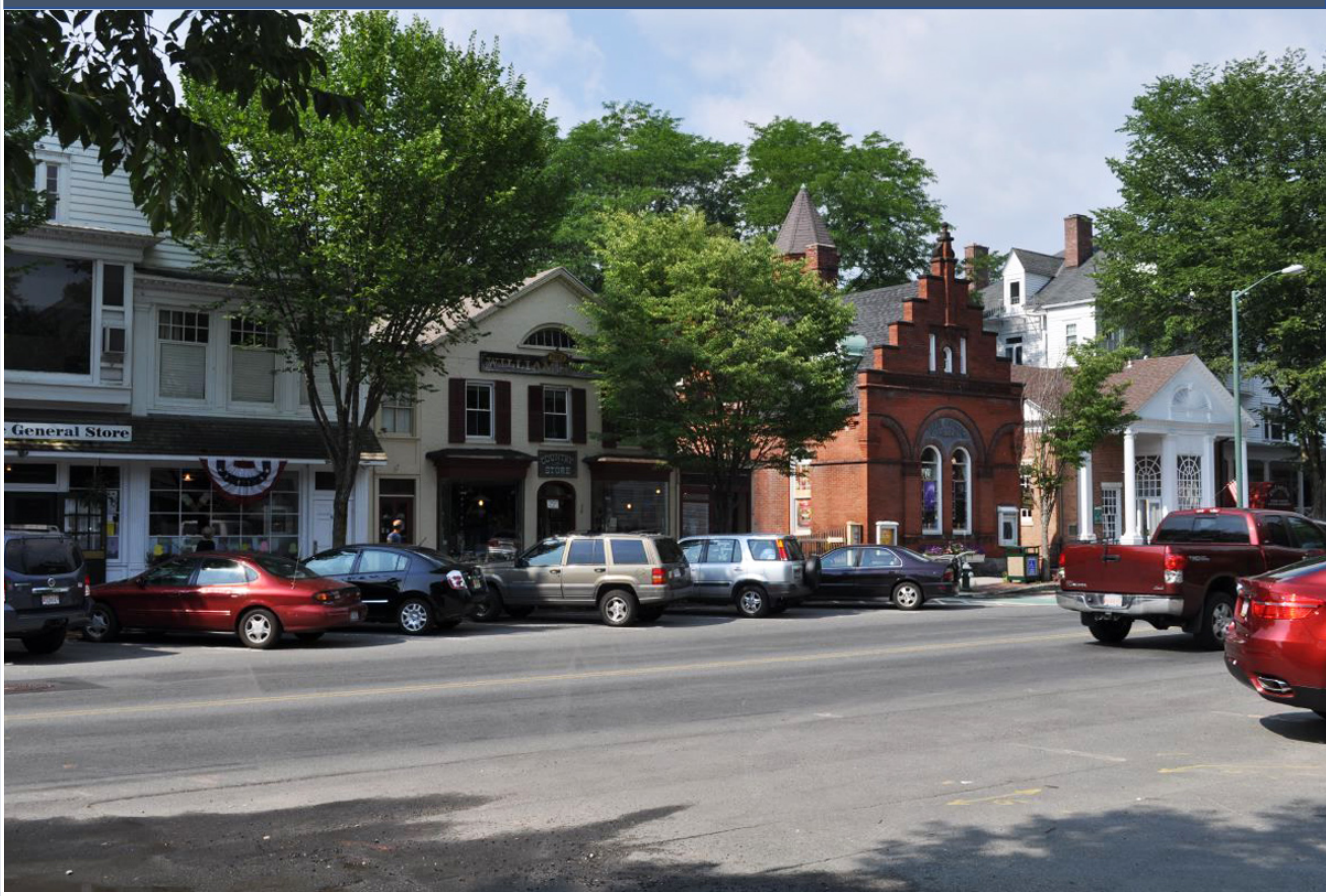
Town of Stockbridge

Community Resilience Building

Summary of Findings

June 2021



Main Street in Stockbridge, MA
Source: Stockbridge Chamber of Commerce

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Findings from the RESILIENT HOUSING INITIATIVE are provided as a companion to this MVP Summary of Findings report and can be found at https://stockbridgemvp.wordpress.com/resilient-housing-initiative/.

EXECUTIVE SUMMARY

In accordance with Executive Order 569, which seeks to build resilience and adapt to the impacts of climate change, the Town of Stockbridge, Massachusetts is pleased to submit this Summary of Findings Report. In 2020, the Town of Stockbridge applied for and received a Municipal Vulnerability Preparedness (MVP) Planning Grant from the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) to complete a vulnerability assessment and action oriented resilience plan (Findings Report). This planning initiative followed the Community Resilience Building (CRB) framework developed by The Nature Conservancy to apply a community-driven workshop process to 1) identify climate-related hazards, 2) identify community strengths and vulnerabilities, and 3) develop solutions to address these considerations. Completion of the CRB process enables the Town to achieve MVP community designation status from the EEA and receive preference for future state grants under the MVP program or other participating funding entities.

COMMUNITY RESILIENCE BUILDING PLANNING AND WORKSHOPS

The CRB process began with the establishment of a Core Team that included community stakeholders comprised of municipal staff, members of community boards and commissions, and representatives of interest groups throughout the community. The Core Team held a strategic planning session on January 6, 2021 and February 3, 2021. Core Team meetings were used to develop a broad understanding of the hazards, vulnerabilities, and strengths that characterize the Town of Stockbridge. The Core Team identified the following goals for the CRB Workshop within the context of community interests and needs:

1. Build resilience by generating awareness of the impacts of climate change on Stockbridge.
2. Identify existing and future strengths and vulnerabilities to changing climate conditions.
3. Develop prioritized actions to lessen hazard impacts and build resilience.
4. Inform future planning/operations/regulatory activities in Stockbridge.

Due to the COVID-19 pandemic and the Massachusetts Non-Essential Business Order and Stay-at-Home Advisory that went into effect on March 24, 2020, Core Team meetings, the CRB Workshop, and the Public Listening Session were held virtually using a Zoom video conferencing platform with phone dial-in option. To increase community engagement, a project website was developed and used to house project information in a central location (https://stockbridgemvp.wordpress.com/). Resources made available on the website included project maps, an interactive GIS community data viewer, recorded video presentations, surveys, and links to useful climate data information provided on the Massachusetts Climate Change Clearinghouse Website, www.resilientma.org. Municipal stakeholders that were unable to attend the Core Team planning meeting were encouraged to provide information through the data collection tools provided on the project website.

The Community Resilience Building Workshop was held on the following three dates: March 15, 2021, March 24, 2021, and March 26, 2021. Each workshop session lasted two hours and included a morning, mid-day and evening option to increase opportunity for participation. Prior to the workshop, registered participants were asked to review project materials on the project website to prepare for the CRB process. 38 community stakeholders from municipal departments, local businesses, non-government

entities, local interest groups, and residents participated in the workshop. A list of workshop attendees is provided at the end of this report.

The CRB Workshop involved a refinement of preliminary planning efforts held during Core Team meetings. This virtual workshop involved presentations provided by BSC Group, Inc. and was followed by smaller, breakout-group discussions relative to infrastructural, societal, and environmental features within the community. In addition to a guided discussion led by meeting facilitators, participants were encouraged to engage with the project website, project mapping, and other applicable project information and provide feedback through the various engagement mechanisms provided to the group (e.g., discussion dialogue, zoom chat feature, online data mapper, project survey, email). Information gathered during these various methods of engagement were compiled and integrated into a Master CRB Risk Matrix. Following the Workshop and the development of a Final CRB Risk Matrix, five key themes were derived from the information gathered as presented within this report findings. Additionally, top Action Items were identified. Workshop participants were asked to vote on the top actions through an online survey. Top priority Action Items were integrated into the Findings Report.

A Public Listening Session was held on April 29, 2021. A recorded presentation and an online survey were provided on the project website following the listening session and the feedback from the community was solicited through this survey for a period of two weeks. Feedback collected through this Public Listening Session was integrated into the Findings Report.

The success of climate resilience planning is contingent upon ongoing participation of community stakeholders. Workshop attendees and other interested stakeholders are encouraged to provide comments, corrections, updates, or additional information of findings transcribed in this report to Michael Canales, Town Administrator at TownAdministrator@stockbridge-ma.gov.

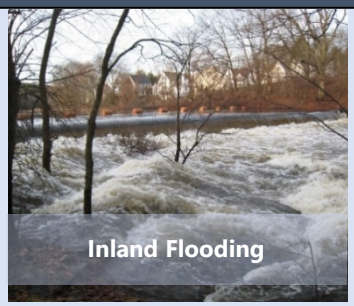
DEFINING HAZARDS

The Town of Stockbridge has several challenges related to establishing resilience to the effects of climate change. Climate change is expected to increase the occurrence and intensity of natural hazard related weather events. For example, the observed amount of precipitation falling in extreme events has increased by 71% in the Northeast from 1958-2012[1]. 16% of the town's land area is floodplain and there have been 31 recorded flood events in the past 20 years[2]. Identifying and preparing for the hazards most prevalent within Stockbridge is the first step to prepare for the effects of climate change. Understanding that climate change challenges how community resources are managed and that the distribution of risk for decision-makers is gradually changing, it is essential to establish planning efforts that prioritize explicit needs of the community.

During the Core Team meetings and CRB Workshop, stakeholders identified the top natural hazards for the Town of Stockbridge. Inland flooding and stormwater management from extreme precipitation events was identified as the top hazard among most participants. Gradually rising temperature was also seen as a persistent threat for the community. Precipitation extremes related to rainfall and drought and severe storms, notably blizzards, ice, hurricanes, and wind, represented the other climate exposure hazards highlighted as significant concerns for the Town.

Collectively, it was agreed upon by the group that the Town of Stockbridge faces not only ongoing, but also cumulative, adverse impacts to the community's most important environmental, societal, and infrastructural resources relative to a changing climate.

TOP HAZARDS WITHIN STOCKBRIDGE



[1] US Global Change Research Program. 2014. Third National Climate Assessment.
[2] Town of Stockbridge Hazard Mitigation Plan. Draft. December 18, 2020.

***Seniors**, who make up a large percentage of town, are vulnerable to climate hazards in Stockbridge.*

*Our **woodlands/forests, wetlands, lakes/ponds, Kampoosa Bog, waterways and habitat** are vulnerable to climate hazards. **Vernal pools** are not well-documented.*

***Cyanobacteria in Stockbridge Bowl** is exacerbated by climate change.*

*Strengthen **town bylaws** for increased environmental protection (trees and water).*

*Establish emergency plans for **Housatonic flooding.***

*Ice Glen and other areas of old-growth forest increase **carbon sequestration**.*

*Remove **invasive species** from wetlands and protect heavily used hiking trails.*

SURVEY SAYS...

As part of the Community Resilience Building engagement process, an online survey was conducted. Stockbridge residents commented on their concerns and priorities related to climate change in the Town of Stockbridge. The quotes on this page paraphrase responses received from the survey.

