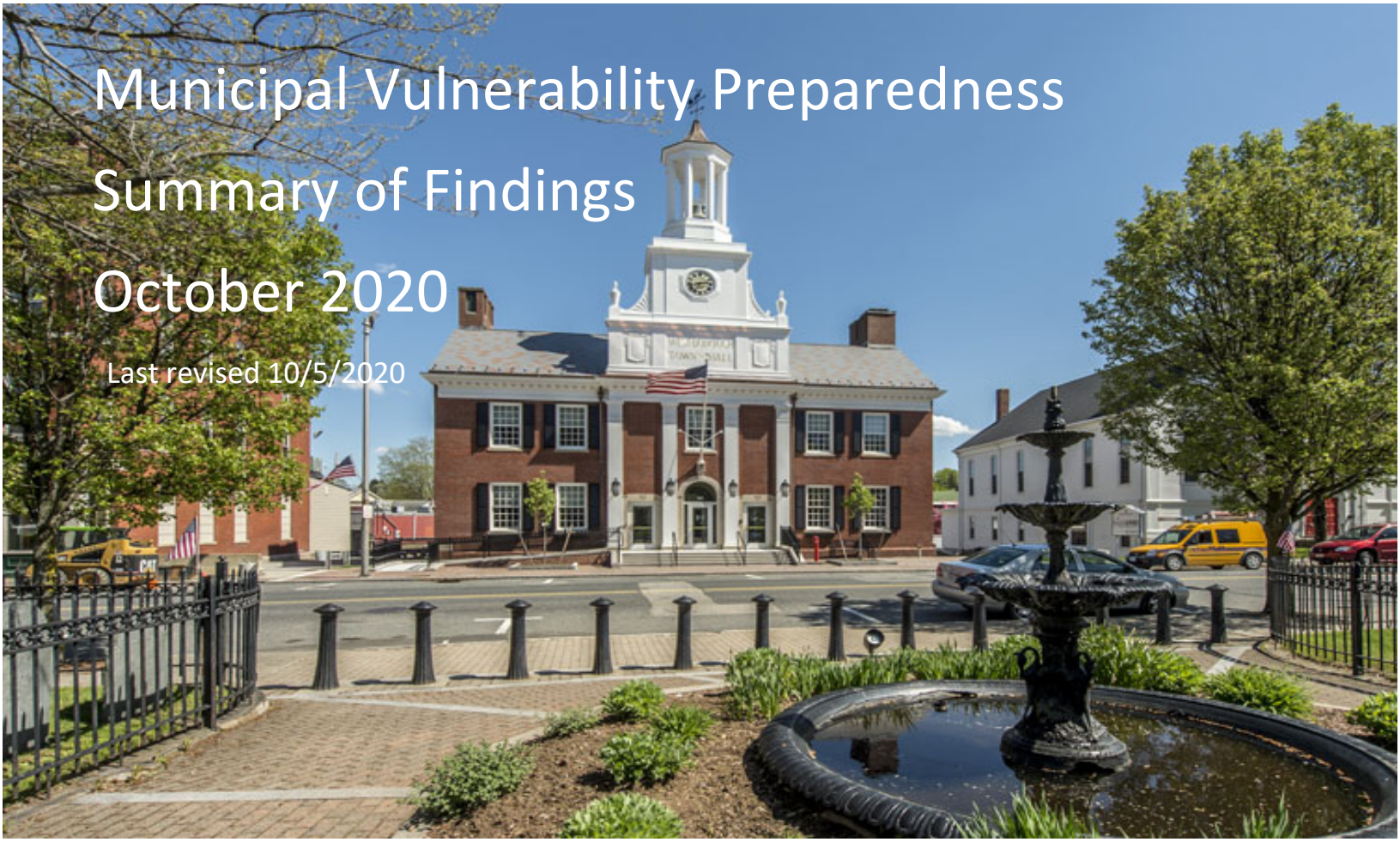
Town of Westborough



Municipal Vulnerability Preparedness

Summary of Findings

October 2020

Last revised 10/5/2020

CMRP C
Central Massachusetts Regional Planning Commission

Executive Office of Energy and Environmental Affairs

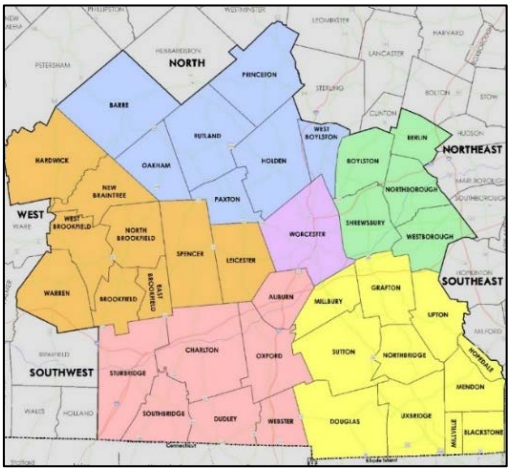
CMRPC Mission

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

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

Our History and Progress

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

EXECUTIVE ORDER 569

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 Westborough 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 Building Workshop was funded by the Executive Office of Energy and Environmental Affairs. This Summary of Findings and CRB Workshop was prepared for the community of Westborough by the Central Massachusetts Regional Planning Commission (CMRPC). Support from the Westborough Board of Selectmen and the town officials was much appreciated, especially for allowing the workshop to take place in the Great Hall, located in the Forbes Municipal Building.

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

Kimberly Foster, Assistant Town Manager, Project lead

Kristi Williams, Town Manager

Jim Robbins, Town Planner

Chris Payant, DPW Director

Derek Saari, Assistant DPW Director

Sheri Widdiss, Interim Conservation Agent

Lisa Allain, Town Engineer

Patrick Purcell, Fire Chief

Jeffery Lourie, Police Chief

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

Peter Peloquin, Associate Planner, CMRPC

Kerrie Salwa, Principal Planner, CMRPC

Mimi Kaplan, Associate Planner, CMRPC

Ian McElwee, Associate Planner, CMRPC

Danielle Marini, Assistant Planner, CMRPC

Hillary King, Regional Coordinator, EOEEA

WESTBOROUGH: A PROFILE

The Town of Westborough, Massachusetts was incorporated in 1717. Westborough is located at the junction of Interstates 90 and 495 some 5 miles east of Worcester and 35 miles west of Boston, serving as a bedroom community for both cities and their larger suburbs. Much of Westborough lies within the Assabet/Sudbury River Basin, except for the extreme southern edge, which lies in the Blackstone River Basin. Westborough is bordered by Northborough on the north, Southborough and Hopkinton on the east, Grafton and Upton on the south, and Shrewsbury on the west. Westborough has a total area of 21.6 square miles and a population of 18,481 (2014 American Community Survey). Westborough is a growing community, though growth is moderating as buildable land becomes scarce following booms in the 1950s-60s and 1990s. According to the CMRPC Long Range Transportation Plan, Mobility 2040, Westborough is expected to experience low to moderate population growth over the next 25 years.

