



Town of Hadley Municipal Vulnerability Preparedness (MVP) Project Public Listening Session



Agenda

- MVP Program Overview
- Hadley Climate Projections
- Workshop Results
 - Goals
 - Top Hazards, Challenges, Strengths
 - Prioritized Recommendations
- Next Steps



MVP Program Overview

ENVIRONMENTAL BOND 2018



- **\$2.4 billion bond bill with focus on climate change resiliency**
- **Over \$200 million for climate change adaptation**
- **Provides funding for the MVP Program**

Source: <https://www.mass.gov/files/documents/2019/07/16/mvp-grant-program-overview-2019-mvp-vendor-training.pdf>

MVP Program Overview

Obtain Planning Grant



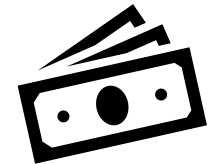
Complete Workshop

- Identify Actions to Address Vulnerabilities
- Write Report



Become Certified MVP Community

- Eligible for Grant Funding to Implement Actions

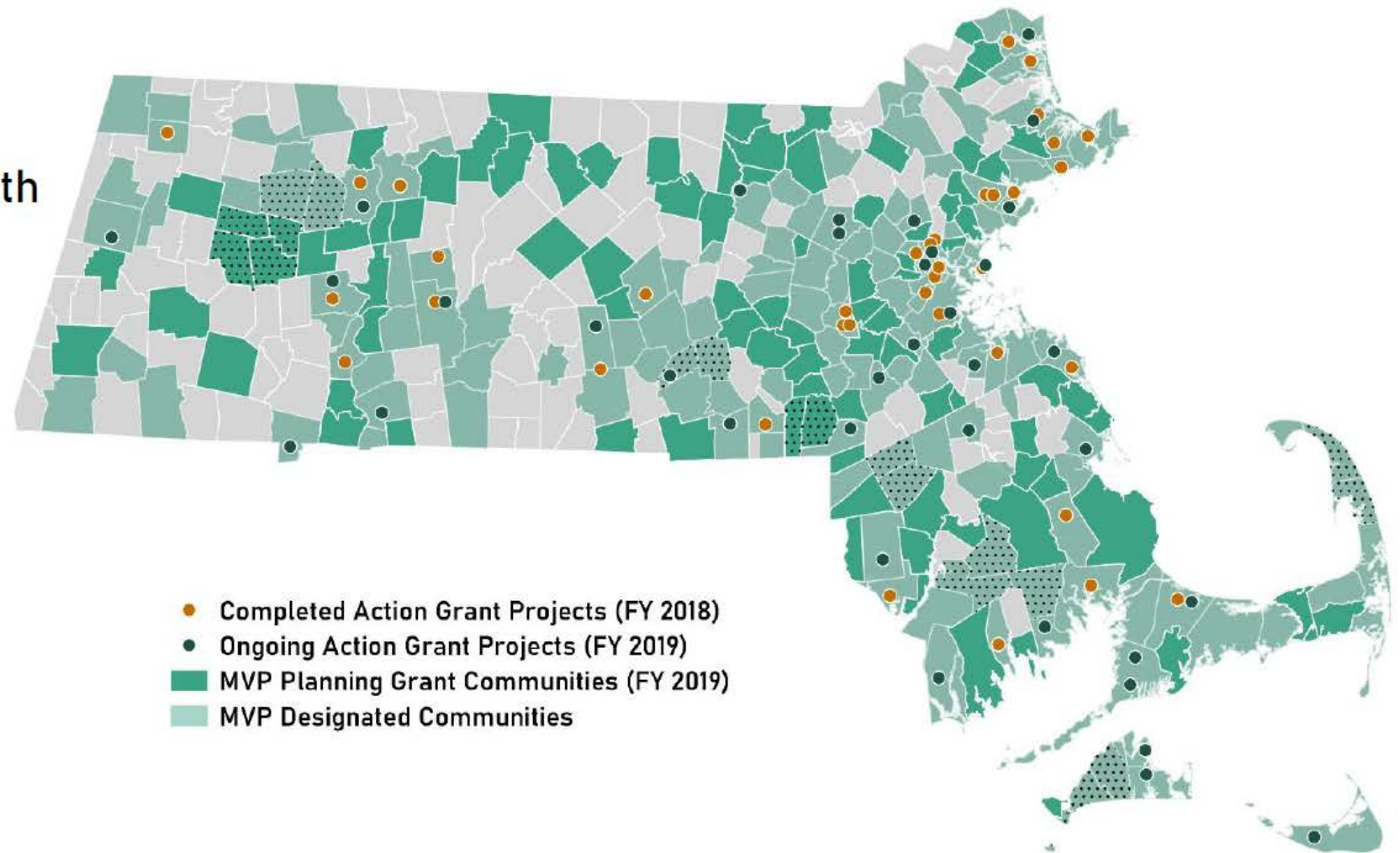


Three Years of MVP

MVP Designations
71% of the Commonwealth
249 communities

Action Grant Projects
FY 18: 37
FY 19: 36

Total Awards
\$17M+ in planning and
action grants to date



MVP Action Grants: Project Types

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



* Most common project type

** Second-most common project type

***Third-most common project type

MVP Action Grants: Project Types (cont.)

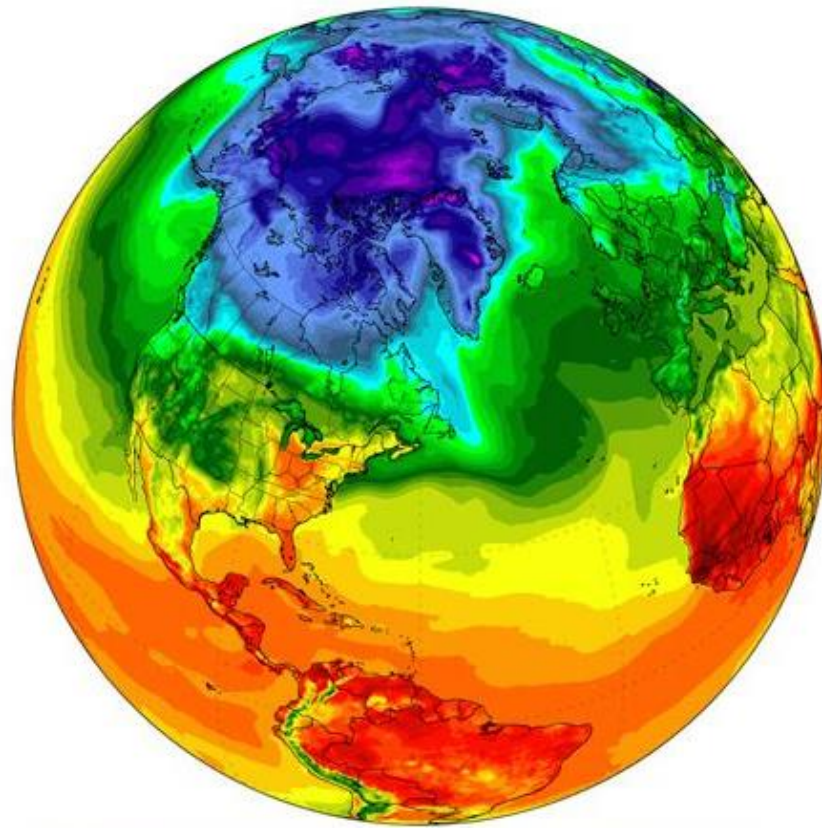


- Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impacts
- Ecological Restoration and Habitat Management to Increase Resiliency

