Plainville, MA

Municipal Vulnerability Preparedness (MVP) and Community Resilience Building (CRB) Workshop Summary of Findings

April 2020

Submitted by:

Resilient Taunton Watershed Network (RTWN)

SRPEDD Southeastern Regional Planning & Economic Development District

The Nature Conservancy

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Overview

Located in Bristol County, Massachusetts, the town of Plainville covers 11.6 square miles of land and supports a population of 8,264 residents (as of the 2010 US census). Plainville sits on the Massachusetts-Rhode Island state border, at the northeast corner of Rhode Island. Located within the Providence, RI, and Boston, MA, metropolitan areas, Plainville is facing residential development pressure for its convenient location and ease of commute between both cities. It straddles three watersheds—the Blackstone, Ten Mile, and Taunton River watersheds divide the town from west to east, but all are sub-basins of the larger Narragansett Bay watershed.

A low-density farming community in its early years, scattered development throughout the twentieth century has altered the character of Plainville. Between 1950 and 2000, following the construction of Interstate 495, Plainville's population increased 268%, from 2,088 to 7,683, at a higher rate than the regional average. Today, 36.5% of the town is developed while 63.5% remains open space, 8.6% of which is permanently protected from development and 1.92% of which is considered undevelopable wetlands (according to 2005 MassGIS land use data). Twenty percent of the town's forest has been lost to development since 1990 alone, however, and the remainder of Plainville's unprotected open space is continually threatened by increasing demands for residential development.

Plainville's Master Plan identifies its town assets: "a strong sense of community, attractive town character, open space, convenient access, and extensive wetlands and streams that serve as a resource for the town." Addressing the vulnerabilities of these important resources to the stress of development and climate change impacts, like **severe storms**, **wind**, and more severe **flood/drought cycles** in particular, is a priority for the town. Local residents see collaborative planning as an effective way to ensure a resilient community and sustain critical shared resources, now and into the future.

The town is already facing challenges from climate change impacts. Trees are under stress from longer periods of drought and increasing prevalence of pests like gypsy moths, and are falling more frequently during intense storms with high winds. Downed power lines leave the town's vulnerable residents without power during extreme weather and cut off the water supply for those that rely on private wells. Downed trees and flooding cut off traffic and create bottlenecks along key evacuation routes. Lack of public transportation and long-term sheltering options leave vulnerable populations in danger during severe storms. The town recognizes the importance of nature in alleviating the issues of flooding, water quality impairments, and water scarcity; however much of the town's open space is unprotected from future development.

To support the community in considering and prioritizing actions to address these vulnerabilities and improve its climate resilience, the Town of Plainville applied for and received a grant from the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) to become a Designated Municipal Vulnerability Preparedness (MVP) Community. Core members of the Resilient Taunton Watershed Network (RTWN) were tasked with coordinating MVP planning workshops, specifically the Southeast Regional Planning and Economic Development District (SRPEDD), who acted as Plainville's Certified MVP Provider. Staff from The Nature Conservancy, Manomet, and Mass Audubon supported the Community Resilience Building (CRB) workshop process as Certified MVP Providers and members of RTWN. These planning workshops took place on two consecutive Tuesdays, January 14 and 21, 2020 at the Plainville Town Hall.

Stakeholders from Plainville were present as workshop participants, including representatives from many of Plainville's municipal boards and departments. Also in attendance were representatives from Plainville's schools, police and fire department, as well as town residents (see Appendix C for full list). Attendees were divided into two distinct groups that remained consistent in both workshops. Each group identified features in Plainville visually with a map (Appendix A), and verbally on a matrix (Appendix B). Each feature was related to hazards that the town is concerned about and participants determined whether a particular feature was considered vulnerable to those hazards or a strength that helps Plainville mitigate them. Each item listed on a group's matrix was numbered, and corresponded to a numbered dot they placed on their map. Three colors used on the map visually represent the different feature categories of infrastructural (red), environmental (green), and societal (yellow in group 1 and blue in group 2).

Through facilitated discussion, workshop attendees:

- Defined top local natural and climate-related hazards of concern;
- Identified existing and future strengths and vulnerabilities;
- Developed prioritized actions for the community, and;
- Identified immediate opportunities to collaboratively advance actions to increase resilience.

Several recurring themes emerged from the discussion, particularly the need to **prevent power outages** through more proactive tree management and installing back-up generators, **protect drinking water quantity and quality** through management of existing water sources and surrounding lands, and **establish a community center** that could serve as a center for sharing information and providing shelter during emergencies. **Public education**, through better homeowner outreach regarding tree management and private well and sewer management, as well as general emergency preparedness

communication both before and during emergency events, was also identified as imperative to achieving community resiliency.

Top Hazards and Vulnerable Areas

Participants discussed past impacts from natural hazards that they have experienced, and came to consensus on the top three concerns to their community, which were identified as:

- Wind
- Severe storms
- Flood/drought cycles

Wind is a primary driver of power outages in Plainville during storms. The town has a history of prolonged outages due to slow response times from National Grid. This is particularly concerning for residents on the west side of town who get their water from private wells, which cannot pump when the power is out. While downed trees from strong winds are the direct cause of the outages, it is also important to address issues that impact tree health and root systems, such as gypsy moth infestation and prolonged drought, that weaken the trees and make them more susceptible to wind.

Severe Storms are a primary concern because flooding and downed trees can cause traffic bottlenecks or cut off access altogether along important thoroughfares, particularly Route 106. Plainville also does not currently have the capacity to support all of its residents during prolonged severe weather. The current shelter at Jackson Elementary School is not large enough to support the entire town, nor does it have the capacity to provide food or overnight accommodations. Additional concerns during severe storms for the town include lack of transportation options to get vulnerable populations out of their homes in an emergency, and lack of heating and cooling centers that can serve residents during power outages.

Flood/Drought Cycle describes the threat to Plainville's roads, forests, and water management infrastructure posed by large precipitation events and more frequent, longer-lasting droughts. Floods directly damage infrastructure and can disrupt traffic, while also destabilizing sediment that can result in tree falls and water quality impairments. Prolonged droughts can weaken trees and their root systems, which makes them more vulnerable to wind damage and falling on power lines. Droughts also threaten Plainville's drinking water supply, drawing down water levels in reservoirs and well fields. The stresses resulting from a more volatile flood/drought cycle affect all residents, businesses, and institutions in Plainville.

Areas of Concern

Several locations in town were identified as important strengths or notable vulnerabilities, and some, because of their complex nature, were considered to be both strengths *and* vulnerabilities. The top three natural hazards identified by Plainville workshop attendees were **wind**, **severe storms**, and **flood/drought cycles**. The town's identified strengths and vulnerabilities to each of these hazards, as well as potential actions that can be taken to address areas of concern, are outlined in the following sections. Prioritization (high, medium, low) and time anticipated to complete each action are indicated in the digitized matrices (Appendix B).

Infrastructural concerns centered around public utilities and vulnerabilities resulting from power outages during intense storms. In particular, more frequent power outages due to increased tree fall, and lack of backup generators to power public centers and private water wells, and strengthening the town's water supply system in general, were cited as high priority concerns.

Power Lines and Outages

Plainville recognizes the value of its abundance of trees for the environmental and economic benefits and unique community character they provide. The Department of Public Works' Tree Management Program undertakes the important task of monitoring Plainville's tree health. A 2018 tree health survey recognized declining tree health in the town's roadside trees from pests, such as gypsy moths and hemlock wooly adelgids, and droughts. Weaker trees are more vulnerable to falling down or losing limbs in strong winds, and more frequent storms are increasing the frequency of downed trees that block roads and traffic movement, and take down power lines, causing power outages. When the power goes out, response times from National Grid are typically slow. Parts of town have been without power for as long as seven days. Outages are of particular concern to residents on the west side of town who rely on private wells and sewer systems that cannot pump without power. Not only are many homeowners without generators, but the town does not have reliable generators for important public centers, such as the senior center, either. This means that during emergency events many residents will also have no source of power for heat and A/C, or for powering communication devices.

More proactive tree management and homeowner education on appropriate tree planting and care, and on how to spot potential hazards to power lines, were identified as important measures to take to reduce tree fall. The town could reduce power outage risks by acquiring its own bucket truck and trimming trees immediately as needs arise (rather than having to go through the process of hiring an outside bidder to do the work each time) and

meeting with National Grid to plan for future response and strategize ways to reduce response time.

Water Supply and Management

Quality and quantity of the public drinking water supply is a major concern to both town officials and residents in Plainville. Much of the town has access to the public water supply; however, a portion of the west side of the town does rely on private wells. For these residents, having an alternative source of power and/or water will be crucial for emergency preparedness into the future. The town's public system currently relies on three operating wells, which do not fulfill the town's needs, so additional water is purchased from the neighboring city of North Attleborough. Falling water levels resulting from prolonged droughts, as well as potential contamination sources nearby (the capped landfill, the uranium storage site at the old Engelhard Industries, and septic systems surrounding Lake Mirimichi) pose significant threats to the future water supply. The town will need to take steps to secure the existing wells in operation, and explore options to reopen or drill new wells to meet the growing population's needs. Aging infrastructure across the town's water system is an additional vulnerability, particularly in the center of town where infiltration into old clay sewer pipes has been discovered and unnecessarily drives up water treatment costs. Continuing to update aging infrastructure across the town's water and sewer system will be essential for the town to meet the demands of a growing population and ensure resiliency of its water system as future precipitation patterns and water availability become less certain.

Essential action the town recognizes it needs to take to secure its water supply includes performing a risk and resilience assessment on the municipal water system to identify how the town can continue to meet its residents' needs. Additionally, the town needs to look into getting five existing inoperable public wells back on line and drilling additional wells to meet growing water needs. The town should also continue monitoring water quality, with careful attention paid to the capped landfill and Engelhard site to make sure contaminants are not leaching into the water supply.

Transportation (Traffic Patterns, Infrastructure, and Public Transit)

The town identified several spots where localized flooding or tree fall can cause severe traffic bottlenecks or cut off access altogether. Route 106 in particular is an important thoroughfare that provides access from the town center to Route 152 and the neighboring town of Foxborough, for which reason it was also identified as a key infrastructural strength; however, a lack of alternative routes is problematic when this road becomes blocked. Widespread flooding is not an existing concern for the town; however, the town did identify certain areas where localized flooding and/or sewer overflow during excessive rainfall cause disruptions, including: Shepard Street, West Bacon Street, Lakeside Drive,

Branch Avenue, South Street, and the senior center parking lot. Another town-wide concern is the lack of public transportation, particularly in an emergency event and for vulnerable populations that may not have access to their own transportation. The Greater Attleboro Taunton Regional Transit Authority (GATRA) does operate buses through Plainville, but the town does not have its own transportation in place to evacuate vulnerable residents, should the need arise.

The town needs to address potentially dangerous traffic bottlenecks by ensuring adequate alternative access routes through the town, or where alternatives do not exist, maintaining roadside trees to avoid future blockages. One action that could facilitate travel to and from the west side of town is widening Fuller Street to allow additional access as an alternative to West Bacon Street when it floods. The town also requires an assessment of vulnerable infrastructure across the town, including dams (including Shepard Street, Wetherells Pond, and Lake Mirimichi), culverts (including West Bacon Street), bridges (including Mirimichi Street and Fuller Street), and the stormwater system, to ensure safety to the town and its infrastructure during future storm and precipitation events. Additionally, providing public transportation options to make the town less reliant on cars will help to mitigate carbon emission impacts, and could provide emergency evacuation options for residents without cars.

Environmental concerns focused on water quantity and quality, with a desire to protect groundwater recharge areas for the town's wells. Additionally, growing prevalence of vector borne disease and associated threats to forest health from invasive species such as gypsy moth, as well as public health threats from mosquitoes and ticks, were high priorities.

Open Space Protection

Workshop participants identified the value of Plainville's existing open space network, some of which is already protected from development (i.e. town-owned lands in the center of town, the recently purchased Hawkins Woods, and some privately-owned Chapter 61 lands, though these Chapter 61 lands are only temporarily preserved). These natural areas play important roles in removing carbon from the atmosphere and storing it underground in plant roots and the soil, and additionally capture and filter rainfall and return it to ground and surface waters. Identifying high value open space and taking immediate action to manage what is already protected and acquire additional lands that are not protected (i.e. unprotected lands adjacent to Hawkins Woods, lands surrounding Turnpike Lake and Lake Mirimichi, and permanent preservation of Chapter 61 lands or other privately owned areas), are high priority actions that will protect the town's water resources, including the Ten Mile Watershed and wellhead recharge areas, and improve general climate resiliency.

Recreation is also an important service provided by Plainville's open space, which increases its value to the town and its residents, in support of additional protection measures. Completing a trail inventory and creating a map of all recreational trails open to the public will be a valuable asset for the town and allow residents and visitors to enjoy this land in a responsible way, while allowing these green areas to continue supporting watershed and groundwater quality.

Wellhead Protection

Drinking water quantity and quality concerns topped the list of environmental vulnerabilities and are a high priority for action. There are three wellfields that supply the town's water: West Bacon Street, Turnpike Lake, and Lake Mirimichi. The groundwaters that recharge these wellfields are protected in the town's Groundwater Protection District. Only three of the town's eight wells are currently operating, however. The Lake Mirimichi wellfield is no longer operational because the well was overdrawn and the water too contaminated, and the Lake itself is vulnerable to further contamination from road runoff and potential leaching from the nearby capped landfill. The well underneath Turnpike Lake still supplies water to the town; however, this Lake is also vulnerable to contamination from runoff and is being overdrawn as water levels in the Lake continue to drop. The town's Conservation Land A tract in the center of town, the groundwater source that feeds the West Bacon Street Wellfield, is also becoming increasingly dry each year and care will need to be taken to avoid overdrawing on this water source.

Protecting the land in these groundwater recharge zones is essential to ensuring that adequate drinking water resources will be available to serve the town and its growing population. Healthy, native vegetation on this land removes pollutants from stormwater, protecting groundwater quality. Maintaining existing open space is also important for groundwater recharge, because impervious surfaces convey rainfall away from groundwater and into storm drains. Protecting and managing this open space and implementing nature-based solutions that capture and treat stormwater naturally and allow for groundwater recharge will ensure both quantity and quality of Plainville's groundwater resources. Furthermore, creating a wellhead protection plan and reviewing and updating town bylaws and regulations that govern land use in these areas will ensure proper management into the future. Since much of the water system's infrastructure is aging, an audit of the existing system should be conducted and ways to improve efficiency and "green" technology should be included in the wellhead protection plan.

Surface Water Quality

The town identified high priority surface water resources for protection: the Ten Mile River and its watershed, Turnpike Lake, Lake Mirimichi, and Fuller Pond. All of these bodies of

water are experiencing water quality degradation due to pollutant loading from contaminated stormwater and septic systems, flow disruptions from invasive plant overgrowth and sedimentation, and algae blooms. Furthermore, there are a few local sources of contamination where potential leakage would further impact these water bodies (i.e. capped landfill near Lake Mirimichi and uranium storage at old Engelhard Industries site near Turnpike Lake).

Assessments of water quality and stormwater runoff from major roads such as Route 1 and Interstate 495 will help to understand how sediment and other pollutants from these roads are impacting neighboring water bodies. Nature-based solutions to address these threats to water quality can then be identified and prioritized for optimal impact. Invasive species monitoring and management will also improve water quality, in Lake Mirimichi in particular. Monitoring water quality and managing algal blooms in Fuller Pond was also noted as a high priority for surface water quality protection. Ongoing education and outreach with homeowners will also be necessary to help landowners understand what actions improve or harm water quality. Lastly, the town identified a need for management plans for these high priority water bodies, and for updating the existing Ten Mile Watershed Management Plan in particular, which would synthesize these concerns and actions into a guide for the town to implement.

Vector Borne Diseases

The non-native gypsy moth has deeply degraded local tree health and worsened the impacts of other stressors associated with climate change. The resulting increase in tree fall has impacted roads and power lines in significant ways, straining local capacity to respond and proactively manage for the future. Human disease is also on the rise as ticks carrying Lyme disease and mosquitoes carrying EEE have become more prevalent in Plainville recently. Future climate impacts in the town will only exacerbate these problems and the town needs to take proactive action to manage these threats.

Implementing a forestry management plan will help the town in maintaining tree and forest health. Public education campaigns will help landowners monitor tree health on their own properties, and also help the public protect themselves from ticks and mosquitoes. Further action should also be taken in the town to address mosquito populations by reducing standing water as much as possible. A town-wide assessment and hydrologic study could help to understand and improve water flow throughout the town and identify and eliminate potential mosquito breeding habitat.

Societal vulnerabilities revolved around emergency preparedness and how best to serve vulnerable populations in the case of an emergency. Identifying where these vulnerable

populations live and preparing an emergency preparedness plan for the town were identified as high priority actions to secure Plainville's resilience well into the future.

Vulnerable Populations

Certain populations throughout the town were identified as more vulnerable and in need of specialized support in the case of an emergency. Plainville's senior population comprises one third of the town and continues to grow. There are several large mobile home communities that are more vulnerable to extreme storms. Several group homes house the functional needs population. Each of these communities will need special attention during emergencies to ensure they are getting important messages and that, should the need for evacuation occur, they have access to transportation to a safe place. Furthermore, families with young kids struggle with a lack of child care when schools close because of extreme weather, and residents on the west side of town who rely on private wells for their water supply are also vulnerable during extended power outages when they lose the ability to pump water from their wells. Understanding where throughout the town each of these populations is located and identifying a plan for how to make sure each is getting the support necessary to stay safe during emergencies is essential, and should be included in an updated emergency preparedness plan.

Lack of affordable housing options for vulnerable and low income populations, particularly seniors, was also identified as a weakness in Plainville. Creating more diverse housing options will allow older residents to remain in the town, rather than being forced to relocate for more affordable options elsewhere. Creating dedicated elderly housing communities can also help the town more effectively serve this community during an emergency, as those in need of assistance could be reached simultaneously in one central location.

Emergency Preparedness and Communications

While the town has a local emergency planning council and has in the past participated in a regional emergency planning council, local emergency preparedness plans are outdated and do not fully address the climate associated disasters that the town will likely experience in the future, nor do they address how the town will ensure the safety of vulnerable populations during emergencies. The Community Emergency Management Plan (CEMP) and Board of Health Emergency Management Plan (BOHEMP) need to be integrated into one plan that will fully address the town's needs and improve communication methods to reach everyone.

The town can better prepare its residents for future emergencies by expanding emergency preparedness trainings; improving communications systems that quickly get important messages out to the entire town; giving town departmental staff website editing access so

that they can share important emergency messages; creating a streamlined emergency webpage on the town website that residents can go to for the most up-to-date information; and improving general awareness among residents regarding emergency procedures and encouraging more people to take advantage of the sheltering resources the town has to offer.