*Legislate for a serious **reduction in our carbon footprint**.*

***Many town boards and private organizations** are in place and **could potentially address climate change-related concerns**. Many need to open up and be more visible and accessible for the interested public.*

*Conduct a tree inventory with DCR and/or National Grid to identify **hazardous trees.***

*Consider an economic analysis of the cost of **development** to the environment and to taxpayers.*

*We need a stronger connection to **state resources and agencies** that are proactive in **conservation**.*

*Stockbridge has extensive **flood storage areas** along the Housatonic and its tributaries.*

CHARACTERIZING A CLIMATE RESILIENT STOCKBRIDGE: MUNICIPAL VULNERABILITIES AND STRENGTHS

The CRB process involves a robust stakeholder engagement effort and is used to characterize the vulnerabilities and strengths unique to a given community. The Stockbridge CRB process revealed important characteristics that broadly represent the identity and culture of the community. Collectively, these characteristics provide a snapshot of the community's vulnerabilities and strengths and is an important starting point to identify community features most at risk to the effects of climate change.

Valuable Natural and Cultural Resources

Stockbridge has an abundance of important cultural resources that define the character of the community. Many of the town's natural, cultural, and scenic resources, such as the Berkshire Botanical Garden, Tanglewood Trails, Stockbridge Bowl, Bullard Woods, and Ice Glen are inherently connected to support societal benefits such as open space and recreation, economic benefits, tourism, and ecosystem services such as clean water, air, and small-scale agricultural land.

Source: Berkshire Botanical Garden

Many people travel to Stockbridge, and the Berkshires more broadly, for the scenic beauty and recreational activities organized around the natural resources of the region and the community. The conservation and management of these resources for the long-term sustainability of the town remain a priority for residents. Local interest groups, associations, or commissions work collaboratively to "improve the quality of life and the environment in the Town of Stockbridge." The Laurel Hill Association for example maintains over 460 acres of property and recreational trails in conjunction with other local organizations pertaining to community welfare, town beautification, and cultural preservation. Another local organization, the Stockbridge Bowl Association works proactively to manage invasive species and control erosion within the Lake Mahkeenac watershed. The Housatonic River and associated floodplain is also described as among the town's most important natural resources and a source of vulnerability within the community. Notably, the Housatonic River meanders through the downtown area and adjacent to important cultural or recreational resources such as the Stockbridge Town Park, Stockbridge Golf Club, Stockbridge Cemetery, New England Merwin House, Norman Rockwell Museum, and others. While many of these areas are currently situated outside the Housatonic Floodplain,

there is concern among community members that extreme storm and flood events may impact these areas in the future.

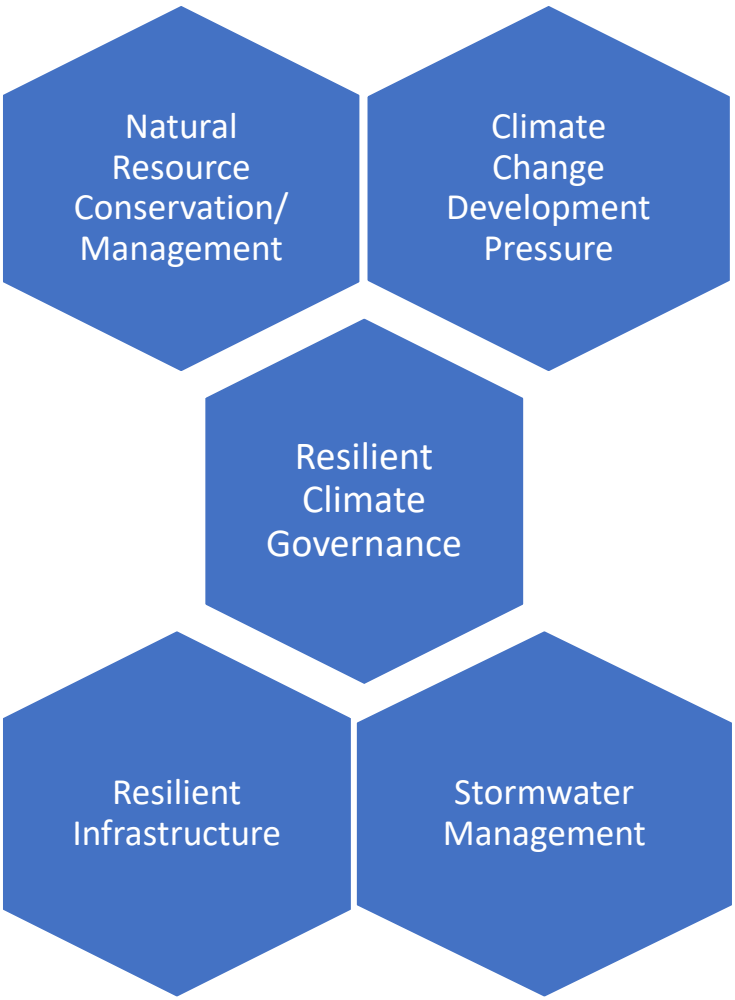
Changing Demographics

The Town of Stockbridge recognizes that changing climate conditions place development pressure on the town's current and future demographic trends characterized by an aging full-time resident population and an increasing abundance of part-time residents (i.e., second-home owners). In response to changing climate conditions in urbanized areas such as New York City or Boston, the potential for climate migration to rural areas within the Berkshires is apparent. Behavior patterns during the Covid-19 pandemic, where people retreated to rural areas seeking to escape cities is a harbinger of future shifts in rural and urban population dynamics. The community is acutely aware of the risk on the community resulting from compounding stressors related to gradual climate changes, an aging population, and income disparities among residents of Stockbridge. Nearly half the town is characterized by residents over the age of 62 and the town's median age is age 60, both significantly higher than percentiles across the rest of Massachusetts.[3] The elderly population within Stockbridge represents the most vulnerable social group within the town often lacking resources needed in a climate emergency such as transportation, electric redundancy, heating or cooling shelters, or cellular service. While social support systems exist across the community, there is a broad understanding that awareness of these resources may be lacking. Additionally, an understanding that a socially cohesive community supports all within town is acknowledged as lacking. Similarly, an abundance of part-time residents leads to uncertainty over long-term efforts to build social capital in the community. Opportunity to address these needs through regulatory mechanisms was noted, for example through proactive amendment to zoning laws. Similarly, residents feel strongly for the need to build social cohesion through robust engagement and community-building initiatives organized around establishing a climate resilient Stockbridge. As an early effort to better understand these issues, this MVP planning process involved a concurrent planning initiative related to resilient housing in Stockbridge. The findings of this planning effort provide additional detail and are provided as an Appendix to this report.

[3] U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

CATEGORIZING CONCERNS AND CHALLENGES

Workshop participants used the CRB process to collaboratively identify action-oriented solutions to address the climate vulnerabilities faced by the Town of Stockbridge. These actions are organized into five categories based on a combination of community characteristics (i.e., strengths and vulnerabilities) and solutions identified by Workshop participants. During the workshops, an emphasis was placed on the interdependence of these categories to allow for the development of climate resilient solutions that span infrastructural, societal, and environmental features. Through this lens, overlapping solutions that provide co-benefits were identified and prioritized.



Natural Resource Conservation/Management

Stockbridge workshop participants identified the town's natural resources as its most important asset building a climate resilient community. In many cases the town's natural resources, open space, and recreational areas are mutually dependent providing ecosystem services such as public health benefits, clean air and drinking water, cultural and aesthetic value, and economic opportunity through tourism. Similarly, unique ecological resources such as old growth forest, floodplain, wetlands, and agricultural land present an important source of climate resilience in an uncertain climate future. As described by a key workshop participant, people come to Stockbridge for its natural resources, cultural heritage, and scenic beauty.

Workshop participants care deeply about how changing climate conditions impact the town's natural resources. An increase of nuisance insect, pest, and animal species such as mosquitos, ticks, Emerald Ash Borer, Hemlock Woody Adelgid, Phragmites, Bittersweet, and Hogweed, each present unique conservation management challenges and risks the long-term sustainability of the town's natural resources and open space.

Natural Resource Conservation/ Management

Stockbridge Bowl

Tree Management

Invasive Plant Species

Invasive Insect Species – Emerald Ash Borer

Woody Adelgid

Water Quality in Reservoir

Housatonic River / Floodplain

Stockbridge Bowl
Source: Chamberednautilus / CC BY-SA 4.0

A significant emphasis was placed on conservation and management of the town's forests. The intersection of scenic roadways, changing tree habitats, and the built environment was an important consideration for workshop participants. Notably, recommendations to build upon the existing capacity in the town to conduct tree/forestry management was commonly discussed, and new ideas around establishing greater capacity to manage trees in the community was a key workshop outcome. Tree management, including the replacement of trees removed within proximity to power lines along roadways was identified as an important area of interest for community members.

Another key workshop outcome was the emphasis placed on residential-scale natural resource conservation and sustainability best management practices. Educational campaigns and regulatory measures were identified as key mechanisms to implement environmentally friendly best management practices at a residential property-scale. The view that residential property-scale best management practices could benefit the greater community was a key finding for workshop attendees. These approaches are particularly important in locations where development is situated within proximity to important natural resources, such as the Stockbridge Bowl. The inclusion of part-time residents in these measures was noted as important.

Climate Change Development Pressure

Workshop participants are acutely aware of the changing development patterns in Stockbridge relative to changing climate conditions. The risk that changing demographics adversely impact long-term resilience planning was emphasized among workshop participants. Stockbridge's significant elderly population and part-time residents (i.e., second-home owners or short-term renters) bring strengths and challenges to developing cohesive approaches to climate resilience. Workshop participants observed that acute events (e.g., Hurricane Sandy, COVID-19) bring people escaping cities into Stockbridge and they anticipate this trend will continue; this puts pressure on existing infrastructure, services, facilities, and community cohesion. Climate extremes place additional burdens on older residents, especially maintaining, heating, and cooling large, older homes. Rapidly rising home prices bring up discussion of new development or changes in zoning to accommodate all levels of the market. ***To address the potential changes related to climate migration or future development pressure in the town, workshop participants agreed that a combination of community engagement, regulatory mechanisms, and an expansion of community social support services were needed to develop a more climate resilient Stockbridge.*** Community building and education campaigns were offered as a solution to develop social ties and resilience among permanent and part-time residents. Incentive programs to support local businesses or healthcare services such as dentist, physician, and pharmacy practices were also identified as a need. Outreach initiatives to increase awareness of local emergency preparedness services such as the local shelter and the town's reverse 911 program were promoted to establish a more climate prepared community. Many workshop participants spoke of expanding participation by younger residents on local boards and committees, as well as other volunteer opportunities such as being volunteer firefighters. As an aging community, many participants commented that jobs and housing are needed to bring young workers into

Climate Change Development Pressure

Elderly Populations

Second Homeowners

Tourism

Business and Economic Impacts

Transient Communities

Aging Housing Stock

Short Term Rentals

Cultural Resources

Social Resilience

Incentive Programs

Source: Red Lion Inn

the town. Also mentioned was expanding the resources and capacity of existing community groups, for example the Council on Aging or Laurel Hill Association. Other groups such as local farmers were identified as a source of education for the community relative to sustainable practices such as eating locally, residential property-scale best management practices, composting, and soil management to support carbon sequestration. Collectively, the group agreed that more social resilience is needed to maintain the distinct and unique character of Stockbridge deep into the 21st century.