According to the *American Community Survey Westborough Town Report 2018*, the number of residents has grown from 14,133 in the 1990 US Census to the current (2018) estimate of 18,982 residents in the town. The most recent survey of Westborough's geography (2010) concludes a population density of 888.0 people per square mile, and a total area of 20.58 square miles. Approximately 70.4% of the population is White. The median age of residents was 39.0 with 26.5% of the population under the age of 18 and 17.5% of the population over the age of 62. The median household income for the town was $108,767 with 4.2% of the population living below the poverty line.

The Town of Westborough houses an active community through a variety of municipal and communal landscapes. Westborough is home to the Forbes Municipal Building, Town Hall, Fire Station, Senior Center, and a multitude of recreational facilities, including the Westborough Country Club and library. The Westborough Public Library is a social epicenter for senior and adolescent daily programs. The town is home to the Westborough Public Schools including the Armstrong, Fales, and Hastings Elementary Schools.

WORKSHOP SUMMARY

The Town of Westborough's Municipal Vulnerability Preparedness (MVP) workshop was held on Thursday, February 6, 2020 at the Forbes Building. The Town of Westborough had contracted with the Central Massachusetts Regional Planning Commission (CMRPC) 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 Westborough. A small group of Town officials convened on October 21, 2019 to form the 'Core Team' which, together

with CMRPC staff, organized and planned the CRB Workshop over the course of three meetings and three conference calls.

Workshop Invitees and Participants

First Name	Last Name	Affiliation	Attended
Lisa	Allain	DPW – Engineering	Y
Maureen	Amyot	Library	Y
Brian	Antonioli	Department of Public Works	Y
Steve	Baccari	Board of Health	Y
Don	Burn	Westborough Community Land Trust	Y
Alma	Demanche	Senior Center	Y
Peter	Dunbeck	Sustainable Westborough	Y
Leigh	Emery	Board of Selectman	Y
Alison	Field-Juma	Organization for the Assabet River	Y
Kim	Foster	Town of Westborough	Y
Andrew	Keonigsberg	Conservation Commission	Y
Jeff	Lourie	Westborough Police Department	Y
Robert	Moran Jr.	National Grid	Y
Chris	Payant	Department of Public Works	Y
Cara	Presley	Youth & Family Services	Y
Pat	Purcell	Westborough Fire Department	Y
Jim	Robbins	Planning Department	Y
Derek	Saari	Department of Public Works	Y
Mark	Stockman	IT Department	Y
Heena	Suratwala	Westborough Connects	Y
Sheri	Widdiss	Conservation Department	Y
Kristi	Williams	Town of Westborough	Y
Linda	Birch		Y
Kerrie	Salwa	CMRPC	Y
Faye	Rhault	CMRPC	Y
Ian	McElwee	CMRPC	Y
Sarah	Adams	CMRPC	Y
Peter	Peloquin	CMRPC	Y

Core Team and Project Team

Name	Affiliation	Role
Kimberly Foster	Town of Westborough	Assistant Town Manager, Project Lead
Kristi Williams	Town of Westborough	Town Manager
Jim Robbins	Town of Westborough	Town Planner
Chris Payant	DPW	Director
Derek Saari	DPW	Assistant Director
Sheri Widdiss	Town of Westborough	Interim Conservation Agent
Lisa Allain	Town of Westborough	Town Engineer
Patrick Purcell	Town of Westborough	Fire Chief
Jeffery Lourie	Town of Westborough	Police Chief
Peter Peloquin	CMRPC	Associate Planner, Lead Coordinator
Kerrie Salwa	CMRPC	Principal Planner

The Workshop's goal was to identify the four top natural hazards that impact Westborough and develop strategies to enhance the town's resiliency related to climate change. Following the CRB work plan process, CMRPC facilitators and planners gave 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 Westborough, including the top four hazards perceived by the core team.

Upon completion of the presentations, the group discussed the top four hazards that affect Westborough. There was agreement between the Core Team and all participants that--in no particular order—***flooding, wind events, winter storms,*** *and* ***temperatures*** have the greatest effects and potential effects on the Town. Having identified these hazards, workshop attendees were then broken into four groups to work through the CRB program's matrix and mapping exercise. Table facilitators, along with CMRPC staff guided stakeholders in small groups 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.

After lunch, Peter Peloquin presented examples of projects from other municipalities in the state that were funded by MVP Action Grants, providing inspiration for participants to:

- Develop and prioritize actions to reduce or mitigate threats.
- Identify opportunities for collaboration aimed at increasing the town's resilience.

The groups then reconvened to build upon the morning work. The goal of the afternoon breakout session was to identify actionable items to reduce or mitigate the projected impacts

of climate change. Once each table had completely filled out the matrix, all the groups reconvened and the table reporters gave a summary of their findings. The workshop ended with each attendee voting for what they believed to be the top project in the infrastructure, society and environmental categories.

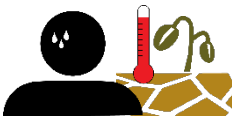
Twenty-Eight (28) people attended the CRB Workshop, including representatives from the town government, emergency services, the MVP Core team, Westborough Community Land Trust, local business owners and National Grid. Members from Westborough's Senior Center acted as scribes, and contributed their perspective.

A public listening session to discuss MVP results and recommendations for future action was held virtually August 18, 2020 as part of a regularly scheduled Board of Selectmen's Meeting. The listening session and Board of Selectmen's meetings were properly advertised across various media and was broadcasted on Westborough's public access channel, Westborough TV.

Top Hazards

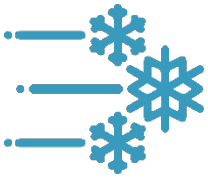
Following the presentations at the beginning of the workshop, a full-group discussion was held for approximately fifteen minutes to determine the top four hazards for breakout groups to further assess solutions. Taking climate change projections, critical infrastructure, and other considerations into account, workshop participants chose to focus on the four following hazards: **flooding, wind events, winter storms,** and **temperatures.**

In 2016, Westborough experienced extreme droughts along with the majority 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.



TEMPERATURES

Increases in projected temperatures pose threats 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.



WINTER STORMS

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

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.

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 Westborough continues to develop. Through the introduction of the MBTA railway system and an intricately designed culvert system, Cedar Swamp has become prone to flooding during storm events. Areas with frequent drainage issues include not only Cedar Swap, but West Main Street and Chauncy Street as well.

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. Safety and efficiency measures, including additional egresses to shelter locations and increased efficiency in emergency communications, may implement proactive strategies to combat winter storms as they become more frequent.

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 may lead to water shortages that will impact the entire town whether or not residents and businesses are on town water or have private 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 Sudbury, Assabet, Concord River Basin, where Westborough is located, projections show an expected increase in precipitation overall, with the greatest increase during winter. The number of days with more than 2" of rainfall, potentially leading to inland flooding, is also expected to increase with the average expected to be close to 15 days by the year 2100 compared with

approximately 10 days now. Consecutive dry days and days above 90 degrees Fahrenheit are expected to increase, leading to drought. Days at the wintery-mix level of cold are also expected to increase, leading to a greater likelihood of freezing rain in the winter. Higher wind in the summer and storm severity increases with warmer temperatures.