Community Shelter Options

Plainville currently uses Jackson Elementary School as an emergency shelter; however, underutilization has led the town to send residents to larger regional shelters instead. In the case of an extreme weather event in which the town would need high shelter capacity, the existing shelter is not large enough to support the entire town and does not have bed capacity or food availability to operate as a 24-hour shelter. In fact, there are no centers in town capable of operating as 24-hour shelters or of supporting the entire town, if needed. Constructing just such a community center has been a high priority for the town for some time. If the town had a large community center, it would improve the community's resilience to future climate stressors by serving as a source of heat, air conditioning, shelter, food, and/or water during extreme weather; it could be reinforced with a back-up power source so that it could remain open during extended power outages; and it could serve as an important center for information and support to the community during emergencies.

Current Strengths and Assets

Plainville is well acquainted with the many strengths it leverages to manage the risks that natural hazards pose. Supporting and enhancing existing strengths and assets into the future will complement strategies identified to address current vulnerabilities, further helping to build local resilience. The following strengths and assets were identified as essential for adapting to the impacts of **wind**, **severe storms**, and **flood/drought cycles**:

Infrastructural Strengths

- **Route 106** was identified as a strength to the town, connecting it with other major transit routes and the neighboring town of Foxborough. Lack of alternative east-west routes through the town, however, is a vulnerability. The town will need to maintain safe access along this route, particularly focusing on proactive management of roadside trees to avoid traffic blockages.
- The **newly constructed town center**, consisting of new fire and police stations, a library and town offices, are a strength of the town, and maintaining this critical infrastructure is a high priority to the town.

- Plainville's **Senior Center** was identified as a highly utilized resource for the town's growing elderly population, providing heating, cooling and a kitchen. It also has the potential to be used more broadly as a center of communication and shelter in an emergency; however, it does not have a back-up generator for power. The parking lot also has limited parking and often floods, further limiting emergency access options. This center could be strengthened by securing a generator for back-up power during emergencies and installing green infrastructure to address flooding.
- The town's closed and capped **landfill** continues to serve as a source of revenue for the town, now hosting solar arrays in its retirement. Close attention should continue to be paid to the landfill and surrounding lands and waterways, particularly Lake Mirimichi, for potential leaching.
- Three large **mobile home parks** serve as important housing options for lower income residents in the town. As these homes are more vulnerable to wind and storm damage, however, the town should continue to prioritize checking in with these communities during extreme weather to ensure all are safe and well.
- Workshop participants identified certain **regional assets** that the town has the option to tap into when needed: the Greater Attleboro Taunton Regional Transit Authority (GATRA), Attleboro's larger 24-hour emergency shelter, and Wrentham's school system as an emergency sheltering option. Plainville wishes to plan with these neighboring communities to better prepare for how to share resources in future emergencies, while also strengthening its local transportation and shelter options.
- The town's **dams** were noted as an infrastructural strength for managing water flow; however, continued monitoring and assessment of dam infrastructure is integral to their maintenance.
- The town has already undertaken several **planning efforts** to promote community resiliency: Green Communities Energy Reduction Plan, Tree Management Program, Open Space and Recreation Plan, town-wide water assessment and protection efforts, a local emergency planning council and emergency preparedness training for residents. The town will need to continue seeking out funds to operate these programs and update plans as needed. Additionally, the town would like to see further green community initiatives, including transitioning to electric vehicles and renewable energy to further improve climate resiliency.

Environmental Strengths

- Plainville's existing network of **open space**, both protected and unprotected, is a valuable asset, providing water resource protection and recreation. Acquiring

and protecting as much of this network as possible and formalizing recreational opportunities that do not impede the land's ability to sequester carbon and capture and treat stormwater, will further enhance this asset.

- Plainville's **trees**, an important aspect of the town's open space network, are themselves a unique strength to the town. Trees provide a multitude of benefits, from removing carbon from the atmosphere to cooling buildings, and effectively managing the town's tree population will improve resiliency in the face of increasing temperatures and more intense storms, while improving tree health and thus reducing the frequency of tree falls disrupting power service.
- Plainville's existing **regulations on private sewer development** were identified as a strength to the town because they hold developers to a higher standard than the state and help protect water quality.

Societal Strengths

- Plainville's **senior center** was again identified as a strength for the services it provides to the town's elderly population. Providing a backup generator for the center will enable it to serve the broader population during an emergency.
- **Local emergency preparedness efforts** have already been undertaken in the town, through the Local Emergency Planning Council, Community Emergency Management Plan (CEMP), and Board of Health Emergency Management Plan (BOHEMP). Both plans need updating, however, and could be integrated into one town-wide plan that would need to include better plans for servicing vulnerable populations during an emergency. Public education programs could also be expanded upon to increase awareness of what to do during an emergency and what resources the town has to offer.
- Local **civic support groups**, including the Boy Scouts, the Lions Club and local churches are already providing support to residents in need. Further supporting these organizations will enable them to serve the town during future emergencies. The Boy Scouts in particular could assist the town during an emergency given their location next to the senior center. Their facilities could be hooked up to the same backup generator that the town hopes to provide for the senior center, so that both buildings could operate during a power outage.
- The **regional Bristol-Norfolk Medical Reserve Corps (MRC)** that Plainville shares with Plainville, Attleboro, Foxboro, Mansfield, North Attleborough, Norton, Rehoboth, and Seekonk is an important resource that the town can rely on during an emergency. Supporting recruitment efforts for this volunteer medical response program is essential as the town will likely need to tap into this resource more frequently in future extreme weather events.

- The town has an agreement with the owner of a **private electronic billboard on Route 1** to display emergency messages when needed. Continuing this agreement, and exploring additional options to secure its own electronic signs to display messages elsewhere in town are important for the town's ability to communicate with its residents during future emergencies.

Top Recommendations to Improve Resilience

After strengths and vulnerabilities to climate change impacts were discussed in the first workshop, the second workshop focused on identifying and prioritizing actions that participants agreed would address identified concerns and/or reinforce identified strengths. Once actions were generated related to the list of strengths and vulnerabilities, facilitators led each group in deciding the top priority actions for each of the feature categories (infrastructural, environmental, and societal). Then all attendees came together to share their priority actions and discuss emergent themes. Facilitators led the group in a verbal vote to select the top three priorities for bolstering Plainville's resilience.

Participants were encouraged to consider action items that mitigate hazards through strengthening natural systems and processes and complement technological or built fixes. An action that limits damage of natural hazards through conserving existing lands, integrating benefits of nature where they are critically needed (i.e. flood storage, water quality improvement), or restoring an ecosystem where it has been disrupted is referred to as a **nature-based solution**. Nature-based solutions (NBS) are a category of emerging strategies in climate adaptation and their exploration is of interest to the Commonwealth of Massachusetts as a national leader in comprehensive hazard mitigation planning. Effective implementation of NBS means designing community features where the functions of built infrastructure and the natural environment are mutually reinforcing in providing protections and benefits for residents.

The workshops' top emergent themes for priority actions included **forestry management**, protecting the **public drinking water supply,** and **emergency preparedness**.

Proactive Forestry Management

Promote general tree health throughout the town

- Expand town's tree health survey to include a full tree inventory that identifies locations of the town's vulnerable trees.

- Develop a Forest Management Plan to promote the health of the town's forests and trees, so that they may continue to capture and treat stormwater, mitigate carbon emissions, and provide other economic benefits to the community.
- Develop a Pest Management Plan, either alongside or included in the Forest Management Plan, that addresses stressors to tree health from pests such as gypsy moths.
- Educate homeowners on how to monitor tree health on their property and how to identify and treat common issues, particularly gypsy moth infestation.

Reduce treefall impacts on infrastructure

- Through the town tree inventory and Forestry Management Plan, identify where trees pose the greatest threats to roadways and electrical lines and prioritize monitoring and management that prevents disruptions in power and travel.
- Purchase equipment the town can use to proactively trim and remove injured or dying trees as needs arise.
- Meet with National Grid to explore ways to reduce response time to power outages.
- Educate homeowners on proper planting strategies to reduce risks to electrical lines, and on how to identify and prevent potential hazards to infrastructure.

Improve Public Drinking Water Supply

Protecting surface and ground water quality

- Develop a Wellhead Protection Plan that prioritizes groundwater recharge and protects water quality.
- Conduct water quality and stormwater assessments to identify and prevent sources of contamination to surface and groundwater.
- Remove invasive species from water bodies that impact water flow and quality.
- Continuously monitor water quality in surface waters and potential sources of contamination (i.e. from capped landfill and Engelhard Industries site).
- Work with neighboring towns to update the Ten Mile River Management Plan and seek funding to implement.
- Partner with local land trusts and others to protect high priority land within Groundwater Protection Districts and surrounding sensitive water bodies (through land acquisition and/or conservation restrictions with private landowners); ensure proactive management of protected land to enhance ecological function.
- Consider low impact development and nature-based solutions that can work in tandem with traditional infrastructure to capture and treat stormwater while allowing for maximum groundwater recharge.

Increase town well output

- Explore options and secure funding to bring at least one more well online to increase town water supply.
- Conduct an audit of water system infrastructure to identify upgrade needs and ways to improve efficiency of both output and energy use.
- Increase education with homeowners on private wells about how to monitor and protect well water quality, and what to do when they lose power.

Emergency Preparedness

Emergency communications

- Purchase one or more electronic signs that the town can use to display important messages at strategic locations throughout the town.
- Update and integrate Community Emergency Management Plan (CEMP) and Board of Health Emergency Management Plan (BOHEMP) to formalize emergency procedures and communicate these plans to the town.
- Identify strategies to reach vulnerable populations throughout town with important emergency messages and secure transportation for evacuation, when necessary.
- Implement an effective Reverse 911 system to get emergency messages out to the entire town.
- Increase public awareness of what to do in case of an emergency through outreach and distribution of educational materials.

Community resources

- Build a community center, capable of supporting the entire town during extreme weather or other emergency events, that can serve as a heating and cooling center, a 24-hour emergency shelter, and a source of food, water, communication and power during extended power outages.
- Formalize agreements with neighboring towns to arrange for emergency shelter options for town, until the town has a community center capable of supporting its residents.
- Explore local public transportation options for assisting vulnerable populations during emergencies.
- Until local transportation options are in place, form an agreement with the Greater Attleboro Taunton Regional Transit Authority (GATRA) to assist vulnerable populations in case of evacuation.
- Secure backup generator for senior center so that it can operate during power outages, until a community center is built that meets the town's needs.

Additional priorities the group identified that did not make the top three but are notable for their high importance include **preventing vector borne diseases** and **proactive infrastructure management** to secure the town's dams, bridges and culverts.

Preventing Vector Borne Diseases

Ticks and Lyme Disease

- Increase public outreach regarding the dangers of ticks and Lyme disease.
- Educate the public on ways to reduce contact with ticks and how to handle bites.
- Increase informational signage on trails and around outdoor recreational areas.

Mosquitoes and EEE

- Town-wide hydrological study to identify and address areas of standing water.
- Increase public education on how to avoid contact with mosquitoes and the importance of reducing standing water on private property.

Proactive Infrastructure Management

- Assess all of the town's dams and develop plans to repair and restore those that are more vulnerable to structural failure.
- Conduct a vulnerability assessment of the town's bridges and culverts and identify those in need of repair or upgrades.

In making these recommendations, this cohort generated an array of potential actions that related back to the identified top priority hazards and how they impact Plainville's infrastructure, environment, and society. A complete list of actions generated by the groups, along with their prioritization (high, medium, low) and time-frame (short-term, long-term, or ongoing) can be found in Appendix B.

Citation

Town of Plainville (2020) Community Resilience Building Workshop Summary of Findings. Resilient Taunton Watershed Network. Plainville, MA

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Municipal Vulnerability Preparedness Program for their funding support for these workshops, and; all of those who participated in the workshops and contributed to the plan resulting from these workshops.

Appendices

Appendices A & B *show different methods of recording the same vulnerabilities and strengths named by workshop participants through mapping and prioritized lists. Small groups recorded infrastructural, environmental, and societal features in Plainville and which hazard(s) they relate to. Each feature category (infrastructure, environment, society) was documented on a separate matrix (see Appendix B complete lists). On these short lists, or matrices, action items were identified corresponding to each feature that was named. Each action was then assigned a high, medium, or low priority value and expected short-term, long-term, or ongoing time frame to complete.*

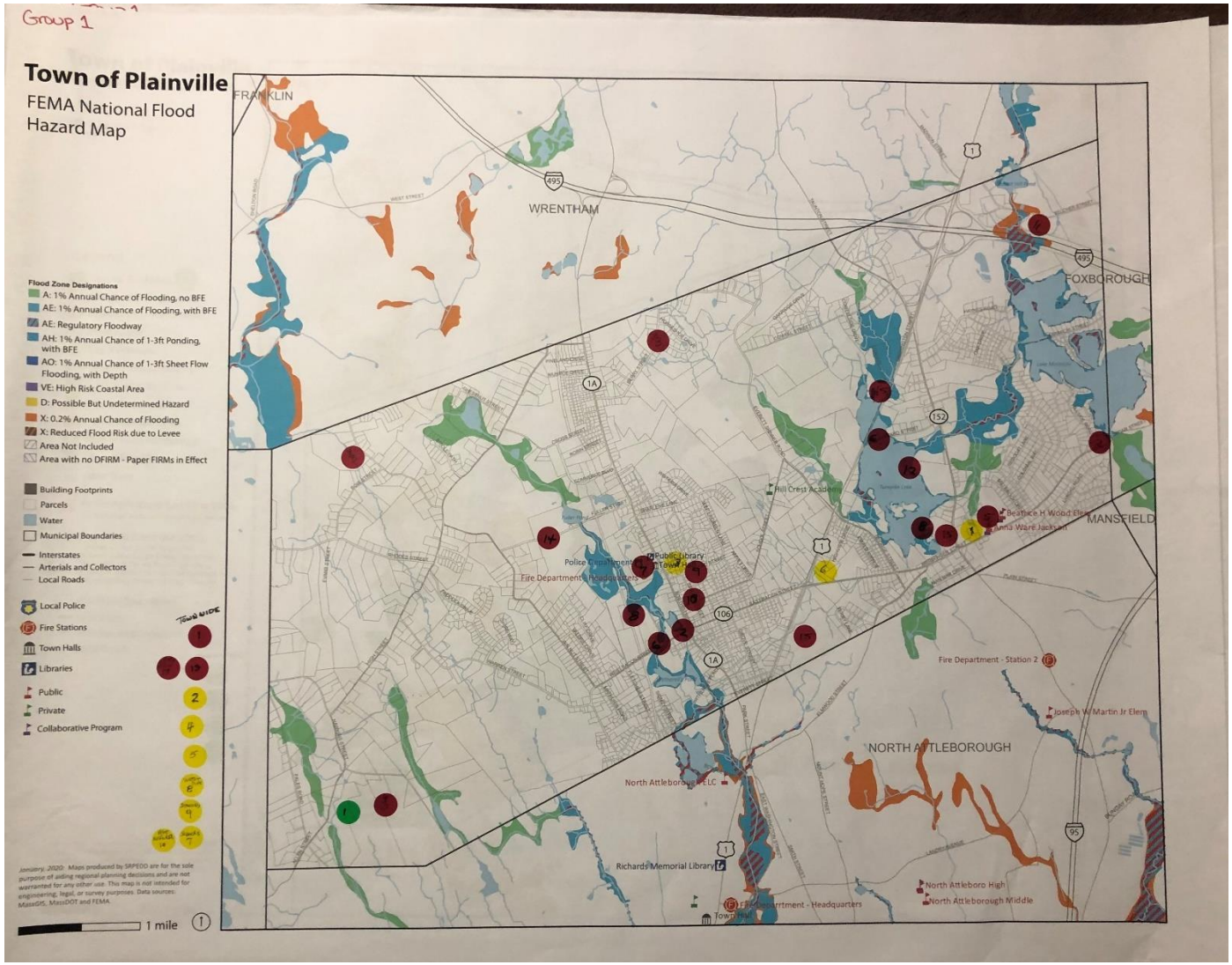
To account for spatial relationships between features, participants simultaneously placed points on a map that corresponded to items they named on the different matrices (Appendix A). Infrastructural features are indicated with a red point, environmental with a green point, and societal with a blue or yellow point. Items on the map are also labeled for what they represent from the written list, but do not represent prioritization or associated action(s).

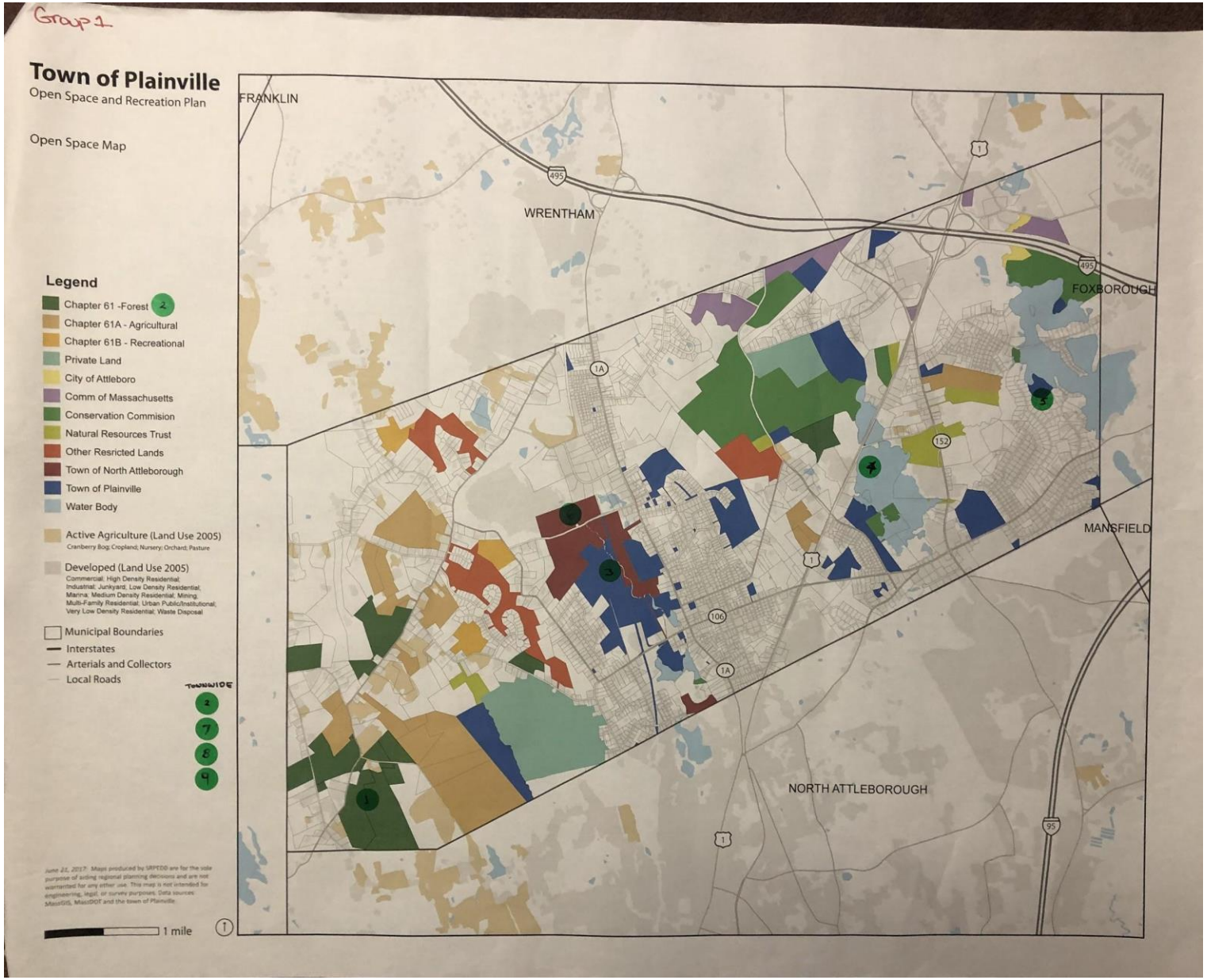
Appendix C *lists all the participants that attended both workshops and their respective affiliations with the town. Most participants were present for both sessions; however, some on the list were only available to attend one workshop or the other.*