Stormwater Management

Stormwater Management

Bridges

Culverts

Route 7

Lake Averic

Housatonic River

Residential Property-Scale Best Management Practices

Managed municipal stormwater infrastructure in Stockbridge is characterized by an interdependent network of roads, bridges, dams, constructed stormwater drainage systems, and natural "country drainage". The town's water supply reservoir at Lake Averic and the Housatonic River are also key features of the town's hydrology, and directly affect the town's approach to stormwater management. The Housatonic River for example, was described by a workshop participant, as the town's greatest source of strength and its biggest source of vulnerability. Workshop participants expressed that while an abundant supply of fresh water exists in Stockbridge - serving as a key source of climate resilience - the abundance of freshwater also presents many risks for residents and visitors to the community. The town emphasized the importance of identifying funding sources to repair damaged municipal infrastructure such as roadways and undersized bridges but placed most emphasis on addressing the network of aging, damaged and undersized culverts. Workshop participants placed a key emphasis on developing regional coordination efforts with adjacent communities with the understanding that upstream and downstream natural resource management directly impacts Stockbridge. Community engagement campaigns were discussed to raise the awareness of stormwater best management practices. Many stakeholders expressed an interest to promote residential property-scale approaches to stormwater management and infiltration as opposed to letting it "runoff". Continuing to address concerns of nutrient loading within Stockbridge Bowl was frequently mentioned to avoid algal blooms, beach and business closures, and to maintain the important recreational value of the lake. Educational campaigns were recommended for homeowners relative to lawn care best management practices.

Resilient Infrastructure

Stockbridge has an active Town government that continues to address infrastructure vulnerabilities; however, some remain. The Town recently completed flood mitigation improvements at the Town Offices and Police Station. These were designed with expansion capacity to support future climate adaptation. The four Interlaken Bridges have fallen into various states of disrepair over time and are all currently closed. These bridges are important to local commerce, as they provide access to Tanglewood, and serve as evacuation routes. At the time of this report, repairs are currently underway on two of the bridges and the town is seeking funding for a third. Town staff report that Lake Averic, Stockbridge's public water source, has proven more resilient than reservoirs in nearby communities even during droughts and the town maintains a robust emergency action plan for the reservoir. Still, CRB workshop members acknowledged that changing population and more severe droughts could place pressure on the reservoir in the future. Several key infrastructure buildings, including the wastewater treatment plant and highway garage, are in the floodplain and are potentially vulnerable to flooding or becoming isolated by flooded roads.

Resilient Infrastructure

Electric Utility

Bridges

Route 7

Lake Averic

Wastewater Treatment Plant

Drinking Water Plant

Highway Garage

Park Street Pump Station

Lastly, Stockbridge is impacted by frequent and long duration power outages. This was identified as the top priority vulnerability by workshop participants. Utilities are generally not buried in Stockbridge and fallen trees and limbs cause considerable damage after severe storms and wind events. When the power is out in Stockbridge, residents who would otherwise rely on home internet for communication are left to rely on cell phone service which is poor in many areas of town. This creates isolation, especially for the most vulnerable. Additionally, town water is not available in all parts of the town so many residents, estimated at 50% of town residences, use private wells and are left without water during power outages.

Resilient Climate Governance - Integrative/Collaborative Land Use Planning

The Town of Stockbridge places an emphasis on developing climate resilient solutions that provide co-benefits for the municipality. Co-benefits within the context of climate change can be defined as a set of solutions that address multiple challenges presented by extreme weather events or changing climate conditions. Stockbridge emphasized the importance of establishing a collaborative and integrated governance system that draws upon municipal departments, local organizations, residents, business owners, and other interested stakeholders to develop comprehensive planning approaches to addressing the community's vulnerability to climate change. Additionally, the town emphasized the importance of drawing upon the climate resilience planning efforts of other communities within the Berkshires that face similar challenges to Stockbridge, such as land use development pressure, aging infrastructure, valuable natural resources, or socially vulnerable groups such as elderly or low-income populations. The Town of Stockbridge has a well-established municipal governance structure that collaboratively focuses on the town's environmental, cultural, and recreational resources. However workshop participants sought to see a greater emphasis on social networks across the community to support co-benefits. Coordination with the local farming community was mentioned to disseminate important information to residents throughout town and create an increased sense of social capital. Similarly, service providers within the community such as residential contractors were identified as a source of disseminating information. A significant emphasis was placed on the role of regulatory mechanisms such as local zoning or conservation/planning bylaws to protect the town's most important natural and cultural resources, while also accommodating changing demographics within the community including the need for more diverse housing for low-to-moderate income residents and increasing interest in second homes and vacation properties in town.

Resilient Climate Governance

Regulatory Mechanisms that Promote Co-Benefits

Land Conservation

Regional Collaboration

Renewable Energy

Community Education

Social Capital

Zoning

Bylaws

PRIORITIES FOR ACTION

Climate Resilience Actions to address identified concerns were prioritized through workshop activities and coordination with Core Team leadership. These Climate Resilience Actions are organized by High Priority, Medium Priority, and Low Priority Actions. The top 3 priorities identified by workshop participants are **bolded.** Priorities from the Resilient Housing Initiative, an expanded scope project undertaken along with the CRB process, are identified with the initials **"[RHI]."**

High Priority Actions

Category	Action
Natural Resource Conservation/Management	Develop a regional strategy to deal with related climate extremes, notably flooding/flood management. Establish a community education/outreach program to inform residents of the risks faced by climate change. Educate residents on single property scale best management practices relative to nature-based solutions, green infrastructure, sustainability, carbon mitigation/sequestration.
	Protect recreational areas and make them more accessible to all. Consider creating additional recreational facilities.
	Consider a messaging campaign and/or community events centered around the strengths and vulnerability of part-time and full-time residents in town. Consider applying the lens of natural resource protection as a way to bring the community closer and develop a distinct sense of social capital among all residents.
	Study/identify unique, rare, and endangered natural habitats and prioritize for protection. This is a regional issue that could be worked on with other communities.
	Consider utilizing the town's Agricultural and Forestry Commission ensuring they consider tree management through the lens of climate change. Consider these efforts in conjunction with open space management, water quality management, invasive species management, and town open space recreation plans. Complete Forest Management Plan on town owned tracks and encourage private landowners to do the same.
	While Stockbridge community members are generally aware about the risks related to tick and mosquito-borne illness, measures to further educate the community and tourists of these risks were recommended. Action to address the invasive insect species impacting the town's forests should be immediately addressed.

	Conduct an educational campaign for residents regarding resident scale sustainability best management practices to prevent algal blooms on bodies of water. Resolve conflicts in approaches to lake water quality so that homeowners, community, environment, public recreation, and economic drivers are all considered. Encourage nature-based solutions on residential properties surrounding Stockbridge bowl and other water bodies including additional vegetation planting and maintaining appropriate buffers along the banks of the lake.
	Collaborate with local partners who undertake invasive species management to address Phragmites stand in Kampoosa bog. Consider conducting a vulnerability assessment of the area surrounding the bog and identify nature-based solutions that may be used to mitigate for climate stressors such as stormwater runoff.
	Continue to support various groups (e.g., Laurel Hill Association, Stockbridge Land Trust, Berkshire Natural Resources Council, Appalachian Mountain Club) within the community to manage natural, open, and recreational space within Stockbridge. Identify open spaces/areas of town where people would like to recreate and support organizations that would like to manage them. Identify funding sources for these groups and draw upon the local knowledge of community members to support these initiatives.
Climate Change Development Pressure	Identify grant funding sources to support ongoing training for emergency responders relative to changing/more challenging climate impacts. Purchase equipment necessary to support these preparedness efforts. Improved emergency communication systems are necessary to address changing climate extremes. Consider a community-wide outreach/engagement initiative to increase the awareness of the town's emergency resources such as reverse 911/Code Red or emergency shelters. Consider options to generate interest in emergency preparedness and response for younger people in the community.
	The town should proactively consider what changing demographic conditions may look like in the future and plan for these changes through regulatory mechanisms bylaws, zoning, and renewable energy siting.
	Share information and initiate conversations about the strengths and vulnerabilities of part time and full-time residents. The town should engage in public education that puts climate resilience, notably the preservation of natural resources, open space, and recreational areas, at the center of its planning goals. Messaging focused on the collective outcomes of the entire community in response to climate change should be emphasized.
	Improve sheltering capability and resources including transportation to shelter. Town sheltering capacity is limited/unknown.
	[RHI] Leverage and create mobility options to support aging in place. Activities can include exploring expanded uses of the Council on Aging van and services, as well as ensuring that community land use planning improves older-adult mobility.

	[RHI] Complete a housing production plan to understand housing needs in the community and develop a strategy for providing a diverse supply of housing that meets current and projected needs including for older residents, younger individuals and families looking to enter the market, and those providing essential services to the community.
Resilient Climate Governance	Increase community awareness of the shelter. Explore coordinating with private groups to provide emergency shelter.
	Increase diverse representation on town boards and committees, especially with younger people who will be dealing with the more severe effects of climate change. Develop ways to encourage people to participate and address challenges to participating (e.g., obligations to young children, work, etc.). Show people that they are qualified, and their voice is needed.
	At the municipal level, consider the development of bylaws that account for various types of integrated water management and co-benefits. At the public level, develop educational outreach initiatives that may include: flyers, pamphlets for handouts, welcome package for new residents or renters/vacationers, social media campaigns, etc. to support the implementation of residential property-scale water quality best management practices. Leverage education in schools for community applications (e.g., Monument Mountain High School taught about homeowner use of pesticides - how to bring that out of the classroom); collaborate with Housatonic Valley Association and Mass Audubon, Berkshire Botanical Gardens for education and outreach. Draw upon the institutional knowledge of long-time residents relative to changing climate conditions in the community.
	[RHI] Educate community members on housing resilience and available resources. Possible education topics include: tree care and management for homeowners, solar/renewable energy and weatherization programs, exploration of the tension point between preserving community character and facilitating change, climate migration, and education and tools for local boards and committees regarding housing.
	[RHI] Implement an Accessory Dwelling Unit bylaw and allow ADUs in all residential districts.
Resilient Infrastructure	**All sources of extreme weather events place a burden on electric transmission. Coordinate with National Grid to identify best management practices. For example, recovery time practices and tree maintenance/replacement to improve redundancy. Conduct tree inventory and develop follow-up action plan in town to address frequency of power outages. Develop a community outreach program to support awareness of resources within the community during power outages. Consider program to distribute and/or install hand-pumps to support residents who rely on private wells.**
	Seek funding for and complete Interlaken bridge repairs. Consider climate resilience in the design of these bridges.

Stormwater Management	There are many community resources on Larrywaug Brook subject to flood impacts including the transfer station, the wastewater treatment plant, and Pine Woods affordable housing. Conduct a vulnerability assessment of the Larrywaug Brook and surrounding areas; identify climate resilient solutions to address flooding.
	Conduct flood assessment/analysis at known locations of flooding especially within proximity of vulnerable roadway infrastructure. Identify sources of funding to address flood risk and stormwater infrastructure improvements.
	Look at nature-based solutions upstream of culverts that can impact culvert function. Prioritize management around Route 7 and downstream impacts. Address beaver issues. Culvert under Hawthorne St. is an important wildlife crossing. Study and implement best approach to managing large volume of runoff into Stockbridge Bowl and adjacent Lily Brook Pond. Initiate culvert prioritization assessment with eventual renovation of high priority culverts. Upgrade and expand existing stormwater infrastructure. Where nature-based solutions are not feasible, consider extending town stormwater infrastructure to these locations. Assess opportunity for nature-based solutions/green infrastructure where stormwater infrastructure is not feasible/practical.
	Improve stormwater management infrastructure where practical/feasible to protect water quality. Consider the use of nature-based solutions or green infrastructure. Conduct a community outreach program to increase community awareness of best management practices. Identify opportunity to fund green infrastructure management projects to increase community climate resilience.
	Conduct an inventory of previous hydrogeological studies of the area to inform current town staff, board/commission members, and determine if others are necessary to better understand Stockbridge bowl, Lake Averic, Calcarious Fens area and the impacts of changing precipitation and stormwater.