SUMMARY OF FINDINGS

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

The Town's public buildings and access to transportation systems were described as strengths, along with the recreation opportunity. Outreach organizations, such as Westborough Connects and the Westborough Interfaith Association, were considered to be an underutilized strength for the town. Due to its central location in town, connection to several water resources, and proximity to the MBTA Commuter Rail, Cedar Swamp was seen as both an area of concern and a strength. Culverts throughout town were considered to be a major vulnerability and a root cause for other concerns. The possibility of creating a coalition to educate and influence state organizations that own and manage culverts in town was discussed with much support from participants.

Another area that was widely seen as a prospect for management was Lake Chauncy and Parke-Davis Brook Watershed. Lake Chauncy is a valuable water resource in town and provides both recreation and cooling opportunity during the hot summer months. Due to the changing climate, Lake Chauncy has experienced a higher frequency of algal blooms and has had to shut down for extended periods of time in order to protect the public health. The Parke-Davis Brook Watershed, located on the northeastern border of Westborough, has been identified as a flood prone area due to poor stormwater management. While developments were underway to solve this issue, ownership conflict halted the process of remediation, leaving the flood hazard unresolved.

Other vulnerable areas mentioned were issues of the overall health and maintenance of the tree canopy, the abundance of beaver and deer populations, and the need for an improved emergency shelter. There was extensive concern regarding access to emergency information and communication systems. Recommendations included increasing the language options available on the Code RED system, and utilizing outreach organizations that already have established connections with hard to reach communities.

There was agreement that the town's water system needed to be upgraded and expanded. Initiating strategies to educate state organizations, private companies, and residents on the impacts of runoff pollution, proper culvert maintenance, and water conservation were widely discussed. It was also recommended that the town establish better water conservation policies and bylaws to ensure that the public water supply is protected during times of drought.

All four tables identified specific vulnerable locations that are already in need of attention and will likely face worsening impacts due to climate change. The areas include Interstate 495, the MBTA Commuter Rail, town-owned culverts, and the town's drinking wells.

Current Concerns and Challenges Presented by Hazards and Climate Change

CMRPC, the MVP planning provider, had the unique advantage of preparing Westborough's Hazard Mitigation Plan (HMP), which was adopted by the Town's Board of Selectmen in February 2017 and was approved by FEMA in February 2017. Meetings with the MVP Core Team prior to the workshop as well as the HMP helped to identify past climate-related events that significantly impacted the Town. Disaster events of concern included frequent major winter storms (as in 2015 and 2018), ice storms (2008), severe rain events (2005, 2010, 2016), tropical storms (Irene, Sandy), infestations of invasive and otherwise undesirable species (Asian Longhorn Beetle, gypsy moths, aquatic invasive species, ticks), and extended periods of drought (2015 to 2016). Westborough has adequate public water coverage and maintains six water supply protection zones. Advisedly, it will be important for the town to maintain a backup and response plan in the event that one or more wells is damaged by drought or storm and cannot be replenished at the prescribed rate of use.

At the workshop, CMRPC staff presented downscaled climate change data provided by Massachusetts's Executive Office of Energy and Environment Affairs (EOEEA) and the Northeast Climate Science Center at the University of Massachusetts, Amherst. Westborough lies mostly within the Sudbury, Assabet, Concord 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 by 9 to 30 days annually; days below freezing will fall from 19 to 38 days annually; annual precipitation will increase 1.2 to 6.3 inches. Seasonal drought conditions will become more frequent as precipitation becomes more concentrated in extreme intensity events and winter snowpack is reduced. Some of the challenges of these projected changes – many of which are already being observed – were discussed in a presentation at the workshop focused on specific hazards in the Westborough area.

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

- Implications associated with climate change will exacerbate problems that are already apparent, and the town lacks the resources to address vulnerabilities comprehensively – flooding and storm water management, vulnerable roads, ecological damage, and vulnerable populations, all within the context of a small community.

- An increase in hot and warm days and decrease in cold days will mean greater need for cooling and less need for heating, especially among vulnerable groups such as children and seniors. 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 – particularly around northeastern and central portions of Westborough where existing wetlands are present.

- 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 areas in Westborough identified by workshop participants during discussion as vulnerable to the hazards discussed include areas adjacent to drinking wells, roadways and railways that induce flooding, and the town's emergency systems ability to inform all community members.

VULNERABLE AREAS

- Water Supply
- Interstate 495
- MBTA Commuter Rail
- Language

Water Supply was identified as a townwide public good threatened by polluted runoff and inefficient flood infrastructure. Flooding during large storm events throughout the town overwhelms current flood infrastructure, allowing for pollutants to enter waterbodies via flood waters. The need for additional groundwater supplies and increased infiltration of current supplies has grown due to increased drought conditions throughout the region.

Cedar Swamp, photo courtesy of Derek Saari, Westborough DPW

Interstate 495 is a major route that runs along the eastern border of Westborough. Along the interstate are a series of culverts that have failed to properly mitigate stormwater. This has led to stormwater runoff that flows into nearby tributaries of Cedar Swamp, a larger tributary to the Westborough Reservoir which is designated as a public water supply reservoir. Pollutant runoff

from interstate 495 threatens the quality of nearby waterbodies and water supply.

MBTA Commuter Rail was addressed unanimously as a threat to the adjacent habitats, particularly surrounding Cedar Swamp. Culvert systems were designated within Cedar Swamp, as well as Kay Street, West Main Street, Chauncy Street, Alen Street, and Chestnut Street. These culverts have not been successful in mitigating flood waters and have been found to create stagnant pools of water which can harbor vector borne illnesses, like EEE.

Language barriers during emergency situations were of particular concern for the majority of the tables. Being able to utilize emergency communication systems for all residents was identified as an issue for non-English speaking communities within Westborough. Reconstructing communication systems, like Code Red, and ensuring accessibility to emergency plans and evacuation routes, with language in mind, is needed to promote the safety of all town residents.

Specific Categories of Concerns and Challenges

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

Infrastructure Concerns:

INFRASTRUCTURE

- Culverts
- Water System
- Municipal Resources

Culverts

Westborough has a number of water resources throughout town such as Chauncy Lake, Cedar Swamp, Crane Swamp, Assabet River, Jackstraw Brook, and Rutters Brook, among others. Many of these waterbodies house culvert systems to mitigate overflow of discharge and floodwaters. Attendees noted that a number of these culverts are not functioning properly, specifically those located at Kay Street, West Main Street, Chauncy Street, Allen Street, Chestnut Street, Morse Street, Upton Road, and Ulman Street. With the increase in annual precipitation in the form of heavier and increasingly frequent storms inundating these natural resources beyond their capacity, the town will be faced with greater flooding. In fact, much of the town consists of low lying or wetland areas already experiencing flooding during heavy rain storms. The increased volume of storm water runoff will render most of the town's culverts inadequate to handle the amount of water. Spillage onto the roads and into developed areas will make streets impassable and cause property damage. And flooding near drinking wells could have negative

Chauncy Street Culvert, photo courtesy of Derek Saari, Westborough DPW

impacts to the public water system. Westborough must undertake additional study and planning to reassess the current culvert systems or implement innovative solutions to replace them.

