

Municipal Vulnerability Preparedness Program - Public Listening Session



Maynard, MA | Public Listening Session | June 22, 2020



Meeting Agenda

- I. Welcome and Introductions (6:00 – 6:05 PM)**
- II. Summary of the MVP Program/Maynard Participation (6:05 – 6:15 PM)**
- III. Overview of the Findings (6:15 – 6:40 PM)**
 - Identification and Description of Priority Hazards
 - Summary of Community Strengths and Vulnerabilities
 - Priority Actions for Enhanced Community Resilience
- IV. Participant Questions and Answers (6:40 – 6:55 PM)**
- V. Next Steps and Adjourn (6:55 – 7:00 PM)**

WELCOME AND INTRODUCTIONS

Introductions

- **Maynard Project Managers**
 - Justin DeMarco, Maynard Department of Public Works
 - Wayne Amico, Maynard Engineering
- **MVP Core Team**
 - *Name*
 - *Affiliation (i.e., Town Department/Board or Committee/Resident/etc.)*
 - *One Takeaway from the Planning Process*
- **Town Consultants (VHB)**
 - Donny Goris-Kolb, AICP, LEED O+M, ENV SP
 - Van Du, ENV SP, WELL AP
 - Carissa Mills



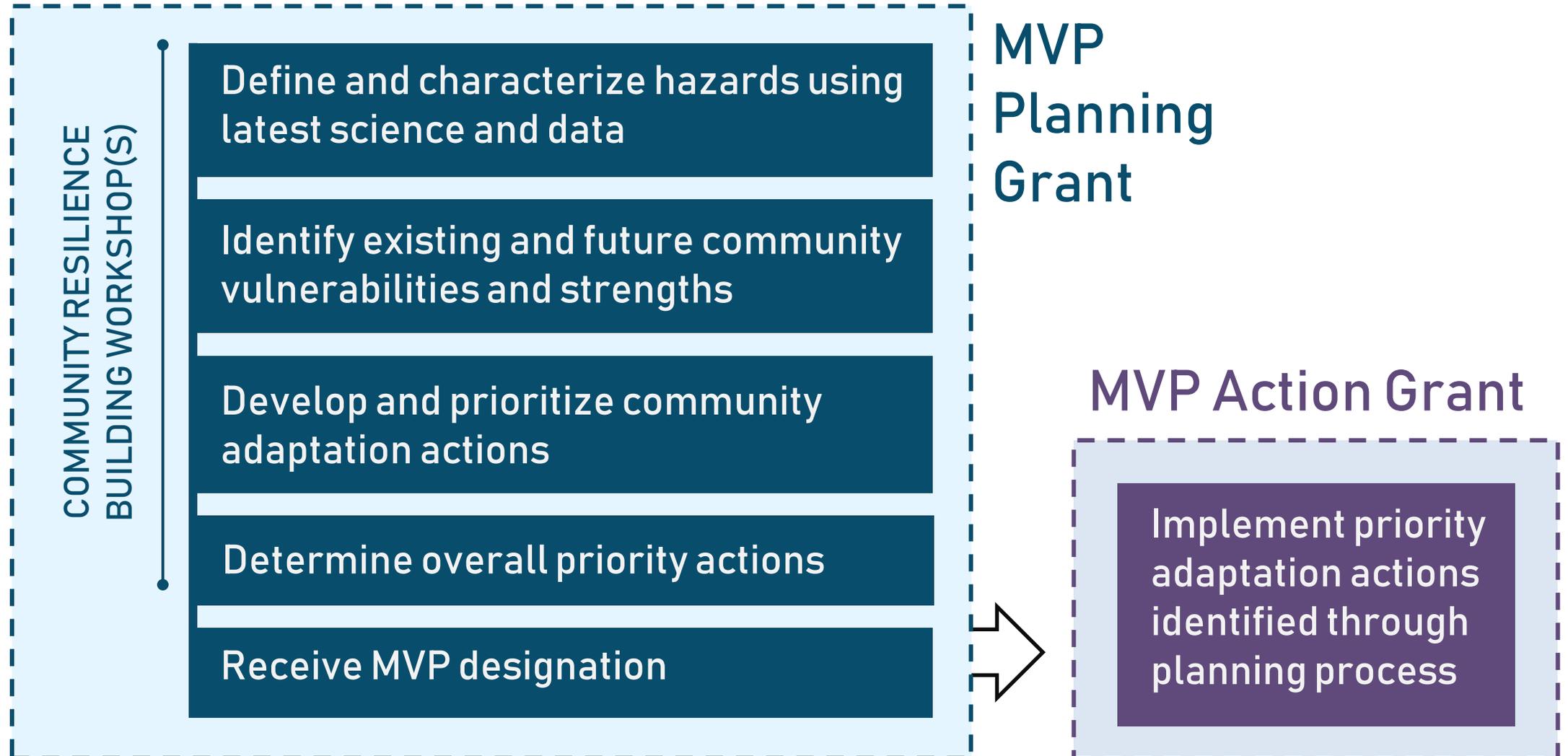
Summary of the MVP Program/ Maynard Participation

But First...A Fundamental Definition

Climate Resilience: *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 do not just recover, they continuously build capacity to reduce the impacts of future climate events.