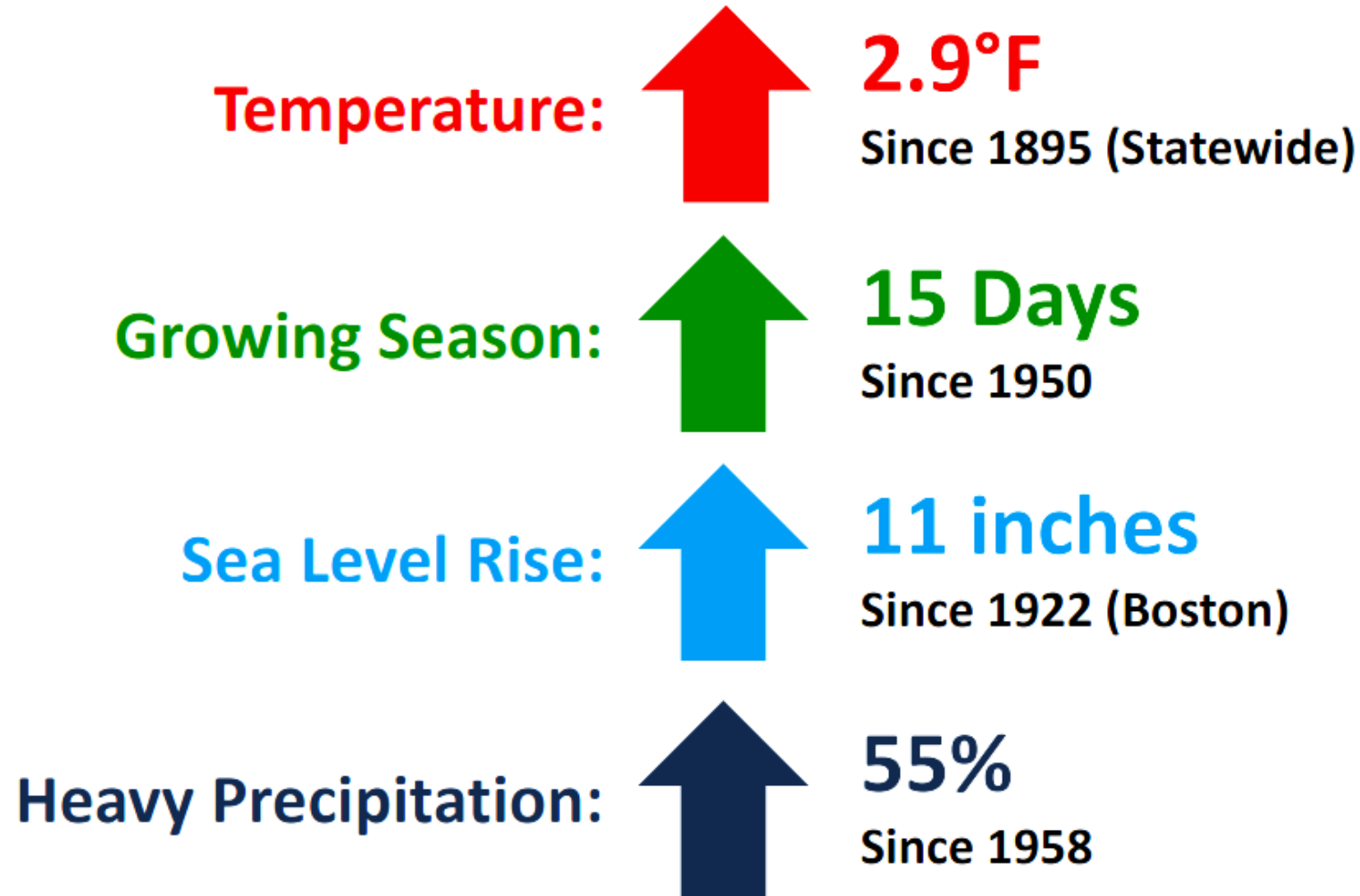
NEW IN 2019

- Energy Resilience
- Chemical Safety
- Land Acquisition for Resilience
- Subsidized Low-Income Housing Resilience Strategies
- Mosquito Control Districts
- + Expanded eligibility of project location