Appendix D *includes the presentation facilitators shared with workshop participants at the start of day one to introduce them to the MVP and CRB processes.*

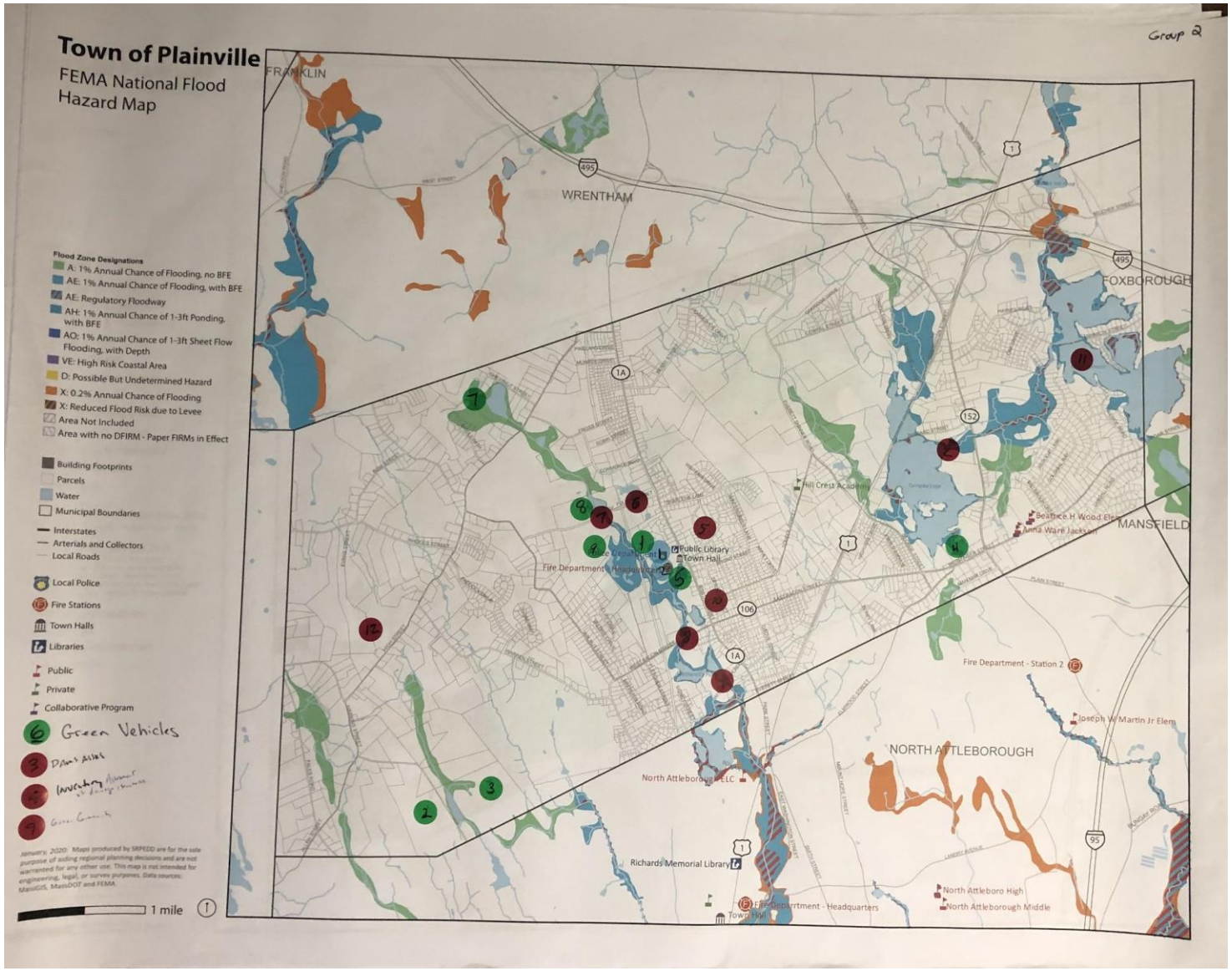
Appendix A: Strengths and Vulnerabilities Map

Maps of Plainville, group 1. Red dots indicate infrastructural features, green dots indicate environmental features, and yellow dots indicate societal features. Group 1 identified features across two maps.




Group 1
Town of Plainville
Open Space and Recreation Plan
Open Space Map
Legend
Chapter 61 -Forest
Chapter 61A - Agricultural
Chapter 61B - Recreational
Private Land
City of Attleboro
Comm of Massachusetts
Conservation Commision
Natural Resources Trust
Other Resricted Lands
Town of North Attleborough
Town of Plainville
Water Body
Active Agriculture (Land Use 2005)
Cranberry Bog; Cropland; Nursery; Orchard; Pasture
Developed (Land Use 2005)
Commercial; High Density Residential; Industrial; Junkyard; Low Density Residential; Marina; Medium Density Residential; Mining; Multi-Family Residential; Urban Public/Institutional; Very Low Density Residential; Waste Disposal
Municipal Boundaries
Interstates
Arterials and Collectors
Local Roads
1 mile
FRANKLIN
WRENTHAM
FOXBOROUGH
MANSFIELD
NORTH ATTLEBOROUGH
495
1
1A
152
106
95

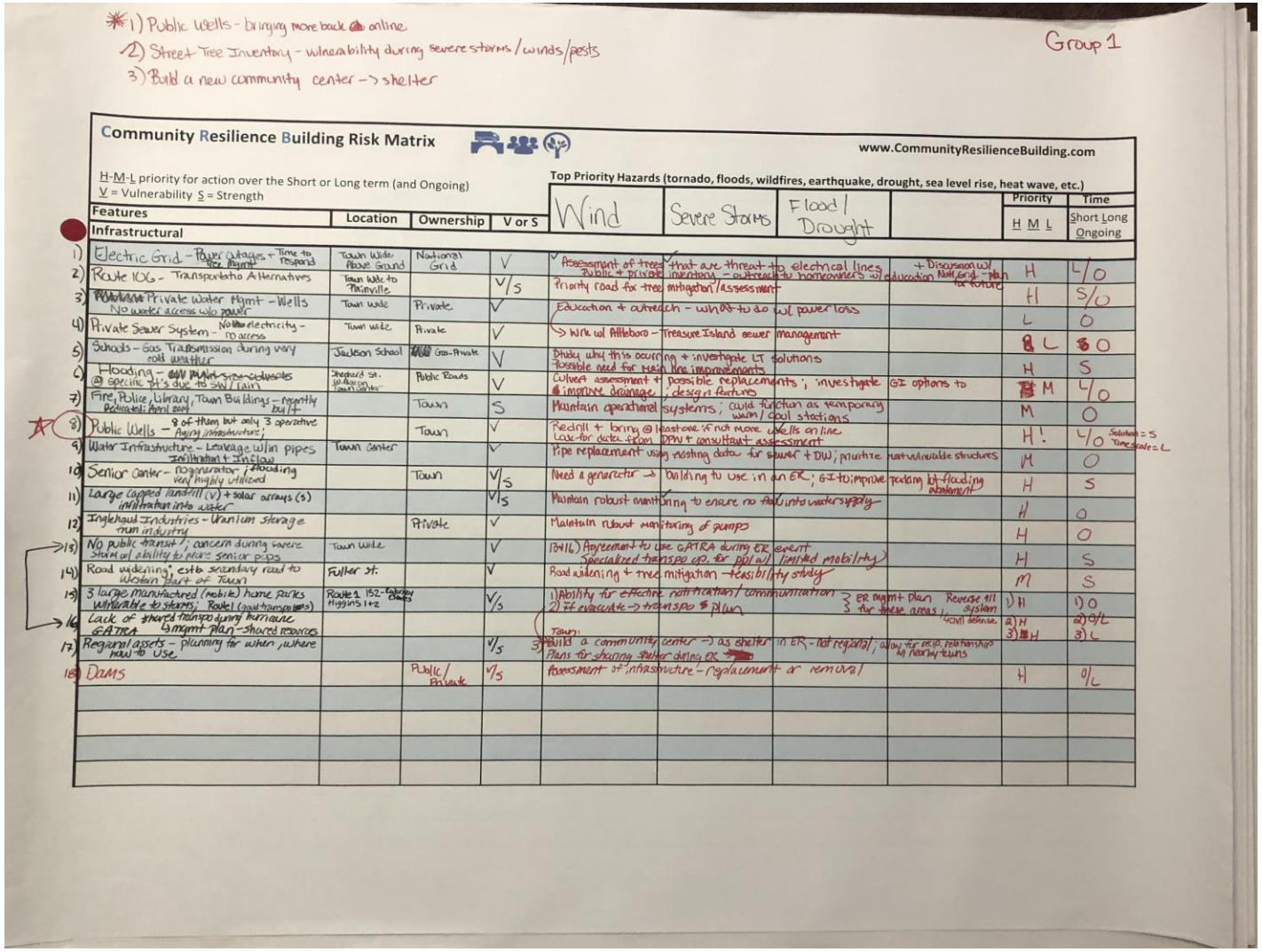
Map of Plainville, group 2. Red dots indicate infrastructural features, green dots indicate environmental features, and blue dots indicate societal features.



Appendix B: Digitized Risk Matrices

Group 1 - Matrix Photographs

Infrastructural Features



1) Public Wells - bringing more back online
2) Street Tree Inventory - vulnerability during severe storms / winds / pests
3) Build a new community center -> shelter

Group 1

Community Resilience Building Risk Matrix www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

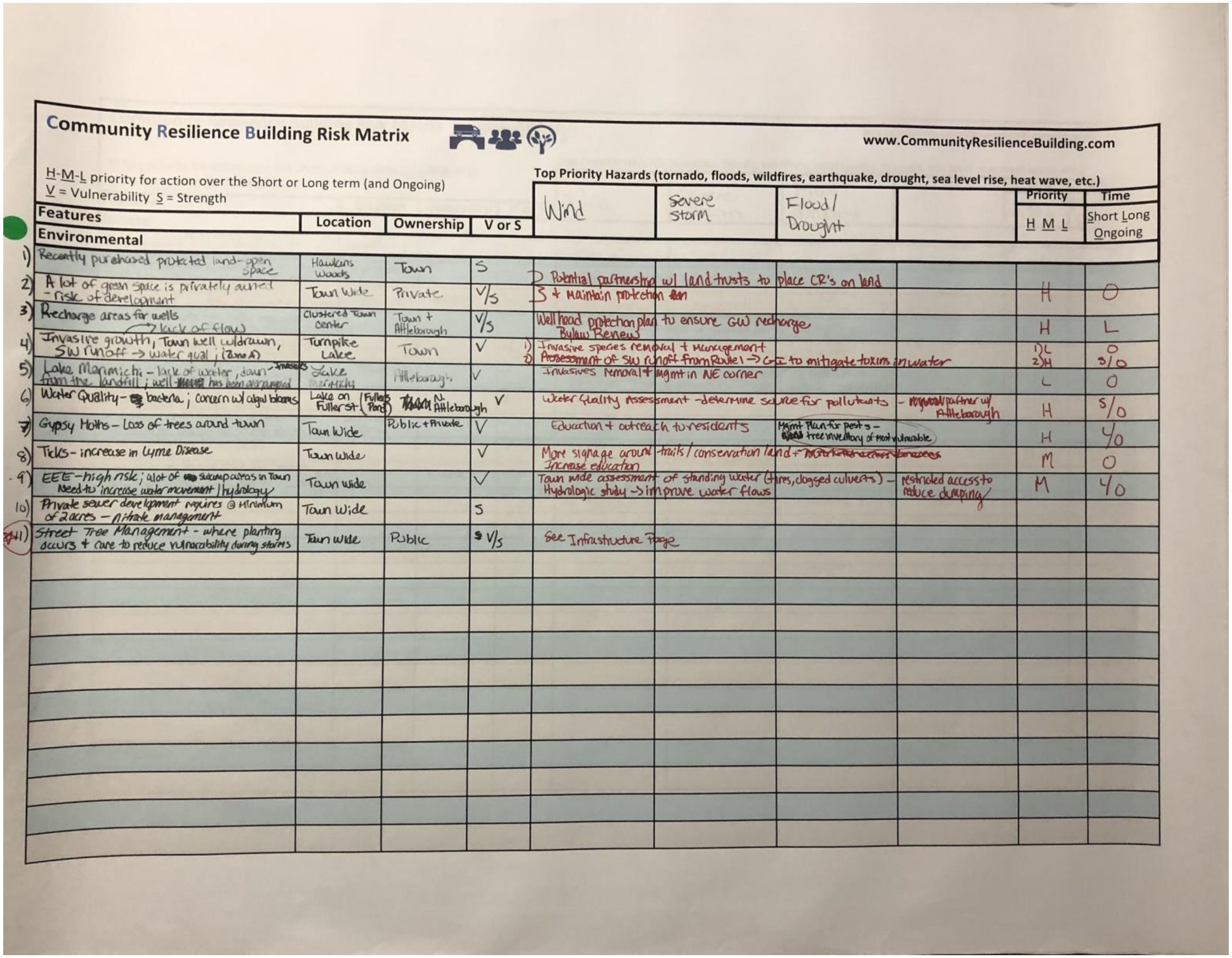
Top Priority Hazards (tornado, floods, wildfires, earthquake, drought, sea level rise, heat wave, etc.)

	Features	Location	Ownership	V or S	Wind	Severe Storms	Flood / Drought		Priority H M L	Time Short Long Ongoing
	Infrastructural									
1)	Electric Grid - Power Outages + Time to Respond	Town Wide, Above Ground	National Grid	V	✓ Assessment of trees Public + private	that are threat to electrical lines inventory - outreach to homeowners w/		+ Discussion w/ Nat'l Grid - plan for future	H	L/O
2)	Route 106 - Transportation Alternatives	Town Wide to Plainville		V/S	Priority road for tree	mitigation/assessment			H	S/O
3)	Private Water Mgmt - Wells No water access w/o power	Town wide	Private	V	Education + outreach - what to do w/ power loss				L	O
4)	Private Sewer System - No electricity - no access	Town wide	Private	V	-> Work w/ Attleboro -	Treasure Island sewer	management		L	O
5)	Schools - Gas Transmission during very cold weather	Jackson School	Gas-Private	V	Study why this occurring + investigate LT solutions				H	S
6)	Flooding - GW Plume - specific locations @ specific pt's due to SW / rain	Shepard St. Jefferson Town Center	Public Roads	V	Culvert assessment + possible replacements; investigate improve drainage; design features			GI options to	M	L/O
7)	Fire, Police, Library, Town Buildings - recently renovated; April 2014		Town	S	Maintain operational	systems; could function as temporary warm / cool stations			M	O
8)	Public Wells - 8 of them but only 3 operative - Aging infrastructure;		Town	V	Redrill + boring @ least one if not more	wells online			H!	L/O
9)	Water Infrastructure - Leakage w/in pipes Infiltration + Inflow	Town Center		V	Pipe replacement	using existing data for sewer + DW; prioritize		non-vulnerable structures	M	O
10)	Senior Center - no generator / flooding very highly utilized		Town	V/S	Need a generator ->	Building to use in an ER; GI to improve		parking lot flooding abatement	H	S
11)	Large capped landfill (V) + solar arrays (S) infiltration into water			V/S	Maintain robust monitoring	to ensure no leak into waters supply			H	O
12)	Inglehead Industries - Uranium storage - mun industry		Private	V	Maintain robust monitoring of pumps				H	O
13)	NO public transit; concern during severe storm w/ ability to move senior pops	Town Wide		V	(5416) Agreement to use GATRA during ER	event Specialized transpo ops. for ppl w/	limited mobility		H	S
14)	Road widening, estb secondary road to Western part of Town	Fuller St.		V	Road widening + tree	mitigation - feasibility study			M	S
15)	3 large manufactured (mobile) home parks Vulnerable to storms; Route 1 (goat transpo ops)	Route 1 152-Taunton Stacks Higgins 1+2		V/S	1) Ability for effective notification/ communication			} ER mgmt plan for these areas	Reverse 911 system	1) H
16)	Lack of shared transpo during hurricane GATRA Emgmt plan - shared resources				2) If evacuate -> transpo plan				civil defense	2) H 3) H
17)	Regional assets - planning for when, where how to use			V/S	Town: 3) Builds a community center -> as shelter	in ER - not regional;		allow for recip. relationships w/ nearby towns		3) L
18)	Dams		Public / Private	V/S	Plans for sharing shelter during ER Assessment of infrastructure - replacement or removal				H	O/L

Solutions = S Time scale = L

* indicates top priorities for group

Environmental Features



Community Resilience Building Risk Matrix www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

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

Features	Location	Ownership	V or S	Wind	Severe Storm	Flood/ Drought		Priority H M L	Time Short Long Ongoing
Environmental									
1) Recently purchased protected land - open space	Hawkins Woods	Town	S	1), 2) Potential partnership w/ land trusts to place CR's on land + maintain protection plan				H	O
2) A lot of green space is privately owned - risk of development	Town Wide	Private	V/S						
3) Recharge areas for wells → lack of flow	Clustered Town center	Town + Attleborough	V/S	Wellhead protection plan to ensure GW recharge Bylaw Renew				H	L
4) Invasive growth, Town well withdrawn, SW runoff → water qual; (Zone A)	Turnpike Lake	Town	V	1) Invasive species removal + management 2) Assessment of SW runoff from Route 1 → GI to mitigate toxins in water				1) L 2) H	1) O 2) S/O
5) Lake Manimicki - lack of water, dumping of invasives from the landfill; well [illegible] has been arranged	Lake Manimicki	Attleborough	V	Invasives removal + mgmt in NE corner				L	O
6) Water Quality - [illegible] bacteria; concern w/ algal blooms	Lake on Fuller St (Fullers Pond)	N. Attleborough	V	Water Quality Assessment - determine source for pollutants			- Regional partner w/ Attleborough	H	S/O
7) Gypsy Moths - Loss of trees around town	Town Wide	Public + Private	V	Education + outreach to residents		Mgmt Plan for pests - Prioritize tree inventory of most vulnerable		H	L/O
8) Ticks - increase in Lyme Disease	Town Wide		V	More signage around trails / conservation land + [illegible] Increase education				M	O
9) EEE - high risk; a lot of swamp areas in Town Need to increase water movement / hydrology	Town Wide		V	Town wide assessment of standing water (tires, clogged culverts) - Hydrologic study → improve water flows			restricted access to reduce dumping	M	L/O
10) Private sewer development requires @ Minimum of 2 acres - nitrate management	Town Wide		S						
11) Street Tree Management - where planting occurs + care to reduce vulnerability during storms	Town Wide	Public	$ V/S	See Infrastructure Page					