Medium Priority Actions

Category	Action
Natural Resource Conservation/Management	Identify areas where loss of roadside vegetation may be occurring. Address invasive species in these areas including a review of roadside maintenance practices that may affect spread of invasives. Utilize the town's Agriculture and Forestry Commission to assist.
	Consider exploring changes to zoning/building codes that would address or minimize erosion in ecologically sensitive areas. Consider a community outreach/education campaign that raises awareness of the public of

	the importance of residential property scale best management practices to mitigate this problem. Prioritize acquisition of conservation land to strategically benefit these areas.
	Coordination with homeowners, including full-time and part-time residents and vacation property managers, is essential to promote residential ecologically sustainable best management practices. Develop education/ outreach materials to support general awareness.
	Conduct a community-wide education campaign relative to the benefits of small-scale farming; include resident-scale composting, native plants, gardening, and vegetation management. Utilize the town's Agricultural and Forestry Commission to champion these efforts.
Climate Change Development Pressure	Evidence suggest climate stressors may lead to or require that people relocate (permanently or through 2nd home ownership) to the Berkshire region to escape climate risk and extreme weather events in other places - such as extreme heat in urban areas. This was observed after Hurricane Sandy, as an example. Consider assessing the impact of climate migration to evaluate the risk or opportunities related to changing land use development and population changes within Stockbridge or the Berkshire region more broadly. This assessment should consider impacts to the economy, public infrastructure, housing, social resources, demographics and natural resources. Identify how to engage new residents in identifying problems and developing solutions for climate impacts.
	[RHI] Plan for demographic changes including those due to climate migration to proactively minimize anticipated challenges such as those related to housing and infrastructure while creating the conditions that support desired changes such as attracting individuals who can provide essential health, safety, and property services.
	Conduct a community outreach effort to educate the public about dirt road best management practices. Coordinate with DPW on these outreach efforts. Promote vegetated/revegetation of roadside shoulders along dirt roads. Maintain stormwater infrastructure.
	Conduct a septic vs. municipal sewer assessment, involve Board of Health in this assessment.
	Identify where seniors live and those who may live in vulnerable areas. Provide or develop amenities (playgrounds, community gardens). Provide services to vulnerable populations (snow removal, salting, etc.) during and after severe weather events. Explore options to provide transportation for vulnerable populations and tourists. Draw upon Council on Aging resources to further support senior needs through additional funding. Develop a community outreach/education plan to create a network of resources for seniors such as a daily wellness call or access to affordable home contractors.
	Assess how to improve cell coverage in town. Assess areas/groups of greatest vulnerability.

	Attract medical professionals/services with incentives. Evaluate incentive programs available in MA. Explore options to provide transportation for vulnerable populations and tourists. Coordinate with nearby communities such as Lee, Lenox, and Great Barrington to develop regional resources.
	[RHI] Reframe "affordable housing" to include moderate-income households to nurture support for changes to land use/zoning regulations and the provision of incentives that will increase the supply and availability of desired housing.
Resilient Climate Governance	Explore opportunities to strengthen and leverage existing networks and services (e.g., Council on Aging, Faith-based organization) to support community resilience against climate hazards.
	[RHI] Adopt a property tax deferral program that would permit homeowners over 65 years of age who conform to income guidelines to defer payment of property taxes freeing up money for homeowners to pay for utilities, make home improvements, or meet other needs.
Resilient Infrastructure	Coordinate with National Grid to better understand the vulnerabilities of the Route 7/South Street Bridge relative to Stockbridge and the region. Conduct an assessment to better understand vulnerabilities relative to ice jams. Evaluate mitigation strategies (e.g. infrastructure hardening) to protect this bridge from ice jam damage.
	Assess how to store precipitation runoff if not absorbed during severe rain events, to support the health of Stockbridge Reservoir.
	Conduct an assessment of the three town dams or draw upon previous assessments. Assess potential risk to downstream flooding (people and properties). Notify individuals within risk prone areas.
	Assess climate change impacts at Heaton Court and Pine Woods and identify actions to address vulnerabilities.
	Encourage backup power sources for cultural institutions/collection owners. Support condition monitoring/ maintenance of historic structures and homes. Consider using CPA funds to protect vulnerable collections. Engage National Grid on power resumption timeline. Consider backup energy generation options at vulnerable locations.
	[RHI] Provide/promote incentives for including clean and renewable energy in new construction and major rehabilitations.
Stormwater Management	Maintain conveyance system at Town Offices and Police Station. Identify grant funding opportunities to support future stormwater system management improvements.
	Evaluate areas where flood risk has become increasingly prominent. Conduct hydrologic assessments on these areas and consider the use of green infrastructure or nature-based solutions to mitigate persistent flood risk.

Low Priority Actions

Category	Action
Natural Resource Conservation/Management	While an established approach to dealing with Zebra mussels in Stockbridge Bowl has been implemented, it is important to continue to raise awareness about the ongoing and persistent threat of invasive species inhabiting the Bowl. Continue to support financial and governance mechanisms to control zebra mussels in the Bowl. Strongly discourage boat launchings anywhere on the lake other than the boat launch facility where boats are monitored and inspected for zebra mussels.
Climate Change Development Pressure	Provide awareness of and increase availability of options to provide energy-efficient heating and cooling (heat pumps, solar panels) to low-income residents. Encourage use of clothes lines. Care for shared commons (recreation, etc.) - increase access to shared resources. Assess and address issues related to food access and transportation.
Resilient Climate Governance	**[RHI]** Adopt a "Visitability" ordinance for new construction that requires basic accessibility features such as zero step entry, doors with 32 inches of clear passage space, and a first-floor accessible bathroom. "Visitability" builds basic accessibility into new construction and make homes safer for people as they age, for those with temporary disabilities, and for people in different stages of life.
	[RHI] Adopt an empty homes tax with revenue invested in affordable housing initiatives.
Resilient Infrastructure	none
Stormwater Management	none

Workshop Participant List

Abigale Fredsall	High School Student
Alison Dixon	Housatonic Valley Association
Andrea Lindsay	Stockbridge Housing Authority
Anthony Campetti	Town Municipal Sewer Dept.
Barbara Zanetti	Stockbridge Chamber of Commerce
Bill Vogt	Planning Board
Brian Cruey	The Trustees
Bruce Peeples	Tanglewood
Carrieanne Petrik	MVP Regional Coordinator
Charlie Kenny	Board of Health
Chris Marsden	Emergency Management Director
Christine Rasmussen	Planning Board member not representative
Darrell G. Fennelly	Stockbridge Police Department
Denny Alsop	Resident
Fallyn Davis	Boston Symphony Orchestra
Hilary Somers Deely	Laurel Hill Association
Hugh Page	Stockbridge Highway
Jamie Chadwin	Camp Mahkeenac
Jessica Toro	Stockbridge Land Trust
June Wolfe	Construct Inc.
Kate Fletcher	Stockbridge Planning Board
Laura Dubester	Stockbridge Green Communities Committee
Laurie Norton Moffatt	Norman Rockwell Museum
Lisa Bozzuto	Austen Riggs Center
Mathieu Boudreau	Woven Roots Farm
Michael Vogt	Stockbridge Housing Authority
Michael Buffoni	Town of Stockbridge Water & Sewer Works
Mike Canales	Town Administrator, Stockbridge
Nancy Socha	Stockbridge Planning Board
Patricia Flinn	Resident, Laurel Hill Association
Patrick White	Stockbridge, Town of
Richard Seltzer	Stockbridge Bowl Association
Rick Wilcox	Local History
Ross Jolly	BSO/Tanglewood
Roxanne McCaffrey	Town of Stockbridge
Shelby Marshall	Resident
Teresa O'Brient	Williams and Sons
Tom Stokes	Pricing Carbon Initiative; Stockbridge Green Communities Committee

Citation

Town of Stockbridge (2021). *Community Resilience Building Workshop*, Summary of Findings. Town of Stockbridge and BSC Group, Inc. Stockbridge, Massachusetts.

MVP Core Team Working Group

Michael Canales	Town Administrator
Laura Dubester	Green Communities Chair
Patrick White	Select Board
Ron Brouker	Conservation Commission Chairman
Brent Damrow	Congregational Church
Andrea Lindsay	Stockbridge Housing Authority
Theresa O'Brient	Business owner
Barbara Zanetti	Chamber of Commerce
Chris Marsden	Emergency Management Director
Hugh Page	Highway Department
Tony Campetti	Sewer & Water
Mike Buffoni	Sewer & Water
Chief Vincent Garofoli	Fire Department
Chief Darrell Fennelly	Police Department
Dr. Charles Kenny	Board of Health
Hilary Deely	Laurel Hill Association
Richard Seltzer	Stockbridge Bowl Association
Martin Mahoney	Norman Rockwell Museum
Brian Cruey	The Trustees of Reservations
Father Sam	The Marian Fathers/Shrine of Divine Mercy
Jess Toro	Stockbridge Land Trust
Bill Vogt	Planning Board
Jim Wilusz	TriTown Health Department
Joanne Derose	National Grid
Carrieanne Petrik	MVP Regional Coordinator

Workshop Facilitators

Katie Kemen	BSC Group, Inc.
Jeanette R. Tozer	BSC Group, Inc.
Jeffrey T. Malloy	BSC Group, Inc