MVP Process/ Grant Types



MVP Program Status

MVP Designations

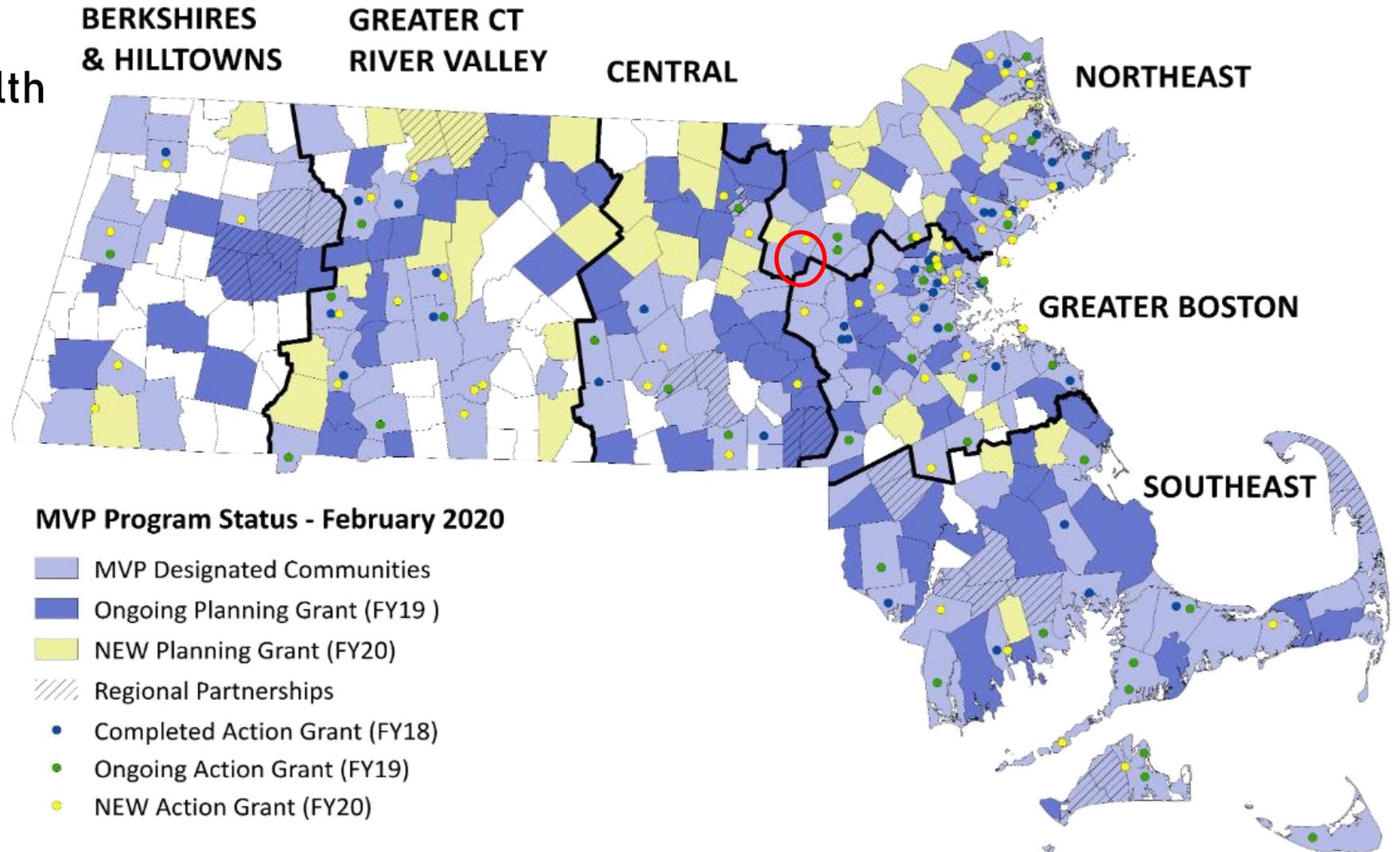
82% of the Commonwealth
287 communities

Action Grant Projects

FY18: 37
FY19: 36
FY20: 54

Total Awards

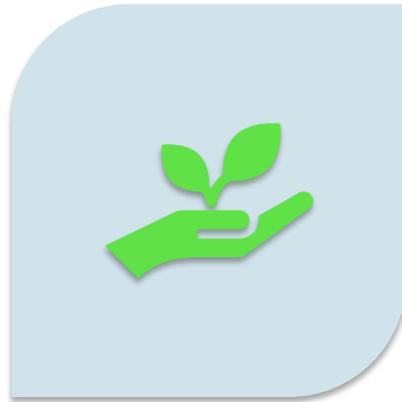
\$33M+ in planning and
action grants to date



