Berkley, MA

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

June 2022

Submitted by:

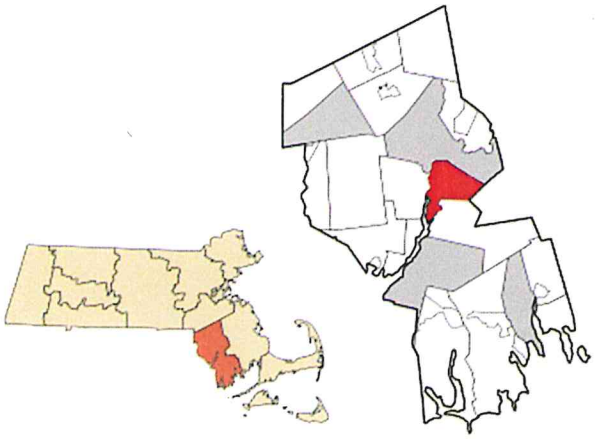
Resilient Taunton Watershed Network (RTWN)

SRPEDD
Southeastern Regional Planning & Economic Development District

Contents

Community Profile

The Town of Berkley was established April 18, 1735, and named for George Berkeley, Bishop of Cloynes, Ireland. Berkley is bordered north by Taunton, east by Lakeville, south by Freetown and west by the Taunton River. The total land area of the town is 16.4 square miles, while water occupies about 1 square mile of the Town. Berkley is located in Bristol County, about 40 miles south of Boston and about 20 miles east of Providence, RI. Principal highway access to Berkley is provided by state routes 24 and 79. Berkley's current population is 6,764.



MVP Program Overview

To date, 335 of the Commonwealth's 351 municipalities (95%) have participated in the MVP Program. This has resulted in over $65 million dollars to date in Planning Grants and Action Grants to help communities address high priority actions identified during the MVP planning process. Projects funded through Action Grants are wide ranging, including the following priority project categories:

- More detailed vulnerability and risk assessments;
- Community outreach and education projects;
- Local bylaw updates;
- Redesign and retrofits of infrastructure;
- Nature-based solutions for flood protection, drought mitigation, and water quality improvements;
- Nature-based infrastructure and technology solutions for extreme heat and poor air quality.

MVP Workshop

The Town of Berkley received funding through an MVP Planning Grant to compile data for and conduct a Community Resiliency Building (CRB) workshop. The goal of the CRB workshop was to have community stakeholders work collaboratively to complete a climate change and natural hazard vulnerability assessment and develop prioritized actions to address vulnerabilities and improve strengths. Upon completion of the CRB workshop process, Berkley will become a state certified "MVP Community" and will be eligible to apply for MVP Action Grant funding from the Commonwealth.

An interdisciplinary team of Town staff ("Core Team"), citizen volunteers from committees and regional non-profits, worked to implement the CRB process with consulting support from Southeastern Regional Planning and Economic Development District (SRPEDD) a certified MVP provider. The Town's MVP Core Team included the following:

Town of Berkley — MVP Core Team
Heather Sterling Martin – Town Administrator
Melinda Paine-Dupont
Jim Romano – Board of Health
Robert Rose – Highway Surveyor/Tree Warden
Scott Fournier – Fire and Rescue
Barrett Johnson – Fire and Rescue
Marge Ghilarducci – Historical Commission
Scott Labonte – Police Department
Joe Callahan - TRWA

Workshop Preparation

The following tasks were performed to prepare for the MVP workshop:

- The Core Team and held a kickoff meeting on April 26, 2022 to plan for the workshop.
- SRPEDD conducted interviews with Core Team members to identify potential areas of concern, strengths, and vulnerabilities.
- SRPEDD contacted and conducted interviews with community partners and organizations who were suggested by Core Team members as playing an active role in the Town.
- SRPEDD prepared presentation materials and Town-wide maps to guide the workshop.

- The Core Team scheduled the workshop, invited stakeholders, and handled logistics.

Workshop Process

An MVP planning workshop was held in-person, at the Berkley Town Hall, on June 1st, 2022. The workshop participants are listed below.

NAME	AFFILIATION/ORGANIZATION
Melissa Ryan	Supt., School Department
Joe Callahan	TRWA
Heather Sterling Martin	Town Administrator
Jim Romano	Board of Health
Scott Fournier	Fire and Rescue
Scott Labonte	Police Department
Danica Belknap	SRPEDD/RTWN
Bill Napolitano	SRPEDD

The workshop began with brief introductions and descriptions of the roles and responsibilities of each of the participants and their organizations within the Town of Berkley. SRPEDD staff then provided a description of the MVP program and the format of the workshop to the participants, as well as what we hoped to achieve during the session. SRPEDD staff also provided an overview of climate change and the potential impacts of climate change on the community and the region; specific climate change projections for the town; a discussion of nature-based solutions, green infrastructure, and related practices, and; a summary of vulnerability/hazard concerns mentioned in other municipal planning documents and pre-workshop interviews

This report provides an overview of workshop findings, including a summary of the Town's top hazards related to climate change, current climate resiliency strengths and vulnerabilities, and potential actions to improve the community's resilience to natural and climate-related hazards. The summary of findings described in this report are compiled from feedback from the workshop participants.

Workshop participants chose to work as a single group, and the results of the input from workshop participants is documented, organized, and presented in the Risk Matrix found in Appendix B of this report.

Top Hazards and Vulnerable Areas

Summary of Top Hazards

Flood / Drought Cycle describes the threat to Berkley's roads, farms, forests, and physical infrastructure posed by large precipitation events and more frequent, longer-lasting droughts. Residents have also noted an increase in tree fall that can be attributed to this volatility, as forest soils and tree root structures become damaged by this cycle of extreme conditions.

Storms/High Winds are a primary concern because during strong storm events, flooding can cut off access to major thoroughfares, and trees frequently fall, further limiting road access for residents and emergency personnel. High wind also threatens existing power infrastructure, and Berkley has recent experience with prolonged power outages after storms. Because most residents rely on wells for drinking water, power outages leave them without functioning pumps and running water, sometimes for days at a time.

Extreme Temperatures refers to an increasing number of days over 90 degrees as well as cold snaps during winter and in early spring. This hazard relates somewhat to flood-drought cycle changes with distinct impacts to limited public water availability during droughts, damage to native habitat from fire, and the strain on populations with limited access to seasonal heating/cooling locations during extreme cold and extreme heat.

Areas of Concern

Prior to the workshop, interviews were conducted with key stakeholders on the Core Team in order to develop a preliminary list of Berkley's primary climate resiliency vulnerabilities and strengths. Interviewees were primarily concerned with stormwater management (all aspects), vulnerabilities in the emergency communication system, potential culvert failures, and the loss of open land to development and its impacts on agriculture, water supply protection, and floodplain/flood storage.

During the workshop discussions, the group present echoed many of the concerns brought up in the Core Team discussions, adding site specific information to the more general topics. The specific topics/issues were broken down into Infrastructural, Environmental, and Societal concerns, and are listed below.

