



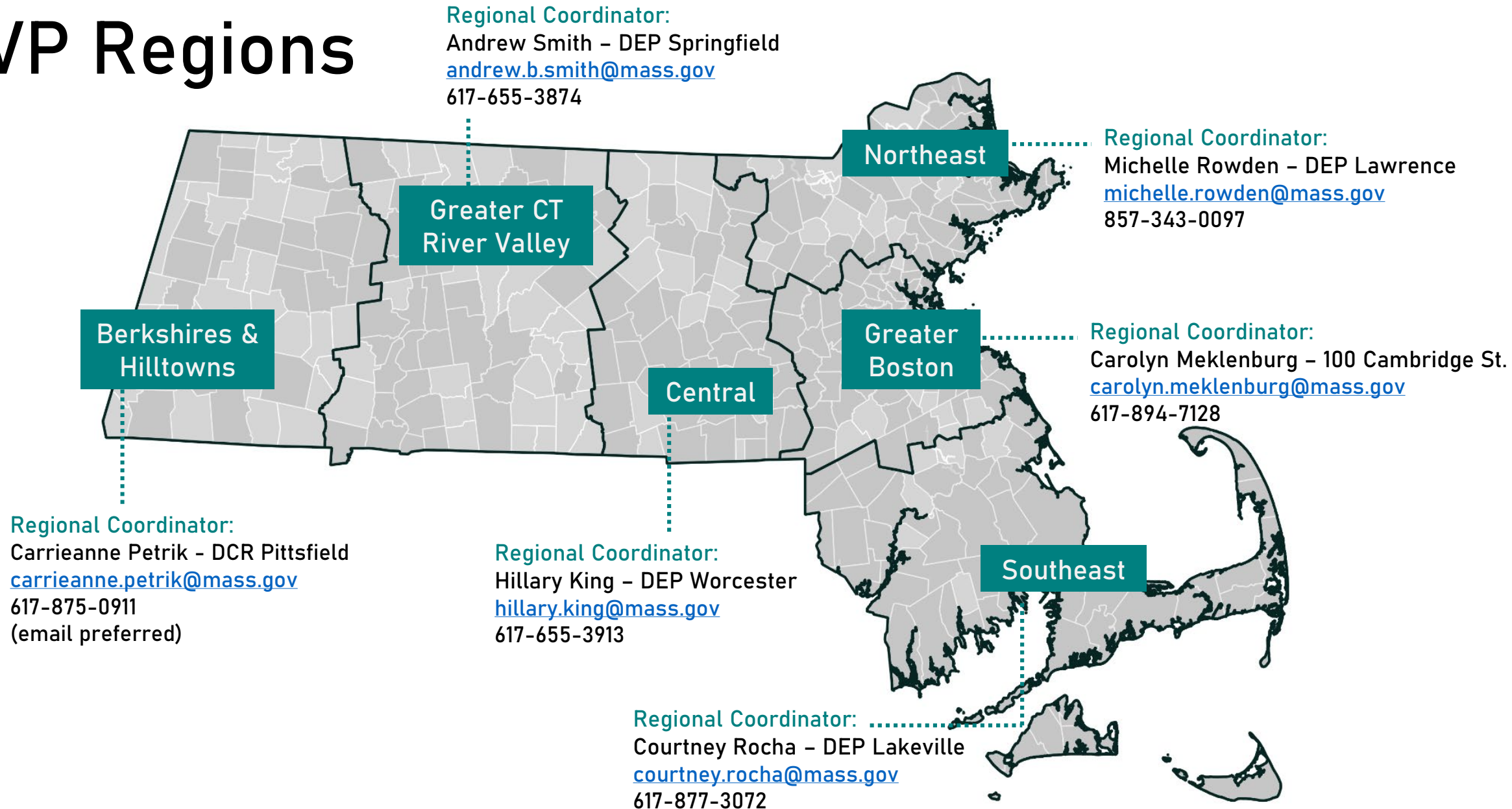
# Municipal Vulnerability Preparedness Program



MVP Staff Team: Kara Runsten, Carolyn  
Meklenburg, Michelle Rowden  
MA Executive Office of Energy and Environmental Affairs