MVP Action Grants: Project Types



Planning, Assessments, and
Regulatory Updates

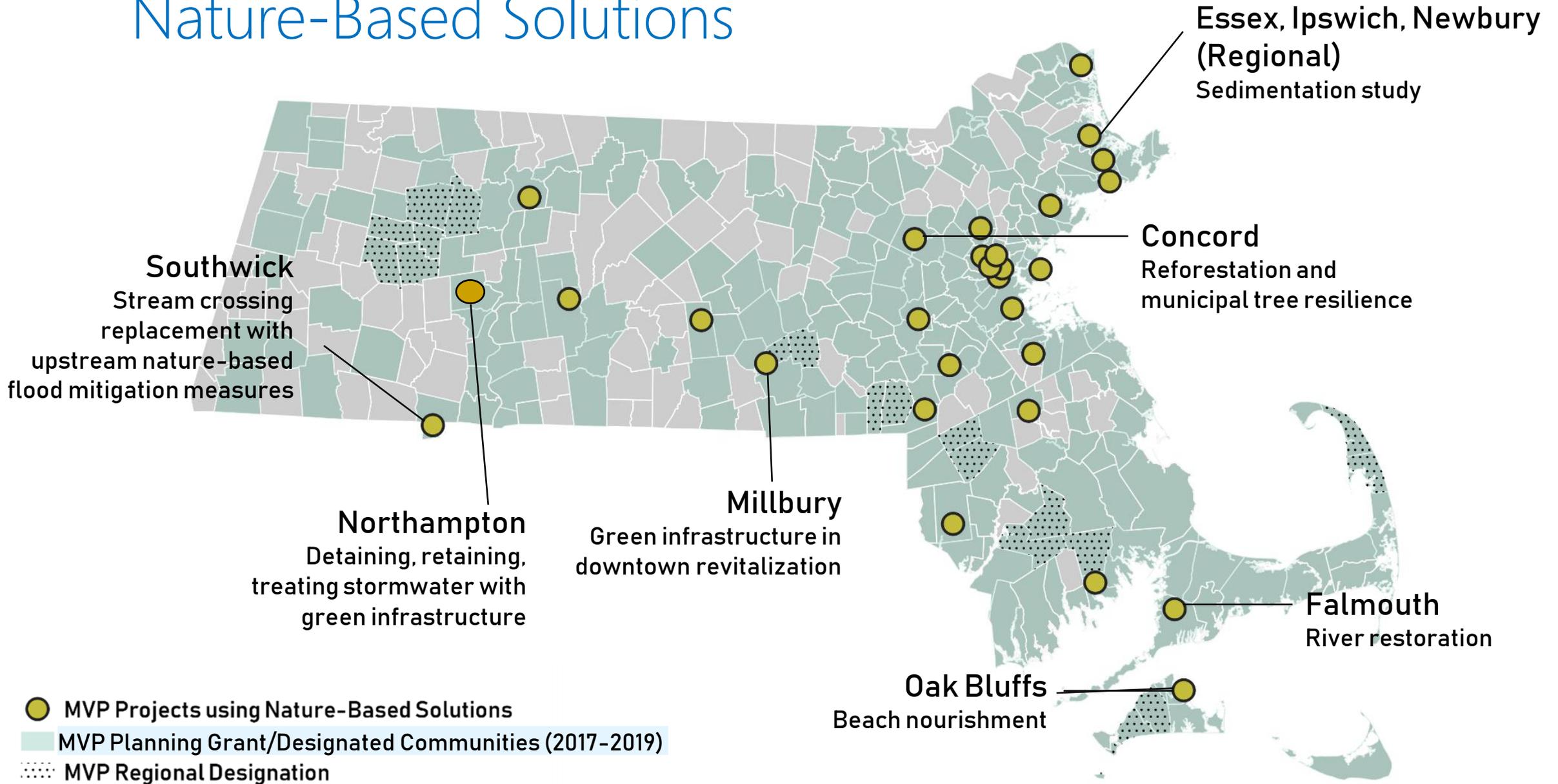


Nature-based Solutions for
Ecological and Public Health

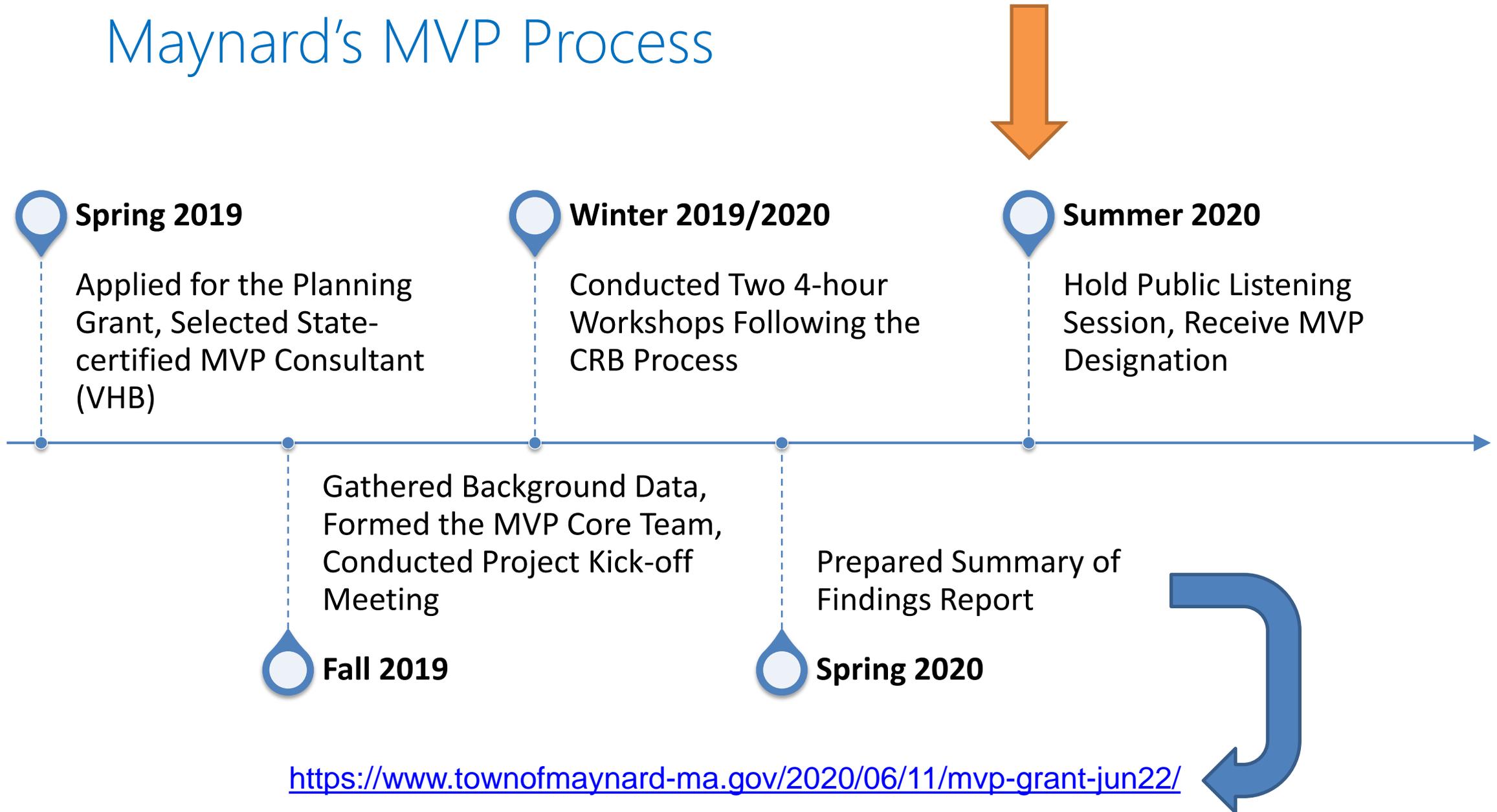


Resilient Redesigns and
Retrofits for Critical Facilities
and Infrastructure

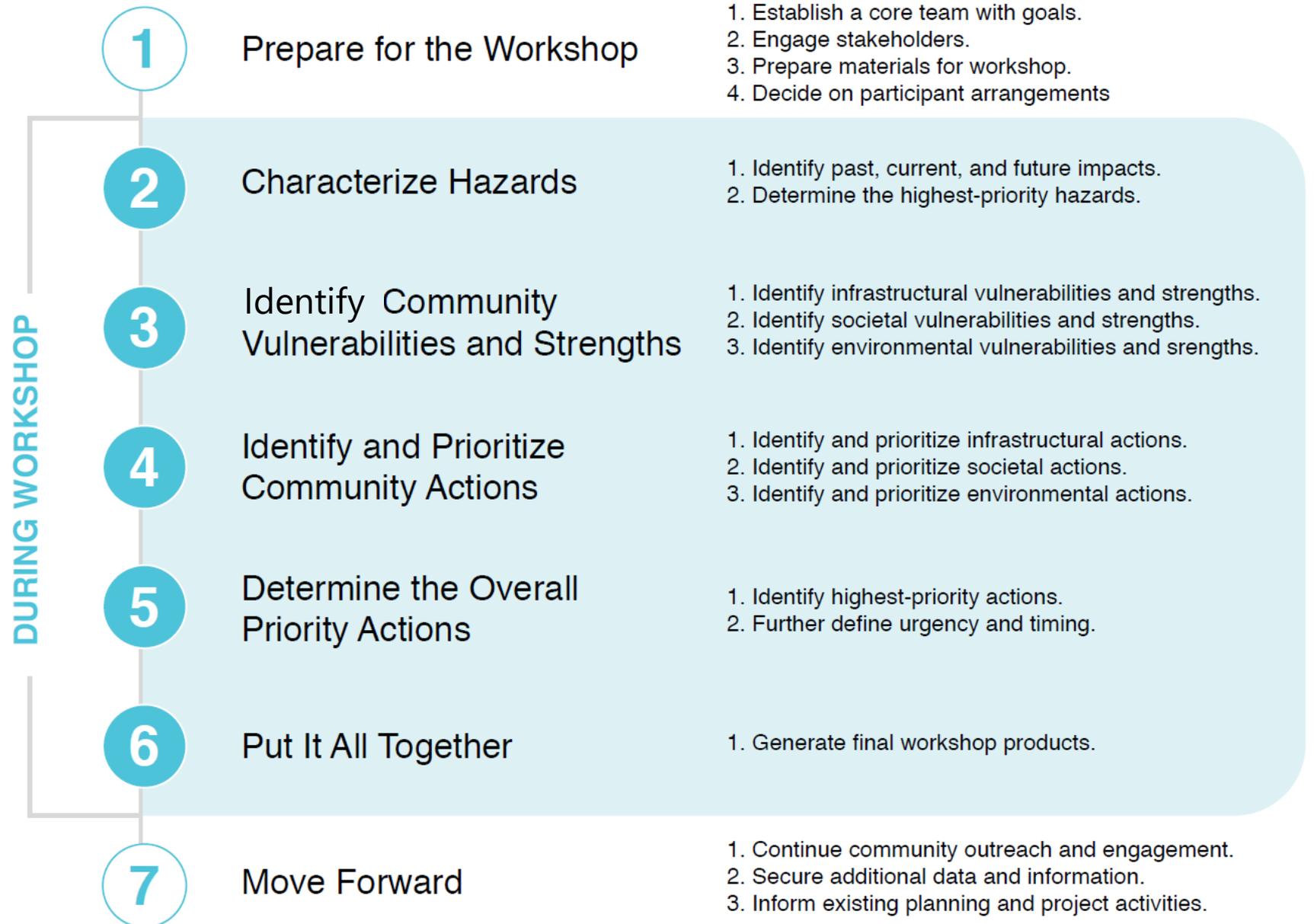
Nature-Based Solutions



Maynard's MVP Process



MVP Workshops



MVP Workshops (January and February 2020)

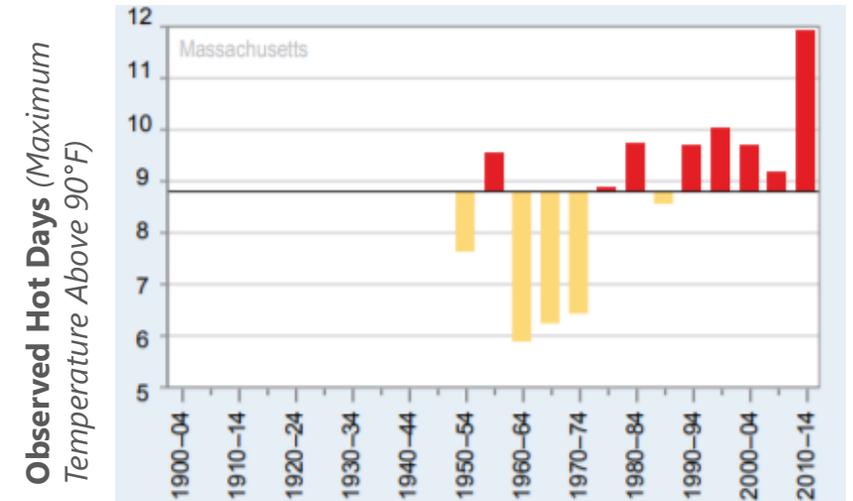
■ **Participants**

- Town Manager
- Office of Municipal Services/Planning
- Building Commissioner
- Council on Aging
- Conservation Commission
- Board of Health
- Housing Authority
- Public Safety –Fire Department
- Public Safety –Police Department
- Maynard Historical Commission
- Maynard Sustainability Committee
- Green Maynard
- Maynard Tree Committee
- Maynard Community Gardeners
- OARS
- Eversource
- Tufts University
- Residents
- Town Contractors/Vendors

**OVERVIEW OF THE
FINDINGS -
PRIORITY HAZARDS**

MA Climate Trends and Observed Conditions

- Between 1900 and 2014, average annual temperatures have increased by approximately 3°F
- The number of extreme heat days (max. temperature over 90°F) has been consistently above average since the 1990s
- The state has experienced above-average precipitation in the last 10 years
- More extreme weather events have been reported since 2005

