Energy and Environmental Affairs. This Summary of Findings and virtual CRB Workshop were prepared for the community of North Brookfield by the Central Massachusetts Regional Planning Commission (CMRPC). Support from the North Brookfield Board of Selectmen and the town officials was much appreciated, especially for allowing the workshop and listening session to take place virtually during unprecedented times.

The CMRPC would like to acknowledge the town of North Brookfield's Core Team for their time and hard work in participating in this project. These include, but are not limited to:

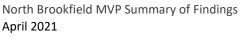
> Ashley Barre, Administrative Assistant, Project lead Ann Hicks, Local Committees (Former Conservation Agent) Joseph Holway, Fire Chief Jim Nyberg, Sewer Department Dawn Thistle, Library Director

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

> Pete Peloquin, Associate Planner, CMRPC Kerrie Salwa, Principal Planner, CMPRC Dani Marini, Assistant Environnemental Planner, CMRPC Matt Franz, GISP - GIS Analyst, CMRPC Faye Rhault, Intern, CMRPC

Andrew Smith, MVP Regional Coordinator, Greater Connecticut River Valley, EOEEA





April 2021

NORTH BROOKFIELD: A PROFILE

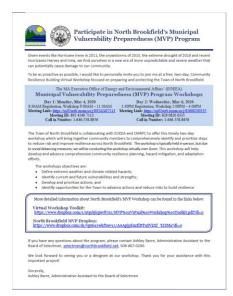
The Town of North Brookfield, Massachusetts was incorporated in 1812. North Brookfield is located on Route 67, 19 miles west of the City of Worcester and is largely a bedroom community. All of North Brookfield lies within the Chicopee River Basin. North Brookfield is bordered by West Brookfield on the west, Spencer on the east, Brookfield and East Brookfield on the south, and New Braintree on the north. North Brookfield has a total area of 21.47 square miles and a population of 2,226. According to the Central Massachusetts Regional Planning Commission's (CMRPC) Long Range Transportation Plan, Mobility 2040, the Town of North Brookfield is expected to experience minimal population growth, compared to the region, over the next 25 years.

The number of residents has declined from 4,683 in the 2000 US Census to 4680 in 2010 to the currently (2018) estimated 4808. North Brookfield is a largely white community, with some 97.6% of residents identifying within that group. Mixed Race American are the largest minority group, at 1.72%. Similarly, to the state age distribution, North Brookfield has a median age of 41.1, with 27.2% of the population under the age of 19 and 12.9% of the population over the age of 65. The median household income resides at \$68,654, with 6.32% of the community living below the poverty line.

North Brookfield actively involves its community through various youth and adult programming at the North Brookfield Senior Center, Haston Free Public Library, and provides recreational outlets at the North Brookfield Town Forest Park and Lake Lashaway Beach. The town is home to the North Brookfield Elementary, Junior High School, and Senior High School.

WORKSHOP SUMMARY

The Town of North Brookfield contracted with the Central Massachusetts Regional Planning Commission (CMRPC) on February 11, 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 North Brookfield. A small group of town officials and local residences convened on March 9, 2020 to form the 'Core Team' which, together with CMRPC staff, organized and planned the CRB Workshop over the course of three meetings.







Workshop Invitees and Participants

North Brookfield MVP Summary of Findings

April 2021

Name	Affiliation	Attended	Table #
Diane Nichols	COA	N	
Ashley Barre	Administrative Assistant to the Board of Selectmen	Y	1
Ann Hicks	Boards and Committees (former ConComm)	Y	1
Jim Nyberg	Sewer Superintendent	Υ	1
Dawn Thistle	Library Director	Υ	1
Joe Holway	Fire Chief	Υ	1
John Turner	Planning Board and Conservation Commission	Υ	1
Andrew Smith	MVP Regional Coordinator	Υ	1
Cynthia Henshaw	Executive Director, East Quabbin Land Trust	Υ	1
Becky Ikehara		Υ	1
Sue Lewandowski	NB Cares, Hearts for Heat, Emergency Management	Υ	1
Trish Miller		Υ	1
Sgt. Chris Donais	NBEMA Director/Police Sergeant	N	
Kevin Valeri	Water Commissioner and Hannaford Employee	N	
Troy Brown	Electrician	N	
Jeff Samuelson	Contractor	N	
Bill King	Planning Board	N	
Tara Hayes	Town Clerk	N	
John Tripp	Selectmen, Planning Board, Rail Trail	N	
Danny Roman	Playground	N	
Rich Lind	Superintendent of Schools	N	
Sheila Leblanc	Schools	N	
Holly Kularski	VSO	N	
John Couture	Building Inspector	N	
Sheila Orsi	Downtown Development Committee	N	
Glenna Stocks	NB Helps and DDC	N	
Margaret (Peg) Bodine		N	
Harbour Fraser Hodder		N	
David Maher		N	
Scott Norrie		N	
Ellen Smith		N	
Tom Skowron		N	
Betty Wuelfing		N	
Shirley Cummings		N	
Jan Moran		N	
Nancy Nykeil	Retired Town Accountant	N	
Paulette Adams		N	





Brandon Avery	Town Historian and Historical Museum Director	N	
•	Town historian and historical Museum Director		
Christine Morrison		N	
Ross Hubacz		N	
Dale Kiley	Board of Selectmen	N	
Jason Petraitis	Board of Selectmen	N	
Anne Adams	NB Emergency Management	N	
David Maher	Valley View School	N	
Kenneth Prestwich	Biology professor at Holy Cross and wildlife researcher	N	
Catherine Langtimm	Biology professor at Holy Cross and wildlife researcher	N	
Trevor Bruso	Board of Health	N	
John Alphin	Board of Health	N	
Bob LaFlamme	business owner, boy scout leader	N	
	Conservation Commission, Board of Health and formerly		
Bob Locatelli	Finance	N	

Core Team and Project Team

North Brookfield MVP Summary of Findings

April 2021

Name	Affiliation	Role	
Ashley Barre	North Brookfield	Admin Assistant, Project lead	
Joe Holway	North Brookfield	Fire Chief	
Anne Hicks	North Brookfield	Local Committees	
Dawn Thistle	North Brookfield	Library Director	
Jim Nyberg	North Brookfield	Superintendent Water/Sewer	
Peter Peloquin	CMRPC	Project lead	
Kerrie	CMRPC		

The Town of North Brookfield's CRB workshop was scheduled to be held on April 16, 2020 at the North Brookfield Senior Center. On March 23, 2020, Governor Baker ordered all non-essential businesses to cease in person operation through April 7, 2020. The Core Team had a regularly scheduled meeting on the same day of the announcement and it was decided to keep the date as scheduled. On March 31, 2020, Governor Baker ordered all non-essential businesses to remain closed and gatherings of not more than 10 people to remain in effect through May 4, 2020. On April 28, 2020 that order was extended through May 18, 2020.

During this time of uncertainty, North Brookfield's Core Team continued to meet to discuss possible alternatives in the case no extension was granted. North Brookfield's Core Team and the staff at CMRPC worked diligently to create a virtual workshop. The virtual workshop would





be conducted in a similar format as an in-person workshop with some slight differences. It was 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 half hours. The first half 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 item to improve resiliency throughout the Town of North Brookfield.

The virtual workshop was scheduled to be held on May 4, 2020 from 8:30AM – 11AM, May 6th from 2PM-4PM, and May 11th from 9AM-11AM. To prepare participants for the workshop all presentations were to be 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 North Brookfield 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 North Brookfield and develop strategies to enhance the town's resiliency related to climate change. Following the CRB work plan process, CMRPC facilitators and planners pre-recorded three presentations:

- Overview of the CRB process and the MVP program.
- A summary of climate change projections, impacts and mitigation strategies
- A detailed profile of natural hazards in the Town of North Brookfield, 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 North Brookfield. After some discussion by the group, there was final agreement between the Core Team and all participants that--in no particular order-- flooding, wind events, winter storms and extreme temperatures have the greatest effects and potential effects 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 one 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. Later that day the Executive Office of Energy and Environmental Affairs (EEA) announced a one-time approval to extend current MVP Planning Grants with a new contract end date of June 30, 2021. The Core Team decided that they had put in a great amount of effort and would continue with the virtual workshop as planned, while applying for the extension to ensure all deadlines were meet.



The group then reconvened two days later to build upon the first day's work. The goal of the second session was to continue to identify features and identify actionable items to reduce or mitigate the projected impacts of climate change. The group needed more time to complete the matrix and the third day was utilized to complete the matrix. Once the group had completely filled out the matrix, the group gave a summary of findings by the table reporter.

Upon completion of the three workshop meetings, CMRPC compiled all information from the matrix into survey form. The survey was then distributed to all attendees of the workshop. The attendees took the survey to prioritize and vote for what they believed to be the top project in the infrastructure, society and environmental categories. Results of the survey were used to prioritize and organize the matrix and report.

Eleven (11) people attended the CRB Workshop, including representatives from Town government, emergency services, the MVP Core team, Municipal Department Heads, Conservation Commission, North Brookfield Library and concerned citizens of North Brookfield.

A public listening session to discuss MVP results and recommendations for future actions was held on October 13, 2020 prior to a regularly scheduled Board of Selectmen's Meeting. The listening session and Board of Selectmen's meetings were properly promoted across several avenues, with a combined four (4) residents including all three selectmen in attendance. Between the two meetings, a total of fifteen (15) people participated in the MVP process.

Top Hazards

Following the overview 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: **flooding**, **extreme temperatures**, **winter storms**, and **wind events**.

In 2016, North Brookfield 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.



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 frequency of storm events continues to increase. Specific areas with critical infrastructure have been shown to be prone to flooding, thereby creating a variety of safety concerns. Areas with frequent drainage issues include West Brookfield Road, at undersized culverts throughout town including on Ward Street, and near areas with beaver activity, such as along Bigelow Road and Tucker Road.

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 Chicopee River Basin, where North Brookfield 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 warmer storm severity increases with temperatures.



Horse Pond Dam

SUMMARY OF FINDINGS

Overall, the virtual workshop was received positively by all in attendance. Following the presentations, participants were asked if they agreed with the core team's identification of flooding, wind events, winter storms and extreme temperatures as the primary hazards facing North Brookfield. All the participants agreed that these four hazards were the most relevant for North Brookfield.

North Brookfield's Highway Department, cultural and social service facilities, and the North Brookfield Emergency Management Agency were described as strengths, along with the numerous natural resource areas. While vulnerable to development and in need of further protection, wetland areas were considered to be an overall strength for the town because of their high-quality habitat. With the majority of participants expressing concern for increased flooding risks, dams, culverts, and bridges were viewed as vulnerabilities in need of assessment and repair. And communication



Haston Free Public Library, photo courtesy of Dawn Thistle, Library Director.

and public engagement were also considered to be a vulnerability with room to increase information sharing and participation in town projects.



Another area that was widely seen as underutilized was the Haston Free Public Library. The library is publicly owned and located in the Towns center. The library provides multiple free services and programs to the Town's population. It was noted that the majority of services and programming is received and attended by the town's senior population. There was extensive conversation about the potential to utilize the library for community engagement, climate education, public meeting space and town information to be distributed through the library. The library experiences problems with limited access to the building during and after heavy snowfalls due to the limited parking area and buildup of plowed snow.

There was agreement that the Town's water and sewer pumping stations needed to be replaced or upgraded and outfitted with alternate power sources to provide for the expansion of both water and sewer throughout the town. Many asked for greater public education regarding water use, including promoting efficient home appliances, requiring annual inspections of septic tanks, and installing permeable pavements. It was observed that municipal facilities were a prime place for installing solar panels.

The group identified specific vulnerable locations that are already in need of attention and will likely face worsening impacts due to climate change. These include culverts throughout the town especially the Ward Street culvert, town-wide bridges, sidewalks and street tress, municipal buildings with flat roofs, and Doane Pond and Man-O-Name dams.

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

CMRPC, the MVP planning provider, had the unique advantage of preparing North Brookfield's Hazard Mitigation Plan (HMP), which was adopted by the Town's Board of Selectmen and approved by FEMA in September 2019. Meetings with the MVP Core Team prior to the workshop as well as information from the Hazard Mitigation Plan 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). The majority of North Brookfield is provided with public water coverage from the Horse Pond Reservoir. Advisedly, it will be important for the town to maintain a backup and response plan in the event that the reservoir is damaged by drought or storm and cannot be replenished at the prescribed rate of use.

Prior to the workshop, CMRPC staff presented downscaled climate change data provided by Massachusetts's Executive Office of Energy and Environment Affairs (EOEEA) and the Northeast Climate Science Center at the University of Massachusetts, Amherst. North Brookfield lies mostly in the Chicopee 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 9 to 30 days annually; days below freezing



April 2021

will fall from 19 to 38 days annually; annual precipitation will increase from 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 Barre area.



Challenges highlighted in the presentations and/or discussed as a

Downed power lines during 2019 wind storm

group or in the breakout groups included the following concerns:

- ➤ Issues associated with 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 increased need for cooling and less need for heating, especially among vulnerable groups such as children and seniors. This concern was elevated because of the Town's relatively limited formal shelter capacity and the lack of backup power at the Senior Center, an important resource for many of the town's senior population and other residents.
- 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.
- 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 National Grid. 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.

VULNERABLE AREAS

The locations in North Brookfield identified by workshop participants during discussion as vulnerable to the hazards discussed include areas adjacent to water bodies, forested areas, roadways that frequently flood, and neighborhoods that are dense and difficult to access in case of emergency.

Town-wide Dams were of concern to many in attendance, especially the Doane Pond Dam and Man-O-Name Dam, both dams mentioned are in need of repairs and were

VULNERABLE AREAS

- Town-wide dams
- Localized flooding
- Wetland areas
- Forested areas

thought to be ideal dams to study for removal, improvements or replacement. Doane Pond Dam has breached in the past. Man-O-Name Dam is in need of repairs and has been deemed a Significant Hazard by the Massachusetts Office of Dam Safety. The dam presents absentee ownership challenges as the current owner is residing in Rhode Island. North Brookfield is concerned that a breach of this dam would cause catastrophic problems to the Town of West Brookfield a short distance downstream.

Localized flooding was identified along Ward St., Slab City Rd., Gilbert St., St. Clair Ave., Grove St., Tucker St., Town Farm Rd. and Spring St. Higher density rainfall events coupled with undersized culverts and beaver dams are a major contributing factor.

Wetland areas in the North West section of town, Murphy Road and Collins Road area are concerning due to the lack of a local wetland's bylaw.





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 approximately 59% of the town, according to the Hazard Mitigation Plan. Roadside trees are also a vulnerability due to a lack of a sustainable tree trimming programs and remove and replace program.

Specific Categories of Concerns and Challenges

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

Infrastructure Concerns



Dams

The Town of North Brookfield owns Horse Pond Dam and Doane Pond Dam, both are listed as significant hazards in the town's Hazard Mitigation Plan. There are also five private or state-owned dams throughout North Brookfield. The most concerning dams were Doane Pond Dam and Man-O-Name Dam. Doane Pond Dam is owned by the Water Department and is in the northern section of town along Route 148. The dam is in need of repairs to prevent a

INFRASTRUCTURE

- Dams
- Culverts
- Bridges
- **Municipal Facilities**
- Sidewalks and Road ways



Doane Pond Dam, as seen from Google Maps Street View

second breach. During the hurricane of 1938, the dam breached causing the loss of one life and washed away the sand filtration system. Prior to the damage of the hurricane of 1938, Doane Pond was used as a public water source, but the filtration system was never repaired or permitted and is currently not considered a permitted source of water. It is said to be still hooked into the system in an approved emergency situation.



Man-O-Name dam is privately owned by an out-of-state absentee owner. This dam has been deemed a Significant Hazard by the Massachusetts Office of Dam Safety. The dam is owned by a private party in Rhode Island and is surrounded by Audubon Society property. Downstream water flows to West Brookfield, and a breach of the dam could pose risks to the Audubon property and West Brookfield.

Culverts

Undersized culverts are becoming a larger problem town-wide. Ward St. was identified as an undersized and problematic culvert. The "North South" culvert as it was referred to has been a problem for many years. It is estimated that the culvert begins in the area of Conroy Ave. and runs behind the houses on Grove St., under the Vibram building, through the Hannaford's parking, lot behind the houses along East Brookfield Rd, eventually crossing the road and continuing through and behind properties along East Brookfield road. The culvert is made up of many different sizes and materials including stones, brick, concrete and pipes. Outside of the issues cause by rain fall, the location of the culvert is still somewhat unknown. The Highway Department continues to find access points to the culvert. Access points have become overgrown and causing silt build up restricting flow through the culvert causing roads and basements to flood during rain events. Discussion of the possibility of "day lighting" appropriate parts of the culvert were discussed during the workshop.

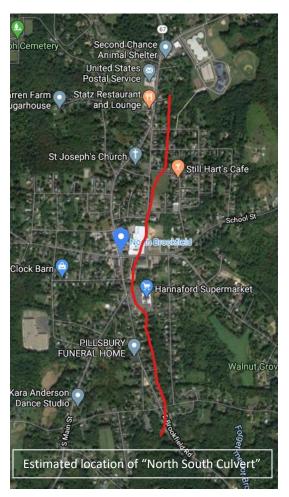
Bridges

Bridges located throughout the Town were identified as vulnerable to intense rain events. The Bennett's

Hill, Bigelow Hollow, Five Mile, and Coys Brook along Route 67 bridge were all identified as potentially problematic bridges and are currently experiencing some levels of erosion. An in depth look at the inspection reports is needed and further assessments and/or repairs should be completed on an as needed basis.

Municipal Facilities

An increase in the number of climate change-related disasters could damage the town's infrastructure and endanger all those who live in North Brookfield. The community will need buildings and command centers that can effectively store equipment to maintain potential shelters and important departments and services. Additionally, all municipal buildings should be equipped with lightning rods to deflect lightning strikes, and be ADA compliant to provide for







residents with mobility issues thereby providing access for everyone to these municipal services and safe shelters.

According to attendees, North Brookfield's municipal buildings, school buildings and first responder sites require generator upgrades and/or tie-in's in order to produce the backup power and heating/cooling required to serve as potential shelters and continued operation. This limits their use in effectively reacting to severe weather events caused by climate change. Without these upgrades these buildings could be of little use during future natural disasters. (At present, the North Brookfield High School is the town's only designated emergency shelter.)

As these shelters could be required year-round, the town must ensure that each is equipped with the tools to respond to all severe weather events and is ready to host residents regardless of the reason.

The Town's municipal buildings are also susceptible to snow loading. According to the group, the Highway Department, Fire Station, Town Hall and Senior Center all have flat roofs. Frequent snow build up can cause damage and leaking to a roof.

Roadside drainage

Drainage ditches along West Brookfield Rd. are becoming full of dirt and no longer operate properly. During rain events, the ditches fill up with water and eventually spill into the road creating unsafe driving conditions and localized flooding. Roadside drainage is problematic throughout the Town's road system. The Highway Department is diligent in its efforts to keep roadside drainage free of debris, but limited staff and equipment make it difficult to keep up with the aging infrastructures that are in place.

Sidewalks and Roadways

Dead and dying trees were identified as risks for damaging utility wires or obstructing roadways if they fall due to windstorms. There is a need for implementation of a tree planting and replacement program along the roadside in order to lessen the risks of these trees falling. Shade trees and places of rest are limited throughout North Brookfield's sidewalk system, and a replacement program could increase shaded and cool areas throughout town.

Other vulnerabilities to roadways include poor drainage. West Brookfield Road was identified as a particular area of interest as the sides of the road get flooded with water. This creates dirt build up and a dam effect, resulting in dangerous conditions when driving.





Societal Concerns



Vulnerable Populations

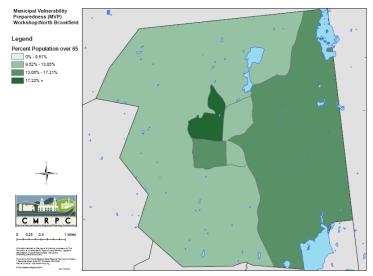
The town has several vulnerable populations that need to be considered when planning for climate resiliency. Many local seniors do not have access to a vehicle and live alone. Environmental risks faced by everyone could be even more hazardous to these individuals, and destructive events such as flooding, storms, ice and longer periods of

SOCIETAL

- **Vulnerable Populations**
 - Communications
- **Public Engagement**

higher temperatures will require more immediate attention for seniors than other residents. This concentration of vulnerable parties in a potentially dangerous area will require town and emergency response officials to periodically review and update management and evacuation procedures for the community, especially as flooding and wildfires become more common.

North Brookfield's homeless population is also of great concern when discussing climate resiliency. The number of homeless peoples in North Brookfield is difficult to determine. Many of North Brookfield's homeless people transient and/or "couch-surfing¹." This concern regarding creates assessment and information sharing during climate related events. The need to better understand the total number of this population and how to better sever the population was discussed during the workshop.



Communication

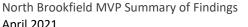
April 2021

During the workshop, multiple aspects of communication were discussed. The overall consensus was that communication was both a vulnerability and a strength. The Town's CodeRed system was thought of as a strength, but there were many vulnerabilities with the system. Participation within the system is low, not all participants are set up to receive the proper notifications and/or are not confident in the operation of digital devices. Participants on landline will not receive notification when away from the landline. Language options were also considered to be lacking and incorporating the Russian language was discussed. A campaign for CodeRed education and sign-up was discussed.