Infrastructural: Generally, concerns focused on stormwater management and related infrastructure, public safety infrastructure, and access to the waterfront in emergency events, and included the following:

1. At Holloway & County Streets, on Cotley Brook, at the former Package Store site (now vacant) on blind curve (poorly designed road – shop corner), there is flooding caused by

an undersized culvert; an upgrade/replacement could address multiple problems at once.
    a. The entire area is also vulnerable to pollution; a water access line to area should be considered (the town is already looking into this).
2. Emergency Communications Infrastructure – the town is working to address with ARPA funding (this is considered a strength)
3. The Public Safety building is 20yrs old and too small to meet the community's needs – currently houses police & fire – could house one, but not both; the Town needs a new Public Safety building
4. Elementary School – has flooding, mold issues and needs updates to meet code
    a. Building is too close to roadway – traffic issues
    b. Both schools have only one way in and out, creating traffic and safety issues
    c. Currently, a police officer directs traffic – won't be available in future
    d. There is a school building feasibility study underway that will be looking at all of these issues, and more
5. We need more sidewalks around town (many roads not wide enough to accommodate pedestrian usage)
    a. Complete streets grants could be a potential funding source
    b. COVID led to more people being outdoors/on streets, walking dogs, etc.; this is a big concern
    c. High priority on Locust St, from the Middle School to commons
6. Roadway maintenance is needed; increasing traffic from the Dighton-Berkley bridge puts added stress on the roads
    a. Town has patched roads, where needed, to extend life, but the surface is somewhat of a hazard because it is slippery (especially for motorcycles); need to be repaved
7. **Top priority:** MS4 compliance – need capacity/tech assistance (currently Town Admin responsibility, difficult to keep up with requirements)
    a. Consider hiring consultant to manage reporting / set up report structure & management plan for town to keep updated
    b. Need to restart public education campaign
    c. Town stormwater bylaws – have been discussed in the past, but nothing has been done yet
8. The South Coast Rail, Phase I creates the need for a CEMP update to accommodate impacts; regional chiefs group working with state for updated rescue equipment and trainings for rail line
    a. Community impacts include 80mph trains, 22x/day; we expect car & people crashes at 4 separate crossing locations
    b. Noise impacts will impact rural community character (Town can't afford additional costs for "Quiet crossings")

c. A high priority when construction of railway complete (expected end of this year) is the need to prepare the community for the opening and continue to work on it on an ongoing basis
d. We need to have regular meetings with MBTA (weekly meetings scheduled, MBTA often cancels)

9. Taunton River contains hazards to navigation (sunken rocks, trees, other debris); they once were marked with buoys by Taunton River Association; the Association is no longer active, and these markings not kept up to date
10. More use of Taunton River from Weir Park ramp (Taunton) – boats, jet skis getting stuck, resulting in more calls for help (the Town does not have adequate access to provide necessary assistance, at times).

Environmental concerns focused largely on preservation of existing agricultural lands, protection of water resource and potential water resource areas, and access to the estuary in order to address water related hazards. Top environmental concerns included:

1. **Top priority:** Privately owned Berkley air strip (the owner passed away, and the will stated that the land could only be for airport use); it is currently open space, and is important for flood storage; there is concern over losing this site to development
2. **Top Priority:** The Fernandes Farm, Jerome Street; we don't expect the family to leave, but they may have to sell this important farm property if they can't afford to maintain it.
    a. Potential for APR application for this property
3. **Top Priority:** The Fournier Farm, on Locust & Porter; there was concern about potentially losing this agricultural land to development
    a. APR may also be a suitable program for property
    b. Current generation are farmers, next generation may not be, leaving no one to inherit, continue the farm operation
    c. The Town lacks funds for right of first refusal for purchasing Chapter 61 lands (could adopt funding mechanism like Dighton's rollback program – when property pulled out of program, back taxes go into town fund for future land purchases)
    d. **The development impacts of these properties will stress all municipal departments; protection of these properties will also protect the aquifer and help to enhance community resilience)**
4. The Town has over ten miles waterfront on the Taunton and Assonet Rivers, with very limited public access or boat launch access (only Berkley Bridge Village Heritage Park; most is privately controlled); have to leave town to get into water to get somewhere in an emergency.
    a. When flooding cuts off access to roads (Bayview Rd in previous years), we will need to secure waterway access (Taunton River & Assonet) for service.

5. Berkley Street marsh on Taunton River – offers flood storage and wave attenuation during coastal storms, but can also flood road during storms; dead cattails in Fall – fire hazard?
6. Conspiracy Island (privately owned) – becomes island at high tide, and people get stranded on island (current too strong to walk through water) until the tide goes out
    a. The island also contains old growth forest, which is important for resilience (carbon sequestration) as well as affording recreational opportunities
    b. Need town access
7. There is a need for more recreational land / outdoor opportunities; improve existing facilities, provide more connections between properties, waterfront rec access
8. Protect moderate yield aquifer recharge areas (water protection district & surrounding area from H&H modeling study), or find alternative water sources.

Societal concerns focused largely on sheltering issues and the capacity of the existing school system as part of a community emergency sheltering strategy. Specific issues included:

1. **Top Priority:** Sheltering is strength – one shelter (Middle school) seems to provide adequate capacity for now
    a. Shelters – open new shelter now, have to provide accommodation for dogs, cats
    b. Opened a winter shelter once for 48hrs – had 6 people
2. **Top Priority:** Establish heating/cooling station – long term, future need
    a. The Town has ever opened a cooling center; never received requests for one that anyone can remember
    b. If at school – would need to shut down school every heat wave (concern); thinking long-term, should such stations be located at Town Hall?
3. **Top priority (1-3 can be addressed together):** Establish pet sheltering
4. Elementary school – no cooling, heating is costly, and there are maintenance needs (built 1960s)
5. Preschool at elementary school – 2 programs, sliding payment scale for affordability – looking to expand in order to provide all day coverage; we are also working to accept state vouchers (will be the only town in region – but it is a difficult process)
    a. Schools feasibility study may project need to expand school (expecting enrollment increase ~5yrs from now from increased birth rates – COVID babies 3x birthrate of previous 5yrs)
6. No in-town hospitals, doctors etc.; this is a point of concern

Current Strengths and Assets

Workshop attendees considered the Berkley Community Emergency Management Plan, or CEMP, as a strength, not only in terms of community preparedness, but for its regional context

and connections. A perceived challenge will be to work on a CEMP update to accommodate impacts of the MBTA's South Coast Rail, Phase 1, once construction is complete. Currently, there is a regional Chiefs (first responders) group working with the state to obtain updated rescue equipment and trainings in preparation the opening of the rail line. The CEMP defines the scope of preparedness and emergency management activities in the community, and facilitates all hazard preparedness, mitigation, response, and short-term recovery activities, thereby setting the stage for a successful long-term recovery. The CEMP also describes the community's emergency management organization, including the roles, responsibilities, and operations of the Town and all of its departments and agencies during a disaster, major emergency or planned event. The CEMP describes the relationship between the community and local, regional, state, and federal emergency response structures.

The amount of open space remaining in the Town, and the services that it provides – food production, water supply protection, flood storage, habitat and connectivity – are seen as a strength, highly valued, and not to be taken for granted. During the recent COVID lockdowns, workshop participants also noted the increased amount of outdoor activity – walking, biking – in town, and the need for more open land for recreational activities, as well. In fact, the Town would like to be able to be more proactive in working with current land owners in order to retain these open lands, and their function, in perpetuity.

Sheltering capacity and accommodation was also considered a strength by both the Core Team and other workshop participants. The Middle School currently serves as the emergency shelter, and there is also limited pet accommodation. In the future, workshop participants thought that heating/cooling stations, enhances sheltering capabilities, may be services more appropriate to the Town Hall and Senior Center.

The federally designated Wild & Scenic Taunton River forms the western boundary of the Town and is seen as a major asset and strength. Over the years, Berkley has been very active in the Taunton River Stewardship Council (TRSC), a coalition of local mainstem river communities, regional, state, non-profit, and federal organizations, who work to maintain the integrity of the river, its tributaries and watershed. Over the years, Berkley has received substantial grant funds, free service and technical assistance from the TRSC and its members in order to maintain and improve the Bridge Village Heritage Park, one of the busiest access points on the Taunton River. The workshop attendees did mention navigational challenges, due to submerged rocks, on this stretch of the Taunton.

The Emergency Communication infrastructure was also cited as a strength. In addition to recent improvements made by the Town, they are working to address more significant upgrades through ARPA funding.

Recommendations to Improve Resilience

At the conclusion of the workshop, participants were asked to select their top choices in each topic/category discussed. The results of this process are listed below.