* indicates top priorities for group

Societal Features

Community Resilience Building Risk Matrix www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

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

Features	Location	Ownership	V or S	Wind	Severe Storms	Flood/ Drought		Priority H M L	Time Short Long Ongoing
Societal									
1) Shelters - lack of use; no 24 hr shelter; regional shelter staffing shortage; communication w/ elderly	Jackson School		V	1) See infrastructure - Build community center → use as shelter					
2) ER Mgmt/Hazard Communication - seniors Don't know who has message + who doesn't	Town Wide		V	1) See infrastructure - Reverse 911					
3) Senior Center - well utilized + frequented (but no generator)		Public	S	1) See infrastructure - buy generator					
4) Lions, Boy Scouts - actively engaged civic Churches, food pantry @ schools support			S	Hook up boy scout house w/ generator @ sr center				L↓	S
5) Regional MRC - add'tl recruitment needed education + outreach			V/S	Add'tl recruitment, educ + outreach about program				L	O
6) Access + Functional Needs population - lack of transportation, group homes ↳ data on where they are	Town Wide		V	Assessment/data on where limited mobility ppl live + plan evac. transp options for them; website registration				H	L/O
*7) Nowhere for students to go during extreme weather (hurricane) that closes school but not work	Schools		V	Community Center				H	L/O
8) West side of town - unable to survive more than 48 hrs w/o power during storms	West side of Town		V	Community Center				H	L/O
9) Senior Population (1/3 or more) - Communication			V	Website registration - thru senior center - looking for assistance Build database → ed + outreach				H	L/O
10) Affordability of Housing stock for existing population (S's priced out) - difficult for ... ppl to stay		Private	V						
11) Billboard	Route 1	Private	S	Use this for info sharing/educ (see above for needs)				L	S/O

Community Center (circled annotation beside items 7 and 8)

* indicates top priorities for group

Group 1 - Digitized Matrices

Action ID (no specific order)	Feature	Location	Ownership	V or S	Wind	Severe Storms	Flood/Drought	Priority	Time
Infrastructural Features								H, M, L (high, med, low)	S, L, O (short-term, long-term, ongoing)
1	Electric grid - power outages + time to respond; tree management	Townwide, above ground	National Grid	V	Assessment of trees that are threat to electrical lines; Public + private inventory - outreach to homeowners w/ education + Discussion w/ Nat'l Grid - plan for future			H	L/O
2	Route 106 - Transportation alternatives	Townwide to Plainville		V/S	Priority road for tree mitigation/assessment			H	S/O
3	Private water mgmt - wells; no water access w/o power	Townwide	Private	V	Education + outreach - what to do w/ power loss			L	O
4	Private sewer system - no electricity - no access	Townwide	Private	V	^ Work w/ Attleboro- Treasure Island sewer management			L	O
5	Schools - gas transmission during very cold weather	Jackson School	Gas - private	V	Study why this is occurring + investigate LT solutions; possible need for main line improvements			H	S

* indicates top priorities for group

6	Flooding - @ specific pts due to SW/rain	Shepher St.; W. Bacon; Town Center	Public roads	V	Culvert assessment + possible replacements; investigate GI options to improve drainage; design features	M	L/O
7	Fire, police, library, town buildings - recently built. Dedicated: April 2019		Town	S	Maintain operational systems; could function as temporary warm/cool stations	M	O
8*	Public wells - 8 of them but only 3 operative; aging infrastructure		Town	V	Redrill + bring @ least one if not more wells on line; Look for data from DPW + consultant assessment	H!	L/O (solution = S, timescale = L)
9	Water infrastructure - leakage w/in pipes; infiltration + inflow	Town Center		V	Pipe replacement using existing data for sewer + DW; prioritize most vulnerable structures	M	O
10	Senior Center - no generator; flooding; very highly utilized		Town	V/S	Need a generator + building to use in an ER; GI to improve parking lot flooding abatement	H	S
11	Large capped landfill (v) + solar arrays (s); infiltration into water			V/S	Maintain robust monitoring to ensure no flow into water supply	H	O
12	Inglehand Industries - uranium storage from industry		Private	V	Maintain robust monitoring of pumps	H	O

* indicates top priorities for group

13	No public transit; concern during severe storm w/ ability to move senior pops	Townwide		V	13+16) Agreement to use GATRA during ER event; specialized transpo op. for ppl w/ limited mobility			H	S
14	Road widening; est. a secondary road to western part of town	Fuller St.		V	Road widening + tree mitigation - feasibility study			M	S
15	3 large manufactured (mobile) home parks vulnerable to storms; Route 1 (good transpo)	Route 1; 152 - Killarney Estates; Higgins 1+2		V/S	1) Ability for effective notification/communication 2)If evacuate --> transpo plan 3)Town: Build a community center - as shelter in ER, not regional; allow for recip. relationship w/ nearby towns; plans for sharing shelter during ER; ER mgmt + plan for these areas; Reverse 911 system, civil defense			1) H 2) H 3) H	1) O 2) O/L 3) L
16	Lack of shared transpo during hurricane; mgmt plan - shared resources; GATRA								
17	Regional assets - planning for when, where, how to use			V/S					
18	Dams		Public/private	V/S	Assessment of infrastructures - replacement or removal			H	O/L

* indicates top priorities for group

Action ID (no specific order)	Feature	Location	Ownership	V or S	Wind	Severe Storms	Flood/Drought	Priority	Time
Environmental Features								H, M, L (high, med, low)	S, L, O (short-term, long-term, ongoing)
1	Recently purchased protected land - open space	Hawkins Woods	Town	S	Potential partnership w/ land trusts to place CR's on land + maintain protection			H	O
2	A lot of green space is privately owned - risk of development	Townwide	Private	V/S				H	O
3	Recharge areas for wells	Clustered town center	Town + N Attleborough	V/S	Wellhead protection plan to ensure GW recharge; Bylaw review			H	L
4	Invasive growth (lack of flow); Town well w/drawn, SW runoff --> water qual; (Zone A)	Turnpike Lake	Town	V	1) Invasive species removal + management 2) Assessment of SW runoff from Route 1 --> GI to mitigate toxins in water			1) L 2) H	1)O 2) S/O
5	Lake Mirimichi - lack of water, invasives down from the landfill; well has been overpumped	Lake Mirimichi	Attleborough	V	Invasives removal + mgmt in NE corner			L	O

* indicates top priorities for group

6	Water quality - bacteria; concern w/ algal blooms	Lake on Fuller St. (Fuller's Pond)	N. Attleborough	V	Water quality assessment - determine source for pollutants - partner w/ N. Attleborough		H	S/O
7	Gypsy moths - loss of trees around town	Townwide	Public + private	V	Education + outreach to residents; Mgmt plan for pests - tree inventory of most vulnerable		H	L/O
8	Ticks - increase in lyme disease	Townwide		V	More signage around trails/conservation land; increase education		M	O
9	EEE - high risk; a lot of swamp areas in town need to increase water movement/hydrology	Townwide		V	Townwide assessment of standing water (tires, clogged culverts) - restricted access to reduce dumping; Hydrologic study --> improve water flows		M	L/O
10	Private sewer development requires a minimum of 2 acres - nitrate management	Townwide		S				
11*	Street tree management - where planting occurs + care to reduce vulnerability during storms	Townwide	Public	V/S	See infrastructure page			

* indicates top priorities for group

Action ID (no specific order)	Feature	Location	Ownership	V or S	Wind	Severe Storms	Flood/Drought	Priority	Time
Societal Features								H, M, L (high, med, low)	S, L, O (short-term, long-term, ongoing)
1	Shelters - lack of use (no 24 hour shelter); regional shelter staffing shortage; communication w/ elderly	Jackson School		V	1) see infrastructure - Build community center --> use as shelter				
2	ER mgmt/Hazard communication - seniors don't know who has message + who doesn't	Townwide		V	1) see infrastructure - Reverse 911				
3	Senior Center - well utilized + frequented (but no generator)		Public	S	1) see infrastructure - buy generator				
4	Civic support: Lions, Boy Scouts - actively engaged; churches, food pantry @ schools			S	Hook up Boy Scout house w/ generator @ sr center			L	S

* indicates top priorities for group

5	Regional MRC - add'l recruitment needed, education + outreach			V/S	Add'l recruitment, edu + outreach about program			L	O
6	Access + functional needs population (lack data on where they are) - lack of transportation, group homes	Townwide		V	Assessment/data on where limited mobility ppl live + plan evac. transpo options for them; website registration			H	L/O
7*	Nowhere for students to go during extreme weather (hurricanes) that closes school but not work	Schools		V	Community center			H	L/O
8	West side of town - unable to survive more than ~48 hours w/o power during storms	West side of town		V	Community center			H	L/O
9	Senior population (1/3 or more) - communication			V	Website registration - thru senior center - looking for assistance; Build database --> ed + outreach			H	L/O
10	Affordability of housing stock for existing population (srs priced out) -		Private	V					

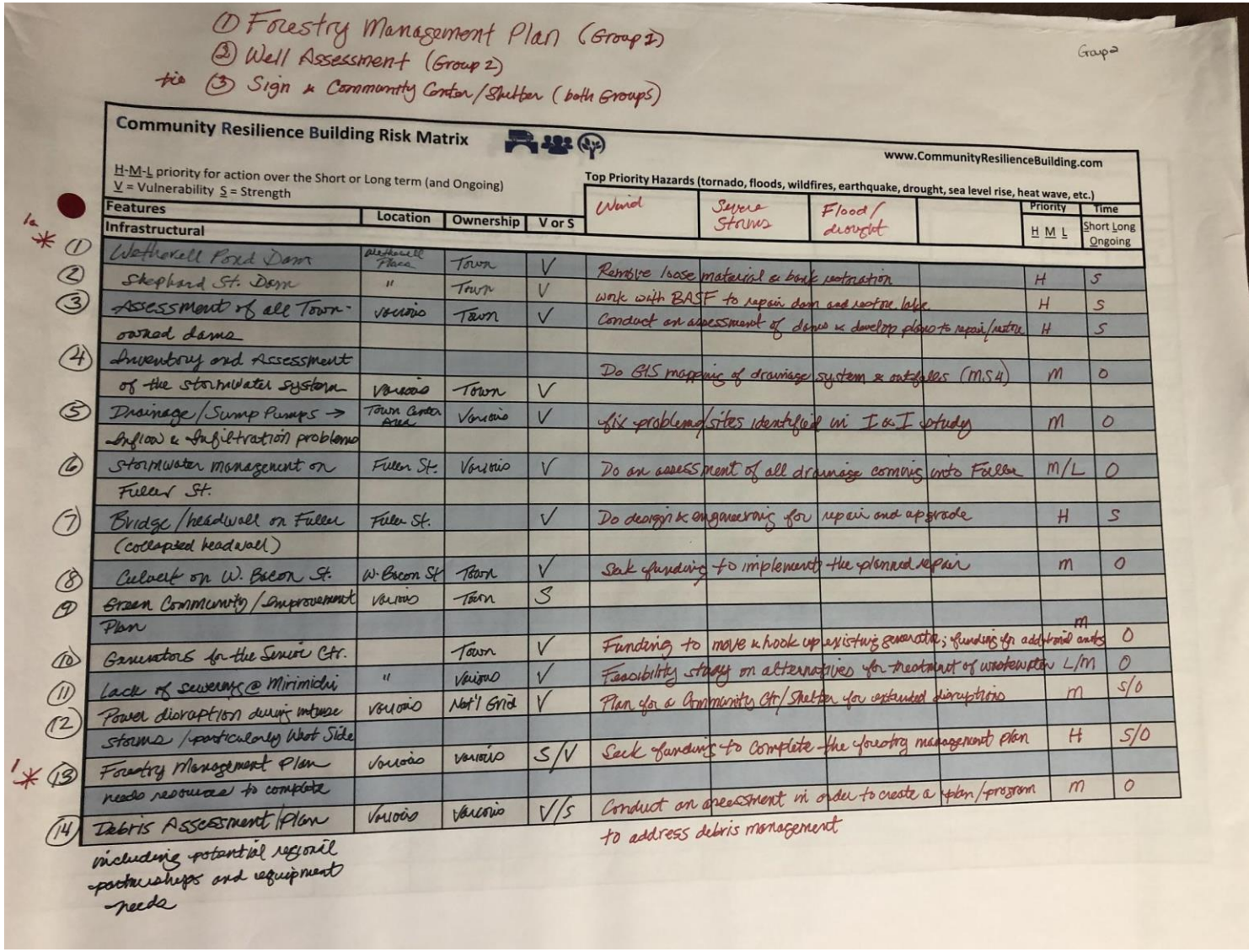
* indicates top priorities for group

	difficult for Plainville ppl to stay								
11	Billboard	Route 1	Private	S	Use this for info sharing/educ (see above for needs)			L	S/O

* indicates top priorities for group

Group 2 - Matrix Photos

Infrastructural Features



① Forestry Management Plan (Group 1)
② Well Assessment (Group 2)
tie ③ Sign @ Community Center/Shelter (both Groups)

Group 2

Community Resilience Building Risk Matrix

www.CommunityResilienceBuilding.com

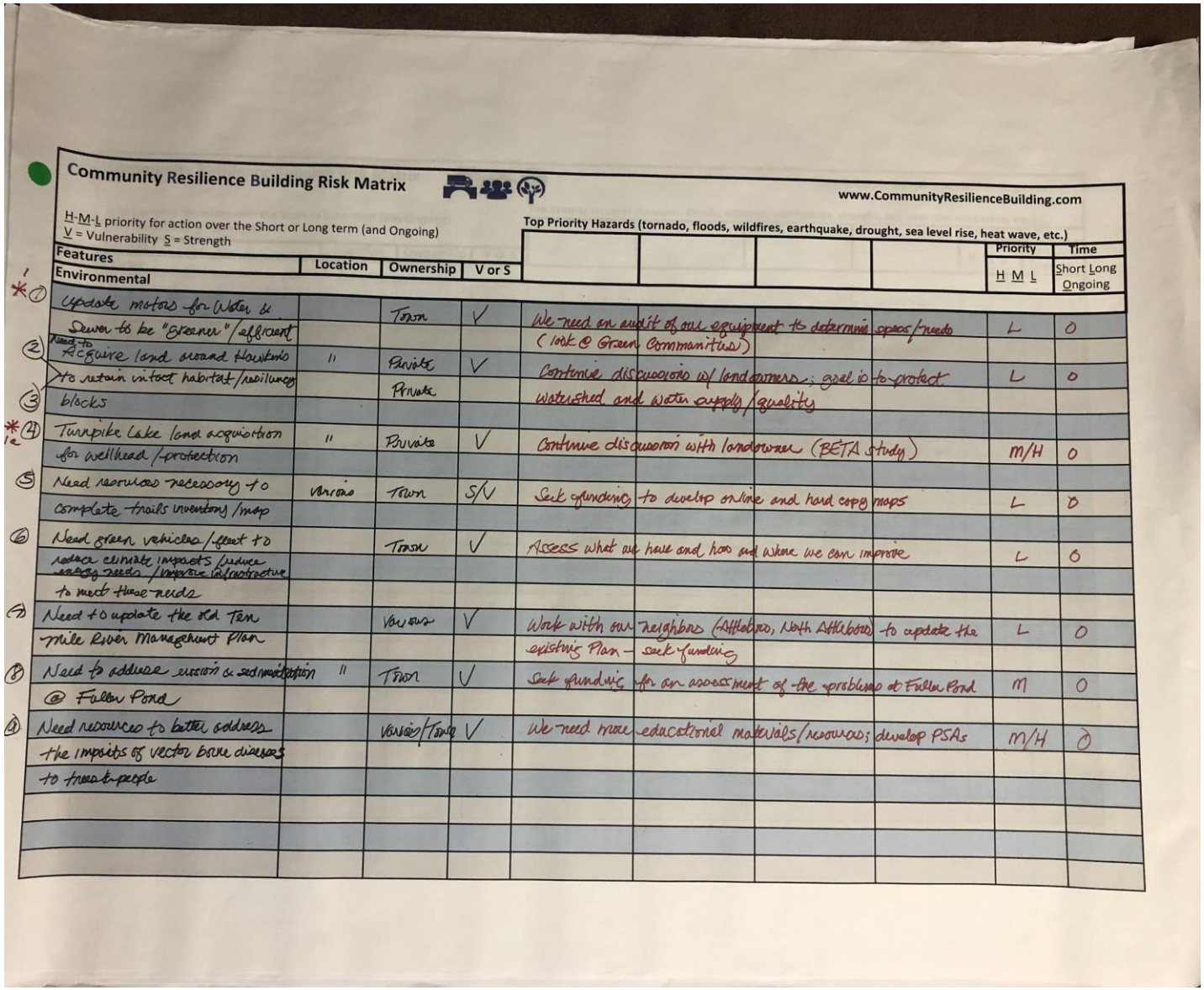
H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

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

Features	Location	Ownership	V or S	Wind	Severe Storms	Flood / drought		Priority H M L	Time Short Long Ongoing
Infrastructural									
1a * ① Wetherell Pond Dam	Shephard Pl.	Town	V	Remove loose material & bank restoration				H	S
② Shephard St. Dam	"	Town	V	work with BASF to repair dam and restore lake				H	S
③ Assessment of all Town-owned dams	various	Town	V	Conduct an assessment of dams & develop plans to repair/restore				H	S
④ Inventory and Assessment of the stormwater systems	various	Town	V	Do GIS mapping of drainage system & outfalls (MS4)				M	O
⑤ Drainage/Sump Pumps → Inflow & Infiltration problems	Town Center Area	various	V	fix problems/sites identified in I&I study				M	O
⑥ Stormwater Management on Fuller St.	Fuller St.	various	V	Do an assessment of all drainage coming into Fuller				M/L	O
⑦ Bridge/headwall on Fuller (collapsed headwall)	Fuller St.		V	Do design & engineering for repair and upgrade				H	S
⑧ Culvert on W. Bacon St.	W. Bacon St	Town	V	Seek funding to implement the planned repair				M	O
⑨ Green Community/Improvement Plan	various	Town	S						
⑩ Generators for the Senior Ctr.		Town	V	Funding to move & hook up existing generator; funding for additional units				M	O
⑪ Lack of sewerage @ Mirimichi	"	various	V	Feasibility study on alternatives for treatment of wastewater				L/M	O
⑫ Power disruption during intense storms/particularly West Side	various	Nat'l Grid	V	Plan for a Community Ctr/Shelter for extended disruptions				M	S/O
1 * ⑬ Forestry Management Plan needs resources to complete	various	various	S/V	Seek funding to complete the forestry management plan				H	S/O
⑭ Debris Assessment/Plan including potential regional partnerships and equipment needs	various	various	V/S	Conduct an assessment in order to create a plan/program to address debris management				M	O