In addition to these town-owned culverts, participants also discussed culverts that are under private or state ownership. The Massachusetts Bay Transportation Authority (MBTA) owns the commuter rail that runs through Westborough. The culverts along this railroad are not well maintained, especially the culvert located at the intersection of Route 30 which abuts Cedar Swamp. Flooding and runoff pollution from these culverts could have negative impacts to the drainage and water quality of nearby natural resources. Interstate 495 (I-495) is another notable problem area that runs through Westborough and is owned by the Massachusetts Department of Transportation (DOT). The culverts here are also not well maintained, and the flooding and runoff flows to the town's drinking well sites. The town should work to strengthen relations with the MBTA and the DOT as runoff pollution and flooding from these improperly functioning culverts directly impact town resources.

Water System

Attendees at all four tables noted major concerns regarding the Town of Westborough's current water system involving both flooding and drought. Although improvements have been made to increase the efficiency of the water system, groundwater and surface water resources are vulnerable to commercial, residential, agricultural, and industrial activities that occur near those sources. Poorly functioning culverts and dam failure were thought of as a risk to the town's water supply. There is one (1) High Hazard and two (2) Significant Hazard dams in Westborough. The George H. Nichols Multipurpose Dam is designated as a High Hazard dam and is owned by the Massachusetts Department of Conservation and Recreation (DCR). Both the Upper Sandra Pond Reservoir Dam and the Lower Sandra Pond Reservoir Dam are designated as Significant Hazard dams and are town-owned. The Upper and Lower Sandra Pond Dams were noted as a concern by participants. Though the dams were upgraded in 2005-2007, they are in need of a spillway replacement. If these dams fail, it will result in a flooding of the town's drinking well sites. And if these areas flood, groundwater and surface water resources are at risk of being contaminated by runoff pollution. With the projected increases in annual precipitation, the town will be faced with a greater occurrence of these risks.

On the opposite side of the spectrum, there was also concern about water conservation. Westborough lies in the Sudbury-Assabet-Concord River Basin (SuAsCo). The SuAsCo is projected to have a significant increase in the number of consecutive dry days over the next century. While the town has a standard water use policy to preserve water supplies as a preventative measure, these drinking wells are still vulnerable to drought. Additionally, a significant portion of the town's water supply is pulled from ground and surface water resources. The municipal drinking water from these sources goes through the Wastewater Treatment Plant and is discharged into the Assabet River, which exits the town into neighboring regions. Consequently, much of the town's surface and ground recharge waters are being

replenished elsewhere. In either situation, flooding or drought, caused by insufficient recharge, the town's current water system will be unable to provide Westborough's current population. Westborough must research additional groundwater resources, as well as flood and stormwater mitigation strategies.

Municipal Resources

Westborough is fortunate to have a number of facilities, resources, and utilities available throughout town. However, it was noted by several participants that these facilities need significant upgrades. Currently, the town has two options for shelters. The Senior Center, located at 4 Rogers Road, can serve as a shelter in times of crisis, though it lacks showers and backup power. For these reasons, the Senior Center can only be used as a temporary, short-term shelter. Westborough High School, located at 90 W Main Street, can serve a larger capacity of individuals and has showers. It acts as the town's long-term shelter; however, because this results in an interruption of schooling it was not considered a viable option. An upgraded shelter that has an alternative energy source and will not interrupt important town services is needed.

In addition to shelters, the town also has fully staffed Police, Fire, and Public Works departments. However, participants noted that there is a lack of redundancy for these services throughout town. In times of severe weather events, the operation of the police, fire station, and DPW may be limited or entirely interrupted. Equipment may also be vulnerable and unavailable, especially if proper storage options are not available.

Societal Concerns:

Communication

Communication was largely viewed as a barrier between the town and residents. The current communication infrastructure relies on underground copper wiring and above ground power lines. The underground copper wires need to be upgraded and should be replaced with fiber wires to improve functionality and durability. And without a consistent tree trimming program, above ground powerlines are at a risk to fallen trees and debris during winter storms. This risk will only increase with a higher frequency of storm events. Existing cell towers are also vulnerable to windstorms and require vegetation maintenance.

SOCIETAL

- Communication
- Vulnerable Populations
- Preparedness and Prevention
- Rogers Field

In addition to the infrastructural concerns, there was frequent discussion regarding the communication needs of non-English speakers. While Westborough has a Code RED system that distributes emergency notifications, the limited number of language options leaves out a significant portion of the population. English is the only language offered on the system causing

non-English speaking individuals to be more vulnerable in times of disaster. Without the ability to translate an emergency alert, residents will not be able to take precautionary actions.

Vulnerable Populations

Westborough has several groups of people that are at higher risk from the effects of climate change. Senior citizens are among the many vulnerable populations that require more consideration and careful planning. Older residents will feel the effects of climate change more than other citizens in town. Due to their age, they will be more vulnerable to both extreme temperatures and the limited drinking water supply that will accompany drought and hot days. In addition, senior residents are more susceptible to disease, particularly EEE and other insect-borne diseases which will only increase with the changing climate. Senior citizens will be more vulnerable in times of emergency when evacuation is necessary due to their reduced ability to mobilize quickly. There are a number of independent and assisted living communities including the Villages at Walker Meadow, Kindred Transitional Care and Rehab, Whitney Place, Beaumont Rehabilitation and Skilled Nursing, The Willows Retirement Community, and The Highlands Gracious Retirement Living. Several of these facilities are located in close proximity to one another, creating high concentrations of individuals who have either limited mobility or no mobility, and making evacuation even more challenging.

Immigrants and non-English speaking individuals were identified as another vulnerable population in Westborough. Concentrations of non-English speakers were identified in the neighborhood southwest of Hoconmonoco Pond and in the neighborhood off of Route 9 near Indian Meadows. As noted above, Westborough's Code RED system only operates in English, leaving out this portion of the population. Aside from being unable to access emergency notifications, immigrants and non-English speaking individuals may not be able to easily receive or understand education and outreach initiatives from the town. Language and cultural barriers can prevent these residents from accessing information on the risks of wildfires, the harm of insect-borne disease, and the importance of water conservation. Immigrants and non-English speakers might also be apprehensive of government agencies, further limiting their access to key information.