Top Choices

Infrastructure

1. Stormwater management and MS4 related issues

Environmental

1. Protection/preservation/acquisition of identified priority open space for water supply protection, flood storage, retention of productive agricultural soils

Social

1. Improving sheltering capacity, including heating /cooling stations and pet accommodation

Other High Priority Recommendations

- The need for a new Public Safety Building to replace the current, undersized structure
- Address the priority recommendations in the current School Feasibility Study
- Address the needs of town roads – surfacing and flooding/culverts
- Address updates to the CEMP around MBTA/South Coast Rail issues
- Develop more river access points for recreation and emergency response teams

High Priority Recommendations from the Listening Session

- Save open space that is important to our water resources
- Stormwater management needs
- Shoreline stabilization, natural buffer at Bridge Village Heritage Park
- Highway and Public Safety Building needs to be addressed

Citation

Town of Berkley (2022) Community Resilience Building Workshop Summary of Findings. Resilient Taunton Watershed Network. Berkley, MA

Acknowledgements

The Berkley Core Team and Facilitation Team would like to thank the following for their contributions to the MVP Workshop process: Berkley Town staff; the Commonwealth of Massachusetts, EEA, Municipal Vulnerability Preparedness Program for their funding support for these workshops, and; all of those who participated in the workshops and contributed to the plan resulting from these workshops. Special thanks to Melinda Paine-Dupont. Special thanks and remembrance to Marge Ghilarducci.

APPENDIX A

Presentation Slides

Core Team Presentation: Berkley MVP Planning Workshop

Resilient Taunton Watershed Network (RTWN)

SRPEDD
Southeastern Regional Planning & Economic Development District

The Nature Conservancy
nature.org

Mass Audubon

Municipal Vulnerability Preparedness (MVP) Program

A state and local partnership to build resilience to climate change by building capacity to respond to climate effects at the local level and pilot innovative adaptation practice

Across the Commonwealth, cities and towns need financial and technical resources to prepare their residents, businesses, and aging infrastructure:

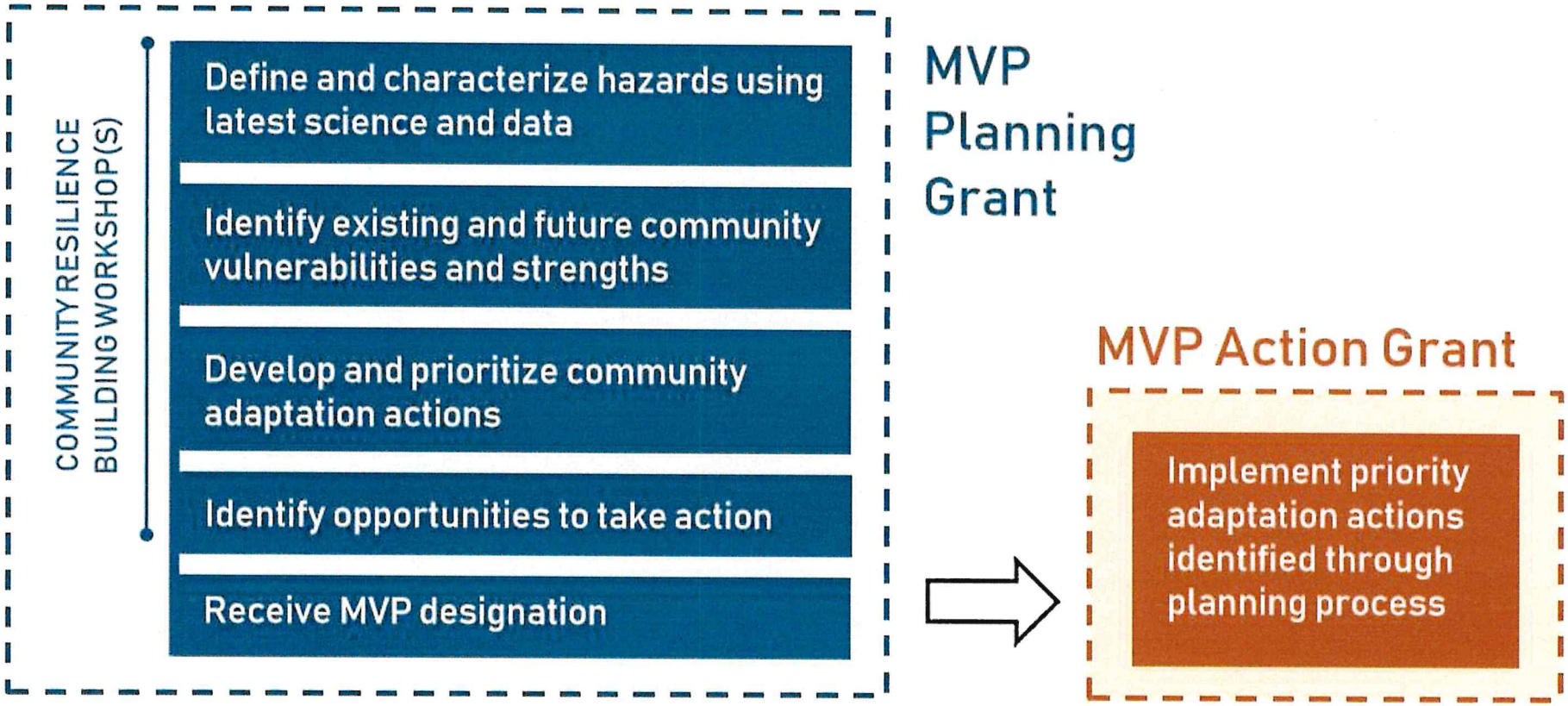
12,000+ culverts and small bridges needing replacement

1,100 municipally-owned coastal structures

300 high-hazard dams

96% DHCD housing developments to see 5.4° increase in max temperature by 2070

MVP Resources



MVP PLANNING Grant

Lead a community-driven planning process to understand climate vulnerabilities and identify priority adaptation actions.

Utilize state-certified MVP providers, toolkit, and climate data to develop an MVP Plan through workshops and community outreach.

Be designated as an MVP Community and eligible for Action Grant funding!

As an MVP Community:

- ✓ Submit yearly progress reports
- ✓ Apply to implement your priority actions

MVP Core Principles

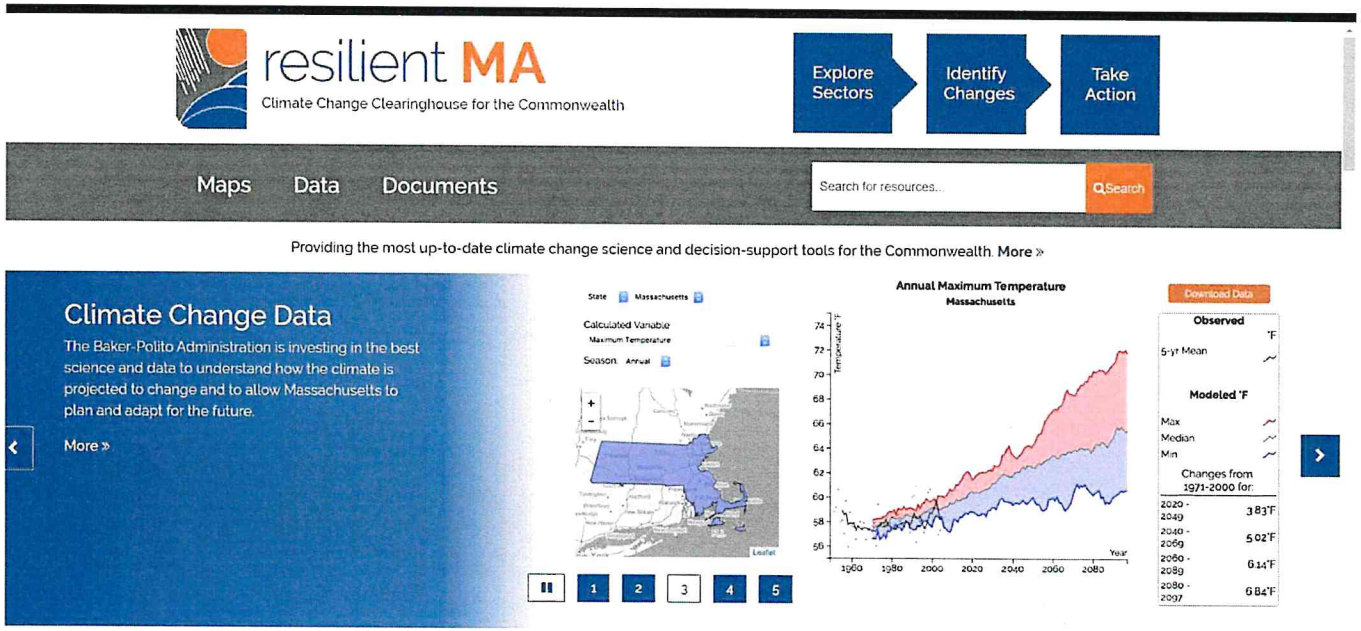
- Furthering a community identified priority action to address climate change impacts.
- Utilizing best available climate change data for a proactive solution. Data from local-level climate change vulnerability studies may also be used.
- Employing nature-based solutions.
- Involving Environmental Justice Populations in meaningful decision-making, as defined and outlined in the 2017 EEA EJ Policy, and giving special consideration to Climate Vulnerable Populations.
- Achieving broad and multiple community benefits.
- Committing to monitoring project success and maintaining the project into the future.
- Utilizing regional solutions toward regional benefit.
- Pursuing approaches from which other MVP communities and the state can learn.