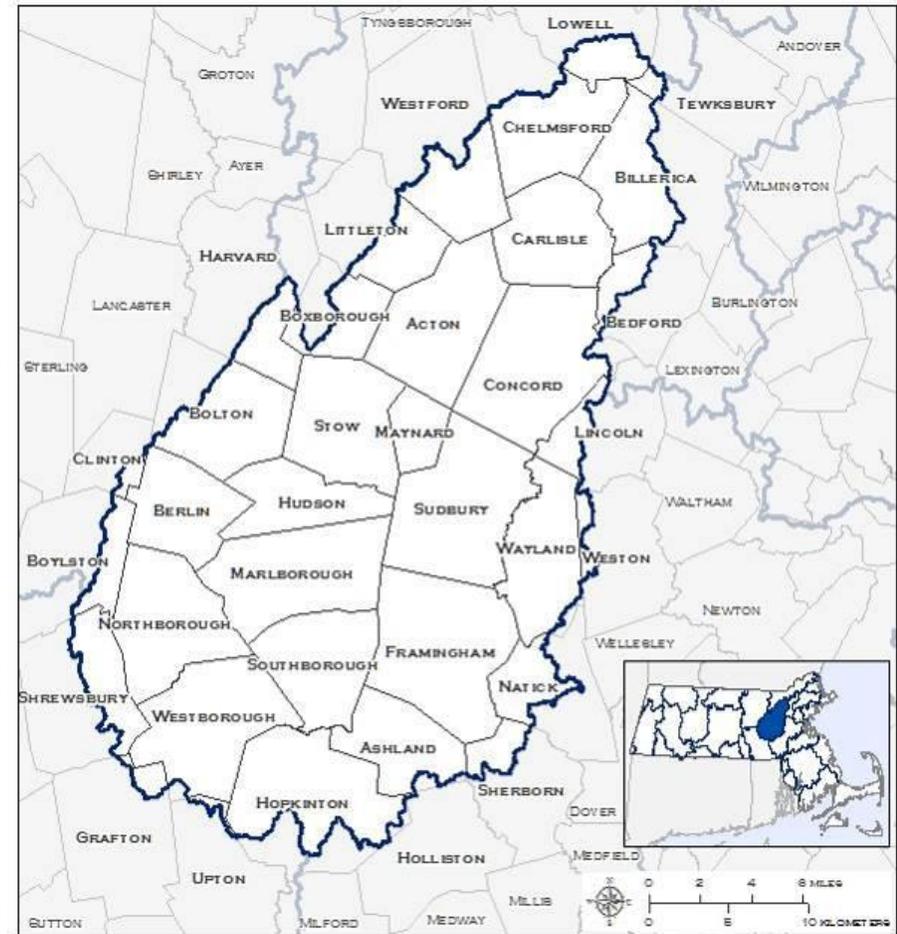


Source: NOAA NCEI State Climate Summary, 2014

Climate Projections for Sudbury-Assabet-Concord Basin

Increased Temperatures

- Average temperatures in the winter are likely to increase more than in the summer
- More extreme heat days are expected.
- More frequent droughts are expected, due to less rainfall and higher projected temperatures.



Source: Massachusetts Climate Change Projections – Statewide and for Major Drainage Basins, EEA, 2018.

Climate Projections for Sudbury-Assabet-Concord Basin

Increased Temperatures

	Baseline (1971 – 2000)	Mid-Century (2050s)	End-of-Century (2090s)
Average annual temperature (°F)	48.7°F	↑ 3.0 to 6.3°F	↑ 3.8 to 10.9°F
Days per year > 90°F	8	↑ 10 to 35 days	↑ 14 to 76 days
Days per year > 95°F	1	↑ 3 to 17 days	↑ 6 to 48 days
Days per year > 100°F	< 1 day	↑ <1 to 5 days	↑ <1 to 22 days
Days per year < 32°F	143 days	↓ 19 to 40 days	↓ 24 to 65 days
Days per year < 0°F	6 days	↓ 2 to 4 days	↓ 2 to 5 days

Source: Massachusetts Climate Change Projections – Statewide and for Major Drainage Basins, EEA, 2018.

Climate Projections for Sudbury-Assabet-Concord Basin

Changes in Precipitation Patterns

- More precipitation may be expected during winter and spring seasons
- Increasing consecutive dry days may be expected during summer and fall seasons
- Winter precipitation could fall more often as snow by mid-century, but is most likely to be rainfall by the end of the century
- Increased frequency of high-intensity rainfall events is expected through mid- and end of century



Photo credit: Town of Maynard

***Note: Seasonal projections for total precipitation vary, and there is less certainty specifically in the SuAsCo Basin*

Climate Projections for Sudbury-Assabet-Concord Basin

Changes in Precipitation Patterns

	Baseline (1971 – 2000)	Mid-Century (2050s)	End-of-Century (2090s)
Total annual precipitation (inches)	45.4 inches	↑ 0.6 to 6.1 inches	↑ 1.2 to 8.0 inches
Days per year with over 1" rainfall	7 days	↑ 1 to 3 days	↑ 1 to 4 days
Days per year with over 2" rainfall	1 day	↑ <1 to 1 day	↑ <1 to 1 day
Days per year with over 4" rainfall	< 1 day	↑ by <1 day	↑ by <1 day
Annual consecutive dry days	17 days	↑ 0 to 2 days	↓ 1 to ↑ 3 days

Source: Massachusetts Climate Change Projections – Statewide and for Major Drainage Basins, EEA, 2018.

