Town of West Stockbridge

Municipal Vulnerability Preparedness

SUMMARY OF FINDINGS

This report was prepared by Weston & Sampson for the Town of West Stockbridge. The project was funded by the Massachusetts Executive Office of Energy & Environmental Affairs, through the Municipal Vulnerability Preparedness (MVP) Planning Grant Program

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1.0 INTRODUCTION

Following the completion of the West Stockbridge Hazard Mitigation Plan (HMP) in 2021, the Town of West Stockbridge pursued the Massachusetts Executive Office of Energy and Environmental Affairs' (EEA) Municipal Vulnerability Preparedness (MVP) Planning Grant. The grant was awarded for the Reduced Scope MVP and expanded upon efforts from the 2021 HMP.

West Stockbridge's 2021 HMP fulfilled the grant eligibility requirements of the Federal Emergency Management Agency (FEMA) and was approved by FEMA. It contains additional information on historical natural hazard occurrences, the Town's current capability for mitigation hazards, and a vulnerability and risk assessment for natural hazards. The 2021 HMP does incorporate climate change, however, it is not a focus of the document and was not a FEMA requirement at the time of drafting. In contrast, EEA's MVP program concentrates on climate change adaptations and resiliency. By completing this Summary of Findings, appendix to the 2021 HMP, West Stockbridge will become eligible for additional grant funding through the MVP program and will be more competitively scored in other state grants.

The planning process engaged the community in a conversation about preparing West Stockbridge to withstand future weather and climate change-related hazards. In doing so, the community has identified and detailed their top three projects that will not only build the Town's resilience to weather and climate change-related hazards, but also to other major disruptions or shocks to day-to-day life. Resilience, for the purpose of this plan, strives to strengthen the community across all sectors, from economic diversity to robust social networks and communications, and beyond. The Town's top three projects are listed below.

Figure 1. Top Selected Projects

1.1 Community Profile

West Stockbridge is a small town with a population of 1,343 (as of the 2020 Census). According to the 2021 American Community Survey, the population of West Stockbridge is 1,164[1]. The Town is located at the border of Massachusetts and New York and is bordered by the towns of Richmond, Stockbridge,

[1] United States Census Bureau. 2021. West Stockbridge Town ACS. https://data.census.gov/table?q=west+stockbridge+ma&tid=ACSST5Y2021.S0101

Great Barrington, Alford, MA, Austerlitz, NY, and Canaan, NY. The following table includes demographic information for the Town of West Stockbridge.

Table 1. Population Demographics[2]			
	2021	West Stockbridge	Massachusetts
	Population	1,164	7,029,917
	Under the Age 18	21.5%	19.5%
65+	Over Age 65	21.5%	17.4%
	Bachelor's degree or higher	51.3%	34.6%
$	Median household income	$83,571	$89,645
	Poverty Rate	6.9%	10.4%
	With a Disability	13.7%	11.7%
	Limited English-Speaking Households	1.8%	6.1%
	Housing Units	488	2,759,018
	Renter-Occupancy Rate	18.6%	36.8%

The Town covers an area of 18.7 square miles, or approximately 12,000 acres. Of the total area, 18.5 square miles are covered by land and the remaining is covered by water.

West Stockbridge resides in the path of the glacial retreat of 12,000 years ago, which left in its wake a narrow flat plain that characterizes most of the Town. The Williams River runs through the center of West Stockbridge, and most water bodies within West Stockbridge feed the river. Water bodies in the Town include Card Pond, Shaker Mill Pond, and Mud Pond, in addition to many other wetlands, streams and smaller water bodies. Four major transportation routes pass through the Town: I-90 (the Mass Pike), Route 102, and Route 41. The Mass Pike bisects the northern side of the Town as it runs east to west. Residents can access public transportation by way of the Berkshire Regional Transit Authority (BRTA) bus line, providing service between Pittsfield and Great Barrington. The nearest regional bus service and Amtrak service are both located in Pittsfield. Local airports in the vicinity of West Stockbridge can be found in Pittsfield and Great Barrington, and a larger airport is located 45 miles away in Albany, NY.

1.2 Process and Timeline

The MVP planning process was informed by previous planning efforts and coordinated with ongoing initiatives and operations. The 2021 HMP outlined a range of priority mitigation actions for the community, and the actions listed in the HMP were used to inform this Summary of Findings. The 2023

[2] United States Census Bureau. 2021. West Stockbridge Town ACS. https://data.census.gov/table?q=west+stockbridge+ma&tid=ACSST5Y2021.S0101

HMP Appendix: MVP Summary of Findings (this document) reflects this information and the results of the process described in Figure 1.

Figure 2. Planning Process

1.3 Core Team Meetings

The Town convened its first Core Team meeting, which included participants from municipal departments, on January 11, 2023. During this meeting, the team reviewed the project scope and schedule, received an overview of the MVP Program, and conducted a discussion of existing materials. The second Core Team meeting was held on January 30, 2023. During the second meeting, the team reviewed ResilientMA climate data, discussed actions from West Stockbridge's HMP, and conversed about workshop logistics.

The Core Team guided the planning process by reviewing the actions put forth in the 2021 HMP and selecting action items believed to be the highest priority for implementation. The Core Team indicated four mitigation actions from the HMP that should be prioritized. Feedback and further detail were given on each of the four actions, from which the three priority actions would be selected at the MVP Stakeholders' Workshop. The Core Team provided input on prevalent natural hazards in West Stockbridge, key assets, natural resources, and communities, as well as described existing work the Town has undertaken to adapt to climate change impacts.

Core team members met once more on May 8, 2023 to finalize the invitation list for the stakeholders' workshop and to review and finalize materials, including the invitation, agenda, and presentation. Materials from all three core team meetings can be found in Attachment A. Core Team members are listed in Table 1 below.

Table 2. Core Team Members

Name	Title	Affiliation
Marie Ryan	Town Administrator	Town of West Stockbridge
Curt Wilton	Superintendent	West Stockbridge Highway Department
Marc Portieri	Chief of Police	West Stockbridge Police Department
Steve Traver	Fire Chief	West Stockbridge Fire Department
John Masiero	Chairperson	West Stockbridge Conservation Commission

1.4 MVP Stakeholders' Workshop

The MVP Stakeholders' Workshop had six primary objectives:

- Understand connections between ongoing community issues, climate change and natural hazards, and local planning and actions in the municipality.

- Understand how climate change will exacerbate or lead to new community issues, hazards, and other challenges the municipality faces.
- Explore how social vulnerabilities are impacted by the prioritized hazards and how to center vulnerable populations.
- Explore nature-based solutions to build resiliency in the municipality.
- Identify opportunities to advance actions that further reduce the impact of climate change and natural hazards and increase resilience across and within municipalities.
- Learn more about the MVP Program at large, ResilientMA.org, and the Climate Resilience Design Standards Tool.

Municipal Staff, Town boards and committees, local organizations, regional partners, adjacent municipalities, utility providers, and state agencies and representatives were invited to participate in the MVP Stakeholders' Workshop. The announcement and RSVP form for the workshop was also posted in the Local Yokel, a local paper, to give the general public the opportunity to attend and provide feedback.

The workshop was conducted in a hybrid format, with the option for stakeholders to attend in person at the Town Hall, or virtually via zoom. A two-hour meeting was held on May 31, 2023. Six participants were in attendance at the meeting. Two attended in person, and four attended virtually. Workshop materials are included in Attachment B.

At the Stakeholders' Workshop, Weston & Sampson presented information about natural hazards and climate change impacts in West Stockbridge. This information was compiled from data sources such as the National Oceanic and Atmospheric Administration (NOAA), the Federal Emergency Management Agency (FEMA), and ResilientMA.org. Participants discussed their experience with hazards and climate change impacts in the community. They discussed issues that the community faced, and ultimately developed three detailed priority projects for the Town to advance and apply for implementation funding in the future. These projects are described in detail in Sections 2.3 through 2.5.

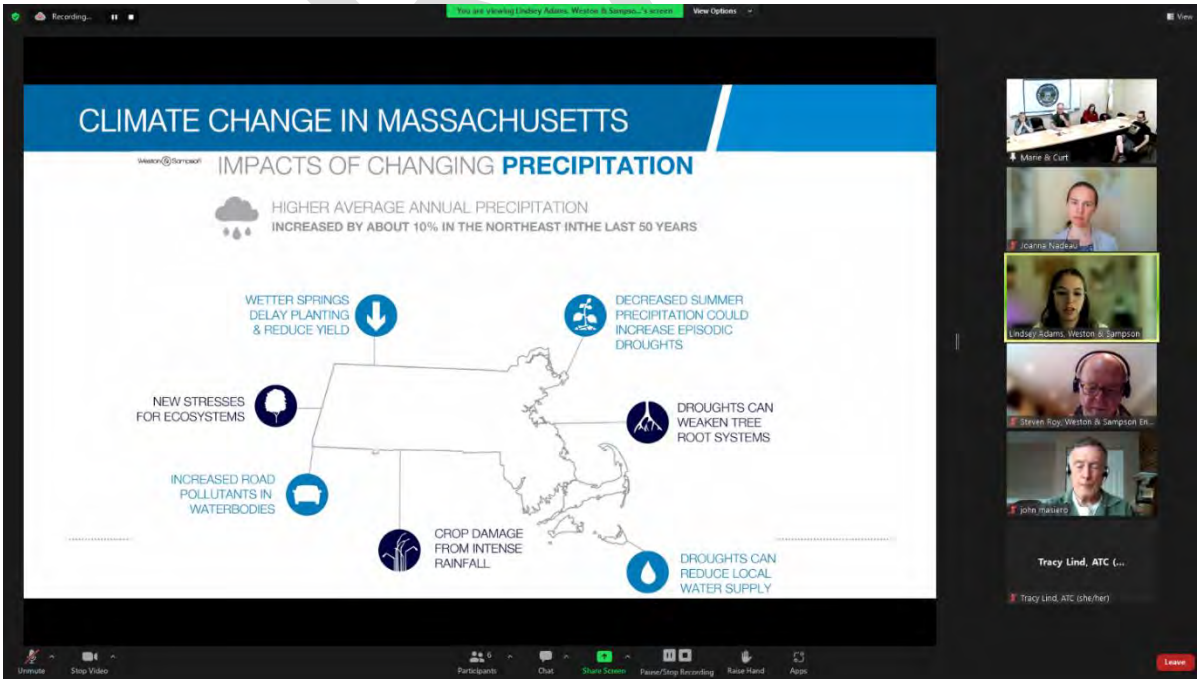


Figure 3. Virtual Stakeholders' Workshop

1.5 Community Engagement and Feedback

The Town distributed a flyer and survey to receive community feedback on natural hazards and climate impacts in West Stockbridge, vulnerabilities within the community, and priority mitigation actions for West Stockbridge. To promote the opportunity to provide input, the fact sheet was also posted on the Town website and shared on social media pages. An announcement was posted in the Local Yokel, informing the community on the MVP Planning Process and opportunities for involvement through the public survey. A link to RSVP to the Stakeholders' Workshop was also provided.

Responses to the survey were received via Microsoft Forms, and 20 community members responded. The survey and a summary of responses is included in Attachment C, and in Section 2.1.

1.6 West Stockbridge Hazards and Climate Impacts

During the Core Team meeting, Stakeholders' Workshop, and through the public survey, participants identified the Town's greatest natural hazards:

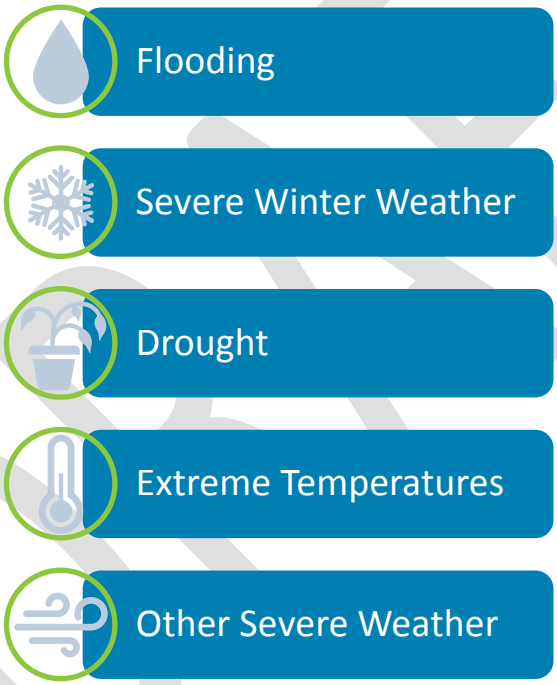


Figure 4. Top Hazards

Much of the Town's critical infrastructure is located within FEMA flood zones or in locations prone to stormwater flooding. As a rural town, many of the roads that lead to residences are dirt and have only one access point. During a hazard event such as flooding or a severe storm, the road could become damaged and prevent residents from evacuating or emergency response vehicles from accessing the road. These impacts are predicted to worsen in the future due to climate change, as precipitation events increase in frequency and intensity, and storms are predicted to worsen.

During the Core Team Meeting and Stakeholders' Workshop, Weston & Sampson reviewed climate change data available through ResilientMA.org. Through the Climate Change Projections Dashboard, the team was able to view precipitation and temperatures projections for the years 2030, 2050, 2070,

and 2090 by Town and Watershed. This data was used to further understand future impacts of climate change to assist the team in developing detailed projects that can mitigate and withstand future climate hazards.

Additional feedback from the community on hazard impacts is summarized in Section 2.1: Survey Results.

2.0 FINDINGS

2.1 Survey Results

In the community survey, severe winter weather and severe weather (high winds, thunderstorms) were ranked as the highest extreme weather events of concern within the Town. Respondents were asked what impacts they could recall from hazard events experienced in West Stockbridge. The following image shows their responses, with the larger responses being the ones entered most frequently.

Figure 5. Community Survey Responses

2.2 Priority Project Development

Core Team Input

The Core Team reviewed the mitigation actions in the 2021 HMP to determine priority projects for the Town to pursue. The Core Team selected priority projects based the list of actions from the HMP and on their knowledge of the Town. The full list of mitigation actions from the HMP is included in Table 3 below, and those selected by the Core Team as high priority mitigation actions can be seen in **bold text**.

Table 3. Mitigation Actions from 2021 Hazard Mitigation Plan

Mitigation Action	Hazard Mitigated	Estimated Benefit	Priority
Upgrade bridges noted as structurally deficient (Cone Hill Road Bridge & West Center Road Bridge)	Flooding	High	Medium
Replace or upgrade culverts that are undersized and prone to flooding as reported from Town Road-Crossing Study conducted by HVA	Flooding	High	High
Upgrade Town-wide conveyances	Flooding	High	High
Continue enforcement of flood management bylaws	Flooding	High	Medium
Plan and enact a Town stormwater management bylaw	Flooding	High	Medium
Continue to mow and maintain large beaver dams. Breach as needed.	Flooding	Medium	Medium
Continue to prioritize roadway improvements	Flooding	Medium	Medium
Major transportation routes in inundation areas for dams of High or Significant Hazard have been determined; continue to update as necessary	Flooding	Medium	Medium

Encourage use of low-impact development techniques especially in flood-prone areas.	Flooding	Medium	Medium
Conduct loss estimates for inundation areas	Flooding	Medium	Medium
Continue work to inform property owners in the floodplain about grant programs available to retrofit and/or flood proof structures	Flooding	Medium	Medium
Continue to inspect all dams at appropriate intervals	Dams	High	High
Continue to maintain dams as necessary	Dams	High	High
Work with MassSaves and other available water conservation programs to encourage residents to install water saving technologies; many of these devices are available at no or minimal expense	Drought	Medium	Low
Enforce timbering / clear cut regulations and other such land disturbing activities on slopes susceptible to erosion to avoid creating areas of bare ground subject to erosion and landslides.	Landslides	Medium	Medium
Provide the Building Commissioner, Planning Board, and Highway Department with the Slope Stability Map produced by Massachusetts Geologic Survey, for West Stockbridge.	Landslides	Medium	Medium
Reactivate and test the existing siren warning system	Fire	Medium	Medium
Continue to work with CSX Railroad to remove woody debris around tracks	Fire	Medium	Medium
Continue to monitor and fight brush and other fires	Fire	Medium	Medium
Continue to monitor and inspect levels of invasive species with assistance from Solitude Lake Management or similar environmental agency	Invasive Species	Medium	Medium
Have residents or seasonal residents self-identify their needs, such as the need for oxygen, to the Police and/or Fire Department may help to prevent problems during a disaster of any kind.	Hurricane & Tropical Storms	Low	Medium
Continue to open gate valves on Shaker Mill Pond to lower water through early warning protection	Hurricane & Tropical Storms	High	Medium
Clean out / activate stormwater management systems to ensure free flow of water during heavy rain events.	Hurricane & Tropical Storms	High	Medium
Enforce snow load building code regulations	Severe Winter Weather	Medium	Low
Continue to encourage building owners to get energy audits and improve building efficiency to reduce human health risk due to extreme cold and power outages and reduce risk of building damage such as ice dams.	Severe Winter Weather	Low	Low
Continue to encourage older residents, disabled, and those with medical issues to self-identify with the West Stockbridge Police Department as having special needs during emergency incidents.	Severe Winter Weather	High	High
Develop and deploy education program to inform residents of their responsibilities, primarily for themselves and	Severe Winter Weather	Medium	Low

neighbors, during power outages and extreme winter weather events.			
Explore Reverse 9-1-1 for cell phone users and encourage residents to sign-up.	Severe Winter Weather	Medium	Low
Activate and use Town siren warning system	Tornado	Medium	Medium
Continue strict adherence to MA Building Code	Other Severe Weather	High	High
Encourage cell phone users to enlist in the Town's Reverse-911 system.	Other Severe Weather	High	High
Encourage the elderly, disabled, and those with medical issues to self-identify with the West Stockbridge Police Department as having special needs during emergency incidents.	Other Severe Weather	High	High
Develop and deploy education program to inform residents of their responsibilities, primarily for themselves and neighbors, during power outages and extreme weather events.	Other Severe Weather	Medium	Low
Strict adherence to the state Building Code	Earthquakes	High	High
Strict adherence and enforcement of state storage regulations for hazardous materials.	Earthquakes	High	High
Assess modifications to Town Bylaws as needed regarding limiting the expansion of infrastructure in hazard-prone areas	All Hazards	High	Medium
Continue work to conduct local disaster response drills and feature them in local news media outlets	All Hazards	Medium	Medium
Continue to work with Southern Berkshire Regional Emergency Planning Committee to publicize local and regional evacuation routes and Shelter locations	All Hazards	Medium	Medium
Continue work to develop formal and legally binding Mutual Aid Agreements for emergency response teams and DPWs	All Hazards	Medium	Low
Continue work to fill communications gaps by adding new towers where necessary, using existing towers and structure where possible	All Hazards	Medium	Medium
Continue work to increase local and regional emergency response training	All Hazards	High	Medium
Continue work to re-evaluate shelter capacity for West Stockbridge residents and determine each shelter's structural ability to withstand natural disaster events, including the Town Hall	All Hazards	High	High
Continue to expand and formalize local agreements for use of shared mass care shelters in the event of a disaster	All Hazards	Medium	Medium
Continue to investigate option of shared regional shelters with neighboring communities	All Hazards	Medium	Medium
Continue to determine ability of Town governmental centers to withstand a variety of natural hazard events	All Hazards	Medium	Medium
Continue to work to improve record keeping of local natural disasters and their impacts.	All Hazards	Medium	High
Continue work to educate local officials to help them develop plans to protect critical documents and materials	All Hazards	Low	Medium

Work with West Stockbridge Historical Commission and identify historic structures, businesses, and critical facilities located in hazard- prone areas, including floodplains and dam failure inundation areas.	All Hazards	Medium	Medium
Provide workshops to help local historic properties and businesses to develop disaster mitigation plans for their facilities	All Hazards	Medium	Medium

From this list, four top priority actions, listed below, were selected and developed by the Core Team. These actions were proposed to the community via the survey and Stakeholders' Workshop for further refining and development, to ultimately led to selection of the top three projects detailed in Sections 2.3 through 2.5 of this document. Note that while the selected actions detailed below are related to mitigation actions listed in Table 3, the wording may be updated.

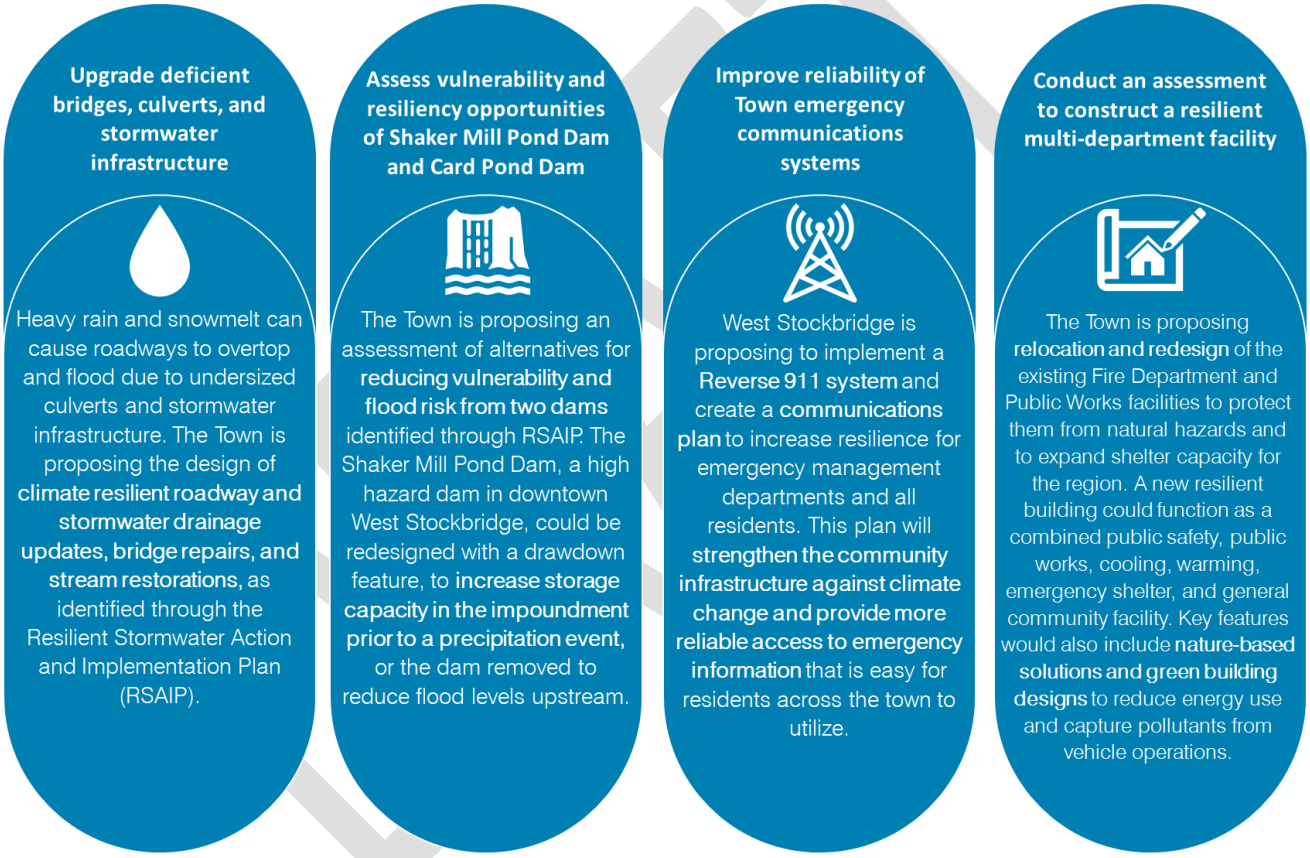


Figure 6. Top Four Priority Projects

Stakeholders' Workshop

The four projects selected and developed by the Core Team were reviewed at the Stakeholders' Workshop. Stakeholders worked together to select their three priority projects through discussion and a voting exercise, and they then further developed them into detailed projects utilizing the questions found in the FY24 MVP Action Grant Application. In some cases, the prioritized actions contain a combination of multiple HMP Mitigation Actions. The team was introduced to the Climate Resilience Design Standards Tool, a tool developed by the Resilient MA Action Team (RMAT) to determine climate change and exposure risk, recommend climate resilience design standards, and guidance of best

practices to support implementation of a project. At this point in time, none of the top three projects selected are site-specific and therefore were not applicable for entry into the Climate Resilience Design Standards Tool. As the projects develop in the future and project locations are selected, each project will be entered into the Tool to determine risk and design guidance and standards.