Communication between Boards and Committees was considered to be an area to improve upon. Boards and Committees meet regularly as individual groups to move their respective work

¹ To stay temporarily in a series of other people's homes, making use of improvised sleeping arrangements.







forward. Unfortunately, that work is often not shared as widely as it could be. There has been an effort to hold a quarterly meeting of all Boards and Committees to give an update to the Selectmen on current and future projects and to share information with all other Boards and Committees in attendance. Attendees at the workshop believe this quarterly meeting should continue and ways to improve upon information sharing should be investigated. The pool of community members who volunteers on Committees has become smaller. Members of the community who volunteer for committees are stretching their time and resources thin. This makes it difficult to hold regular meetings with all Boards and Committees.

Public Engagement

North Brookfield's pool of volunteers are extremely active, yet limited in numbers. Community service groups such as North Brookfield Cares, once held a strong presence in town. Over time the community slowly disengaged with the group and new members are becoming harder and harder to find. Throughout the town, public knowledge of local meetings, events and voter turnout is low. Information for meeting and events are posted on websites, public bulletin boards and in the window of the Town Offices, yet there is still limited public engagement. This is concerning to attendees of the workshop. They are concerned that without public engagement, residents will have little knowledge about what is going on in town, and will not have an understanding of important hazard, fire safety, or climate preparedness knowledge.

Environmental Concerns



Wetlands and Water Resources

Participants noted that their wetlands and water resources are in need of protection. Currently, North Brookfield does not have a Wetlands Protection Bylaw, leaving important natural resources vulnerable to development.

The Five Mile River was listed as another vulnerable

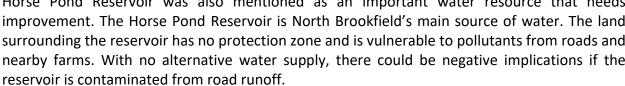
water resource. It is located on the southeast side of town, stretching ten miles between North Brookfield and Spencer. Participants reported that in addition to development pressures, the river fills with invasive plant species. While the Town sprays for the invasives every year, the invasive plants continue to come back. In fact, the river is so overrun with invasive species, that they have travelled downstream and infested Lake Lashaway.

Horse Pond Reservoir was also mentioned as an important water resource that needs improvement. The Horse Pond Reservoir is North Brookfield's main source of water. The land surrounding the reservoir has no protection zone and is vulnerable to pollutants from roads and nearby farms. With no alternative water supply, there could be negative implications if the

ENVIRONMENTAL

- Wetlands and Water Resources
- Forest Management
- Invasive and Nuisance Species





Forest Management

During the workshop, participants discussed the vulnerability of the Town's forest management practices. North Brookfield consists of 8,699 acres, or 62%, of forests. And between 2005 and 2017, there were 80 incidents of fire, with 45.45 acres burned. With an increase in temperatures and numbers of consecutive hot days, drought and wildfires will be an ongoing hazard. It was stated that there is a need to educate the community on fire safety and its importance to help lessen this risk. Additionally, fire loads in forests need to be reduced through debris and invasive species removal, and the most vulnerable areas need to be identified. The Bell Hill Reservoir, located between Bell Road and Route 67, was identified as a particularly vulnerable forested area for its high fire load and proximity to the water treatment plant. Saint Joseph's Cemetery was also mentioned as another forested area of concern in need of fire load reduction.

Invasive and Nuisance Species

There was discussion on the presence of invasive and nuisance species throughout North Brookfield. As the climate continues to change, the region will experience a shift in flora and fauna. Plants and animals that have adapted to warmer and drier climates will increase, and native species that are better adapted to cooler weather will decrease. Invasive species can often outcompete native species due to a lack of predators to manage population numbers. Participants reported invasive species as a widespread issue throughout North Brookfield, but noted Lake Lashaway, the Five Mile River, and forests across town as particularly vulnerable areas.

Attendees also noted a large presence of beavers in their many forested wetlands. Beaver populations have grown in recent years due to a lack of natural predators and an abundance of resources. Beaver dams can often cause a backup of stream water that may impact communities downstream or could flood nearby roadways. With more powerful and more frequent storms, risks of increased flooding if these dams break are of even greater concern. Two areas of particular concern are Tucker Road and Bigelow Road. Participants noted beaver activity at Coys Brook along Tucker Road and Old West Brookfield Road. The brook has flooded in the past due to beaver activity, and though the beavers have been removed, they continue coming back. The pond along Bigelow Road has also been growing due to beaver dam activity. If the dam gives way, it will flood Bigelow Road and take out the horse barn across the street. In Massachusetts, regulations mostly protect beavers and beaver dams from human interference. This makes it difficult to trap beavers or breach dams outside of the trapping season.

CURRENT STRENGTHS AND ASSETS

North Brookfield has taken some steps to address natural hazards and climate change over recent years. The following topics were identified by workshop attendees as strengths or assets that will aid in North Brookfield's climate resilience.



Infrastructure Strengths



Municipal Buildings

Though some municipal buildings are aging, each building is able to provide services to the community. The Town Offices is host to town government, veterans' services, and a multitude of other local services. The Senior Center and Library are staples in the community providing services needed on a daily basis. Communication among these

INFRASTRUCTURE

- Municipal Buildings
- Public Safety
- Schools
- Communications

centers is recognized as paramount and is executed at a high level to keep both employees, residents and surrounding communities informed. The current systems that are in place, such as social media, are great starting points and have the potential to grow.

Public Safety

The town's emergency responders are highly trained and have the ability to quickly and safely respond to most events. The town is equipped to handle almost any situation related to the changing climate and has the ability to call upon local mutual aid when needed. In the case of a significant catastrophic event, North Brookfield also has the ability to call upon the region's resources for specialized equipment.

The Highway Department, though housed in an aging building and lacking equipment, responds to storms of all types. The Highway Department proactively removes debris from culverts, roadside drainage and streams to prevent flooding in rain events. During and after storms the department actively removes debris from roads, culverts and drainage systems to prevent any further issues that may arise. The department is also responsible for ice and snow removal among many other tasks.

Schools

The North Brookfield school system is not only home to education. The schools are equipped with back-up generators and serve as the Town's shelter and regional distribution point. The schools are in the beginning stages of installing solar canopies in the parking lot. The elementary school is also home for North Brookfield Emergency Management Agency (NBEMA). NBEMA is a group of volunteers who plan with and assist local first responders and the Highway Department for all man-made and climate related events.

Communications

The Town utilizes multiple communications systems to share information with the community. The website is regularly updated, E-alerts are sent out with appropriate information, public notices and events are distributed through the website and public bulletin boards. Public safety utilizes the Code Red system notifying the public during all man-made and weather events.





Societal Strengths



Cultural and Social Facilities

North Brookfield's places of worship provide services to members of the community. They also serve as networking and information sharing facilities. Many of the places of worship are prepared to assist the town and its residences during times of crises.

SOCIETAL

- Cultural and Social Services Facilities
- Emergency Management

Shelters

The North Brookfield High School serves as the large-scale sheltering site and Regional distribution center. The Senior Center and Library building also serve roles as heating and cooling stations.

Library

The Haston Free Public Library is the towns information center. The library provides programing of all types including conservation and environmental issues. The library staff provides outreach to the local senior population including home delivery services. The senior population is also the largest clientele of the library and its services. Future programming will look to build upon past environmental programming and look to incorporate ways to reach the broader population of North Brookfield.

Emergency Management

North Brookfield's Emergency Management Agency (NBEMA) is a highly engaged, active and trained group of CERT volunteers who assist in the preparation, protection and response to natural hazards that impact the Town. NBEMA is housed in the basement of the elementary school and is considered to be an advanced emergency management center. NBEMA is equipped and trained to assist with all hazards both man-made and natural that may impact the town and surrounding area.





Environmental Strengths



Wetlands and Water Resources

While North Brookfield does not have a Wetlands Protection Bylaw, wetlands and water resources are still viewed as strengths to the town. Important wetland areas lie in the northwest area of town, along Murphy Road, King Road, Downy Road, and Collins Road near the

ENVIRONMENTAL

- Wetlands and Water Resources
- Town Forest

New Braintree border. All of these wetlands are healthy and provide important habitats.

The Five Mile River is another important feature of the town. It is a 10.1-mile river that stretches from North Brookfield to Spencer and flows into Lake Lashaway. A large aquifer is underneath the river and has the potential to be an additional water supply resource. The Coys Brook Corridor is a third important water resources that participants discussed. Located on the western part of town, the corridor provides important habitat for Wood turtles.

Town Forest

The Town Forest lies on both sides of West Brookfield Road and has had many improvements in recent years. North Brookfield's Town Park Committee and the East Quabbin Land Trust constructed trails and fixed the picnic area. These trails have been well used by residents for recreation, and the forest provides good wildlife habitat. There is also a linkage opportunity with Coys Brook Corridor. Connecting to the corridor to the west could provide more habitat for the Wood turtle and could expand ecosystem services.

RECOMMENDATIONS TO IMPROVE RESILIENCE

On Day 2 and 3 of the workshop, attendees 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 matrix, which can be found in Appendix B of this document.

Infrastructure Actions



Performing a dam repair assessment at the Doane Pond Dam will be critical in building resilience, especially as flooding and storm events increase. Assessing the Doane Pond Dam is necessary to prevent a second breach and should be easier to do since the Water Department owns the dam. The Man-O-Name

Dam is also in need of repairs and should be evaluated as well.

INFRASTRUCTURE

- Doane Pond Dam Assessment
- Identify Critical Linkages
- Incorporate Green Infrastructure and Nature-Based Solutions





The University of Massachusetts Critical Linkages project should be utilized to **identify undersized culverts** and to improve wildlife corridors. It was recommended to replace undersized culverts town-wide as they restrict fish migration upstream and can cause flooding risks. Participants noted that these culverts are difficult to identify in the field, so utilizing the UMass Critical Linkages projects was suggested as a way to aid this effort.

Incorporating green infrastructure and nature-based solutions into the West Side Plan was suggested in order to improve drainage and divert water off the Housing Authority parking lot. The poor drainage at the Housing Authority parking lot results in frequent flooding and icing in front of the property. This creates hazards for senior and disabled persons trying to access the Housing Authority. These hazardous conditions will only increase as the climate continues to change. Nature-based solutions should be considered at other flood-risk areas in town, such as along West Brookfield Road.

Societal Actions



With the prevalence of a lack of information sharing throughout town, a **Communication Coordinator should be appointed** as tasked with spreading important information. The Communication Coordinator will stay up to date with what is happening around town and will distribute that information to different groups and committees.

North Brookfield MVP Summary of Findings

April 2021

SOCIETAL

- Appoint a Communication Coordinator
- Organize Joint Committee
- Utilize Community Groups

Along with a Communication Coordinator, the town should also **organize a Joint Committee** to meet with the Board of Selectmen on a quarterly basis. By organizing a Joint Committee, communication will increase between the various boards and committees in town, and they can be informed of and collaborate with the projects going on in town.

In addition to a lack of communication between boards and committees in town, there is also a lack of communication with the general public. The town **should utilize different community groups** to help spread information to the public. Churches, the Senior Center, the Creative Life Center, the Library, and other businesses and organizations in town were listed as key community groups that could help spread information on town projects, hazard and emergencies, and preparedness and preventative measures.





Environmental Actions



Participants felt that natural resource protection in town was lacking. It was suggested to **enact a Wetlands Protection Bylaw** and/or Natural Resource Zoning to better protect important environmental features. Several key wetland areas and water resources, such as the Five Mile River, are vulnerable to development pressures and runoff pollution and would benefit from additional protections.

ENVIRONMENTAL

- Enact a Wetlands Protection Bylaw
- Perform Habitat Evaluations
- Construct a Multi-Use Dry Hydrant

As forest management was viewed as a vulnerability, it was recommended that the town **perform habitat evaluations** in forests throughout North Brookfield. These evaluations should note areas of flooding, drought, fire risks, and invasive species. The Bell Hill Reservoir and St. Joseph's Cemetery are good candidates for habitat evaluations as both were identified as vulnerable forest areas.

A unique idea that was discussed was the idea of constructing a multi-use dry hydrant. This dry hydrant would have trails surrounding it, educational signage, and would be ADA compliance, providing a wide range of recreational opportunities. Additionally, the dry hydrant could be utilized to provide access to water for firefighting efforts. The area near the Hillsville Road and Kittredge Road intersection and the area near Hines Bridge were noted as potential suitable locations.

Top Recommendations

Following the three-day virtual workshop, these actions were placed in a survey on Survey Monkey 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 North Brookfield complete. A copy of the survey questions and the survey results can be found in the Appendix at the end of this document.

The majority of participants, about 57%, indicated that they were most concerned with flooding

TOP RECOMMENDATIONS

- Perform Town-wide Watershed Assessment
- Enact Bylaws to Promote Preservation
- Create a Tree Trimming and Replacement Program
- Repair and Replace Existing Culverts
- Increase Participation with the Code RED System





hazards as the climate continues to change. Consequently, the top priority recommendation with five votes is to **perform a town-wide watershed assessment**, identifying causes of flooding and problem areas, expanding the water system, and prioritizing dams and culverts to be repaired. Also receiving five votes, the next priority recommendation that participants favored is the **enact bylaws that promote preservation of natural areas**, especially as the town faces increased development pressures from residents moving away from heat islands in Boston. Other actions that participants prioritized include **enacting a tree trimming and replacement program** to manage street trees, to **repair and replace existing culverts with nature-friendly designs**, and to **increase participation with the Code RED** system through educational programs, signage, and mailings.

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 page were compiled based on those actions reported out voted on by participants. Actions are organized by priority and project type.

Category	Key
Infrastructural	00
Societal	222
Environmental	

Hazard	Key
Severe Storms/Flooding	114/1
Winter Storms	* - -
Wind	क्ष
Drought	S. Co
Wildfires	



Project Type	Category	Issue	Recommended Action High Priority	Hazard
Stormwater	A	Watershed Perform a town-wide watershed assessment, identifying causes of flooding and problem areas, expanding the water system, and prioritizing dams and culverts to be repaired		11511
Management		Culverts	Repair and replace existing culverts with nature-friendly designs or day-light culverts	
Policy Updates		Development Pressure	itown taces increased development pressure from residents	
Tree/Forest Management		Street Trees	Enact a tree trimming/removal and replacement program to manage street trees	₩ Pr
Emergency Communication	4	CodeRED	Incrase participation with the Code RED system through educational programs, signage, and mailings	₩. }-
			Medium Priority	
	0	Community Education	Utilize the library to promote educational materials and programs in town	
Education and Outreach	Schools/Youth	Develop an ecological curriculum with the schools to promote the importance of conservation and protecting natural resources		
***		Senior Population	Create and distribute informational materials to the senior population	e p
Communicaton	Inter-Town		Organize a joint committee to meet with the Board of Selectmen on a quarterly basis in order to increase communication between the various committees in town	11511
		Community	Appoint a Communication Coordinator who will stay up to date with what is happening around town and distribute that information to different groups and committees	4
Tree/Forest	Management		Apply for forestry grants to secure funding for forest management, preventative cutting, and other habitat assessments	3 🕏
Management			Develop forest management plans on private and public lands	
		Dams	Perform a dam repair assessment study of Doane Pond Dam	
		Streams	Perform a stream crossing assessment	11511
Stormwater Management		West Side Plan	Incorporate green infrastructure and nature-based solutions into the West Side Plan to improve drainage and divert water off the Housing Authority parking lot	
		Drainage	Install curb cuts or swales in order to improve drainage along roadways	ೌ
		Critical Linkages	Use the UMass Critical Linkages assessment to identify undersized culverts and improve wildlife corridors	80

Water Supply Protection		Water Conservation	Develop a green/purple water system in order to conserve water (cannot drink water, but can be used to water plants, etc.)	
Policy Updates	(2 -	Natural Resource Protection	Enact a Wetlands Protection Bylaw and/or Natural Resource Zoning in order to better protect important environmental features	
			Low Priority	
Stormwater	Stormwater Garden		Install a community garden at the Town Common to improve flooding and increase access	
Management		Beavers	Investigate the beaver dam located off of Bigelow Road	30
Education and Outreach	3	Wildfire	Develop an education initiative to promote fire safety and encourage reducing the fire load	
	(}	DCR	Collaborate with the DCR to perform controlled burns in forests throughout North Brookfield	
Tree/Forest Management		Vulnerable Ares	Perform habitat evaluations in forests throughout North Brookfield to note areas of flooding, drought, fire risks, and invasive species	40
	222	Wildfire	Construct multi-use dry hydrants with trails, educational signage, and ADA compliance, that provide access to water for firefighting efforts	ಕ್ಕ

Appendix A

Agendas and Sign-in Sheets
Workshop Meeting Materials
Table Matrix, Maps and Notes
Workshop Presentation
Listening Session Presentation



Meeting Name: MVP Meeting 1

Community: North Brookfield

Location: Town Offices

Date: February 11, 2020

Meeting Time: 9:30AM

Participant Name	Organization	Title	E-Mail
Ashley Barre	NorthBrook	field Admin	selectmen@northbroakfie
Ashley Barre Kerrie Carnes Salva	CM RIC	Planner	Ksalwalo cmrpc.org
PETE PELOQUEN Andrew Sunta	CMRPC	PLANNER	
Indraw Smith	EEK	Reg Coordina	tw
	-) -	



1 Mercantile Street – Suite 520 Worcester, MA 01608 508.756.7717 P 508.792.6818 F www.cmrpc.org

North Brookfield Municipal Vulnerability Preparedness (MVP) Pre-Kickoff Meeting

Date/Time: February 11, 2020, 9:30AM

Location: North Brookfield Town Offices, 215 N. Main St, North Brookfield, MA 01535

AGENDA

- Introductions
- MVP Program Background
- Roles & Responsibilities
 - o Town
 - Assemble Core Team (participates in prep meetings, workshop and listening session)
 - Identify stakeholders to invite to workshop and lead invitation/RSVP process
 - Lead outreach for public listening session
 - Provide feedback on summary of findings report
 - Grant reporting and documentation of in-kind match
 - o CMRPC
 - Organize and lead Core Team meetings
 - Organize and lead workshop, including preparation of presentations and other materials (maps, handouts, etc.)
 - Organize and lead public listening session; assist with outreach
 - Prepare and submit summary of findings report
- Core Team Timeline
 - Core Team Meetings (three total)
 - Pre-Workshop meeting/Call
 - o CRB Workshop
 - Listening Session (Must be held before May 31st)
- Workshop Agenda/Structure
 - Welcome speaker(s) (Town)
 - Content speakers (CMRPC)
 - o Table facilitators (generally Town or other local stakeholders; CMRPC will assist)
 - o Table reporters (Town or other local stakeholders)
 - Scribes (generally students/seniors)
 - Food (can be funded through grant)
- Nuts and bolts
 - Workshop location options
 - Estimated date
- Other/next meeting



Municipal Vulnerability Preparedness (MVP)

Program Information



In September 2016, Governor Charlie Baker signed Executive Order 569, instructing state government to provide assistance to cities and towns in Massachusetts to complete climate change vulnerability assessments and resiliency planning.

The Municipal Vulnerability Preparedness grant program (MVP) provides support for cities and towns to begin the process of planning for resiliency. The MVP program provides support for communities to address the challenges of climate change, and to prioritize climate adaptation practices actions at the local level in order to create a safer and more resilient future.

The state awards communities with funding to complete vulnerability assessments and develop action-oriented resiliency plans. MVP-certified providers across the state have been trained to provide technical assistance in completing the assessments and resiliency plan using the Community Resilience Building Framework. Municipalities work with a MVP-certified provider through a community-led process to identify key climate-related hazards, vulnerabilities and strengths, develop adaptation actions, and prioritize next steps.

The MVP Program is led by a Project Coordinator from the community with a Core Team of town staff and volunteers representing town planning departments, emergency managers, conservation commissioners, economic councils, the business community, and other key stakeholders who care about the future health and resilience of the community.

The MVP program helps communities to:

- Define extreme weather and natural and climate related hazards
- Identify existing and future vulnerabilities and strengths
- Develop and prioritize actions for the community
- Identify opportunities to build resiliency and reduce risk

Results of the workshops and planning efforts will be incorporated into existing local plans, grant applications, budgets, and policies in order to ensure that resilience is a community priority. One area of focus will be using the findings to inform Master Plans, Hazard Mitigation Plans, Open Space Plans, and other comprehensive planning processes.

Upon successful completion of the program, communities will be designated as a "Municipal Vulnerability Preparedness (MVP) Program Community" and are eligible for MVP Action Grant funding and other opportunities.

All MVP-certified communities will acquire priority status for follow-up state grant funding.

Flip page to learn more about MVP grant opportunities →

State and local partnership to build resiliency to climate change



Municipal Vulnerability Preparedness (MVP)

Program Information



The MVP Program offers two grant programs for municipalities or groups of municipalities to either

1) conduct community resilience-building workshops and develop resiliency plans, <u>OR</u>

2) for communities that have already completed the MVP process, to implement priority projects.

MVP PLANNING GRANTS

To participate in the MVP program, communities first apply for Planning Grants, which are used to complete a community-based workshop and prioritize next steps to address climate change impacts. Applications may be for single communities or may be regional, with a single community serving as the fiscal agent. Municipalities with no current local hazard mitigation plan (HMP), or those with plans expiring in 2019 or 2020 are eligible for additional funding to complete or update a full draft of the HMP for MEMA review. Please note that an in-kind match is required for the MVP Planning Grant. All projects are required to provide quarterly reporting as well as a Final Report. All proposals must provide the following:

- A signed letter of support from the chair of the board of selectmen, mayor, a town administrator, or similar city or town official
- A short statement of the community's commitment to taking on this grant and planning for the impacts of climate change in the city or town
- The name of a qualified employee of the municipality, committee member or volunteer who can serve as the local project manager and point of contact for the grant
- A summary of community support and any project partners and letters of support from all relevant local boards, departments, commissions, businesses, organizations and other partners
- A description of any ongoing planning efforts such as local hazard mitigation plans, open space plans, master plans, etc.
- A description of the community's need to address climate change, expected impacts, and any ongoing climate-change related projects within the community or region
- If the community wishes to expand the scope of the planning grant provide a description of the additional work you intend to complete.