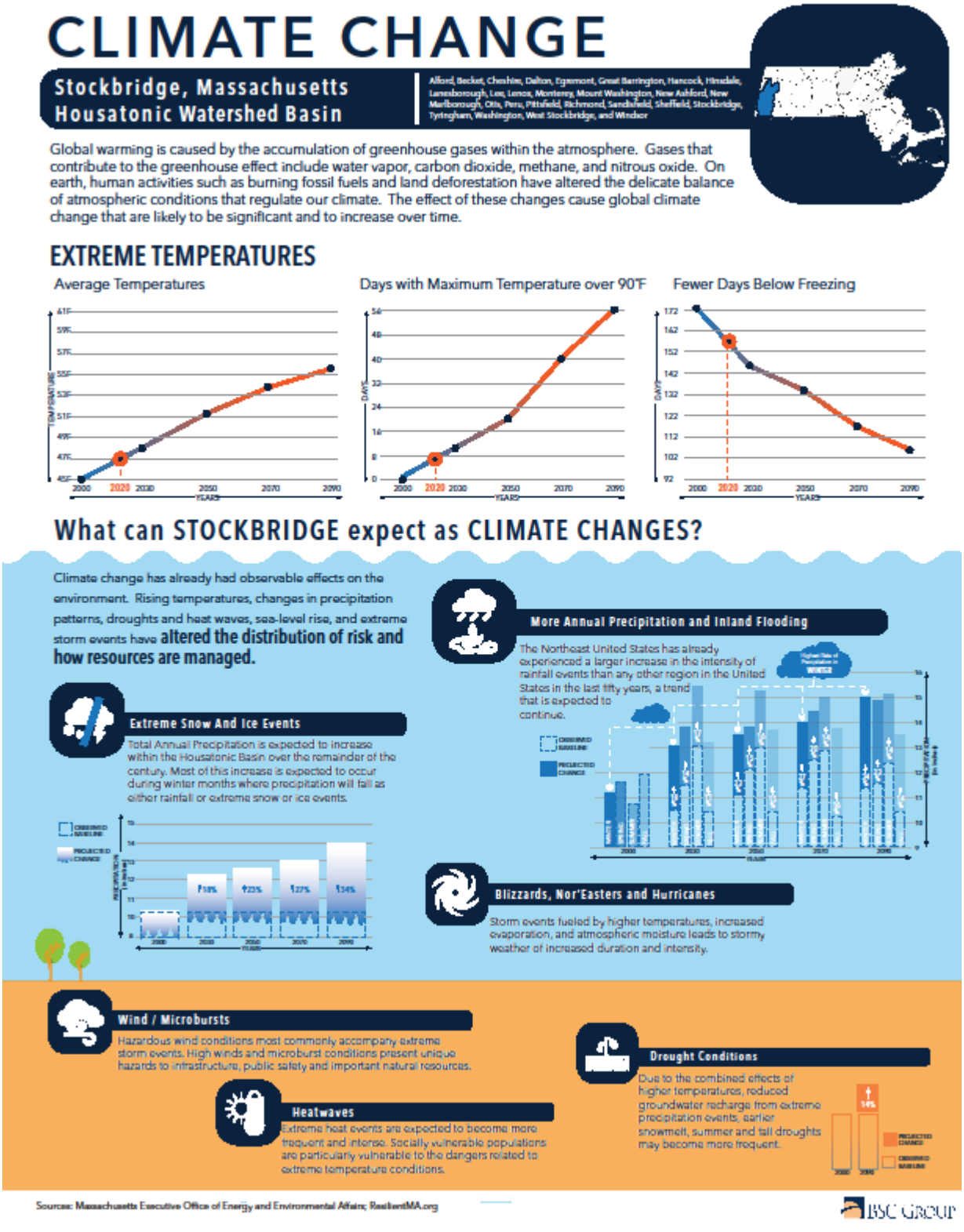
Acknowledgements

This project was made possible through funding from the Massachusetts Executive Office of Energy and Environmental Affairs' Municipal Vulnerability Preparedness (MVP) Grant Program. Thank you for providing the leadership and funds to support this process. The Town of Stockbridge values your partnership.

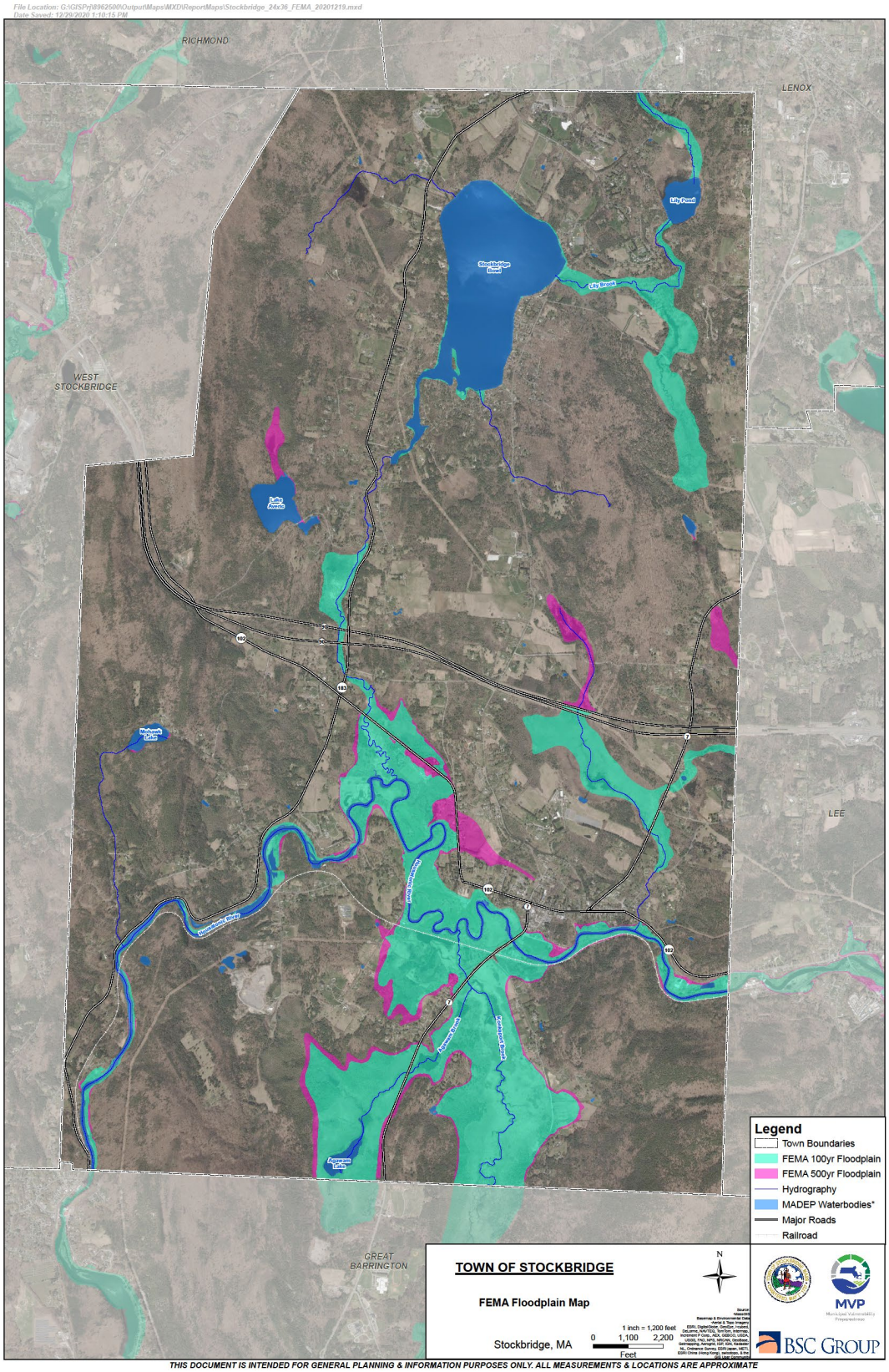
Thank you to the community leaders within Stockbridge who attended the Stockbridge Community Resilience Building Workshops. The institutional knowledge provided by workshop participants was essential to the success of this process.

Thank you to Carrieanne Petrik, EEA Regional MVP Coordinator, for procedural guidance through this planning process.

APPENDIX 1: CLIMATE CHANGE INFOGRAPHIC



APPENDIX 2: STOCKBRIDGE FEMA FLOODPLAIN MAP



APPENDIX 3: WORKSHOP PRESENTATION SLIDES

Workshop participant pre-read materials: https://stockbridgemvp.wordpress.com/mvp-workshop/

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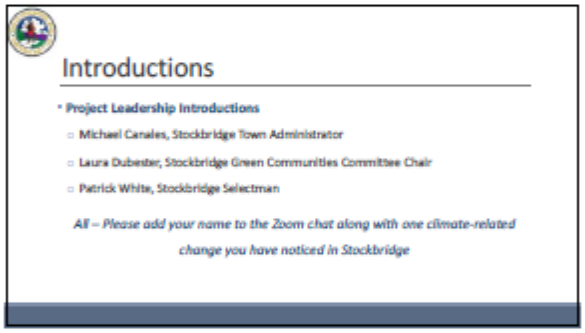

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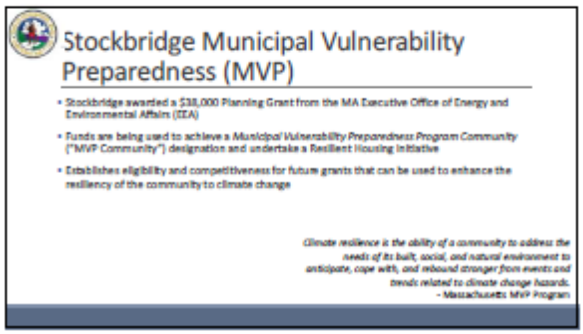

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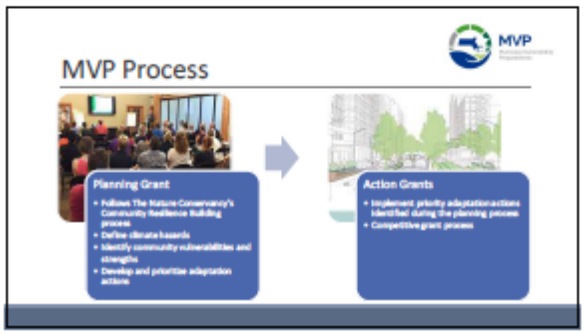

6

From Designation to Implementation

- Planning, Assessments, and Regulatory Updates
- Nature-based Solutions for Ecological and Public Health
- Resilient Redesigns and Retrofits for Critical Facilities and Infrastructure

7

MVP Action Grants

- Detailed Vulnerability and Risk Assessments (Further Planning)
- Community Outreach and Education
- Local Bylaws/Ordinances, Plans, and Other Management Measures
- Redesigns and Retrofits
- Nature-Based Flood Protection, Drought Prevention, Water Quality, and Water Infiltration Techniques
- Nature-Based Solutions to Reduce Vulnerability to Climate Change Impacts
- Land Acquisition to Achieve Resiliency Objectives
- Ecological Restoration and Habitat Management to Increase Resiliency

8

MVP Core Principles

Furthering community identified priority actions | Proactive solutions | Employing Nature-Based Solutions

Improving outcomes for and supporting strong partnerships with Environmental Justice and Climate Vulnerable populations | Conducting robust community engagement | Achieving broad and multiple community benefits

Committing to monitoring project success and maintaining the project into the future | Utilizing regional solutions toward regional benefit | Pursuing innovative, transferable approaches

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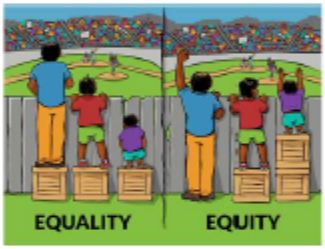

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Equity

Equity in Process	Equity in Outcomes
• Involve community members/organizations from the start • Include Community Liaisons in the project and budget • Identify how stakeholder feedback will be considered, incorporated, and reported out to the community • Build in trainings on anti-racism, equity, and justice for the project core team and stakeholders • Strive to continually improve access	Implement policies and programs that adapt to climate impacts while: • Dismantling barriers to access • Increasing equity • And investing in historically marginalized communities Leads to more resilient and just society

MVP Environmental Justice & Equity Toolkit: https://resilientma.org/mvp/content.html?toolkit=justice

11

Nature-Based Solutions

Nature-Based Solutions use natural systems, mimic natural processes, or work in tandem with traditional approaches to address natural hazards like flooding, erosion, drought, and heat islands.