The following sections provide detailed information for each of the three selected projects, generated through local knowledge and conversation during the two-hour Stakeholders' Workshop.

2.3 Project #1: Upgrade deficient bridges, culverts, and stormwater infrastructure

2.3.1 Project Narrative (Description, Rationale, and Climate Data)

Heavy rain and snowmelt can cause roadways to overtop and flood due to undersized culverts and stormwater infrastructure. The Town is proposing the design of climate resilient roadways and stormwater drainage updates, bridge repairs, and stream restorations, as identified through the Resilient Stormwater Action and Implementation Plan (RSAIP). This project would mitigate climate change impacts from flooding, severe weather, and erosion.

2.3.2 Timeline, Budget & Funding Options

This is an ongoing project that could be implemented over many years. The initial phase would involve selection of a priority project through the RSAIP. This project would then seek funding for design and permitting in one fiscal year. The following fiscal year's tasks could focus on construction, and future years could involve multiple projects going through this same sequence. Funding opportunities could include MVP Action Grant funding, Berkshire Taconic Community Foundation, MassWorks, Chapter 90, DER Culvert Replacement Municipal Assistance Grant Program, or the Small Bridge Program.

The projects identified in the RAISP related to bridges, culverts, and stormwater infrastructure ranged from $100,000 to over $1,000,000 total. An initial year of design and permitting was estimated to cost from $100-$400,000 for a culvert redesign, or below $100,000 for a bioretention project. Costs were presented in June 2023 numbers and are planning level and will require refinement following selection of the specific project and further design.

2.3.3 Nature-Based Solutions & Environmental Co-Benefits

Establishing vegetation on some roadsides and as part of some stormwater infrastructure projects would achieve the same or better protection than riprap, as the roots hold the soil in place. The solution can be designed to capture flow upstream where water can be detained and slowly released over time, which would reduce flooding from a flash rain event. Sometimes, such as when an opportunity occurs on DCR-owned land, the design of the resilient stormwater structure can involve raising a berm and adding an outlet into a wetland area for more water collection and storage. These projects also could involve protecting existing open space to enhance water quality protection.

2.3.4 Environmental Justice & Public/Regional Benefits

There are known residential private properties adjacent to some of the project areas. This project would protect these climate vulnerable populations. There are also many remote residents and critical roadways that this project would help with access for emergencies.

When tributaries run through one town into another, or a dam affects another municipality downstream, it makes sense for the impacted communities to partner on a project. Including other affected

communities in a meeting to hear their input and sharing examples and results of implementing this project may help encourage other towns to try nature-based solutions (NBS) and help increase regional interest in the concept. Existing connections to other towns' DPW are an opportunity to learn and share. Regional groups can also help make those connections across the watershed.

2.3.5 Public Involvement & Community Engagement

As the Town coordinates public meetings around these projects, they will include on the agenda the street/location listed with the relevant project, so that residents would be aware of projects impacting their neighborhood and may be more interested in attending and giving input. The Town would inform residents about project updates via email, local Facebook, an MVP projects webpage, and the Local Yokel with information about how the community can get involved. Survey responses can be effectively gathered by posting on a community Facebook board, through email notifications, and the Local Yokel. In order to incorporate regional involvement, the Berkshire Wildlife Linkage partners meet regularly and consider projects for connectivity. There is potential for the Linkage partners to help the Town write grants for these projects and assist with researching funding opportunities.

2.3.6 Project Transferability, Capacity Building, Measurement of Success, & Maintenance

Many of these projects could generate regional adoption, as adjacent communities are likely to be impacted by these updates. As the Town implements projects from the RSAIP, they will serve as examples of best practices for other communities. Success will be measured through flood reduction in the Town and beyond. Many of the projects in the RSAIP are problem areas that the DPW has been aware of and haven't been addressed due to lack of funding. As they are implemented, the Town can confirm that it is addressing flooding issues throughout the community. Road and stormwater maintenance is a regular job managed by the DPW, and it would continue to manage that for any new projects.

2.4 Project #2: Conduct an assessment for a resilient, multi-department emergency facility

2.4.1 Project Narrative (Description, Rationale, and Climate Data)

The Town is proposing relocation and redesign of the existing Fire Department and Public Works facilities to protect them from natural hazards and to expand shelter capacity for the region. A new resilient building could function as a combined public safety, public works, cooling, warming, and emergency shelter, and general community facility. Key features would also include nature-based solutions and green building designs to reduce energy use and capture pollutants from vehicle operations. This project would mitigate climate change impacts including flooding of existing buildings and all hazards, as it provides a resilient building for emergency management and a reliable shelter for the community during emergencies, including heat, cold, and power outages.

2.4.2 Timeline, Budget & Funding Options

The first phase of this project would be completed within one fiscal year and would involve a feasibility and site assessment, followed by design and permitting of the proposed emergency facility in the second fiscal year. Funding opportunities may include a combination of MVP Action Grant, Green Communities, Berkshire Taconic Community Foundation, BRIC, FMA, Rural and Small-Town Development Fund, USDA Rural Community Funds, and NFWF Five Star and Urban Waters Restoration Grant Program.

The first phase, the assessment, would likely cost approximately $100,000. Approximate costs for a new multi-department emergency facility for Fire and Public Works with an additional community use space would range from $900 to $1,100 per square foot. These construction costs are estimates based on the current prices for standard materials used in construction of emergency facility buildings and labor, and they are subject to future price escalations.

2.4.3 Nature-Based Solutions & Environmental Co-Benefits

This project would include nature-based solutions, including green building techniques, a green roof on the garage or solar panels, to reduce nonrenewable energy use. The Town can use green infrastructure (GI) and low impact development (LID) to filter and capture water from operations and vehicles on site to reduce water pollution and runoff to nearby water bodies and collect runoff from the parking lot.

2.4.4 Environmental Justice & Public/Regional Benefits

Vulnerable populations in West Stockbridge include people in remote locations, elderly, and people with medical challenges during power outages. It is important that these populations have access to a space to be safe and healthy – as a cooling or heating center - and receive efficient emergency response, which would be enhanced by a more resilient facility. Many residents have also asked for a place to charge their phone or use Wi-Fi during an event to obtain critical communications, and this would provide those resources for the community.

West Stockbridge shares the Fire Department with Richmond, so they will also benefit from this update. They have a new Town Hall under construction but currently have no local shelter. The proposed location is currently owned by West Stockbridge and is on the Richmond/West Stockbridge line, which would help both communities with emergency shelter capacity and emergency access. West Stockbridge has an existing generator that could be used at the new facility that would also benefit neighboring communities in being a reliable source of emergency communications and shelter during an emergency.

2.4.5 Public Involvement & Community Engagement

Channels for public engagement on this project would include the Town website, community Facebook, emails, and the Local Yokel. Engagement efforts will highlight the importance of the shelter, Wi-Fi access, food pantry with fresh food, and other community services. Part of engagement will also include letting people know the risks associated with the existing facility being located in the floodplain, and what important equipment and systems are currently located at the vulnerable site. Once people are interested, the Town can create a mailing list, and send flyers with specifics about the project as it develops. Relocation away from the existing site would reduce traffic and noise for the neighborhood.

2.4.6 Project Transferability, Capacity Building, Measurement of Success, & Maintenance

Many communities around West Stockbridge have infrastructure located in floodzones or other vulnerable areas. By completing this project, adjacent municipalities would be able to utilize West Stockbridge's lessons learned to complete similar projects of their own. Measurement of success would involve monitoring emergency response time improvements and effort required. As it is an important town facility, the Town would provide ongoing maintenance to the facility.

2.5 Project #3: Improve reliability of Town emergency communications systems

2.5.1 Project Narrative (Description, Rationale, and Climate Data)

West Stockbridge is proposing to implement a Reverse-911 system and create a communications vulnerability plan to increase resilience for emergency management departments and all residents. The plan will identify solutions to strengthen the community infrastructure against climate change and provide more reliable access to emergency information that is easy for residents across the Town to utilize.

Climate change impacts mitigated by this project would include extreme weather, thunderstorms, high winds, and road closures due to these impacts. The assessment would involve looking at which communications systems are most vulnerable in the community: land lines, Wi-Fi, cell phones, etc. and identifying strategies to make them more reliable, possibly including upgrades, redundancies, or alternative communication methods.

2.5.2 Timeline, Budget & Funding Options

This project would be completed within one fiscal year and would involve implementing a Reverse-911 system and creating a communications plan. Upgrades identified through the plan would be implemented over coming years. This project could be funded through MVP Action Grant, FEMA Hazard Mitigation Funding, Berkshire Taconic Community Foundation, and Rural and Small Town Development Fund.

Based on a quote received from CodeRED for this size community, cost for setup and three years of service could range from $5,000 to $7,500. Additional in-house costs for municipal staff to learn the system and send out messages is not reflected in the quoted cost.

Cost for creating a written communications plan can range from $65,000 to $100,000 depending on the Town's needs.

2.5.3 Nature-Based Solutions & Environmental Co-Benefits

This is a planning and programmatic project and would not incorporate nature-based solutions or environmental co-benefits.

2.5.4 Environmental Justice & Public/Regional Benefits

This plan will generate an updated database for Town emergency response teams of who lives on flood- and storm-vulnerable roads. Emergency response personnel can then strategize and prioritize access to these populations, especially for older adults or those in remote locations. Other community members will need effective communication channels, such as teachers and children at schools during an emergency who need to have access to open communication with their families. The plan will allow residents to direct which channels best reach them, ensuring equitable access.

If major roads are closed during an emergency event, people in adjacent Towns may need information about passable roadways to get across the region. The Town can use enhancements made through this plan to communicate to neighboring communities that an arterial road that they may need to use to access a hospital, or another facility is closed so that they can plan safe routes. During power or infrastructure outages in another town, adjacent residents could come and use West Stockbridge's cell tower to get critical information.

2.5.5 Public Involvement & Community Engagement

Establishing a Reverse 911 service through the sheriff's department could help to let all residents know when an emergency is occurring, and residents can opt to be included by submitting their phone numbers and sign up. Outreach about this opportunity would involve informing community members through the Town website, Facebook, email, and the Local Yokel. Many people communicated issues with the Town after the last storm and were looking for resources (places to charge phones, access email, etc.), but they found it difficult without an official communication network for emergencies.

2.5.6 Project Transferability, Capacity Building, Measurement of Success, & Maintenance

This project could be implemented in communities across the Commonwealth. Many small communities do not have resources such as Reverse-911 or an extensive communications plan. By completing this project in West Stockbridge, communities can implement similar strategies of their own. The plan would strengthen the Town's emergency response and hazard preparedness, and it should be reviewed by the Town and updated on an as-needed basis.

ATTACHMENT A

Core Team Materials

Town of West Stockbridge
Municipal Vulnerability Preparedness (MVP) Planning Grant

Core Team Meeting
January 11, 2023

Attending:
Curt Wilton, Highway Superintendent
Marie Ryan, Town Administrator
John Masiero, Conservation Commission Chair
Steve Traver, Fire Chief
Marc Portieri, Chief of Police
Lindsey Adams, Weston & Sampson
Joanna Nadeau, Weston & Sampson

1. Introductions

2. Core Team Roles & Responsibilities

3. Project Overview
   - MVP Overview
   - Project Scope
     1. Kickoff meeting with core team members and regional coordinator
     2. Review prioritized actions from HMP
     3. Conduct two-hour workshop with key stakeholders (local and regional) to select top three HMP actions and draft into potential MVP action grant projects
     4. Draft a robust community engagement strategy to build relationships with project partners
     5. Collect public input on the three project ideas
     6. Compile workshop materials and outputs into an appendix for the HMP
     7. Public presentation of findings
     8. Submit quarterly reports to EEA
   - Schedule
   - Q: Do you have our HMP?
     i. Yes, and we have started pulling through the priority actions

4. Overview of ResilientMA & Climate Resilience Design Standards Tool
   - Overview of website
   - Viewing climate data for West Stockbridge
   - Q: How can we access that map?
     i. On a website, we will send it to you.
   - Q: Where did that data come from?
     i. State sources
     ii. Heat island looks at impervious area
     iii. Weather observations… Carrieanne can share more about the sources

iv. "scientists!"

5. Two-hour Stakeholder Workshop
    - Potential Dates?
    - Workshop Participants –include residents, active staff, adjacent communities, organizations
        i. Master plan committee
        ii. Planning board – chair s also the MPC chair
        iii. John and Carol, conservation
        iv. Stockbridge house culvert – basement – individual person – Ryan Butterworth (resident with huge flooding issue)
        v. Not usually a public invitation, but active or affected residents

6. Questions, Wrap Up and Next Steps
    - Other MVP opportunities and projects
    - We are currently able to handle culverts in a simpler process. Masiero – rip culvert out – don't need community benefits or major grant.
    - Planning and engineering is expensive, so have small budgets.
        i. May need complex projects
        ii. HMP is a living document, accepted, on a shelf.
        iii. Baker street was one of the 5 on the plan.
    - Lindsey has compiled the list of actions from the action plan, and can share the list with them. Then they can think over the projects and what might be
    - Q: MVP status of communities – around for 5 years
    - How much money is awarded each year? How competitive?
    - How can we interest police and fire? Would MVP consider funding police fire highway facility? Highway and fire department need to be moved to higher drier area.
    - Curt is on Compete Streets program- 500k a year award, put in 15 projects, doesn't ge you very far. Once you get one, not eligible for years.
    - Can we package it with other emergency response things?
    - Any projects for conservation that might need funding for? Nothing going, other than nuisance beaver control. Trout Unlimited and Ducks unlimited might be interested. Stream restorations. Sometime adding storage upstream paired with a culvert upgrade.
    - Invasive species removal at swimming hole/reservoir
    - Schedule next Core Team Meeting – Jan. 30 at 10am.

Action Items	W&S	Town
Send link to resilient ma map	Lindsey	
Start listing out people to invite for town to review and add before next meeting	Lindsey	Core Team
Send them past awards list and case studies	Lindsey	
Send HMP Actions	Lindsey	

MUNICIPAL VULNERABILITY PREPAREDNESS DESIGNATION

January 11, 2022
Core Team Meeting

Weston & Sampson℠

MVP
Municipal Vulnerability Preparedness

MEET THE SUPPORT TEAM

JOANNA NADEAU
PROJECT PLANNER
Weston & Sampson

LINDSEY ADAMS
RESILIENCY ENGINEER
Weston & Sampson

MVP
Municipal Vulnerability Preparedness

CARRIEANNE PETRIK
BERKSHIRES & HILLTOWNS REGIONAL COORDINATOR
EEA MVP Program

WELCOME CORE TEAM

CORE TEAM ROLES

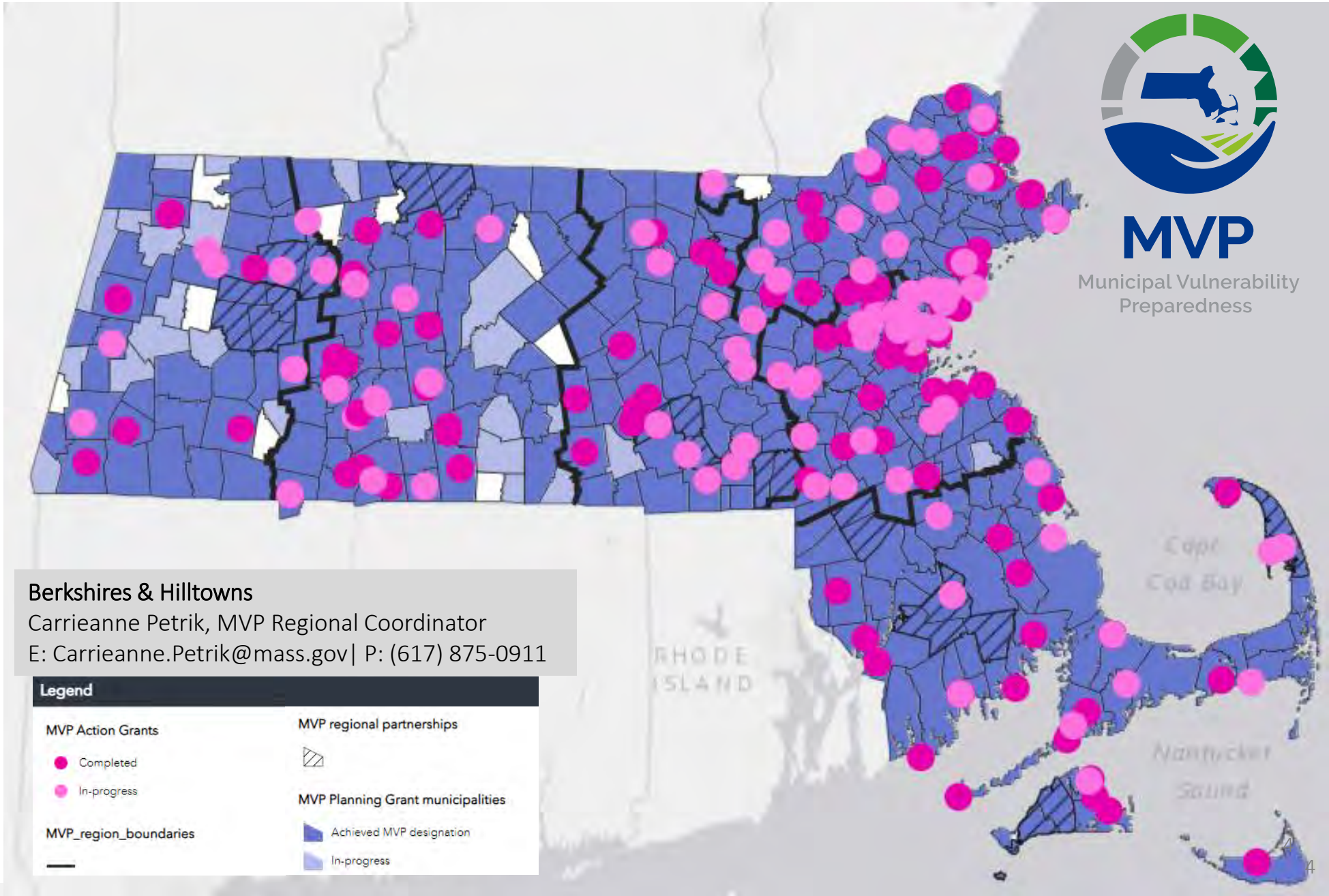
- ❑ Confirm approach
- ❑ Provide data and local expertise
- ❑ Participate in the workshop
- ❑ Finalize action items for the appendix and future MVP grant applications

TODAY'S OBJECTIVES

1. Core Team Roles & Responsibilities
2. Review Scope & Timeline
3. Overview of Climate Data and Data Sources
4. Prepare for Stakeholder Workshop
5. Other Related Projects

MUNICIPAL VULNERABILITY PREPAREDNESS (MVP) PROGRAM

- Improved resilience and preparedness
- Collaboration with stakeholders
- Increased education, planning, and implementation
- Funding for resilience-related



Berkshires & Hilltowns
Carrieanne Petrik, MVP Regional Coordinator
E: Carrieanne.Petrik@mass.gov| P: (617) 875-0911

Weston & Sampson

MVP PROGRAM

MVP Planning Grant/Designation

- Define top three prioritized action items from HMP
- Develop a robust community engagement strategy to build relationships with project partners
- Conduct two-hour workshop
- Draft an appendix for 2021 HMP
- Receive MVP designation

MVP Action Grant

- Implement priority adaptation actions identified during the planning process

MVP
Municipal Vulnerability Preparedness

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MVP CORE PRINCIPLES

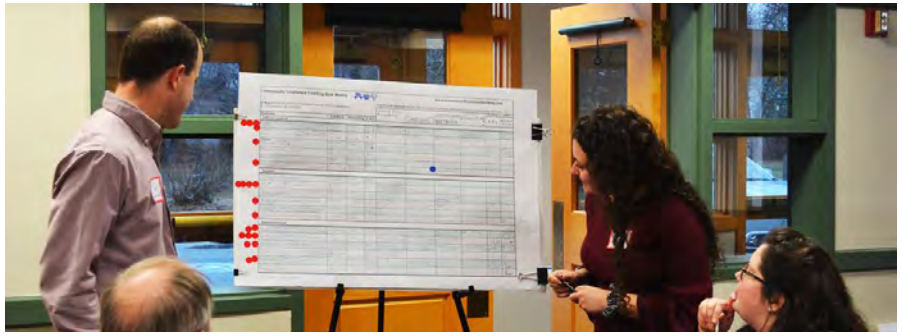
MVP
Municipal Vulnerability Preparedness

1. Further a community-identified priority action to **address climate change impacts.**

2. Utilize **best available climate change data for a proactive solution.**

Resilient MA
Climate Change Clearinghouse for the Commonwealth

3. Commit to **monitoring** project success and **maintaining** the project into the future.



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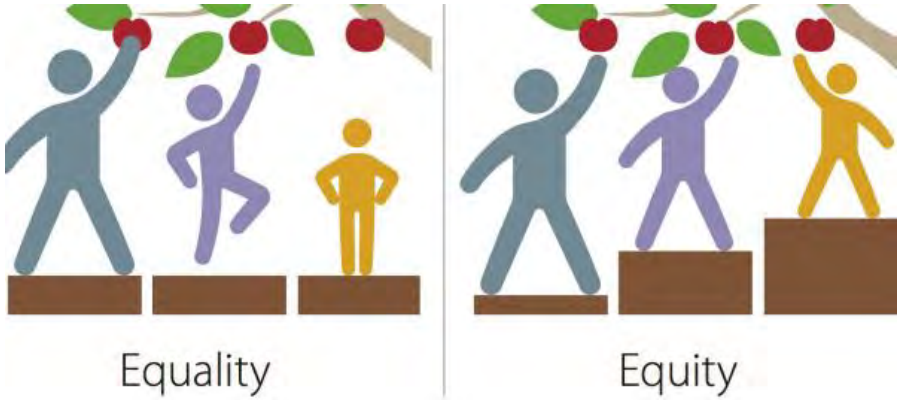
MVP CORE PRINCIPLES

4. Employ **nature-based solutions**.

5. Achieve **broad** and multiple community benefits.

6. **Involve Environmental Justice Populations in meaningful, decision-making**, as defined and outlined in the 2017 EEA EJ Policy, and giving special consideration to Climate Vulnerable Populations.