MVP ACTION GRANTS

Already a MVP Community? Apply for an Action Grant to implement priority projects identified at your community workshop and in your resiliency plan. MVP Action Grants are available only to designated "MVP Communities" to implement key priorities and projects identified through the MVP planning process. The MVP Action Grants allow municipalities to implement crucial measures to prepare for the effects of climate change while strengthening community engagement and collaboration among town departments.

Applicants may request up to \$2,000,000 in funding and awards are expected to range from \$25,000–\$2,000,000. Regional proposals may request up to \$5,000,000. Note that exceptions may be made at EEA's discretion. These projects include follow-up vulnerability assessments, design studies, local bylaws and ordinances, redesigns and retrofits, natural infrastructure and storm protection, and education and outreach. Projects should be proactive, and applicants should clearly demonstrate how the projects have been redesigned, re-evaluated, or reconsidered to better respond to changing climate conditions and to incorporate new climate change data. Projects that propose nature-based solutions or strategies that rely on green infrastructure or conservation and enhancement of natural systems to improve community resilience will receive higher scores.

Please note that a 25% in-kind/cash match is required for the MVP Action Grant.

MUNICIPAL STAFF COMMITMENT

The municipality must provide sufficient staff time (estimated at 120-200 hours) to assure completion of this planning exercise and community engagement:

- Paperwork; selecting and contracting vendor
- Help establish a core team within the town or region to steer the project
- Help identify and complete outreach to critical stakeholders, partners and town officials for workshop(s) and public listening session(s)
- Help coordinate, schedule, send invitations and attend planning meetings and workshop(s) and listening session(s)
- Find sufficient volunteers to serve as scribes during the workshop(s)
- Help coordinate staff interviews with key experts to collect information prior to the workshop(s)
- Provide MVP provider access to relevant planning documents, budget information, and other information on as needed useful to conducting the planning exercise, including access to;
- With MVP Provider, complete and send 3
 progress reports to EEA with information on
 progress and spending to date, and submit
 final deliverables and invoice
- With consultant support as budget allows, complete at least one public listening session to engage the broader public in a discussion of the workshop results and completed report
- Continue municipal outreach and engagement, using the completed report to inform existing planning and project activities

MVP PROVIDER COMMITMENT

The MVP state certified provider must provide sufficient time (estimated at 120-240 hours) to complete the following tasks:

- Meet with Municipal Project Manager to set out project scope, timeline, and compile list of data needs; help with stakeholder mapping; and, set schedule for workshop(s)
- Meet with Community Core team 2-3x to help plan for workshop(s) and collect information
- Conduct several interviews with key municipal staff
- Prepare materials for workshop including:
 - Basemaps of town with critical layers
 - Climate change data relevant to the town and summary of potential impacts
 - Relevant planning documents and other existing town information about current hazards
 - o Risk matrix
- Serve as the lead facilitator during workshop(s) and bring 4-5 facilitators (or as many breakout groups planned) to assist as table facilitators.
- Designate town leads or skilled volunteers to be scribes at each table
- Document all workshop outcomes and prepare final risk matrix and summary reports
- Work with town to submit all materials to Commonwealth



Executive Office of Energy and Environmental Affairs Municipal Vulnerability Preparedness Program, 2018

Common Pitfalls to Avoid

- Be prepared to know what's already been done in the municipality
 - Read any Master Plans, Hazard Mitigation Plans, etc. to know the top hazards and be ready to address these.
- Provide reminders that the goal is to identify action items and to prioritize them to assist the community in taking first steps towards resilience
 - · Encourage groups to move actions from conceptual to shovel-ready or implantation ready
- Make sure facilitators take time to fully explain any mapping resources provided at the workshop tables
 - E.g., Hurricane SLOSH maps, geospatial climate projections, nature-based solution, etc.
- Who shows up to the workshop hugely shapes the outcome
 - Assure a broad cross-section of the community stakeholders are represented at the workshops
 - · Facilitators should ensure all voices are heard
- The CRB framework is facilitation heavy
 - Please ensure that the workshop is appropriately staffed with enough table facilitators and pre-appointed scribes for each table



Participate in North Brookfield's Municipal Vulnerability Preparedness (MVP) Program

Given events like Hurricane Irene in 2011, the snowstorms of 2015, the extreme drought of 2016 and recent Hurricanes Harvey and Irma, we find ourselves in a new era of more unpredictable and severe weather that can potentially cause damage to our community.

To be as proactive as possible, I would like to personally invite you to join me at a free, full-day, Community Resilience Building Workshops focused on preparing and protecting the Town of North Brookfield.

The MA Executive Office of Energy and Environmental Affairs' (EOEEA)

Municipal Vulnerability Preparedness (MVP) Program Workshops Day, Date

8AM Coffee and Registration, Workshop 8:30AM - 4:30PM
Location
Lunch will be provided

The Town of North Brookfield is collaborating with EOEEA and CMRPC to offer this timely one-day workshop which will bring together community members to comprehensively identify and prioritize steps to reduce risk and improve resilience across North Brookfield. This workshop will help develop and advance comprehensive community resilience planning, hazard mitigation, and adaptation efforts.

The workshops objectives are:

- Define extreme weather and climate related hazards;
- Identify current and future vulnerabilities and strengths;
- Develop and prioritize actions; and
- Identify opportunities for the Town to advance actions and reduce risks to build resilience

More information about North Brookfield's MVP Award is attached to this

letter. We would appreciate your participation in this timely workshop.

Please RSVP by Day, Month, Year

If you have any questions about the program, please contact Ashley Barre, Administrative Assistant to the Board of Selectmen, selectmen@northbrookfield.net, 508-867-0200 or NAME, TITLE, (PHONE/EMAIL).

We look forward to seeing you or a designee at our workshop. Thank you for your assistance with this important project!

Sincerely,

Ashley Barre, Administrative Assistant to the Board of Selectmen

MR/ MS	First Name	Last Name	Department	Street Address	RSVP Y/N	Attended
			Highway Dept.			
			Admin. Secretary			
			Adult Day care facility			
			Agricultural Committee			
			Animal Shelter			
			Army Corp. Engineering			
			Board of Health Member			
			Board of Selectmen Member			
			Boys and Girls Club			
			Building Inspector			
			CERT Teams			
			Chamber of Commerce			
			Conservation Commission			
			Council on Aging			
			Cultural Council			
			DCR			
			Department of Dam Safety			
			Diversity Group			1
			Economic Development			1
			Emergency Management Director		1	
			EOEEA- MVP Regional Coordinators			
		1	Fire Chief			
			Golf Course			<u> </u>
			Housing Authority			
			Lake/River Association			
			Land Trust Members			
			Library			
			Local business			
			Local Construction Co.			
			Local Engineering Firms			
			Local Farmers			
			Local Non-Profits			
			Local Realtors Associations			
			MA Fish & Wildlife			
			Mass Audubon			
			Mass Dot			
			MBTA/WRTA			
			Natural Gas Provider			
			Neighboring Town MVP Core Team Member			
			Neighboring Town MVP Core Team Member			
			Neighboring Town MVP Core Team Member			
		1	Neighboring Town MVP Core Team Member		1	
		1	Neighboring Town MVP Core Team Member		1	
			Other Muni. Employees		1	
			Planning Board Member		ļ	
			Police Chief			
			Power Company			
			Rail Road			
			Rail Trail			
			Recreation Committee			
			School Superintendent			
			Senior Center			
			Sewer Department			
			State Rep.			
			Storm Water Committee			İ
			Sudbury Valley Trusties			
		1	Sustainable Group		1	
		 	Town Manager		+	
		1	Utility Company			
		1	Veterans Rep.			
						
			Waste Transfer Provider Water Dept.			



Town of North Brookfield

Municipal Vulnerability Preparedness

Day/Date

8:30am - 4:30pm; Registration at 8:00 am

Location

Address

Workshop Objective

- Define extreme weather and climate related hazards;
- Identify current and future vulnerabilities and strengths;
- Develop and prioritize actions; and
- Identify opportunities for the Town to advance actions and reduce risks to build resilience



C M R P C



Workshop Agenda

8:00am – 8:30am Registration, Networking & Coffee 8:30am – 10pm:

- Welcome and Overview
- CRB Overview Presentation
 - o Peter Peloquin, CMRPC
- Climate Change Projections and Impacts
 - o Mimi Kaplan, CMRPC
- Profile of Natural Hazards
 - o Ian McElwee, CMRPC

10am - 12pm:

 Breakout Groups – Identify Hazards, Local Features, Strengths & Vulnerabilities

12pm -1pm Lunch

1pm - 4:30pm:

- Breakout Groups Identify & Prioritize Actions
- Table Reports and Priority vote
- Closing Remarks and Wrap up

Thank you for participating in North Brookfield's Community Resilience Building Workshop!

Community Resilience Building	Risk Matri	x 📑	322 (§)			www.Commu	nityResilienceB	uilding.c	org
		•		Top Priority Hazards	(tornado, floods, wildfire	, hurricanes, earthqua	ke, drought, sea level r	ise, heat wa	ve, etc.)
$\underline{\mathbf{H}}$ - $\underline{\mathbf{M}}$ - $\underline{\mathbf{L}}$ priority for action over the $\underline{\mathbf{S}}$ hort or $\underline{\mathbf{L}}$ ong t $\underline{\mathbf{V}}$ = Vulnerability $\underline{\mathbf{S}}$ = Strength	erm (and <u>U</u> ngon	ngj						Priority	1
Features		Ownership	V or S	_				<u>H</u> - <u>M</u> - <u>L</u>	<u>S</u> hort <u>L</u> on <u>O</u> ngoing
Infrastructural		F							
Societal									
300.00									
Environmental									



Meeting Name: MVP Meeting 2

Community: North Brookfield

Location: Town Offices, Selectmen's Office

Date: March 9, 2020

Meeting Time: 10AM

Participant Name	Organization	Title	E-Mail
Jim Ny beng	Journ of North Brookfield Seven Dept	Sperintendent	nbseuereverizon net
Jim Nyberg Ann Hicks	Town of DB		fabhicks@aof.com
Ashley Barre	Found of Selectmen	Admin Bos	selectmen@ northbrookfield.net
Ashley Barre PETE PELOQUEN	CMRPC		
JASON J BENOIT	Highway	SUPT	
	<i>C</i> \		
		1 1	
E			



North Brookfield Municipal Vulnerability Preparedness (MVP) Meeting #2

Date/Time: March 9, 2020 10AM

Location: North Brookfield Town Offices, 215 N. Main St, North Brookfield, MA 01535

AGENDA

- Introductions
- MVP Program Background
- Roles & Responsibilities
 - o Town
 - Assemble Core Team (participates in prep meetings, workshop and listening session)
 - Identify stakeholders to invite to workshop and lead invitation/RSVP process
 - Lead outreach for public listening session
 - Provide feedback on summary of findings report
 - Grant reporting and documentation of in-kind match
 - o CMRPC
 - Organize and lead Core Team meetings
 - Organize and lead workshop, including preparation of presentations and other materials (maps, handouts, etc.)
 - Organize and lead public listening session; assist with outreach
 - Prepare and submit summary of findings report
- Core Team Timeline
 - o Core Team Meetings (three total)
 - Pre-Workshop meeting/Call
 - o CRB Workshop
 - Listening Session (Must be held before May 31st)
- Workshop Agenda/Structure
 - Welcome speaker(s) (Town)
 - Content speakers (CMRPC)
 - o Table facilitators (generally Town or other local stakeholders; CMRPC will assist)
 - o Table reporters (Town or other local stakeholders)
 - Scribes (generally students/seniors)
 - Food (can be funded through grant)
- Nuts and bolts
 - Workshop location options
 - Estimated date
- Other/next meeting



North Brookfield Municipal Vulnerability Preparedness (MVP) Meeting #2

Date/Time: March 23, 2020 10AM

Location: Conference Call, North Brookfield Town Offices, 215 N. Main St, North Brookfield, MA

01535

AGENDA

- Introductions
- COVID19 rescheduling/update
- Core Team Timeline
 - Core Team Meeting #3 (Today)
 - ⊕ Pre-Workshop meeting/Call, April 14, 2020-Need to reschedule
 - ⊕ CRB Workshop April 16, 2020 Need to reschedule
 - Listening Session May 26, 2020 (Backup Date)
- Climate Concerns and Priorities
 - Identify four (4) focus hazards

•

- Workshop Agenda/Structure
- Workshop roles & responsibilities for CMRPC & Town
 - Welcome speaker(s) (Town Department Heads)
 - Content speakers (CMRPC)
 - Table facilitators (Town w/ CMRPC support)
 - Table reporters (Town)
 - Scribes (Town)
- Workshop Nuts and bolts
 - o Location-
 - Outreach plan(s)
 - Invitations
 - Confirmed guests
 - Logistics and IT situation
 - o Table set up
 - o Food vendor
- Presentations and maps to be developed
 - o MVP Program; Climate Change Data; Profile of Local Hazards
 - Base Map; potential reference maps
 - Zoning, Dams, Evacuation Routes and Shelters, Land Use, Water/Sewer Systems, other
- Match Documentation
- Other/next meeting



North Brookfield Municipal Vulnerability Preparedness (MVP) Meeting #3

Date/Time: April 8, 2020 9AM Location: ZOOM Meeting

https://zoom.us/j/585157436?pwd=SGt5WndiQjNpOHA5RDRzSWxzZkEvdz09

AGENDA

- Introductions
- COVID19 rescheduling/update
- Core Team Timeline
 - Core Team Meeting #3 (Today)
 - → Pre-Workshop meeting/Call, April 14, 2020-Need to reschedule
 - ⊖ CRB Workshop April 16, 2020 Need to reschedule
 - Listening Session May 26, 2020 (Backup Date)
- Climate Concerns and Priorities
 - Identify four (4) focus hazards
- Workshop Agenda/Structure
 - Location/ Virtual platform
 - Workshop roles & responsibilities for CMRPC & Town
 - Welcome speaker(s) (Town Department Heads)
 - Content speakers (CMRPC)
 - Table facilitators (Town w/ CMRPC support)
 - Table reporters (Town)
 - Scribes (Town)
 - o Table set up
- Workshop Nuts and bolts
 - Outreach plan(s)
 - Invitations
 - Confirmed guests
- Presentations and maps to be developed
 - o MVP Program; Climate Change Data; Profile of Local Hazards
 - Base Map; potential reference maps
 - Zoning, Dams, Evacuation Routes and Shelters, Land Use, Water/Sewer Systems, other

Match Documentation

Other/next meeting

Virtual Public Engagement During COVID-19 for MVP Grants

A key component to the Municipal Vulnerability Preparedness (MVP) program is public engagement. The MVP Planning Grant process includes at least three in-person, group meetings: a Core Team meeting, the Community Resilience Building (CRB) Workshop, and Public Listening Session. Action Grants can vary in the amount of public participation depending on the scope of the project. During this time of Covid-19 and the need for social distancing, meeting the various requirements for public engagement within the MVP program will require outside of the box thinking and utilizing a variety of formats. This is an opportunity to consider ways of gaining and incorporating feedback from community members who may have been unable to participate during in-person meetings and workshops.

While online formats can offer alternatives to in person engagement, we also recognize that some communities have no access to internet and that online formats can decrease the participation from Environmental Justice and other Climate Vulnerable Populations. In order to create equitable engagement in any MVP grant it is recommended that engagement is a top priority that happens early and often.

To gain participation for a planning or action grant it is necessary that a community is informed about what is going on. The following are some suggestions that could be used at any point to inform, generate ideas and discussion, gather information or reflect outcomes. When working in communities that have non-English speakers, translations services should be used.

Possible Engagement Tools for the MVP Process

Place an ad/notice in local print/online newsletters explaining the nature of the project.

Direct mailings to residents and stakeholders informing them of options to participate.

Work with local schools to incorporate student participation into the learn-at-home curriculum.

Create a project webpage linked to the Town website where all project information, including documents and links are available.

Develop a project hotline where stakeholders can call to learn how to participate and leave messages regarding comments and questions.

Use local email lists, social media outlets, and Google groups.

Develop a series of online workshops and/or an online speaker series. This could also take the form of a podcast.

Most Importantly, reach out to your Regional Coordinator to discuss the details of your proposed virtual approach.

Below are some <u>suggestions</u> for modifications based on a planning grant format. These suggestions could also be considered for Action Grant projects, depending on the scope.

Core Team Meetings

Typical Format:

In-person meeting at Town Hall with representatives from municipal departments and any other core stakeholders.

Possible Virtual Format:

Meeting conducted over Skype, Zoom, or other online conference call platform. In the interest of accessibility, consider providing a phone call-in line to online meetings as well. Meeting materials should be shared in advance via email. For communities without enough internet coverage, this could also be a conference call between all the parties.

Resources:

Suggestions for how to run an online meeting:

- https://www.insidehighered.com/blogs/learning-innovation/7-best-practices-covid-19-necessitated-online-meetings
- https://www.cbi.org/article/10-tips-for-improving-our-online-meetings/
- https://iap2.org.au/covid-19/
- https://merid.org/7-tips-designing-virtual-meetings/
- https://merid.org/takeaways-facilitating-virtual-meetings/

CRB Workshop

Typical Format:

One 8-hour, or two 4-hour, in-person workshop(s) with representatives from municipal departments, local organizations, State agencies, surrounding communities, and other stakeholders.

Possible Virtual Format:

Like Core Team Meetings, workshops could be conducted over Skype or other online conference call platforms, specifically platforms that allow for break out rooms where smaller groups can meet and discuss specific topics. Many online conference call platforms provide a phone line as well for those unable to join online. Check that the platform you choose allows for this function. Meeting materials can be shared with workshop attendees in advance via email or mail, or both, depending on the needs of the community.

When switching to an online or phone format for a CRB workshop, it is important to consider that participants attention spans are not the same as during an in-person format. Studies suggest keeping remote formats to two hours. During the Covid-19 pandemic many have competing needs for their attention such as children or unwell family members. Having multiple, but shorter, remote formats allows for greater participation.

For communities without enough internet coverage for some, or all participants, conducting a non-interface CRB workshop poses greater challenges. While a conference call between all the parties is an option, it might be more useful to consider conference calls between specific participant groups. Once

these group calls have been accomplished, the information generated by each group will need to be shared among the entire group. This could happen through a document circulated by mail or by linking relevant documents to a project website. While some residents do not have internet access in their home, many are driving regularly to internet locations to check email and other online matters.

It is important that you identify a process that will meet the Community Resilience Building Workshop's four core objectives, and others that are outlined in your MVP Scope of Services.

<u>Examples of activities that could meet the objectives are outlined below. Feel free to propose a different approach to your regional coordinator.</u>

Characterize hazards

- Meet with the Core Team (conference call or online) to select four main hazards in advance of the workshop that relate to infrastructure, societal and environmental features of the community.
- Hazards could be presented to workshop participants with a live online, video, or podcast presentation and prioritized through a survey.

Identify Community Vulnerabilities and Strengths

- A survey could be mailed or emailed out to participants prior to the workshop to identify vulnerabilities and strengths.
- Participants could identify vulnerabilities and strengths during webinars or conference calls detailed below.

Identify and Prioritize Community Actions

- Host three webinars or podcasts, each related to one of the following topic areas: infrastructure, society, and the environment. Invite workshop attendees to attend the webinar that most closely relates to their field and area of expertise.
- Host calls (phone, Skype, or other) with small groups of attendees, to replicate the workshop table format (no more than 8 attendees on each Skype call). Facilitate discussion related to hazards, features, and proposed adaptation actions.
- Record and share an introductory presentation and use an interactive platform like Qualtrics to
 collect input related to hazards, local features, and proposed adaptation actions that participants
 can interact with on their own time over a designated period.

Determine the Overall Priority Actions

 Host a meeting to debrief on features and actions identified in the steps above and vote on priority actions. This could be through a collective document, polling application, or a virtual "sticky-note" platform. Or a short video could be created and posted on a town website along with a survey to prioritize actions.

Resources:

- Collaborate by creating and sharing virtual sticky notes: <u>www.ideaflip.com</u>
- Create collaborative mind maps in real-time with your team: www.mindmeister.com
- Create an online "whiteboard" for team brainstorming: www.webwhiteboard.com
- Use polling tools to rank preferences or collect other information: https://www.polleverywhere.com/
- For more online tools for collaboration: https://www.cbi.org/article/using-online-tools-to-empower-collaboration/

Public Listening Session

Typical Format:

Daytime or evening meeting open to all members of the public.

Possible Virtual Formats:

The important part of the listening session is that you can present the draft report to the public and gain feedback.

Possible activities could include:

- A webinar recorded and posted on the Town Website, along with a survey shared with the public to collect feedback through an online form such as SurveyMonkey.
- Recording the typical listening session presentation for Local Access TV and seeking input through a survey.
- Working with a local radio station to broadcast the information and seeking input through a survey.
- In addition to one of the above, increasing the promotion of the public comment period for the report.
- Creating a podcast about the draft report and seeking input through a survey or other means.