# MVP Regions





# Agenda

- Overview of MVP Program: Carolyn
- Details on FY21 Planning Grant Round: Carolyn
- Details on FY21 Action Grant Round: Kara
- How to write a successful action grant proposal and case studies: Michelle
- Wrap up: Carolyn
- Q&A via chat function: Carrieanne facilitating



# The Climate is Changing

*By end of century:*

## RISING TEMPERATURES



- 10.8°F increase in avg annual temp.
- Up to 64 fewer days/year with min. temperatures < 32° F
- Up to 64 more > 90°F days/year

## CHANGES IN PRECIPITATION



- 18% increase in consecutive dry days
- 57% increase in days with > 1 in. rainfall
- 7.3 inches additional annual rainfall

## SEA-LEVEL RISE



- 4- to 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



# Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP)



Acknowledges that climate change is already worsening natural hazards, **integrating information and planning elements** for 14 natural hazards that affect the Commonwealth

## Implementation

- *State:* Resilient MA Action Team (RMAT)
- *Local Partnerships:* Municipal Vulnerability Preparedness (MVP) Program



# BUILDING CLIMATE RESILIENCE IN THE COMMONWEALTH

## CLIMATE MITIGATION

(GWSA & Green Communities)

- Energy conservation & efficiency
- Increased renewables in electric grid
- Onsite renewable energy
- Sustainable transportation / improved fuel efficiency
- Capture and use of landfill and digester gas
- Carbon sinks

## CLIMATE ADAPTATION

(EO 569 & MVP)

Utilizing climate projections in planning and design

- Water/energy conservation
- Microgrids
- Strategic electrification
- Storage for peak demand response
- Resilience hubs
- Risk & vulnerability assessments
- Structure retrofit/relocation
- Culvert upgrades
- Dam removal
- Adaptive resource management
- Land acquisition

## HAZARD MITIGATION

(SHMCAP, MEMA/FEMA)

- Dry floodproofing
- Dam rehabilitation
- Slope stabilization
- Removal or reduction of flammable vegetation
- Generators for critical facilities

## CROSS-CUTTING STRATEGIES:

- Smart Growth
- Community Outreach, Engagement and Education
- Building Code Updates (including development, enforcement, and public education)
- Green infrastructure
- Evaluating adoption and/or implementation of bylaws/ordinances that reduce risk and increase resilience





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.



# 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.





## Planning GRANT

RFR open late April 2020;  
Rolling until August 2020  
\$15,000- \$100,000 per plan  
completed by 6/30/2021  
Some expanded scopes  
*\$1M available*



## Action GRANT

RFR open late April 2020;  
Closes ~6 weeks later  
Open to MVP communities  
\$25,000- \$2M per project,  
completed by 6/30/2021 or  
6/30/2022  
*\$10M available*