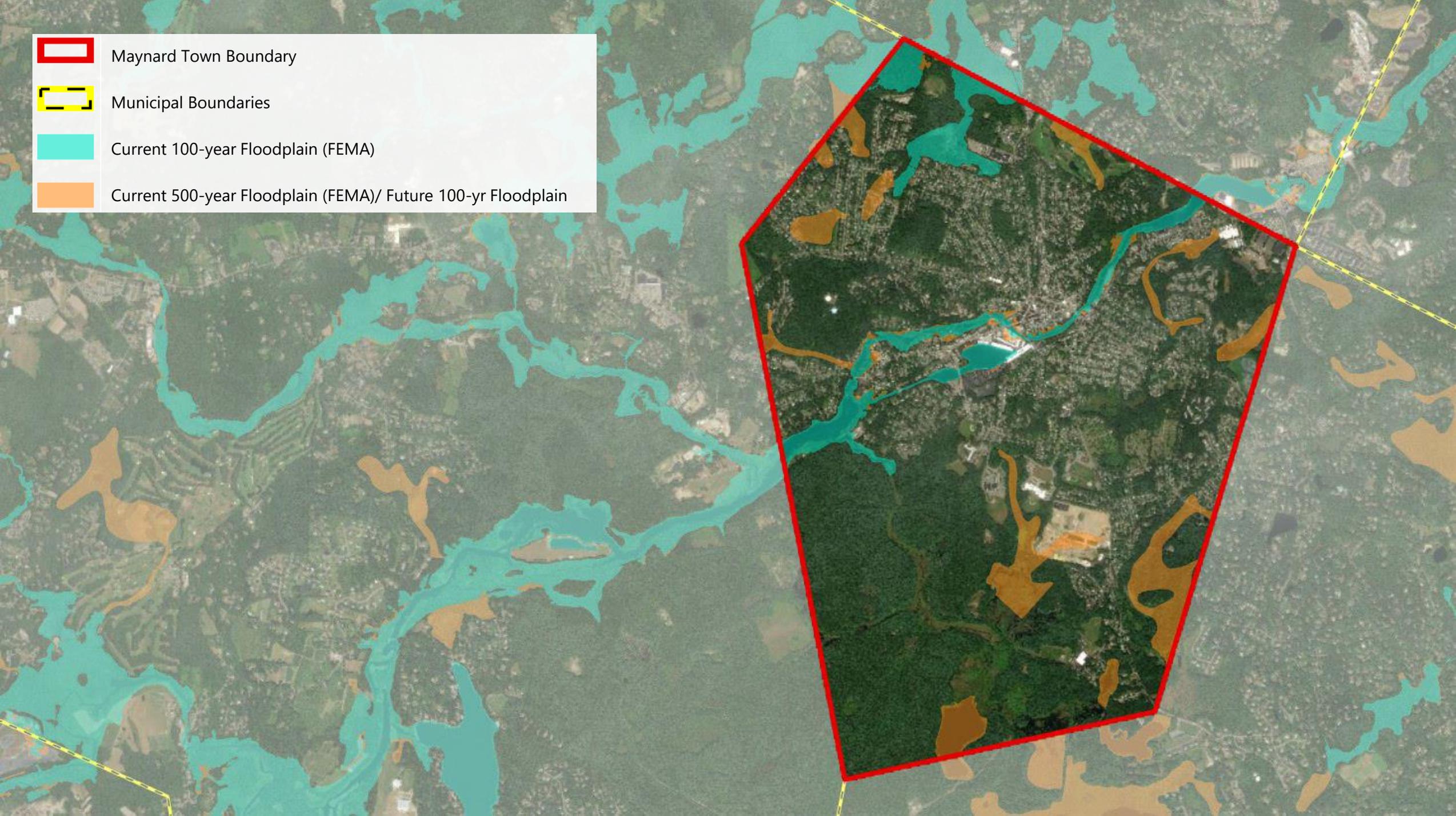
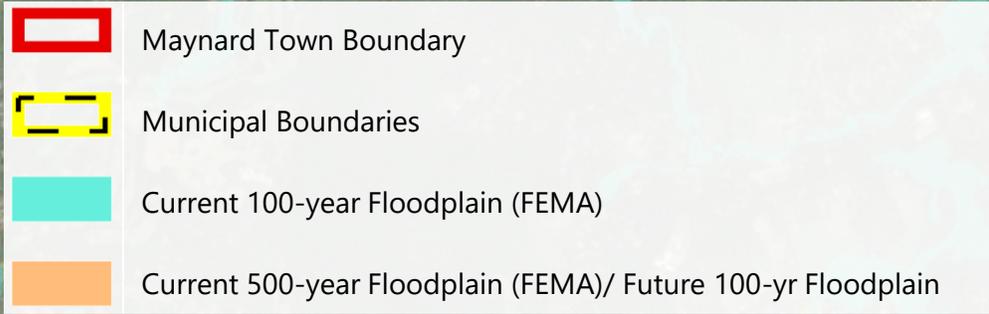
Extreme Storms: Trends & Projections in Massachusetts

- Observed Conditions:
 - Several major winter coastal storms with flooding between 2010 and 2018, including two in 2018.
- Anticipated Conditions:
 - Risk of increased riverine flooding;
 - Mean increase of ~43 percent in flood flows for one-percent flood by 2085
 - More frequent and intense strong hurricanes in the northeast U.S. by 2100
 - Increases in hurricane activity could yield annual property losses of \$11-\$17 billion



Sources:
Dupigny-Giroux, L.A., et al. 2018. Northeast. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II*.
The Boston Research Advisory Group Report. 2016. *Climate Change and Sea Level Rise Projections for Boston*. Retrieved: https://www.boston.gov/sites/default/files/document-file-12-2016/brag_report_-_final.pdf.