Climate resilience is the ability of a community to address the needs of its built, social and natural environment to anticipate, cope with, and rebound stronger from events and trends related to climate change hazards.

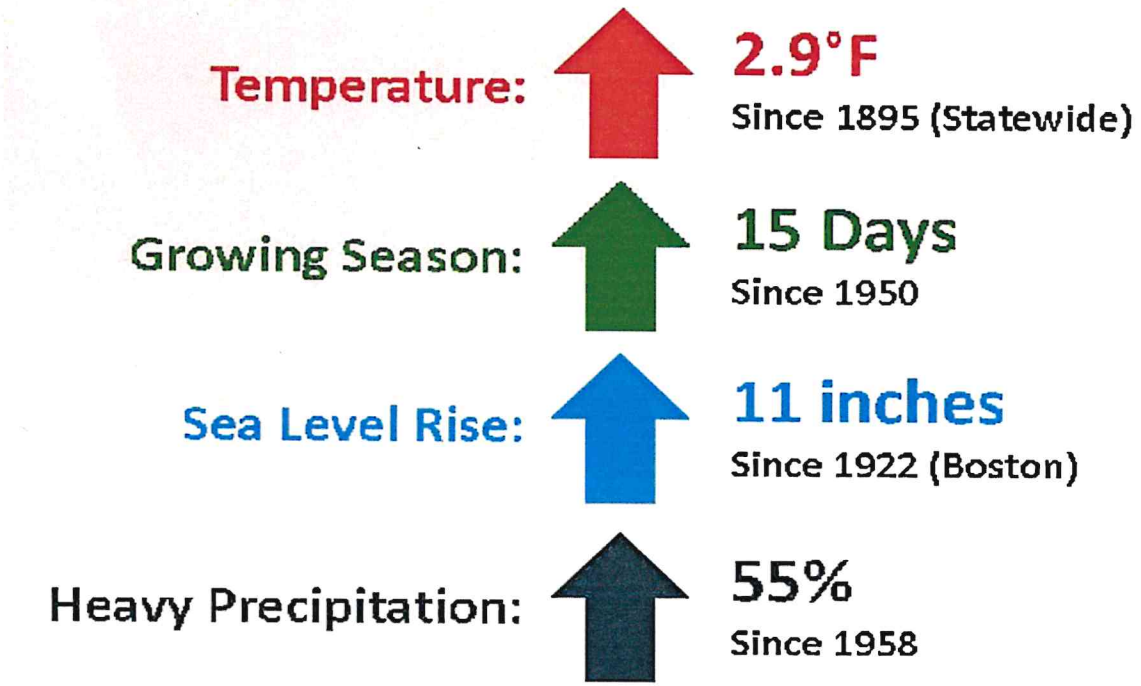
Resilient communities don't just recover—they ***continuously build capacity*** to reduce the impacts of future climate events.

Climate Change in Massachusetts

Climate Data and Projections

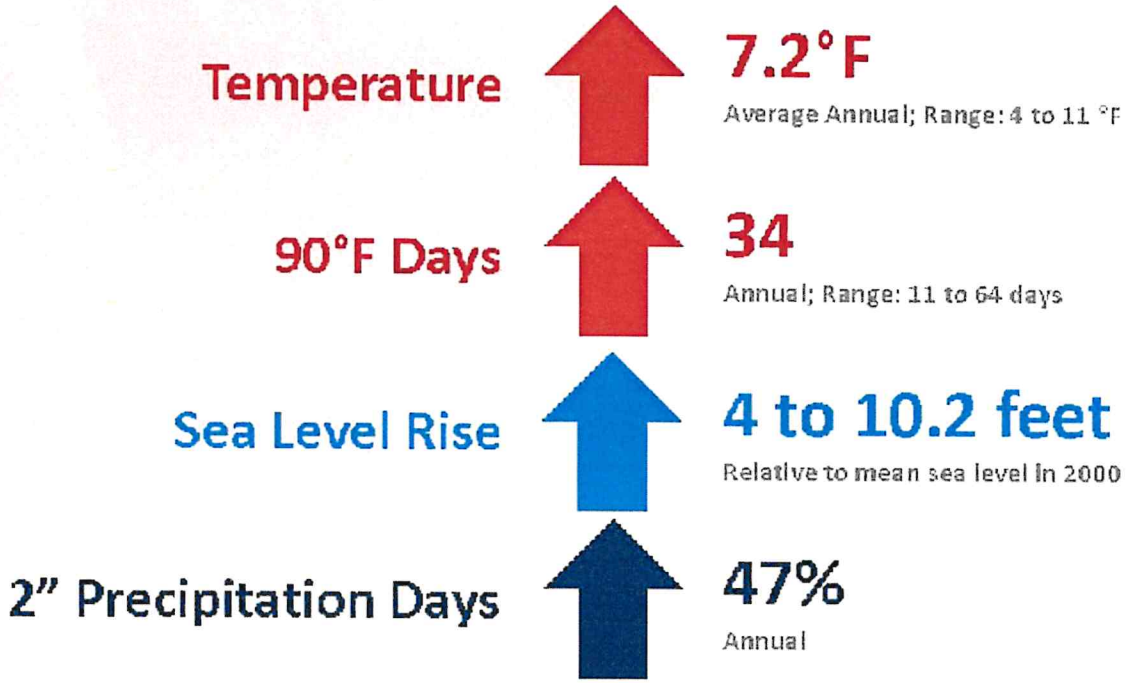


Massachusetts
Observed Climate Changes



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

Massachusetts Climate Changes Projected by the 2090s



Source: Northeast Climate Adaptation Science Center

Changing Energy Use and Demand

More Warm Winter Days, Less Heating Demand

(based on annual Heating Degree-Days, base 65)

26.2%

by the 2090s

1971-2000 Average:
6839 Heating Degree-days

More Warm Summer Days, More Cooling Demand

(based on annual Cooling Degree-Days, base 65)

178%

by the 2090s

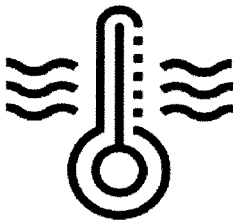
1971-2000 Average:
457 Cooling Degree-days

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

Extreme Heat in Massachusetts

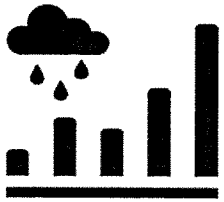
	Current		Projected by Mid-Century
Days per year above 90°F	≤15	↑	+30 to 40
Days per year above 95°F	≤5	↑	+3 to 9
Days per year above 100°F	≤1	↑	+1 to 5