# Three Years of MVP

## MVP Designations

82% of the  
Commonwealth  
287 communities

## Action Grant Projects

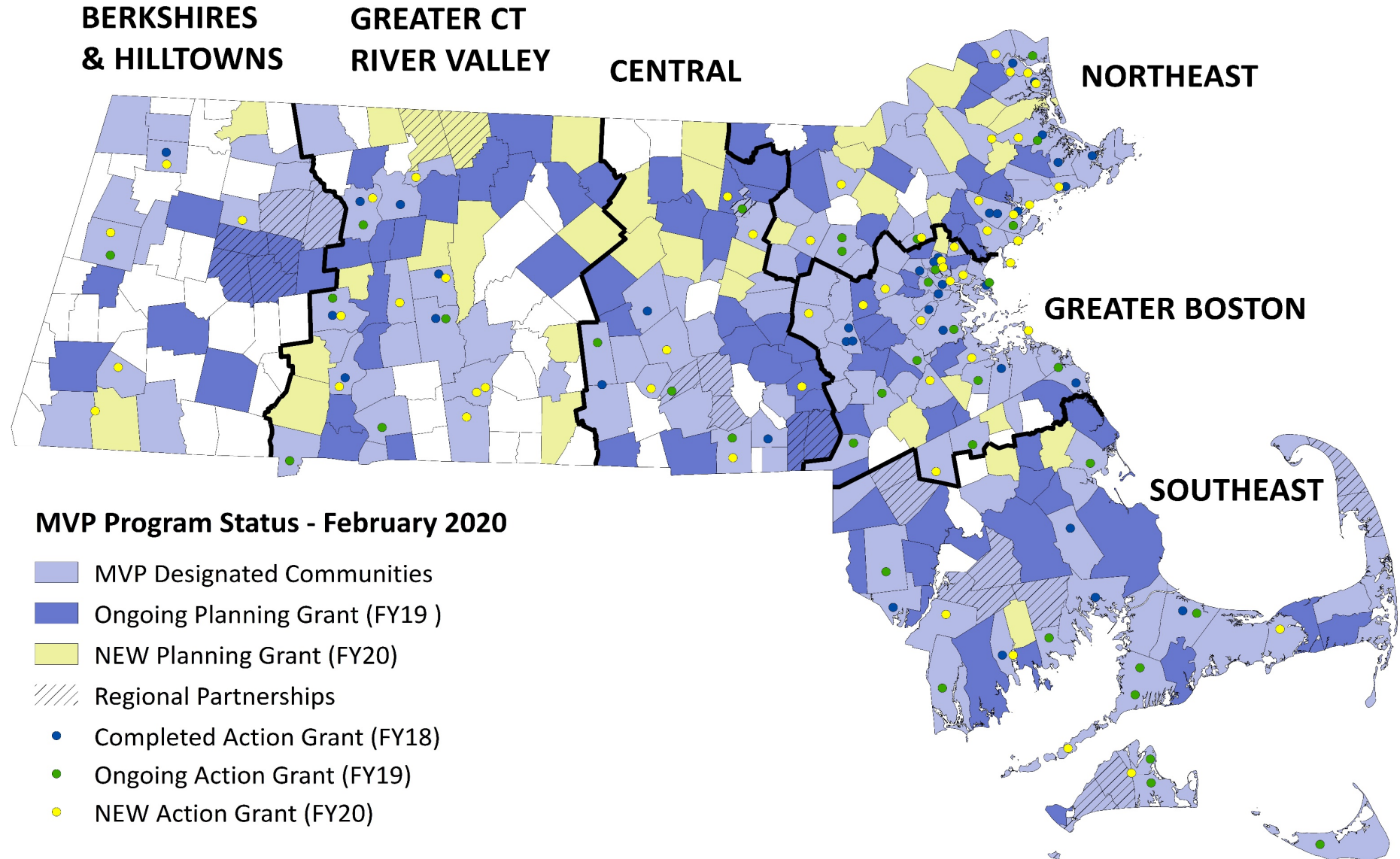
FY 18: 37

FY 19: 36

FY 20: 54

## Total Awards

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





# Planning Grants



# 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

*fundamental*

*As an MVP Community:*

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



# What's NEW in this FY21 round?

More examples of equitable engagement strategies that can be applied for through an Expanded Scope

- ✓ Childcare
- ✓ Translation services
- ✓ And more!



Created by Laura Amaya  
from Noun Project



# Details and Timeline



~\$1 million available  
Upfront payments



Submit applications  
by email



RFR release: Late April 2020

Applications due: Rolling until August 2020 (see RFR for details)

Award announcement: Rolling

Projects start: Anticipated July-September 2020

Projects end: June 30, 2021



# Planning Grant – Application Components

- ✓ **Cover sheet (appendix to RFR)**
- ✓ **Application (appendix to RFR), including:**
  - ✓ Signed letter of support from top municipal official
  - ✓ Statement of commitment
  - ✓ Name and qualifications of municipal project lead
  - ✓ Letters of support from key municipal/community partners
  - ✓ Description of how municipality will use results to inform other planning efforts
  - ✓ Description of status of Hazard Mitigation planning
  - ✓ Description of need to address climate change
  - ✓ Indication of presence of Environmental Justice Communities or other Climate Vulnerable Populations and how the municipality will involve these populations in the planning process
  - ✓ Details on any request for expanded scope funds (and accompanied by a completed scope and budget template attached to RFR)



# Action Grants





## Statistics From Last Round

---

111 applications

---

Over \$30 million requested

---

54 funded projects

---

Total funding \$10.5 million

---

Average grant size: ~\$195,000



# What's NEW in this FY21 round?

- More information on the MVP core principles that all proposals should embody
- Revised eligible project types to decrease redundancy and better highlight the climate resilience goals of the project type and example strategies
- Revised scoring criteria to better emphasize the core MVP principles
- A new requirement for design/construction projects to complete an attachment as part of the application to better ensure project success
- More guidance and requirements around public involvement and community engagement particularly with respect to Environmental Justice (EJ) Populations and Climate Vulnerable Populations
- Revamped appendices, including example previously funded MVP Action Grant projects and other potential funding sources/technical assistance that could be leveraged for each project type