Other vulnerable populations that were discussed during the workshop include low-income residents, those in high density areas, and children. A mobile home park with a low-income population was identified off Route 9 near Chauncy Lake. While mobile homes tend to provide more affordable housing, they are much less secure during wind and flooding events. Projected increases in the number of storms will only worsen these risks. Low-income individuals also might not have access to reliable transportation, making evacuation difficult. A high-density area was identified in the neighborhood near Windsor Ridge Drive off of Route 30. Especially when trying to limit water use during times of drought, high concentrations of people will make conserving resources more challenging. And next to Chauncy Lake, participants identified the Robert F. Kennedy School and the Fay A. Rotenberg School. Both schools are juvenile treatment facilities operated by the Robert F. Kennedy Children's Action Corps. The close proximity of

these schools to Chauncy Lake increases the risks of flooding and mosquito exposure for the children that reside there.

Preparedness and Prevention

Public safety and maintenance education were of high concern for attendees. Participants felt that the residents of Westborough are not well informed to handle emergencies, especially those in the vulnerable populations mentioned above. In general, it was agreed that climate change risks are not well known throughout town. Residents have a minimal understanding of fire hazards and fire prevention techniques. Safety and precaution information regarding insect-borne illness as well as runoff pollution and contamination are also not well understood. Further, there was a strong desire to develop better evacuation and resiliency plans as many residents in town might need assistance during severe climate emergencies.

Maintenance of state-owned properties and structures provide an even more challenging prevention concern. As noted above, the MBTA-owned commuter rail has a variety of culverts that are not functioning properly. Regular maintenance of culverts is important to reduce risks of flooding. It was also noted that the railroad occasionally sparks posing wildfire risks along the forested portions of the rail. Regular debris management is necessary to reduce the fire load and prevent forest fires. Interstate-495 and Interstate-90 also pose a unique ownership challenge. The DOT has ownership over I-495 and I-90, but runoff pollution frequently flows into Westborough's natural resources and drinking water supply. Continued maintenance of culverts and roadways along these routes is necessary to reduce runoff risks. Educational efforts should be made to engage both the MBTA and DOT in consistent management strategies in order to reduce all of these risks.

Rogers and Hennessy Field

Rogers Field is a 47-acre park located on Forest Lane. It is situated near the behind the Senior Center and abuts Cedar Swamp. The field houses a youth baseball and softball field, a baseball field with a 90-foot diamond, a basketball court, soccer fields, a playground, and a gazebo. Rogers Field is within walking distance of the Willows Retirement Community, Cedar Estates, Westboro Knowledge Beginnings day care center, and Hastings Elementary School, providing recreation access to children, elderly residents, and low-income and disabled populations. However, it's close proximity to Cedar Swamp makes the fields more prone to flooding. Participants described that the fields are often underwater and unusable. This hinders recreational opportunities in the town, and specifically hinders recreation to the vulnerable populations that it serves. Additionally, the flooding leads to frequent standing water on and near the fields, putting nearby users at increased mosquito exposure risk. Drainage issues at Rogers Field should be addressed to improve recreational opportunities in town and decrease the risk of insect-borne illness.

Hennessy Field is a 5-acre park located on Upton Road. The field is situated along the Jackstraw Brook and Route 135. The field is home to the Town's youth soccer leagues and a place of active recreation for all of Westborough's residence. However, it's close proximity to Jackstraw

Brook makes the fields more prone to flooding. Participants at the workshop described this as hindrance to recreational opportunities and specifically to the populations that it serves.

Environmental Concerns:

Cedar Swamp

ENVIRONMENTAL

- Cedar Swamp
- Insect-Borne Disease
- Forestry Management
- Nuisance Species
- Water Resource Management

Cedar Swamp is one of the three main wetland habitats in Westborough. It is located within the SuAsCo Watershed at the southeast end of Westborough and covers approximately 1,500 acres. Ownership of Cedar Swamp is shared by the Department of Conservation and Recreation (DCR), the Sudbury Valley of Trustees (SVT), the Town of Westborough, and other private owners. A number of rivers and brooks drain into Cedar Swamp, such as Piccadilly Brook, Whitehall Brook, and Jackstraw Brook, however, this area contains poorly draining soils. Workshop attendees noted that these poorly draining soils accompanied by improperly maintained culverts along I-495, I-90, and the commuter rail have contributed to increased flooding issues in and around Cedar Swamp. This results in a wetland that is not functioning properly and has very limited flood storage control. Rogers Field is directly impacted by the increased flooding at Cedar Swamp and has frequently been unusable due to the amount of standing water on the field. Participants also expressed concerns regarding increase mosquito and insect-borne disease exposure in these areas due to the amount of standing water. Not only is Cedar Swamp a critical resource for flood storage, it is also an important recharge area for two municipal drinking water wells. Runoff from the highways and commuter rail, exacerbated by the improperly maintained culverts, could negatively impact the water quality in these areas and consequently have a disastrous effect on the town's water supply.

Cedar Swamp Culvert, photo courtesy of Derek Saari, Westborough DPW

Insect-Borne Disease

Risk of insect-borne diseases, especially EEE and Lyme disease, will worsen as the climate warms and periods of flood and drought increase. Mosquitos carry EEE and West Nile Virus

(NV). They tend to lay their eggs in and around standing water, so populations of mosquitos will likely increase in times of flooding. Mosquitos are also more aggressive on hot, dry days, and will feed more frequently during those periods, causing greater instances of contracting those diseases. In Massachusetts, deer ticks (*Ixodes scapularis*) can carry Lyme disease. Typically, deer ticks will die out during the cold winter months, controlling the deer tick population and managing the spread of Lyme disease. However, climate change will result in milder and warmer winters, causing fewer disease-carrying ticks to die out during those winter months. With fewer ticks dying, the overall tick population will increase, creating a greater chance of contracting Lyme-disease. Children and senior citizens are more susceptible to the effects of insect-borne diseases, and those living near open water or flood-prone areas could be more exposed to insect-borne diseases. Though education and prevention measures of insect-borne disease should be taught town-wide, areas of particular concern were identified near Cedar Swamp, around Chauncy Lake, near Crane Swamp, and at Rogers Field.

Along with the health risks, outdoor programming has suffered disturbance due to the heightened risk of Eastern Equine Encephalitis (EEE) and state mandated insecticide spraying. Both of these factors have led to the postponement or cancellation of outdoor activities in order to keep residents safe. With a lack of indoor facilities or alternative recreational opportunities, there was a concern that climate change will severely limit recreational programming in town.

Forestry Management

Street trees are a critical tool in managing and mitigating the effects of climate change. They, like their forest counterparts, have the ability to sequester carbon and remove CO2 from the atmosphere. They can also provide shading to houses, people, and infrastructure. While street trees can be helpful in mitigating climate change effects, they can also be vulnerable to them as well. The Town of Westborough has many streets trees that will be at risk as climate change impacts worsen. As winter storms and high wind events increase, dead, dying, and unhealthy trees could be at risk of falling or losing limbs. Fallen trees can cause power outages and roadway hazards. Trimming and monitoring trees on a regular basis can help trees stay healthy longer, however, attendees noted that the Town of Westborough has a limited tree trimming program and does not have a removal-replacement program.