Source: NOAA NESDIS



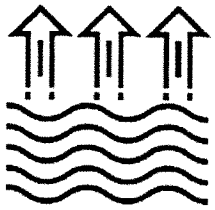
Impacts from Increasing Temperatures

- Public health
  - Increase in heat-related illnesses and mortality
  - Urban residents face greater risks
- Health of plants, animals, and ecosystems
  - Increased pests
  - Changes to growing seasons
- Economic sectors
  - More sick days due to heat-related illnesses
  - Reduced crop production and impacts to livestock and fisheries
- Infrastructure
  - Larger demands on energy systems
  - Stress on train tracks, roads and bridges, and other critical infrastructure



Impacts from Changing Precipitation Conditions

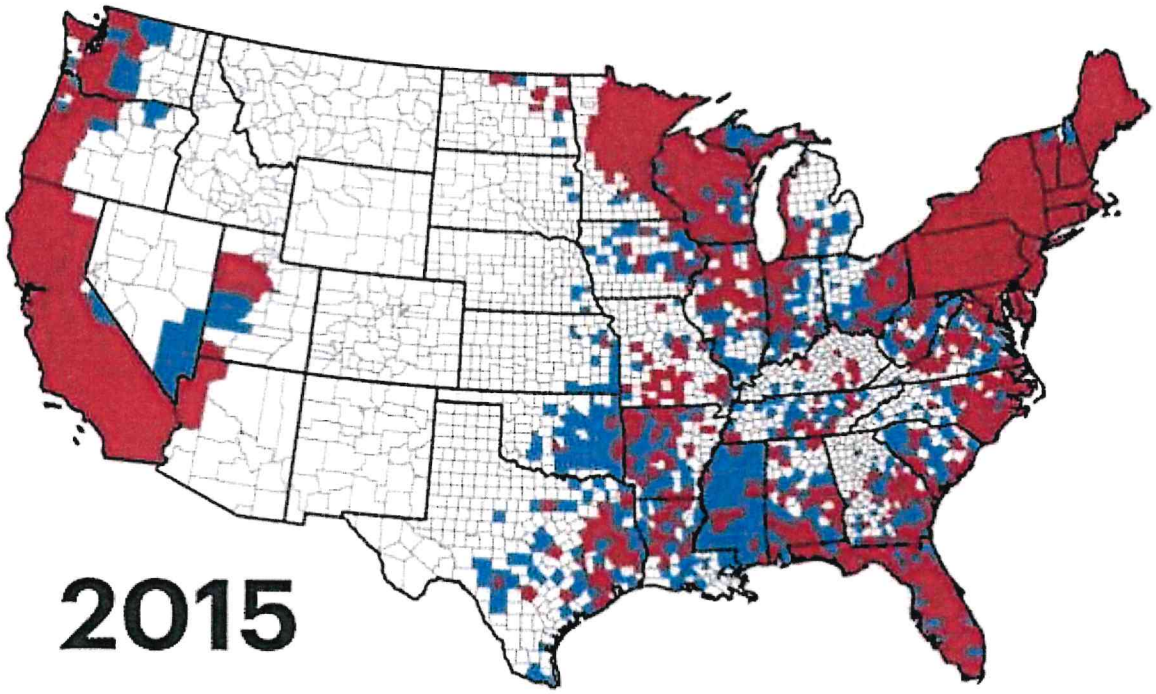
- Increased total rainfall
  - Impact on the frequency of minor but disruptive flooding events
  - Impact agriculture, forestry, and natural ecosystems
- More intense downpours
  - Increased risk of flooding
  - Increased damage to property and critical infrastructure
  - Impacts to water quality
- Changes to rainfall and snowfall patterns
  - Impacts to certain habitats and species with specific physiological requirements
  - Reduced snow cover for recreation and tourism
  - Potential increase in frequency of episodic droughts



Impacts from Sea Level Rise

- Local impacts shaped by:
  - Ocean currents
  - Wind patterns
  - Land and shoreland elevations
  - Subsidence and accretion rates
  - Tidal zones
- Will exacerbate many existing coastal hazards including:
  - Severe storms and storm surge
  - Tidal inundation
  - Salt water intrusion
- More regular flooding of developed and natural low-lying coastal areas
- Increased erosion of existing coastal landforms
- Damage to coastal buildings and infrastructure

Public Health:
Ticks and Lyme Disease



2015

Nature-based Solutions

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

Green Infrastructure

Low Impact Development (LID)