Green Infrastructure

Low Impact Development (LID)

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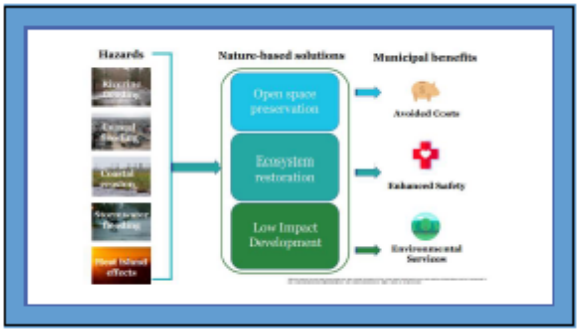

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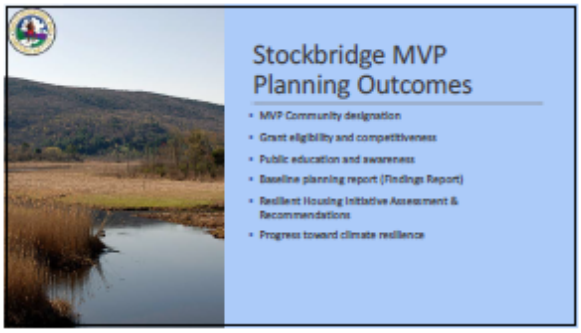

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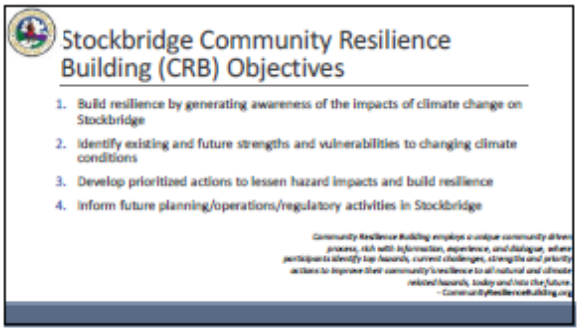

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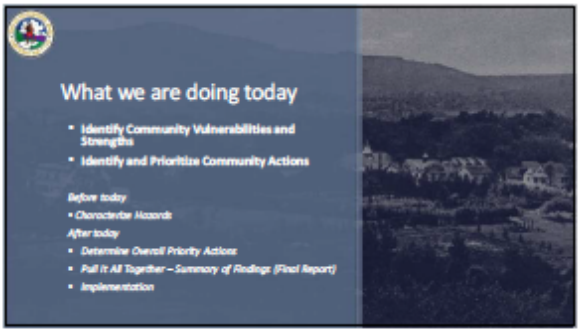

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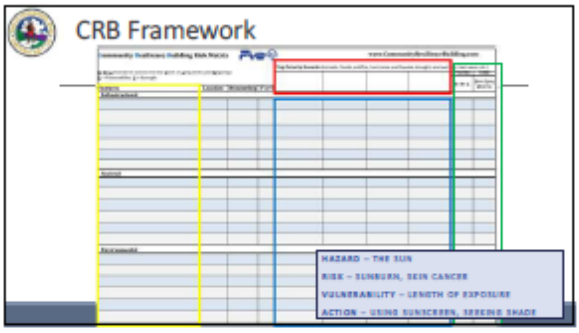

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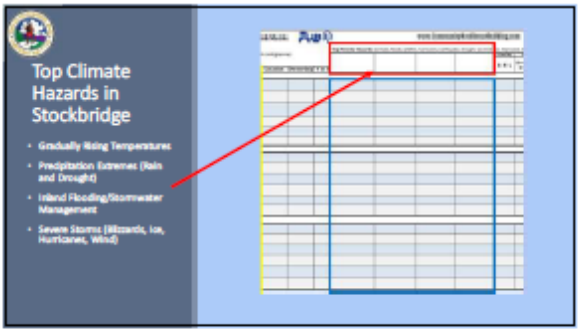

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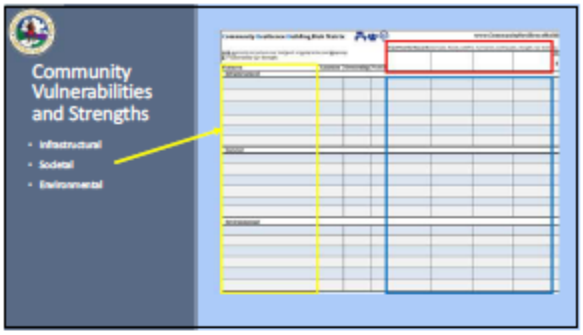

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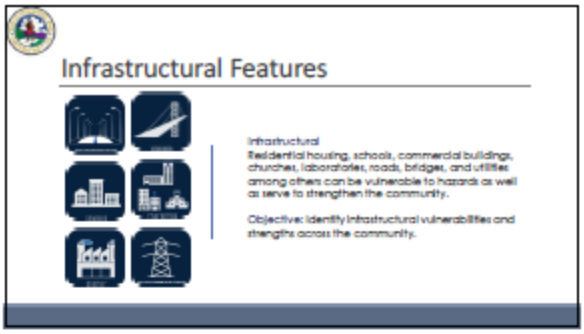

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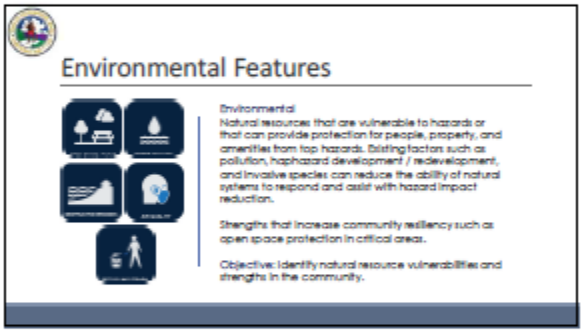

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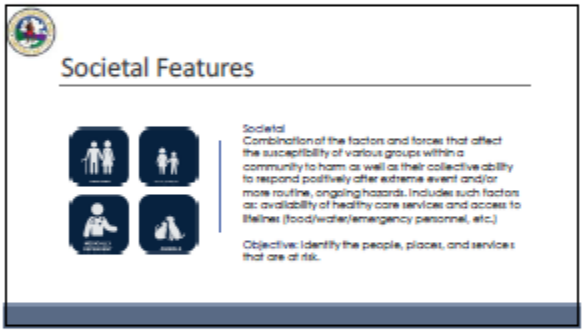

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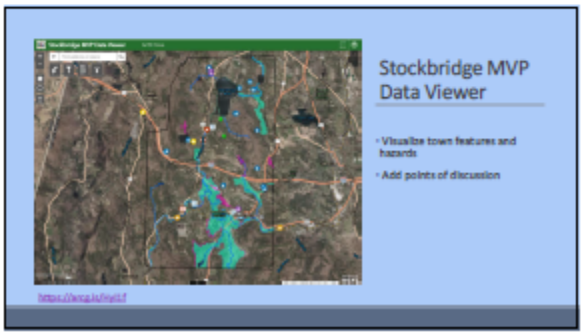

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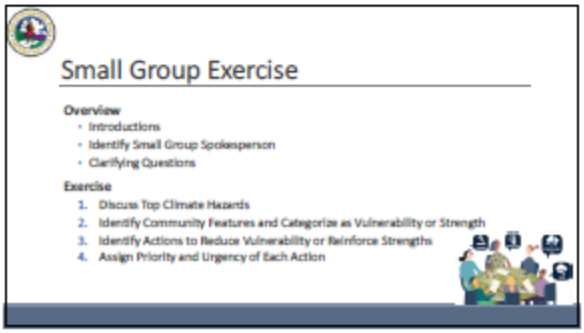

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Small Group
Report Out
Speaker from each small group has 3-4 minutes to share:
1. Key vulnerabilities and strengths
2. Highest priority actions & urgency assigned
ALL – Please share your top three priorities with urgency level in the Zoom chat

25


Next Steps

26

APPENDIX 4: COMMUNITY RESILIENCE BUILDING MATRIX

Community Resilience Building Risk Matrix

www.CommunityResilienceBuilding.org

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

#	Features	Location	Ownership	V or S	Gradually Rising Temperatures	Precipitation Extremes (rain and drought)	Inland Flooding/ Stormwater Management	Severe Storms (blizzards, ice, hurricanes, wind)	Priority H - M - L	Time S Short L Long O Ongoing
	Infrastructural									
1	Flood Mitigation - Town has completed flood mitigation improvements (i.e. conveyance system with future expansion capacity) at Town Offices & Police Station	50 Main Street	Public	S		Maintain conveyance system. Identify grant funding opportunities to support future stormwater system management improvements.			M	O
2	Flood vulnerability of important roadways and infrastructure - Affected roadways (e.g. Elm Street, Main Street, Glendale Middle Road, Park Street, Route 7 south and Route 102 west) and other community resources (e.g. Stockbridge Golf Course). Drinking water plant, wastewater treatment plant, new highway garage, and Park Street Sewer pump station are all located in the floodplain.	Specific Areas	Public/Private	V		Conduct flood assessment/analysis at known locations of flooding especially within proximity of vulnerable roadway infrastructure. Identify sources of funding to address flood risk and stormwater infrastructure improvements.			H	S & L
3	Stormwater Management/Stormwater Infrastructure - Undersized culverts throughout town present flood hazards.	Town wide; Kampoosa Bog; Averic Road; Stockbridge Bowl	Public (Town/State)	V		Look at nature-based solutions upstream of culverts that can impact culvert function. Prioritize management around Route 7 and downstream impacts. Address beaver issues. Culvert under Hawthorne St. is an important wildlife crossing. Study and implement best approach to managing large volume of runoff into Stockbridge Bowl and adjacent Lillybrook Pond Initiate culvert prioritization assessment with eventual renovation of high priority culverts. Upgrade and expand existing stormwater infrastructure. Where nature-based solutions aren't feasible, consider extending town stormwater infrastructure to these locations. Assess opportunity for nature-based solutions/green infrastructure where stormwater infrastructure isn't feasible/practical.			H	S
4	Regional Coordination - Towns within the Berkshire region share similar challenges related to stormwater management infrastructure and the challenges of adapting to climate change	Adjacent Municipalities, Regional Municipalities	Public/Private	S/V	Develop a regional strategy to deal with related climate extremes, notably flooding/flood management. Establish a community education/outreach program to inform residents of the risks faced by climate change. Educate residents on single property scale best management practices relative to nature-based solutions, green infrastructure, sustainability, carbon mitigation/sequestration.				M	O
5	**Electric Transmission Redundancy - Frequent and long duration power outages after storms; utilities not buried; tree management not as robust as it should be; small communities not prioritized**	Town-Wide	Private	V	All sources of extreme weather events place a burden on electric transmission. Coordinate with National Grid to identify best management practices for example recovery time practices, tree maintenance/replacement to improve redundancy. Conduct tree inventory in town to address frequency of power outages. Develop a community outreach program to support awareness of resources within the community during power outages. Consider program to distribute hand-pumps to support residents who rely on private wells.				H	S/O