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Municipal Vulnerability Preparedness

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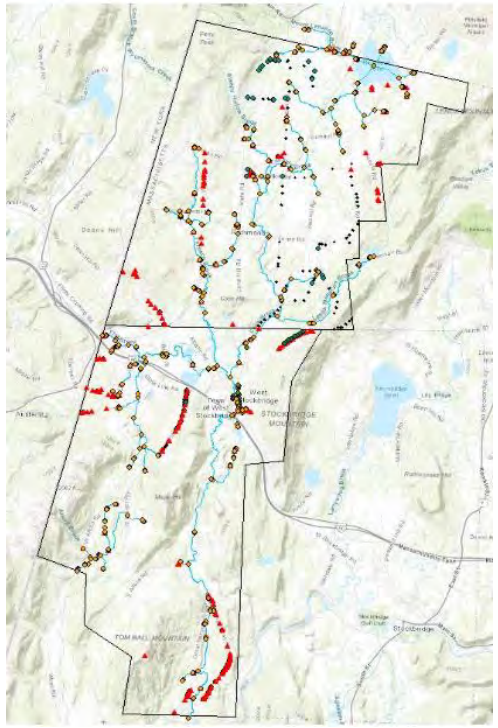
MVP CORE PRINCIPLES

7. Utilize regional solutions toward **regional** benefit.

8. Pursue approaches from which other MVP communities and the state can **learn**.



Grantee: Richmond (& West Stockbridge)
Project Title: Resilient Stormwater Action and Implementation Plan
Award: $265,408

MVP
Municipal Vulnerability Preparedness

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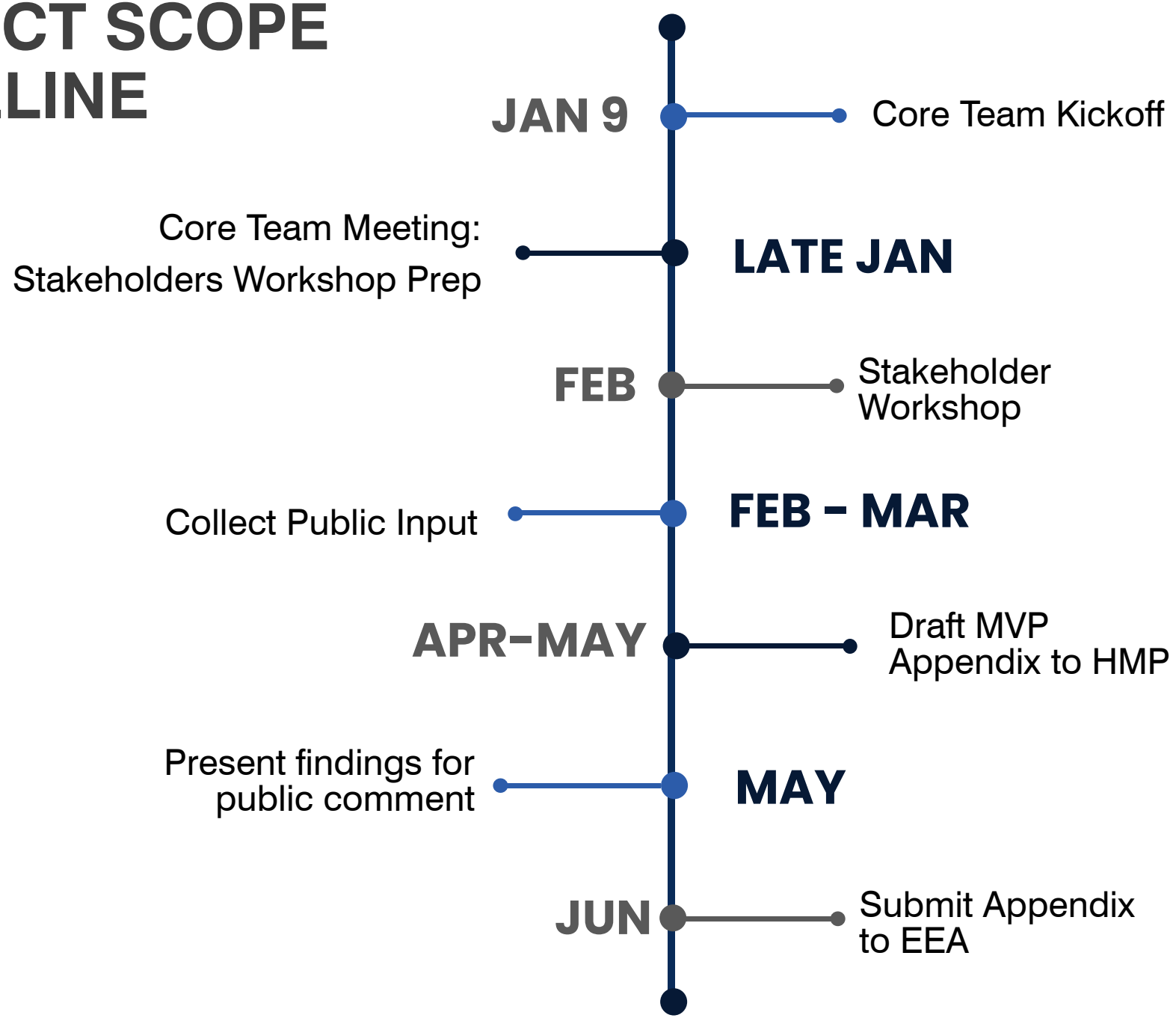
PROJECT SCOPE & TIMELINE



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WHAT ARE WE PLANNING FOR?

MA Projections By End of Century:

Changes in precipitation

- 18% increase in consecutive dry days
- 57% increase in days with > 1 in. rainfall
- 7.3 inches additional annual rainfall
- Increase in flooding

Rising temperatures

- 10.8°F increase in average annual temperature
- 42% decrease in days/year with min. temperatures < 32* F
- 1,280% increase in 90-degree days/year

Winter weather

- Overall a decrease in annual snowfall
- Likely to have fewer events with a lot of snow
- Freeze –thaw cycle to change

Regional changes

- Increase in frequency and magnitude of hurricanes and nor'easters
- 4-10.5 feet of sea level rise

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Source: State Hazard Mitigation and Climate Adaptation Plan, September 2018 / resilientma.org / Northeast Climate Adaptation Science Center

WHAT ELSE CAN INFORM OUR PLANNING?

Climate Change Clearinghouse for the Commonwealth

Resilient MA was created by EEA to support the Commonwealth with climate change science and tools.

This **maps and data center** features interactive applications to explore the latest statewide climate data and projections curated to support climate resilience in Massachusetts.

CLIMATE RESILIENCY DESIGN STANDARDS TOOL

The Resilient MA Action Team (RMAT) led development of this tool, which provides:

- A preliminary climate change exposure and risk rating;
- A recommended climate resilience design standards for projects with physical assets; and
- Guidance of best practices to support implementation.

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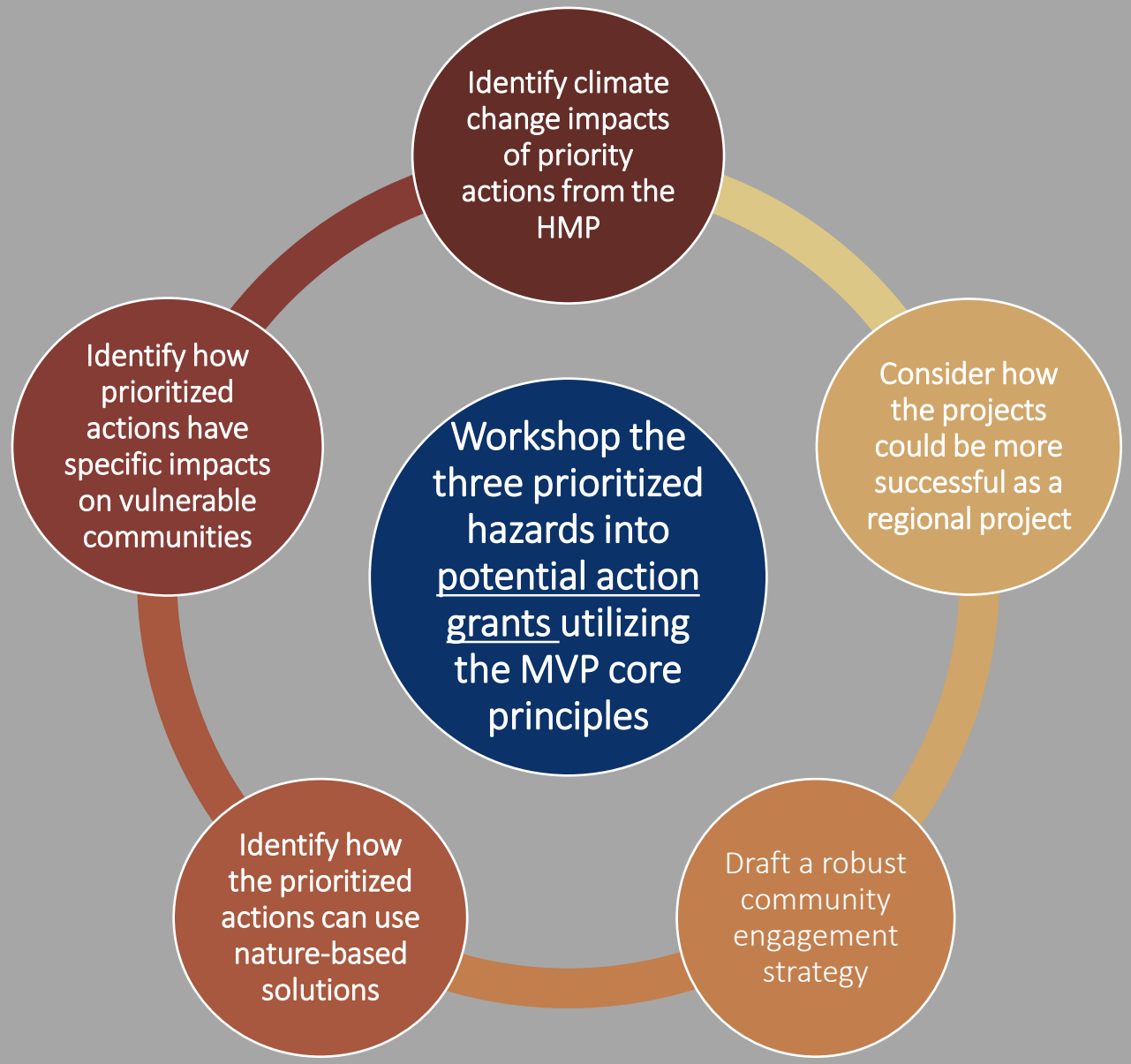
WORKSHOP APPROACH



THINK ABOUT:

- **What climate hazards will the priority projects help the community address?**
- **How could this project could serve as an example to other communities with similar challenges?**
- **Are the voices of climate vulnerable community members being represented?**
- **How do these potential projects address the needs of the most vulnerable community members?**

WHAT CAN THE MVP ACTION GRANT FUND?

MVP
Municipal Vulnerability Preparedness

Assessments

Outreach & Education

Management Measures

Redesign & Retrofit

Nature-Based Solutions

Ecological Restoration

Water Quality & Infiltration

Flood Protection

Extreme Heat Mitigation

Drought Mitigation

Energy Resilience

Chemical Safety

Land Acquisition

Housing

Mosquito Control

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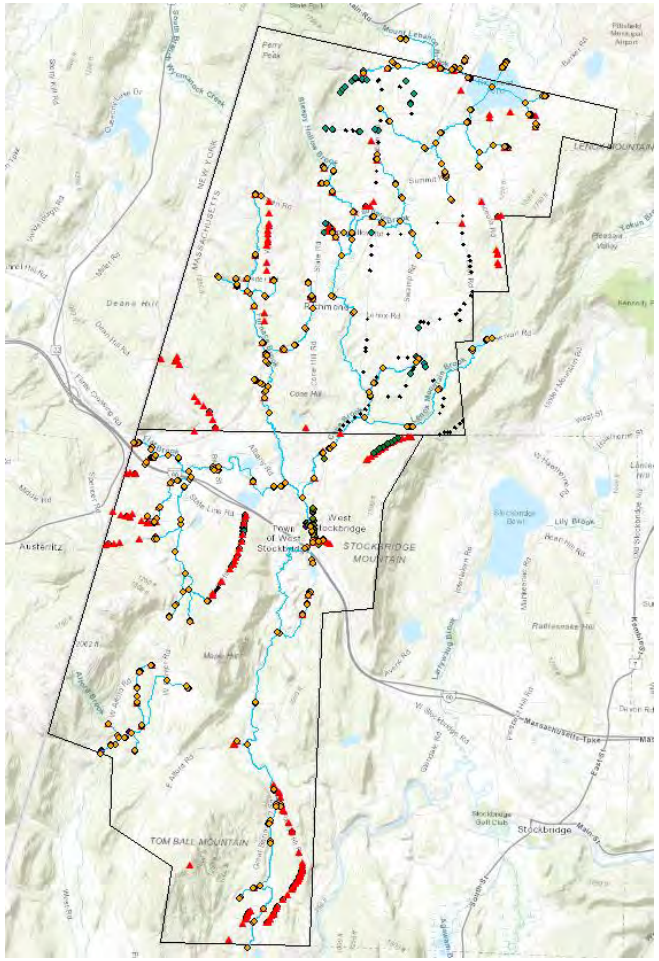
RELATED MVP PROJECTS AND OPPORTUNITIES

MVP
Municipal Vulnerability Preparedness

Resilient Stormwater Action and Implementation Plan for Richmond and West Stockbridge

(FY23 MVP Action Grant)

- Will identify stormwater project priorities
- Plan drafted by May



FY24 MVP Action Grants

Expressions of interest due Jan. 20.

Grant applications due early May

What actions do you want to see the Town pursue for MVP Action Grants?

QUESTION FOR THE GROUP

QUESTIONS?
THANK YOU!

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MVP
Municipal Vulnerability Preparedness

Town of West Stockbridge
Municipal Vulnerability Preparedness (MVP) Planning Grant

Core Team Meeting
January 30, 2023
10:00 – 11:00 am

Zoom Meeting
Meeting ID: 821 7130 6622
Passcode: 646573

Attending: Steve Traver, Marie Ryan, Curt Wilton, Lindsey Adams, Joanna Nadeau, John Masiero

1. Welcome & Agenda
   Let's include Dana in these meetings going forward. She's involved in the Planning Board. Carrieanne – MVP project examples; will share information after this meeting with them.

2. Hazards Impacting West Stockbridge (Summary of data from ResilientMA)
   Baseline is 47.43 to 53.61 inches of precip annually. Not distributed equally through the year but means that you're getting lower summer and fall precip and more in the winter/spring.

3. HMP Action Items
   - Review High Priority actions from HMP – select priority actions to bring to workshop
   - *Discussion: Do we want this to move forward for MVP funding?*
   - Culverts from RSC/HVA study. Talk about specific culverts to move forward with replacement. Top 5 from HVA – make sure they were red and bring them forward. Would rather see Wilson Road. Stockbridge Road. Often culverts are funded with some inclusion of flood storage, pub engt, NBS.
   - Upgrade town-wide drainage conveyances. Same as above.
   - Updating bylaws – Town could count the bylaw update as match for a bigger project.
   - Dam mitigation actions – dam inspections and maintenance tend not to be covered by MVP. Town has a level 2 threat, so they have a 2 year cycle of inspection. So they have a group that does that, but it costs $5000. Typically inspections are not funded. Dam may not be that dangerous, according to Curt. May need to reevaluate the amount of water it's holding, and can drain it within 10 hours right now into a brook. Maybe not the right class of dam. Could a town-wide infrastructure vulnerability assessment show that it doesn't need to be done as often, saving them the money for frequent inspections.
   - High temps/drought – getting residents to identify with the Police Dept. – Would prefer to build a shelter. So much focus on flooding and water, freeze thaw. But I like the idea that we talked about to get fire departments with flood zone. Police dept is not where the needs are. But a multi-departmental facility would benefit the townspeople, include a shelter/cooling center. Could also set up a capture site for where they wash the trucks and keep it out of the river.
     i. Medford did an energy resilient facility, shelter. Pelham.
   - Stricter Building Code. Green Community – Would rather see reduction in adherence to building code. Reducing the improvements, means code is restrictive. If they could put in a culvert, it would be more efficient.

- Pair the reverse 911 signup with emergency facility as an engagement strategy. Would like to set up the reverse 911 system with funding. Set up code red. Could maybe get FEMA grant. Right now sheriff department collects names and sends out notices.
    i. Also areas with communication gaps, where AT&T and radios don't work. Maybe a tower? Town owns property on highest peak that's 1800 feet, so could fund an antenna to put up there!
- Have fuel tanks storage and it's already going on. Doesn't need funding.
- Need to set up the capacity, make it efficient. Solar panels, EV charging. Bring people in to see how the water gets reused. Where the frogs can jump.
- Think about:
    i. Is this competitive for MVP funding?
    ii. What are ways that this project could serve as an example to other communities with similar challenges?
    iii. How do these projects address the needs of the most vulnerable members of the community?

4. Workshop Logistics
    - Goal: Conduct two-hour workshop with key stakeholders (local and regional) to select top three HMP actions and draft into potential MVP action grant projects
    - Confirm Stakeholders
        i. Are the voices of climate vulnerable community members being represented?
        ii. Will need the police chief, fire, DPW, Dana as part of master plan, conservation, the excel file had a list of people we could invite. We'll need email addresses. Marie can review and send that info there.
    - Select Date
        i. End of March, April
        ii. Let's keep working through the list of stakeholders and then touch base in February once we have a sense of the process with Richmond.
    - Public Input
      All the information from the workshop, will present on a video, or flyer, and have a survey for people to give feedback. What do you want to use as a platform?
      People check the website. Local monthly newspaper – Local Yokel – most residents read that. So you have to get it timed right. Due 2nd Friday in to get out the first of next month. Do we want it in the April issue, so we can get comments before May?

5. Questions, Wrap Up and Next Steps

Action Items	W&S	Town
Send the slides from today to the town w note about follow up re bylaws/concom hopes	X	
Talk to Concom about bylaws hopes/needs		X
Send the invite list and Town will add/update names	X	X
Build schedule for meeting dates and public input	X	
Send copy of presentation for Town review (Feb/Mar)	X	

MVP Core Principles

1. Further a community-identified priority action to address climate change impacts.
2. Utilize best available climate change data for a proactive solution.
3. Commit to monitoring project success and maintaining the project into the future.
4. Employ nature-based solutions.
5. Achieve broad and multiple community benefits.
6. Involve Environmental Justice Populations in meaningful, decision-making, as defined and outlined in the 2017 EEA EJ Policy, and giving special consideration to Climate Vulnerable Populations.
7. Utilize regional solutions toward regional benefit.
8. Pursue approaches from which other MVP communities and the state can learn.

1

AGENDA

- Climate Hazards Impacting West Stockbridge
- Discussion of HMP Priority Action Items
- Workshop Logistics
- Wrap Up

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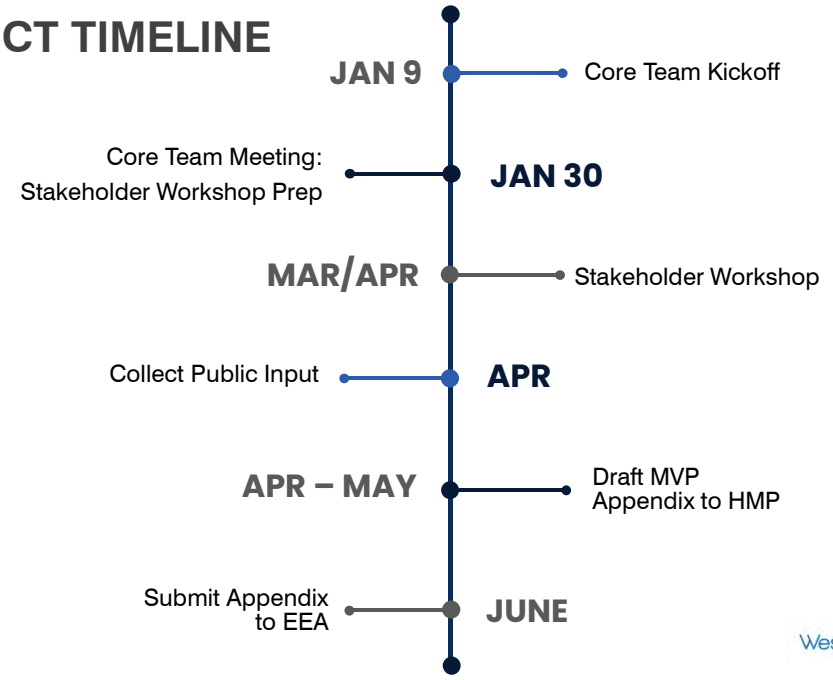
2

PROJECT TIMELINE



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3

3

WHAT ARE WE PLANNING FOR?