Along with street trees, forested and vegetated lands are also vulnerable to changes in the climate. Each of these areas are at risk from drought and invasive species. Both drought and invasive species can lead to increased fire load and risk of wildfires. With an increase in temperatures and numbers of consecutive hot days, drought, and consequently more wildfires, will be an ongoing hazard. Along with drought, climate change will bring a shift in flora and fauna of the region. Plants and animals that have adapted to warmer and drier climates will increase in Massachusetts, and native species that are better adapted to cooler weather will decrease. When a non-native species invades an area, it can often outcompete the native species. Without a predator to manage population numbers, invasive species can dominate an ecosystem very quickly. This is especially detrimental to forest ecosystems. Attendees noted

the Asian Longhorn Beetle and the Emerald Ash Borer as invasive insect concerns. While these insects typically do not have direct harmful effects to humans, they do have disastrous effects on native tree species in Massachusetts. The Asian Longhorn Beetle prefers to feed on maple, poplar, willow, elm, and birch trees, while the emerald ash borer feeds on ash trees. Trees that are impacted by invasive insects are much more vulnerable to damage during intense storm events as well as drought.

Risks of drought and invasive species were of particular concern due to conflicts with the commuter rail. Attendees noted that the commuter rail bisects a large section of forested and vegetated lands. The railroad sparks frequently, and with minimal ability to access the railroad, the town has limited and challenging firefighting ability when those sparks lead to wildfires. As the MBTA has ownership over the commuter rail, the town is restricted in its debris management and vegetation trimming capacity in that area. Relations between the town and the MBTA should be improved so that these fire hazards can be properly managed or prevented.

Nuisance Species

The Town of Westborough has many woodlands and water resources. As a result, there are also large populations of beavers and deer. While not invasive species, due to both the abundance of resources and lack of natural predators, beaver and deer populations have grown in recent years. Attendees noted that overpopulated deer have been a concern, stating that Westborough's current deer population far exceeds the state's population density recommendation. An even larger concern regarded the presence of beavers and beaver-made dams. Current Massachusetts regulations mostly protect beavers and beaver dams from human interference. As such, it can be difficult to trap beavers or breach dams outside of the trapping season. Beaver dams can often block culverts and cause a backup of stream water that may impact to communities downstream. Especially since climate change should bring more powerful and more frequent storms, risks of increased flooding should these dams break was of even greater concern to attendees.

Water Resource Management

Without consistent management, existing water resources will continue to be vulnerable to the effects of climate change. Lake Chauncy is Westborough's only town beach. It provides outdoor recreation opportunities and can serve as a cooling off location for residents on hot and humid days. Attendees recalled that the Westborough Board of Health issued a public health advisory for cyanobacteria in Lake Chauncy last summer. The algae bloom that occurred was capable of producing toxins that could be dangerous to humans and pets, so as a result, the beach had to be closed for two weeks. Warm temperatures, drought, and intense storms can lead to an increased risk of algal blooms. Toxic blue-green algae prefer warmer water and warmer temperatures prevent water from mixing allowing algae to grow thicker and faster. Algal blooms also absorb sunlight, which makes water warmer and creates even more algal blooms. Alternating periods of drought and intense rain events can create more nutrient runoff into waterbodies that can feed more algal blooms. With the projected increases in the number of

hot days and frequency of drought and flooding events, algae blooms will likely become a more common occurrence. Without effective management strategies, Lake Chauncy could become an unusable resource, limiting recreation and cooling opportunities for residents.

In addition to Lake Chauncy, participants expressed concerns regarding the management of a private pond off of Fox Lane. Historically, this area was a mill site that has since turned into an impoundment. The pond is in horrible condition and consists of many uprooted trees. Increased risks of flooding, mosquitos, and water quality issued were noted to be a concern. As the pond is privately owned, the town is restricted in their management capabilities.

The Parke-Davis Brook Watershed is an area with poor water resource management, particularly with stormwater. Not only is the watershed vulnerable to polluting runoff from nearby roadways, but is a hazard to infrastructure downstream. While there have been developments to produce a stormwater management system, the town has made little headway due conflicts with land ownership surrounding the waterbody. Without a method for remediation, Park-Davis Brook Watershed is at high risk of continued flooding and pollution.

Current Strengths and Assets

Westborough has taken some steps to address natural hazards and climate change over recent years. Public opinion holds that the work town officials have completed over the years, and their plans in the area for the future are a "societal strength" that will protect and strengthen the Westborough community. Perceived environmental strengths focused mainly on the large and diverse number of natural resources that Westborough residents can use and highlight now and in the future.

Infrastructure Strengths:

INFRASTRUCTURE

- Municipal Buildings
- Transit
- Utilities

Municipal Buildings

While some municipal buildings are in need of updates, Westborough has been able to provide a number of services to the community through these facilities. The town of Westborough has a number of schools that provide educational services and afterschool activities for students ranging from Pre-Kindergarten through 12th grade. These schools include Hastings Elementary School (Pre-K, K-3rd grade), Armstrong Elementary School (K – 3rd grade), Fales Elementary School (K – 3rd grade), Mill Pond School (4th – 6th grade), Gibbons Middle School (7th – 8th grade), and Westborough High School (9th – 12th grade). The high school also serves as a shelter in times of emergency. The Westborough Senior Center also can serve as a temporary shelter. Westborough is also fortunate to have a fully staffed and operational Police, Fire, and

Public Works Departments. Even though redundancy is desired for these departments, these three facilities provide a number of public safety services for residents.

Transit

Interstate 495 is considered the "beltway" of the Boston metropolitan area. Cutting through the eastern border of Westborough, Interstate 495 provides Westborough residents to the Cape and Boston. Having major interstate access in Westborough provides a means of direct access to urban centers for commuters for recreational or work related travel.

Just west of Westborough's town center is the access point for the MBTA Rail Line, specifically the Framingham/Worcester Line. This rail line connects Westborough to all other major urban centers and provides alternative commuter transportation. In addition to increased accessibility, the presence of the commuter line promotes the use of public transportation as a mode of sustainability for Westborough.

Utilities

Though coverage and capacity are limited, the Town of Westborough does have many utilities that residents rely on. Westborough's water system is an intricately designed set of six water supply protection zones throughout the town. Each of the protected zones house groundwater wells that supply the nearby neighborhoods. These sources include wells from Chauncy Lake, Otis Street, Indian Meadow, Andrews Street, Morse Street, and Hopkinton Street. Some of the public water supply is also supported by surface waters from Sandra Pond and the Westborough Reservoir. Recent improvements to the water system, as indicated by the 2018 Annual Drinking Water Quality Report, include fire hydrant replacement, the installation of an additional 2,700 feet of water mains which connected the Mass Department of Youth Services to the public water supply, as well as the completion of the leak detection program for water mains throughout Westborough. The town should look to expand the water system and protect existing water wells from runoff pollution and flooding.

In addition to the water system, residents also have access to electricity and cell coverage. There are a few cell towers in town that allow for improved communication. National Grid provides and maintains the electric grid in town. Efforts should be made to manage vegetation around the cell towers and powerlines to protect these services from inclement weather.