* indicates top priorities for group

Environmental Features



Community Resilience Building Risk Matrix www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

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

Features	Location	Ownership	V or S					Priority H M L	Time Short Long Ongoing
Environmental									
*① Update motors for Water & Sewer to be "greener"/efficient		Town	V	We need an audit of our equipment to determine specs/needs (look @ Green Communities)				L	O
② Need to Acquire land around Hawkins to retain intact habitat/resiliency	"	Private	V	Continue discussions w/ landowners; goal is to protect watershed and water supply/quality				L	O
③ blocks		Private							
*④ Turnpike Lake land acquisition for wellhead/protection	"	Private	V	Continue discussion with landowner (BETA study)				M/H	O
⑤ Need resources necessary to complete trails inventory/map	Various	Town	S/V	Seek funding to develop online and hard copy maps				L	O
⑥ Need green vehicles/fleet to reduce climate impacts/reduce energy needs/improve infrastructure to meet these needs		Town	V	Assess what we have and how and where we can improve				L	O
⑦ Need to update the old Ten Mile River Management Plan		Various	V	Work with our neighbors (Attleboro, North Attleboro) to update the existing Plan – seek funding				L	O
⑧ Need to address erosion & sedimentation @ Fuller Pond	"	Town	V	Seek funding for an assessment of the problems at Fuller Pond				M	O
⑨ Need resources to better address the impacts of vector borne diseases to treat people		Various/Town	V	We need more educational materials/resources; develop PSAs				M/H	O

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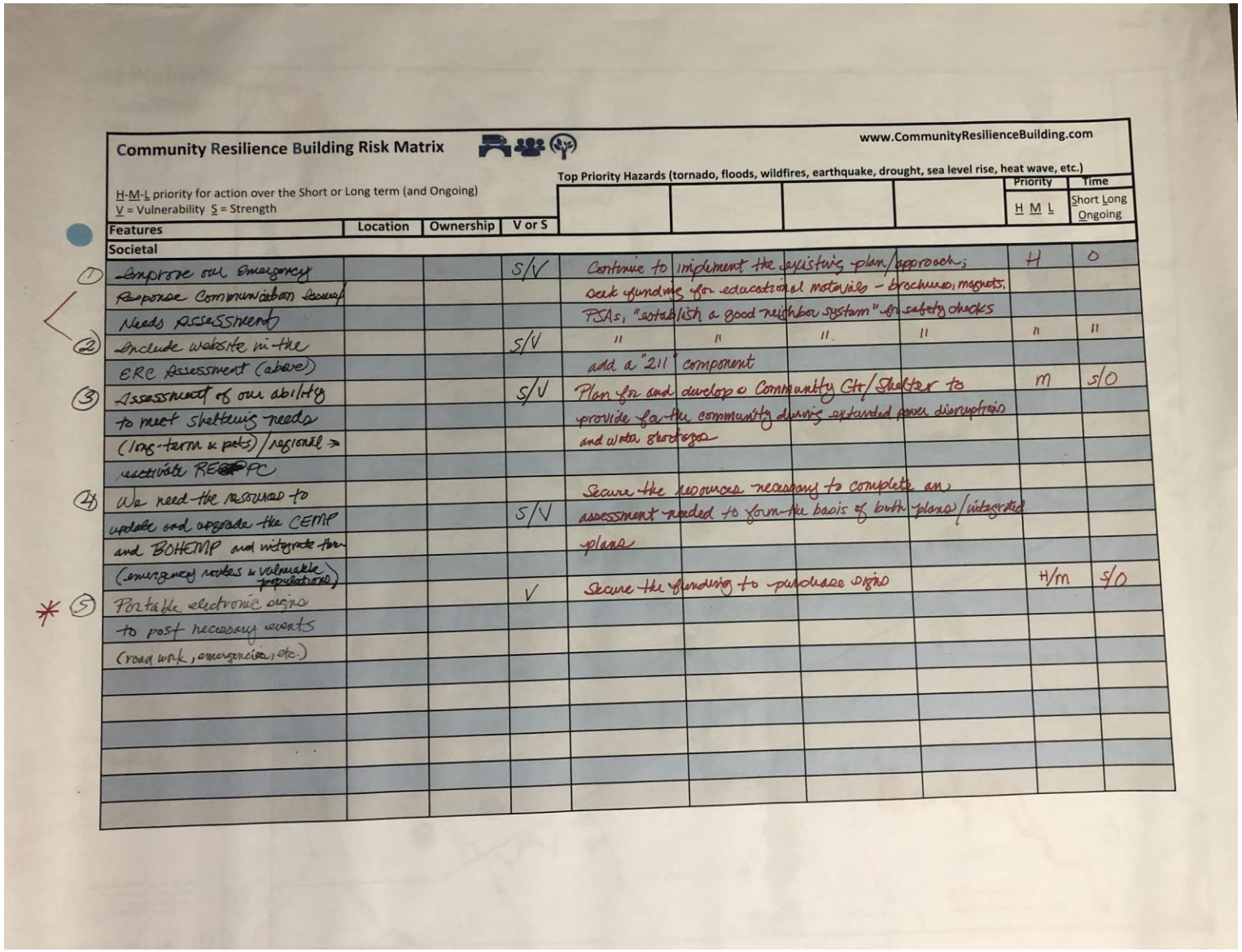
* indicates top priorities for group

Societal Features



Community Resilience Building Risk Matrix www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

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

Features	Location	Ownership	V or S					Priority H M L	Time Short Long Ongoing
Societal									
① Improve our emergency			S/V	Continue to implement the existing plan/approach;				H	O
Response Communication Strategy				seek funding for educational materials – brochures, magnets,					
Needs Assessment				PSAs, "establish a good neighbor system" or safety checks					
② Include website in the			S/V	"	"	"	"	"	"
ERC Assessment (above)				add a "211" component					
③ Assessment of our ability			S/V	Plan for and develop a Community Ctr/Shelter to				m	s/o
to meet sheltering needs				provide for the community during extended power disruptions					
(long-term & pets)/regional →				and water shortages					
reactivate REPC									
④ We need the resources to				Secure the resources necessary to complete an					
update and upgrade the CEMP			S/V	assessment needed to form the basis of both plans/integrated					
and BOHEMP and integrate them				plans					
(emergency routes & vulnerable populations)									
* ⑤ Portable electronic signs			V	Secure the funding to purchase signs				H/m	s/o
to post necessary events									
(road work, emergencies, etc.)									

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* indicates top priorities for group

Group 2 - Digitized Matrices

Action ID (no specific order)	Features	Location	Ownership	V or S	Flood - Drought cycle	Heavy Precip	High Winds	Extreme Temps	Priority	Time
Infrastructural Features									H, M, L (high, med, low)	S, L, O (short-term, long-term, ongoing)
1*	Wetherell Pond Dam	Wetherell Place	Town	V	Remove loose material + bank restoration				H	S
2	Shephard St. Dam	Wetherell Place	Town	V	Work with BASF to repair dam and restore lake				H	S
3	Assessment of all Town-owned dams	various	Town	V	Conduct an assessment of dams + develop plans to repair/restore				H	S
4	Inventory and assessment of the stormwater system	various	Town	V	Do GIS mapping of drainage system + outfalls (MS4)				M	O
5	Drainage/sump pumps → inflow + infiltration	Town Center area	various	V	Fix problems/sites identified in I&I study				M	O

* indicates top priorities for group

	problems						
6	Stormwater management on Fuller St.	Fuller St.	various	V	Do an assessment of all drainage coming into Fuller	M/L	O
7	Bridge/head wall on Fuller St. (collapsed headwall)	Fuller St.		V	Do design + engineering for repair and upgrade	H	S
8	Culvert on W. Bacon St.	W. Bacon St	Town	V	Seek funding to implement the planned repair	M	O
9	Green Community/ Improvement Plan	various	Town	S			
10	Generators for the Senior Center		Town	V	Funding to move + hook up existing generator; funding for additional units	M	O
11	Lack of sewering @ Mirimichi	various	various	V	Feasibility study on alternatives for treatment of wastewater	L/M	O
12	Power disruption during	various	Nat'l Grid	V	Plan for a Community Center/Shelter for extended disruptions	M	S/O

* indicates top priorities for group

	intense storms/particularly West Side						
13*	Foresty Management Plan needs resources to complete	various	various	S/V	Seek funding to complete the forestry management plan	H	S/O
14	Debris Assessment/ Plan including potential regional partnerships and equipment needs	various	various	V/S	Conduct an assessment in order to create a plan/program to address debris management	M	O
15	Water system vulnerability	various		V	Perform a Risk and Resilience assessment on the municipal water system	H	S/O

* indicates top priorities for group

Action ID (no specific order)	Features	Location	Ownership	V or S	Flood - Drought cycle	Heavy Precip	High Winds	Extreme Temps	Priority	Time
Environmental Features									H, M, L (high, med, low)	S, L, O (short-term, long-term, ongoing)
1*	Update motors for water + sewer to be "greener"/efficient		Town	V	We need an audit of our equipment to determine specs/needs (look @ Green Communities)				L	O
2/3	Need to acquire land around Hawkins to retain intact habitat/resiliency blocks	"	Private	V	Continue discussions w/ landowners; goal to protect watershed and water supply/quality				L	O
4*	Turnpike Lake land acquisition for wellhead/protection	"	Private	V	Continue discussion with landowner (BETA study)				M/H	O

* indicates top priorities for group

5	Need resources necessary to complete trails inventory/map	various	Town	S/V	Seek funding to develop online and hard copy maps	L	O
6	Need green vehicles/fleet to reduce climate impacts/reduce energy needs/improve infrastructure to meet these needs		Town	V	Assess what we have and how and when we can improve	L	O
7	Need to update the old Ten Mile River Management Plan		various	V	Work with our neighbors (Attleboro, North Attleborough) to update the existing Plan - seek funding	L	O
8	Need to address erosion + sedimentation @ Fuller	"	Town	V	Seek funding for an assessment of the problems at Fuller Pond	M	O

* indicates top priorities for group

	Pond						
9	Need resources to better address the impacts of vector borne diseases to trees + people		various/Town	V	We need more educational materials/resources; develop PSAs	M/H	O

Action ID (no specific order)	Features	Location	Ownership	V or S	Flood - Drought cycle	Heavy Precip	High Winds	Extreme Temps	Priority	Time
Societal Features									H, M, L (high, med, low)	S, L, O (short-term, long-term, ongoing)
1	Improve our emergency response communication issues/needs			S/V	Continue to implement the existing plan/approach; seek funding for educational materials - brochures, magnets, PSAs, "establish a good neighbor system" for safety checks				H	O

* indicates top priorities for group

	assessment						
2	Include website in the ERC Assessment (above)			S/V	same as above; add a "211" component	H	O
3	Assessment of our ability to meet sheltering needs (long-term & pets)/regional --> reactivate REPC			S/V	Plan for and develop a Community Center/Shelter to provide for the community during extended power disruptions and water shortages	M	S/O
4	We need the resources to update and upgrade the CEMP and BOHEMP and integrate them (emergency			S/V	Secure the resources necessary to complete an assessment needed to form the basis of both plans/integrate plans		

* indicates top priorities for group

	routes & vulnerable populations)						
5*	Portable electronic signs to post necessary events (road work, emergencies, etc.)			V	Secure the funding to purchase signs	H/M	S/O

* indicates top priorities for group

Appendix C: CRB Workshop Participants

Name	**Affiliation**
Bob Stone	Schools
Michael Stauss	Fire Department
Chris Yarworth	Town
Stephen Nunnery	DPW
Deb Revelle	Board of Health
Judy DePue	Resident
Maggie Clarke	Resident
Tom Lamonte	Resident
Jim Alfred	Police Department
Dave Raiche	Schools
Kelly Pawluczonek	Board of Health
Jim Floyd	Police Department
Donna DiFiore	Resident

Appendix D: Workshop Presentation Slides

Today's Agenda

9:00 Introductions and Kick-Off

9:15 – 10:00 Presentations

- MVP Introduction and Overview
- Climate Change and Nature Based Solutions
- Hazards and Workshop Materials

Breaking into small working groups

Break

10:15 Small Groups Identify Strengths and Hazards

12:00 Report Out and Wrap Up

1:00 pm Goodbye, see you next week!

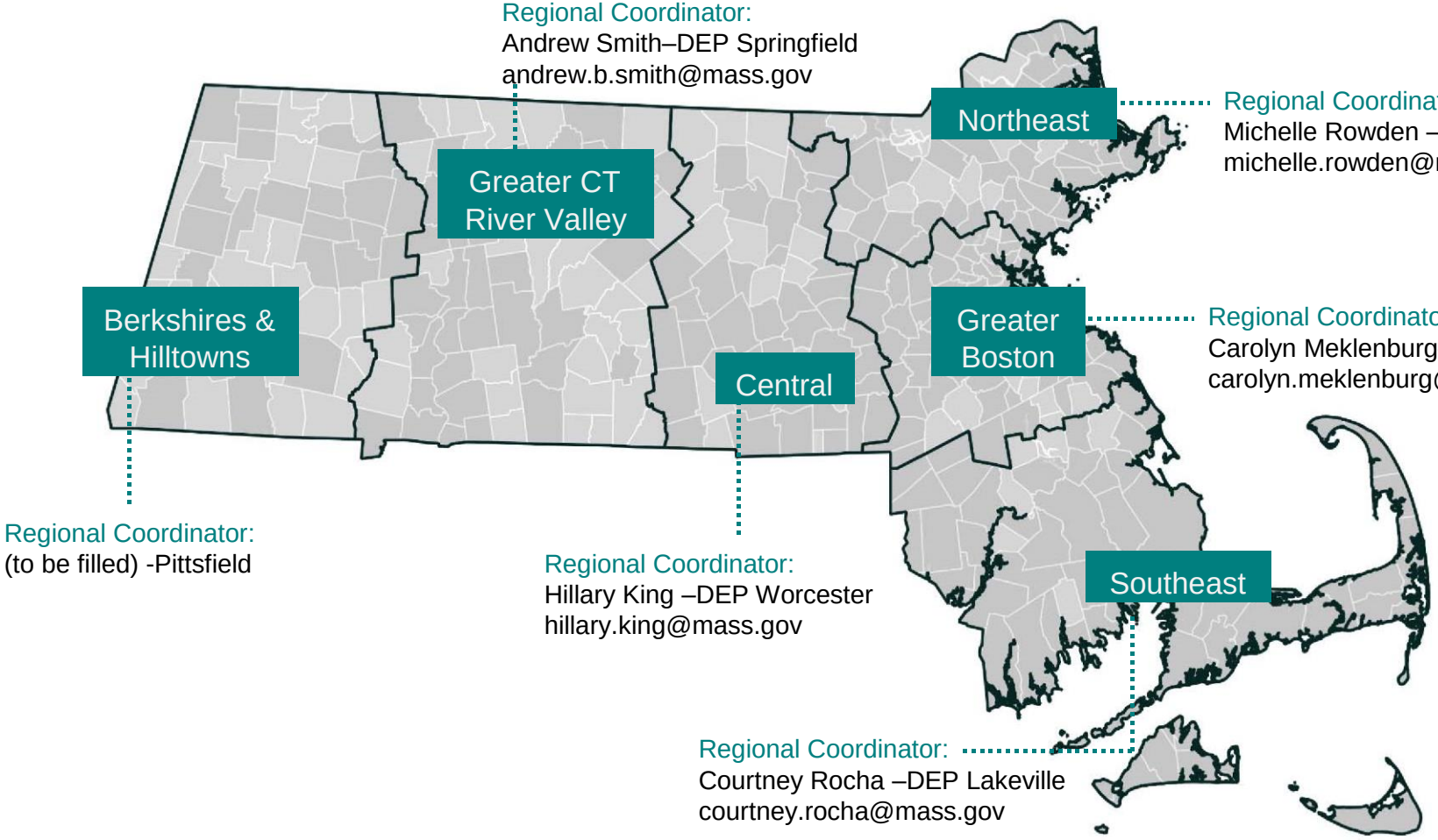
Municipal Vulnerability Preparedness Program

Carolyn Meklenburg

MVP Regional Coordinator for Greater Boston

MA Executive Office of Energy and Environmental Affairs

MVP Regions & Regional Coordinators



Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) - September 2018

- Acknowledges that climate change is already worsening natural hazards, **integrating information and planning elements** for 14 natural hazards that affect the Commonwealth
- Uses **best scientific data and projections** to assess risk and vulnerability

Evaluates the Commonwealth's existing capabilities to implement **agency-specific and statewide activities** to reduce risk and increase resilience

MA 2050 Decarbonization Plan

EEA is conducting an **80x50 Study** to identify the strategies, policies, and implementation pathways for MA to achieve at least 80% Greenhouse Gas reductions by 2050.

The results of that research will be published in a **2050 Roadmap report** and will inform the setting of a **2030 GHG emissions limit** and the development of the **Clean Energy and Climate Plan for 2030**.