MA Projections By End of Century:

Changes in precipitation

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- 57% increase in days with > 1 in. rainfall
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- Increase in flooding

Rising temperatures

- 10.8°F increase in average annual temperature
- 42% decrease in days/year with min. temperatures < 32* F
- 1,280% increase in 90-degree days/year

Winter weather

- Overall a decrease in annual snowfall
- Likely to have fewer events with a lot of snow
- Freeze-thaw cycle to change

Regional changes

- Increase in frequency and magnitude of hurricanes and nor'easters
- 4-10.5 feet of sea level rise

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4

Source: State Hazard Mitigation and Climate Adaptation Plan, September 2018 / resilientma.org / Northeast Climate Adaptation Science Center

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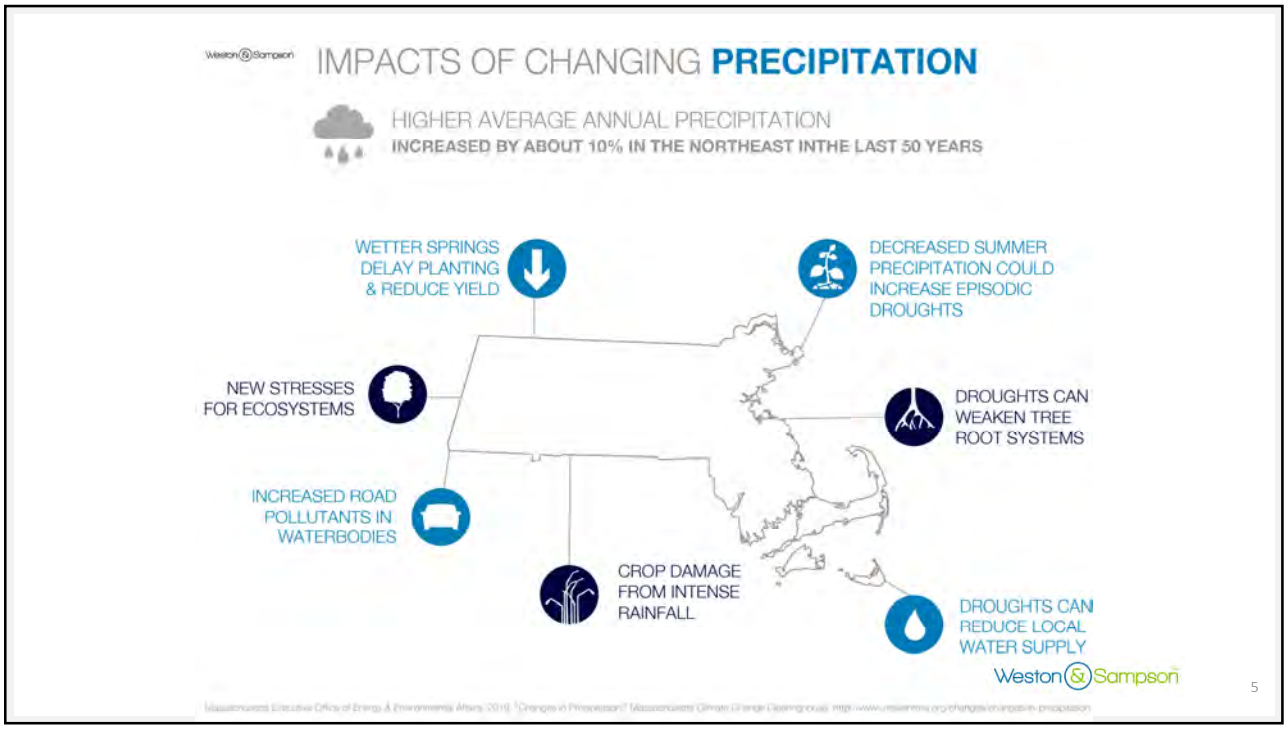
IMPACTS OF CHANGING PRECIPITATION
HIGHER AVERAGE ANNUAL PRECIPITATION
INCREASED BY ABOUT 10% IN THE NORTHEAST INTHE LAST 50 YEARS
WETTER SPRINGS DELAY PLANTING & REDUCE YIELD
DECREASED SUMMER PRECIPITATION COULD INCREASE EPISODIC DROUGHTS
NEW STRESSES FOR ECOSYSTEMS
DROUGHTS CAN WEAKEN TREE ROOT SYSTEMS
INCREASED ROAD POLLUTANTS IN WATERBODIES
CROP DAMAGE FROM INTENSE RAINFALL
DROUGHTS CAN REDUCE LOCAL WATER SUPPLY
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5

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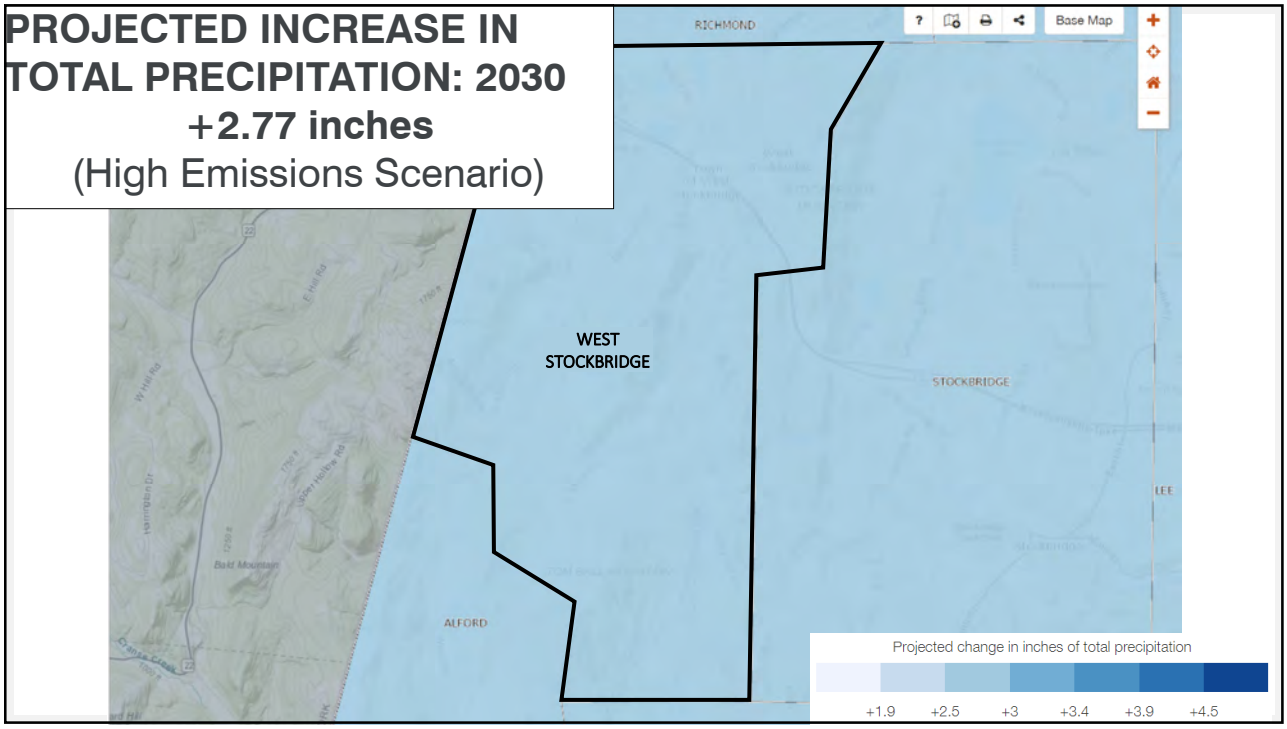
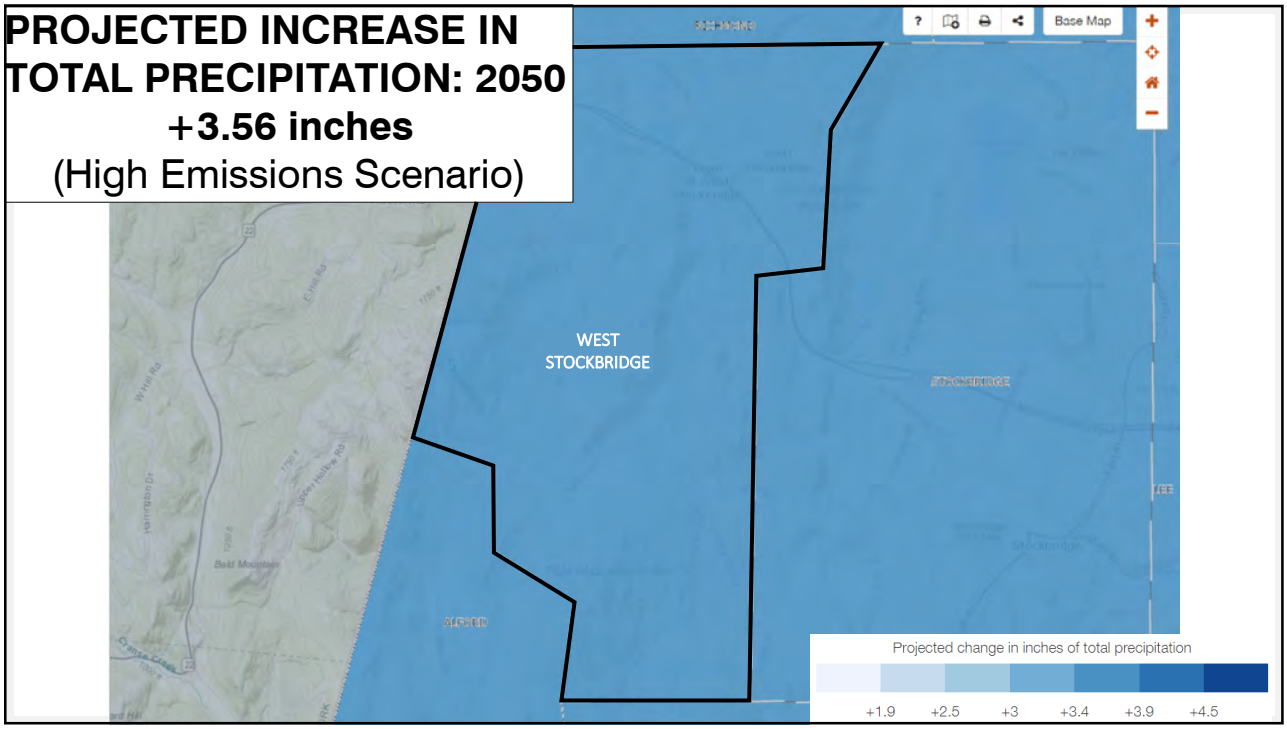

PROJECTED INCREASE IN TOTAL PRECIPITATION: 2030
+2.77 inches
(High Emissions Scenario)
RICHMOND
Base Map
WEST STOCKBRIDGE
STOCKBRIDGE
LEE
ALFORD
Projected change in inches of total precipitation
+1.9
+2.5
+3
+3.4
+3.9
+4.5

6

PROJECTED INCREASE IN TOTAL PRECIPITATION: 2050
+3.56 inches
(High Emissions Scenario)



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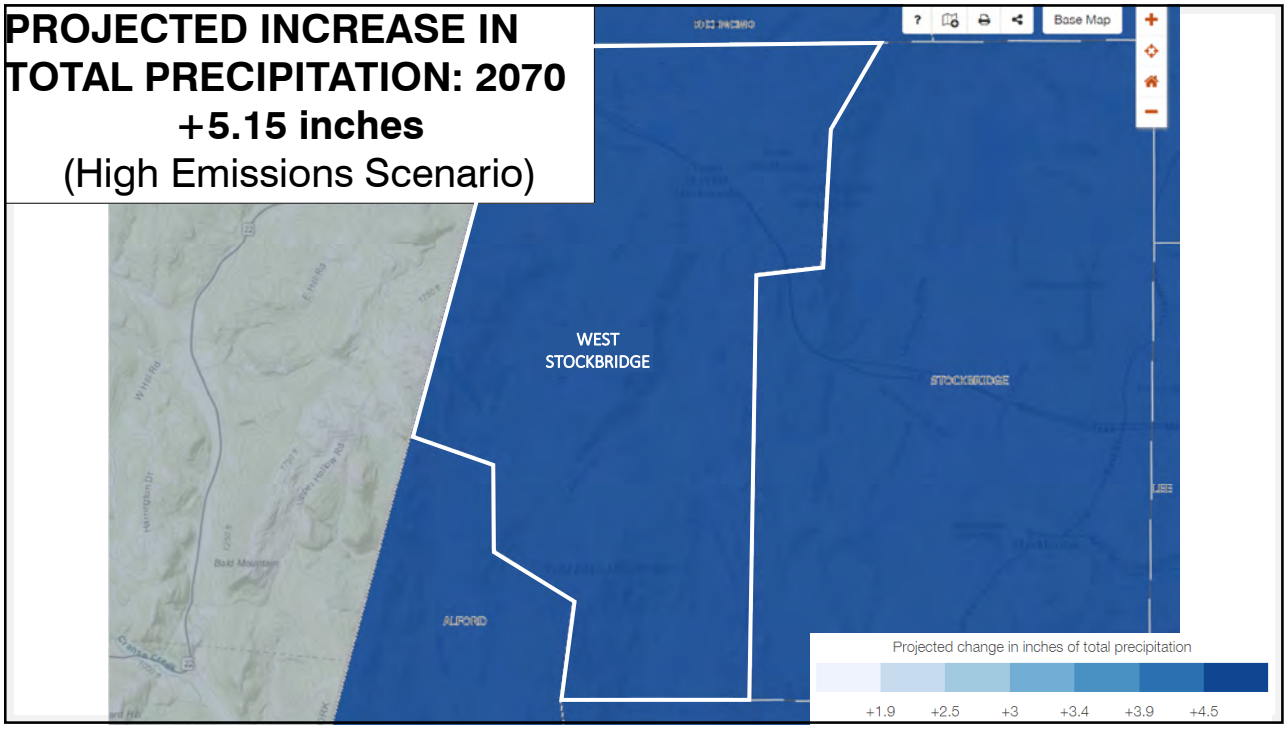
PROJECTED INCREASE IN TOTAL PRECIPITATION: 2070
+5.15 inches
(High Emissions Scenario)



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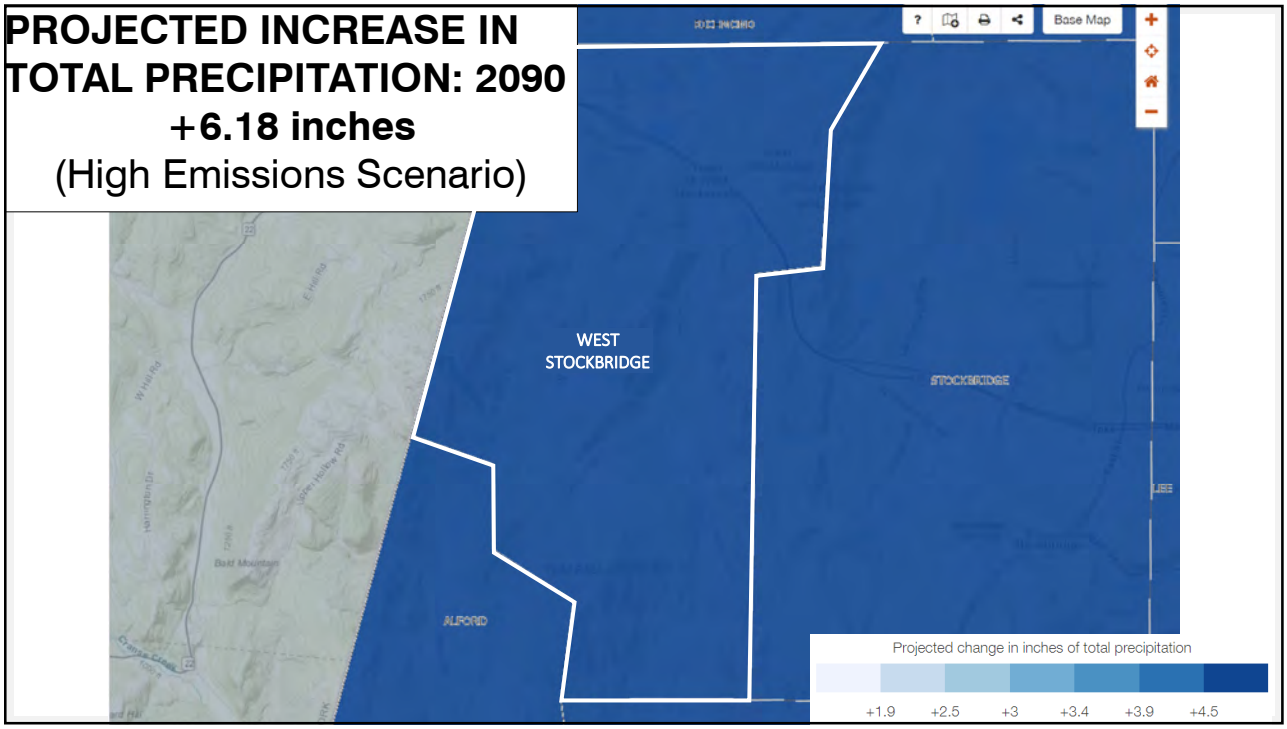
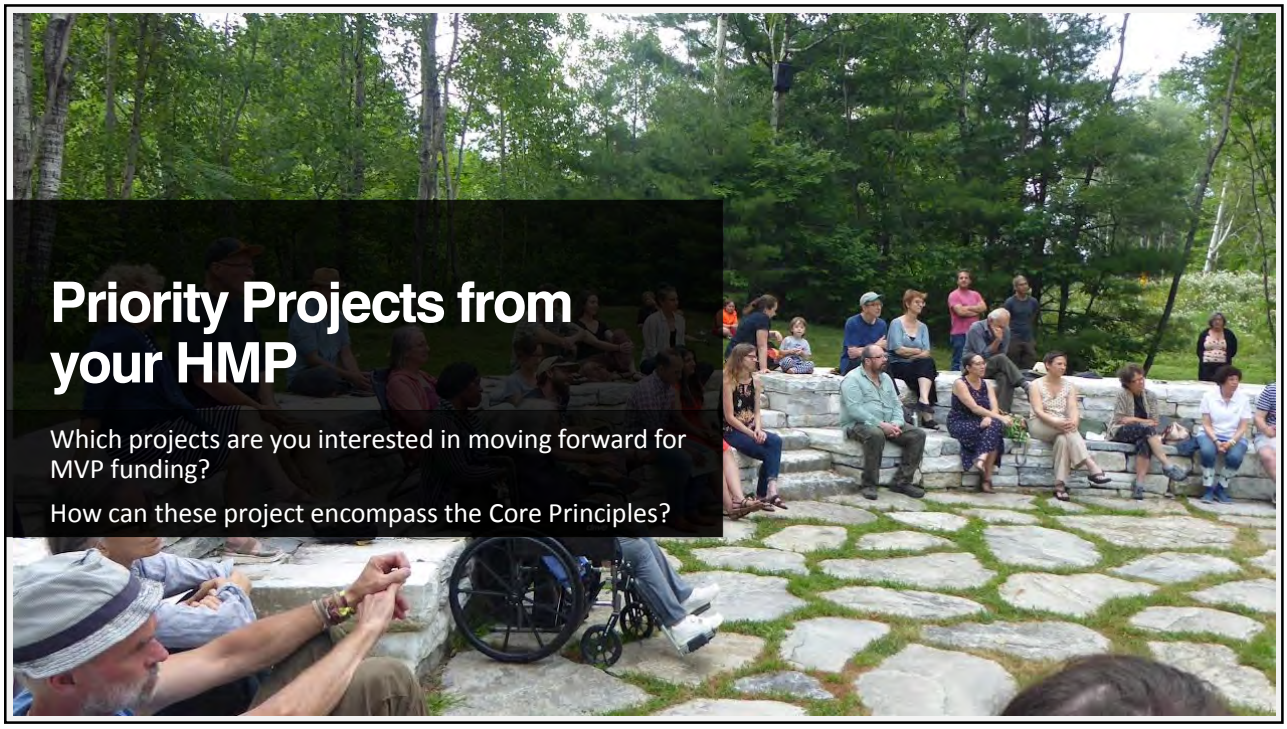

PROJECTED INCREASE IN TOTAL PRECIPITATION: 2090
+6.18 inches
(High Emissions Scenario)
Base Map
WEST STOCKBRIDGE
STOCKBRIDGE
ALFORD
Projected change in inches of total precipitation
+1.9
+2.5
+3
+3.4
+3.9
+4.5

9


Priority Projects from your HMP
Which projects are you interested in moving forward for MVP funding?
How can these project encompass the Core Principles?

10

MVP CORE PRINCIPLES

1. Further a community-identified priority action to **address climate change impacts.**
2. Utilize **best available climate change data for a proactive solution.**
3. Commit to **monitoring** project success and **maintaining** the project into the future.
4. Employ **nature-based solutions**.
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7. Utilize regional solutions toward **regional benefit.**
8. Pursue approaches from which other MVP communities and the state can **learn.**

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FLOOD MITIGATION ACTIONS FROM HMP

Mitigation Action	Geographic Coverage
Upgrade bridges noted as structurally deficient	Cone Hill Road Bridge West Center Road Bridge
Replace or upgrade culverts that are undersized and prone to flooding as reported from Town Road Crossing Study conducted by HVA	Town-wide
Upgrade Town-wide drainage conveyances	Town-wide
Continue enforcement of flood management bylaws	Town-wide
Plan and enact a town stormwater management bylaw	Town-wide

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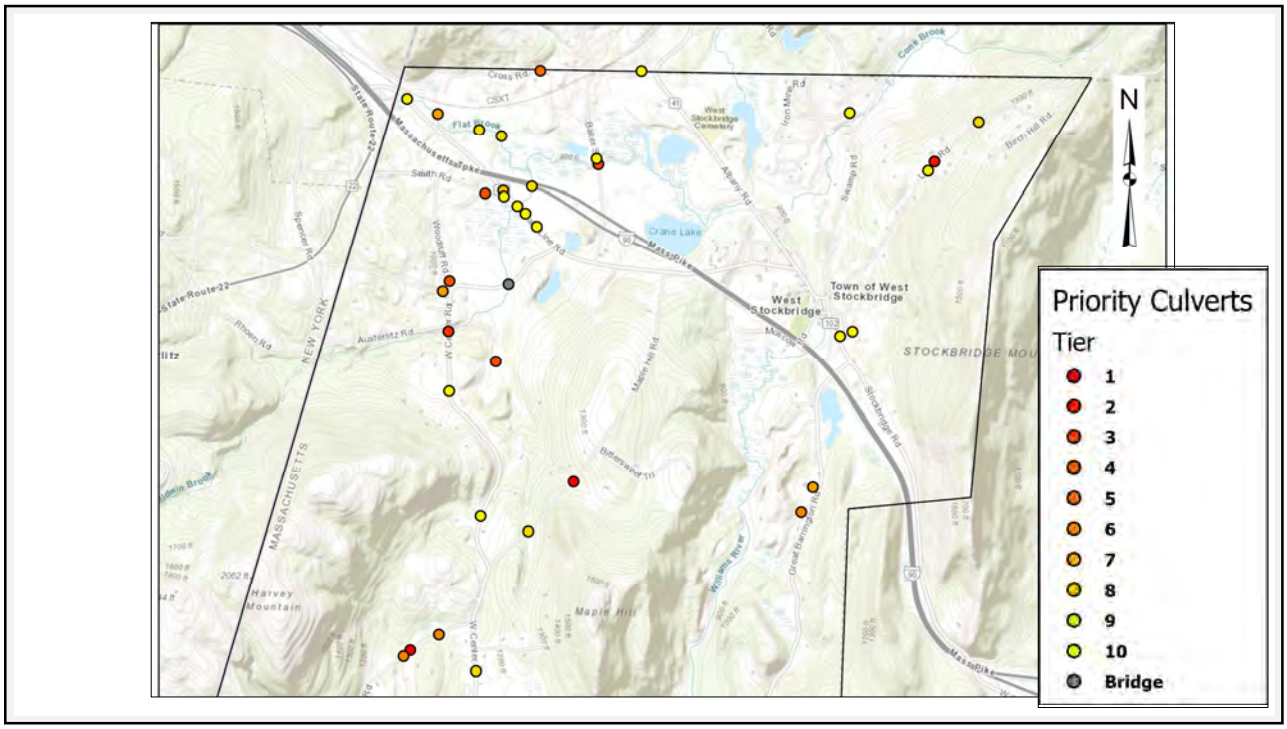
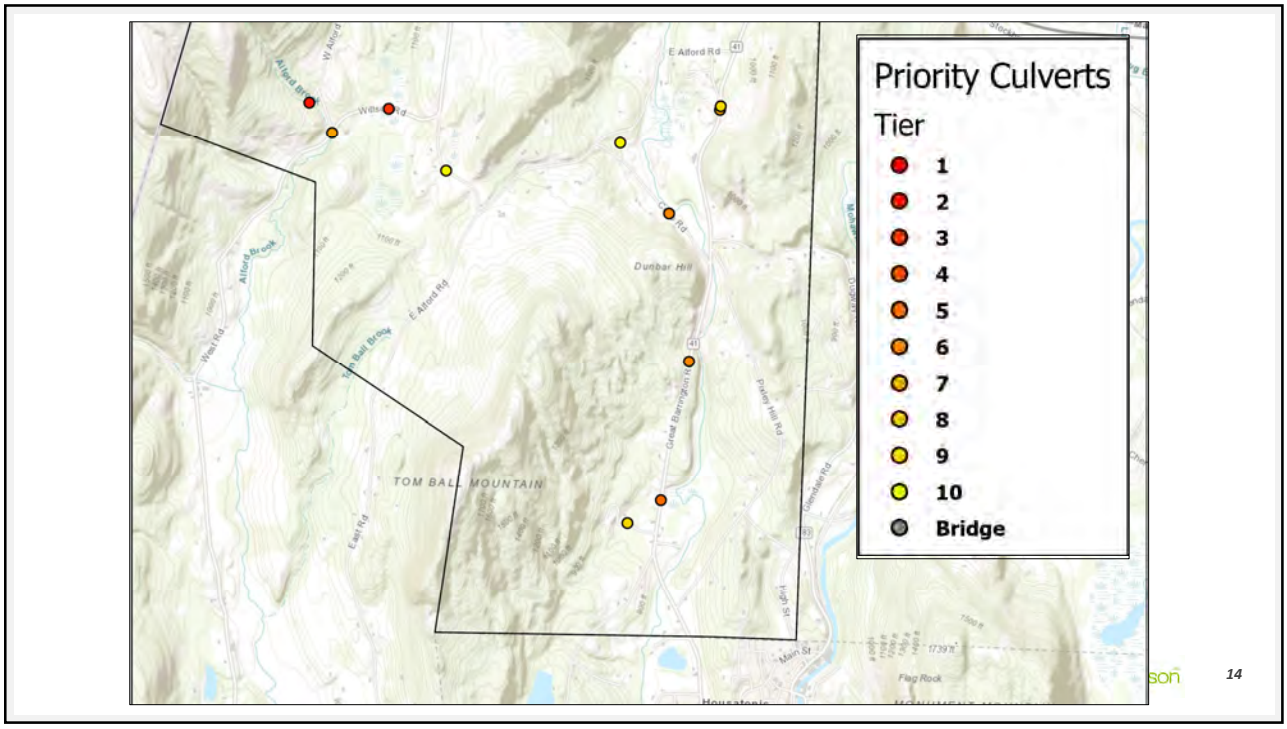

N
Priority Culverts
Tier
1
2
3
4
5
6
7
8
9
10
Bridge
West Stockbridge
Town of West Stockbridge
Crane Lake
Harvey Mountain
Maple Hill
MASSACHUSETTS
NEW YORK
STOCKBRIDGE MOU

13


Priority Culverts
Tier
1
2
3
4
5
6
7
8
9
10
Bridge
TOM BALL MOUNTAIN
Dunbar Hill
E Alford Rd
14

14

FLOOD MITIGATION ACTIONS FROM HMP

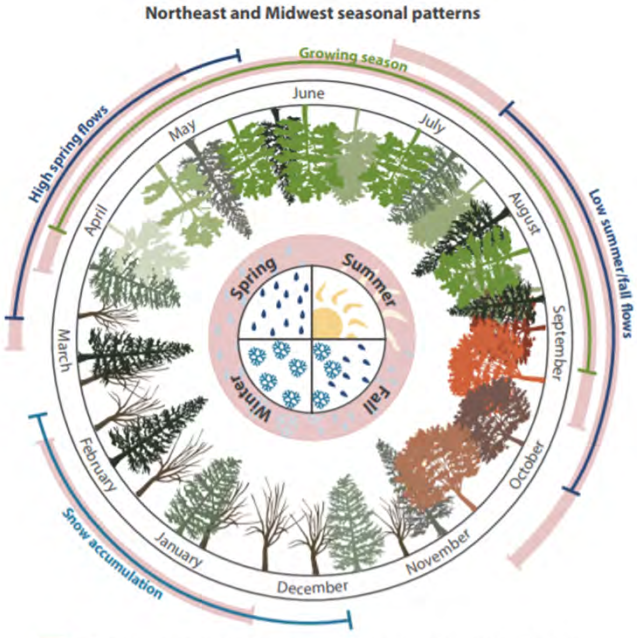
Mitigation Action	Geographic Coverage
Upgrade bridges noted as structurally deficient	Cone Hill Road Bridge West Center Road Bridge
Replace or upgrade culverts that are undersized and prone to flooding as reported from Town Road Crossing Study conducted by HVA	Town-wide
Upgrade Town-wide drainage conveyances	Town-wide
Continue enforcement of flood management bylaws	Town-wide
Plan and enact a town stormwater management bylaw	Town-wide

15

DAM MITIGATION ACTIONS FROM HMP

Mitigation Action	Geographic Coverage
Continue to inspect all dams at appropriate intervals	Town-wide
Continue to maintain dams as necessary	Town-wide

16



The most recent notable drought event was in **2016**[1]
(48 weeks long)

The occurrence of droughts
lasting 1 to 3 months
could go up by as much as
75% over existing conditions
by the end of the century,
under the high emissions scenario[1]

1. Source: Executive Office of Energy and Environmental Affairs, Adaptation Advisory Committee. 2011. "Massachusetts Climate Change Adaptation Report," 17.