Resources:

- www.surveymonkey.com
- www.sogosurvey.com



North Brookfield Municipal Vulnerability Preparedness (MVP) Meeting #5

Date/Time: April 21, 2020 9AM Location: ZOOM Meeting

https://zoom.us/j/91783182327?pwd=K1hmWTczWXdiQ0Jka1VOcHcrNHJPdz09

AGENDA

- Role Call
- COVID19 rescheduling/update
- Workshop Agenda/Structure
 - o ZOOM Platform
 - Workshop roles & responsibilities for CMRPC & Town
 - Welcome speaker(s) (Town Department Heads)
 - Content speakers (CMRPC)
 - Table facilitators (Town w/ CMRPC support)
 - Scribes (Town/CMRPC)
 - Virtual Table set up
- Core Team Timeline
 - Core Team Meeting #5 (Today)
 - Pre-Workshop meeting/Call
 - CRB virtual Workshop dates
 - Listening Session
- Climate Concerns and Priorities
 - Identify four (4) focus hazards
- Workshop Nuts and bolts
 - Outreach plan(s)
 - Invitations
 - Confirmed guests
- Presentations and maps to be developed
 - o MVP Program; Climate Change Data; Profile of Local Hazards
 - Base Map; potential reference maps
 - Zoning, Dams, Evacuation Routes and Shelters, Land Use, Water/Sewer Systems, other

Match Documentation

• Other/next meeting



North Brookfield Municipal Vulnerability Preparedness (MVP) Meeting #6

Date/Time: April 28, 2020 9AM Location: ZOOM Meeting

Join Zoom Meeting

https://us02web.zoom.us/j/82832964485?pwd=NUNXRmRjOUkrbklDbldneTNSOGRXdz09

AGENDA

- Roll Call
- COVID19 rescheduling/update
- Workshop Agenda/Structure
 - o ZOOM Platform
 - Workshop roles & responsibilities for CMRPC & Town
 - o Record Welcome speaker(s) (Town Department Heads)
 - Content speakers (CMRPC)
 - Table facilitators (Town w/ CMRPC support)
 - Scribes (Town/CMRPC)
 - Virtual Table set up
- Core Team Timeline
 - Core Team Meeting #6 (Today)
 - Pre-Workshop meeting/Call (today)
 - o CRB virtual Workshop dates May 4, 2020 and May 6, 2020
 - Listening Session <u>TBD</u>
- Climate Concerns and Priorities
 - Identify four (4) focus hazards: <u>Wind event/Flooding/Drought/Winter Storms</u>
- Workshop Nuts and bolts
 - Outreach plan(s)
 - Invitations: *April 29, 2020*
 - Confirmed guests
- Presentations and maps to be developed
 - o MVP Program; Climate Change Data; Profile of Local Hazards
 - Base Map; potential reference maps
 - Zoning, Dams, Evacuation Routes and Shelters, Land Use, Water/Sewer Systems, other
 - Match Documentation
- Other/next meeting





Participate in North Brookfield's Municipal Vulnerability Preparedness (MVP) Program

Given events like Hurricane Irene in 2011, the snowstorms of 2015, the extreme drought of 2016 and recent Hurricanes Harvey and Irma, we find ourselves in a new era of more unpredictable and severe weather that can potentially cause damage to our community.

To be as proactive as possible, I would like to personally invite you to join me at a free, two-day, Community Resilience Building Virtual Workshop focused on preparing and protecting the Town of North Brookfield.

The MA Executive Office of Energy and Environmental Affairs' (EOEEA)

Municipal Vulnerability Preparedness (MVP) Program Workshops

Day 1: Monday, May 4, 2020

8:30AM Registration, Workshop 9:00AM – 11:30AM

Meeting Link: https://us02web.zoom.us/j/89242407113

Meeting ID: 892 4240 7113 **Call in Number:** 1-646-558-8656

Day 2: Wednesday, May 6, 2020

1:30PM Registration, Workshop 2:00PM – 4:00PM **Meeting Link:** https://us02web.zoom.us/j/82608200335

Meeting ID: 826 0820 0335

Call in Number: 1-646-558-8656

The Town of North Brookfield is collaborating with EOEEA and CMRPC to offer this timely two-day workshop which will bring together community members to comprehensively identify and prioritize steps to reduce risk and improve resilience across North Brookfield. The workshop is typically held in-person, but due to social distancing measures, we will be conducting this workshop virtually over Zoom. This workshop will help develop and advance comprehensive community resilience planning, hazard mitigation, and adaptation efforts.

The workshops objectives are:

- Define extreme weather and climate related hazards;
- Identify current and future vulnerabilities and strengths;
- Develop and prioritize actions; and
- Identify opportunities for the Town to advance actions and reduce risks to build resilience

More detailed information about North Brookfield's MVP Workshop can be found in the links below:

Virtual Workshop Toolkit:

https://www.dropbox.com/s/ntg1bjiqjuv87x5/MVP%20Virtual%20Workshop%20Toolkit.pdf?dl=0

North Brookfield MVP Dropbox:

https://www.dropbox.com/sh/vgu6a3whftzev13/AAApjpEuzfDtTuSVkXf TJSMa?dl=0

If you have any questions about the program, please contact Ashley Barre, Administrative Assistant to the Board of Selectmen, selectmen@northbrookfield.net, 508-867-0200.

We look forward to seeing you or a designee at our workshop. Thank you for your assistance with this important project!

Sincerely,

Ashley Barre, Administrative Assistant to the Board of Selectmen



North Brookfield's Municipal Vulnerability Preparedness (MVP) Program Virtual Workshop Toolkit

Welcome to the North Brookfield MVP Virtual Workshop Toolkit. The following resources will help you learn more about the MVP program and prepare for the upcoming workshop. All of these resources and more can be found in the following Dropbox link. If possible, you will want to have this Dropbox link open on the days of the workshop so that you can easily access this information.

North Brookfield MVP Workshop Dropbox:

https://www.dropbox.com/sh/vgu6a3whftzev13/AAApjpEuzfDtTuSVkXf TJSMa?dl=0

Program Overview and Guide

The following two documents will give you an overview of the MVP program and will describe a typical Community Resiliency Building (CRB) workshop.

MVP Program Overview:

https://www.dropbox.com/s/urx39iy4qpti5yw/MVP%20Program%20Overview.pdf?dl=0

CRB Workbook:

https://www.dropbox.com/s/tqpc2nffmj1y16t/CRB%20Workbook.pdf?dl=0

Presentations

The following link contains presentations that will help you be better prepared for the MVP workshop. Please take some time to **review each of the presentations ahead of Monday's workshop**.

https://www.dropbox.com/sh/qo4fx0aczlvw30f/AAC1sk5KEzplctZ-0TkKul75a?dl=0

Matrix and Mapping

During the virtual workshop, we will divide up into breakout groups to discuss strengths, vulnerabilities, and possible actions that the town can take. During this process, we will be filling out a matrix and marking up an online map with our ideas. The following three documents will show you an example of a completed matrix, will guide you through using the online mapping tool, and will give you a set of pre-made maps that already display various features, hazards, and resources in North Brookfield.

Complete Matrix Example:

https://www.dropbox.com/s/a94rg9jiylslejh/Complete%20Matrix%20Example.pdf?dl=0

Online Mapping Tool:

https://www.dropbox.com/s/wa651f4459z8znb/Online%20Mapping%20Tool.pdf?dl=0

Maps:

https://www.dropbox.com/sh/vc08qf9ql2e75af/AAAQxh3BMQnhQ4vWIJOdZzvVa?dl=0

Agenda and Meeting Information

The 2-day workshop will be on Monday, May 4th from 9:00 - 11:30 am and on Wednesday, May 6th from 2:00 - 4:00 pm. The agenda for each day as well as the Zoom meeting links are listed below.

Agenda Day 1 (May 4th):

https://www.dropbox.com/s/6un2m71fsqsnh62/Workshop%20Agenda%3A%20Day%201.pdf?dl=0

Zoom Link Day 1: https://us02web.zoom.us/j/89242407113

Agenda Day 2 (May 6th):

https://www.dropbox.com/s/iw17lxw9syeobsw/Workshop%20Agenda%3A%20Day%202.pdf?dl=0 **Zoom Link Day 2:** https://us02web.zoom.us/j/82608200335

•

How to Zoom

New to Zoom? The following document contains a series of instructional videos to help guide you through Zoom from downloading the app to joining a meeting for the first time.

https://www.dropbox.com/s/bghmsobh4291lpw/How%20To%20Zoom.pdf?dl=0





Town of North Brookfield

Municipal Vulnerability Preparedness
Day 1- Monday, May 4, 2020
9:00 am – 11:30 am; Check-in at 8:30 am

Meeting Link (Click to Join): https://us02web.zoom.us/j/89242407113

Meeting ID: 892 4240 7113

Call in Number (if unable to join online): 1-646-558-8656

Workshop Materials:

https://www.dropbox.com/sh/vgu6a3whftzev13/AAApjpEuzfDtTuSVkXf_TJSMa?dl=0

Workshop Agenda

8:30 am - 9:00 am:

Login & Familiarize with Zoom

9:00 am - 9:30 am:

- Welcome & Overview
- Questions & Answers

9:30 am - 11:00 am:

- Breakout Groups
 - Identify Hazards & Local Features
 - Discuss Strengths & Vulnerabilities

11:00 am - 11:30 am:

- Reconvene as Large Group
- Quick Table Summary
- Closing Remarks & Wrap Up

Day 1: Workshop Objectives

- Define extreme weather and climate related hazards:
- Identify current and future vulnerabilities and strengths;
- Edit online map with important hazards and features

Homework

- Review hazards, vulnerabilities, and strengths in matrix
- Brainstorm actions to address vulnerabilities

Thank you for participating in North Brookfield's Virtual Community Resilience Building Workshop!







Town of North Brookfield

Municipal Vulnerability Preparedness
Day 2- Wednesday, May 6, 2020
2:00 pm – 4:00 pm; Check-in at 1:30 pm

Meeting Link (Click to Join): https://us02web.zoom.us/j/82608200335

Meeting ID: 826 0820 0335

Call in Number (if unable to join online): 1-646-558-8656

Workshop Materials:

https://www.dropbox.com/sh/vgu6a3whftzev13/AAApjpEuzfDtTuSVkXf TJSMa?dl=0

Workshop Agenda

1:30 pm - 2:00 pm:

• Login & Familiarize with Zoom

2:00 pm - 2:15 pm:

- Welcome & Recap from Day 1
- Questions & Answers

2:15 pm - 3:45 pm:

- Breakout Groups
 - Identify Actions to Reduce Risks and Build Resilience
 - Prioritize Actions by Urgency and Timing

3:45 pm - 4:00 pm

- Reconvene as Large Group
- Table Reports
- Closing Remarks & Wrap Up

Day 2: Workshop Objectives

- Review vulnerabilities and strengths identified on Day 1
- Develop and prioritize actions;
- Identify opportunities for the Town to advance actions and reduce risks to build resilience

Homework

- Review actions to reduce risks and build resilience
- Vote for top priority actions via survey (link in Dropbox and will be emailed)
- Attend virtual Listening Session

Thank you for participating in North Brookfield's Virtual Community Resilience Building Workshop!





North Brookfield MVP Program Online Mapping Tool

Our team has developed an online mapping tool so that you can mark down important features and hazards in North Brookfield. Use the links below and follow the step-by-step guide for instructions on how to access and mark up the map.

Team 1 (Table 1): https://bit.ly/2Sic9Ci

Team 2 (Table 2): https://bit.ly/3f5oJ1R

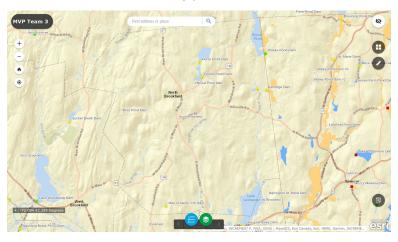
Team 3 (Table 3): https://bit.ly/2SaOQKP

Team 4 (Table 4): https://bit.ly/3bNnAtv

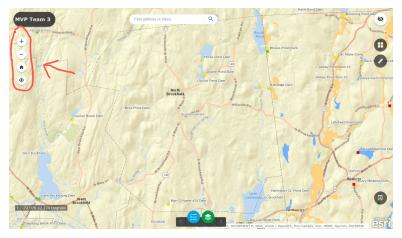
To use the online mapping tool:

1. Open the link to your table's corresponding map. (Example - if you are in Table 2, click on the Team 2 map link).

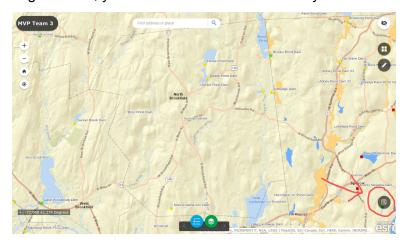
2. Once the map is loaded, click and drag your cursor to move around the town (map).



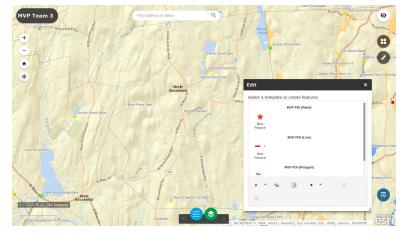
3. In the top left corner, you will have the option to zoom in (+), zoom out (-), return to the default view (house icon), and find your location (target icon).



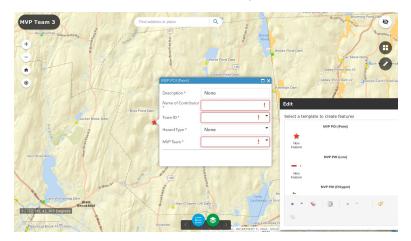
4. In the lower right corner, you will find a button that allows you to edit the map.



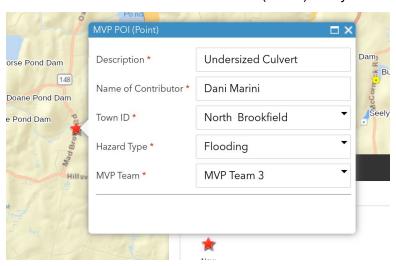
- 5. You can create a point, line, or polygon with this button. To mark a new feature on the map, you will:
 - a. Select the edit button in the lower right corner.
 - b. Select whether you want to create a point, line, or polygon.



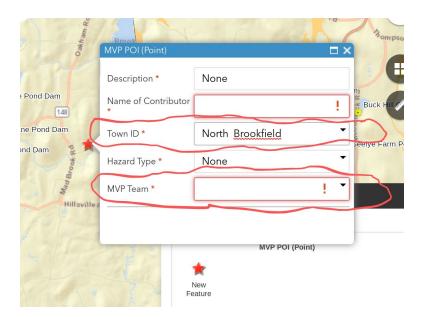
- c. Click on the map where you want to place your feature.
- d. You will then be prompted to describe your feature.

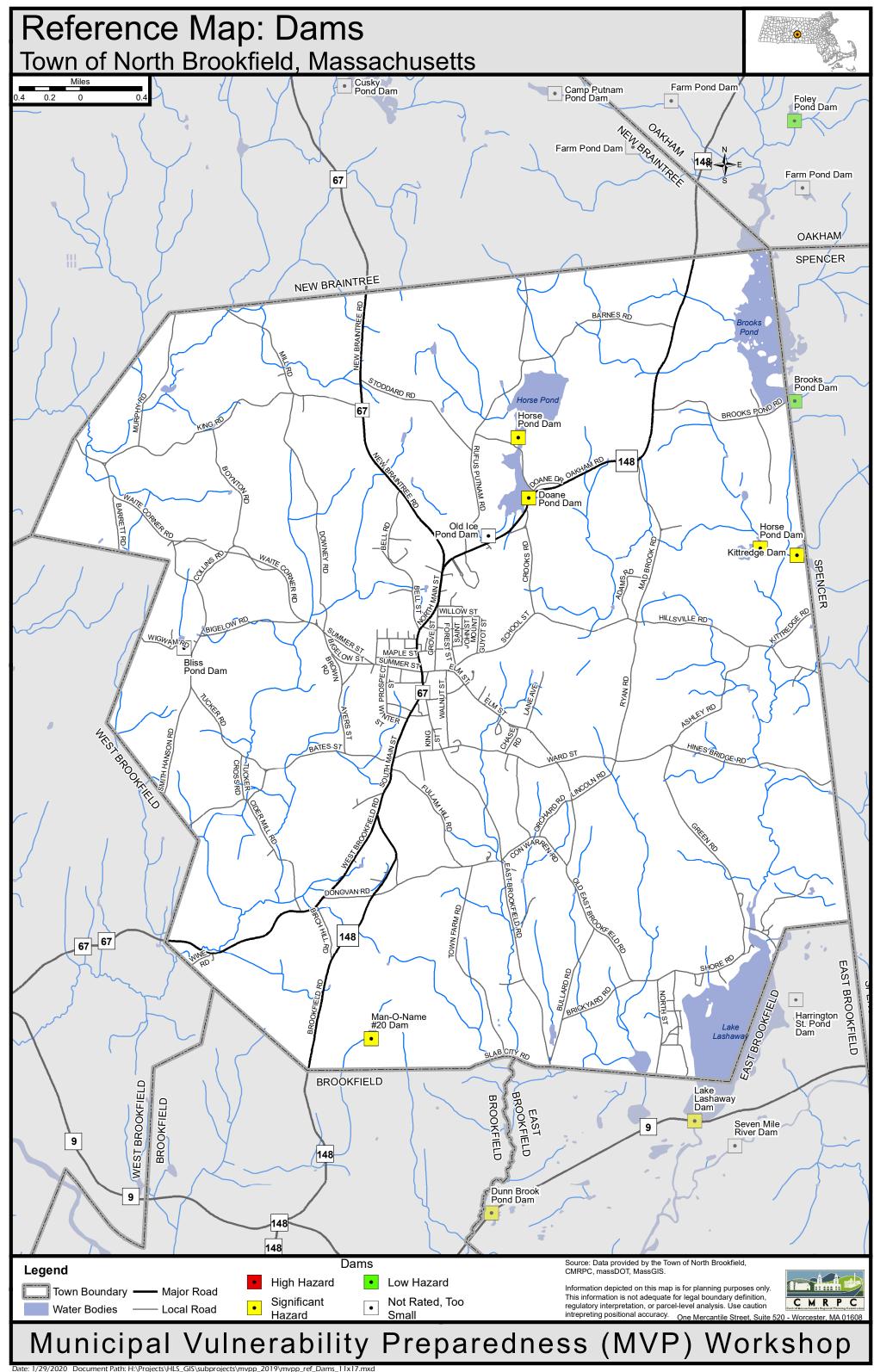


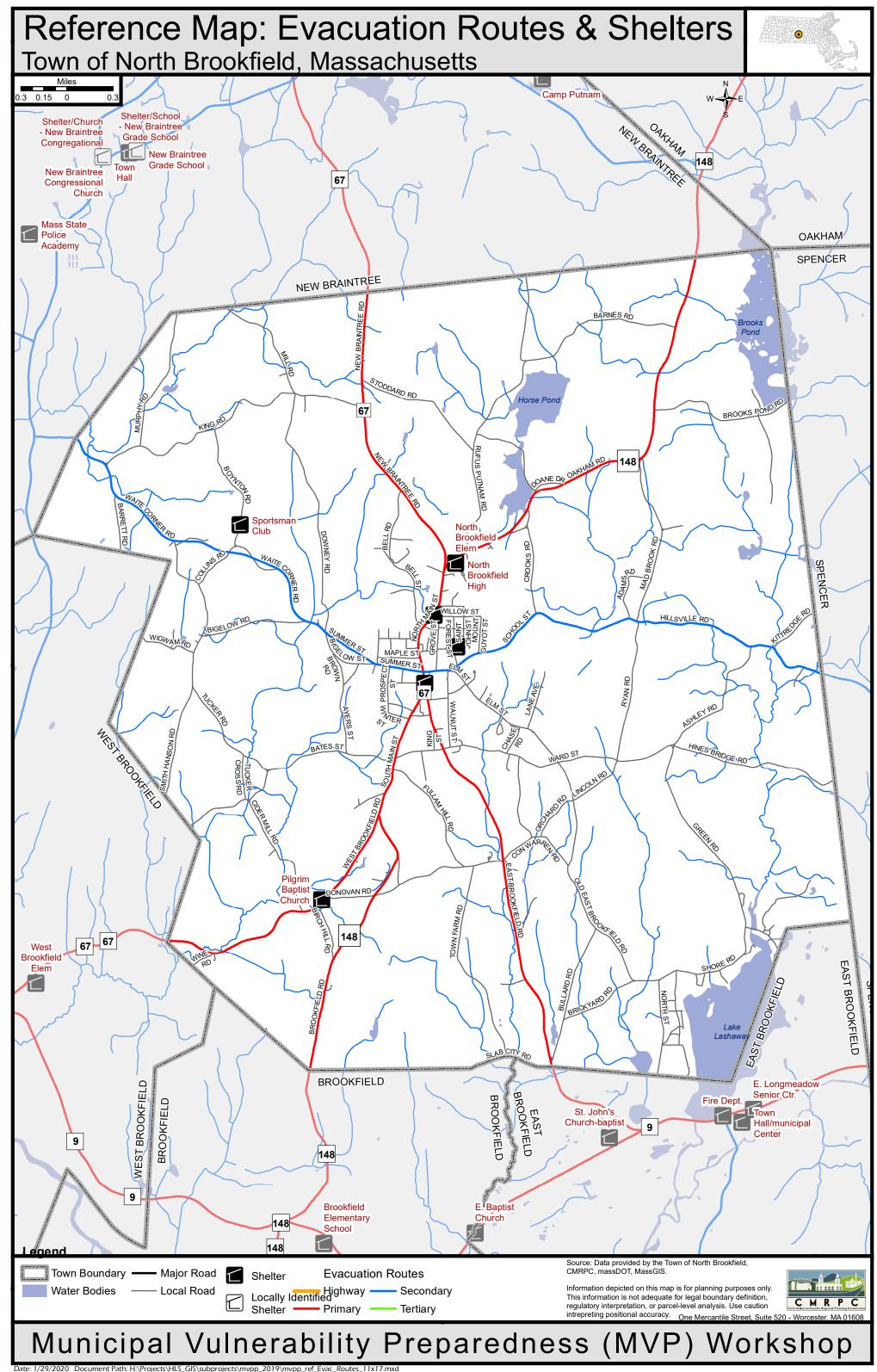
- 6. When creating your feature, you will be given the following attributes to fill out:
 - a. Description Provide a brief description of what the point, line, or polygon is representing.
 - b. Hazard Type Select from the dropdown menu the type of hazard (if any) the point, line, or polygon is representing. Use "None" if you are not sure what to select.
 - c. Name of Contributor Please enter your name so we know who created the point, line, or polygon in case we have follow up questions.
 - d. Town Please select your town (North Brookfield).
 - e. MVP Team Please select the MVP Team (Table) that you were assigned to.