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

#	Features	Location	Ownership	V or S	Gradually Rising Temperatures	Precipitation Extremes (rain and drought)	Inland Flooding/ Stormwater Management	Severe Storms (blizzards, ice, hurricanes, wind)	Priority H - M - L	Time S Long O ngoing
	Infrastructural									
6	Climate Migration - Changing development patterns as people seek to escape climate extremes common to urbanized areas places a significant burden on the infrastructural, social, and environmental resource in Stockbridge.	Community-wide town	Private	V/S	Evidence suggest climate stressors may lead to or require that people relocate (permanently or through 2nd home ownership) to the Berkshire region to escape extreme climate risks in other places - such as extreme heat in urban areas. This was observed after Hurricane Sandy, as an example. Consider assessing the impact of climate migration to evaluate the risk or opportunities related to changing land use development and population changes within Stockbridge or the Berkshire region more broadly. This assessment should consider impacts to the economy, public infrastructure, housing, social resources, and natural resources. Identify how to engage new residents in identifying problems and developing solutions for climate impacts.				M	O/L
7	Water Quality - All sources of climate exposure and extreme storm events cause water quality issues. This is a significant challenge in Stockbridge where abundant water resources exist.	Town Wide, emphasis on Stockbridge Bowl	Private	V	Improve stormwater management infrastructure where practical/feasible. Consider the use of nature-based solutions or green infrastructure. Conduct a community outreach program to increase community awareness of best management practices. Identify opportunity to fund green infrastructure management projects to increase community climate resilience.				H	O
8	Interlaken Bridges - 4 Bridges in various states of repair/disrepair. All four closed due to age/deterioration. Repairs are currently in progress for 2 bridges. Seeking funding for a 3rd bridge repair. No action on the 4th bridge.	Northwest area of town near Rt. 102/183/90	Public	V		These bridges are an important local resource relative to commerce (access to Tanglewood) and public safety (emergency/evacuation route). Seek funding for and complete bridge repairs. Consider climate resilience in the design of these bridges.			H	S/O
9	Route 7/South Street Bridge exposed to floods and ice flows. Bridge has proven resilient but potential concern for high pressure gas main (feeds Great Barrington) and electrical line (National Grid) bridge carries.	Route 7/South St.; Also Tuckerman Bridge	MassDOT	V/S		Coordinate with National Grid to better understand the vulnerabilities of this infrastructural resource relative to Stockbridge and the region. Conduct an assessment to better understand vulnerabilities relative to ice jams. Evaluate mitigation strategies (e.g. infrastructure hardening) to protect this bridge from ice jam damage.			M	S
10	Flood Risk - Low-lying areas such as farmland, Stockbridge Golf Course, driveways/private ways, dirt roads, are more frequently flooded and washed out.	Town Wide	Public/Private	V	Evaluate areas where flood risk has become increasingly prominent. Conduct hydrologic assessments on these areas and consider the use of green infrastructure or nature-based solutions to mitigate persistent flood risk.				M	O
11	Stockbridge Reservoir (Lake Averic) - The reservoir has proven resilient to past droughts but is a potential source of vulnerability as the drinking water supply source for the town.	Lake Averic	Public	V/S	Assess how to store precipitation runoff if not absorbed during severe rain events. The reservoir is resilient despite recent drought conditions in the Berkshire region. There is a robust water department emergency action plan in place. Additional population and more runoff could pose hazard in future.				M	L/O

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

#	Features	Location	Ownership	V or S	**Top Priority Hazards** (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.) Gradually Rising Temperatures	Precipitation Extremes (rain and drought)	Inland Flooding/ Stormwater Management	Severe Storms (blizzards, ice, hurricanes, wind)	Priority **H** - **M** - **L**	Time **S**hort **L**ong **O**ngoing
	Infrastructural									
12	Dirt Roads Vulnerability - Public and private dirt roads are frequently subject to damage from extreme storm events. Example roadways include Ice Glen and Averic.	Town-wide	Public/Private	V	Dirt roads infrastructure is particularly vulnerable to the effects of climate change. Private driveways that intersect dirt roads are particularly vulnerable to washout. Conduct a community outreach effort to educate the public about dirt road best management practices. Coordinate with DPW on these outreach efforts. Promote vegetated/revegetation of roadside shoulders along dirt roads. Maintain stormwater infrastructure.				M	O/L
13	Roadside Vegetation - Vegetated roadside shoulders provide important environmental benefit as a green infrastructure/nature-based solution to climate impacts.	Town-wide	Public/Private	V/S	Roadside vegetation is an important green infrastructure/nature based approach to address extreme heat, water quality, and flood mitigation. Where trees are removed to promote electric transmission redundancy, consider vegetation replacement/management approaches to avoid vegetative loss. Identify areas where loss of roadside vegetation may be occurring. Address invasive species in these areas including a review roadside maintenance practices that may affect spread of invasives. Utilize the town's Agriculture and Forestry Commission to assist.				M	O
14	Dam Risk Failure - Three 19th Century dams holding back PCB contaminated material - all are North of Stockbridge	3 Specific Dam Sites	Public	V			Conduct an assessment of these dams or draw upon previous assessments. Assess potential risk to downstream flooding (people and properties). Notify individuals within risk prone areas.		M	O/L
15	Town wide sewer system	Town Wide	Public/Private	V/S		Conduct a septic vs. municipal sewer assessment, involve Board of Health in this assessment.			M	L
16	Emergency Shelter - Residents are unaware of it as a resource; impacted by Route 7 flooding; local businessess/institutions could potentially participate in emergency response and provide sheltering resources.				Increase community awareness of the shelter. Explore coordinating with private groups to provide emergency shelter.				H	O

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

#	Features	Location	Ownership	V or S	Gradually Rising Temperatures	Precipitation Extremes (rain and drought)	Inland Flooding/ Stormwater Management	Severe Storms (blizzards, ice, hurricanes, wind)	Priority H - M - L	Time S hort L ong O ngoing
	Societal									
17	Emergency Preparedness and Response - Climate impacts presents new challenges (e.g. swiftwater rescues, inaccessible properties, wildfires)	Town Wide	Public/Private	V	Consider finding grant funding sources to support ongoing training for emergency responders relative to changing/more challenging climate impacts. Purchase equipment necessary to support these preparedness efforts. Improved emergency communication systems are necessary to address changing climate extremes. Consider a community-wide outreach/engagement initiative to increase the awareness of the town's emergency resources such as reverse 911/CodeRed or emergency shelters. Consider options to generate interest in emergency preparedness and response for younger people in the community.				H	O
18	Land Use Development Pressure - Changing development patterns are placing a burden on existing public services/social support systems and natural resources.	Town Wide	Public/Private	V	Demographic trends due to climate migration (and/or public health crises) put a strain on existing municipal resources or social service systems. The town should proactively consider what changing demographic conditions may look like in the future and plan for these changes through regulatory mechanisms bylaws, zoning, renewable energy siting.				H	O
19	Heaton Court & Pine Woods (Affordable/Senior Housing) - Pine Woods in floodplain; Asian Tiger mosquito	Specific Location	Public	V/S	Assess impacts and identify actions to address vulnerabilities.				M	S
20	Seniors - vulnerable to weather extremes especially in regard to maintaining safe temperatures in older homes, assuing accessibility (plowing, etc.) in snow/ice events.	Town-wide	Public/Private	V	Identify where seniors live and those who may live in vulnerable areas. Provide amenities (playgrounds, community gardens). Provide services to vulnerable populations (snow removal, salting, etc.) during and after severe weather events. Explore options to provide transportation for vulnerable populations and tourists. Draw upon Council on Aging resources to further support senior needs through additional funding. Develop a community outreach/education plan to create a network of resources for seniors such as a daily wellness call, access to affordable home contractors.				H	O
21	Council on Aging (outreach and food delivery); Churches & Faith-based Organizations provide social connection and support.	Town-wide	Public/Private	S	Explore opportunities to strengthen and leverage existing networks and services to support community resilience against climate hazards.				M	O
22	Low-income residents - changing climate and extreme weather events increase cost of living (utilities, repairs, etc.).	Town-wide	Public/Private	V	Provide awareness of and increase availability of options to provide energy-efficient heating and cooling (heat pumps, solar panels). Encourage use of clothes lines. Care for shared commons (recreation, etc.) - increase access to shared resources. Assess and address issues related to food access and transportation.				L	O
23	Cultural Resources - Cultural assets/collections at museums, library, town monuments and historic properties, etc. are vulnerable to climate change (storms, power outages, heat/humidity). Important to preserve for future generations.	Museums, Monuments, Library, Historic Properties	Public/Private	V	Encourage backup power sources for collection owners. Support condition monitoring/ maintenance of historic structures and homes. Utilize CPA funds to protect vulnerable collections. Engage National Grid on power resumption timeline. Consider backup energy generation options at vulnerable locations.				H	O

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
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	Societal									
24	Communications Technology - Poor telecomm infrastructure can isolate people day-to-day and especially in emergencies - 50+ people in town with no internet; cell service in town is generally poor (Verizon OK; other service providers not).	Town-wide	Private (Service Providers)	V	Assess how to improve cell coverage in town. Assess areas/groups of greatest vulnerability.				M	L
25	Relationship Between Natural Resources and Public Health - Stockbridge natural resources provide important health benefits through ecosystem services such as recreation.	Town Wide	Public	V/S	Stockbridge has many places to be outdoors and get exercise which supports health and humans' ability to adapt. Natural environment is vulnerable to changes in climate and extreme events (e.g., more allergies).Protect recreational areas and make them more accessible to all. Consider creating additional recreational facilities.				H	O
26	Local Social and Medical Services - lack of or recent loss of services creates gap in necessary support, especially for climate vulnerable popluations (seniors, people with limited mobility or lack of transportation)	Town-Wide	Public/Private	V	Climate change requires that public health and social services serve as a key factor for community resilience. In recent years downtown healthcare and pharmacy services have closed or relocated limiting health care options for residents. Attract medical professionals/services with incentives. Evaluate incentive programs available in MA. Explore options to provide transportation for vulnerable populations and tourists. Coordinate with nearby communities such as Lee, Lenox, and Great Barrington to develop regional resources.				M	L
27	**Land Use Development Pressure Conflicts with Resilience Planning - Stockbridge is characterized by a large population of part-time/2nd home owners and an older full-time population. There is a general consensus that current demographics in the community are in conflict with long term climate resilience planning.**	N/A	N/A	V	Share information and initiate conversations about the strengths and vulnerabilities of part time and full-time residents. The town should engage in a public education campaign that puts climate resilience, notably the preservation of natural resources, open space, and recreational areas, at the center of its planning goals. Messaging focused on the collective outcomes of the entire community in response to climate change should be emphasized.				H	O
28	Non-full time residents, 2nd home owners, and vacationers are vulnerable in extreme events if unaware of local emergency plans and resources. Residents and businesses take care of themselves when emergency sheltering is needed.	Town-Wide	Public/Private	V/S			Improve sheltering capability and resources including transportation to shelter. Town sheltering capacity is limited/unknown.		H	O
29	Disconnect Between Full and Part-Time Residents - Stockbridge is characterized by a combination of full-time, part-time, rental, and vacationer residents at any given time of the year. A large percentage of non-full-time residents can make the community uniquely vulnerable to the effects of climate change. Some residents feel there is a "us versus them" narrative around full-time and part-time as well as long-term and new residents that they would like to diminish. All people bring different strengths and vulnerabilities. New people bring fresh ideas and perspectives.	N/A	N/A	V	Consider a messaging campaign and/or community events centered around the strengths and vulnerability of part-time and full-time residents in town. Consider applying the lens of natural resource protection as a way to bring the community closer and develop a distinct sense of social capital among all residents.				H	O