Climate Projections

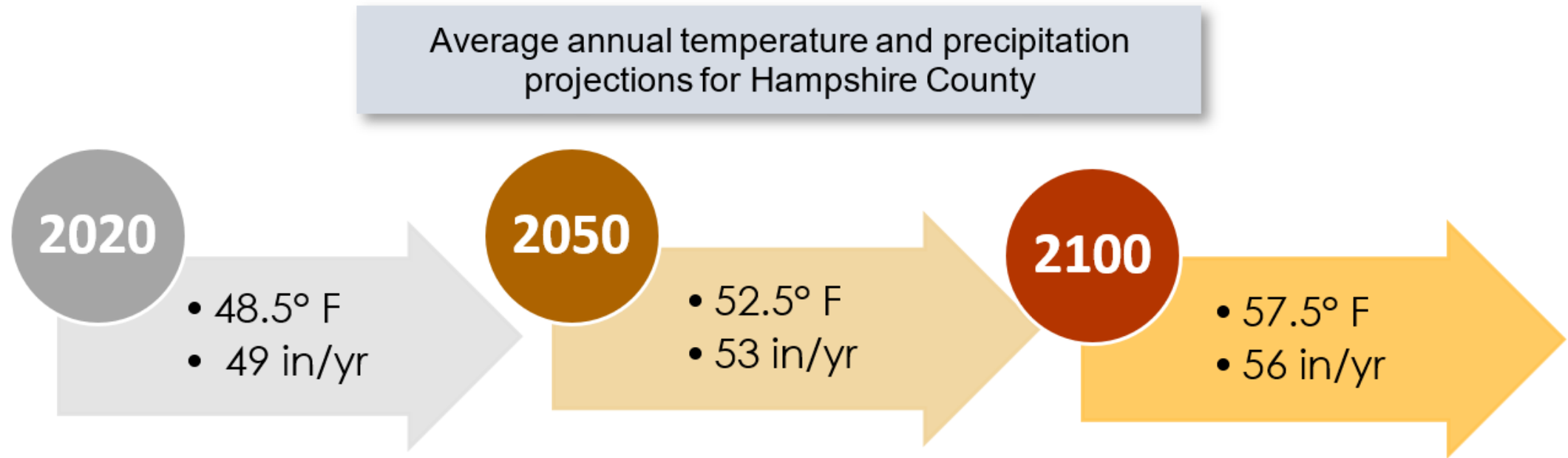


Massachusetts Observed Climate



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

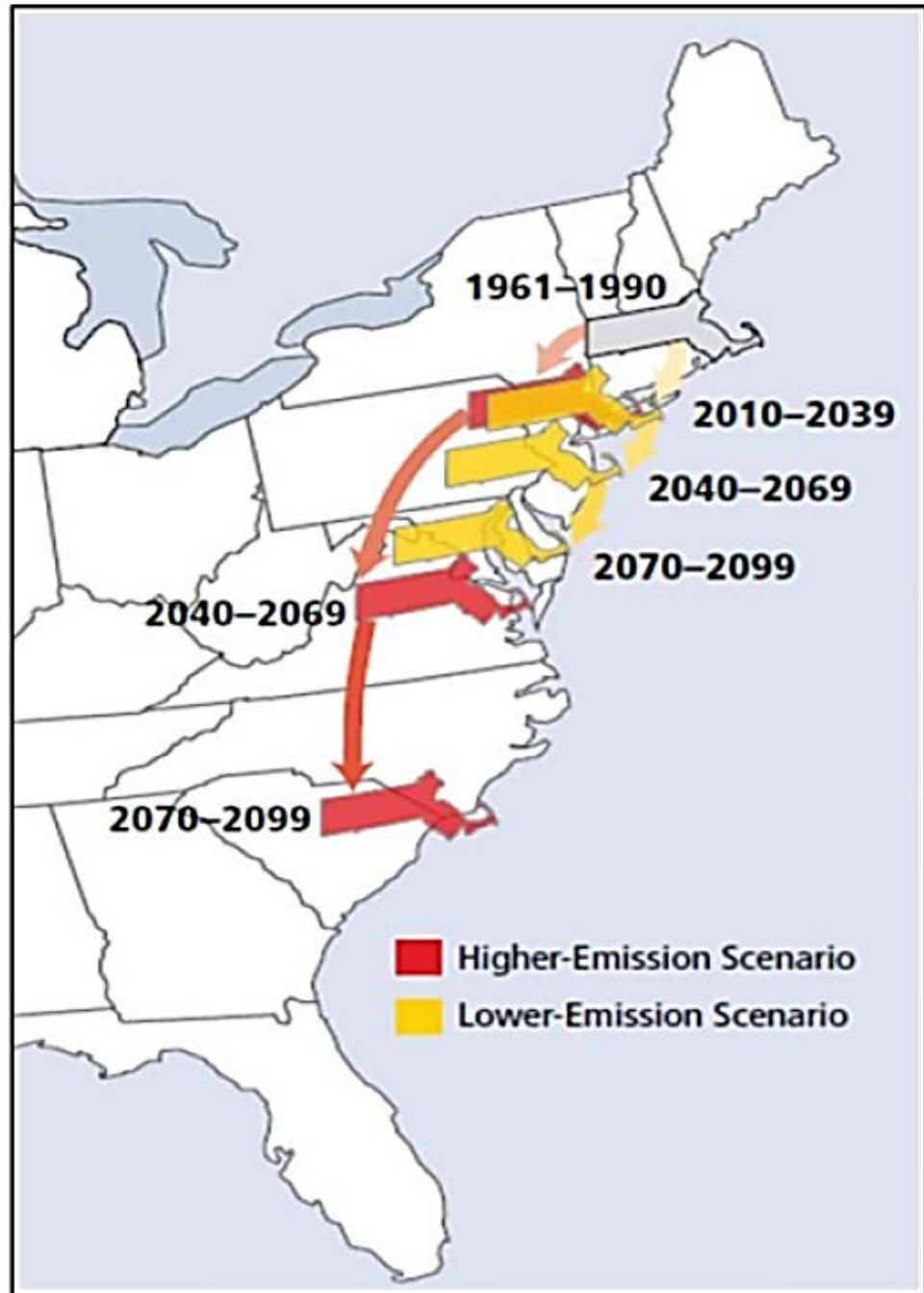
Hadley Projected Climate



Source: <http://resilientma.org/>

What do these Projections Mean?

(relative to temperature)



Potential Consequences of Climate Change



Changes in precipitation