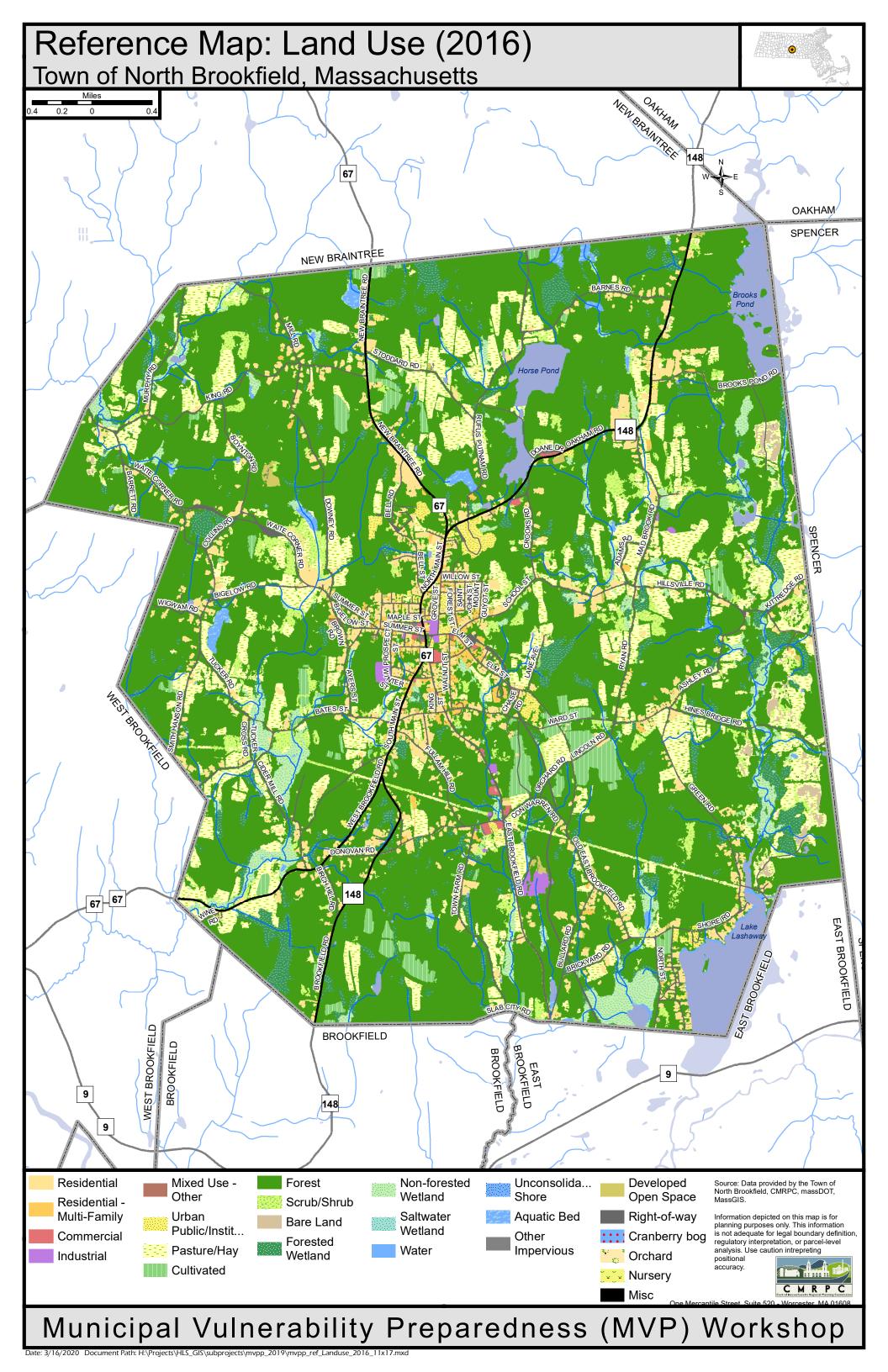


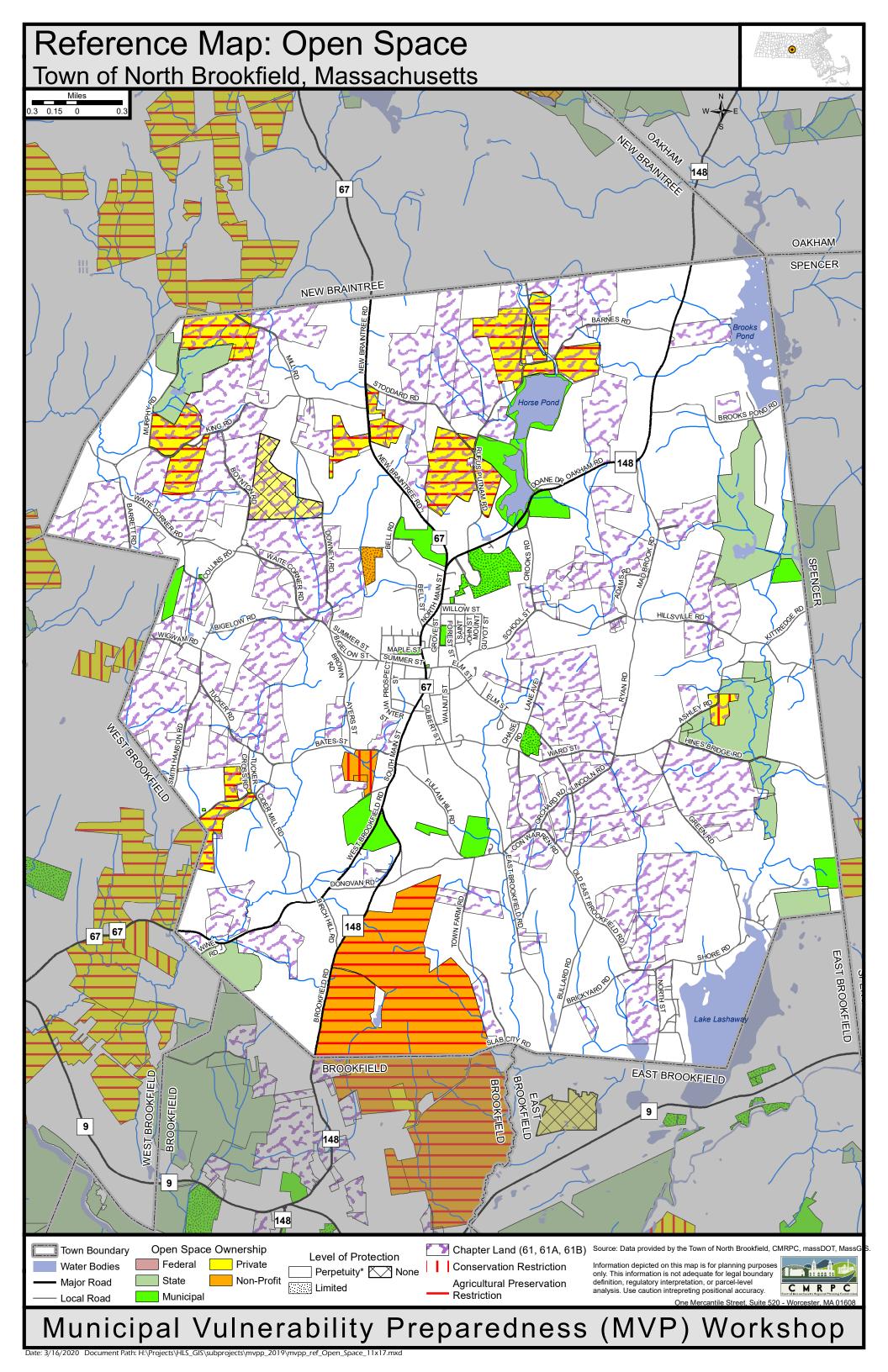
7. It is very important that you enter the correct MVP Team and Town when creating a new feature. If you enter the wrong values, then your feature will not show up on the map and that data will be lost.



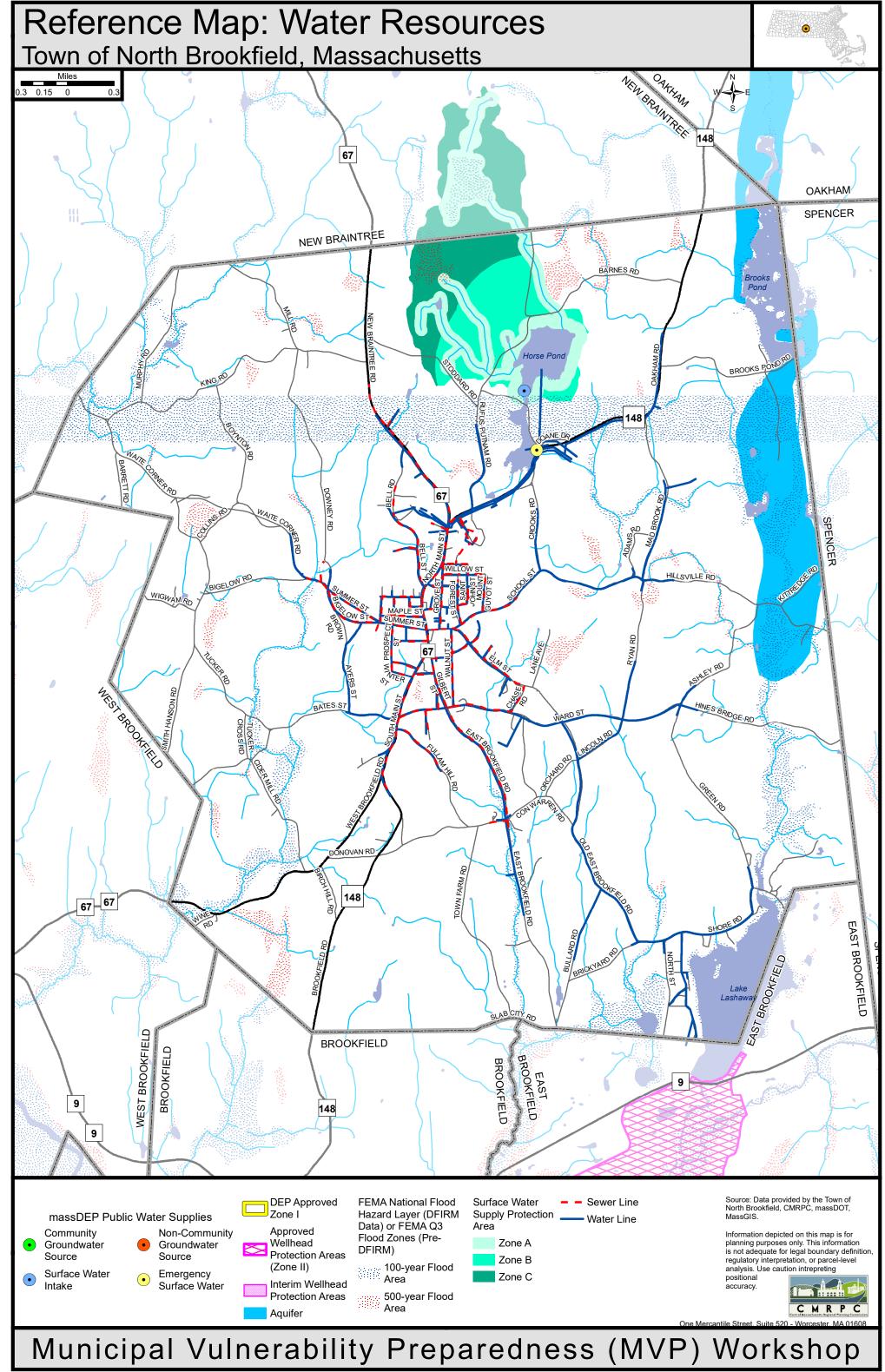


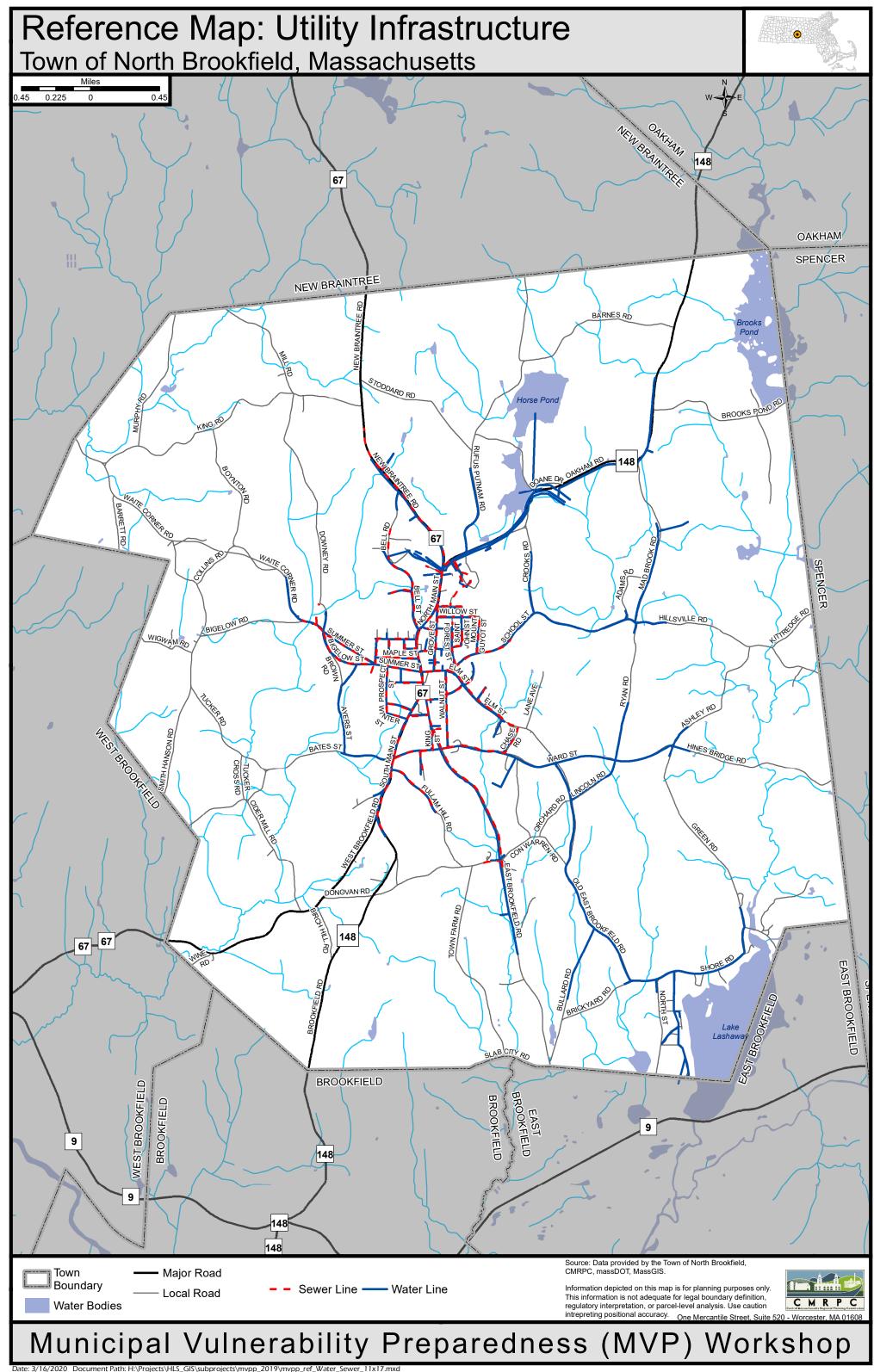


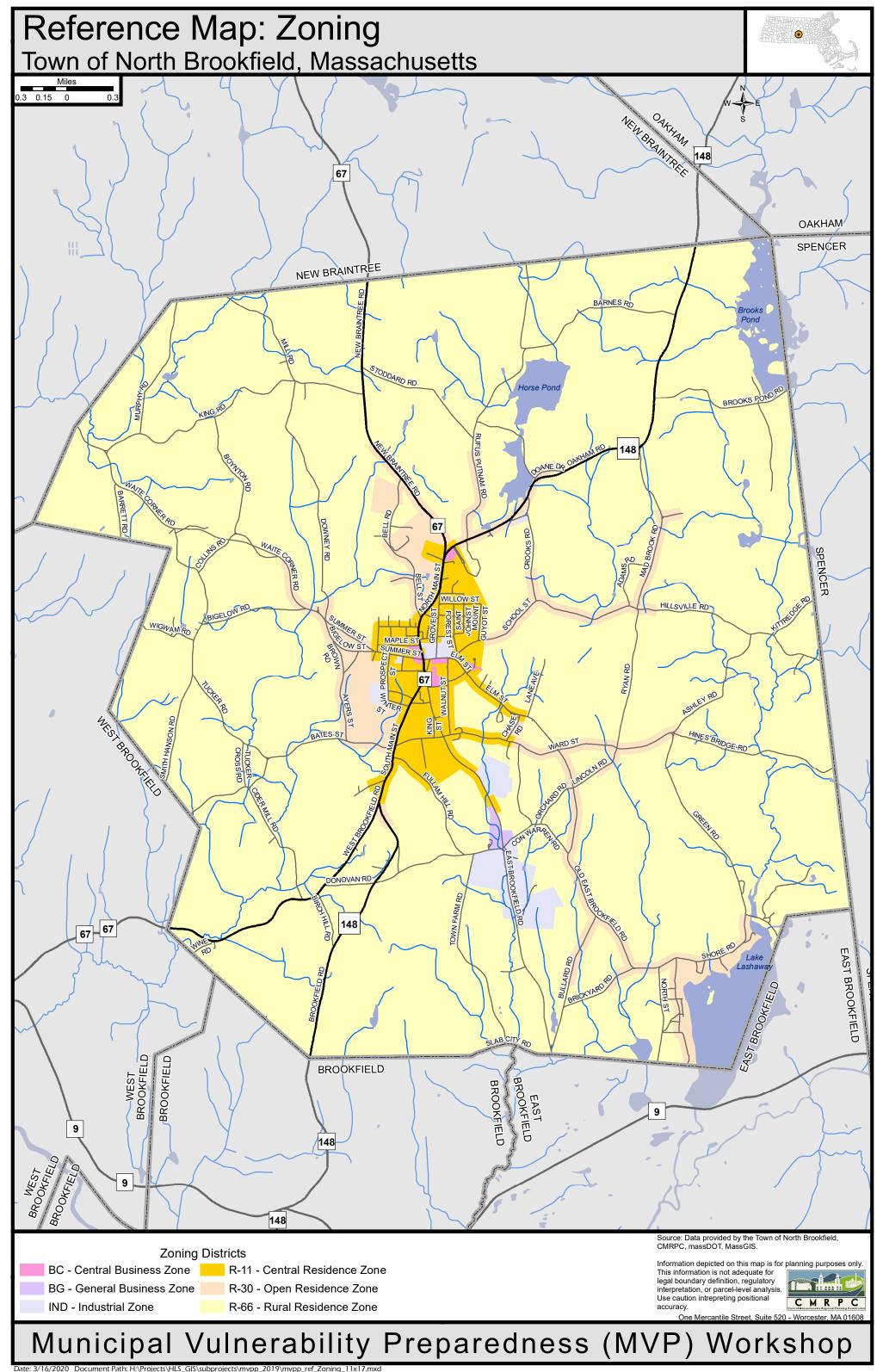
















North Brookfield Hazard Mitigation Plan Update

[Last Revised – September 4, 2019]



Tucker Road Seasonal closure due to Beaver Dam Flooding, February 2019

Adopted by the Board of Selectmen September 3, 2019

Prepared by the Central Massachusetts Regional Planning Commission

1 Mercantile Street, Suite 520 Worcester, MA 01608 www.cmrpc.org



Local Hazard Mitigation Team

Town of North Brookfield, Massachusetts

Acknowledgements

degrees is expected to surge several times over, presenting a health risk to young children, the elderly, and to persons with various health conditions. Overall, the risk of extreme temperatures to people and property can be expected to increase.

5.0 CRITICAL FACILITIES & VULNERABLE POPULATIONS

Critical Infrastructure provides the essential services to the Town of North Brookfield and serve as the backbone to the town's security and health. The systems and networks that make up the infrastructure would be disrupted by a natural disaster and would impact response to the disaster and safety of the town.

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.