Photo credit:
Boston.com



Identified Priority Hazards



Extreme Precipitation Events/Flooding

Severe Storm Events



Extreme Heat / Heat Waves

Wildfire



**OVERVIEW OF THE
FINDINGS -
SUMMARY OF COMMUNITY
STRENGTHS AND
VULNERABILITIES**

Examples of Identified Features/Assets

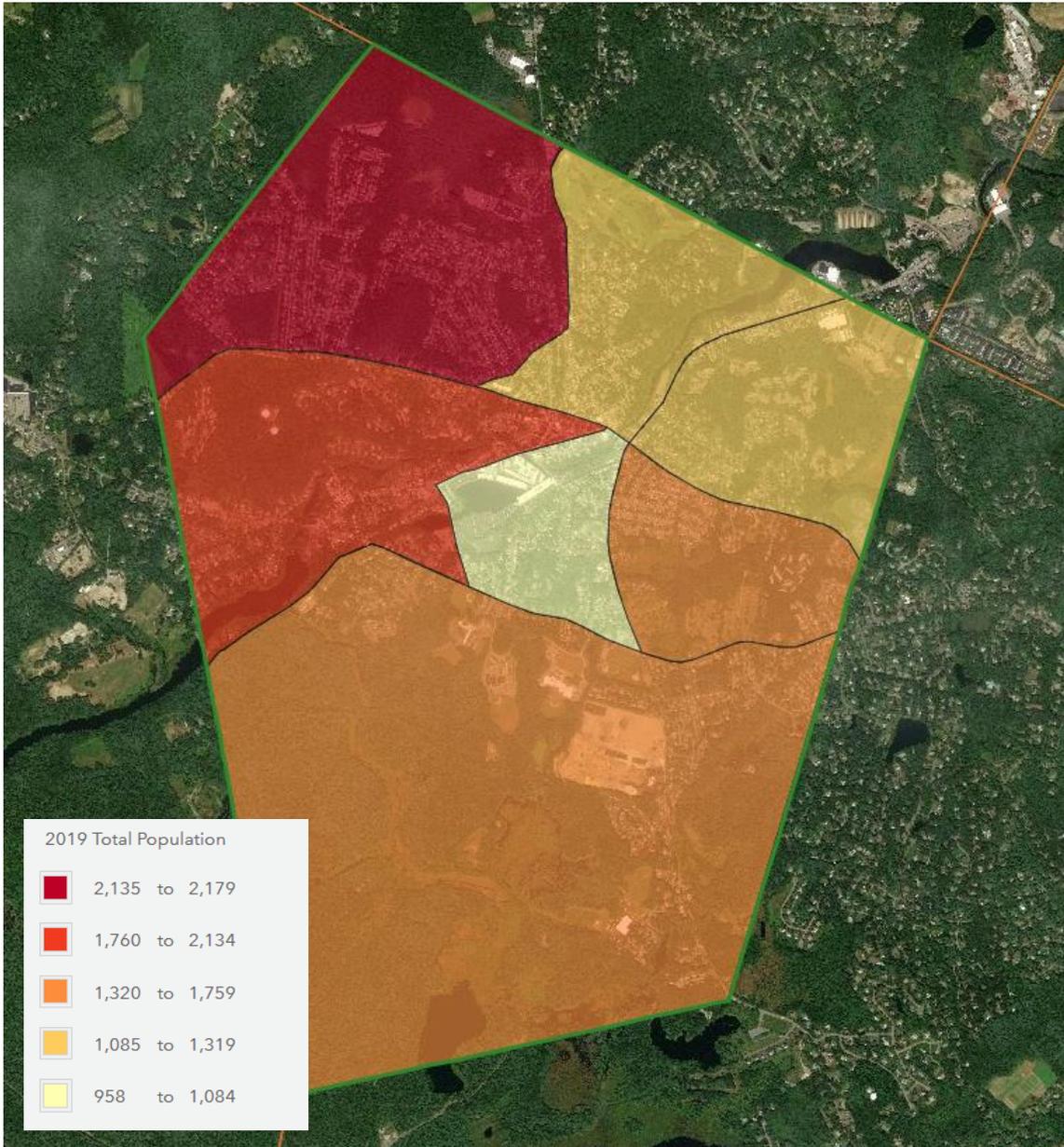
- Infrastructural
 - Town Hall, Police Department, Highway Garage, Schools, Bridges, Dams, Water/Sewer Infrastructure, FEMA Offices
- Societal
 - Cultural District, Emerson Medical, ArtSpace, Powder Mill Road Elderly Housing, Boys & Girls Club, Open Table



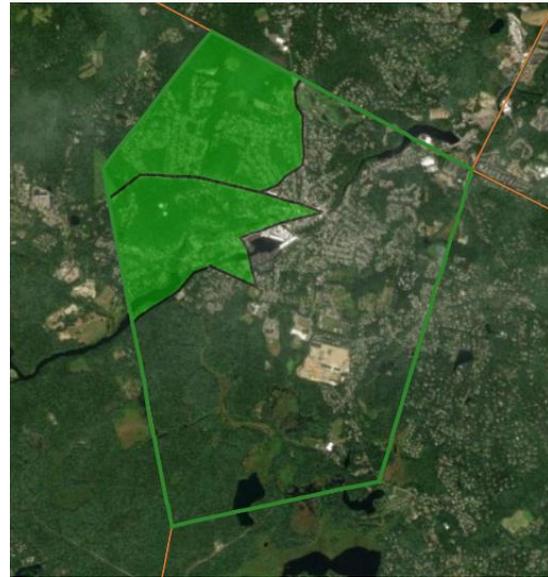
Examples of Identified Features/Assets

- Environmental
 - School Woods, Rockland Avenue Ball Fields, White Pond, Cemetery Woods/Vernal Pool Complex, Urban/Rural Tree Canopy, Assabet River, Assabet River Wildlife Refuge

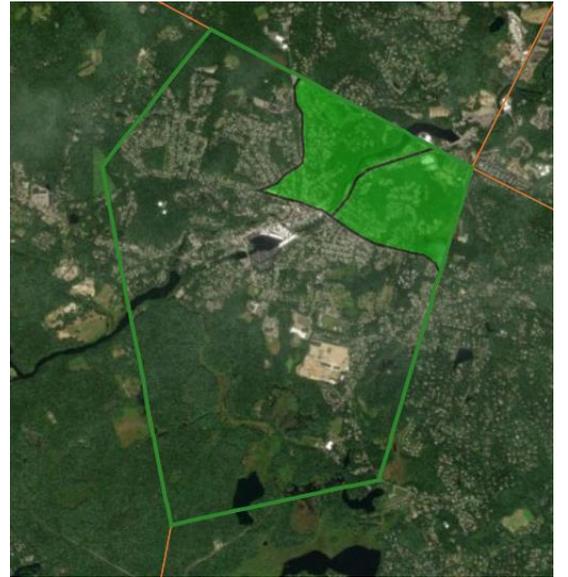




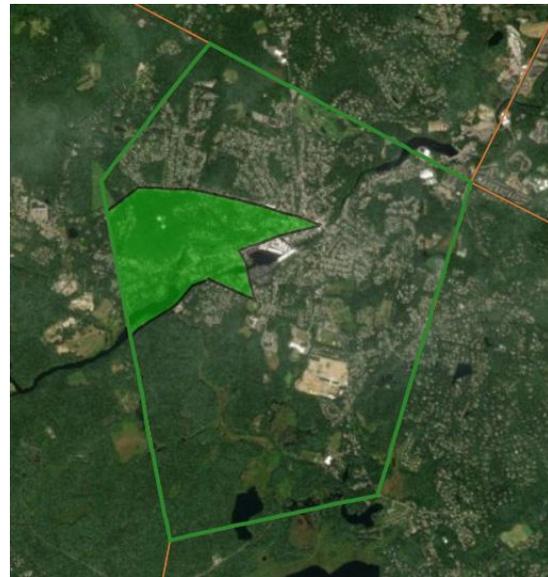
Population Distribution



Senior Population (65+)



