Berkley MVP Listening Session

Resilient Taunton Watershed Network (RTWN)
The Municipal Vulnerability Preparedness (MVP) Program

State and local partnership to build resiliency to climate change

1. Engage Community
2. Identify CC impacts and hazards
3. Complete assessment of vulnerabilities & strengths
4. Develop and prioritize actions
5. Take Action
The MVP Program is a state and local partnership that:

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

COMMUNITY/RESILIENCE BUILDING WORKSHOP(S):
- Define and characterize hazards using latest science and data
- Identify existing and future community vulnerabilities and strengths
- Develop and prioritize community adaptation actions
- Identify opportunities to take action
- Receive MVP designation

MVP Planning Grant

MVP Action Grant

Implement priority adaptation actions identified through planning process
MVP CORE PRINCIPLES

- Multiple benefits to a broad cross-section of the community
- Robust community engagement
- Monitoring & maintenance
- Address community identified climate change priorities
- Proactive solutions supported by climate data
- Improve outcomes for Environmental Justice communities
- Think beyond borders
- Innovative & transferable
- Prioritize Nature-based Solutions
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.
A comprehensive source of state climate change related data is available at www.resilientma.org
Climate Data and Projections
Massachusetts Observed Climate Changes

Temperature: 2.9°F  
Since 1895 (Statewide)

Growing Season: 15 Days  
Since 1950

Sea Level Rise: 11 inches  
Since 1922 (Boston)

Heavy Precipitation: 55%  
Since 1958

Source: Climate Science Special Report, 2017; NOAA NCEI nClimDiv; NOAA Ocean Service
Massachusetts Climate Changes Projected by the 2090s

- **Temperature**: 7.2°F Average Annual; Range: 4 to 11°F
- **90°F Days**: 34 Annual; Range: 11 to 64 days
- **Sea Level Rise**: 4 to 10.2 feet Relative to mean sea level in 2000
- **2” Precipitation Days**: 47% Annual

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

Photo © Daniel Brown
Source: Northeast Climate Adaptation Science Center, ResilientMA.org, accessed 2018.
Extreme Heat in Massachusetts

Days per year above 90°F: Current ≤15 → Projected by Mid-Century +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
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.
“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.”
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 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
Example Action Grant Projects

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

Belchertown

Designing and permitting for a replacement water storage tank that would increase storage capacity and resiliency to drought, and completing a feasibility/concept design of a rainwater harvesting system at Belchertown High School to irrigate the athletic fields.

Nature-based solutions
Pilot potential
So, what did we do next?
Next . . . we planned !!!
Overview of the Process (Steps & Tasks)

Part 1:

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.

Part 2:

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 Resilience Building Risk Matrix

![Logo](https://www.CommunityResilienceBuilding.com)

**H: High, M: Medium, L: Low priority for action over the Short or Long term (and Unongoing)**

**V = Vulnerability  S = Strength**

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

<table>
<thead>
<tr>
<th>Features</th>
<th>Location</th>
<th>Ownership</th>
<th>V or S</th>
<th>Priority</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructural</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Societal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action Item</td>
<td>Status</td>
<td>Feasibility</td>
<td>Locality</td>
<td>Ownership</td>
<td>V or S</td>
</tr>
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<td>-------</td>
</tr>
<tr>
<td>Holloway and County lines, road design - transportation infrastructure: Road-Project Number: Rebuilding of Colley</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Communication Network:</td>
<td></td>
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<tr>
<td>Public Safety Building in Transition Village:</td>
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<tr>
<td>Elementary School, numerous schools:</td>
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<tr>
<td>Lack of sidewalks:</td>
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</tr>
<tr>
<td>Town needs</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| Water Management Tech Assistance/Information: | | | | | | | | |
| Efficient, Water Access: | | | | | | | | |
| Stormwater: | | | | | | | | |
| CEMF Update to Accommodate Impacts of SCR: | | | | | | | | |
| S Near Center: | | | | | | | | |

| Navigational issues on the Torrey Tram (Rocks, cliffs, etc.): | | | | | | | | |
| Nearing Here: | | | | | | | | |
| Torrey River: | | | | | | | | |

<p>| MTA Insurance: | | | | | | | | |
| Need to Consider: | | | | | | | | |
| Roadside Maintenance: | | | | | | | | |
| Patches needed to be fixed, but hazardous because slippery (especially for motorcyclists): | | | | | | | | |</p>
<table>
<thead>
<tr>
<th>Action ID</th>
<th>Features</th>
<th>Location</th>
<th>Ownership</th>
<th>V or S</th>
<th>Extreme Clauses</th>
<th>Priority</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shelters</td>
<td>Middle School</td>
<td>Town S</td>
<td></td>
<td>Social</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Heating/Cooling Stations</td>
<td>Various</td>
<td>Town</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Middle School</td>
<td>Town S</td>
<td></td>
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<tr>
<td>4</td>
<td>Elementary School</td>
<td>Town V</td>
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<td></td>
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<tr>
<td>5</td>
<td>Plan facility for expected enrollment over next few years</td>
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</tbody>
</table>

**Environmental**

<table>
<thead>
<tr>
<th>Action ID</th>
<th>Features</th>
<th>Location</th>
<th>Ownership</th>
<th>V or S</th>
<th>Extreme Clauses</th>
<th>Priority</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preserve the airport land</td>
<td>Narsinath St</td>
<td>Private</td>
<td>VS</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Farming area</td>
<td>Jerome St</td>
<td>SV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Farmland</td>
<td>Loom</td>
<td>Private</td>
<td>SV</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>No clear access</td>
<td>Talvin</td>
<td>Private</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Marsh along Talvin</td>
<td>Various</td>
<td>SV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Conspicuous area</td>
<td>Talvin</td>
<td>SV</td>
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</tbody>
</table>
So, what were the top project choices in each category as determined by a vote of the Berkley MVP Planning Workshop group?
Top Choices

Infrastructure
1. Stormwater Management and MS4 compliance

Environmental
1. Open space protection for flood storage, aquifer protection, agricultural land retention

Social
1. Increase sheltering capacity and capabilities (heating and cooling stations, provisions for pets)
Please review the Matrices and Top Choices and share any comments by contacting Bill Napolitano (bnap@srpedd.org) or Sara Brown (sbrown@srpedd.org) by September 12, 2022.