More information and opportunities to get involved:

www.mass.gov/2050Roadmap

Massachusetts Global Warming Solutions

Bill S.10:

An Act for Climate Change Adaptation Infrastructure Investments in the Commonwealth

- Building on success of existing programs like MVP: Proposed new source of revenue for loans, grants, and technical assistance to municipalities and regional partnerships for priority adaptation projects
- Proposed deeds excise increase → est. $137M annually ($1B in ten years)
- Recurring, long-term revenue stream for multi-year project feasibility

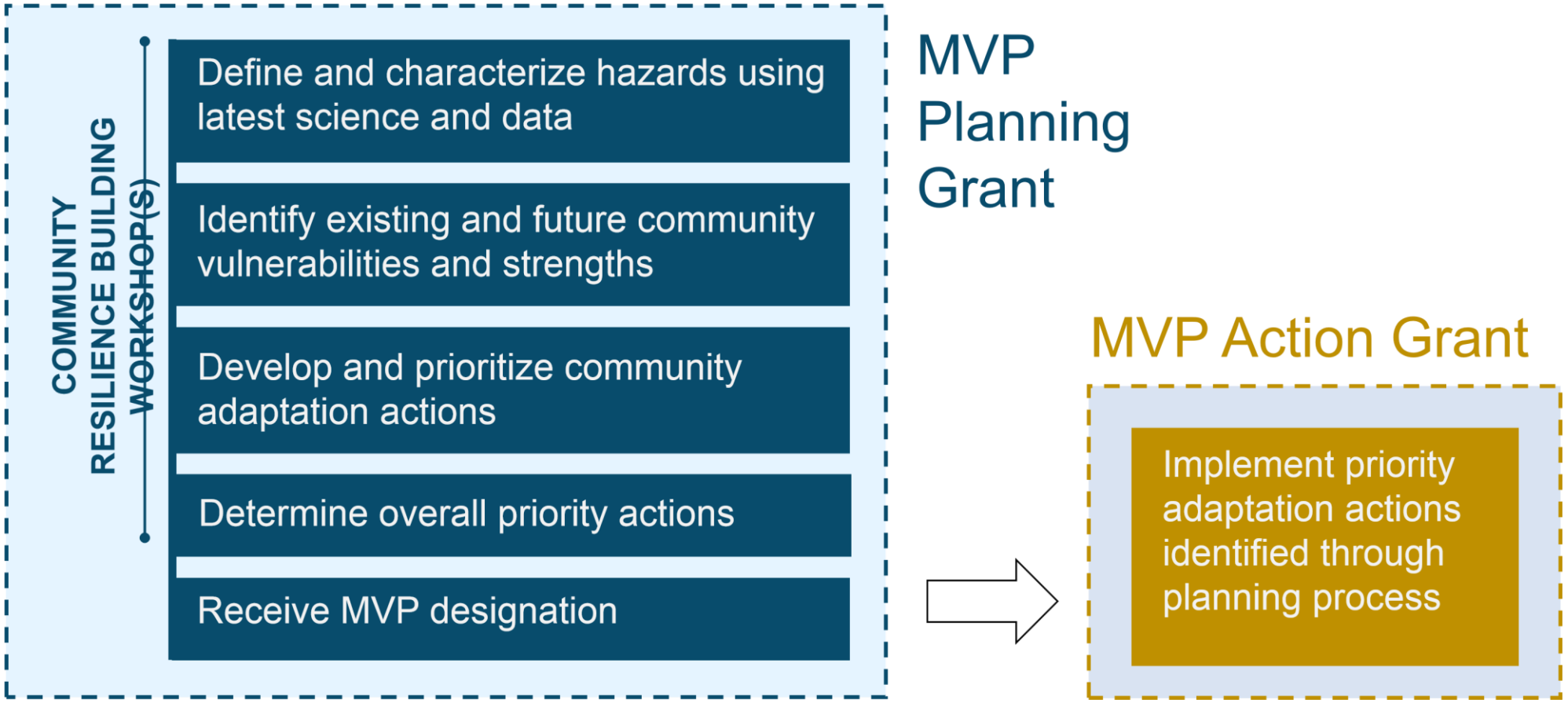
MVP Principles

A community-led, accessible process that

- Employs **local knowledge** and buy-in
- Utilizes **partnerships** and leverages existing efforts
- Is based in **best available climate projections** and data
- Incorporates principles of **nature-based solutions**
- Demonstrates **pilot potential** and is **proactive**
- Reaches and responds to risks faced by **EJ communities and vulnerable populations**

Why nature-based?
Where appropriate, naturebased solutions can be more cost-effective, protect water quality and quantity, sustain lands that provide food and recreation opportunities, reduce erosion, and minimize temperature increases associated with developed areas and climate change.

MVP Process/ Grant Types



Three Years of MVP

MVP Designations

71% of the Commonwealth

249 communities

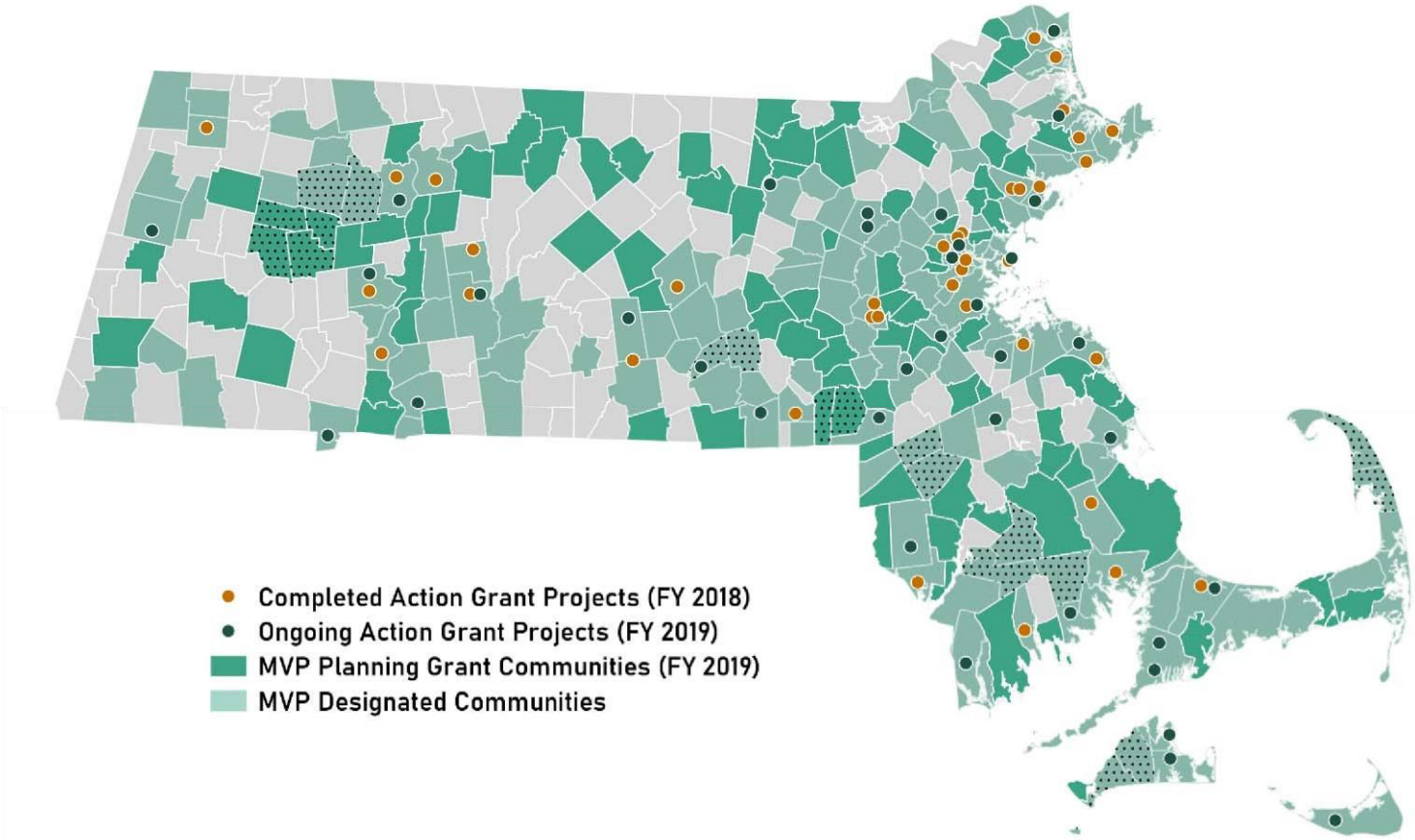
Action Grant Projects

FY 18: **37**

FY 19: **36**

Total Awards

$17M+ in planning and action grants to date



MVP Action Grants: Project Types

- Detailed Vulnerability and Risk Assessment*
- Community Outreach and Education
- Local Bylaws, Ordinances, Plans, and Other Management Measures
- Redesigns and Retrofits***
- Nature-Based Flood Protection, Drought Mitigation, Water Quality, and Water Infiltration Techniques**
- Nature-Based, Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality

* Most common project type
** Second-most common project type
*** Third-most common project type

MVP Action Grants: Project Types (cont.)

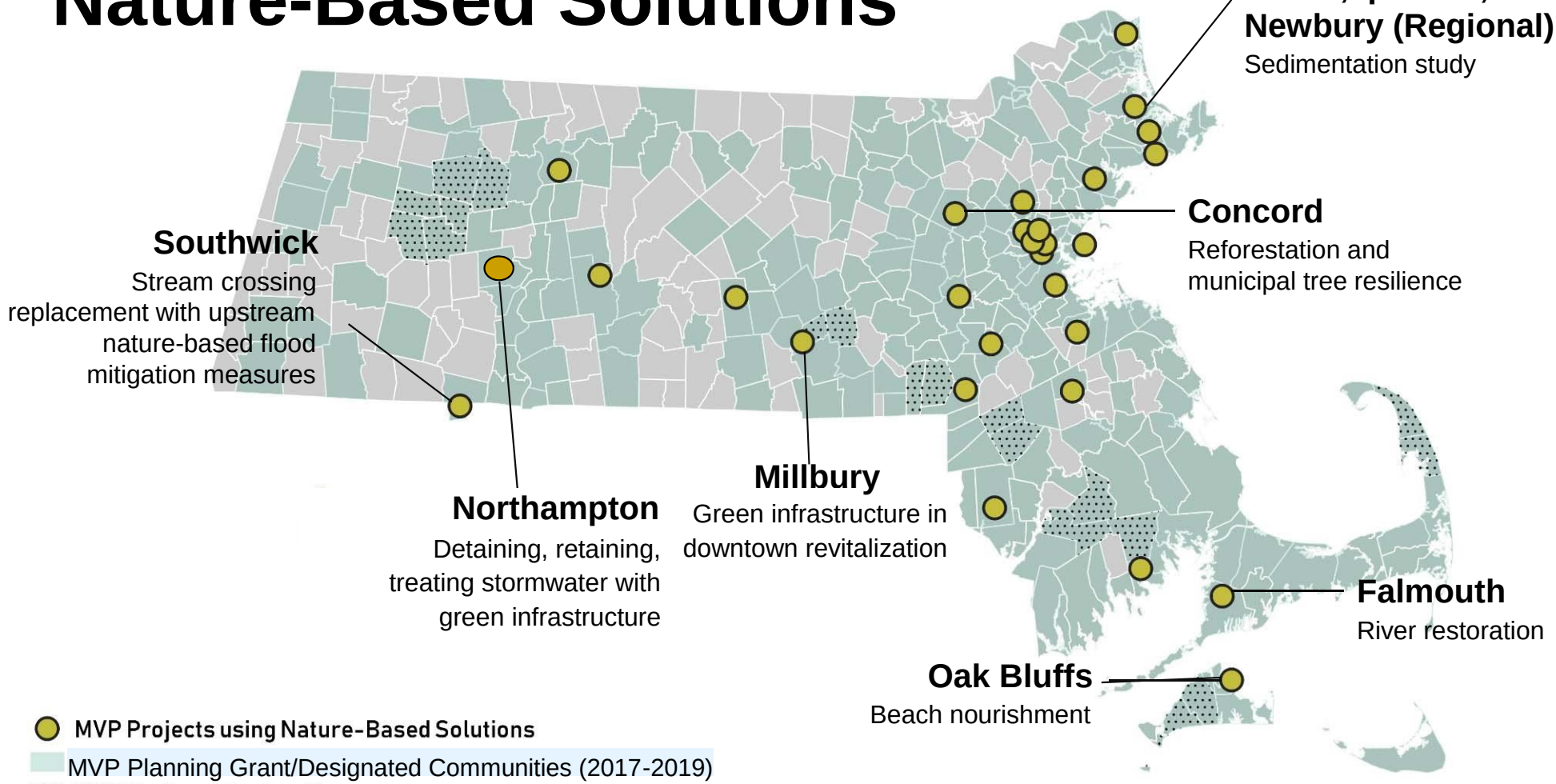
- Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impacts
- Ecological Restoration and Habitat Management to Increase Resiliency

NEW IN 2019

- Energy Resilience
- Chemical Safety
- Land Acquisition for Resilience
- Subsidized Low-Income Housing Resilience Strategies
- Mosquito Control Districts

\+ Expanded eligibility of project location

Nature-Based Solutions



Example Action Grant Projects

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

Millbury

Utilizing **green infrastructure** like stormwater planters, bioretention bump outs, rain gardens, and other measures like porous pavers and pervious pavement **to reduce heat island effects and stormwater runoff** into the Blackstone River.

Nature-based solutions

Example Action Grant Projects

Local Bylaws, Ordinances, Plans, and Other Management

Redesigns and Retrofits

Boston

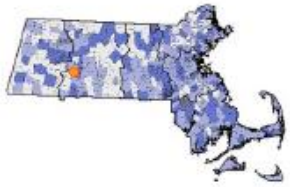
Developing its **first ever resilient building code** so that development in the future floodplain is prepared for at **least three feet of sea level rise**, the likely scenario by late century.

Retrofitting a major **waterfront park** into a legacy park that uses **nature-based solutions** to address climate vulnerabilities while providing important access to recreation for residents.

FY18 Action Grant Projects

Detailed Vulnerability and Risk Assessment, Further Planning

Holyoke



Conducted a detailed **demographic analysis** of individuals who arrived in Holyoke from Puerto Rico as a result of Hurricane Maria and develop recommendations for **planning for future climate change migrants** in Holyoke

Informational graphics from Holyoke's final report

Table 12

How did the Holyoke municipal government respond to your needs? Was the response...	Freq.	Percent
Helpful	26	63.4
I don't know	7	17.1
Neither helpful nor unhelpful	2	4.9
There was no response from this resource	6	14.6
Total	41	100

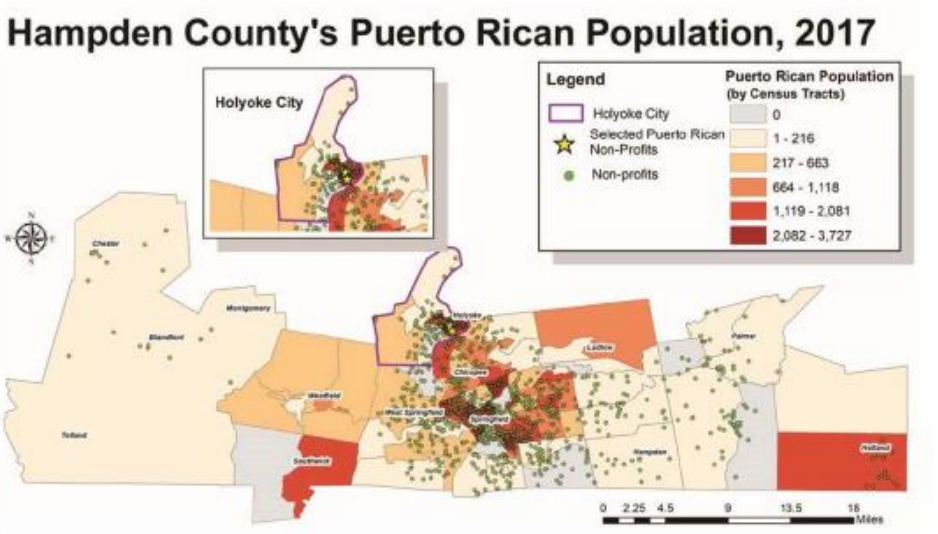


Image credits: Town of Holyoke, Hunter College CUNY, El Instituto UCONN

carolyn.meklenburg@mass.gov

https://www.mass.gov/municipal-vulnerability-preparedness-program

Facilitation Team

Resilient Taunton Watershed Network (RTWN)

SRPEDD

manomet
Soaring Solutions. Grounded Science.

The Nature Conservancy
nature.org

Mass Audubon

Shaping the Future of Your Community

MVP approach is a fluid process that:

- Is locally led and collaborative
- Accessible
- Utilizes partnerships
- Mainstreams climate change
- Informs local planning efforts and promotes local innovation
- Positions municipalities for funding opportunities in a coordinated statewide effort

Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) - September 2018

Acknowledges that climate change is already worsening natural hazards, integrating information and planning elements for 14 natural hazards that affect the Commonwealth

Uses best scientific data and projections to assess risk and vulnerability

Evaluates the Commonwealth's existing capabilities to implement agency-specific and statewide activities to reduce risk and increase resilience

Climate Change in Massachusetts

Municipal Vulnerability Preparedness

[illegible]

Photo: Scituate, Mass. [illegible] photo by U.S. National Guard

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Resources for MVP Communities

Municipal Vulnerability Preparedness (MVP) program

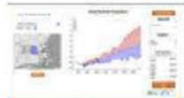
Community Resilience Building Workshop Guide

Ensuring Success Webinar — Massachusetts Municipal Vulnerability Preparedness (MVP) Program Tool Box

Massachusetts Climate Change Projections - Statewide and for Major Drainage Basins

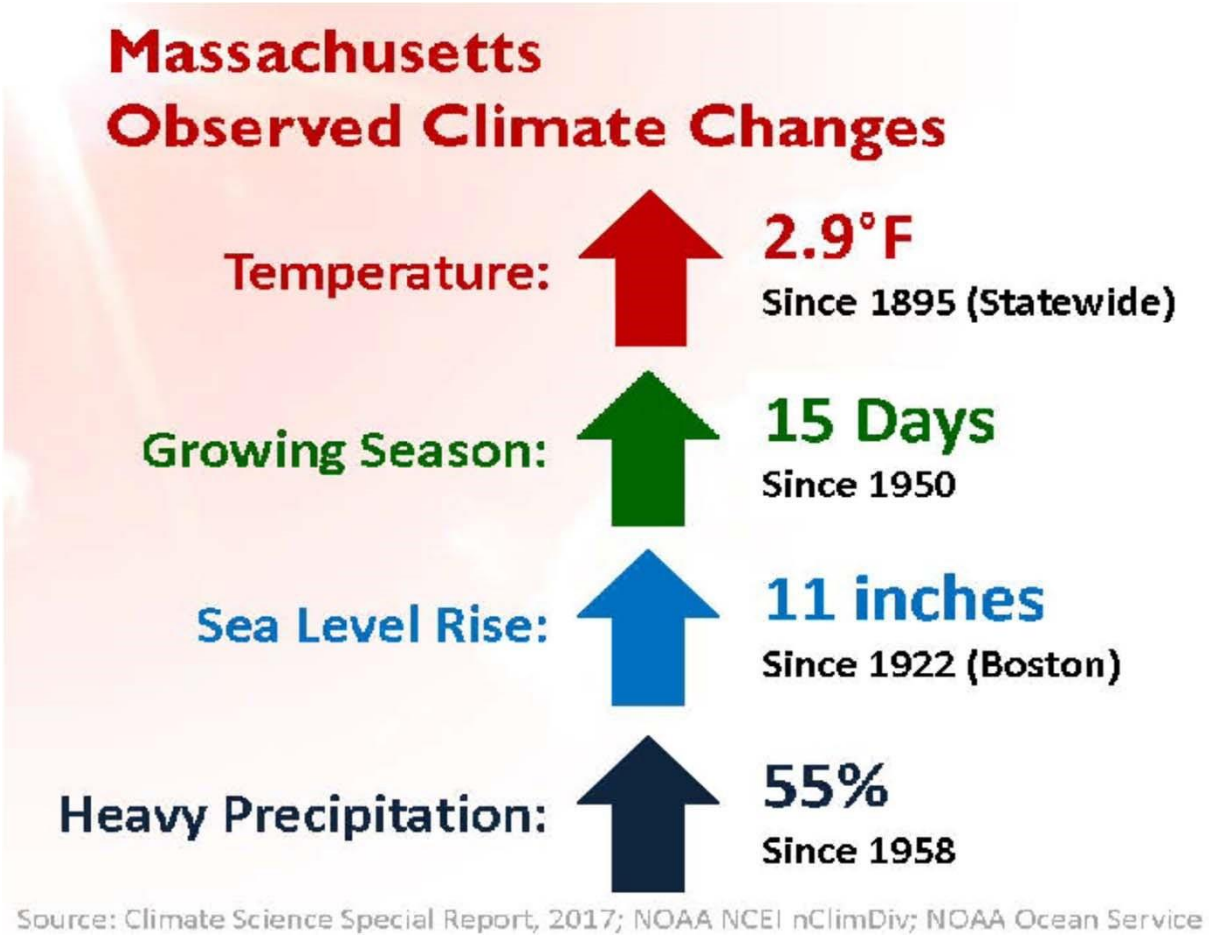
Massachusetts Municipal Vulnerability Preparedness (MVP) program resources