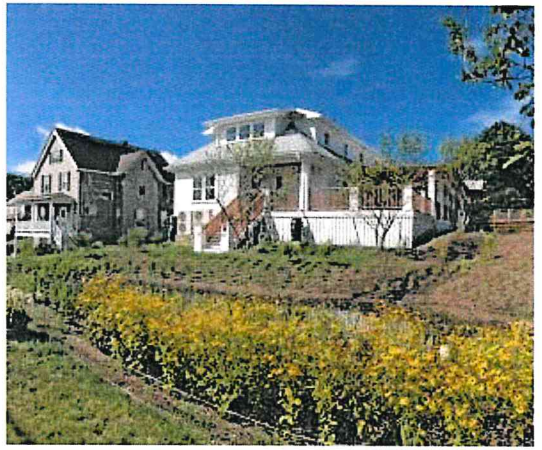
Nature based solutions at every scale

Rural, suburban, or urban

Conserve available open space providing ecosystem services

Integrate concepts into new development at neighborhood scales

Restore resilience in urban areas at site specific scale



Free services provided by nature-based solutions

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

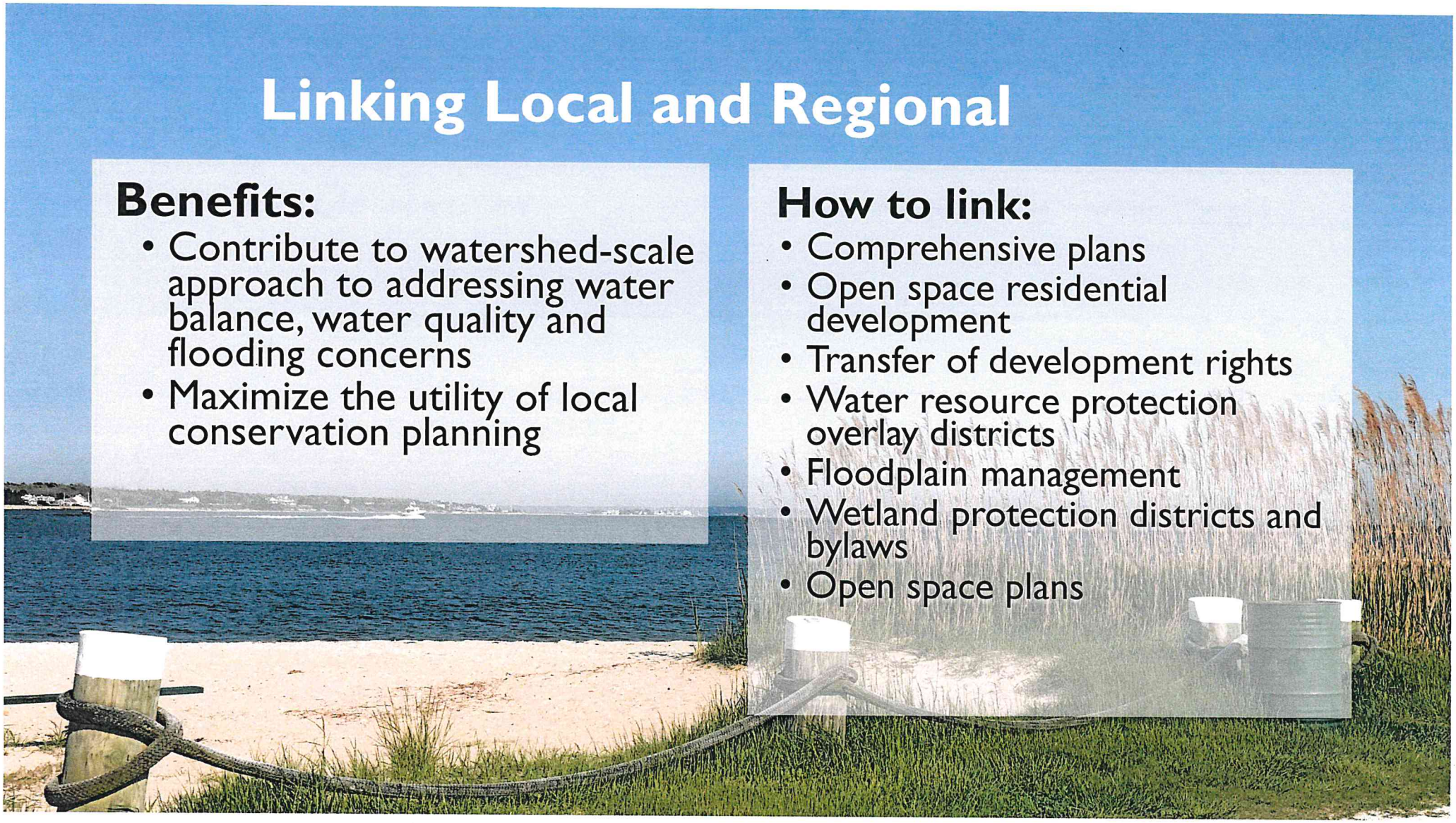
Linking Local and Regional

Benefits:

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

How to link:

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



Baker Administration's Support

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

EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Matthew A. Beaton, Secretary

Grant Announcement

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

Request for Responses (RFR) ENV 18 POL 03

Dated: April 13, 2018

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

MVP ACTION GRANT

...al assistance for municipalities who have ...f Energy and Environmental Affairs (EEA) as ...edness (MVP) Community ("MVP ...tions identified through the MVP planning ...sessment and action planning that has led to

...bility Preparedness Grant Program supports ... Climate Change Strategy for the ...d technical support to cities and towns to ...te change vulnerability assessments and ... resilience to top natural and climate-related ... (CRB) Workshop Guide ...ogram is split into Planning Grants, which ..., leading to designation as an "MVP ...through this opportunity), which seek to implement key priorities and projects identified through the MVP Planning Grants.

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

Funding

Certified MVP Communities Receive Priority Ranking

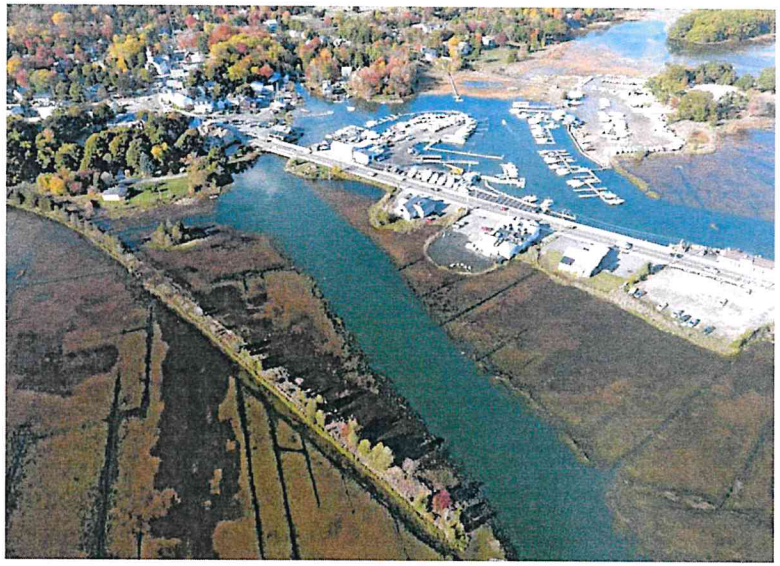
MVP Action grants are only available to MVP certified communities

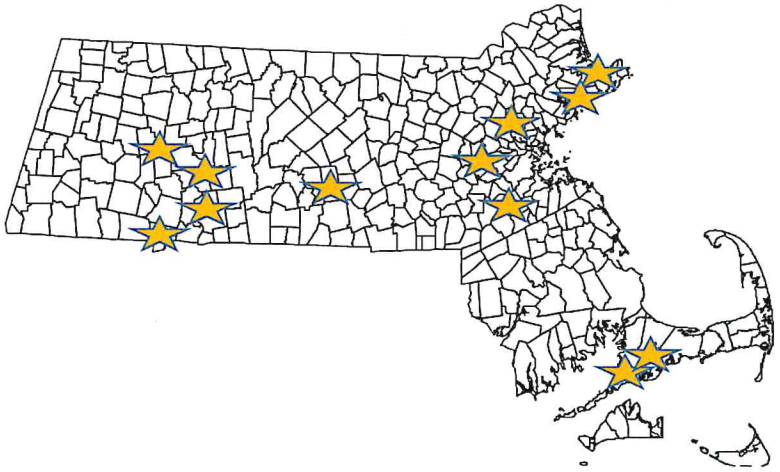
Some of the other grant programs under which MVP certified communities can receive priority ranking include:

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

MVP Action Grants: Project Types

- Detailed Vulnerability and Risk Assessment
- Community Outreach and Education
- Local Bylaws, Ordinances, Plans, and Other Management Measures
- Redesigns and Retrofits
- Nature-Based Flood Protection, Drought Mitigation, Water Quality, and Water Infiltration Techniques
- Nature-Based, Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality
- Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impacts
- Ecological Restoration and Habitat Management to Increase Resiliency
- Energy Resilience
- Chemical Safety
- Land Acquisition for Resilience
- Subsidized Low-Income Housing Resilience Strategies
- Mosquito Control Districts





Example Nature Based Solutions for Resilience

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

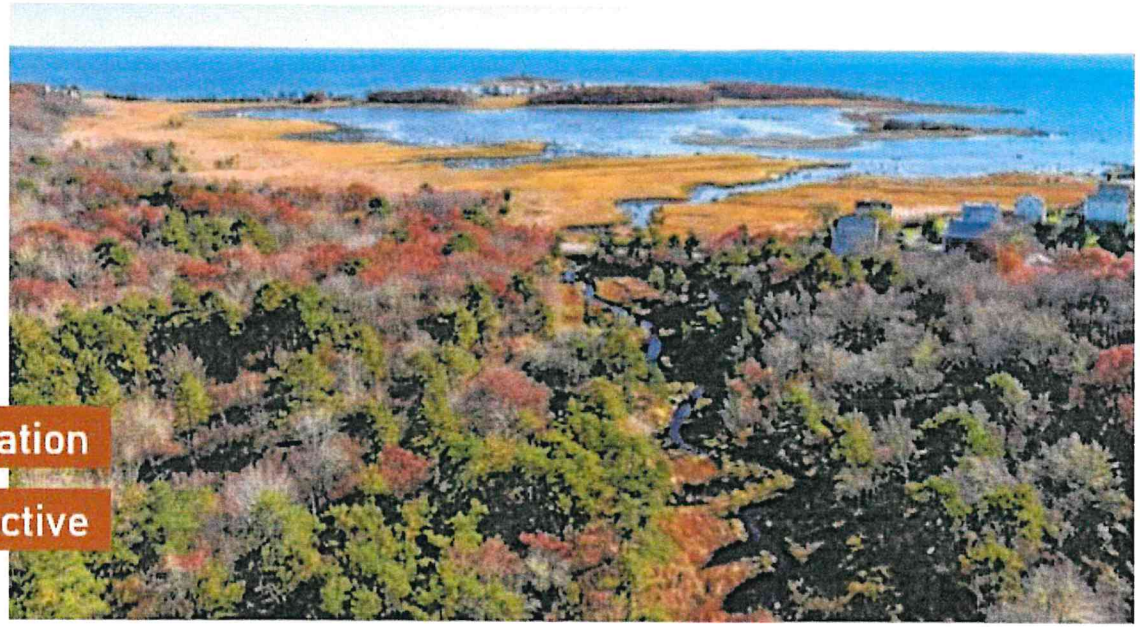
https://www.mass.gov/files/documents/2018/10/19/2017-2018-planning-grant-report-essex.pdf
https://static1.squarespace.com/static/59cbe1e04c326dc7d7bfa01c/t/5beb329e40ec9a5063154e4e/1542140578345/ECAN+MVP+2+Essex.pdf

Example Action Grant Projects

Land Acquisition for Resilience

Mattapoisett

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



Data utilization

Proactive

So, what do we do next?