5.1 Critical Facilities within North Brookfield

The Critical Facilities List for the Town of North Brookfield has been identified utilizing several sources, and the knowledge and expertise of the team:

- North Brookfield's Comprehensive Emergency Management Plan
- MassGIS data
- Critical infrastructure mapping undertaken by CMRPC under contract with the Central Region Homeland Security Advisory Council, which is charged by the Executive Office of Public Safety and Security to administer and coordinate the State Homeland Security Grant for central Massachusetts.

North Brookfield's Hazard Mitigation Team has broken up this list of facilities into four categories:

- Emergency Response Facilities needed in the event of a disaster
- Non-Emergency Response Facilities that have been identified by the Team as nonessential. These are not required in an emergency response event, but are considered essential for the everyday operation of North Brookfield
- Dams
- Facilities/Populations that the Team wishes to protect in the event of a disaster

Critical infrastructure and facilities are mapped in Appendix A.

Category 1 – Emergency Response Facilities

The Town of North Brookfield 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

Police Department 55 School Street, North Brookfield, MA
North Brookfield Elementary School 10 New School Drive, North Brookfield, MA
Fire Headquarters 56 School Street, North Brookfield, MA

2. Police Station

Police Department 55 School Street, North Brookfield, MA

3. Fire Station

Fire Headquarters 56 School Street, North Brookfield, MA

4. Communications Facilities

Police Department 55 School Street, North Brookfield, MA
North Brookfield Elementary School 10 New School Drive, North Brookfield, MA

5. Highway Department

DPW Headquarters 58 School Street, North Brookfield, MA

6. Primary Evacuation Routes

Route 67 Route 148

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 North Brookfield.

1. Water/Sewer

Water Department 14 Bell Road, North Brookfield, MA North Brookfield WWTP 59 East Brookfield Road, North Brookfield

2. Town Facilities

Town Hall
215 N. Main Street, North Brookfield, MA
North Brookfield Senior Center
29 Forest Street, North Brookfield, MA
North Brookfield Elementary School
10 New School Drive, North Brookfield, MA
North Brookfield High School
10 New School Drive, North Brookfield, MA

3. Utilities

National Grid

Category 3 – Dams

A list of dams in North Brookfield is included in Chapter 4 under Dam Failure.

Category 4 – Facilities/Populations to Protect

1. Special Needs Population/Elderly Housing/Assisted Living

Hillside Meadows 66 Ward Street, North Brookfield, MA

2. Public Buildings/Areas

North Brookfield Senior Center	29 Forest Street, North Brookfield, MA
Town Hall	215 Main Street, North Brookfield, MA
First Congressional Church	144 North Main Street, North Brookfield
St. Joesph's Church	269 North Main Street, North Brookfield
Pilgrim Baptist Church	23 West Brookfield Road, North Brookfield

3. Schools/Daycare

(Please note: The EMD has a list of current daycare facilities but these can change locations and addresses frequently, so this list should be revisited periodically.)

North Brookfield Elementary School	10 New School Drive, North Brookfield, MA
North Brookfield High School	10 New School Drive, North Brookfield, MA

4. Historic Buildings/Sites

According to the Massachusetts Cultural Resources Information System (MACRIS) online database accessed in March 2018, within North Brookfield there are, 2 Areas, approximately 63 Buildings, 6 Objects, and 15 Structures listed on the National Register of Historic Places. It should be noted that MACRIS records are not up to date, and therefore do not reflect the total number of resources that are no longer extant. Significant

municipal and commercial buildings concentrated around Main Street, have been identified as areas of priority to protect from natural hazards

5. Employment Centers

Based on data obtained from the Massachusetts Executive Office of Labor and Workforce Development (EOLWD), the following table shows the largest employers in North Brookfield:

Table 6

Largest Employers in North Brookfield - April 2017					
Company	Location	No. of Employees			
Quaboag Corp.	School Street	250-499			
Hannaford Supermarket	Gilbert Street	100-249			
Madix Inc.	Prospect Street	100-249			
North Brookfield School Supt.	High School Drive	100-249			
North Brookfield Elementary	High School Drive #2	50-99			
North Brookfield Guidance	High School Drive	50-99			
North Brookfield High School	High School Drive	50-99			
Brookfield Rescue Squad	Summer Street	20-49			
Camp Atwater	Shore Road	20-49			
North Brookfield Emergency Squad	School Street	20-49			

Source: EOLWD

6. Environmental Justice and Vulnerable Populations

The US Environmental Protection Agency defines Environmental Justice (EJ) as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Within the context of natural hazards and their mitigation, potential EJ concerns may arise from income-related factors, discrimination (overt or institutional), cultural isolation and barriers, language isolation, lack of transportation access, and disability (especially among the elderly).

In 2015, as part of its Mobility 2040 long range transportation plan, CMRPC identified disproportionate concentrations of EJ and other vulnerable populations at the US Census block group level throughout Central Massachusetts. Thresholds used in this identification process included various metrics from the 2010 Census and 2013 American Community Survey:

- Lower income households (median income below \$50,259/year); or
- Minority residents (20.3% or more of population); or
- Hispanic or Latino residents (14.0% or more of population); or
- Language isolated households (9.45% or more of population); or
- Zero vehicle households (12.75% or more of population); or
- Households with persons 75+ years of age (18.8% or more of population); or

North Brookfield does not have any location fitting the criteria listed above.

Effective communication regarding hazard mitigation to these populations should occur through active outreach efforts with the public, the academic community, other agencies, and non-federal governmental entities, to anticipate, understand, and resolve specific issues of concern. The town should provide resources and assistance to threatened neighborhoods and vulnerable populations to enhance their resilience during and after a disaster.

More information regarding the identification of Environmental Justice and Vulnerable populations in the Central Massachusetts region can be found online.

7. Development

The Town of North Brookfield has had little new development in recent years and no new development or redevelopment is expected in the near future. Generally, development is limited to isolated single new dwellings. The North Brookfield Planning Board, Conservation Commission, Zoning Board of Appeals and the Board of Selectmen all tasked with monitoring development in different capacities and mitigating hazards are considered when appropriate. Future developments are limited in hazard prone areas through North Brookfield's Zoning Bylaws, the Wetlands Policy and the Subdivision Control Bylaws.

6.0 EXISTING PROTECTION

The Town of North Brookfield currently makes use of most available locally-controlled tools to mitigate the consequences of natural hazards: zoning regulations, planning, and physical improvements. The Town does not participate in federal programs such as StormReady certification and Community Rating System, and it does plan to research the utility of more public awareness and education programs as a result of this planning process.

North Brookfield has most of the no-cost or low-cost hazard mitigation capabilities in place. Land use zoning, subdivision regulations and an array of specific policies and regulations that include

hazard mitigation best practices, such as limitations on development in floodplains, stormwater management, tree maintenance, etc. North Brookfield also has a limited staff dedicated to hazard mitigation-related work for a community of its size, including an Emergency Management Director, a professionally run Department of Public Works, a Facilities Director, and an unofficial Tree Warden. North Brookfield has several relevant plans in place, including a Comprehensive Emergency Management Plan, and it is working now to update its Master Plan. Not only does North Brookfield have these capabilities in place, but they are also deployed for hazard mitigation, as appropriate. The town also has very committed and dedicated volunteers who serve on Boards, Commissions and Committees and in other volunteer positions. The town collaborates closely with surrounding communities through its Local Emergency Planning Committee and has opted in to fire protection mutual aid agreements through MEMA.

North Brookfield is also an active member community of the Central Massachusetts Regional Planning Commission (CMRPC) and can take advantage of no cost local technical assistance as needed provided by the professional planning staff at CMRPC.

The table below describes existing mitigation protections in North Brookfield. It includes a brief description of each activity as well as a subjective evaluation of its effectiveness and of any need for modifications.

6.1 Existing Protection Matrix

Table 7

Existing Measure	Description	Action	Effectiveness & Recommendations
Participation in National Flood Insurance Program (NFIP)	Provides flood insurance for structures located in flood-prone areas. Also, communities participating in the NFIP have adopted and enforce ordinances, bylaws and regulations that meet or exceed FEMA requirements to reduce the risk of flooding.	North Brookfield stays compliant by enforcing all floodplain regulations (Section 4) in the Town By-Laws. The Town has and will continue to maintain the Town's floodplain maps and review the new FIRM Maps and provided comments on changes as needed, provide residences with all correspondence and maps to all residents impacted by the mapping changes and builders with appropriate building requirements.	North Brookfield should seek to further limit development in the 100-year flood zones. It should continue to score in the Community Rating System (CRS) under NFIP to enable its residents to obtain lower flood insurance rates. North Brookfield should educate its residents about NFIP.
Stormwater Management policy and regulations in place	Planning Boards or Conservation Commissions review projects for consistency with MA DEP standards. This helps ensure adequate on site retention and recharge.	North Brookfield does not have a Stormwater Management Bylaw however, Zoning, Subdivision and Wetlands Regulations have different requirements for Stormwater Management.	Effective No changes recommended

Existing Measure	Description	Action	Effectiveness & Recommendations
Local Open Space and Recreation Plan	Local plan identifying significant natural resources and identifying mechanisms to ensure their protection. Following Mass. Department of Conservation and Recreation guidance for development of OSRPs, this document does not focus on specific hazards. Open Space Plans can provide many tools. Towns must commit to making the land acquisitions and regulatory changes, giving increased attention to preserving undeveloped flood-prone areas and associated lands	North Brookfield's Open Space and Recreation Plan Update was issued in 2007.	Somewhat Effective Plan is expired. North Brookfield should prepare plan update as per Mass. DCR guidance. Where allowable, North Brookfield should use the update to integrate hazard mitigation activities and recommendations.

Existing Measure	Description	Action	Effectiveness & Recommendations
Local wetlands protection bylaw and regulations in place (Mass. Assoc. of Conservation Commissions, 2006 data)	Local bylaws building upon the State's Wetlands Protection Act and Regulations. These add regulatory oversight provisions for development within the jurisdictional buffer zone, adding increased attention to alteration of wetlands and the opportunity to preserve capacity and quality.	North Brookfield does not have a Wetlands Protection Ordinance and Wetlands Protection Regulations	Somewhat effective North Brookfield should examine enhanced development controls at wetlands to sustain natural barriers to flooding
Drainage system maintenance and repair program	Plan to keep municipal drainage facilities (storm drains, culverts, etc.) in good order	North Brookfield performs catch basin cleaning annually, problem locations more frequently	Effective North Brookfield should examine a public education program for residents on storm drain clearance and other best practices
Tree Trimming	Plan to ensure routine maintenance of trees to reduce likelihood of vegetative debris in response to storm events	North Brookfield conducts roadside mowing from April-November to remove juvenile trees. Tree trimming (take-downs and clearing dead branches) takes place as needed.	Effective North Brookfield should work with its electrical utility to coordinate a more systematic tree trimming program
Street Sweeping	Sweep streets to increase stormwater management capacity; capture a dispose of debris appropriately.	All Residential roads swept at least once a year and on an as needed basis.	Very Effective No changes recommended

Existing Measure	Description	Action	Effectiveness & Recommendations
Culvert Maintenance and Replacement	Maintain existing culverts through regular maintenance and (in some cases) beaver controls; replace/expand culverts where needed to allow for adequate stormwater flow.	Culverts are repaired or upgraded on an as needed basis. An inventory of problem culverts is maintained.	Somewhat effective Current efforts are piecemeal and are limited by lack of resources and systematic approach. North Brookfield should develop a policy to prepare for expected climate change related precipitation increase by upsizing culverts, especially in known problematic areas. Seek external financial support. Planning must comply with 2014 Mass. Wetlands Protection Act update; culverts may not be replaced in-kind.
CodeRED System	Emergency warning system that sends voicemail/text/email alerts to residents (text/email alerts are optional).	North Brookfield has recently purchase CodeRED	Effective Continue to actively gain membership in CodeRED while educating the public about the CodeRed system

7.0 MITIGATION STRATEGY

The North Brookfield hazard mitigation planning team developed a list of mitigation strategies (both new and previously identified by local officials) and prioritized them using the criteria described below. This list of factors is broadly derived from FEMA's STAPLE+E feasibility criteria.

7.1 Impact

The team's consideration of each strategy included an analysis of the mitigation impact each can provide, regardless of cost, political support, funding availability, and other constraints. The intent of this step is to separately evaluate the theoretical potential benefit of each strategy to answer the question: If cost were no object, what strategies have the most benefit? Factors considered in this analysis include the number of hazards each strategy helps mitigate (more hazards equal higher impact), the estimated benefit of the strategy in reducing loss of life and property (more benefit equals higher impact) based on the relevant hazard(s) as assessed in Chapter 4, and the geographic extent of each strategy's benefits (other factors being equal, a larger area equals higher impact).

- **High Impact** Actions that help mitigate several hazards, substantially reduce loss of life and property (including critical facilities and infrastructure), and/or aid a relatively large portion of the community
- **Medium Impact** Actions that help mitigate multiple hazards, somewhat reduce loss of life and property (including critical facilities and infrastructure), and/or aid a sizeable portion of the community
- Low Impact Actions that help mitigate a single hazard, lead to little or no reduction in loss of life and property (including critical facilities and infrastructure), and/or aid a highly-localized area

7.2 Priority

Following the ranking of each strategy for its mitigation impact, real world considerations were brought back into the analysis to inform the priority ranking process. Factors considered in this step include costs and cost effectiveness (including eligibility and suitability for outside funding), timing, political and public support, and local administrative burden.

Costs and 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 clear and viable potential funding streams, such as FEMA's Hazard Mitigation Grant Program (HMGP), are also given higher priority.

Time required for completion - Projects that are faster to implement, either due to short work duration, current or near-term availability of funds, and/or ease of permitting or other regulatory procedures, are given higher priority.

Political and public support - Strategies that have demonstrated political and/or public support through positive involvement by the public or prioritization in previous regional and local plans and initiatives that were locally initiated or adopted are given higher priority.

Administrative burden – Strategies that are realistically within the administrative capacity of the town and its available support network (CMRPC, North Brookfield local emergency planning committee, etc.) are prioritized. Considerations include grant application requirements, grant administrative requirements (including audit requirements), procurement, and staff time to oversee projects.

- **High Priority** Strategies that have obvious mitigation impacts that clearly justify their costs and to a large degree can be funded, can be completed in a timely fashion, can be administered effectively, and are locally supported
- **Medium Priority** Strategies that have some clear mitigation impacts that generally justify their costs and generally can be funded, can be completed in a timely fashion, can be administered effectively, and are locally supported
- Low Priority Strategies that have relatively low mitigation impacts that do not necessarily justify their costs and that may have difficulty being funded, completed in a timely fashion, administered effectively, and locally supported

7.3 Estimated Cost

Each implementation strategy is provided with a rough cost estimate based on available third-party or internal estimates and past experience with similar projects. Each includes hard costs (construction and materials), soft costs (engineering design, permitting, etc.), and where appropriate town staff time (valued at appx. \$25/hour for grant applications, administration, etc.). Projects that already have secured funding are noted. Detailed and current estimates were not generally available, so costs are summarized within the following ranges:

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

Timeline

Each strategy is provided with an estimated length of time it will take for implementation. Where funding has been secured for a project, a specific future date is provided for when completion is expected. However, most 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. Strategies are grouped by 1-2-year timeframe, 3-5-year timeframe, 5+ year timeframe, and ongoing items.

Strategy Types

Mitigation strategies were broken into four broad categories to facilitate local implementation discussions, especially regarding budget considerations and roles/responsibilities:

Structure and Infrastructure Projects - Construct "bricks & mortar" infrastructure and building improvements in order to eliminate or reduce hazard threats, or to mitigate the impacts of hazards. Examples include drainage system improvement, dam repair, and generator installation. Structure and infrastructure improvements tend to have the greatest level of support at the local level, but are highly constrained by funding limits.

Preparedness, Coordination and Response Actions - Ensure that a framework exists to facilitate and coordinate the administration, enforcement and collaboration activities described in this plan. Integrate disaster prevention/mitigation and preparedness into every relevant aspect of town operations, including Police, Fire, EMD, EMS, DPW, Planning Board, Conservation Commission and Board of Selectmen; coordinate with neighboring communities where appropriate. Recommendations in this category tend toward standardizing and memorializing generally-practiced activities.

Education and Awareness Programs - Integrate education and outreach into the community to raise awareness of overall or hazard-specific risk and generate support for individual or community-wide efforts to reduce risk.

Awareness and education seek to affect broad patterns of behavior, essentially altering a culture. Awareness-building activity tends to have a fairly slow effect, although in the end it can provide extraordinary benefits with relatively little cash outlay.

Local Plans and Regulations - Review and propose updates to local bylaws, ordinances and regulations to protect vulnerable resources and prevent further risk to those resources. Formally adopt these updates into the local regulatory framework. Review the effectiveness of past

mitigation projects, programs procedures and policies. Incorporate mitigation planning into master plans, open space plans, capital improvement plans, facility plans, and other planning.

Planning and regulatory activity tends to provide extraordinary benefits with relatively little cash outlay. However, in smaller communities where planning activities are largely the purview of volunteers, outside assistance from the state or regional levels may be required to maximize its benefits. Political support may be difficult to achieve for some planning and regulatory measures, especially those that place new constraints on land use.

In addition to describing action items in each of these categories, for each strategy we also identify what hazard(s) it is intended to address, as described in Chapter 4 of this plan. Each strategy also identifies the lead organization who serves as the primary point of contact for coordinating efforts associated with that item, and identifies potential funding sources for implementation. See Chapter 8 for more information on potential funding.

Town of North Brookfield Mitigation Strategies

OVERALL GOAL: Facilitate activity within the Town of North Brookfield that reduces the loss, and risk of loss, to persons and property

Mitigation Strategy	Hazard(s) Addressed	Who?	Potential Funding Sources	Priority	Impact	Estimated Cost	Timeline
Description		Agencies involved		Political & economic viability: High/Med/Low	Mitigation impact: High/Med/Low	High (\$100k+)/ Med (\$50k- 100k)/ Low (<\$50k)	Time needed to complete
A. Structure & Infrastructure Strategies							
Pursue funding to replace failing box culvert bridge on Route 67 (West Brookfield Road) near intersection of Wine Road Continually Identify and prioritize capital/structural mitigation projects that are cost-effective and technically feasible (stormwater drainage, dam repairs, vegetative debris	FL, ST, HU	State, Local, DPW Local	Federal, State, Local Federal, State,	High	High	High	2-3 years
management, etc.). Pursue funding for comprehensive engineering study to locate, asses and replace culvert running through town center, "North South Common Drain". Culvert is believed to run from Reed Ave. along Grove Street. Currently the culvert is known to cause flooding issue in multiple residences and streets. The culvert is undersized and made of mixed materials and sizes.	All FL, ST, HU	State, Local, DPW	Federal, State, Local	High High	High High	Low	Ongoing 3-5 years

Continue to seek funds to implement a vegetative debris							
program (e.g. by acquiring additional equipment), and thereby							
mitigate risks of stormwater flooding, riverine flooding, winter							
storm damage, etc, such as through the Central Massachusetts			Federal.				
Mosquito Control Project. Possible funding through Capital			State,				
Improvement Plan.	All	DPW	Local	Medium	High	Medium	1-2 Years
	FL, ST, WF,		State,				
Pursue funding for Town Tree Warden	HU, SS	DPW	Local	High	Medium	Medium	1-2 years
			State				
Pursue funding to purchase a wood chipper	All	DPW	Local	High	High	Medium	1 Year
Pursue funding for excavator to support town wide tree			Federal,				
trimming and road side drainage issue. Implement roadside			State,				
drainage priority improvement program	ALL	DPW	local	Medium	High	High	1 Year
Pursue funding to implement town wide tree trimming and							
removal program	All	DPW	Local	High	High	Low	1 Year
							Ongoing
							as funds
Continue to repair and replace storm water pipes as funds		DPW,	State,				become
become available. Continue to actively seek stormwater funding.	FL, ST, HU	MassDOT	Local	Medium	High	Medium/High	available
Down for discounting to the control of the control	DE EL CT		1 1				
Pursue funding assistance for town wide beaver remedy. Past	DF, FL, ST,	A.II	Local	l li ala	Himb	1	1 //
beaver dam breaches have caused road flooding and closures	OT	All	State	High	High	Low	1 Year
Pursue funding to improve drainage issue in the area of Summer			State				
Street due to culvert issue	FL, HU, ST	DPW	Local	Medium	High	Medium	1 Year
					_		
			State,				
Implement town wide roadside edging program	FL, ST, HU	DPW	Local	Medium	Medium	Medium	1-2 years
			Federal,				
Pursue funding for comprehensive engineering study to improve			State				
drainage at the intersection of Chestnut St. and Summer St.	FL, ST	DPW	Local	Medium	Medium	High	1 Year