View Map For This Sector



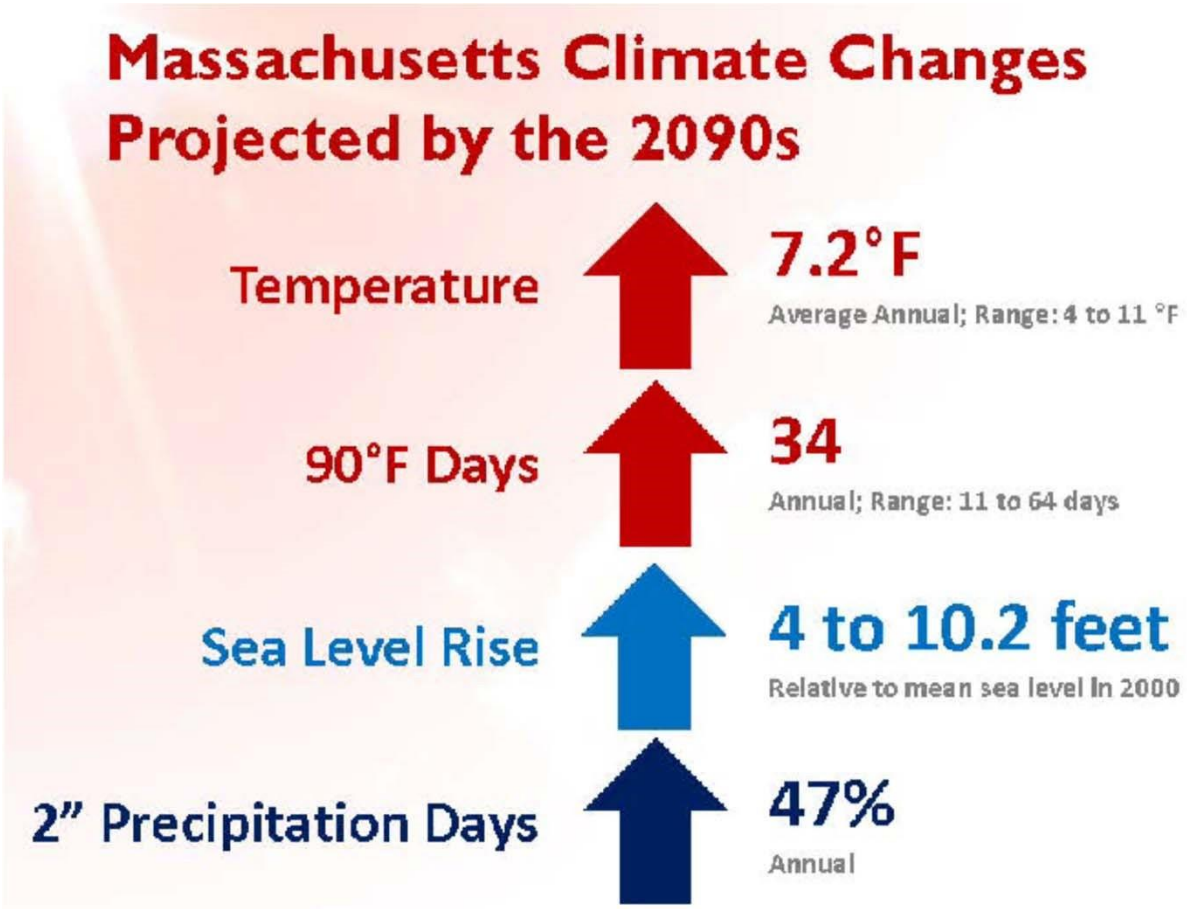
View Data [illegible]

- Showcased Resources
- How do I become an MVP community?
- Do you live in an MVP community?
- Funding Opportunities for MVP Communities



Source: Climate Science Special Report, 2017; NOAA NCEI nClimDiv; NOAA Ocean Service

Massachusetts Climate Changes Projected by the 2090s



Source: Northeast Climate Adaptation Science Center

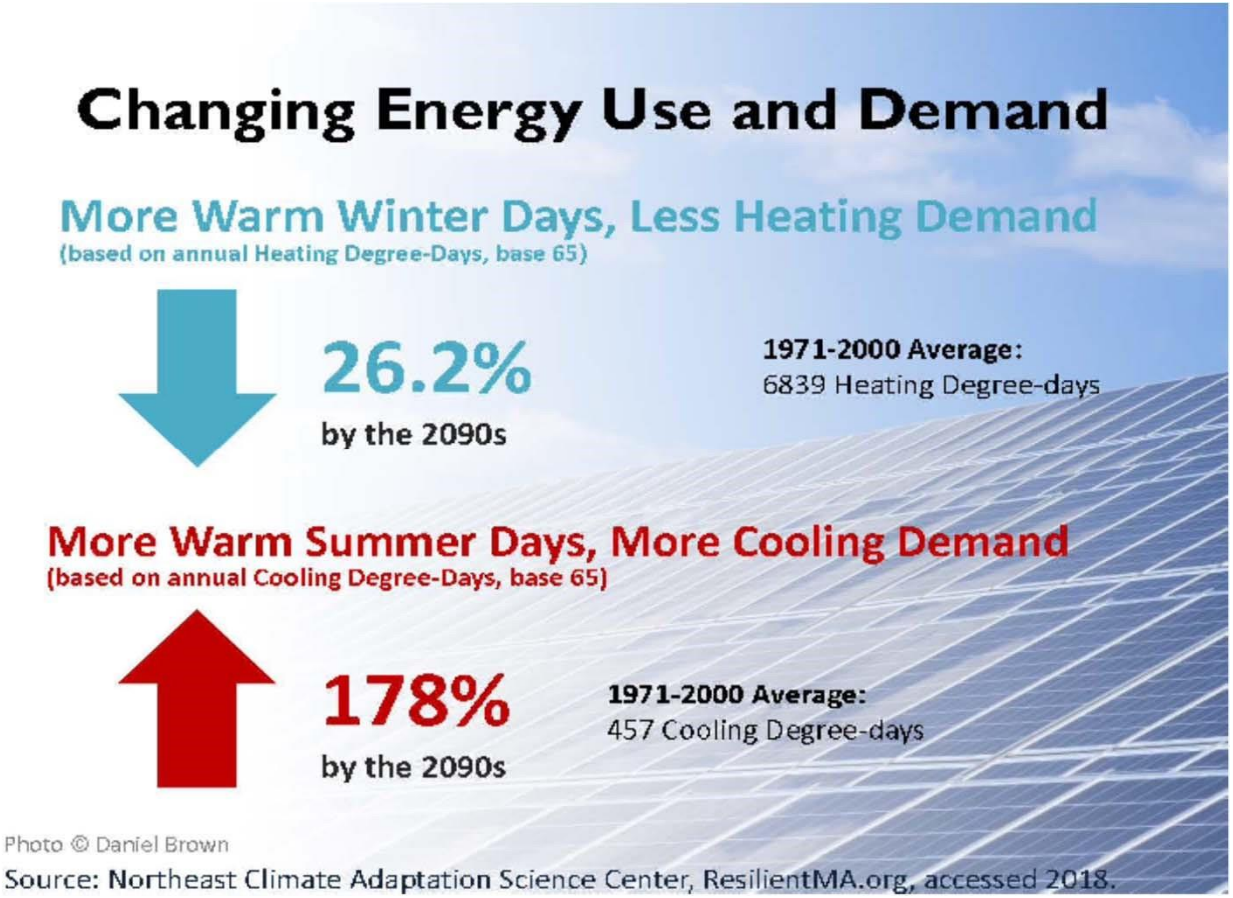


Photo © Daniel Brown

Source: Northeast Climate Adaptation Science Center, ResilientMA.org, accessed 2018.

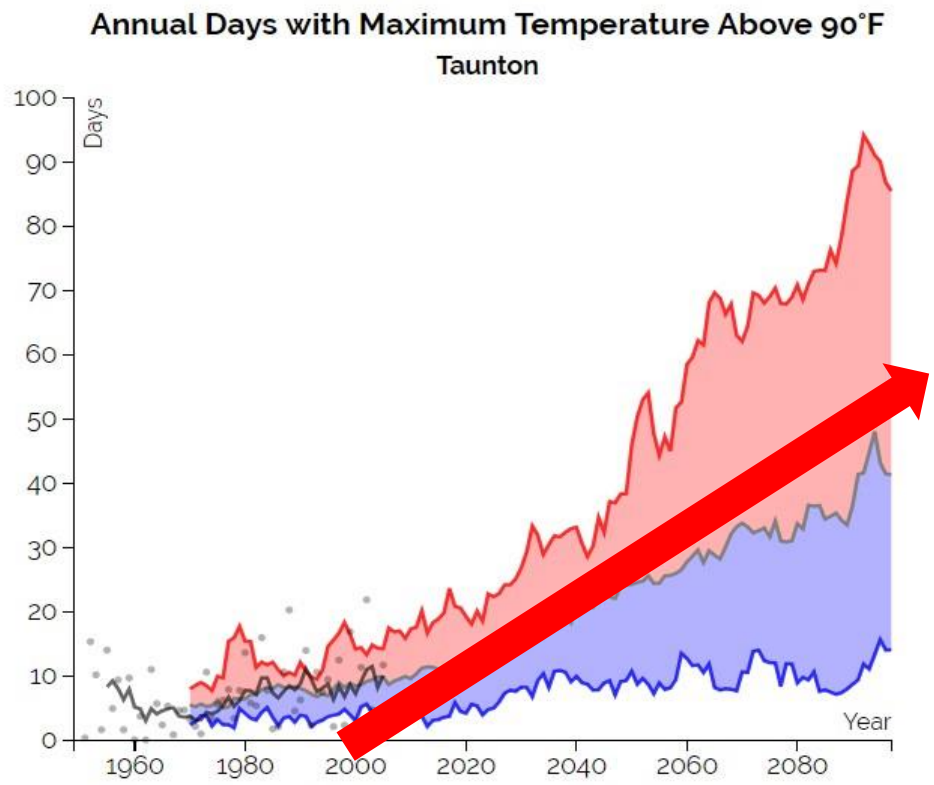
Future climate change impacts in Taunton Watershed

Days above 90°F

Current:10

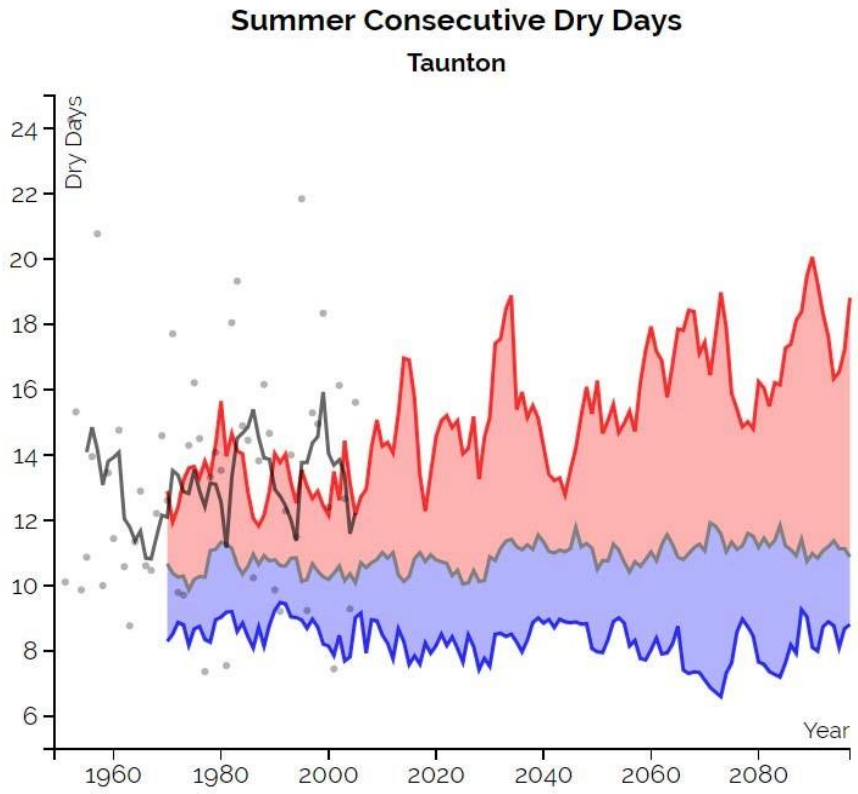
2050: 19

2100: 30



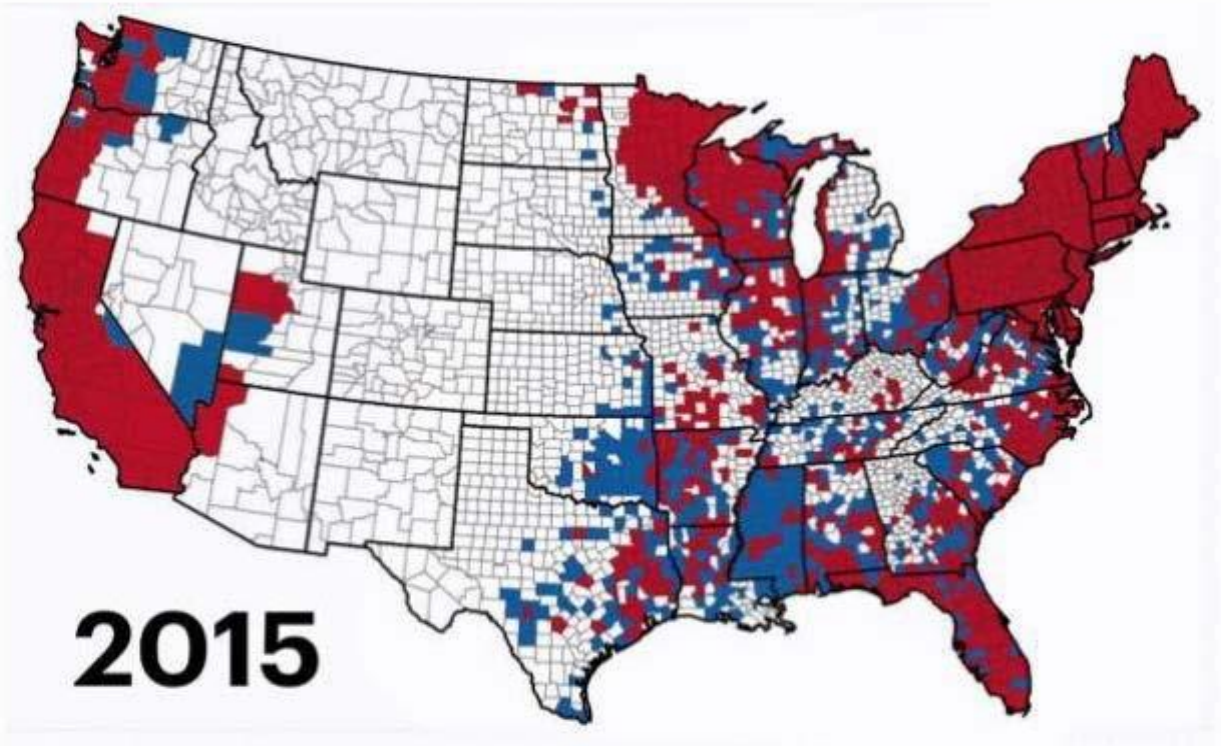
Source ResilientMA.org

Future climate change impacts in Taunton watershed



Source ResilientMA.org

Public Health:
Ticks and Lyme Disease



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)

Nature based solutions at every scale

Rural, suburban, or urban

Conserve available open space providing ecosystem services

Integrate concepts into new development at neighborhood scales

Restore resilience in urban areas at site specific scale

Free services provided by nature-based solutions

- Control flooding and nonpoint source water pollution
- Maximize groundwater recharge
- Limit flooding associated with sea level rise
- Support biodiversity
- Control tax rates and reduce infrastructure costs
- Enhance quality of life

Linking Local and Regional

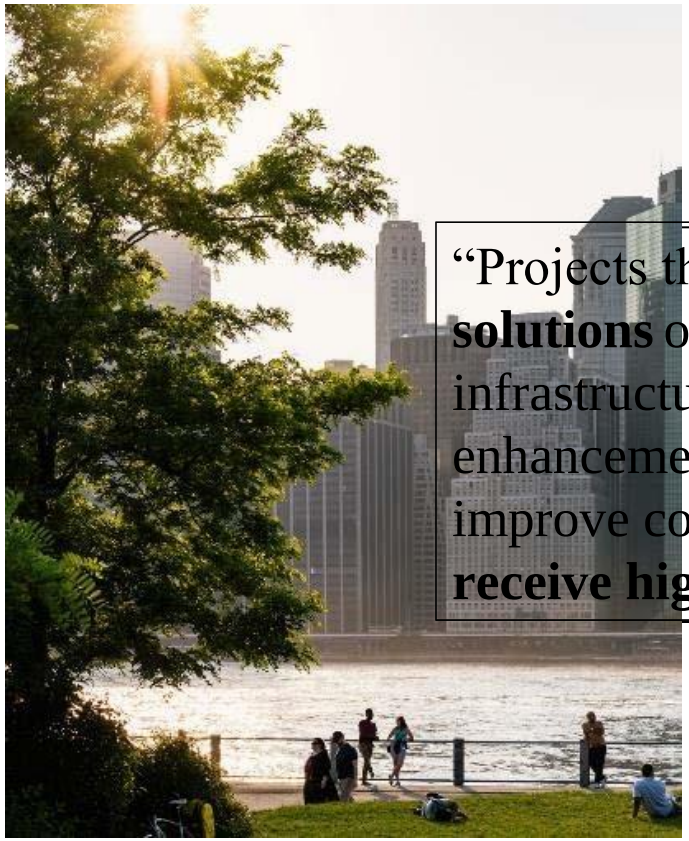
Benefits:

- Contribute to watershed-scale approach to addressing water balance, water quality and flooding concerns
- Maximize the utility of local conservation planning

How to link:

- Comprehensive plans
- Open space residential development
- Transfer of development rights
- Water resource protection overlay districts
- Floodplain management
- Wetland protection districts and bylaws
- Open space plans

Baker Administration's Support



"Projects that propose **nature-based solutions** or strategies that rely on green infrastructure or conservation and enhancement of natural systems to improve community resilience will **receive higher scores**"

EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Matthew A. Beaton, Secretary

Grant Announcement

Commbuys Bid # BD-18-1042-ENV-ENV01-25921

Request for Responses (RFR) ENV 18 POL 03

Dated: April 13, 2018

MUNICIPAL VULNERABILITY PREPAREDNESS GRANT PROGRAM (MVP)
IMMEDIATE NEEDS ROUND FY 18

MVP ACTION GRANT

1. Grant Opportunity Summary

A. Purpose & Scope: Provide financial and technical assistance for municipalities who have received designation from the Executive Office of Energy and Environmental Affairs (EEA) as a Climate Change Municipal Vulnerability Preparedness (MVP) Community ("MVP Community") to implement priority resilience action actions identified through the MVP planning process, or similar climate change vulnerability assessment and action planning that has led to MVP designation.

