



Municipal Vulnerability Preparedness Program



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MA Climate 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

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

Sea level rise

- 4-10.5 feet along the MA coast

Extreme weather

- Increase in frequency and magnitude

Executive Order 569 - 2016



- Comprehensive approach to reduce GHG emissions to combat climate change and prepare for the impacts of climate change
 - State Adaptation Plan
 - Climate Coordinators
 - Agency Vulnerability Assessments
 - Municipal Support

Environmental Bond - 2018



- \$2.4 billion bond bill with focus on climate change resiliency
- Over \$200 million authorized for climate change adaptation
- Codifies EO 569, including the MVP Program

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

Three Years of MVP

MVP Designations

71% of the Commonwealth

249 communities

Action Grant Projects

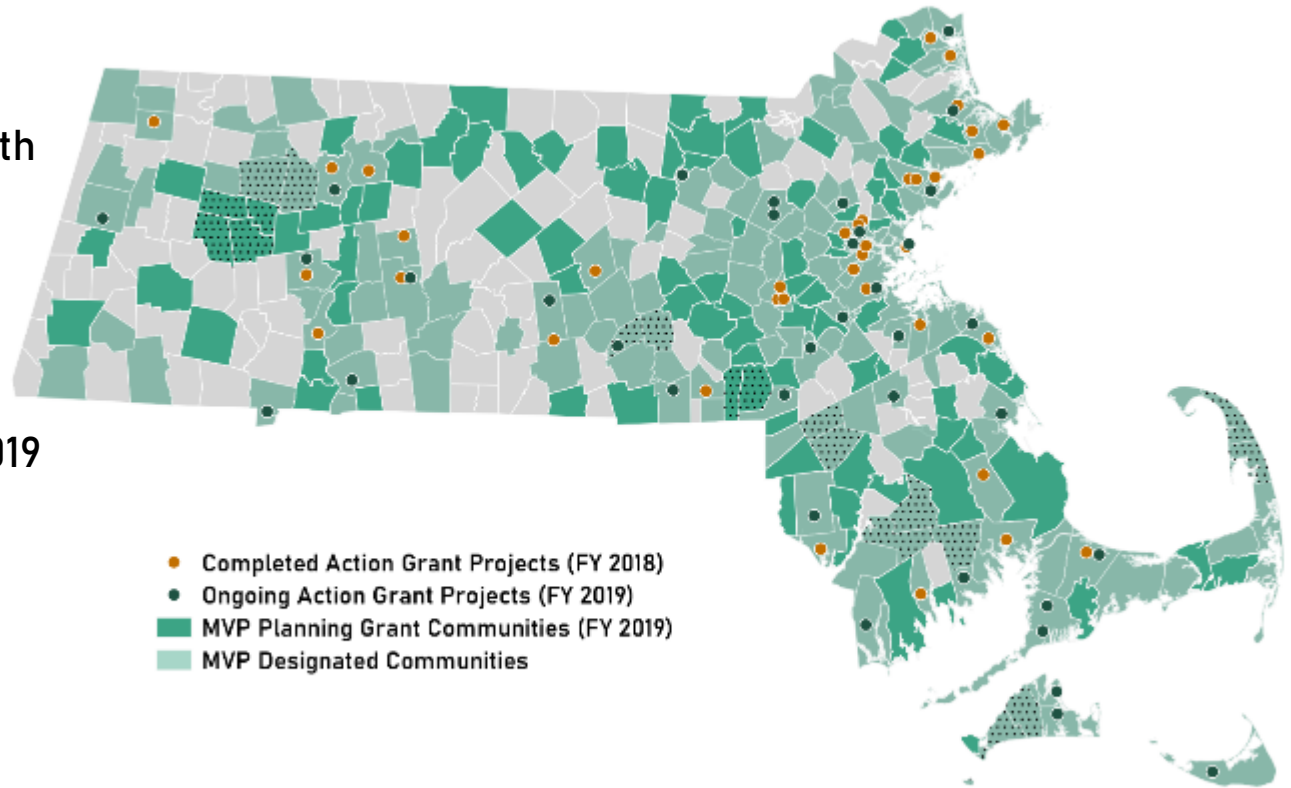
FY 18: 37

FY 19: 36

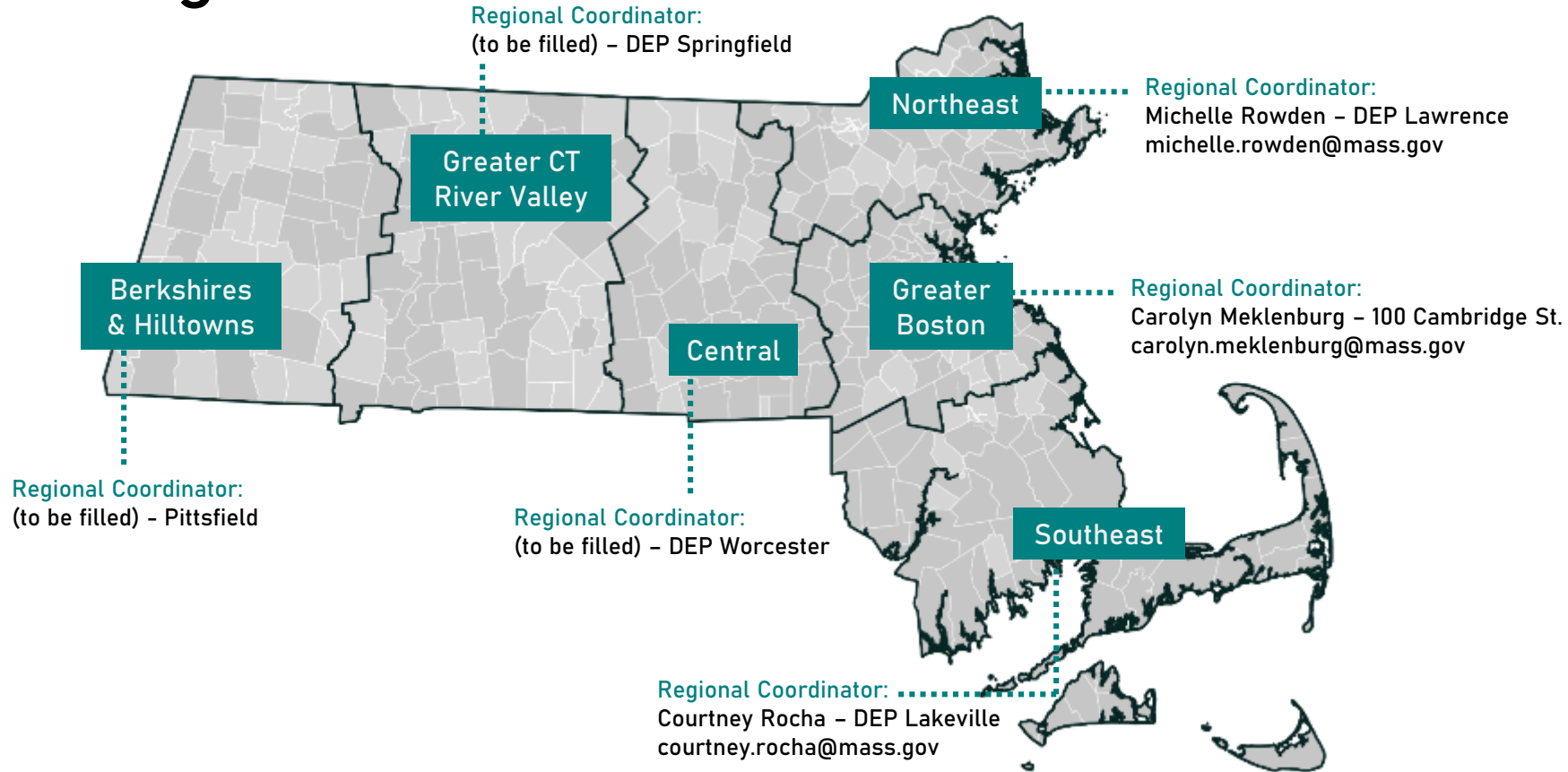
FY 20: Released Sept. 2019

Total Awards

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



MVP Regions



MVP Principles

A community-led, accessible process that

- Employs local knowledge and buy-in
- Utilizes partnerships and leverages existing efforts
- Is based in best available climate projections and data
- Incorporates principles of nature-based solutions
- Demonstrates pilot potential and is proactive
- Reaches and responds to risks faced by EJ communities and vulnerable populations



Why nature-based?

Where appropriate, nature-based solutions can be more cost-effective, protect water quality and quantity, sustain lands that provide food and recreation opportunities, reduce erosion, and minimize temperature increases associated with developed areas and climate change.

MVP Resources



MVP Planning Grant

- RFR open end of Sept 2019, rolling until mid-January
- \$15,000- \$100,000 per plan, completed by 6/30/2020
- Some expanded scopes
- *\$1M available*



MVP Action Grant

- RFR open end of Sept 2019, closes 6 weeks later
- Open to MVP communities
- \$25,000- \$2M per project, completed by 6/30/2020 or 6/30/2021
- *\$10M available annually*

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

Submit regular progress reports

Findings inform State Adaptation Plan

Role of Municipality

- **Procure** a state certified MVP provider
- Establish a **core team**
- Work with MVP provider to **identify and engage stakeholders**
- **Commit** to continue municipal outreach and engagement
- **Use the completed plan** to inform existing planning and project activities