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	Societal									
30	Local Leadership - Encourage broader diversity and participation, especially among younger residents to serve on local boards/volunteer opportunities.	N/A	N/A	V/S	Increase diverse representation on town boards and committees, espcially with younger people who will be dealing with the more severe effects of climate change. Develop ways to encourage people to participate and address challenges to participating (e.g., obligations to young children, work, etc.). Show people that they are qualified and their voice is needed.				H	O
	Environmental									
31	**Rare and Unique Natural Habitat - Numerous location in Stockbridge contain rare or endangered habitat of unique natural and cultural importance. Examples include Stockbridge Bowl, Old-Growth Hemlock Forest, and Kampoosa Bog Habitat.**	Town-wide; Specific Locations	Public/Private	V/S	Rare and endangered species habitat provide important and unique environmental and social benefits. Changing climate conditions place stress on these habitats which are environmentally sensitive and subject to numerous climate and development stressors. This is a regional issue that could be worked on with other communities. Study/identify unique and endangered natural habitats and prioritize for protection. This effort could also occur in a regional/multiple-town scale.				H	O
32	Erosion around Stockbridge Bowl - Compounding climate stressors that include increased temperatures, drought, extreme precipitation, and extreme storm events increase the potential for erosion in areas where development is situated adjacent to important natural resources. Storm runoff is increasing sedimentation with 8-10 feeet of sediment observed in some parts of the water body.	Stockbridge Bowl	Public/Private	V	Consider exploring changes to zoning/building codes that would address or minimize erosion in ecologically sensitive areas. Consider a community outreach/education campaign that raises awareness of the public of the importance of residential property scale best management practices to mitigate this problem. Prioritize acquisition of conservation land to strategically benefit these areas.				M	O
33	Residential Property Best Management Practices	Town-wide; Stockbridge Bowl	Private	V	Coordination with homeowners, including full-time and part-time residents and vacation property managers, is essential to promote residential ecologically sustainable best management practices. Develop education/outreach materials to support general awareness.				H	O
34	Integrated Water Management - Stormwater governance, management, surficial and subsurface hydrology - There is an abundance of freshwater natural resources in Stockbridge. All climate related hazards directly or indirectly impact the overall abundance of freshwater in town, the water quality of water within the town, and risks related to extreme storm events such as flooding.	Town-wide	Public/Private	S/V	At the municipal level, consider the development of bylaws that account for various types of integrated water management and co-benefits. At the public level, develop educational outreach initiatives that may include: flyers, pamphlets for handouts, welcome package for new residents or renters/vacationers, social media campaigns, etc. to support the implementation of residential property-scale water quality best management practices. Leverage education in schools for community applications (ex. Monument HS taught about homeowner use of pesticides - how to bring that out of the classroom); collaborate with HVA and Mass Audubon, Garden Center for education and outreach, etc. Draw upon the institutional knowledge of long-time residents relative to changing climate conditions in the community.				H	S/O

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35	Trees coming down due to high winds; affecting ledges, trails, residences, fire hazards	Town Wide	Public/Private	V	Consider utilizing the town's Agricultural and Forestry Commission ensuring they consider tree management through the lens of climate change. Consider these efforts in conjunction with open space management, water quality management, invasive species management, and town open space recreation plans. Complete Forest Management Plan on town owned tracks and encourage private landowners to do the same.				H	S/O
36	Invasive Insect Species - Emerald Ash Borer, Hemlock Woolly Adelgid, Ticks, Mosquitoes pose risks to Stockbridge's natural resources and people.	Town-wide, Ice Glen, Brother's Trail	Public	S/V	Invasive insect species directly impact environmental and social features within Stockbridge. Insects such as ticks, mosquitos present insect borne illness risk to the community. Other invasive insect species such as Emerald Ash Tree bore and Hemlock Woolly Adelgid are currently impacting Stockbridge forests. While Stockbridge community members are generally aware about the risks related to tick and mosquito-borne illness, measures to further educate the community and tourists of these risks were recommended. Action to address the invasive insect species impacting the towns forests should be immediately addressed.				H	S/O
37	Algal Blooms threaten water bodies important for the environment, drinking water, and recreation.	Stockbridge Bowl, Lake Averic, Kampoosa Bog, Lake Agawam, Lily Pond, others	Public	V	Extreme storm events or changing climatic conditions such as gradually changing temperatures or drought events influences water quality. Land use surrounding water bodies also affects water quality. Conduct an educational campaign for residents regarding resident scale sustainability best management practices. Resolve conflicts in approaches to lake water quality so that homeowners, community, environment, public recreation, and economic drivers are all considered. Encourage nature-based solutions on residential properties surrounding Stockbridge bowl and other water bodies including additional vegetation planting and maintaining appropriate buffers along the banks of the lake. Stockbridge Bowl has top fish stock in state/region - have not used herbicides on the lake that impact habitat. Land owners around lake want to use herbicides on properties. Fishing is recreation enjoyed by many - want to preserve access and enjoyment.				H	O
38	Invasive Plant Species - Burning bush, phragmites, honeysuckle, bittersweet, garlic mustard, japanese barberry, hawthorne, multiflora rose, others along riverbanks, goutweed, eurasian milfoil are some species that have been observed in Stockbridge. - Invasive species risks permanently altering the unique character of Stockbridge natural resources. In addition to important ecosystem services provided by the town's natural resources, risks to public health from loss of recreational areas or open space are at risk.	Town-wide; Causeway, Clark Pond, Lilly Pond, Campusa Bog, Residential Properties	Public/Private	V	Explore options to work with community organizations to draw upon their expertise or the work they may already be doing to assist with removal efforts (e.g. Laurel Hill Association, Marian Fathers). Local small scale farmers also provide important information about small-scale land management techniques to control invasive species and improve soil quality. Work with community members, especially those who may be newer to Stockbrige and less familiar with the issues, to develop a strategy for addressing invasive in town on the residential property-scale that is educational and provides other invasive species management support such as financial options to fund management approaches. Pursue Phragmites control grants available from state. Organize training and volunteer days to remove invasives.				H	S/O
39	Open Spaces Preservation and Recreational Facilities	Town-wide	Public/Private	V/S	Public open space and other recreational resources such as Stockbridge Golf Course increasingly deal with climate related stressors such as flooding or persistent invasive pest (insect, plant, animal) species. Draw upon local capacity to manage open space and recreational areas notably local groups such as Laurel Hill Association that are already actively doing this type of work. Support existing efforts to preserve and enhance open spaces by identifying funding sources to pay for this work.				M	O

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40	Canada Geese - Changing climate conditions has altered bird migration patterns. Residents noted observing more Canada Geese in recent years and hypothesized that this was linked to more frequent closures of Stockbrige Bowl beach by the Board of Health due to high bacterial levels (E.coli).	Stockbridge Bowl Beach	Public	V	Continue to monitor Canada Geese populations and consider options to prevent geese from utilizing the beach at Stockbridge Bowl.				L	L
41	Kampoosa Bog and Agawam Lake - Invasive Species Removal (note: mitigation efforts led by the Stockbridge Conservation Commission, DEP, and NHSEP are scheduled for 2022)	Kampoosa Bog and surrounding sub-watershed	Public/Private	V/S	Kampoosa Bog and Agawam Lake, both calcarious fens, are unique natural resource in Stockbridge. They are subject to stress from adjacent development and has become inundated with invasive Phragmites. This changing ecosystem risks their long term sustainability to provide ecosystem services including diminished flood storage capacity. Collaborate with local partners who undertake invasive species management to address Phragmites stand in the bog. Consider conducting a vulnerability assessment of the area surrounding the bog and identify nature-based solutions that may be used to mitigate for climate stressors such as stormwater runoff.				H	S/O
42	Stockbridge Bowl - Invasive Zebra Mussels	Stockbridge Bowl	Public/Private	S/V	While an established approach to dealing with Zebra mussels in Stockbridge Bowl has been implemented, it is important to continue to raise awareness about the ongoing and persistent threat of invasive species inhabiting the Bowl. Continue to support financial and governance mechanisms to control zebra mussels in the Bowl. Strongly discourage boat launchings anywhere on the lake other than the boat launch facility where boats are monitored and inspected for zebra mussels.				L	O
43	Stockbridge Bowl/Watershed has unique bedrock (calcitic - limestone/marble) - subterranean channels formed by rain increase transfer rate of water and can't predict direction of waterflow	Watershed	Public/Private	V		Conduct an inventory of previous hydrogeological studies of the area to inform current town staff, board/commission members, and determine if others are necessary to better understand Stockbridge bowl, Lake Averic, Calcarious Fens area and the impacts of changing precipitation and stormwater.			H	S/O
44	Larrywaug Brook (sub watershed) - Flood risk management	Larrywaug Brook sub-watershed	Public/Private	V/S		There are many community resources on Larrywaug Brook subject to flood impacts including the transfer station, the wastewater treatment plant, and affordable housing. Conduct a vulnerability assessment of the Larrywaug Brook and surrounding areas; identify climate resilient solutions to address flooding.			H	O
45	Town Recreation - Important connection between Town of Stockbridge natural resources, open space, and recreation. Examples include swimming, rowing, sailing, fishing in Stockbridge Bowl; hiking trails, public parks and high value scenic areas, Laurel Hill (340 acres) walking trails and Yoken Trail	Town-wide	Public	V/S	The threat of climate change risks altering the important relationship in Stockbridge relative to natural resources, open space, and recreation. Increased use of the important resources has increased during the COVID-19 suggesting the importance of these areas under conditions of physical or climatic stress. Continue to support various groups (e.g. Laurel Hill, Stockbridge Land Trust, BNRC, AMC) within the community to manage natural, open, and recreational space within Stockbridge. Identify open spaces/areas of town where people would like to recreate and support organizations that would like to manage them. Identify funding sources for these groups and draw upon the local knowledge of community members to support these initiatives.				H	O
46	Agricultural Land	Town-wide	Private	V/S	The local agricultural movement and businesses in Stockbridge bring a great deal of knowledge relative to invasive species management, sustainable land management, and carbon soil sequestration. There are also farms subject to changing climate conditions (e.g. floods, drought) that stress the feasibility of long term sustainable agricultural practices in the community. Conduct a community-wide education campaign relative to the benefits of small scale farming; include resident-scale composting, gardening, and vegetation management. Utilize the town's Agricultural and Forestry Commission to champion these efforts.				M	O

APPENDIX 5: PUBLIC LISTENING SESSION FEEDBACK

The Town of Stockbridge hosted a virtual Public Listening Session at 6:30 PM on April 29, 2021, to share information and to gather additional feedback from the community. The listening session was promoted to the Core Team and CRB workshop participants, via the town calendar on the Stockbridge town website, a press release placed in the local news, and word of mouth from the project team. To accommodate a greater number of individuals, the live presentation was recorded and posted to the project website with a form available to submit feedback. Online feedback was requested by May 20, 2021; none was received.

The listening session had more than a dozen participants. Attendees demonstrated an interest in the Municipal Vulnerability Preparedness (MVP) process, both procedurally as well as how the municipality can maintain its standing in the program. Questions and feedback centered on:

- **Housing** – Attendees commented on the limited housing options in the area; particularly options for young people wanting to reside in Stockbridge and older people who want to downsize. Attendees were interested in hearing how other communities have dealt with this.
- **Utilities and high winds** – Consistent with the discussion in the CRB workshop, power outages due to high winds was identified as a major problem. One attendee recommended using major road and underground utility projects as an opportunity to bury power lines. This would decrease the cost to bury power lines and beautify the town.
- **Erosion** – Attendees noticed bank erosion at the Stockbridge Bowl boat launch and gravel washing down the boat ramp. Oak tree roots were also suffering from erosion. Bank erosion around Stockbridge Bowl was important to attendees though it was acknowledged that this could be a costly endeavor.

Overall, Public Listening Session attendees were excited about the opportunity to participate in the MVP program and look forward to continued involvement.