Society Strengths:

Senior Population

Westborough's Council on Aging is dedicated to providing social, educational, and recreational programs for the senior community, as well as promoting assistance to senior citizens and their families. These programs and activities are channeled

SOCIETAL

- Senior Population
- Outreach Groups
- Bylaws

through the Westborough Senior Center. The Senior Center offers daily programming for seniors including fitness classes, luncheons, games, crafting classes, outings, and holiday events. Numerous services are provided to aid in senior accessibility to outside resources including transportation to appointments and grocery stores, and residential services. The Council on Aging uses local resources to further engage senior citizens within the community through volunteer opportunities.

Westborough offers several options for senior and assisted living for the town's elderly population. The Willows at Westborough and the Highlands offer independent retirement living facilities with full-service amenities. Whitney Place at Westborough is an assisted living facility that specializes in Alzheimer's care. Whitney Places services include traditional assisted living, memory care, and continuum care to provide proper assistance to each individual as they age. Westborough Country Village is an independent living facility geared toward affordable senior living with maintenance services and community amenities. The Housing Authority also provides a variety of affordable housing options for disabled, special needs, and low-income residents.

Outreach Organizations

While there is a desire to expand communication and unify the town more, there are a number of organizations in Westborough that can serve as a great starting point to reach out to vulnerable populations. Westborough Connects is deeply vested in maintaining and celebrating the diversity and inclusiveness of Westborough. This is supported through community-based events and programs aimed to enhance connectivity between individuals and resources. Westborough Connects is also deeply rooted within other town committees including the Diversity and Inclusion Committee, Programming Committee, and Community Engagement Committee, among others. Under the Westborough Connects outreach umbrella, are a host of volunteer opportunities for community members for all ages.

The Westborough Farmer's Market is a weekly culmination of locally grown and crafted products in Westborough from June through September. Each Thursday local producers and artisans gather at the Congregational Church in Westborough's historic downtown to envelope the Town and surrounding communities in a cultural and agricultural experience unique to Westborough.

Westborough's Food Pantry was established in 1986 by a group of residents. The food pantry is run by a dedicated team of over 60 volunteers. Over 130 families are provided with necessary food items a week and an average of 900 people receive groceries a month. The pantry is stocked through annual food drives, food donations and financial donations.

Westborough Child and Family Services (WCFS) is considered to be a great strength to the Town of Westborough. WCFS provides services ranging from counseling services to family and youth programing. During the workshop, WCFS was considered to be a desirable place to engage Westborough's youth and their families regarding climate resiliency.

Bylaws

Westborough adopted the Massachusetts Non-Zoning Wetlands Protection Bylaw in 2010, later amended in 2012, to protect and administer regulation of activities within wetland zones that may affect the quality of surface and ground water, prevention of pollution and erosion, and agriculture, among others. The bylaw was adopted under the Home Rule Amendment, an amendment under the state constitution, independent of the Wetlands Protection Act. Because of this distinction, all regulation and administration of wetlands under this amendment may be interpreted as stricter than those under the Wetlands Protection Act, due to increased severity of Massachusetts regulation. This has allowed Westborough to preserve and maintain its wetlands to a higher degree and ensure the safety of community recreational areas and water supply.

In addition, Westborough also has a comprehensive stormwater management system under the National Pollution Discharge Elimination System, which was reviewed in July 2019. Westborough was deemed a MS4 community in early 2019 and adheres to the mandates within the MS4 Grant Permit to properly discharge stormwater. Water segments that receive flow from the MS4 discharge include Chauncy Lake, Cedar Swamp, Crane Swamp, Assabet River, and Rutters Brook, among others. Many of these waterbodies receiving from the MS4 house culvert systems to mitigate overflow of discharge and floodwaters.

Environmental Strengths:

ENVIRONMENTAL

- Cedar Swamp
- Recreation Opportunity

Cedar Swamp

Cedar Swamp is a major wetland resource in Westborough covering approximately 1,500 acres. It is an Area of Critical Environmental Concern (ACEC) and was listed on the State Register of Historic Places. Cedar Swamp contains many unique natural resources, such as vernal pools, habitat for Spotted Turtle, host plants for the Hairstreak Butterfly, and Atlantic White Cedar trees. In addition, this wetland area provides opportunities for nature observation and canoeing, and has the potential to provide even more passive recreation.

Recreation Opportunity

The Town of Westborough is dedicated to conserving and preserving lands that provide ecosystem services. Through the Westborough Community Land Trust and Open Space Preservation Committee, the Town continues to focus on lands vulnerable to increasing developmental pressures, particularly those in which ecosystem services may be compromised. These landscapes are often preserved and maintained as passive recreational areas for the community. Some preserved passive recreational lands include Walkup Robinson, Bowman Conservation Area, and Assabet Headwaters Conservation Area. A newer development, under

the Open Space Preservation Committee, is the Charm Bracelet Trail, which is being designed to create linkages between all trails, major waterbodies, and conservation areas throughout the town to provide recreational access points surrounding Westborough and adjacent communities.

Lake Chauncy is a designated wildlife management area and a major recreational hub for Westborough residents. Activities include fishing, boating, swimming, walking, biking, among others. Lake Chauncy provides community access to the public beach and boating ramp for some of these activities.

The Town of Westborough houses numerous recreational areas for youth and adult enjoyment. Some of these areas include the Haskell Recreation Area, Greg's Fields, Lake Chauncy Recreational Area, Rogers Fields, Westborough Country Club, and the fields at Westborough High School. The Westborough Recreation Committee works to preserve and maintain these facilities to promote all age groups to enjoy the recreational amenities provided by the town.

Westborough continually promotes the walkability and bike ability of the town to promote alternative means of transportation and recreation to the community. The Town's Bicycle and Pedestrian Advisory Committee aims to improve conditions in Westborough through the introduction of a rail trail and bicycle community, supported through investments in bicycle and pedestrian amenities. A regional effort is also underway to work with surrounding towns in the development of the Boston Worcester Air Line Trail. The trail would provide a multi-use corridor connecting multiple towns to major urban centers, providing alternative commuter transport and additional recreational opportunities.

Recommendations to Improve Resilience

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

Infrastructure Actions

Replacing and **upgrading culverts** throughout town will be critical in building resilience to increased flooding. Town-owned culverts should be assessed and repaired as needed. It was also recommended that the town strengthens its communication and education with the MBTA to ensure that the culverts along the commuter rail are properly and

INFRASTRUCTURE

- Upgrade Culverts
- Stormwater Management
- Expand Redundancy
- Improve Water Supply

consistently maintained. And, Westborough should form a coalition with surrounding towns in order to engage the DOT developing strategies to prevent highway runoff pollution from entering town water supplies.