Continue to pursue funds to complete projects that will mitigate		DDW	Ctata				
Continue to pursue funds to complete projects that will mitigate flooding on Bradshaw Street, Conroy Ave. and Willow Ave.	FL, ST, HU	DPW, MassDOT	State, Local	Medium	Medium	Medium/High	2-3 Years
nooding on Bradshaw Street, Comby Ave. and Willow Ave.	FL, 31, HU	IVIASSDOT	LUCAI	Mediaiii	ivieulum	ivieulum/mgm	2-3 Tears
Continually maintain and remove debris from culverts as needed							
town wide	FL, HU, ST	DPW	Local	Low	Low	High	Ongoing
tom mac	12,110,31	5	Federal,	2011	2011	1.1.6.1	ongonig
Investigate feasibility of reopening underground stream that			State				
flows through town center to create river walk	FL, ST	All	Local	Low	Medium	High	2-3 Years
	,	7	1000.	1011		8	
Pursue funding to repair or remove Muschopauge Pond Dam,			Federal,				
the dam is in failure per the MA Office of Dam Safety	DF, ST, FL	State	State	Medium	Medium	High	2-3 Years
,	, ,						
			Federal,				
Pursue funding to integrate heating system at High School to			State,				
make use as a shelter	All	All	Local	High	High	Medium	1-2 years
			Federal,				
Pursue funding to upgrade generator at High School to support			State,				
facility as shelter	All	All	Local	Medium	High	High	3-5 years
			Federal,				
Down for the training of the second of the s	A 11	A.II	State,	1	11:-1-	11:-I-	2.5
Pursue funding to install generator in town senior center	All	All	Local	Low	High	High	3-5 years
Pursue funding for road improvement/upgrades to "The Path" to the High School for use as a secondary egress to school during			Ctata				
periods of shelter	All	DPW	State, Local	Low	Low	High	1 Year
B. Preparedness, Coordination & Response Action	All	Drw	Local	LOW	LOW	riigii	1 Teal
Strategies							
on ategies							
Develop local contact/contractor list for assistance with fuel		Fire, Police,					
supply, debris removal etc.	All	DPW	Local	Medium	Medium	Low	Ongoing
suppry, debris removal etc.	All	DF VV	LUCAI	Wiedidiii	ivicululli	LOW	Oligoliig
Pursue funding for increased fuel storage tanks at DPW			State				
supporting all departments in town	All	All	Local	Low	Low	High	1-2 Years

Continue to sweep streets at least once per year to increase			1				
stormwater management capacity; capture and dispose of	ST, SS, FL,	Highway,	Local,				
properly (currently budgeted).	HU	DOT	State	High	High	Low	Annually
Continue to properly clean, at least annually, or more often as							
required, all stormwater structures and basins (currently	ST, SS, FL,		1				
budgeted).	HU	Highway	Local	High	High	Low	Annually
Investigate feasibility of replacing batteries on warning siren to			State,				
utilize existing system. Develop a coding system for siren	All	All	Local	Medium	High	Low	1 Year
Continue to gain membership in CodeRed system. Investigate	7	7	1000.	cara			1
potential to bring Warning Siren back online. Ongoing use of							
social media, town webpages and other communication							
methods. Post generator safety and use info on social media.							
Maintain internal instant messaging system, allowing for rapid		All local					
response of emergency personnel	All	departments	Local	High	High	low	Ongoing
Evaluate and repair dams as identified by the Office of Dam							
Safety.	DF, ST, FL	State	State	High	High	Low	Ongoing
Continue building a strong relationship with utilities, i.e.							
National Grid. Currently very responsive, including sending							
appropriate resources to downed poles and wires through		Local, State,	State,				
picture messages.	All	Utilities	Local	Medium	High	Low	Ongoing
Continue to utilize hazard warning systems and notifications:							
social media, town webpages, Code Red, Warning Siren, and							
other communication methods. Maintain internal instant							
messaging system, allowing for rapid response of emergency		1	1				
personnel	All	Local	Local	High	High	Low	Ongoing
Actively enforce and comply with the state building codes,		Building					
promote successful working relationship between Fire Marshall		Dept., Fire,	1				
and Building Inspector	All	PB, CC, ZBA	Local	High	High	Low	Ongoing

Actively enforce and comply with the Massachusetts Wetlands							
Protection Act. Seek to implement a local wetlands bylaw.	FL, ST	CC	Local	High	High	Low	Ongoing
Continue to support the regional functions that the Rutland Fire Department provides to other communities. This requires increased cooperative efforts for Unified Command and adequate infrastructure resources.	All	Fire, Police, DPW	State, Local	High	High	Medium	Ongoing
C. Education & Awareness Strategies							
Continually educate all segments of the community about hazard mitigation and the impacts that disasters can have on the community through social media, brochures, School Fall Festival, sign boards and mailings. Also, educate on water conservation methods	All	Fire, Police, DPW, Local Government	Local, State, Federal	Medium	Medium	Low	Continued efforts
Continue to engage with the Local Emergency Planning Committee (LEPC) and Central Mass Regional Homeland Security Council (CMRHSC) Fire District 7 and other stakeholders for increased communication and coordination between local, regional, state, and federal agencies regarding disasters and emergencies.	All	Fire, Police, DPW, Local Government	Local	High	High	Low	Continued efforts
Promote available educational material (state/federal) especially to students, regarding disasters at measures they can take to limit risks.	All	Fire, Police, School	Local, State, Federal	Medium	High	Low	Yearly
Pursue educational opportunities in regards to grant writing. Hold regional workshop about Hazard Mitigation Grant Writing	All	Fire, Police, DPW	Local	Low	High	Low	Ongoing
Utilize website, fund mailings, and promote the annual Open House as means of communication about Fire Safety.	WF, DR	Fire	Local	Low	Low	Low	Ongoing
Develop educational materials for residents about protecting wetlands	DR, WF, ST, HU	Con Comm	Local	Low	Low	Low	1 year

D. Local Planning & Regulatory Strategies							
Continually share information on a regional basis about							
successful hazard mitigation planning and programs. Create a			Local,				
feedback loop to improve pre-disaster planning by establishing a		EMD, REPC,	State,				
formal post-disaster assessment process.	All	State	Federal	Medium	Low	Low	1-2 Years
Monitor implementation of the Hazard Mitigation Plan and			Local,				
update five years after approval of plan	All	EMD	Federal	High	High	Low	1 Year
aparte five years after approval of plan	7111	LIVID	reactar	111811	111811	2000	11001
Incorporate hazard mitigation into local and regional plans such		All Town					
as, Master Plan, land use, transportation, Open Space and		Departments,	Local,				
Recreation Plan and Capital Improvement Plans	All	REPC, PDA	State	High	High	Low	Ongoing
Investigate feasibility of membership into Central Massachusetts							
Mosquito Control Project	All	All	Local	Low	High	Low	Ongoing
mosquito control reject	7	7	Local	1000		2011	ongonig
Expand the use of the Capital Improvement Program. Encourage		Capital	Local,				
the Committee to look at hazard mitigation in their long-term		Improvement	State,				
planning for improvements.	All	Committee	Federal	High	High	Medium	Ongoing
			Local,				
			State,				
			Federal,				
Consider acquiring and preserving properties which will result in			Nonprofit			_	
mitigating hazards.	FL, ST	СС	Agencies	Low	Medium	High	Ongoing
Encourage the adoption of underground utility requirements in							
local subdivision regulations and retrofitting of existing		Planning	Local,				
infrastructure.	All	Department	State	Medium	Medium	Low	1 Year
imustracture.	All	Department	State	Wicalam	Wicalam	LOW	1 icai
Continually Integrate hazard mitigation into subdivision, site							
plan review, 40B review, and other zoning reviews. In particular							
require the consideration of downstream flooding impacts							
caused by new projects. Work on model bylaw language to							
reduce the amount of impervious coverage and increase		Planning	Local,				
opportunities for recharge and retention of stormwater.	FL, ST, HU	Department	State	Medium	Medium	Low	1 Year

Maintain Unified Incident Command program, continue training local officials in ICS	All	All Town Departments	Local, State, Federal	Medium	Medium	Low	Ongoing
Continue to Inventory shelter supplies and emergency resources, identify resources that are available at any shelters and if the shelters would be impacted by an emergency. This would help ensure suitable shelters are available for different types of natural hazards.	All	EMD	Local, State, Federal	Low	Low	Low	Yearly
Study the possibility of creating a regional shelter with a neighboring town. This would help limit the expense of maintaining separate shelters when towns have a limited budget.	All	EMD, neighboring towns	Local, State	Medium	Medium	Low	12 Years
Create a Road Bylaw, ensuring new development will have roads able to handle emergency vehicles and proper drainage infrastructure is built	SS, ST, FL	Planning Department	Local	High	High	Low	1 Year
Continue to actively enforce and comply with State Building Code Requirements, ensure proper certification for inspectors	All	Planning Department	Local	High	Medium	Low	Ongoing
Develop a Local Wetlands Bylaw	DR, FL, HU	Con Comm	Local	Low	Medium	Low	1-2 years
Continue to find funds to update the Hazard Mitigation Plan update every five years	All	Fire, Police, DPW, Planning, Con Comm	Local	High	Medium	Low	ongoing
Continue to develop earth removal and reclamation bylaws to ensure prevention of landslides and redirection of natural flood plains and water ways	All	Planning Board	Local	Medium	Low	Low	Ongoing
Update Open Space and Recreation Plan (2017) and be sure to include findings and goals from the Hazard Mitigation Plan Update	All	Planning, Con Comm, BOH, DPW	Federal, State, Local	Medium	Medium	Low	3-5 years

'Hazards Addressed' abbreviations:

DF	Dam Failure	DR	Drought
EQ	Earthquake	FL	Flooding
HU	Hurricane	OT	Other

SS Severe Snowstorm/Ice storm/Nor'easter ST Severe Thunderstorm/Wind/Tornado

WF Wildfire/Brushfire XT Extreme Temperatures

Community Resilience Building Risk Matrix





www.CommunityResilienceBuilding.org

North Brookfield Table 1 Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, etc.) H-M-L priority for action over the Short or Priority Time $\overline{V} = Vulnerability \underline{S} = Strength$ Flooding Drought/Wildfires Wind Winter Storms Short Long <u>H - M - L</u> **O**ngoing Features Location Ownership V or S Description Infrastructural Town (Water n need of repair; Used to be designated as a backup water Doane Pond Dam Oakham Road Study for dam repair Department) supply; Dam has breached in the past In need of repair and demmed dangerous; surrounded by Audubon Society property; owned by a private party in Rhode Man-O-Name Dam off Route 148 Private Island; The danger is downstream as the water goes to West Brookfield Undersized culverts in need of replacement; Restrict fish Day-light the culverts; nature friendly culverts - won't restrict fish; perform a culvert assessment; Culverts migration upstream; Have had difficulties identifying these Town-wide Town stream crossing assessment: culverts in the field Town-wide, back are National Grid, Charter rimming/removal and replacement program; have trees that won't grow as tall as the utility Utility Wires roads more Communications, Vulnerable to intense storm and wind events, power outages wires; install solar lights on every other street light vulnerable Verizon Town-wide, bottom of Bennett's Hill, Some erosion; Need to research the inspection reports on the **Bridges** Bigelow Hollow, Five Town bridges - they might meet the standards now but not sure if Mile, along Route 67 they will hold up during intense storms over Coys Brook Leaks; access to the building is limited when there is 161 N Main Street Library Town Parking lot is not paved well, which can limit access; Does not Senior Center 29 Forest Street have backup/alternative power Horse Pond Resevoir; Water enters the pond upstream from a number of different places; Land surrounding the reservoir is Water Supply green water solution - can drink, but can use to water plants, etc.: Town-wide Town not protected (need a protection zone); There is no alternative water supply Strength - Respond to storms; Clean up debris after storms; Clear roadways when it snows Highwway Department 58 School Street Town Both Vulnerability - In need of an updated facility; Need separate areas to change, shower, eat, etc.; Need an area to store equipment inside the building Do not have sidewalks near conservation areas: Want to Fransportation - Access to green spaces Town-wide Strength - Designated as the town shelter; Will be installing solar canopies in the parking lot; Have backup generators at Schools (Elementary School and Junior/Senior High 10 New School Drive Town Vulnerability - Heating units are not tied into the backup generators; The high school does not have air conditioning Website needs to be updated regularly; Programming is Town Website - Communication Online Town cumbersome: Minutes are slow to be uploaded Almost all of the Town's building have flat roofs; These are Highway, Fire, Town own Buildings - Flat Roofs Town Hall, Senior Center vulnerable to snow buildup tree planting and replacement program Sidewalks

Societal						
Senior Population	Town-wide		S		educational materials for seniors	
Senior Center	29 Forest Street	Town	S	Offers programming and services for the senior population; Provide lunch (food security) lunch; Provide an opportunity for gathering		
Housing Authority	271 N Main Street and 24 Grove Street	Town	Both	Strength - Provides affordable housing for those in need; Has air condition for cooling in the summer Vulnerability - Does not have backup generators or alternative power; lcy conditions build up, limiting access to the buildings; on a hill	incorporate green infrastructure into the west side plan; nature based infrasructure to improve drainage and divert water off the parking lot	
Library	161 N Main Street	Town	S	Deliver requested items to seniors' homes; Can act as an information clearinghouse; Can provide education programs for the town; Is a place of gathering		
Food Bank	296 N Main Street (St. Joseph's)	St. Joseph	Both	Strength - Provides food for those in need Vulnerability - Not much is known about how the program is run and where it might be vulnerable		
North Brookfield Emergency Management Agency	10 New School Drive	Town	S	Have an advanced emergency management center; Acquired a siren for the town; Prepare the Town to prepare for, protect against, and respond to hazards		
Code RED - Communication	N/A	Town	Both	of announcements and alerts Vulnerability - People are not signed up for the right alerts; Does not alert those who aren't signed up to receive alerts (visitors); Need to educate the public on how to set up the alert system on their celiphones; Consider adding multiple	Education effort to increase public participation in the Code RED system; put signage up; education at public meetings; use auto mail and send out a flyer; use different community groups to reach out to the public and send out information	
Town Website - E-Alerts	Online	Town	V	Offers an alternative method for receiving alerts about the town but needs to be improved; The website needs to be updated on a regular basis;		
Siren	Bell Hill	Town	S	Acquired by the Emergency Management Agency to be used for tornado and storm warnings; Is not activated yet but can be easily activated; Requires signage to inform the public what the horn warnings mean; Signage should be offered in multiple languages		
Creative Life Center (Town House)	215 N Main Street	Town	S	Provides a gathering and cultural opportunities; In the process		
Churches		Private	Both	of being updated Strength - Social area; Can share information and support; There is an opportunity for a partnership with the town to share information and expand communication		
Public Involvement/Societal Engagement	Town-wide	N/A	V	Vulnerability - No air conditioning Low public engagement	work with the schools; hold meetings/forums at varying in times during the day; share information on different venues and at different times	
Homeless Population						
Environmental						
Town Common	Common Street	Town	V	Has flooding issues; There is a desire to improve access to the Common	Install a community garden	
Town Forest	West Brookfield Road	Town	Both	Have made improvements, constructed trails, and fixed the area for picnicing; There is a linkage opportunity with Coys Brook Corridor		
Coys Brook Corridor	Bigelow Road, west side	Town?	Both	Strength - Provides important habitat for Wood Turtles Vulnerability - Vulnerable to development; Needs to be protected	Write a Wetlands Protection Bylaw; link bylaw with development pressure from Boston; combine Natural Resource Protection Zoning with Wetlands Bylaw?; comprehsive educational program that reaches as many people as possible to acheive Wetland Bylaw/Natural Resource Protection Zoning	

Five Mile River	east side	Town?	Both	Strength - Has a large aquifer underneath (potential for a town well) Vulnerable - Vulnerable to development; Needs to be protected; Has invasive species		
Lake Lashoway	south east side of town	Town?	V	Invasive species entering from the Five Mile RIver		
Wetlands	north west part of town, Murphy Rd area, Collins Rd	Town and Private?	Both	Vulnerability - Need to be protected from development;	Create a Wetlands Bylaw; education initiative; work with the library to develop an educational program - targeted approach for specific areas; approaching from multiple avenues - utilize the schools as part of academic program; working with elementary school teachers - curriculum designated towards the environment/ecology	
Forest Management	Bell Hill area	Town and Private	V	Need community education on fire safety and importance of forest management; Need to reduce fire loads; Need to know where the most vulnerable areas are	street tree evaluation and planting program	
Forest Plans	Town-wide, St. Joseph's Cemetery	Private	l V	Needed for private landowners to help them manage their forests; Public education and outreach for fire safety		
Invasive Species	Town-wide	Town and Private	V	Abundant invasives in Lake Lashoway, Five Mile River, and in forests around town; Need invasive species management to improve resource conditions and reduce fire loads		

TOWN OF NORTH BROOKFIELD

Municipal Vulnerability Preparedness (MVP)

Community Resilience Building Workshop

May 4 and 6, 2020







Town of North Brookfield

Municipal Vulnerability Preparedness Day 1- Monday, May 4, 2020

9:00 am - 11:30 am; Check-in at 8:30 am

Meeting Link (Click to Join): https://us02web.zoom.us/i/89242407113

Meeting ID: 892 4240 7113

Call in Number (if unable to join online): 1-646-558-8656

Workshop Materials:

https://www.dropbox.com/sh/vgu6a3whftzev13/AAApjpEuzfDtTuSVkXf_TJSMa?dl=0

Workshop Agenda

8:30 am - 9:00 am:

· Login & Familiarize with Zoom

9:00 am - 9:30 am:

- Welcome & Overview
- Questions & Answers

9:30 am - 11:00 am:

- Breakout Groups
 - o Identify Hazards & Local Features
 - o Discuss Strengths & Vulnerabilities

11:00 am - 11:30 am:

- Reconvene as Large Group
- Quick Table Summary
- · Closing Remarks & Wrap Up

Day 1: Workshop Objectives

- Define extreme weather and climate related hazards;
- Identify current and future vulnerabilities and strengths;
- Edit online map with important hazards and features

Homework

- Review hazards, vulnerabilities, and strengths in matrix
- Brainstorm actions to address vulnerabilities

Thank you for participating in North Brookfield's Virtual Community Resilience Building Workshop!







MUNICIPAL VULNERABILITY PREPAREDNESS (MVP)

- State grant program to support cities and towns to begin the process of planning for climate resiliency.
- MVP Planning Process includes CRB Workshop, Report, Listening Session and Annual Reporting
- Communities who complete the MVP Planning Process become certified as an MVP Community
- Designated communities become eligible for MVP Action Grant funding

TABLE ROLES AND RESPONSIBILITIES

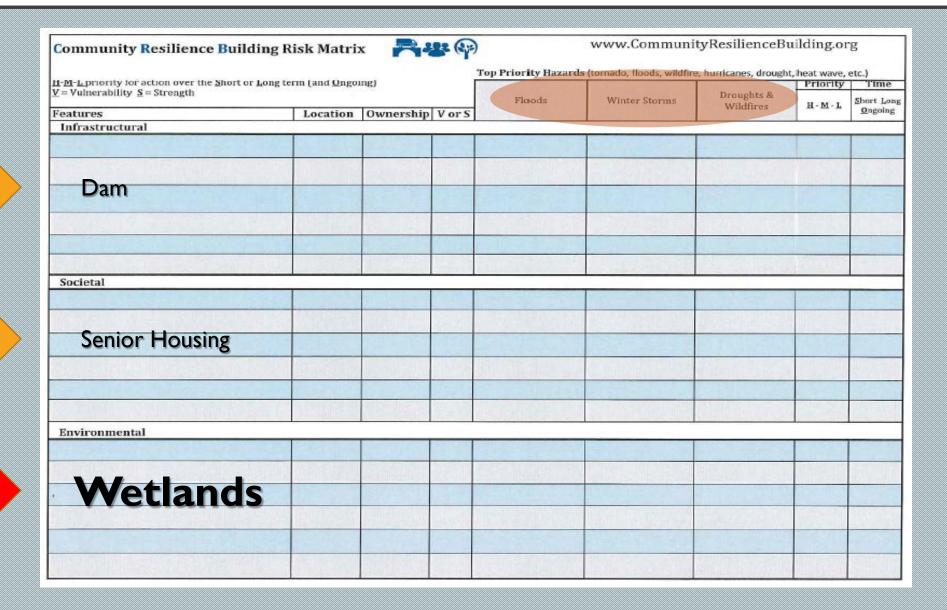
- Table Facilitator directs the discussion and keeps the dialogue moving
- Scribes filling in matrix
- Participants- All of you
- CMRPC resource person
- Table spokesperson for Report Out



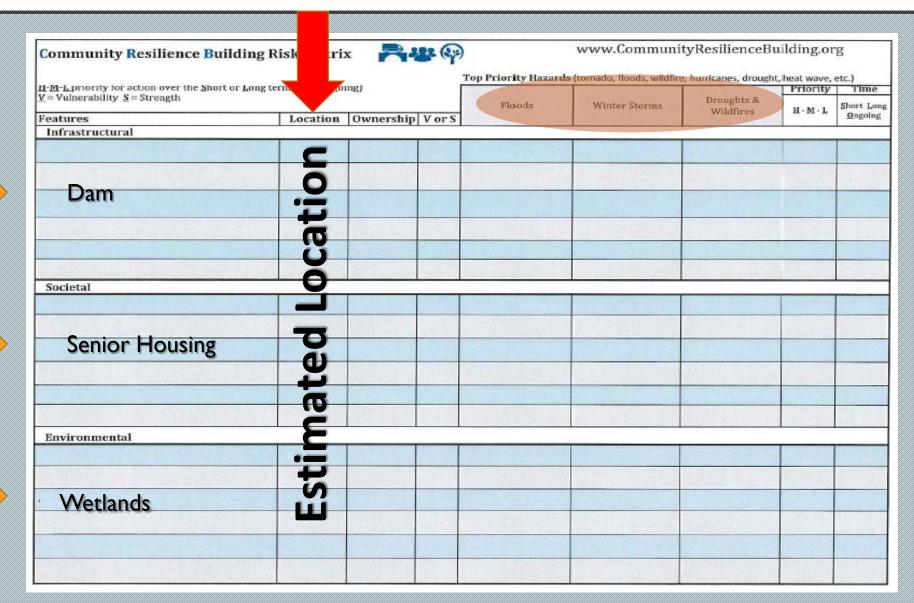
THE MATRIX

Community Resilience	Building Risk Matri	х	To	p Prior i ty Hazards	www.Communit			
1-M-L priority for action over the	Short or Long term (and Qngo	ing)				Trible Hillson III	Priority	Time
Y=Vulnerability S=Strength	Location	Ownership	Vone	Floods	Winter Storms	Droughts & Wildfires	H-M-L	Short Lon Ongoing
	Location	Ownership	VOFS					- 0 0
Infrastructural		T-						
					The second second			
		Name and Address of the			The second secon			Sept.
							THE STATE OF	
Societal					•			
	The second second							
							11111111111	11-11-11
			THE RES					
		The second second						
		I Complete to	Search St.		The state of the s	A CONTRACTOR OF THE PARTY OF TH	S STORY NO.	19/11/11
Environmental								
			Name and Address of the Owner,	The second second	Water and the same of the same			
			100				10-10-1	-
	meaning the later to the later to				The state of the s			1300
								The state of the s
The second secon								
							1000	
					KIND OF BUILDING			
					ATESE SERVICE TO			
		22.00						
		I STATE OF LIST OF			THE COLUMN THE CHARLES TO SEE		2 10 10 10	