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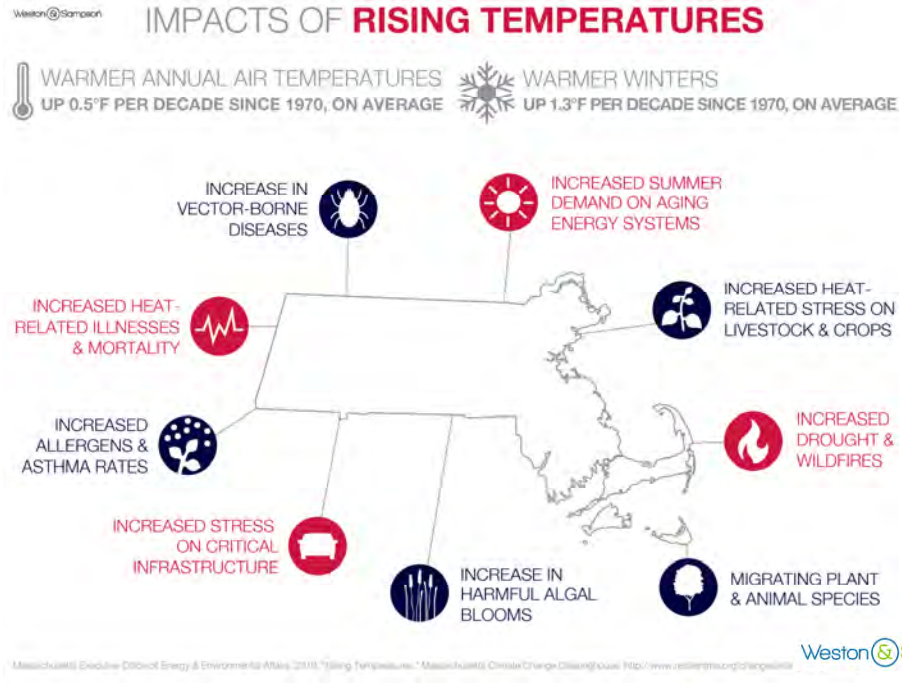

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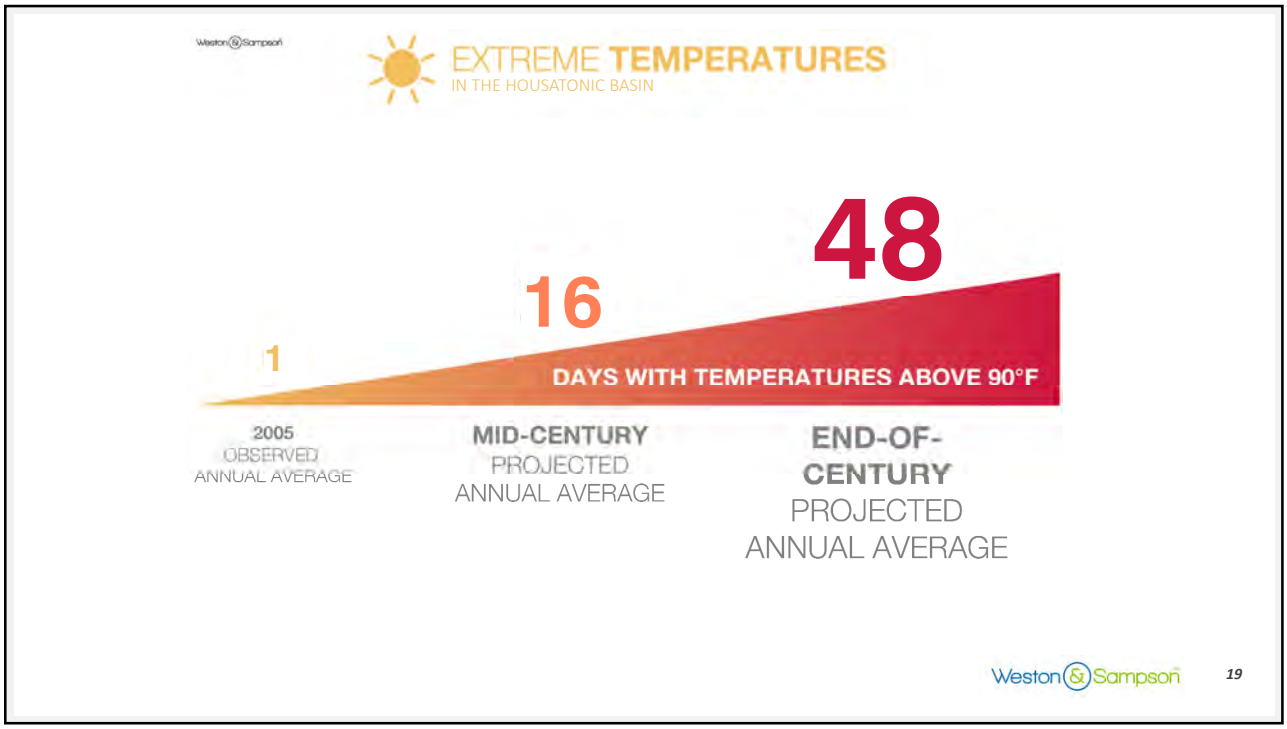

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WINTER STORMS

- The blizzard of 2013 left nearly 400,000 Massachusetts residents without power.[1]
- "Heavy blizzards are among the most costly and disruptive weather events for Massachusetts communities."[2]
- Snowpack likely to decrease annually, but snowfall will occur with heavy intensity
- Extended power outages, cost of snow removal, repairing damages, and loss of business can have a severe economic impact.[3]
- The elderly and infirmed are populations of particular concern during these events

1. *Resilient MA Climate Change Clearinghouse for the Commonwealth. "Extreme Weather," 2017*
2. *"Massachusetts State Hazard Mitigation and Adaptation Plan." 2018. P4-226*

Graphic: Town of West Stockbridge Facebook

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SEVERE WINTER STORM MITIGATION ACTIONS FROM HMP

Mitigation Action	Geographic Coverage
Continue to encourage older residents, disabled, and those with medical issues to self-identify with the West Stockbridge Police department as having special needs during emergency incidents.	Town-wide

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OTHER SEVERE WEATHER MITIGATION ACTIONS FROM HMP

Mitigation Action	Geographic Coverage
Continue strict adherence to MA Building Code	Town-wide
Encourage cell phone users to enlist the Town's Reverse-911 system	Town-wide
Encourage the elderly, disabled, and those with medical issues to self-identify with the West Stockbridge Police Department as having special needs during emergency incidents.	Town-wide

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HURRICANES AND NOR'EASTERS

Upward trend in North Atlantic hurricane activity since 1970

2012: Hurricane Sandy
2017: Hurricane Jose
2018: Hurricane Florence
2019: Hurricane Dorian

Nor'easters along the Atlantic coast are increasing in frequency and intensity

Jan 3-4, 2018: Winter Storm Grayson
March 2, 2018: Winter Storm Riley
March 8, 2018: Winter Storm Quinn
March 13, 2018: Winter Storm Skylar

Source: Climate Science Special Report, Fourth National Climate Assessment (NCA4), Volume prepared by the U.S. Global Change Research Program (USGCRP)Northern Middlesex

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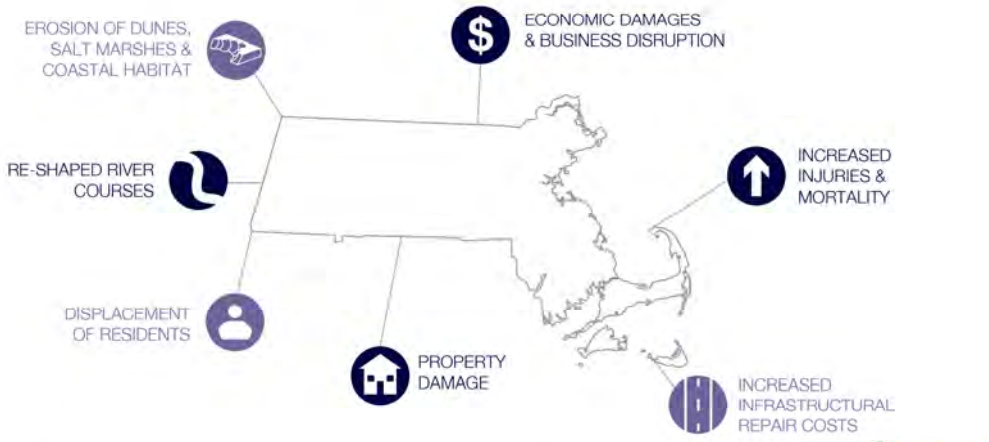
23

23

IMPACTS OF EXTREME WEATHER

STORMS ARE BECOMING MORE INTENSE AND DAMAGING



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HURRICANES & TROPICAL STORMS MITIGATION ACTIONS FROM HMP

Mitigation Action	Geographic Coverage
Clean out/activate stormwater management systems to ensure free flow of water during heavy rain events.	Town-wide

25

EARTHQUAKE MITIGATION ACTIONS FROM HMP

Mitigation Action	Geographic Coverage
Continue strict adherence to MA Building Code	Town-wide
Strict adherence and enforcement of state storage regulations for hazardous materials	Town-wide

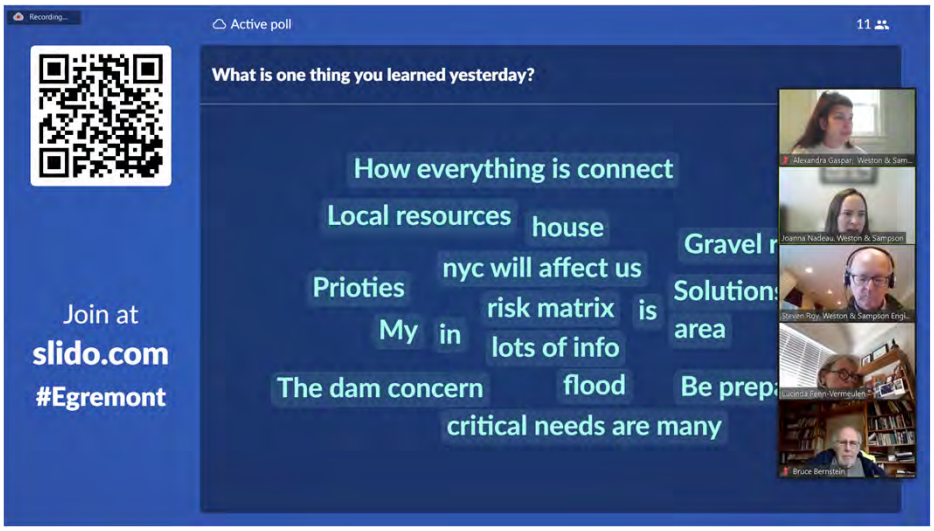
26

ALL HAZARDS MITIGATION ACTIONS FROM HMP

Mitigation Action	Geographic Coverage
Assess modifications to Town Bylaws as needed regarding limiting the expansion of infrastructure in hazard-prone areas.	Town-wide
Continue work to increase local and regional emergency response training.	Town-wide
Continue work to re-evaluate shelter capacity for West Stockbridge residents and determine each shelter's structural ability to withstand natural disaster events, including the Town Hall	Town-wide

27

MVP WORKSHOP



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PROJECT TIMELINE

- **JAN 9** — Core Team Kickoff
- **JAN 30** — Core Team Meeting: Stakeholder Workshop Prep
- **MAR/APR** — Stakeholder Workshop
- **APR** — Collect Public Input
- **APR – MAY** — Draft MVP Appendix to HMP
- **JUNE** — Submit Appendix to EEA

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QUESTIONS? THANK YOU!

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MVP
Municipal Vulnerability Preparedness

30

Town of West Stockbridge
Municipal Vulnerability Preparedness (MVP) Planning Grant

MVP Workshop Prep
May 10, 2023
9:00 – 10:00 am

Zoom Meeting
Meeting ID: 848 0410 7540
Passcode: 138929

1. Select Date for Workshop
    - Options: May 31 (Wednesday), June 1 (Thursday), 9-11am, in a room in town hall on zoom. A lot will be discussion, so having you together to talk it through. Maybe report back to us. Marie controls the keyboard, and mic people. Option to come to Town Hall Meeting room on big screen tv.

2. Review Workshop PowerPoint

    - Confirm Mitigation Actions
        i. Upgrade bridges (7, 5 have been rebuilt, 2 left – 1 deficient, mostly scouring wall issues – Cone Hill Road Bridge over cone hill brook). MADOT report sad overpaved deck, too much weight . $150k project
        ii. Town wide drainage conveyances – combine it with the stormwater priorities
            1. Conveying easements for ROW on Jana Sax property
            2. Demonstration site, what you can do with stormwater
        iii. Do the first two get combined?
        iv. Move DPW/Fire building
        v. CodeRed upgrade – can that be included?
    - Questions/Talking points:
        i. Discuss bylaw updates as an action. Building permits trigger agencies, planning board, zoning, conservation. Bylaws don't limit expansion, control expansion.
        ii. Should any of the actions be combined or separated?
        iii. Is there anything not on this list that should be added? A slido question
    - Will send for Town review next week.

3. Review & Update Stakeholders List
    - Town staff
    - Community Groups
    - Local and Regional Organizations
    - State entities
    - Who would represent natural resources, economics, community segments? It's invite only but broader than CT.
    - Maybe add library, parks, Town of Richmond, CPA, Community Board. Marie will send emails for each person, and ask them to forward it to their whole group. Marie will also email them to let them know it's coming. Having more than one person for each group would be great.

- Resend invitation to review, and she will send zoom link and emails.

4. Additional Items

- Quarterly Report – will send update to you and you submit.
- Public Engagement
    i. Do we have the ability to create a project page on the website, to feature the survey and flyer? We will post a home page announcement, email your input on the plan.
    ii. Who is in charge of website updates? Marie
    iii. Can you pass along notice to community social media managers? Other channels to use? Yes
    iv. Review survey questions by EOD Thursday
    v. Meeting on 31st, paper will be out a few days before end of the month.

5. Questions, Wrap Up and Next Steps

Action Items	W&S	Town
Send emails and zoom link		X
Article review		X
Survey		X

ATTACHMENT B

Stakeholders' Workshop Materials

you're invited!

Please join the Town of West Stockbridge in a Municipal Vulnerability Preparedness (MVP) Workshop as we work together to reduce climate change impacts in the community! During this two-hour virtual workshop funded by the State of Massachusetts' MVP Program, we will develop fundable projects focused on reducing vulnerabilities in the community through nature-based solutions. A copy of the presentation and an agenda will be emailed to you prior to the workshop.

The meeting will take place in-person in the Town Hall Meeting Room and via Zoom on:

May 31, 2023 at 9 am.

Please RSVP by following this link: tinyurl.com/RSVP-WS, and we will provide you with the zoom meeting link and a calendar appointment. The deadline to RSVP is May 30, 2023.

Feel free to reach out to AdamsL@wseinc.com with any questions you may have. Thank you for your support!
#ResilientWestStockbridge

Town of West Stockbridge
Municipal Vulnerability Preparedness (MVP) Planning Grant

MVP Stakeholder Workshop
May 31, 2023
9:00 – 11:00 am

Zoom Meeting
Meeting ID: 813 6602 5988
Passcode: 423068

1. Welcome and Overview
2. Review of Climate Data
3. Planning Considerations and Solutions
4. Project Development
5. Questions and Wrap Up

welcome

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1

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transform your environment

2

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MUNICIPAL VULNERABILITY PREPAREDNESS

West Stockbridge Stakeholders Workshop

May 31, 2023

3

MEET THE CORE TEAM

MARIE RYAN
TOWN ADMINISTRATOR
West Stockbridge

CURT WILTON
HIGHWAY SUPERINTENDENT
West Stockbridge

JOHN MASIERO
CONSERVATION COMMISSION CHAIR
West Stockbridge

MARC PORTIERI
CHIEF OF POLICE
West Stockbridge

STEVE TRAVER
FIRE CHIEF
West Stockbridge

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4

MEET THE SUPPORT TEAM

JOANNA NADEAU
SENIOR PLANNER
Weston & Sampson

LINDSEY ADAMS
RESILIENCY ENGINEER
Weston & Sampson

STEVE ROY
RESILIENCY TECHNICAL LEADER
Weston & Sampson

CARRIEANNE PETRIK
BERKSHIRES & HILLTOWNS REGIONAL COORDINATOR
EEA MVP Program

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5

slido

Join at slido.com
#MVP

ⓘ Start presenting to display the joining instructions on this slide.

6

TODAY'S OBJECTIVE

Develop mitigation measures that West Stockbridge can take to decrease its vulnerability to climate change through nature-based solutions and climate adaptation measures, while protecting areas of the community that are most vulnerable to natural hazards.

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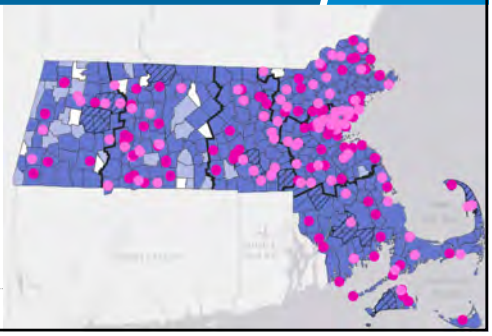
WHAT IS MVP?

- Improved resilience and preparedness
- Collaboration with stakeholders
- Increased education, planning, and implementation
- Funding for resilience-related actions



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WHAT IS MVP?

MVP Planning Grant/Designation

- Define top three prioritized action items from HMP
- Develop a robust community engagement strategy to build relationships with project partners
- Conduct two-hour workshop
- Draft an appendix for 2021 HMP
- Receive MVP designation

MVP Action Grant

- Implement priority adaptation actions identified during the planning process

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WHAT CAN THE MVP ACTION GRANT FUND?

- Assessments
- Outreach & Education
- Management Measures
- Redesign & Retrofit
- Nature-Based Solutions
- Ecological Restoration
- Water Quality & Infiltration
- Flood Protection
- Extreme Heat Mitigation
- Drought Mitigation
- Energy Resilience
- Chemical Safety
- Land Acquisition
- Housing
- Mosquito Control

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WORKSHOP APPROACH

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WHAT ARE WE PLANNING FOR?

MA Projections By End of Century:

Changes in precipitation
- 18% increase in consecutive dry days
- 57% increase in days with > 1 in. rainfall
- 7.3 inches additional annual rainfall
- Increase in flooding

Rising temperatures
- 10.8°F increase in average annual temperature
- 42% decrease in days/year with min. temperatures < 32° F
- 1,280% increase in 90°F days/year

Winter weather
- Overall a decrease in annual snowfall
- Likely to have fewer events with a lot of snow
- Freeze –thaw cycle to change

Regional changes
- Increase in frequency and magnitude of hurricanes and nor'easters
- 4-10.5 feet of sea level rise

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Source: State Hazard Mitigation and Climate Adaptation Plan, September 2018 / resilientma.org / Northeast Climate Adaptation Science Center

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TOP NATURAL HAZARDS IN WEST STOCKBRIDGE


Severe Winter Weather


Flooding


Drought


Extreme Temperatures (heat and cold)


Other Severe Weather (high winds and thunderstorms)

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PRIORITY POPULATIONS IN WEST STOCKBRIDGE

- Elderly
- Children
- People living with disabilities
- People living alone
- Residents living in remote locations with minimal access for emergency response

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VULNERABILITIES IN WEST STOCKBRIDGE

- Degrading and undersized culverts & drainage system
- Fire station located in flood zone
- Invasive species
- Isolated residents

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Are there additional vulnerabilities impacting West Stockbridge that you would like to add?

ⓘ Start presenting to display the poll results on this slide.