- Inland flooding
- Drought



Rising Temperatures

- Wildfires
- Invasive species/pests



Extreme Weather

- Hurricanes/tornadoes
- Severe winter storms



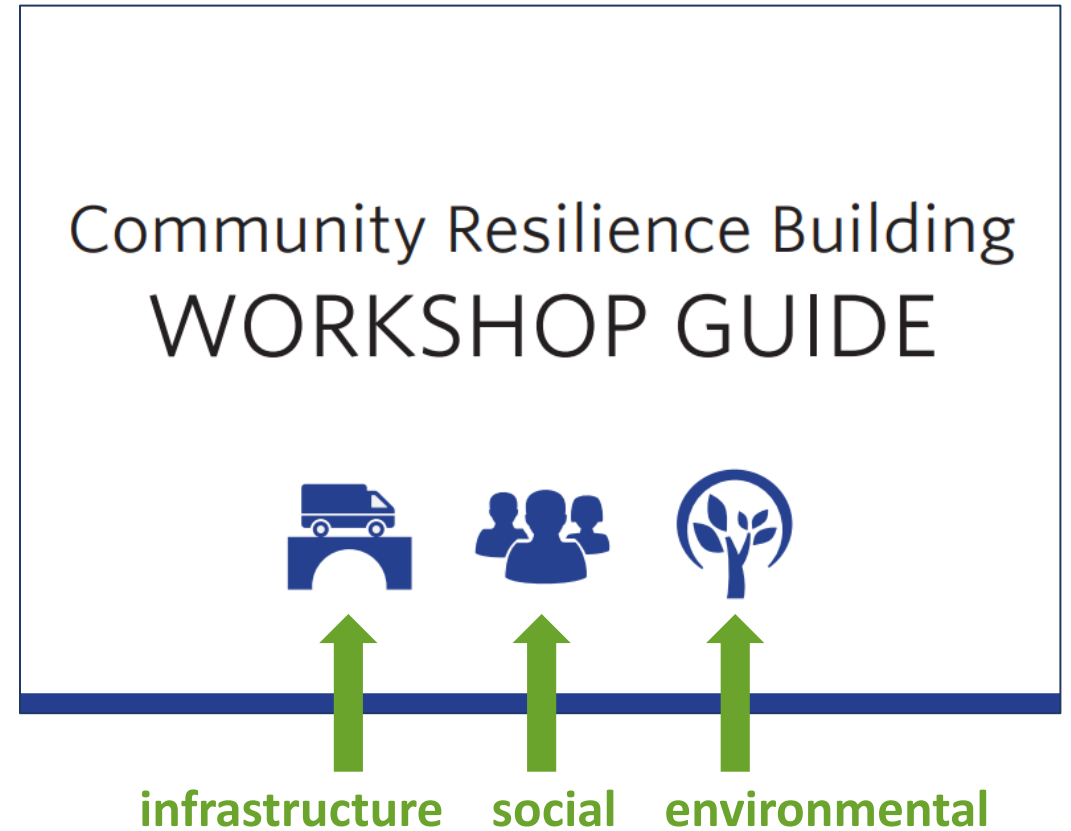
Human-induced hazards

- Loss of habitat/floodplains
- Overuse of fertilizers/pesticides

CRB Workshop Purpose

Use Community Resilience Building Workshop Guide to:

- Complete **baseline assessment** of climate change and natural hazard vulnerability
- Develop **specific actions** to address priority hazards/vulnerabilities



communityresiliencebuilding.com

CRB Workshop Goals



Workshop Results

(Workshop Held on January 7, 2020)

Town of Hadley – MVP Core Team
Chris Okafor, Director of Public Works
Janice Stone, Conservation Commission
William Dwyer, Planning Department
Tim Neyhart, Building Inspector
David Nixon, Town Administrator

Workshop Attendees

Name	Department/Committee	Team
Edwin Matuszko	Conservation Commission	Red
Michael Spanknebel	Fire Department Chief	
Chris Okafor	Dept. of Public Works Director	
Amy Fyden	Finance Committee	
Toni Lyn Morelli	Conservation Commission/UMass	
David Nixon	Town Administrator	
Jennifer Sanders James	Conservation Commission	
Jim Maksimoski	Planning Board	Yellow
Anne McKenzie	School Department	
Molly Keegan	Select Board	
Janice Stone	Conservation Commission	
Michael Romano	Police Department	
Hayley Wood	Council on Aging	
Drew Hutchinson	Hadley Media	
Bob Hartzel	CEI	Facilitators
Elisha Musgraves	CEI	
David Roman	CEI	



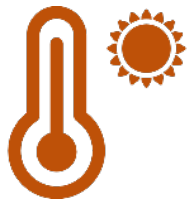
Top Hazards



Flooding: Historical flooding has caused property damage and has led to closures of critical roads.



Strong Storms: Heavy rainfall, high winds, winter storms with potential to damage infrastructure and other physical, social, and environmental consequences.



Drought: Future occurrences of drought are predicted to increase - a top concern for its potential to disrupt agriculture.



Community Resilience Building Risk Matrix



www.CommunityResilienceBuilding.org

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.)

H-M-L: Priority for action on the Short or Long term (and Ongoing)				Priority		Time																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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STRONG

Vulnerability Assessments / public Ed. / Bylaws / Prodesign + Retrofit / Nature Based solutions / Ecological Restoration / Land Acquisition



Concerns / Strengths

Form (and Ongoing)

Top Priority Hazard

Top Hazards

(drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S					Actions	
Infrastructural									
Hadley Dike	Aqua Vitae	Public Access: Private	V/S	Repair existing issues (i.e. widen base); extend dike structure up unprotected shore				H	S/L
Aging culverts	Multiple	Both	V	Redesign and retrofit failing culverts				H	O
Major transportation corridor	Rt-9, 47s, Rocky Hill Road	Public	V	Town-wide vulnerability analysis on stormwater drainage and potential solutions along Rt 9 and Rt 47				H	O
Water treatment plants and pumping stations	Bay Road, West, Middle, Rt-9	Town	S	Assessment on floodproofing feasibility	Feasibility assessment for alternative water source			M	O
Wastewater treatment plant in wellhead protection zone	Middle	Town	V/S	Assesment to: Redesign pumping stations to be above flood levels, move treatment facility, etc.				H	L
UMass Facilities and Amherst WWTP within Hadley	Stockbridge St	Private	V/S	Continue to coordinate with UMass and Amherst Town				M	O
North Hadley Fire Station	River Dr	Town	S	Redundant 911 coverage; keep as emergency shelter					O
Commerce/Industry	Russell St	Private	V/S	Partner with industry on Rt 9 as potential alternative emergency shelters/ community assistance				M	O
Societal									
Senior housing / nursing home	Golden Court	State	V	Work with owners to develop/assimilate site evacuation plans				M	O
Greenleaves Retirement Community	Greenleaves Drive	Private	V	Temporary floodproofing measures				M	O
Windfield Apartments	Greenleaves Drive	Private	V/S	Temporary floodproofing measures				M	O
Schools (Emergency Shelters) -Hartsbrook, Hopkins, Elementary, PVCICS	Multiple	Both	V/S	7 acres available for stormwater retrofit feasibility study behind Middle Street (i.e. water harvesting for sport fields)				L	L
Safety complex - flood risks	15 East Street	Town	V/S	Publicly owned open space in proximity, evaluate stormwater controls and potential retrofit				L	L
Mountain View Apartments (75 Units, HUD)	21 Campus Plaza Rd	Private	V/S	Revisit potential town-wide mandate for private housing complexes to develop emergency plans				M	O
Environmental									
Connecticut River banks - illegal seasonal camping		Both	V/S	Enforce bylaws along bank (i.e. tree clearing)	Form interdepartmental coalition to understand/manage situation			H	S
Norrotuck rail tail	Russell St	State DCR	V/S	Address issues with intersection w/West St; retrofit roadway with speed humps				M	S
Upstream river control communication			V	Contact neighboring communities with upstream/downstream dams about a regional dam control program				L	O
Kestral land acquisition		State	S	Stay on task to continue identifying and acquiring key parcels, especially near waterfront				L	O
Brush fires --> wildfires (Chmura Road)	Moutains (Mt Holyoke)	Private	V		Develop brush burning management plan with DCR			L	O
Invasives (oriental bittersweet)			V	Work with UMass to develop content for education/outreach/connection - citizens, high school, undergrad				M	O