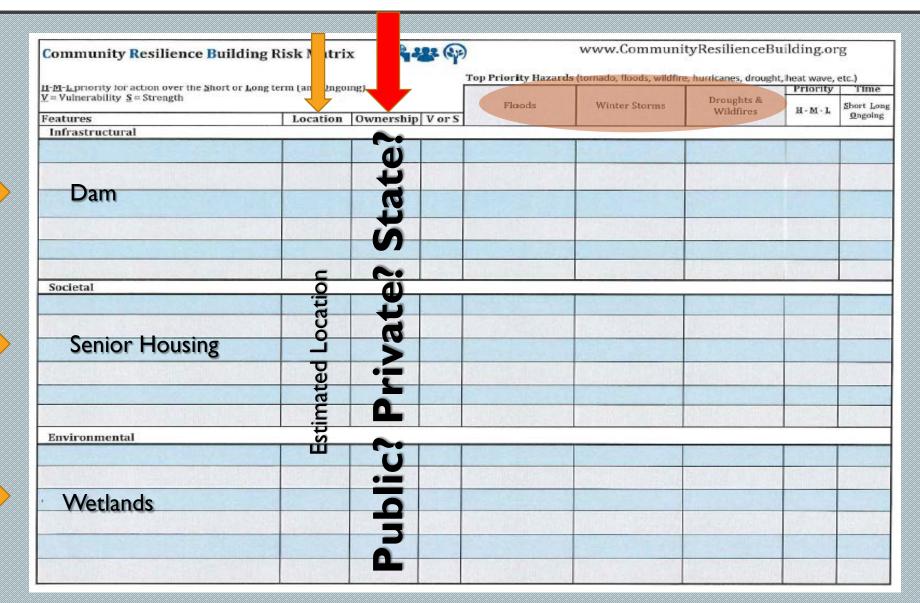




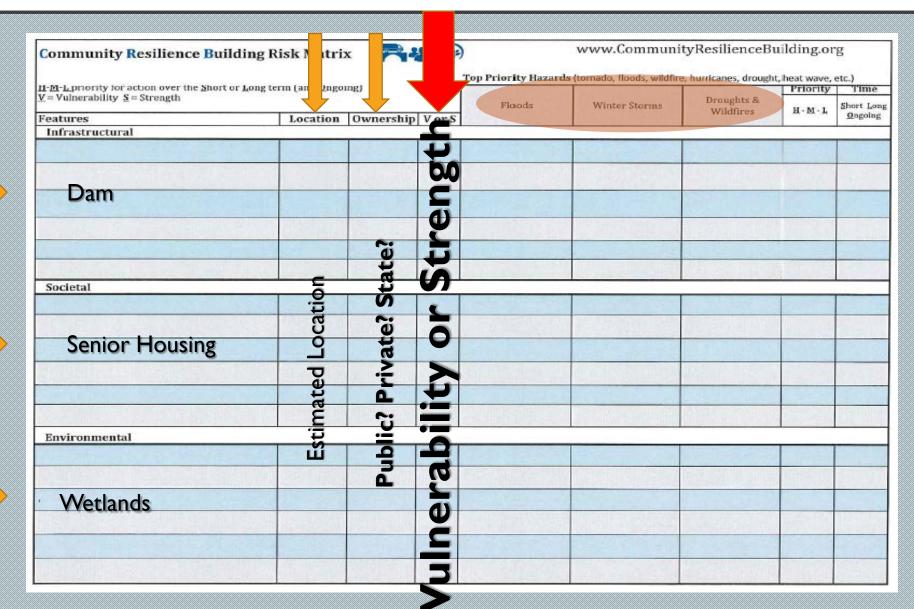














BREAK OUT GROUP: FIRST MEETING

At your table:

- Step I- Fill in top 4 Natural Hazards
- Step 2- Identify key features
 - Infrastructure- Dams
 - Societal- Senior Housing
 - Environmental- Wetlands
 - Where is the Feature Located
 - Identify ownership (Public, Private...)
 - Identify vulnerability, strength or both



QUESTIONS



TIME TO GET TO WORK



NEXT STEPS







Town of North Brookfield

Municipal Vulnerability Preparedness Day 1- Monday, May 4, 2020

9:00 am - 11:30 am; Check-in at 8:30 am

Meeting Link (Click to Join): https://us02web.zoom.us/i/89242407113

Meeting ID: 892 4240 7113

Call in Number (if unable to join online): 1-646-558-8656

Workshop Materials:

https://www.dropbox.com/sh/vgu6a3whftzev13/AAApjpEuzfDtTuSVkXf_TJSMa?dl=0

Workshop Agenda

8:30 am - 9:00 am:

· Login & Familiarize with Zoom

9:00 am - 9:30 am:

- Welcome & Overview
- Questions & Answers

9:30 am - 11:00 am:

- Breakout Groups
 - o Identify Hazards & Local Features
 - o Discuss Strengths & Vulnerabilities

11:00 am - 11:30 am:

- Reconvene as Large Group
- Quick Table Summary
- · Closing Remarks & Wrap Up

Day 1: Workshop Objectives

- Define extreme weather and climate related hazards;
- Identify current and future vulnerabilities and strengths;
- Edit online map with important hazards and features

Homework

- Review hazards, vulnerabilities, and strengths in matrix
- Brainstorm actions to address vulnerabilities

Thank you for participating in North Brookfield's Virtual Community Resilience Building Workshop!







QUESTIONS

NorthBrookfieldMVP@gmail.com



TOWN OF NORTH BROOKFIELD

Municipal Vulnerability Preparedness (MVP)

Community Resilience Building Workshop

May 4 and 6, 2020

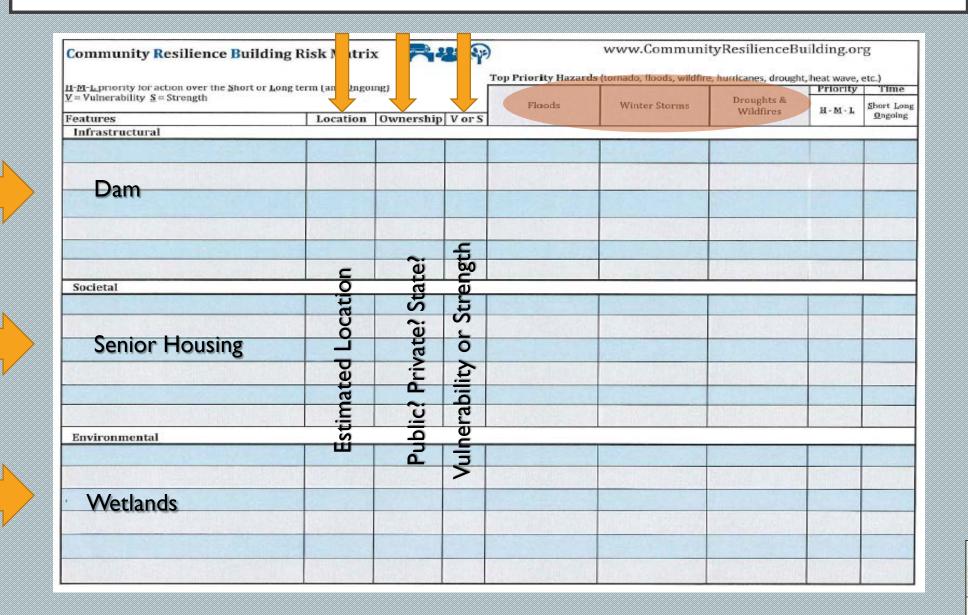


THE MATRIX

Community Resilience	Building Risk Matri	х	To	p Prior i ty Hazards	www.Communit			
1-M-L priority for action over the	Short or Long term (and Qngo	ing)				Trible Hillson III	Priority	Time
Y=Vulnerability S=Strength	Location	Ownership	Vone	Floods	Winter Storms	Droughts & Wildfires	H-M-L	Short Lon Ongoing
	Location	Ownership	VOFS					- 0 0
Infrastructural		T-						
					The second second			
		Name and Address of the			The second secon			Sept.
							THE STATE OF	
Societal					•			
	The second second							
							11111111111	11-11-11
			THE RES					
		The second second						
		I Complete to	Sea market		The state of the s		S STORY NO.	19/11/11
Environmental								
			Name and Address of the Owner,	The second second	Water and the same of the same			
			100				10-10-1	-
	meaning the later to the later to				Tomas Commence			1300
								The state of the s
The second secon								
							1000	
					KIND OF BUILDING			
					ATESE SERVICE TO			
		22.00						
		I STATE OF LIST OF			THE COLUMN THE CHARLES TO SEE		2 10 10 10	

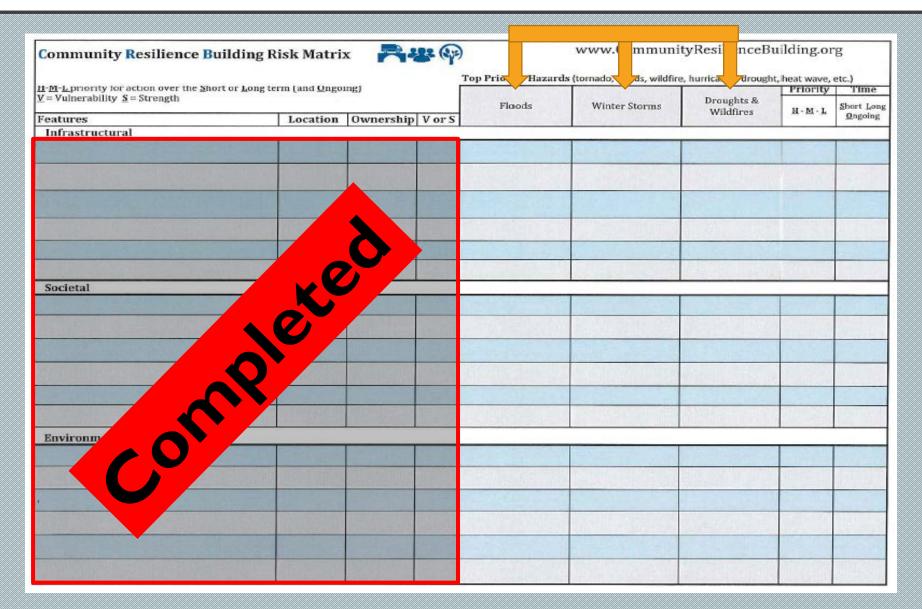


DAY ONE: COMPLETED





STEP THREE: ACTIONS, PRIORITY AND TIMELINE





NATURE BASED SOLUTIONS (LID)

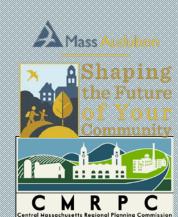
- Natural systems mimic natural processes to absorb and slow runoff and stormwater, and also reduce heat islands.
- Low impact development (LID) designs can be integrated into new development at neighborhood scales and work with traditional approaches





Bioswale between sidewalk and street

Contained bioswale or planter box



MORE EXAMPLES OF LOW IMPACT DEVELOPMENT AND GREEN INFRASTRUCTURE



Green Parking Lots



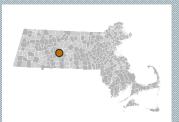
Permeable Paving



Example Action Grant Projects

Nature-Based Flood Protection, Drought Mitigation, Water Quality, and Water Infiltration Techniques

Belchertown



Designing and permitting for a replacement water storage tank that would increase storage capacity and resiliency to drought, and completing a feasibility/ concept design of a rainwater harvesting system at Belchertown High School to irrigate the athletic fields.





ECONOMIC BENEFITS OF LID AND GREEN INFRASTRUCTURE PROJECTS

Aquatic restoration projects in MA, like these natural culverts, are contributing to a growing "restoration economy" by providing jobs and economic output.

Traditional Culvert



Nature Based Culvert







Example Action Grant Projects

Land Acquisition for Resilience

Mattapoisett



Purchasing 120 acres of forest, streams, freshwater wetlands and coastal salt marsh as conservation land to prevent development in vulnerable areas

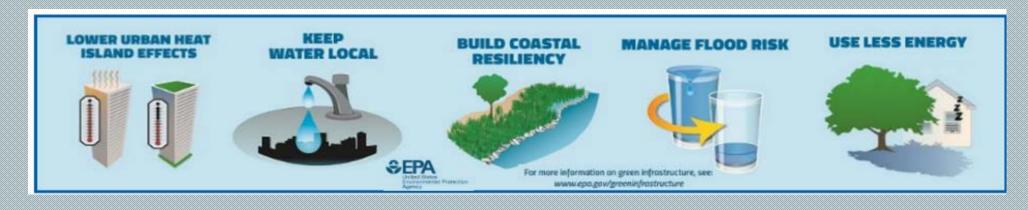




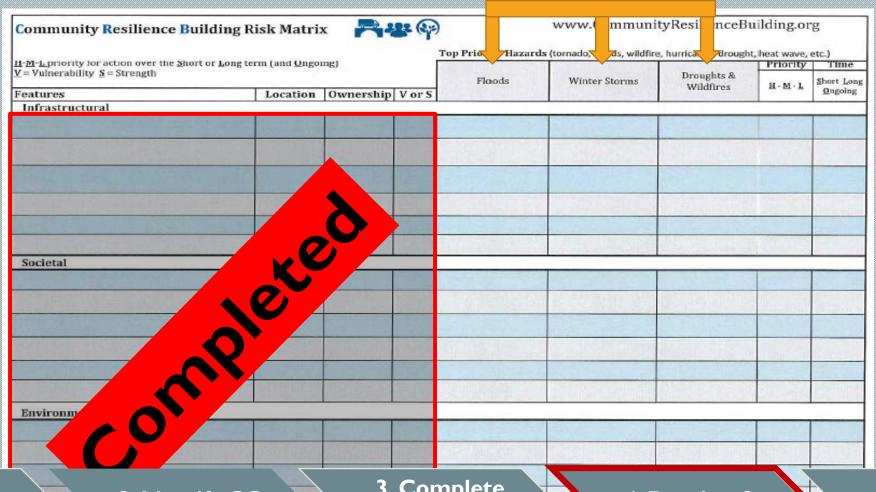
BENEFITS OF GREEN INFRASTRUCTURE AND LID

- Cost Savings
 - Reduced development costs for infrastructure and maintenance
 - Reduced energy costs for residents
- Public Safety
 - Reduced flooding
 - Improved water quality
 - Increased climate change resiliency
 - Reduced urban heat island effect

- Quality of Life
 - Protect and restore natural features for improved aesthetics
- Value
 - Increased property values
- Regulatory
 - Assistance in meeting regulatory requirements



STEP THREE: ACTIONS



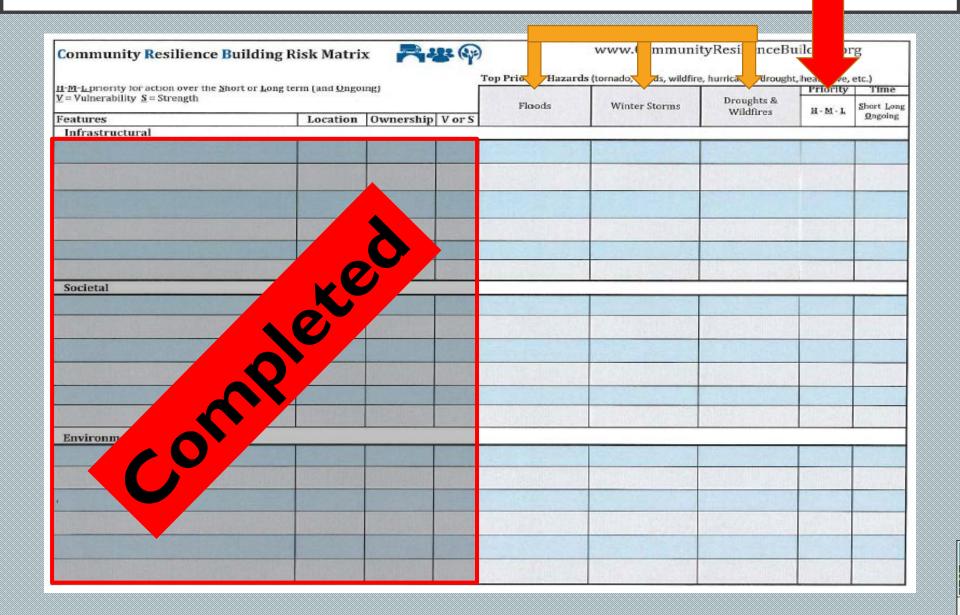
I. Engage Community 2. Identify CC Impacts & Hazards

3. Complete
Assessment of
Vulnerabilities
& Strengths

4. Develop & Prioritize Actions

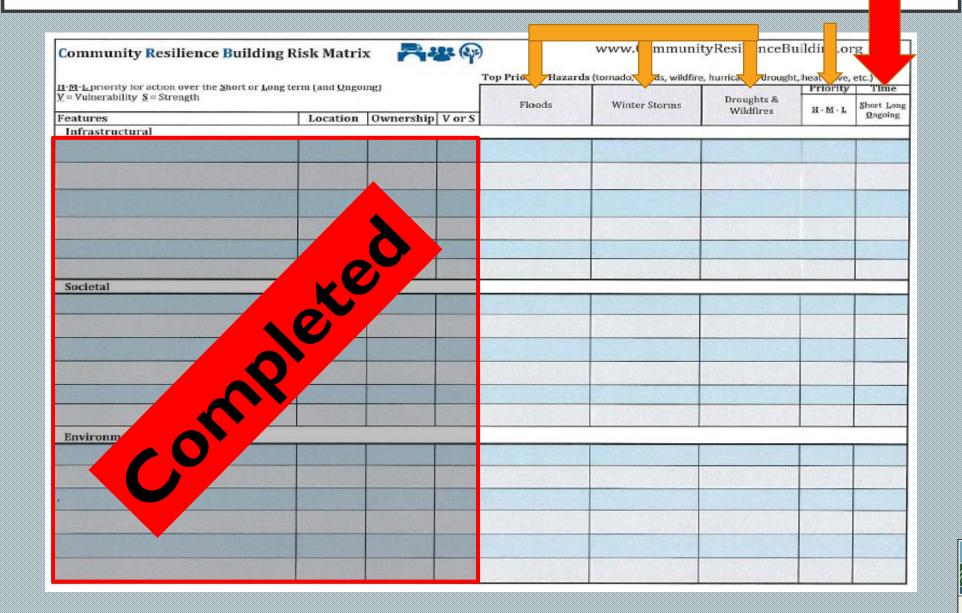
5. Take Action

STEP THREE: PRIORITIES





STEP THREE: TIMELINE





TIME TO GET TO WORK



REPORT OUTS

What did your table find?



SUMMARY DISCUSSION

- Areas of agreement
- Areas of unique perspectives



TIME TO VOTE

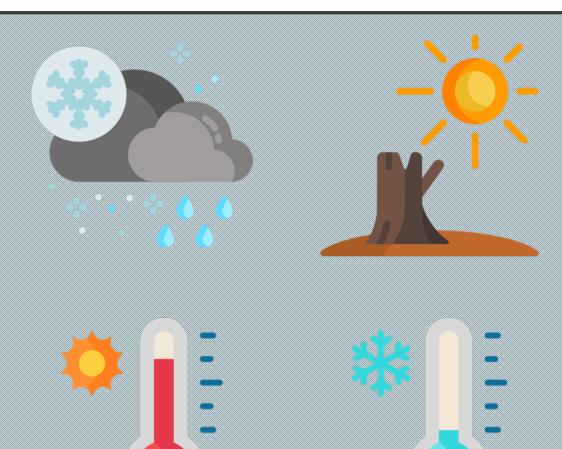
- A survey will be crated after the two meetings are completed
- You will be able to vote for your top five projects



NEXT STEPS

- Vote in survey
- Report development
- Public "Listening" session with Members of the Public and Board of Selectmen Date TBD
- Develop resources and Implement actions through Action Grants

QUESTIONS





CONTACT US

- North Brookfield Core Team Leader
 - Ashley Barre, selectmen@northbrookfield.net
- CMRPC Project Leaders
 - Peter Peloquin, <u>ppeloquin@cmrpc.org</u>
 - Kerrie Salwa, <u>ksalwa@cmrpc.org</u>
 - Executive Office of Energy and Environmental Affairs –
 - Andrew Smith, andrew.b.smith@state.ma.us



THANK YOU