Next . . . We Plan !!!

Overview of the Process (Steps & Tasks)

Part 1:

Part 2:

DURING WORKSHOP

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

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

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

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

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

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

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

Community Components

Infrastructural

Societal

Environmental

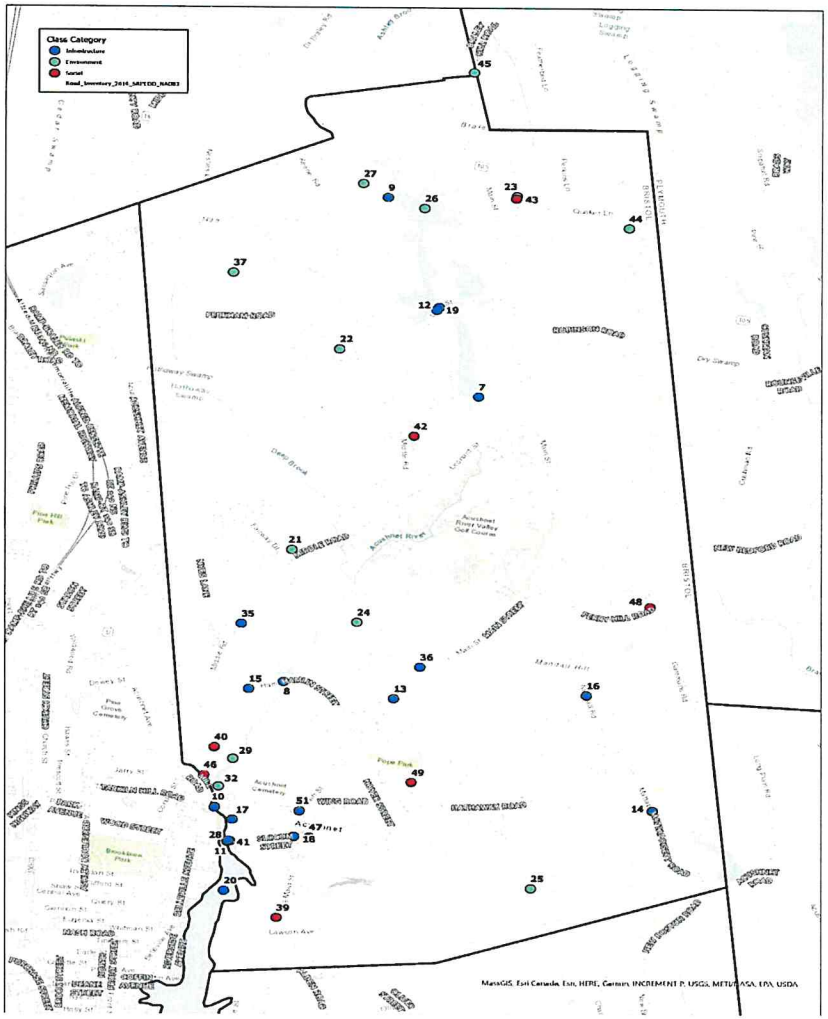
Community Resilience Building Risk Matrix

www.CommunityResilienceBuilding.com

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

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

Features	Location	Ownership	V or S					Priority H - M - L	Time Short Long Ongoing
Infrastructural									
Societal									
Environmental									


Class Category
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Environment
Social
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20
39
Maxar, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

But first . . . what are our Top Priority Hazards?

Drought or Flood/Drought Cycles
Extreme Precipitation/Storm Events
Hurricanes
Wildfire
Sea Level Rise/Coastal Flooding
Wind
Extreme Temperature
Earthquake
Tornado
Other(s)

APPENDIX B

Matrices

Action ID from GIS (no order)	Features	Location	Ownership	V or S	Extreme Storms	Flood/Drought	Wind		Priority	Time
Infrastructural									HML (high, med, low)	SLO (short, long, ongoing)
1	Holloway and County Street: road design - transportation hazard; flooding; waterline project; culvert at Cotley Brook			V	Holloway & County St, on Cotley Brook, at former Package Store (then contractor, then burned down, now vacant) on blind curve (poorly designed road – shop lined corner), flooding, undersized culvert – could address multiple problems at once with update, Whole area vulnerable to pollution – water access line to area should be considered (town already looking at)				H	S
2	Communication Network	Tower	Town	S	Emergency Communications Infrastructure – working to address with ARPA funding (strength), good and recent improvements					
3	Public Safety Building is undersized for current needs/services	Town Green	Town	V/S	Public safety building – 20yrs old, too small to meet needs – currently houses police & fire – could house one, but not both - need new building, needs planning				H	O
4	Elementary school, numerous issues	Town	Town	V/S	Elementary School – flooding, mold, needs updates to meet code, Building too close to roadway – traffic issues, Both schools – only one way in and out – traffic / safety issues, Officer directs traffic – won't be available in future, Current feasibility study, mold, leaks, structural, etc; traffic design issues (access-egress)				H	S
5	Lack of sidewalks	Various	Various	V	Need more sidewalks around town (many roads not wide enough?), Complete streets grants could be funding source, Covid – more people on streets, people walk dogs, big concern, High priority on Locust St, Middle school to commons				M/H	O
6	Town roads need attention	Various	Town	V/S	Roadway maintenance needed – increasing traffic from bridge – roads can't accommodate, Patched roads to extend life, but hazard because slippery (especially for motorcycles), need to be repaved				H	O

7	Stormwater management tech. assistance/education	-	Town	V	MS4 compliance – need capacity/tech assistance (currently Town Admin responsibility, difficult to keep up with requirements), Consider hiring consultant to manage reporting / set up report structure & management plan for town to keep updated, Need to restart public education campaign, Consider requesting waiver from MS4 – eligible?, Town bylaws – discussed in past, but nothing done yet	H	S/O
8	CEMP update to accommodate impacts of SCR	Town	Town/SCR	V/S	South Coast Rail – CEMP update to accommodate impacts, regional chiefs group working with state for updated rescue equipment and trainings for rail line, Community impacts – 80mph trains 22x/day – expect car & people crashes at 4 separate crossing locations, Noise impacts will impact rural community character (town can't afford additional costs for "Quiet crossings", High priority when construction of railway complete (expected end of this year) – will need to prepare for opening and continue to work on it ongoing, Need regular meetings with MBTA (weekly meetings scheduled, MBTA often cancels), Regional Chiefs group/County wide equipment needs and emergency access issues	H	S/O
9	Navigational focuses on the Taunton River (rocky areas, shallow, etc.)	-	-	S/V	Taunton River – hazards to navigation (sunken rocks, trees, other debris) – were marked with buoys by Taunton River Association – no longer active, markings not kept up to date, More use of river from weir park ramp (taunton) – boats, jetskis getting stuck, call for help (town can't access)	M	O