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MITIGATION ACTION CATEGORIES

- Flood Mitigation
- Dam Hazards Mitigation
- Hurricane & Tropical Storm Mitigation
- Severe Winter Storm Mitigation
- Other Severe Weather Mitigation
- Earthquake Mitigation
- All Hazards Mitigation

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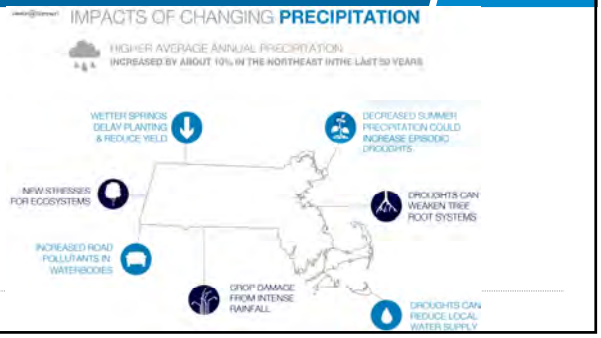
CLIMATE CHANGE IN MASSACHUSETTS



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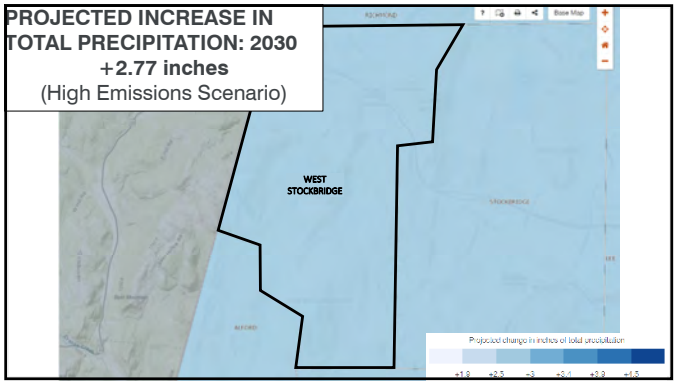
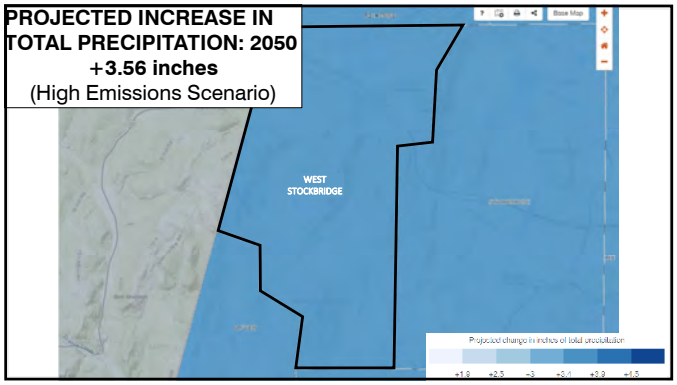
PROJECTED INCREASE IN TOTAL PRECIPITATION: 2030
+2.77 inches
(High Emissions Scenario)



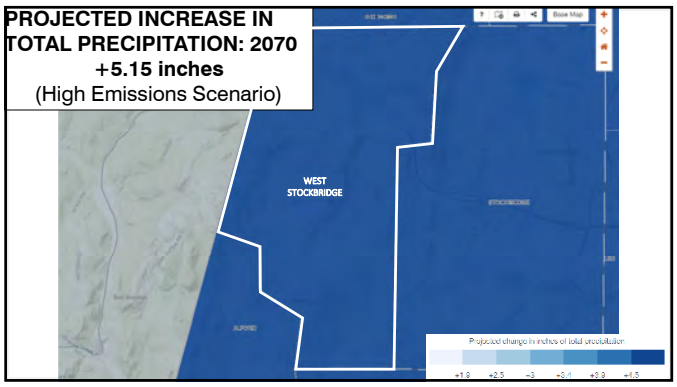
19

PROJECTED INCREASE IN TOTAL PRECIPITATION: 2050
+3.56 inches
(High Emissions Scenario)



20

PROJECTED INCREASE IN TOTAL PRECIPITATION: 2070
+5.15 inches
(High Emissions Scenario)



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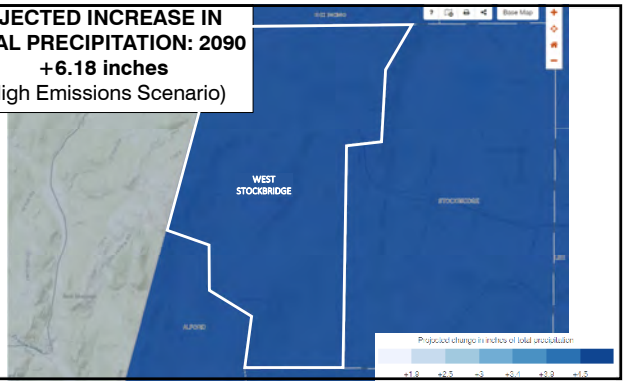
PROJECTED INCREASE IN TOTAL PRECIPITATION: 2090
+6.18 inches
(High Emissions Scenario)



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MITIGATION ACTIONS FROM THE HMP

Upgrade deficient bridges, culverts, and stormwater infrastructure.

Similar MVP funded projects:

Belchertown (FY23) – Scarborough Brook Watershed Improvements. **Design & Permitting to implement culvert replacement.**

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MITIGATION ACTIONS FROM THE HMP

Assess vulnerability and resilience opportunities of Shaker Mill Pond Dam and Card Pond Dam.

Similar MVP funded projects:

South Hadley (FY23) – Queensville Dam and Buttery Brook Restoration. **Eliminate jurisdictional status and hazard threat associated with the Queensville Dam by reducing the impounded area below jurisdictional threshold.**

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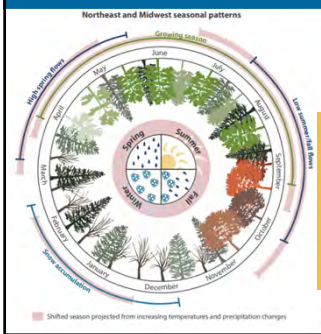
CLIMATE CHANGE IN MASSACHUSETTS



The most recent notable drought event was in **2016**
(48 weeks long)

The occurrence of droughts **lasting 1 to 3 months** could go up by as much as **75% over existing conditions** by the end of the century, under the high emissions scenario.

Sampson

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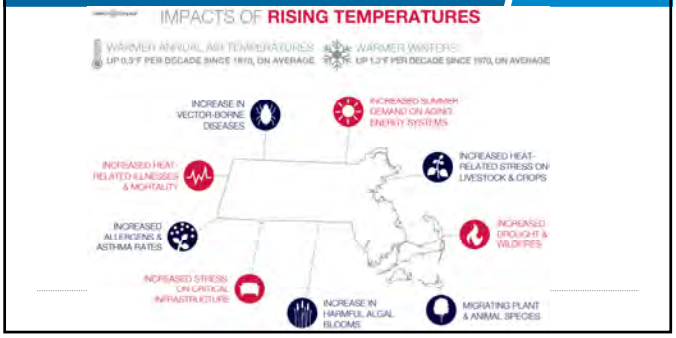
CLIMATE CHANGE IN MASSACHUSETTS



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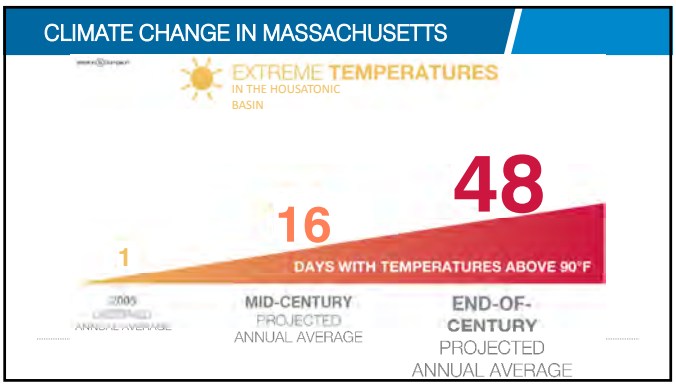
CLIMATE CHANGE IN MASSACHUSETTS



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CLIMATE CHANGE IN MASSACHUSETTS

Upward trend in North Atlantic hurricane activity since 1970

2012: Hurricane Sandy
2017: Hurricane Jose
2018: Hurricane Florence
2019: Hurricane Dorian

Nor'easters along the Atlantic coast are increasing in frequency and intensity

Jan 3-4, 2018: Winter Storm Grayson
March 2, 2018: Winter Storm Riley
March 8, 2018: Winter Storm Quinn
March 13, 2018: Winter Storm Skylar

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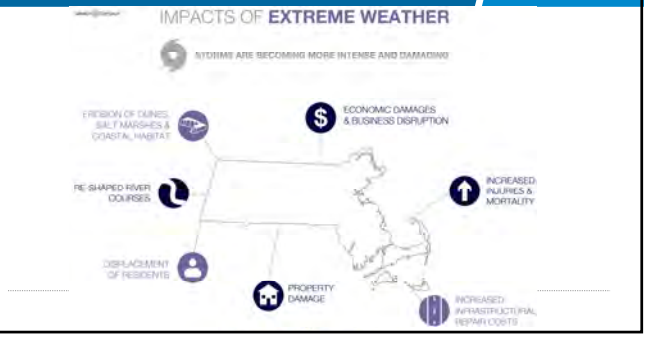
CLIMATE CHANGE IN MASSACHUSETTS



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MITIGATION ACTIONS FROM THE HMP

Improve resilience of Town emergency communications systems.

Similar MVP funded projects:

Uxbridge (FY20) – Integrated Vector-Borne Disease Control Program. **Strengthen the emergency communications plans and system in order to reach all members of the community.**

This project also included mosquito control and replacing degraded culverts

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MITIGATION ACTIONS FROM THE HMP

- Conduct an assessment for a multi-department facility emergency facility.

Similar MVP funded projects:

Monson (FY20) – Energy Resiliency for Town Hall-EOC-Police HQ Facility. **Increase resiliency identifying a viable strategy to prepare main emergency response hub for a renewable energy backup power system.**

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WHAT ELSE INFORMS OUR PLANNING?

Climate Change Clearinghouse for the Commonwealth

Resilient MA was created by EEA to support the Commonwealth with climate change science and tools.

This **maps and data center** features interactive applications to explore the latest statewide climate data and projections curated to support climate resilience in Massachusetts.

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NATURE-BASED SOLUTIONS

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GREEN INFRASTRUCTURE & LID

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STREAM RESTORATION

BANK RESTORATION & STABILIZATION


Live Crib Wall


Vegetated Retaining Wall


Joint Planting


Gabions

CULVERT WIDENING TO IMPROVE HABITAT & FLOW

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ROOF STRATEGIES


EPA Region 1 Headquarters – Boston MA


Figure 1: Dark vs. Cool Roof Surface Temperatures

A dark roof (left) becomes much hotter than a cool white roof (right) on a sunny afternoon.

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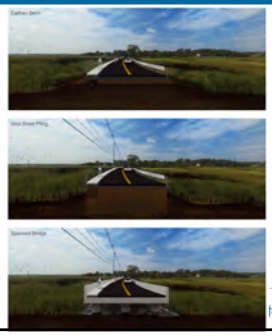
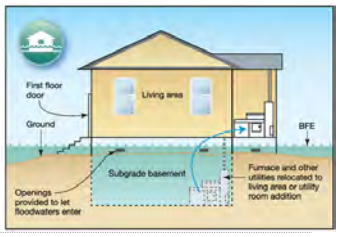
RAISED INFRASTRUCTURE| WET FLOODPROOFING





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WORKSHOP APPROACH

THINK ABOUT:

- **What climate hazards will the priority projects help the community address?**
- **How could this project could serve as an example to other communities with similar challenges?**
- **Are the voices of climate vulnerable community members being represented?**
- **How do these potential projects address the needs of the most vulnerable community members?**

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MITIGATION ACTIONS FROM THE HMP

- Upgrade deficient bridges, culverts, and stormwater infrastructure
- Conduct an assessment for a resilient, multi-department emergency facility.
- Improve reliability of Town emergency communications systems.
- Assess vulnerability and resiliency opportunities of Shaker Mill Pond Dam and Card Pond Dam.

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Are there any additional mitigation actions you would like to consider?

ⓘ Start presenting to display the poll results on this slide.

40

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Select the three actions that you think are most important for West Stockbridge to pursue

ⓘ Start presenting to display the poll results on this slide.

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CLIMATE CHANGE IMPACTS

What climate change impacts are we mitigating with this project?

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PRIORITY POPULATIONS

What key populations will benefit most or be better protected by this action? How?

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NATURE-BASED SOLUTIONS

How can this mitigation action incorporate nature-based solutions?

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COMMUNITY ENGAGEMENT

How can we best inform the community about this project and get them invested and involved?

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REGIONAL IMPACT

Can this mitigation action become a regional project? How will it benefit neighboring communities?

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transform your environment

47

thank you

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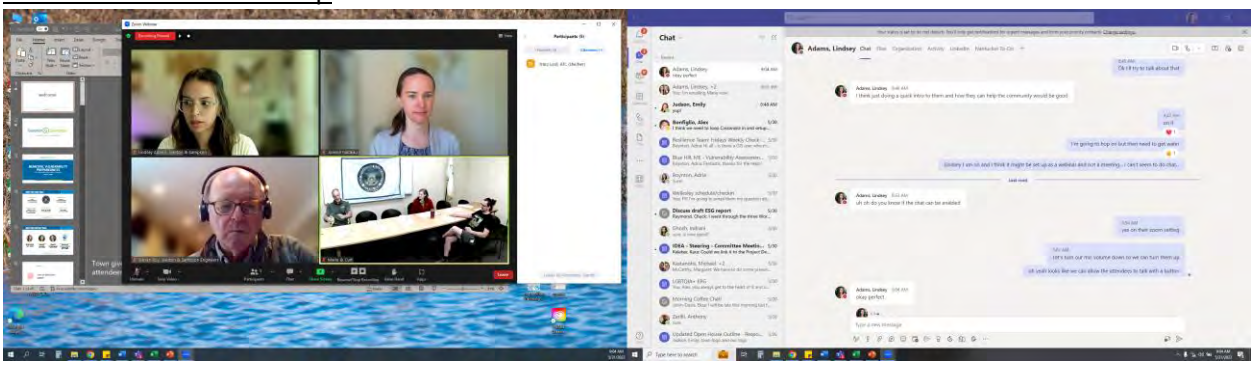
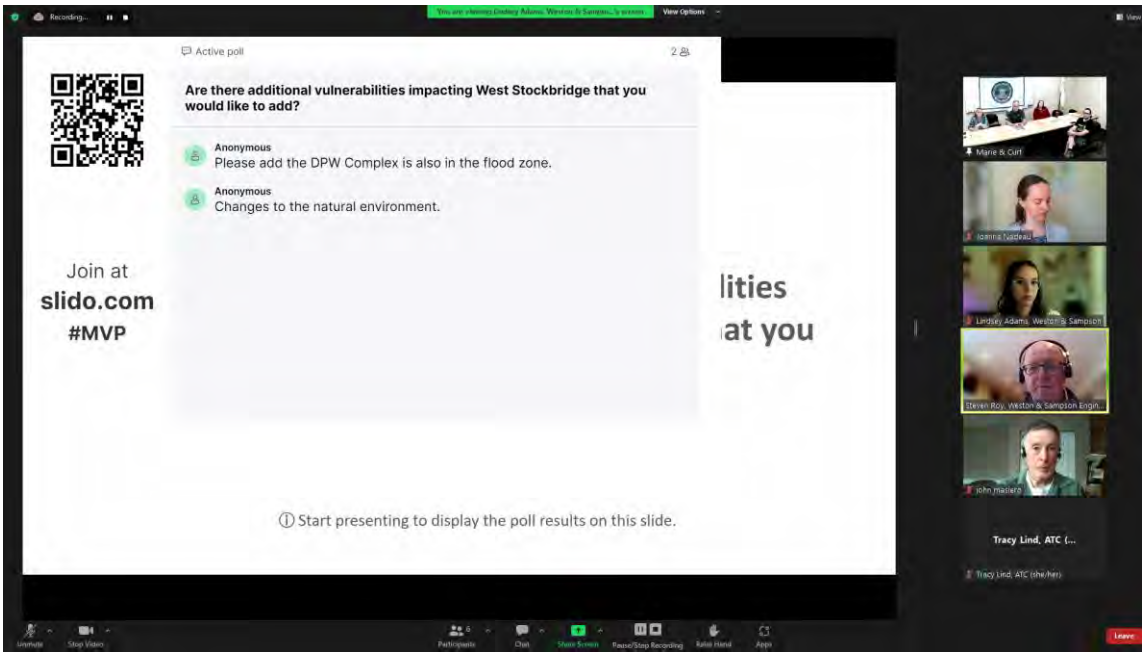
Notes from MVP Workshop

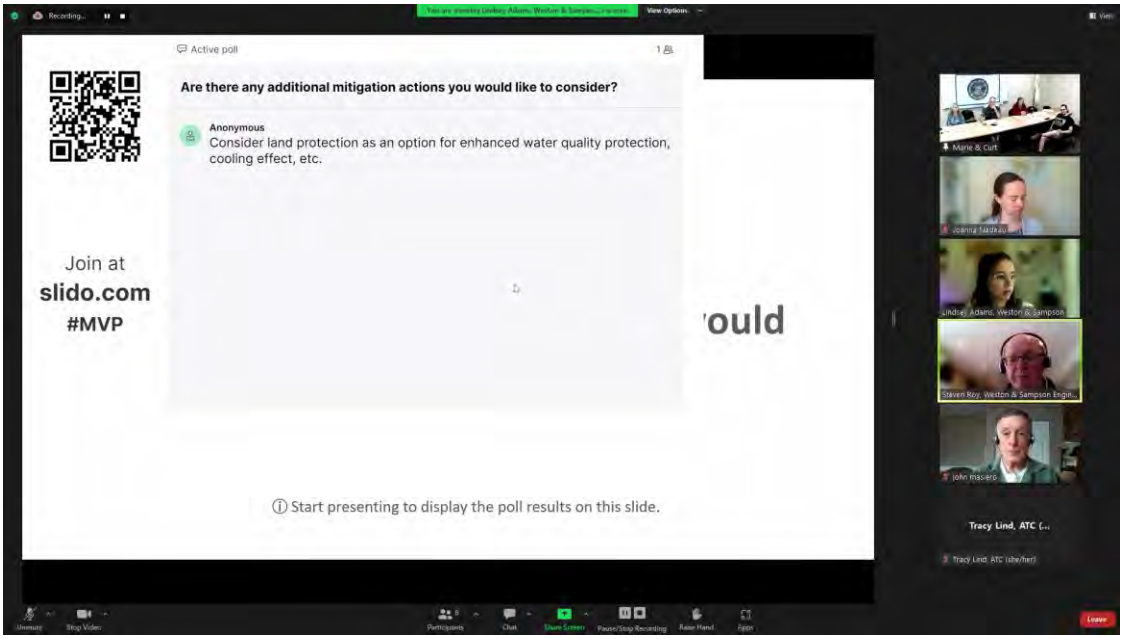




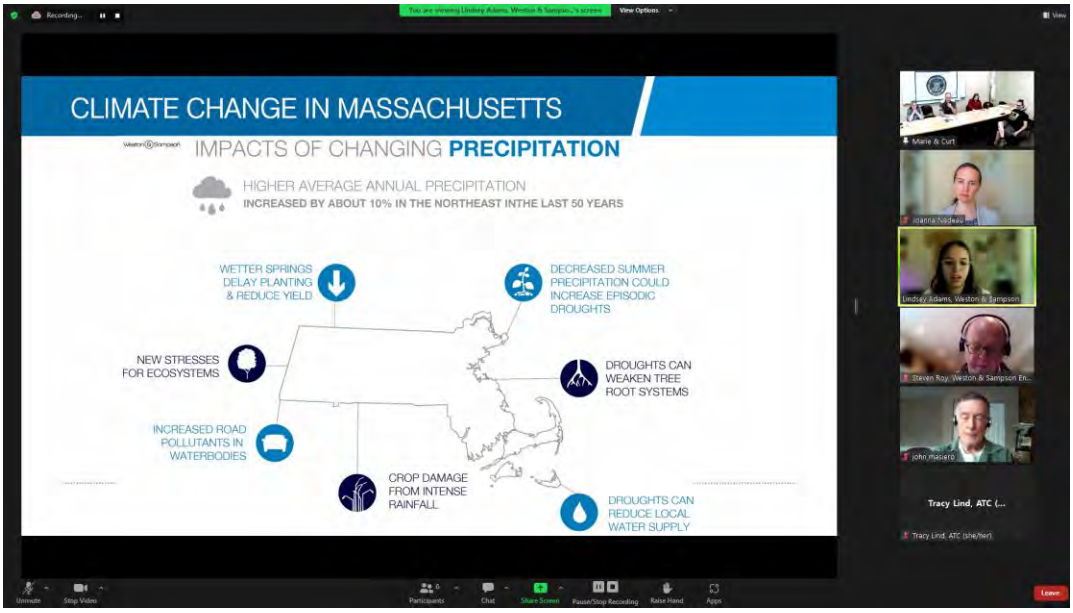
Tracy Lind: The potential impact to the outdoor recreation industry.

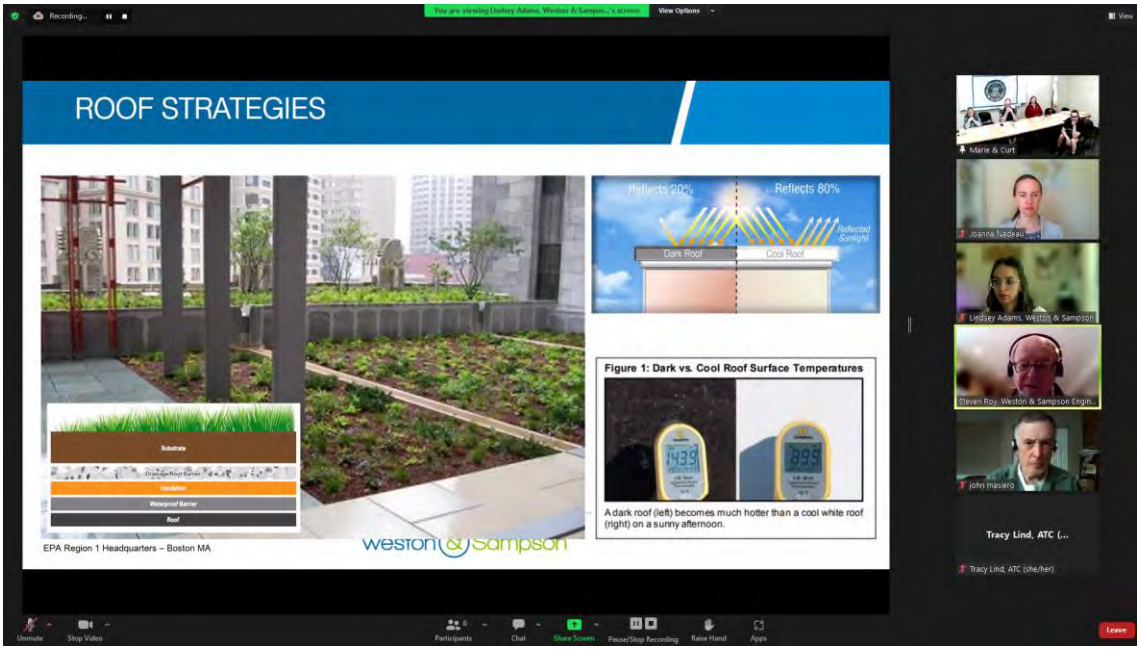
SR: Impacts to agriculture?

CW: raised home/wetproofing sounds relevant to the Butterworths



Could be outright purchase, easements, to preserve the inherent resilience already in the system.