Statistics from FY19 Round – Planning Grants

\$2.2 million in
total funds
awarded

92
communities
awarded

Average grant
was \$27.5K

MVP ACTION Grant

**Implement priority
adaptation actions
identified through the
planning process**

**Clearly demonstrate
how you're
incorporating climate
change data to
redesign and
reconsider**

**Utilize nature-based
solutions and reach
EJ communities**

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
- + Expanded eligibility of project location

Statistics from FY19 Round – Action Grants

\$26 million in total
funds requested by
all applicants

\$12 million in
funds awarded to
36 projects

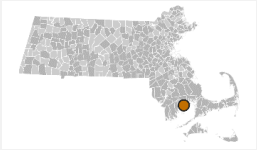
32 projects not
funded

Average grant was
\$390,000

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



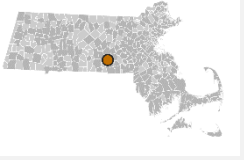
Data utilization

Proactive

Example Action Grant Projects

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

Millbury



Utilizing green infrastructure like stormwater planters, bioretention bump outs, rain gardens, and other measures like porous pavers and pervious pavement to reduce heat island effects and stormwater runoff into the Blackstone River.

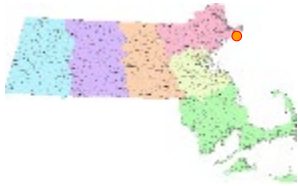


Nature-based solutions

FY18 Action Grant Projects

Flood Mitigation, Ecological Restoration, Redesign and Retrofit

Manchester By-The-Sea



Permitting and Design for Ecological Restoration and Habitat Management to Increase Resiliency

Project Goals:

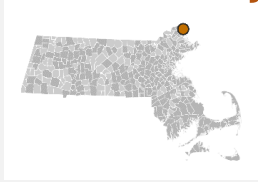
- Alternatives Analysis for Restoration Areas
- Evaluate Options for Stormwater Outfall
- Geotechnical Studies and Property Research
- Permitting Level Design
- Public Outreach



Example Action Grant Projects

Redesigns and Retrofits

Salisbury



Increasing the resilience of the neighborhood of Ring's Island by raising its access/egress roads and by improving tidal flushing through culvert replacements



Vulnerable communities

FY18 Action Grant Projects

Vulnerability Assessment and Analysis

Watershed and Water Supply Vulnerability, Risk Assessment and Management Strategy

Gloucester



MVP Grant: \$107,044

Match Amount: \$35,726

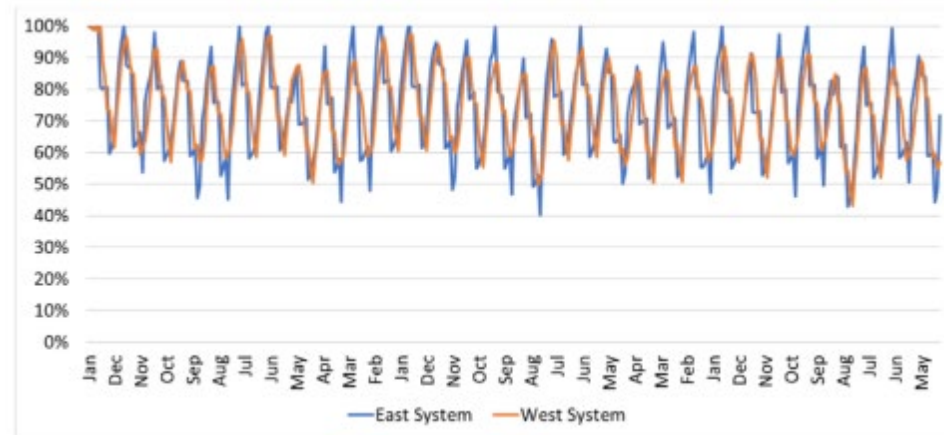
Total Project Cost: \$138,802

Project Objectives:

- Identify potential climate change related risks to the watershed and water supply system
- Assessment and analysis of alternative management strategies for the city's water supply and reservoir system, including watersheds
- Develop recommendations for management and infrastructure strategies to mitigate for identified risks to water supply reliability



Diagram of Land Management Alternatives to Reduce Risk of Fire and Landslide



Total Supply Available with Operational Changes Implemented

Next Steps: Climate Change & the Commonwealth

Bill S.10:

An Act for Climate Change Adaptation Infrastructure Investments in the Commonwealth

- Building on success of existing programs like MVP: Proposed new source of revenue for loans, grants, and technical assistance to municipalities and regional partnerships for priority adaptation projects
 - Proposed deeds excise increase → est. \$137M annually (\$1B in ten years)
 - Recurring, long-term revenue stream for multi-year project feasibility





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<https://www.mass.gov/municipal-vulnerability-preparedness-program>