TOP RECOMMENDATIONS

- HADLEY DIKE - REPAIR & EXTEND
- ALONG CULVERTS - REPAIR & REPAIR
- STUDY ON SW DRAINAGE - R19, R19, R19, R19
- RIVER BYWAY ENHANCEMENT - INTERMEDIATE CULVERT
- S. MAJOR ST & MAJOR ST
- AL TOWN DEPTS - INTERMEDIATE CULVERT
- WATER

1A5

Top Concerns: *Infrastructure*



■ Stormwater Infrastructure

- Undersized/aging culverts – road flooding
 - Agricultural ditches requiring maintenance (need easements)
 - Leaching catch basins installed in poorly drained soils
-

■ Hadley Dike

- Multiple sections require repair
 - Sections on private property cannot be accessed for repairs
 - Does not provide flood mitigation northeast of Bay Road
-

■ Water Supply

- Water Treatment Plant (WTP) is located in Fort River floodplain - vulnerable to outages caused by future storms
 - Water main on S. Maple Street has inadequate capacity for fire control
-

■ Wastewater Treatment Plant

- Wastewater Treatment Plant is in Zone II for public drinking supply – potential contamination risks from by increased flooding

Top Concerns: *Societal*



- **Bylaw Enforcement in Wetlands /Floodplains**
 - Frequency of waivers for developments with wetland/floodplain impacts

- **Flood Isolation Risks to Major Transportation Corridors**
 - Flooding at key routes (Rt. 47; Rt. 9 and Calvin Coolidge Bridge); undersized infrastructure

- **Vulnerable Communities**
 - Senior /low-income populations may not have adequate access to Code Red alerts, AC
 - Town Safety Complex located in floodplain

- **Agricultural Drought Irrigation**
 - Long-term viability of Hadley farms could be at risk without reliable irrigation source for future droughts.

- **Seasonal Campsite Use of Connecticut River Banks**
 - Unpermitted campsites (approx. 100) in vicinity of Sandy Beach on the southern bank of the Connecticut River

Top Concerns: *Environmental*



- **Forest / Wetland Management**
 - Brush fires (conservation land near Chmura Rd.)
 - Invasive pest risks to crops / forests

- **Land Conservation / Habitat Protection**
 - Roughly 1/3 of Hadley is rare species habitat or supporting landscape (*esp. north/south boundaries*)
 - Many private parcels within Connecticut River floodplain – important to protect long-term function of floodplain

- **Water Quality**
 - Lake Warner nutrient impairments / algal blooms

- **Air Quality / Dust**
 - Lack of cover crops on fallow fields can cause air quality/dust issues during dry periods / drought

Top Strengths



■ Emergency Services:

- Excellent response track record and inter-department coordination

■ Conservation Areas:

- 2,500 ac of Town/State Conservation Land and Open Space
- 3,300 ac protected farmland

■ Local Partnerships:

- Good past regional planning coordination with PVPC and Pioneer Valley communities
- UMass – important source of public education/outreach

Top Recommended Actions

1. Hadley Dike: Repair, Maintain, Expand

■ Problem:

- Multiple sections require repair
- Sections on private property not accessible for repairs
- Does not provide flood mitigation northeast of Bay Road

■ Solution:

- Obtain permanent easements for repairs/maintenance
- Conduct feasibility assessment for dike extension along Bay Road

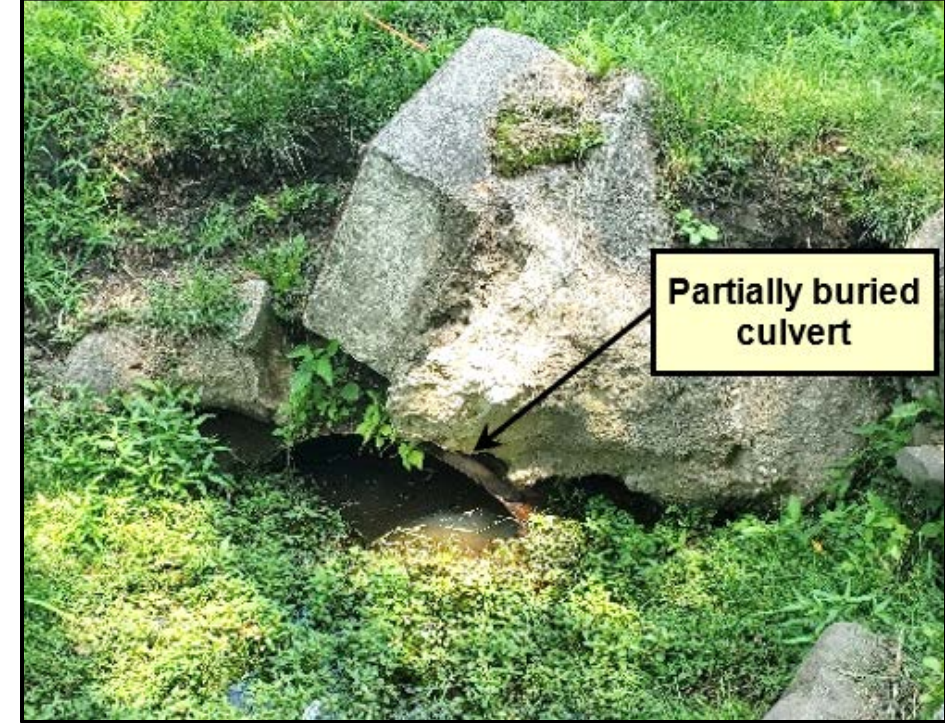


Top Recommended Actions

2. Stormwater Infrastructure

■ Assess:

- Expand previous study to include a comprehensive resiliency assessment of Town drainage infrastructure.
- Prioritized recommendations for repairs / replacements.



■ Maintain:

- Obtain approvals (incl. easements) to maintain key stormwater infrastructure

■ Replace Key Culverts

- Engineering feasibility analysis, permitting, engineering design, and construction

Top Recommended Actions

3. Connecticut River Banks: Alternatives to Unpermitted Campsites



- **Assess alternative safe locations for seasonal population that are safe from floods, legal, and without environmental impacts.**
 - Establish interdepartmental committee to collaborate with area land owners, migrant farm worker representatives and other community stakeholders.
 - Develop equitable solutions that prevent further environmental damages, without displacing socially vulnerable populations in Hadley.

Other High Priority Actions

- **Town WTP and WWTP are in Fort River floodplain = vulnerable to flood impacts**
 - Assess potential floodproofing measures
 - Assess Mt. Warner wells as alternative water source
(incl. pump testing, WQ testing, concept design, treatment piloting)
- **Replace S. Maple Street water main (10,000 lf) to accommodate fire control flows**
(incl. engineering, permitting, construction)
- **WWTP (in Zone 2): Conduct study to assess potential water quality impacts.**
- **Develop interdepartmental emergency communication plan**



NEXT STEPS

- MVP Community Designation
- Implement Prioritized Recommendations
- **Apply for Action Grant Funding**
(late April 2020)

Questions / Comments

- Take the Feedback Survey!

<https://arcg.is/1nDrX9>



- Contacts:

Chris Okafor (DPW Director): okaforc@hadleyma.org

Bob Hartzel (CEI): rhartzel@ceiengineers.com