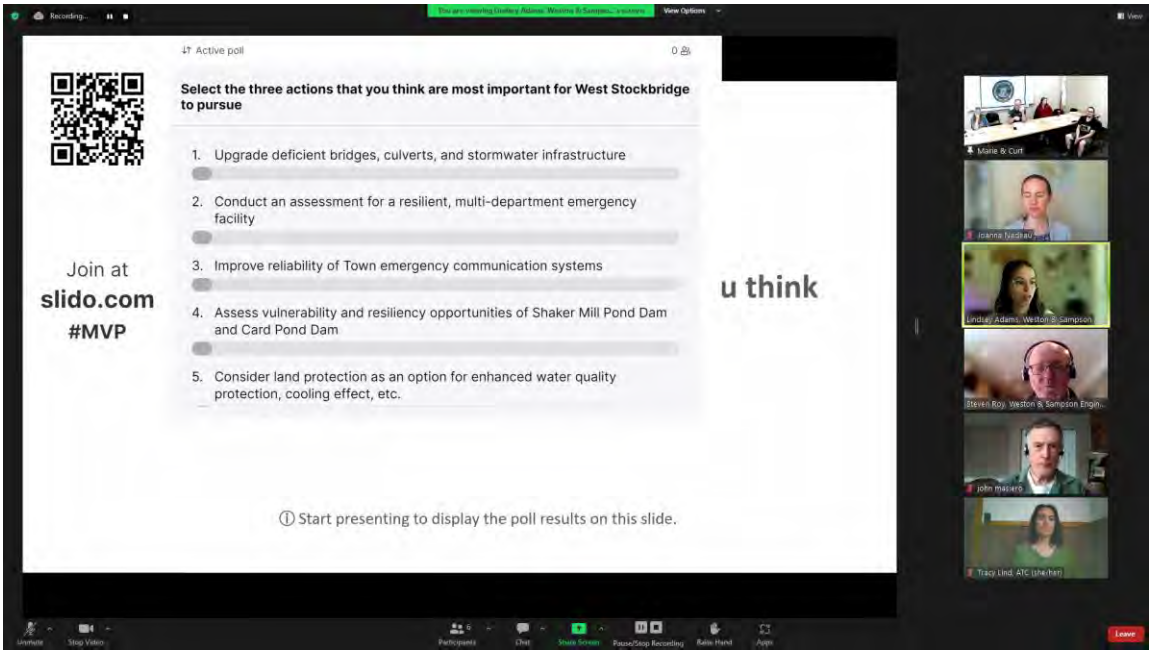


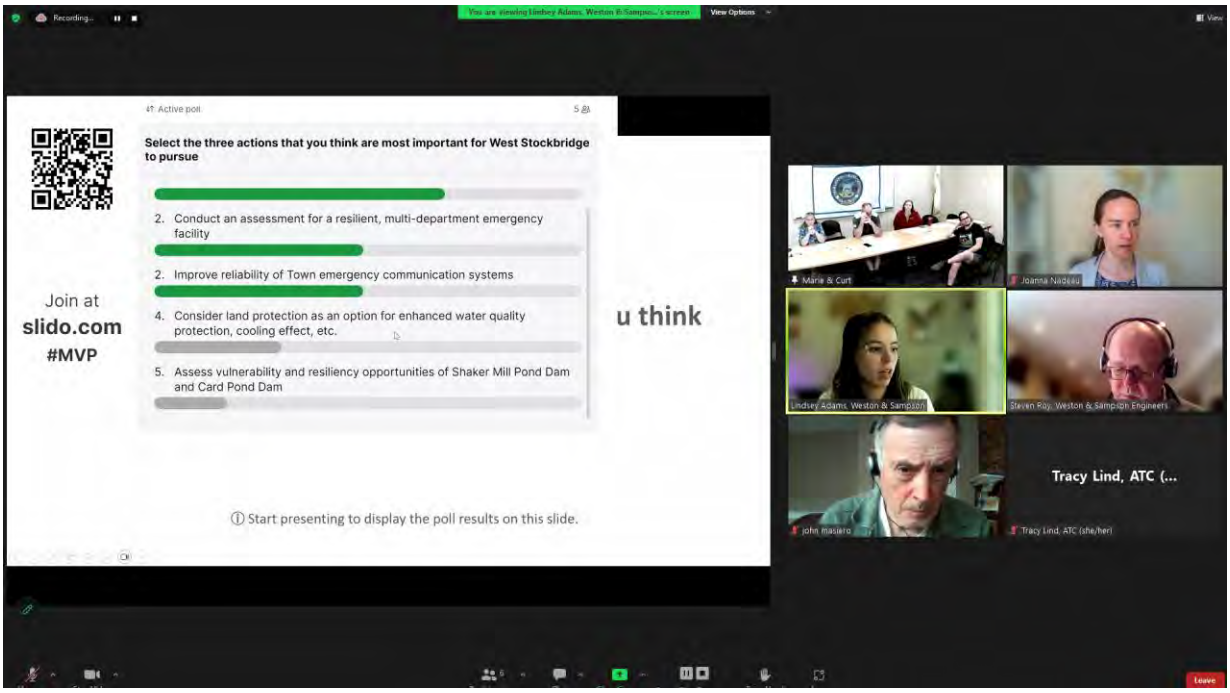
Tracy Lind: When applying for funds, can you apply for multiple reasons at a time?

SR: Absolutely. The art to this is that you are doing what's manageable within the window of the grant period. Typically one fiscal year to complete it. Basically 9 months the first year to do it.

TL: land protection typically take longer than a year, so 2 year option might be good. TL working w the Landscape Partnership Grant program – not directly tied with MVP that is a consideration for grant application.

EEA can help cross reference to funding programs other than MVP. DCR, DEP, can be connected. Not much outside of EEA agencies.





We have a private dam, but we were staying away from it bc of landowners.

Currently have a backup generator at DPW if lose power. Library used it to set up wifi hotspot.

Could look at other funding sources for this, like MassWorks for construction. MVP will be assessment, siting, and prelim design. FEMA BRIC might also be an opportunity to get large grant funds applied to this too. MVP funded an energy system design in Yarmouth as well. DPW facilitaty was across the street, so they put solar PV on both and linked to make a microgrid.

Could include cleanup of existing site…

Project Development Matrix - West Stockbridge - MVP Stakeholder Meeting - May 31, 2023

Priority Mitigation Actions	Project Description	What climate change impacts are we mitigating with this project?	What key populations will benefit more or be better protected by this action? How?	How can this mitigation action incorporate nature-based solutions?	How can we best inform the community about the project and get them invested and involved?	Can this mitigation action become a regional project? How will it benefit neighboring communities?
Upgrade Deficient bridges, culverts, and stormwater infrastructure	Heavy rain and snowmelt can cause roadways to overtop and flood due tot undersized culverts and stormwater infrastructure. The Town is proposing the design of climate resilient roadways and stormwater draiange updates, brudge repairs, and stream restorations, as identified through the Resilient Stormwater Action and Implementation Plan (RSAIP).	Flooding, severe weather, erosion; protecting infrastructure from climate impacts	Residential private properties that help with flooding, eg. Butterworths, a known flooded property. Remote locations, would help with access for emergencies.	Establishing vegetation would achieve same or better protection than riprap, so the roots hold the soil in place. Also can design solutions to capture flow upstream where we can detain water and slowly release it over time, which is good for a flashy storm (not as useful for an extreme precipitation event). Sometimes there is DCR land and we can raise a berm outlet into a wetland area to get more storage. Can also involve protecting existing open space/land to enhance waterquality protection.	Put meeting on the agenda with the street/location listed with the project, then people come to find out what's going on. Survey responses can be gathered by posting on community facebook board, through email notifications. Local Yokel - Small media outlet. Berkshire Wildlife Linkage meets regularly and considers projects for connectivity, can write grants and assist with finding funding. Information in the email about specific details of the conversation was really useful to see how it was relevant to the organization. Multiple email reminders were helpful too. Set up a webpage about MVP projects on the website.	Like with Richmond, when tributaries run through one town into another, or a dam that affects them downstream, it makes sense to join up. Working on a same water source can make sense to partner up. This project started with a regional project, assessed this in that plan to identify it! Including the other communities in meeting to hear their input. Share out examples and results of implementing can encourage others to try NBS. Existing connections to other towns' DPW are an opportunity to learn and share. Regional groups can help make connections across the watershed. SImilarly, Lenox got funding for a dam by describing downstream benefits to Richmond, W. Stockbridge, and other communities.
Conduct an assessment for a resilient, multi-department emergency facility	The Town is proposing relocation and redesign of the existing Fire Department and Public Works facilities to protect them from natural hazards and to expand shelter capacity for the region. A new resilient building could function as a combined public safety, public works, cooling, warming, and emergency shelter, and general community facility. Key features would also include nature-based solutions and green building designs to reduce energy use and capture pollutants from vehicle operations.	Flooding of building, and as a multi-use facility that offers shelter capacity for extreme heat and cold, all hazards. Existing DPW/FD are in flood zone.	People in remote locations, elderly, when they lose power, having a space to be safe and healthy. Many people have asked for a place to charge their phone or use wifi during an event.	Green building, green roof on the garage or solar, to reduce energy use. Can use GI and LID to filter and capture water from operations and vehicles on site to reduce water pollution. Infiltration in the parking lot, porous pavement is easier to do when starting on a blank slate.	Use channels stated above. Highlight the importance of the shelter, wifi access, food pantry with fresh food, and other community services. Letting people know the facility is in the floodplain. Once people are interested, creating a mailing list, and sending flyers with specifics about the project. Detail what equipment is stored at the site and systems affected re DPW and Fire. Relocation would reduce traffic and noise for neighborhood.	Shared Fire Dept with Richmond so they will benefit. They have a new TH but no shelter, and the location is on the Richmond/WS line, to help them with emergency shelter capacity. West Stockbridge has an existing generator that could be used at the new facility that would benefit neighboring communities during an emergency.
Improve reliability of Town emergency communications systems	West Stockbridge is proposing to implement a Reverse-911 system and create a communications plan to increase resilience for emergency management departments and all residents. The plan will strengthen the community infrastructure against climate change and provide more reliable access to emergency information that is easy for residents across the Town to utilize.	Extreme weather, thunderstorms, high winds, road closures. Assessment includes looking at which channels are most vulnerable - landlines, wifi, cell phones.	Knowing who lives on the roads and being able to access them and plan ahead, especially elderly and remote locations. Children at schools that need to be communicated with their families. Residents can direct which channels best reach them. Many people have asked for a place to charge their phone or use wifi during an event.	NA - may not score here	Reverse 911 - sheriff's department - could help to let residents know and ask people to be a part of it, to submit their phone numbers and sign up. Plus all channels stated above. Many people communicated isssues with the town after the last storm and were looking for resources (places to charge phones, access email, etc.), but it was difficult without an official communicaiton network for emergencies.	If roads are closed, then people need to know where to go across the region. Communicate to neighboring communities that a through road they may need to use to access a hopsital or another facility is closed so that they can plan ahead. Power outage in another town may come and use their cell tower to get info.

ATTACHMENT C

Public Engagement

Announcement blurb for shorter webpage text, newspaper, and social media:

Help Our Community Prepare for Extreme Weather – Take the Survey!

Natural hazard events and climate change have the potential to impact the community's health and safety, infrastructure assets, and natural resources. Completing the MVP Designation process will help West Stockbridge build a more resilient future by being eligible for state funding for key projects. **We need your input to complete the process, so please respond to our project survey, at tinyurl.com/Survey-WS by Monday, June 5**.

If you are interested in attending a stakeholders workshop on May 31 to help further develop project ideas, please RSVP at tinyurl.com/RSVP-WS. More information is available on the West Stockbridge Town website, under News and Announcements.

Project webpage:

West Stockbridge's Municipal Vulnerability Preparedness (MVP) Planning Project

With climate change, the Town of West Stockbridge is expected to experience more precipitation, heat waves, and increasingly frequent and intense storms. To prepare for these hazards, the Town was awarded funding to complete the Municipal Vulnerability Preparedness (MVP) planning process as an appendix to the Town's recently completed 2021 Hazard Mitigation Plan (HMP).

- The MVP grant program provides technical and financial support for cities and towns across the Commonwealth to plan for, and mitigate the impacts from, climate change.
- The HMP is part of a Federal Emergency Management Agency (FEMA) program that involves identifying the risks and vulnerabilities associated with natural disasters and developing long-term strategies for protecting people and property from future hazard events.

After receiving approval on the HMP update in 2022, West Stockbridge became eligible for federal FEMA grant funding. By completing this MVP designation project, West Stockbridge will now also be eligible for the Commonwealth's MVP Action grants for the implementation of hazard mitigation and climate adaptation projects identified in the plan.

Your input on this project is essential! **Want to be part of the solution? Take these quick steps!**

1. Review the flyer and take our online survey by June 5th.
2. Share the flyer and survey on Facebook or by email with your network
3. Attend Stakeholder Workshop (RSVP here)

The West Stockbridge MVP process involves:

- Convening a Core Team of municipal department heads to provide key input through meetings and interviews
- Reviewing Action Items from the 2021 HMP
- Engaging key community leaders through a virtual MVP Workshop
- Engaging the residents and community groups through webpage updates, flyer, and survey
- Conducting a vulnerability and risk assessment of historic hazards and the potential impact of climate change in West Stockbridge
- Developing a detailed action and implementation strategy to increase community resilience and preparedness

WEST STOCKBRIDGE MVP

The Town of West Stockbridge received funding from Massachusetts' Municipal Vulnerability Preparedness (MVP) Program to complete the MVP Planning Process and become eligible for funding for projects from the Town's 2021 Hazard Mitigation Plan (HMP). The HMP identified top actions that the Town can undertake to increase resilience against climate change and the hazards listed below.

- **Flooding**
- **Severe Winter Weather**
- **Drought**
- **Extreme Temperatures**
- **Other Severe Weather** (high winds & thunderstorms)

The Town's MVP Core Team selected four top action items to develop into fundable MVP Action Grants. As an integral part of the community, we are asking for your feedback on the projects described below.

Upgrade deficient bridges, culverts, and stormwater infrastructure

Heavy rain and snowmelt can cause roadways to overtop and flood due to undersized culverts and stormwater infrastructure. The Town is proposing the design of **climate resilient roadway and stormwater drainage updates, bridge repairs, and stream restorations,** as identified through the Resilient Stormwater Action and Implementation Plan (RSAIP).

Assess vulnerability and resilience opportunities of Shaker Mill Pond Dam and Card Pond Dam

The Town is proposing an assessment of alternatives for reducing vulnerability and flood risk from two dams identified through the RSAIP. The Shaker Mill Pond Dam, a high hazard dam in downtown West Stockbridge, could be redesigned with a drawdown feature, to increase storage capacity in the impoundment prior to a precipitation event, or the dam removed to reduce flood levels upstream.

Improve reliability of Town emergency communications systems

West Stockbridge is proposing to implement a Reverse 911 system and create a **communications plan** to increase resilience for emergency management departments and all residents. The plan will **strengthen the community infrastructure against climate change and provide more reliable access to emergency information** that is easy for residents across the Town to utilize.

Conduct an assessment for a resilient, multi-department emergency facility

The Town is proposing relocation and redesign of **the existing Fire Department and Public Works facilities** to protect them from natural hazards and to expand shelter capacity for the region. A new, resilient building could **function as a combined public safety, public works, cooling, warming, and emergency shelter, and general community facility.** Key features would also include nature-based solutions and green building designs to reduce energy use and capture pollutants from vehicle operations.

Take a survey by June 5th to vote on the actions!

tinyurl.com/Survey-WS

This project was funded by the Massachusetts Executive Office of Energy & Environmental Affairs' Municipal Vulnerability Preparedness (MVP) Action Grant program, which provides support for cities and towns to begin planning for climate change and to implement projects.

Weston & Sampson℠

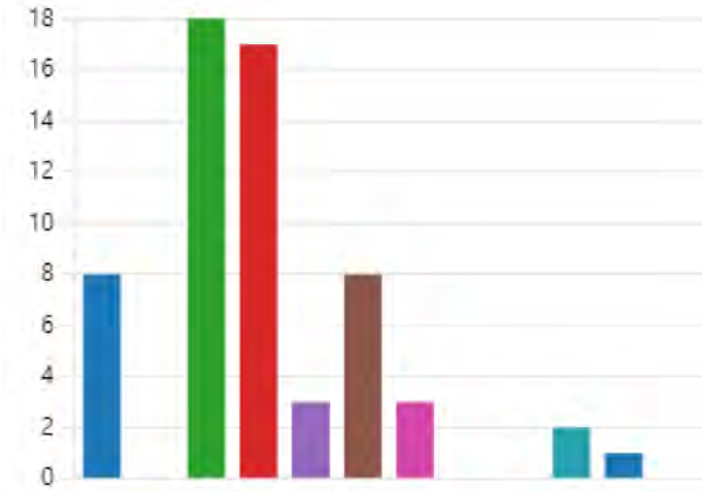
MVP Municipal Vulnerability Preparedness

West Stockbridge Municipal Vulnerability Preparedness (MVP) Community Survey

20	08:59	Closed
Responses	Average time to complete	Status

1. Which natural hazards/extreme weather events have you experienced in West Stockbridge? Check all that apply.

Flooding	8
Dam Failure	0
Severe Winter Weather	18
Severe Weather (High Winds, Th...	17
Hurricanes	3
Extreme Temperatures (Heat an...	8
Drought	3
Earthquake	0
Landslide	0
Tornado	2
Fire	1
Other	0



2. Please describe any details you can recall of events noted above that you have experienced, including date, location, and extent of impacts.

10
Responses

Latest Responses

"*Power outages and trees blocking roads*"

"*The March storm we lost power for about 16 hours.*"

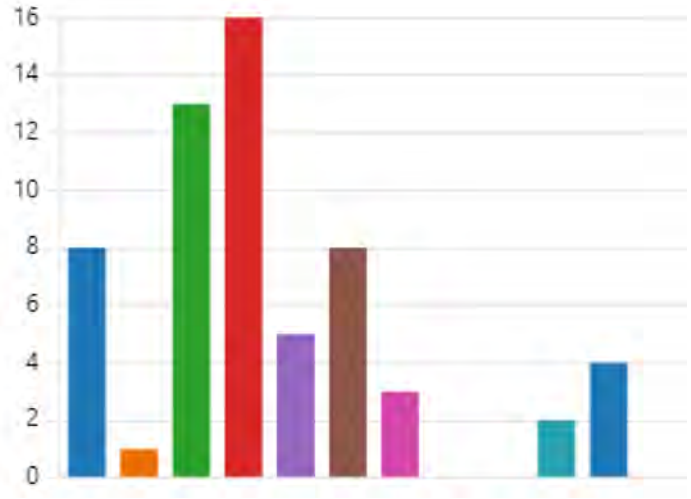
5 respondents (**50**%) answered **Power** for this question.

3. During a natural hazard or major weather event, were you able to receive necessary resources, support, or assistance from the Town, if needed?

Yes	6
No	1
I have not needed this kind of a...	13

4. Which hazards below are you most concerned will harm people or infrastructure in the community?

Flooding	8
Dam Failure	1
Severe winter Weather	13
Severe Weather	16
Hurricane	5
Extreme Temperatures (Heat, Co...	8
Drought	3
Earthquake	0
Landslide	0
Tornado	2
Fire	4
Other	0



5. Please rank the following mitigation actions based on what you think the town should prioritize by moving the items up (higher priority) or down (lower priority).

1	Upgrade deficient bridges, culve...
2	Improve reliability of Town emer...
3	Conduct an assessment for a res...
4	Assess vulnerability and resilien...

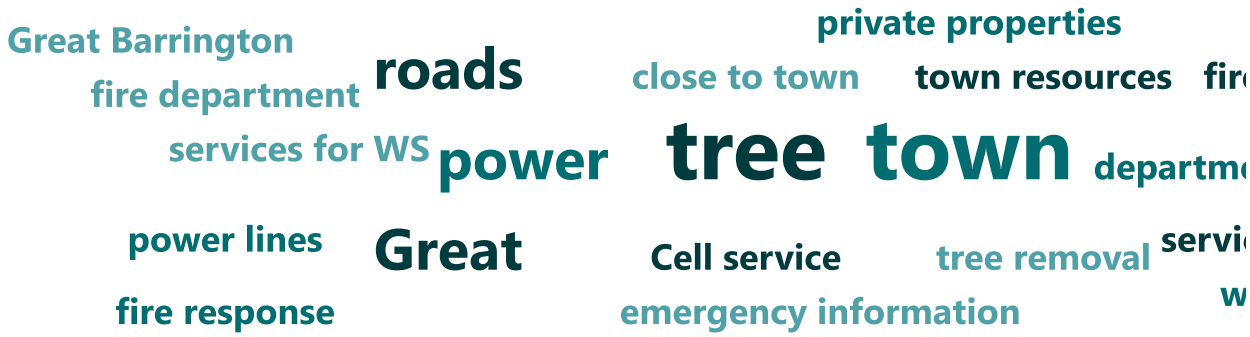
6. Are there any additonal actions that West Stockbridge could take to reduce the impact of natural hazards on the community (think of studies, plans, construction projects, repairs, administrative tasks, etc), or improve support or response for community members during a hazard/extreme weather event?

7 Responses

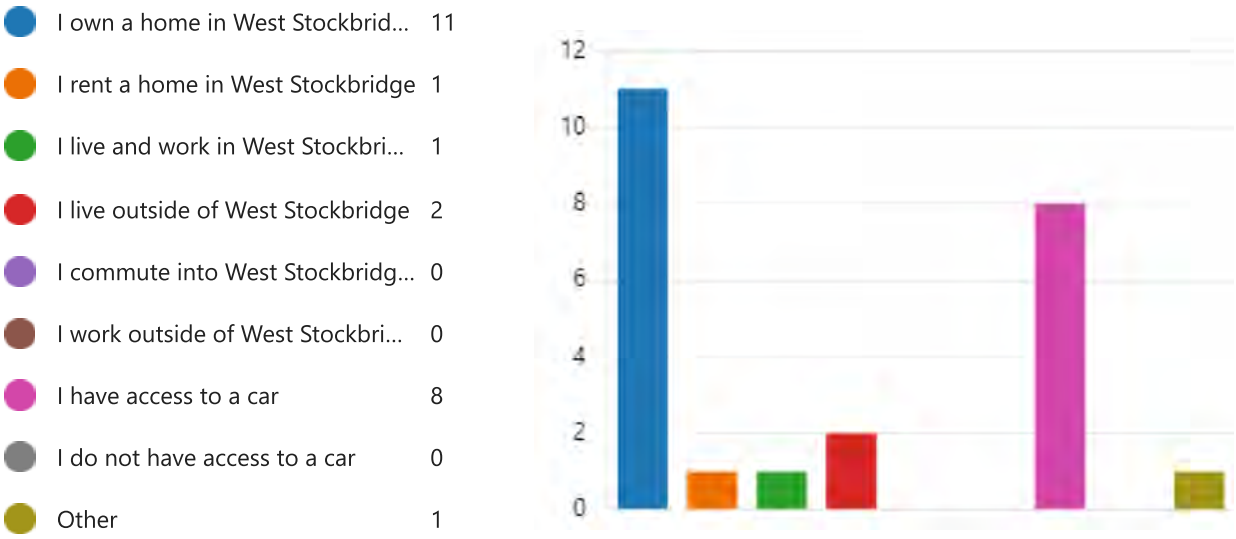
Latest Responses

"In an event of a disaster, it would be great if someone from the...

3 respondents (**43**%) answered **tree** for this question.