Households in Poverty



Minority Population



Employee Concentration

Examples of Identified Vulnerabilities

- **Infrastructural**
 - Water treatment facilities/filtration plants are in flood zones
 - Some bridges are structurally deficient and/or along evacuation routes
- **Societal**
 - Vulnerable populations (e.g., seniors) located in flood zones
 - Downtown employees lack of proper emergency communication channels
- **Environmental**
 - Vernal pools in Cemetery Woods are susceptible to drought effects
 - Flooding at White Pond could cause water quality impacts

Examples of Identified Strengths

- **Infrastructural**
 - Majority of sewer pump stations have back-up power sources
 - Backup communications at Town Hall and/or Police/Fire channel
- **Societal**
 - Emergency Management Registry for emergency management and communications
 - Open Table provided food supplies to residents in need
- **Environmental**
 - Soccer Fields on Rockland Avenue provide for flood storage
 - Urban/Rural Tree Canopy mitigates the heat island effect

OVERVIEW OF THE FINDINGS -

Priority Actions for Enhanced
Community Resilience

Overall Priority Actions - Infrastructural

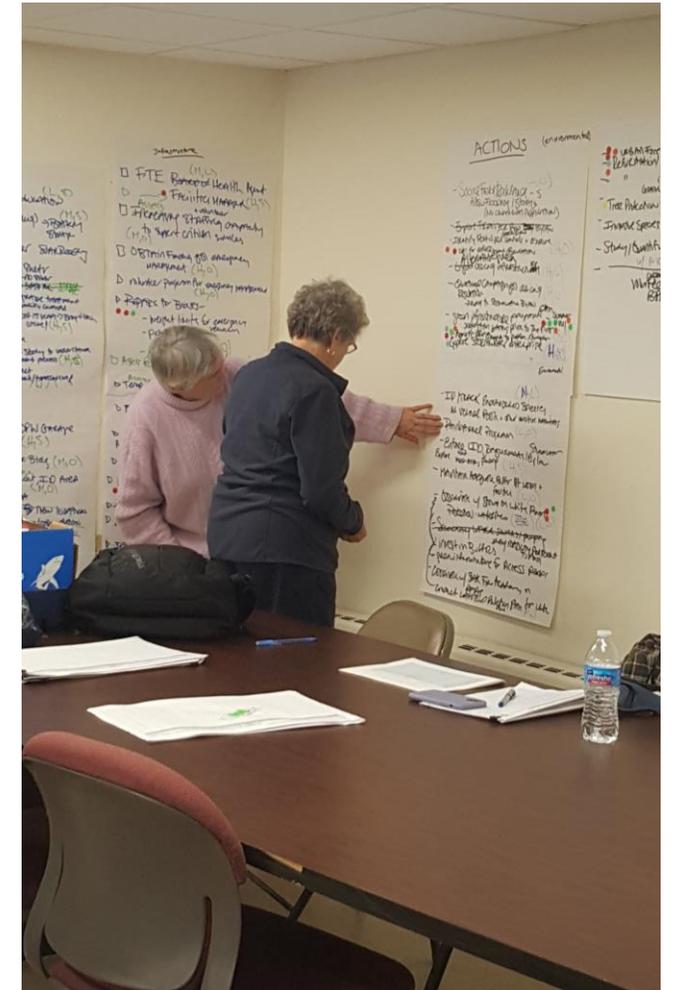
- Upgrade treatment facilities and processes to adapt to changes in water quality and quantity.
- Perform upgrades at sewer pump stations, including acquiring back-up parts and equipment; redesign such infrastructure for redundancy.
- Conduct condition assessments and perform repairs for existing bridges.
- Build a new DPW Garage facility; re-locate it away from the Assabet River and Taylor Brook.
- Secure funding for sewer collection system improvements (infiltration and inflow repairs).

Overall Priority Actions - Societal

- Prepare a performance assessment of the Town's outreach and resources available to address language/speech and mobility needs for residents.
- Apply for funding to complete a hazard mitigation plan.
- Update the American with Disabilities Act ("ADA") Plan with a self-assessment.
- Promote social connections within neighborhoods to support emergency communications.
- Assess the potential to repair existing and/or install new publicly-accessible drinking water fountains (i.e., water bubblers).
- Explore opportunities and potential sites for a publicly-accessible splash pad.

Overall Priority Actions – Environmental

- Explore a stormwater enterprise fund.
- Develop an urban forestry management plan.
- Coordinate with the Town of Stow on White Pond watershed protection.
- Implement reforestation in urban areas for heat mitigation.
- Identify and track endangered species at vernal pools and other sensitive habitats.
- Introduce tree protection bylaws.



Participant Questions and Answers

Questions to Provoke Discussion

- What are your biggest concerns?
- In your opinion, what are the most important recommendations?
- Were there any surprises or findings at odds with your understanding?
- Do you see other opportunities or chances for synergies with existing/planned efforts?
- Are there areas where you would like to see more information/analysis?



Next Steps and Adjourn

Next Steps and Adjourn

- Become a Designated MVP Community
- MVP Action Grant Pursuits

<https://www.townofmaynard-ma.gov/2020/06/11/mvp-grant-jun22/>

Thank You!

Further Questions and Comments can be sent to:

Justin DeMarco | jdemarco@townofmaynard.net

Wayne P. Amico, PE | wamico@townofmaynard.com