Action ID from GIS (no order)	Features	Location	Ownership	V or S	Extreme Storms	Flood/Drought	Wind		Priority	Time
Environmental									HML (high, med, low)	SLO (short, long, ongoing)
1	Preserve the airport land	Paddelford St	Private	V/S	Privately owned air strip (owner passed – will stated could only be used for airport use) – open space currently, important flood storage, concern of losing to development, Adjoining street – Holloway street contaminated wells, Still owned by wife, but elderly – high priority in short term				H	S
2	Fernandes Farm	Jerome St	Private	S/V	Jerome St – Fernandes farm – don't expect family to leave but may sell farm property if can't afford to maintain, potential APR				H	S
3	Fournier Farm	Locast/Procter	Private	S/V	Fournier's Farm – Locust & Porter – concerned about losing to development, APR would be good program for property, Current generation farmers, next generation won't be – no one to inherit, continue farm, Town lacks funds for right of first refusal for purchasing chapter lands (could adopt funding mechanism like Dighton's rollback program – when property pulled out of program, back taxes go into town fund for future purchases), (development impacts of these properties will stress all depts, protection will also protect aquifer…)				H	S
4	No river access/ 11 river miles	Assenot R, Taunton R	Private	V	11mi waterfront on 2 rivers – no public access, no boat launch access – town has no access to water (except illegal ramps/docks on private property), have to leave town to get into water to get somewhere in emergency, When flooding cuts off access to roads (Bayview Rd in previous years), will need to secure waterway access (Taunton River & Assonet) for service				H	S/O
5	Marsh along Taunton	Various	Various	S/V	Berkley Street marsh on Taunton River – floods road during storms; dead cattails in Fall – fire hazard?				H	O
6	Conspiracy Island	Taunton River	Private	S/V	Conspiracy Island (privately owned) – becomes island at high tide and people get stranded on island (current too strong to walk through water), Old growth forest, recreational opportunities, Need town access – easement for dock? Town purchase? Keep peninsula/build pier (avoid cutting off access at high tide)				H	O

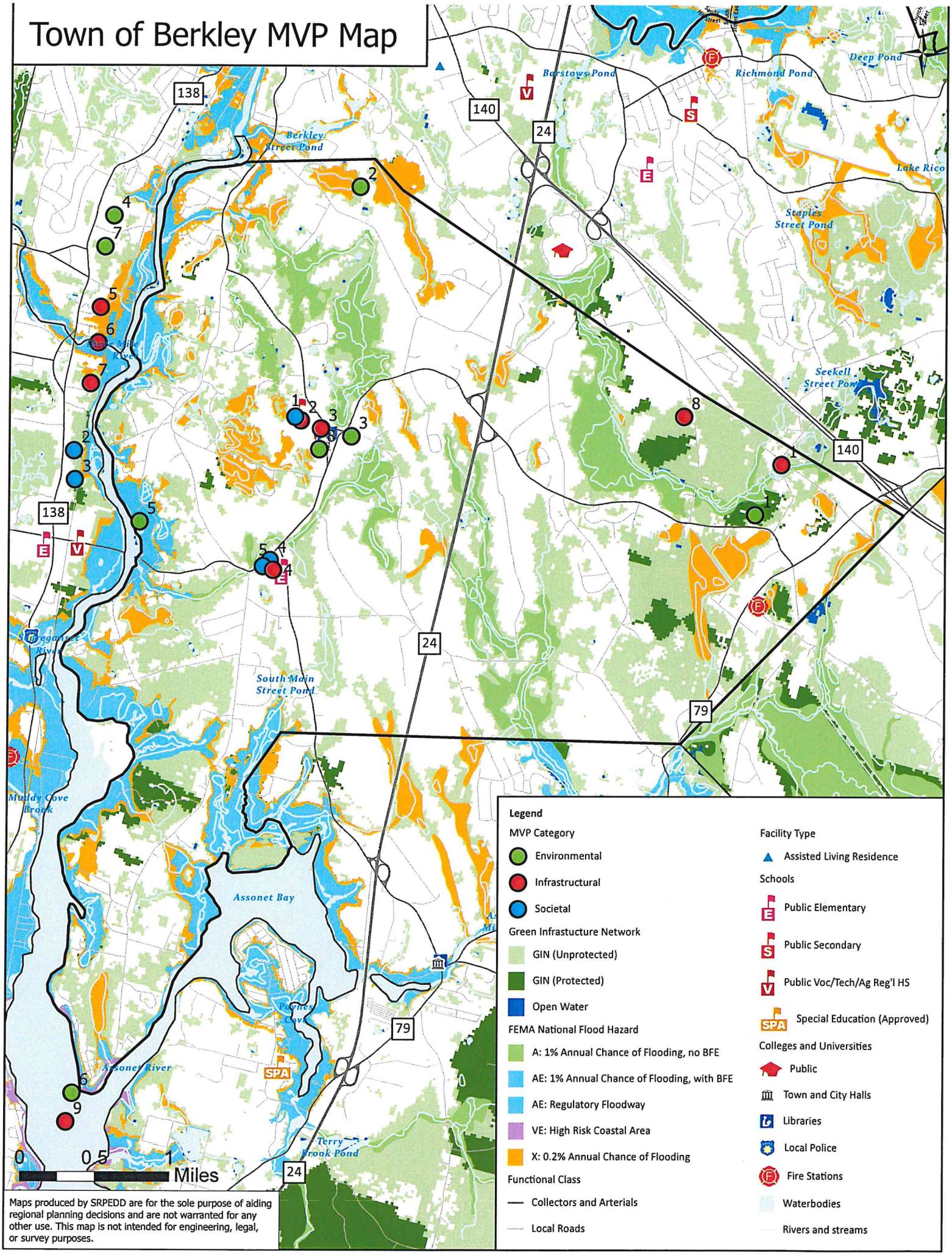
7	More recreational (outdoor) facilities	Various	Various	S/V	General – more rec land / outdoor opps – improve existing facilities, provide more connections between properties, waterfront rec access, Expect to be ongoing priority, expect more pandemics even after covid	M	O
8	Protect the moderate yield aquifer area	Adjacent to Aquifer Protection District	-	S/V	Aquifer recharge area (water protection district & surrounding area from H&H modeling study) – protect groundwater recharge, quality (PFAS/other contaminants), Protect moderate yield area and/or find alternative water source	H	O

Action ID from GIS (no order)	Features	Location	Ownership	V or S	Extreme Storms	Flood/Fro ught	Wind		Priority	Time
Societal									HML (high, med, low)	SLO (short, long, ongoing)
1	Sheltering	Middle School	Town	S	Sheltering is strength – one shelter (Middle school) – adequate capacity, Shelters – open new shelter now, have to provide accommodation for dogs, cats, Opened a winter shelter once for 48hrs – had 6 people				H	O
2	Heating/Cooling Stations	Various	Town		Establish heating/cooling station – long term, future need, Never opened a cooling center, never received calls for need, If at school – would need to shut down school every heat wave (concern), long-term should be at town hall?				H	O
3	Pet Sheltering	Middle School	Town	S	Establish pet sheltering				M	O
4	Elementary School	-	Town	V	no cooling, heating costly, maintenance needs (built 1960s)				H	S
5	Plan facility for expected enrollment born in a few years	Elementary School	Town	S/V	Preschool at elementary school – 2 programs, sliding payment scale for affordability – looking to expand, provide all day, working to accept state vouchers (will be only town in region – but difficult process), Schools feasibility study may project need to expand school (expecting enrollment increase ~5yrs from now from increased birth rates – COVID babies 3x birthrate of previous 5yrs)				M	O

APPENDIX C

Berkley Map

Town of Berkley MVP Map



Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal, or survey purposes.

Legend

MVP Category
- Environmental
- Infrastructural
- Societal

Green Infrastucture Network
- GIN (Unprotected)
- GIN (Protected)
- Open Water

FEMA National Flood Hazard
- A: 1% Annual Chance of Flooding, no BFE
- AE: 1% Annual Chance of Flooding, with BFE
- AE: Regulatory Floodway
- VE: High Risk Coastal Area
- X: 0.2% Annual Chance of Flooding

Functional Class
- Collectors and Arterials
- Local Roads

Facility Type
- Assisted Living Residence

Schools
- Public Elementary
- Public Secondary
- Public Voc/Tech/Ag Reg'l HS
- Special Education (Approved)

Colleges and Universities
- Public

- Town and City Halls
- Libraries
- Local Police
- Fire Stations
- Waterbodies
- Rivers and streams