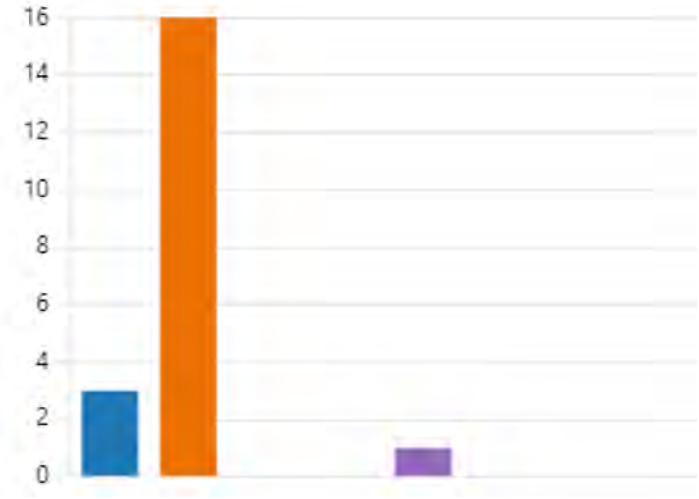


7. Please select all that apply:



8. How many people live in your home?

1	3
2	16
3	0
4	0
5	1
6	0
7 or more	0
Other	0



9. If required, would you need assistance evacuating your home during a natural hazard event?

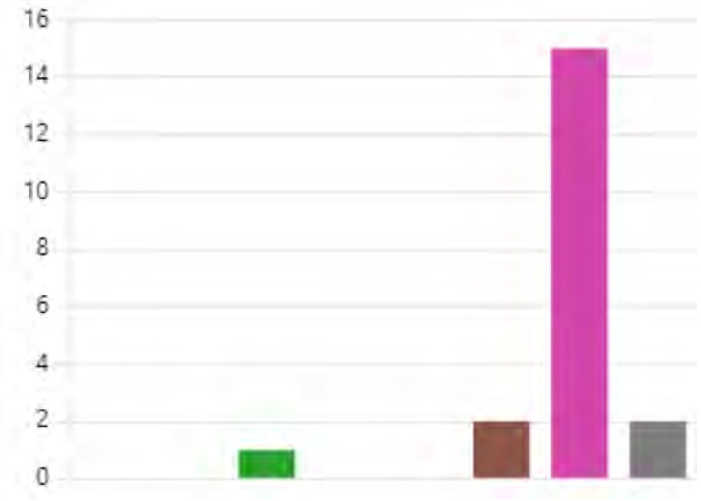
Yes	0
No	9
Maybe	11

10. Do you care for vulnerable family members (young children, older adults, or people with disabilities)?

Yes	3
No	17

11. Please select your age group:

Under 18	0
18-24	0
25-34	1
35-44	0
45-54	0
55-64	2
65-74	15
75 and older	2

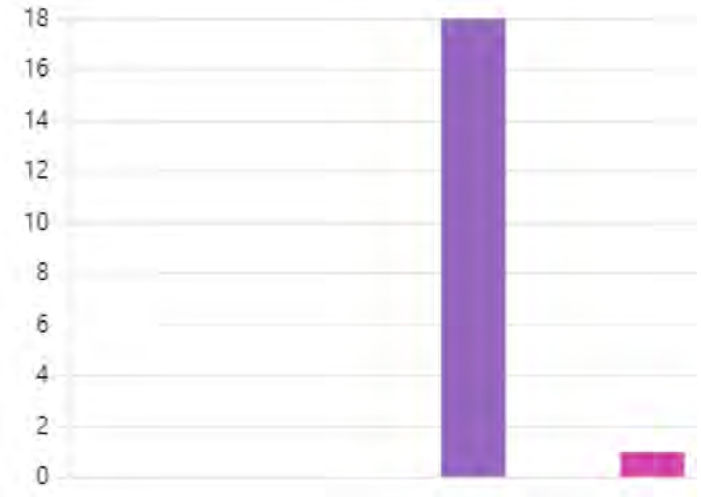


12. Are you of Hispanic/Latino/Spanish Origin?

Yes	1
No	19

13. How would you describe yourself?

American Indian or Alaskan Nati...	0
Black/African American	0
Native Hawaiian or other Pacific...	0
Asian	0
White	18
Two or more races	0
Other	1



ATTACHMENT D

Additional Data

Climate Change Projections Dashboard

HOW TO USE THIS DASHBOARD

Use the **filter data** options below to view **projections of climate metrics** for specified areas of interest under a future warming scenario. Select either a **Watershed** or **Town**. Next, select the **Target decade** and **Season**. Toggle between tabs to view climate metrics at the bottom of the dashboard.

Use the locator map to view **projections of extreme precipitation frequency estimates** across Massachusetts. Click on the layer icon (stacked squares) in the top right corner and click on "**IDF Sites**". Zoom with mouse to desired area or use search icon to zoom and click on blue box and then click "**Select**" in the pop-up box (box with plus sign). Click on the "**Precipitation Frequency Table**" tab at the bottom of the dashboard to view precipitation depth values (inches) for various future design storms.

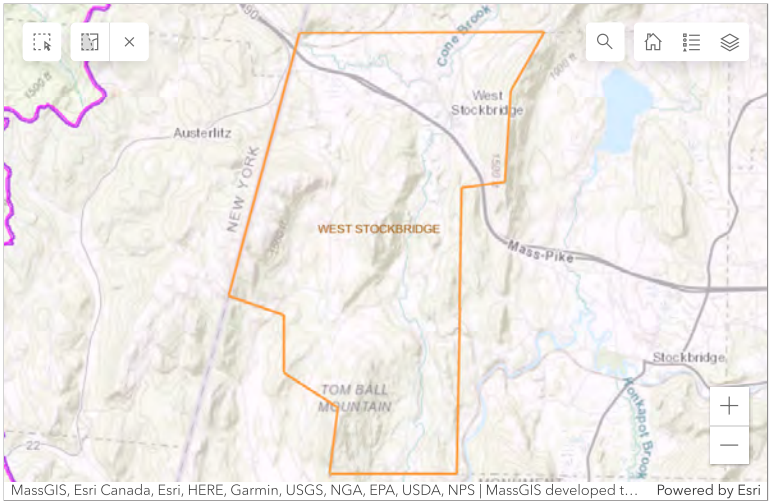
FILTER DATA

Climate Projections by Watershed:
Housatonic

Climate Projections by Town:
WEST STOCKBRIDGE

Target Decade:
2070

Season:
Annual



HOW TO USE THIS DASHBOARD

Stochastic Weather Generator outputs:

To view **temperature and precipitation projections**, use the **filter data** options in the left panel for specified areas of interest under a future warming scenario (Representative Concentration Pathway [RCP] 8.5, a comparatively high greenhouse gas emissions scenario). Temperature and precipitation projections for Massachusetts are provided at the watershed scale (averaged across HUC 8 watershed boundaries) and were developed with downscaled Global Climate Models and a **Stochastic Weather Generator** (see the **Background** to learn more).

Select either a **Watershed** or **Town** from the filter menus on the left panel. For towns that span more than one watershed, users will see those watersheds listed in the drop-down menu after a town is selected, but users must choose one of the watersheds to see projections appear in the display tiles below the locator map. Alternatively, use the locator map and click to select a watershed (purple polygons), zoom and click to select a town (orange polygons), or use the search icon ( ) to search for desired areas of interest. If using locator map to identify watershed, user must select the desired watershed polygon on the map for the climate metrics to update. Users can also click the select tool ( ) in the upper left corner of the map and click on the area of interest.

DETAILED INSTRUCTIONS

Climate Metric (units)	Min temperature (degrees F)	Average duration of coldwaves (days)	Number of coldwave events (events)	Days below 0 degrees F (days)
median value (10th to 90th percentile) baseline value	8.1 5.4 to 10.8 -6.6	-2 -2 to -2 13	0 (0 to 0) 0	-6 (-4 to -7) 8
Average temperature (degrees F)	**Max duration of coldwaves (days)**	**Number of coldstress events (events)**	**Heating degree days (degree days)**	**Days below 32 degrees F (days)**
8.1 (5.4 to 10.8) 47.5	-6 (-6 to -6) 16	-46 (-32 to -57) 83	-2076 (-1436 to -2671) 6789	-63 (-43 to -80) 151

AVERAGE AND COLD DAYS | HOT DAYS | PRECIPITATION | STOCHASTIC WEATHER GENERATOR TABLE | PRECIPITATION FREQUENCY TABLE

Climate Change Projections Dashboard

HOW TO USE THIS DASHBOARD

Use the **filter data** options below to view **projections of climate metrics** for specified areas of interest under a future warming scenario. Select either a **Watershed** or **Town**. Next, select the **Target decade** and **Season**. Toggle between tabs to view climate metrics at the bottom of the dashboard.

Use the locator map to view **projections of extreme precipitation frequency estimates** across Massachusetts. Click on the layer icon (stacked squares) in the top right corner and click on "**IDF Sites**". Zoom with mouse to desired area or use search icon to zoom and click on blue box and then click "**Select**" in the pop-up box (box with plus sign). Click on the "**Precipitation Frequency Table**" tab at the bottom of the dashboard to view precipitation depth values (inches) for various future design storms.

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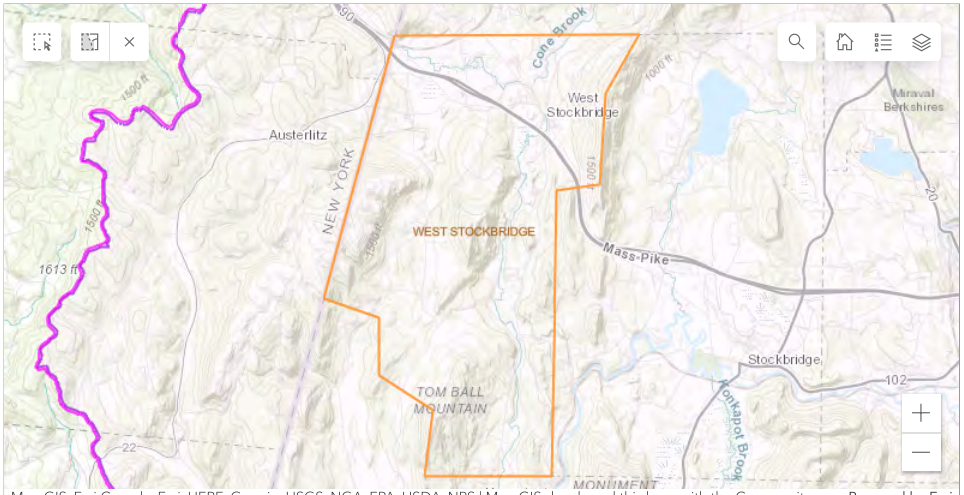
Housatonic

Climate Projections by Town:
WEST STOCKBRIDGE

Target Decade:
2070

Season:
Annual



HOW TO USE THIS DASHBOARD

Stochastic Weather Generator outputs:

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Next, select the **Target decade** (2030, 2050, 2070, 2090) and **Season** (annual, winter, s the left panel to view the 30-year average centered on the selected time period. Users

DETAILED INSTRUCTIONS | BACKGROUND | CLIMATE METRICS

Max temperature (degrees F)	Days above 95 degrees F (days)	Number of heatstress events (events)	Average duration of heatwaves (days)
8.1	9	1	0
(5.4 to 10.8)	(3 to 20)	(0 to 5)	(0 to 5)
82.6	0	0	0

Days above 90 degrees F (days)	Days above 100 degrees F (days)	Number of heatwave events (events)	Max duration of heatwaves (days)
33	1	0	0
(15 to 55)	(0 to 4)	(0 to 0)	(0 to 5)
2	0	0	0

AVERAGE AND COLD DAYS | HOT DAYS | PRECIPITATION | STOCHASTIC WEATHER GENERATOR TABLE | PRECIPITATION FREQUENCY TABLE

Climate Change Projections Dashboard

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Target Decade:
2070

Season:
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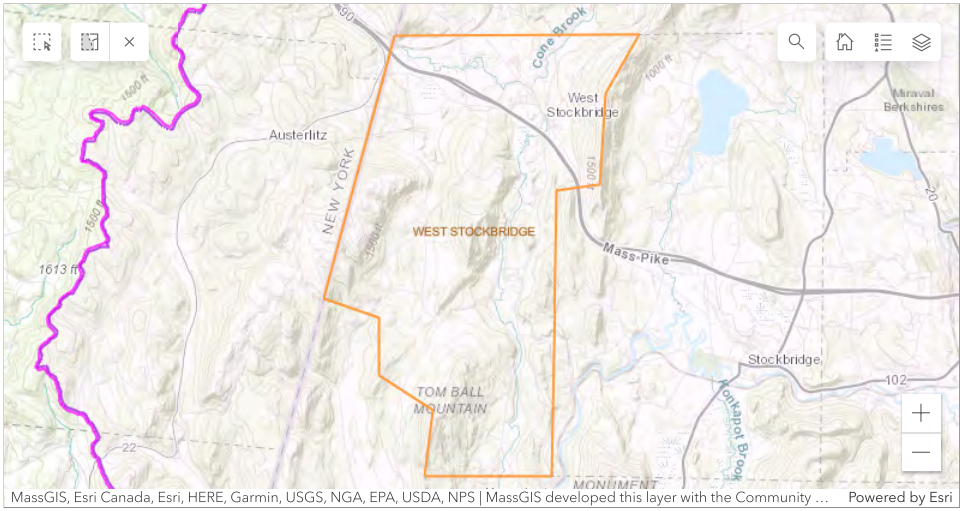

HOW TO USE THIS DASHBOARD

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Next, select the **Target decade** (2030, 2050, 2070, 2090) and **Season** (annual, winter, s the left panel to view the 30-year average centered on the selected time period. Users

DETAILED INSTRUCTIONS | BACKGROUND | CLIMATE METRICS

Climate Metric (units)	Total precipitation (percent change)	Max precipitation (percent change)	Days above 2 inches (days)
median value	10	22.9	0
(10th to 90th percentile)	(-4.8 to 22.3)	(14.1 to 33.2)	(0 to 1)
baseline value	44.9	1.8	0

90th percentile storm rainfall (percent change)	99th percentile storm rainfall (percent change)	Days above 1 inch (days)	Days above 4 inches (days)
0.1	15.1	2	0
(0.5 to -0.7)	(9.4 to 20.8)	(1 to 2)	(0 to 0)
0.4	1	4	0

AVERAGE AND COLD DAYS | HOT DAYS | PRECIPITATION | STOCHASTIC WEATHER GENERATOR TABLE | PRECIPITATION FREQUENCY TABLE

Climate Change Projections Dashboard

HOW TO USE THIS DASHBOARD

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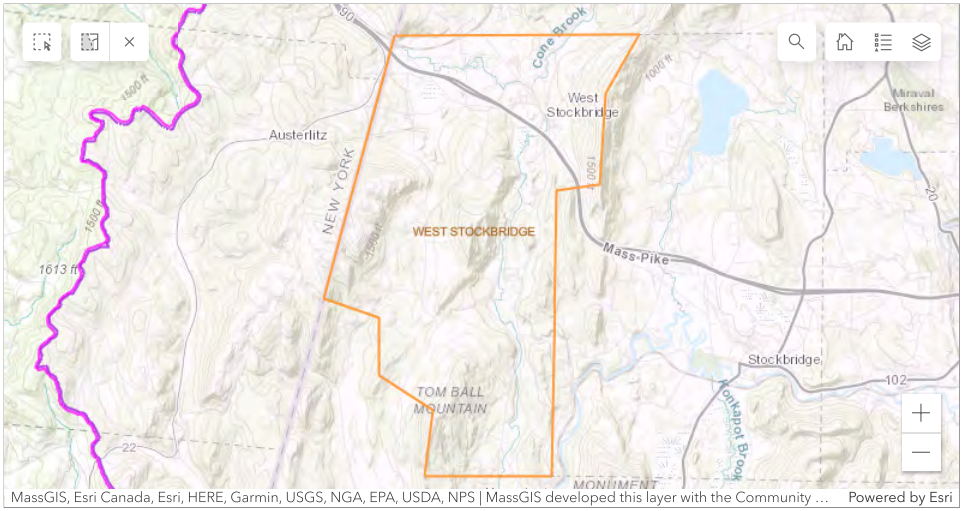
Climate Projections by Town:
WEST STOCKBRIDGE

Target Decade:
2070

Season:
Annual



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Next, select the **Target decade** (2030, 2050, 2070, 2090) and **Season** (annual, winter, s the left panel to view the 30-year average centered on the selected time period. Users

DETAILED INSTRUCTIONS | BACKGROUND | CLIMATE METRICS

Site	Year	Duration	RI_1yr_50th	RI_2yr_50th	RI_5yr_50th	RI_10yr_50th	RI_25yr_50th	RI_50yr_50th	RI_100yr_50th	RI_200yr_50th
Site 1	2070	15m	0.7 (0.7 - 0.8)	0.9 (0.8 - 1)	1.1 (1 - 1.2)	1.3 (1.2 - 1.5)	1.5 (1.4 - 1.8)	1.7 (1.6 - 2)	1.9 (1.8 - 2.2)	2.2 (2 - 2.5)
Site 1	2070	60m	1.2 (1.2 - 1.4)	1.5 (1.4 - 1.7)	1.9 (1.8 - 2.2)	2.2 (2.1 - 2.5)	2.7 (2.5 - 3.1)	3 (2.8 - 3.5)	3.4 (3.2 - 3.9)	3.8 (3.5 - 4.3)
Site 1	2070	02h	1.6 (1.5 - 1.9)	2 (1.8 - 2.2)	2.5 (2.3 - 2.9)	3 (2.8 - 3.4)	3.6 (3.3 - 4.1)	4 (3.8 - 4.6)	4.5 (4.2 - 5.2)	5.1 (4.8 - 5.9)
Site 1	2070	03h	1.9 (1.8 - 2.2)	2.3 (2.1 - 2.6)	2.9 (2.7 - 3.4)	3.5 (3.2 - 4)	4.2 (3.9 - 4.8)	4.8 (4.4 - 5.5)	5.4 (5 - 6.1)	6.1 (5.7 - 7)
Site 1	2070	06h	2.5 (2.3 - 2.8)	3 (2.8 - 3.4)	3.8 (3.6 - 4.4)	4.6 (4.3 - 5.2)	5.5 (5.2 - 6.4)	6.3 (5.9 - 7.2)	7.1 (6.6 - 8.1)	8 (7.5 - 9.2)
Site 1	2070	12h	3.1 (2.9 - 3.6)	3.8 (3.6 - 4.4)	4.9 (4.6 - 5.7)	5.9 (5.5 - 6.7)	7.2 (6.7 - 8.2)	8.1 (7.6 - 9.3)	9.2 (8.6 - 10.5)	10.4 (9.7 - 11.9)
			3.7	4.6	6	7.3	8.9	10.2	11.5	13.2

AVERAGE AND COLD DAYS | HOT DAYS | PRECIPITATION | STOCHASTIC WEATHER GENERATOR TABLE | PRECIPITATION FREQUENCY TABLE

Climate Change Projections Dashboard

HOW TO USE THIS DASHBOARD

Use the **filter data** options below to view **projections of climate metrics** for specified areas of interest under a future warming scenario. Select either a **Watershed** or **Town**. Next, select the **Target decade** and **Season**. Toggle between tabs to view climate metrics at the bottom of the dashboard.

Use the locator map to view **projections of extreme precipitation frequency estimates** across Massachusetts. Click on the layer icon (stacked squares) in the top right corner and click on "**IDF Sites**". Zoom with mouse to desired area or use search icon to zoom and click on blue box and then click "**Select**" in the pop-up box (box with plus sign). Click on the "**Precipitation Frequency Table**" tab at the bottom of the dashboard to view precipitation depth values (inches) for various future design storms.

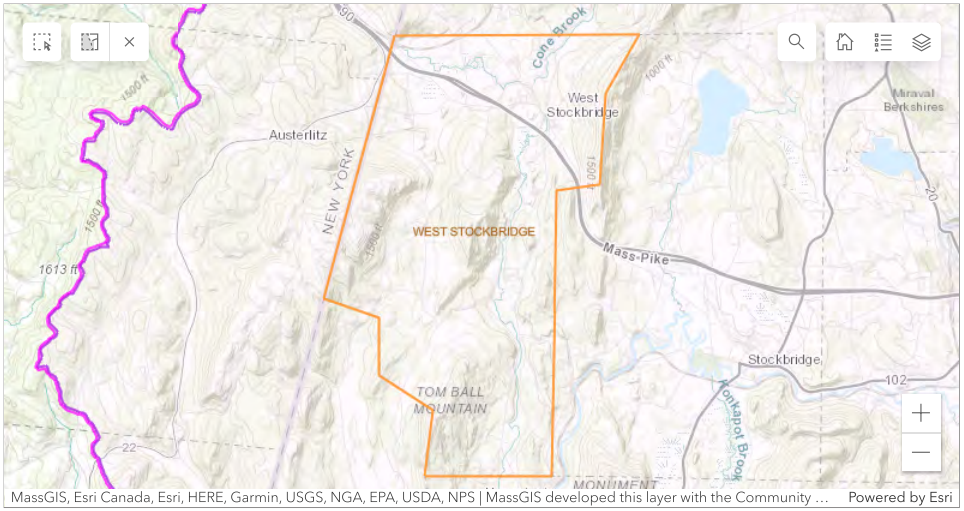
FILTER DATA

Climate Projections by Watershed:
Housatonic

Climate Projections by Town:
WEST STOCKBRIDGE

Target Decade:
2070

Season:
Annual



HOW TO USE THIS DASHBOARD

Stochastic Weather Generator outputs:

To view **temperature and precipitation projections**, use the **filter data** options in the l
under a future warming scenario (Representative Concentration Pathway [RCP] 8.5, a
emissions scenario). Temperature and precipitation projections for Massachusetts are
across HUC 8 watershed boundaries) and were developed with downscaled Global Clim
Generator (see the **Background** to learn more).

Select either a **Watershed** or **Town** from the filter menus on the left panel. For towns t
will see those watersheds listed in the drop-down menu after a town is selected, but u
see projections appear in the display tiles below the locator map. Alternatively, use the

(purple polygons), zoom and click to select a town (orange polygons), or use the search
interest. If using locator map to identify watershed, user must select the desired water

metrics to update. Users can also click the select tool ( ) in the upper left corne
interest.

Next, select the **Target decade** (2030, 2050, 2070, 2090) and **Season** (annual, winter, s
the left panel to view the 30-year average centered on the selected time period. Users

DETAILED INSTRUCTIONS | BACKGROUND | CLIMATE METRICS

Site	Year	Season	90th percentile (percent change)	99th percentile (percent change)	Consecutive dry days (days)	Consecutive wet days (days)	Cooling degree days (degree days)
Housatonic	2070	Annual	(0.5 - -0.7) 0.4	(9.4 - 20.8) 1	(1 - 2) 29	(0 - 1) 44	(535 - 1273) 410
Housatonic	2070	Fall	1.9 (1.8 - 2) 0.4	15.1 (11.1 - 20.4) 1.2	0 (0 - 1) 8	0 (0 - 0) 12	166 (115 - 260) 50
Housatonic	2070	Spring	0.4 (0.5 - -0.3) 0.4	10.7 (7.6 - 18.4) 1	0 (0 - 0) 7	0 (0 - 0) 11	73 (48 - 146) 20
Housatonic	2070	Summer	-0.5 (-0.3 - -2) 0.3	12.2 (7.4 - 16.9) 1	0 (0 - 1) 7	0 (0 - 0) 11	620 (392 - 859) 338
Housatonic	2070	Winter	-0.5 (0.3 - -1.8) 0.3	16.2 (10.9 - 20.4) 0.9	1 (0 - 1) 7	0 (0 - 0) 11	6 (4 - 9) 1

AVERAGE AND COLD DAYS | HOT DAYS | PRECIPITATION | STOCHASTIC WEATHER GENERATOR TABLE | PRECIPITATION FREQUENCY TABLE

ATTACHMENT E

Appendix Adoption