B. **Overview and Goals:** The Municipal Vulnerability Preparedness Grant Program supports Executive Order 569, "Establishing an Integrated Climate Change Strategy for the Commonwealth," by providing direct funding and technical support to cities and towns to complete and implement community-driven climate change vulnerability assessments and action plans that improve the municipality's resilience to top natural and climate-related hazards using the Community Resilience Building (CRB) Workshop Guide (communityresiliencebuilding.org). The MVP program is split into Planning Grants, which result in a completed CRB process and MVP plan, leading to designation as an "MVP Community," and MVP Action Grants (outlined through this opportunity), which seek to implement key priorities and projects identified through the MVP Planning Grants.

C. **Eligible Projects:** Funding is to advance priority climate adaptation actions identified by "MVP Communities" to address climate change impacts resulting from extreme weather, sea level rise, inland and coastal flooding, severe heat, and other climate impacts. (See further detail on eligible projects in **Section 2B**.). Projects that propose nature-based solutions or strategies that rely on green infrastructure or conservation and enhancement of natural systems to improve community resilience will receive higher scores.

Funding

Certified MVP Communities Receive Priority Ranking

- Action grants are only available to MVP certified communities

- MA Clean Water State Revolving Fund Program (CWSRF)
- MA Office of Coastal Zone Management (CZM)
- MA Department of Agricultural Resources (MDAR)
- MA Executive Office of Energy and Environmental Affairs (EEA)
- MA Department of Environmental Protection (DEP)
- Mass Environmental Trust (MET)
- MA DCS LAND and PARC Grants

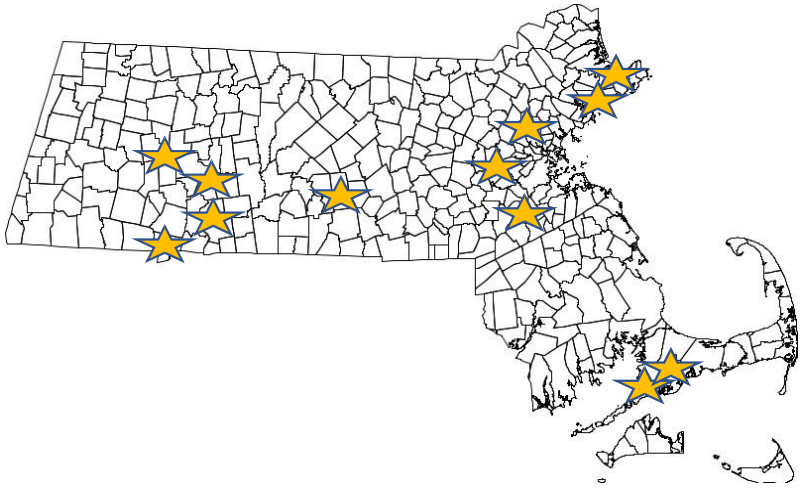
MVP Action Grants: Project Types

- Detailed Vulnerability and Risk Assessment
- Community Outreach and Education
- Local Bylaws, Ordinances, Plans, and Other Management Measures
- Redesigns and Retrofits
- Nature-Based Flood Protection, Drought Mitigation, Water Quality, and Water Infiltration Techniques
- Nature-Based, Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality
- Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impacts
- Ecological Restoration and Habitat Management to Increase Resiliency

MVP Action Grants: Project Types (cont.)

NEW IN 2019

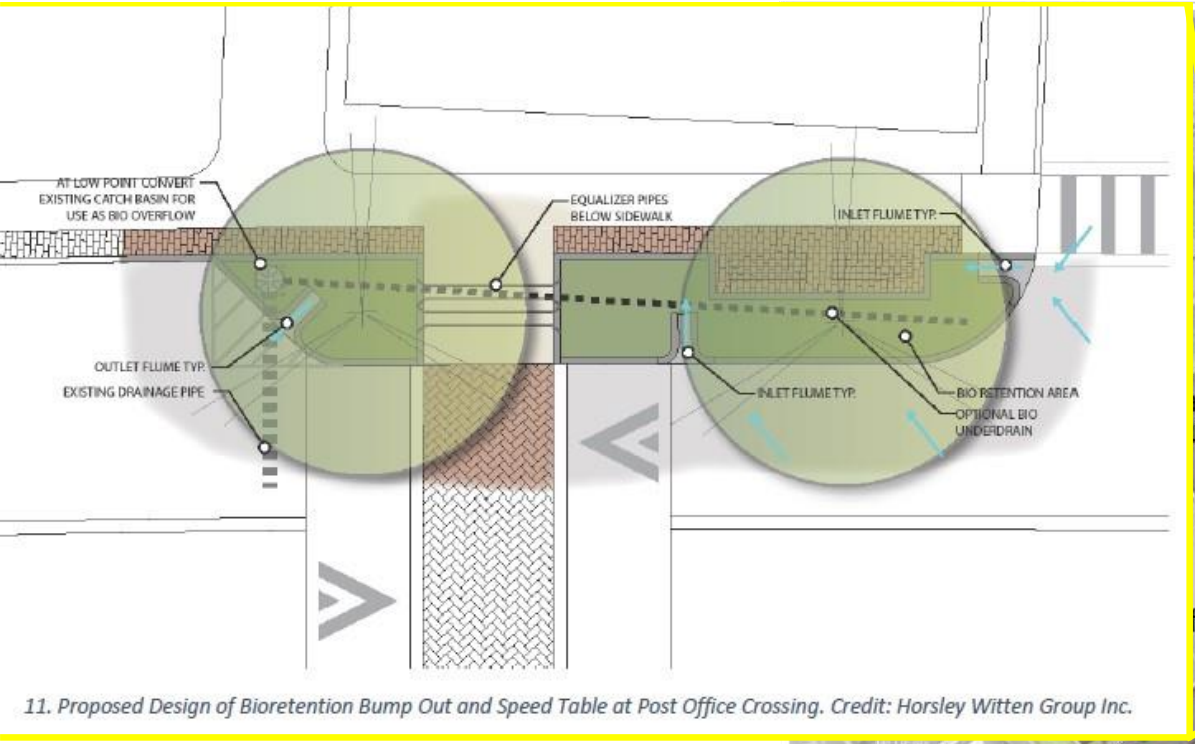
- Energy Resilience
- Chemical Safety
- Land Acquisition for Resilience
- Subsidized Low-Income Housing Resilience Strategies
- Mosquito Control Districts



Example Nature Based Solutions for Resilience

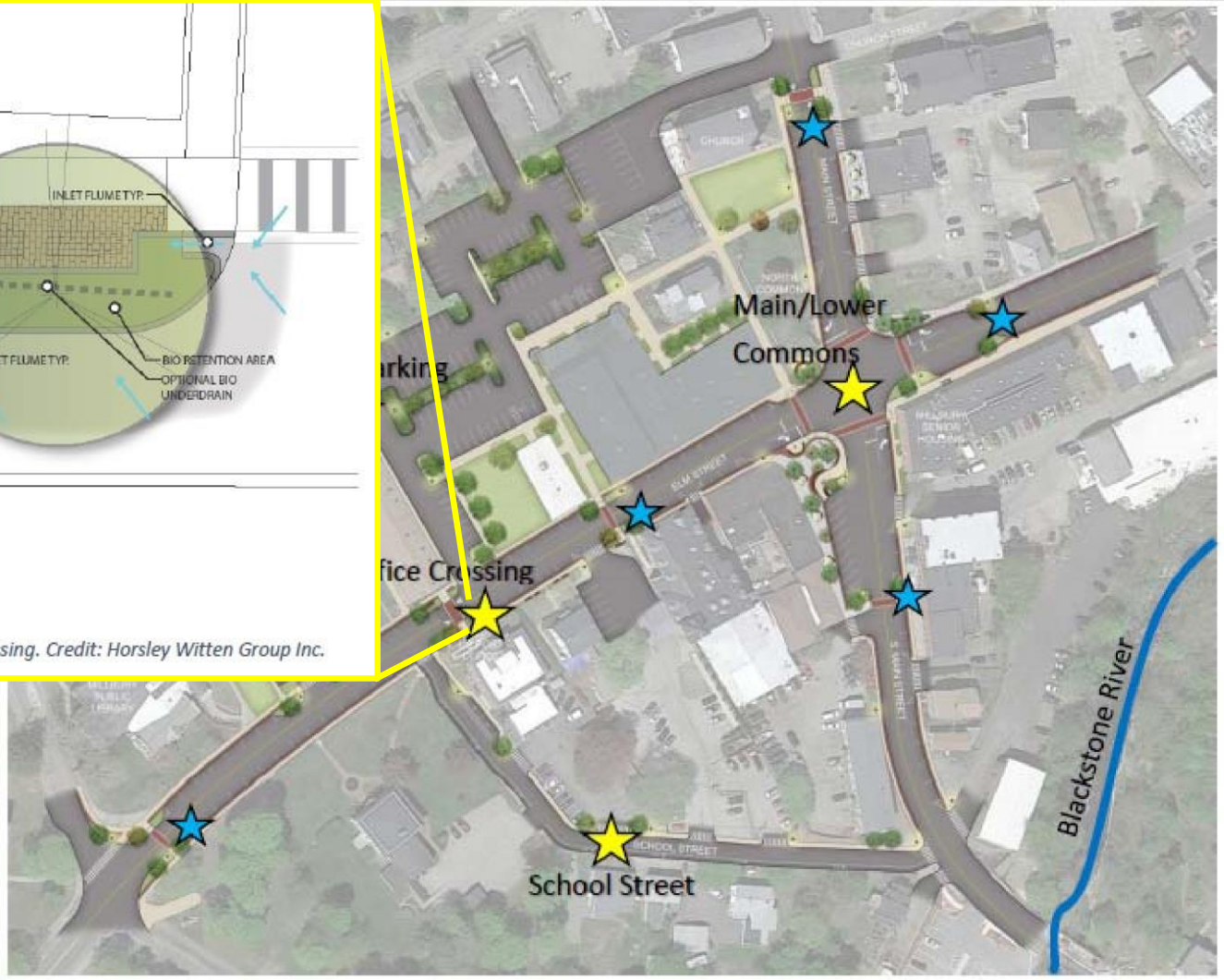
- Living Shoreline Feasibility - Cranberry Bog restoration
  - Watershed Land Protection
  - Salt Marsh Restoration
  - Brook Stabilization
- Tree Planting for Heat Island and reduced runoff
  - Design with Nature for Flood
  - Nature Based Road Stream Crossing
  - Floodplain Restoration
  - Green Infrastructure
- Forestry for Emergency Management and Environmental Conditions

https://www.mass.gov/files/documents/2018/10/19/2017-2018-planning-grant-report-essex.pdf
https://static1.squarespace.com/static/59cbe1e04c326dc7d7bfa01c/t/5beb329e40ec9a5063154e4e/1542140578345/ECAN+MVP+2+Essex.pdf



11. Proposed Design of Bioretention Bump Out and Speed Table at Post Office Crossing. Credit: Horsley Witten Group Inc.

Millbury Downtown Greening



5. Overall Site Plan and Project Area in Relation to Blackstone River –
Yellow stars represent project areas and blue stars represent additional bump outs and bioretention areas.
Credit: Weston & Sampson

So, what do we do next?
Next . . . We Plan !!!

Part 1: Today

Part 2: Jan. 21

Overview of the Process (Steps & Tasks)

DURING WORKSHOP

A Prepare for the Workshop
1. Establish a core team with goals.
2. Engage stakeholders.
3. Prepare materials for workshop.
4. Decide on participant arrangements.

B Characterize Hazards
1. Identify past, current, and future impacts.
2. Determine the highest-priority hazards.

C Identify Community Vulnerabilities and Strengths
1. Identify infrastructural vulnerabilities and strengths.
2. Identify societal vulnerabilities and strengths.
3. Identify environmental vulnerabilities and strengths.

D Identify and Prioritize Community Actions
1. Identify and prioritize infrastructural actions.
2. Identify and prioritize societal actions.
3. Identify and prioritize environmental actions.

E Determine the Overall Priority Actions
1. Identify highest-priority actions.
2. Further define urgency and timing.

F Put It All Together
1. Generate final workshop products.

G Move Forward
1. Continue community outreach and engagement.
2. Secure additional data and information.
3. Inform existing planning and project activities.

Community Components

Infrastructural

Societal

Environmental

Community Resilience Building Risk Matrix

www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
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					Priority H-M-L	Time Short Long Ongoing
Infrastructural									
Societal									
Environmental									

Community Resilience Building Risk Matrix

www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

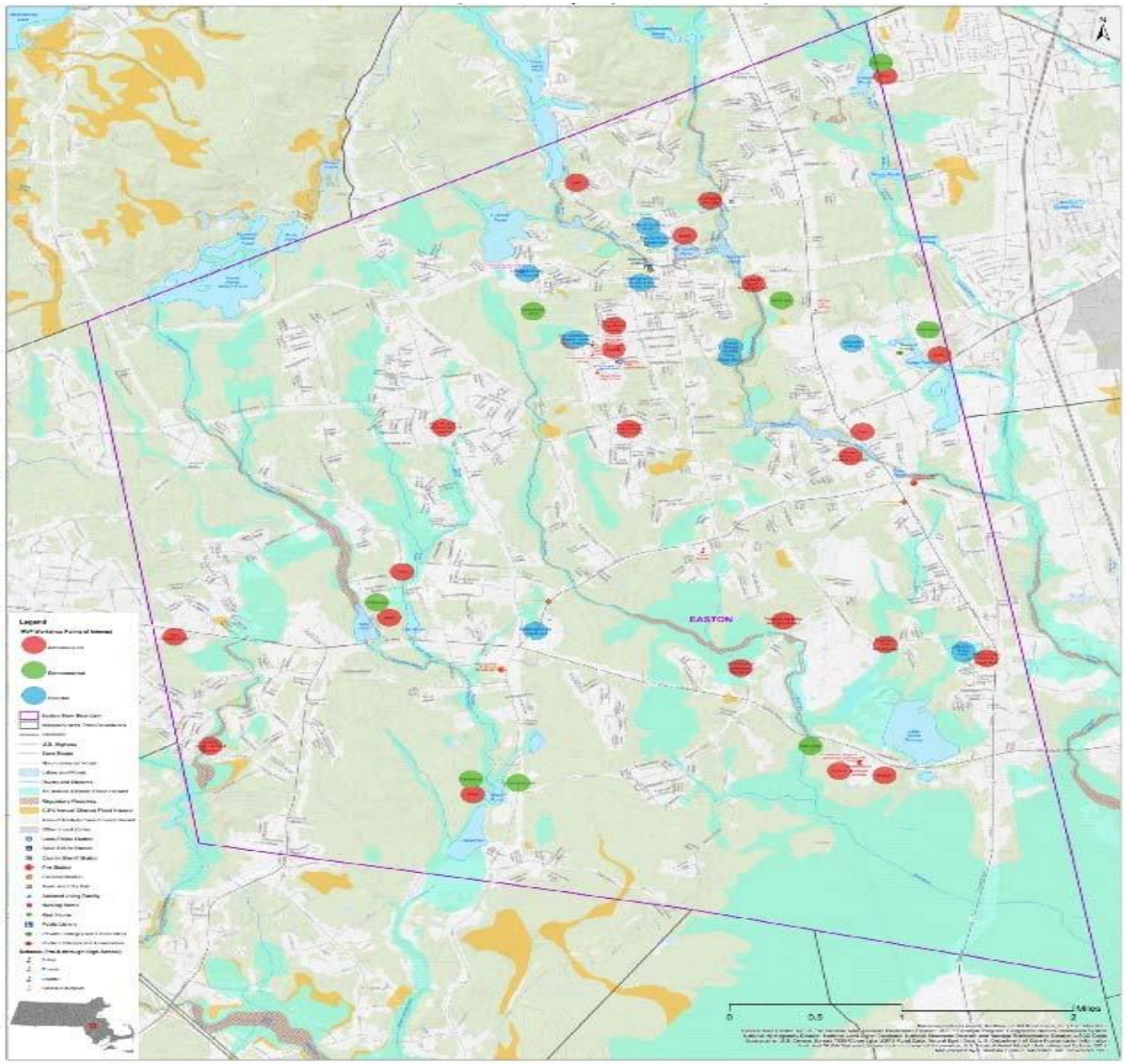
Top Priority Hazards (tornado, floods, wildfires, earthquake, drought, sea level rise, heat wave, etc.)

	Features: Environmental	Location	Ownership	V or S	Flood	Drought/Fire	High Wind	Changing Season of Storms	Priority H M L	Time Short Long Ongoing
*1	Canoe & Wading Rivers	"	—	S/V	✓ Culvert replacement on Wading; work with nature to help keep local water local;	✓	✓	✓	H	S
	Old neighborhoods along the Wading Flood				look @ stream cleaning/mesh w/ our overall permitting process				H	S
2	Rumford River @ Reed & Barton (dam removal)	Cross St	Reed & Barton	V	✓ Get rid of the dam; raise the grade @ Cross St.			✓	"	"
3	Conservation Portfolio	Townwide	Town/Non-Profit	S	✓ Forestry management plan; improve public access/awareness; maintenance will be an issue; staffing	✓	✓		M	ongoing
4	Forest-Wildland interface / deadwood disease	Townwide	Town-Non Profit-Private	S/V	✓ Remove deadfall; bring in all potentially impacted parties for large veg. management plan; Scouts or volunteers for smaller	✓	✓	✓	M	longterm
5	Borrowsville / Dam in ill repair, treated for invasives	"	Town	S/V	✓ Remove dam; retain the veg management plan	✓	✓		M	ongoing
6	Chartley / Dam repaired	"	Town	S/V	"	"	"		L	ongoing
7	Reservoir / area around	Reservoir St	Town	S/V	Boat ramp w/ adequate parking; management plan to address use, veg management, safety	✓		✓	H	longterm
8	Groundwater / iron & manganese	Townwide	Town	V	Manage stormwater and look to keep local water local where able				H	ongoing
					Improved code enforcement					

"Adopt a St... program"

5

3


EASTON
Legend
0
0.5
1
2
Miles

Thank You!