Better strategies for **stormwater management** should be utilized. A town-wide drainage study that examines all stormwater management assets including culverts, basins, and dams, should be performed. Additionally, the town should consider mechanisms to recharge ground and surface water supply including a study to identify options for feeding a portion of the clean water discharge from the wastewater treatment plant back into the town's water supply. The spillway at the Sandra Pond Dams should be upgraded, and strategies should be implemented to increase upstream vegetation. Address stormwater management challenges associated with railroad. The drainage and detention systems within the Jackstraw Brook Watershed should also be upgraded. Rain garden should be planted in the center of town to help with stormwater mitigation. And, it was recommended to study the feasibility of enacting a Stormwater Utility Fee. A Stormwater Utility Fee can provide a dedicated source of funding that will address increases in runoff from impervious surfaces and help the town comply with extensive MS4 permit requirements.

As flooding, intense storm events, and other crises become more frequent, **expanding redundancy** of public safety and emergency services will be imperative. A feasibility study was recommended to consider creating additional substations to house Fire Department, Police Department, and DPW equipment in other areas of town. There was also interest in constructing a Community Center that could act as the town's upgraded shelter in times of emergency.

Projected increases in the frequency of drought led participants to view **improving water supply** as a major priority. It was recommended that the town protect existing water resources by reducing runoff pollution from nearby roads and highways. The town should also look to increase the upstream infiltration of drinking well sites to further reduce flooding and runoff risks. In an effort to conserve existing water resources, the town should perform a water meter feasibility study and consider enacting a water conservation bylaw. Conservation efforts should also include investigating alternatives for sustaining and managing water supply resources and studying water supply recharge options. Investing in drinking wells should also be considered to increase access to the water supply.

Societal Actions

With a significant population of non-English speakers, **expanding communication** was viewed as a priority town-wide. Risks to communication infrastructures should be assessed and back-up plans should be created. Existing cell towers and underground copper

SOCIETAL

- Expand Communication
- Improve Access
- Utilize Outreach Network

wires should be upgraded or replaced, and the town should consider moving utility lines underground to protect from weather related damages.

Along with expanding communication, **improving access** was also discussed. It was recommended that a town-wide Language Access Plan be implemented in order to ensure that there is equitable knowledge and access to services, emergency plans, and general town information. The town should work to identify communities where access to housing and transportation is limited and develop resiliency plans to increase those services. And, additional egresses should be created where necessary to expand evacuation and emergency response, especially in heavily forested woods where firefighting ability is hindered.

To help with communication and access improvement efforts, the town should seek to utilize **outreach with the existing networks** in town. Westborough already has a number of community organizations that reach a wide variety of people such as Westborough Connects, the Interfaith Association, the Housing Association, and the farmers market. Strategies should be implemented to work with the organizations to spread important information town-wide.

Environmental Actions

ENVIRONMENTAL

- Invasive and Nuisance Species Management
- Acquire and Protect Land
- Improve Open Space and Recreation

Participants felt that **invasive and nuisance species management** was a priority to address public health and resource protection concerns. To help prevent insect-borne disease and manage the number of mosquitos, the town should look to reduce stagnant water through upgrading culverts and dredging other water resources. Installing bat boxes and chicken flocks can control the population of mosquitos and ticks respectively. Efforts should be made to increase public awareness of insect-borne disease, invasive plants, and invasive invertebrate species. Additionally, it was suggested that beaver deceivers be installed to discourage beavers from damming culverts and streams.

There was a desire to **acquire land and protect existing resources** to help make Westborough more resilient. Conservation land should be purchased and be used to build trails to increase recreation and connectivity. The health of wetlands and waterways should be assessed and managed to prevent water quality issues. And the private pond off of Fox Lane should be purchased, the dam should be removed, and the area should be restored.

While forests and recreation were viewed as strengths in town, Westborough could benefit from further **open space improvements**. Planting public shade trees in the center of town and in recreational areas, as well as installing awnings and gazebos can increase cooling spots during hot and sunny days. Shade trees and a canopy should also be installed at Lake Chauncy

to increase shade access at the public beach. The town should develop a management plan to treat and prevent future algae blooms, and provide education to the public on the harms of algae. And, drainage issues should be addressed in and around Cedar Swamp in order to reduce flooding impacts to Rogers Field.

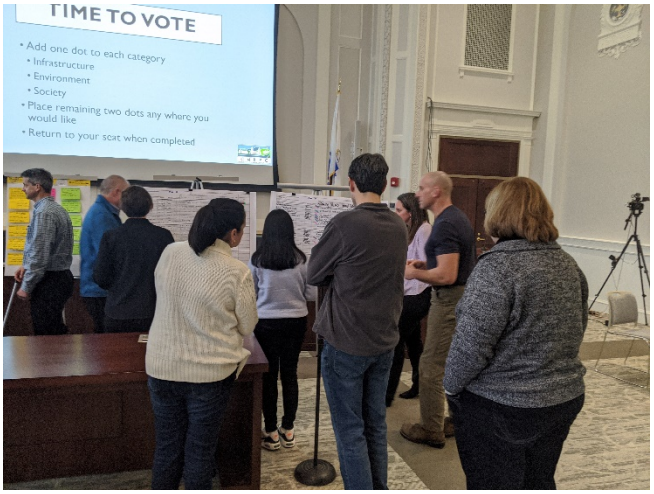
Top Recommendations

Prioritization of recommendations was achieved through four steps: 1) informal discussion at each breakout table during the workshop; 2) voting using stickers placed on the participant's table's CRB matrix (each attendee was given five stickers to select his/her top priority actions, with at least one sticker required to be used for each general topic area); 3) summary's from each table to the full audience to discuss and discern consensus priorities; and 4) final review and reconciliation of duplicate priorities. Several tables mentioned similar concerns and suggested similar ways to address them, but each table had a unique perspective on the challenges Barre faces. These recommendations were organized on a large sheet to enable participants to see the overlap between tables and to learn about suggestions not discussed at their table.

TOP RECOMMENDATIONS

- Repair MBTA Culverts
- Develop Language Access Plan
- Investigate Drinking Well Sites
- Create I-495 Outreach Coalition

The overall top recommendation is to **engage the MBTA** in **repairing and replacing the commuter rail culverts**. Three out of four tables recommended **investigating new water sources** or further protecting existing water supply resources. The top societal action is to create a town-wide **Language Access Plan** to ensure that everyone has access to emergency communication. Other recommended actions agreed upon by the majority include increasing education and prevention strategies of **insect-borne disease**, as well as creating an **I-495 outreach coalition** with other communities along the highway to address runoff pollution concerns with the DOT.



MVP workshop participants voted for their top action items; this helped prioritize items in the final report.

At the end of the workshop, Peter Peloquin thanked attendees for giving their time and attention, and announced several of the actions with the most votes. The following top

recommendations were compiled based on those actions reported out by each table and those actions that participants voted for. Actions are organized by priority and project type.

Public Listening Session Comments

During the August 18, 2020 public listening session, the below comments were received:

- Lake Chauncy was described as an important resource for potable water, natural habitats and recreation. Lake Chauncy must be taken care of and protected.
- Sandra Pond is susceptible to runoff pollution from the Interstate and should be monitored and protected.
- Localized flooding is reoccurring on State owned properties and needs to be addressed.