# Project Types



Planning, Assessments, and Regulatory Updates



Nature-based Solutions for Ecological and Public Health



Resilient Redesigns and Retrofits for Critical Facilities and Infrastructure



# Details and Timeline



~\$10 million  
available

25% match required

Fully reimbursable  
model



Submit applications  
by email



RFR release: Late April 2020

Applications due: ~6 weeks after release  
(see RFR for details)

Award announcement:  
August/September 2020

Projects start: Anticipated September  
2020

Projects end: June 30, 2021 OR June 30,  
2022



# Action Grant – Application Components

- ✓ Completed application template (appendix to RFR)
  - ✓ **NEW** requirement for a public involvement and community engagement plan (part of application)
- ✓ Completed scope/budget template (appendix to RFR) with clear delineation between fiscal years
- ✓ MVP yearly progress report (appendix to RFR)
- ✓ **NEW** attachment for design and construction projects
- ✓ Statement of match (described in RFR)
- ✓ Letters of support from landowner (if applicable), partners, the public



Tasks to be Completed by June 30, 2021					
Task 0: Kick-off meeting with Town, EEA, and Consultant	Meeting notes, sign-in sheet	9/30/2020	N/A	N/A	N/A
Task 1:					
Sub-task 1.1			\$ -	\$ -	\$ -
Sub-task 1.2			\$ -	\$ -	\$ -
Sub-task 1.3			\$ -	\$ -	\$ -
Total Task 1 Cost			\$ -	\$ -	\$ -
Task 2:					
Sub-task 2.1			\$ -	\$ -	\$ -
Sub-task 2.2			\$ -	\$ -	\$ -
Sub-task 2.3			\$ -	\$ -	\$ -
Total Task 2 Cost			\$ -	\$ -	\$ -
TOTAL PROJECT COST FY21					
Tasks to be Completed by June 30, 2022					
Task 1:					
Sub-task 1.1			\$ -	\$ -	\$ -
Sub-task 1.2			\$ -	\$ -	\$ -
Sub-task 1.3			\$ -	\$ -	\$ -
Total Task 1 Cost			\$ -	\$ -	\$ -

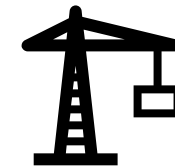
- Tasks should be clearly defined with reasonable deadlines
- If the project spans two fiscal years, there should be a clear distinction between the two years
- Tasks must be complete to request reimbursement- if you need to be reimbursed throughout the fiscal year, please break up your tasks in a manner that aligns with the schedule you'd like to be reimbursed on
- Applicants: Filling out the budget spreadsheet auto populates the scope. If you are switching around the budget spreadsheet and the auto fill isn't working correctly—feel free to just delete all the formulas



# New Design and Construction Attachment

Will include elements like:

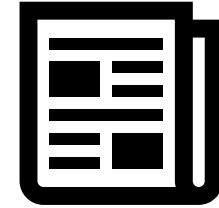
- Ownership of the project site, address, site photos, any preliminary plans
- Identification of anticipated approvals and agency coordination (e.g., does the project alter a wetland, trigger a MEPA threshold, etc.)
- Identification of permits required and status of obtaining them





# New Public Involvement & Community Engagement Requirements

- New attachment with best practices for community engagement
- Includes menu of options for print, digital, and in-person strategies with an emphasis on strategies that will increase engagement with EJ and Climate Vulnerable Populations that you could tailor to your project
- Opportunity to also create your own innovative strategies
- Application question will ask you to fill out a matrix with your proposed strategies and include details in a narrative and in the scope/budget document





# Competitive Evaluation Criteria

- **Project Description, Rationale, and Climate Data**
  - Why project was chosen, what the objectives are, how it will positively impact the community, how it fits in to a larger project, if applicable
  - Reflects priorities in MVP report and includes yearly progress report
  - Incorporates up-to-date climate science and data on future conditions
- **Nature-Based Solutions and Environmental Benefits**
  - How NBS is incorporated into the overall vision of project
  - Identification and description of environmental co-benefits of project
  - If an NBS solution was not chosen, can get partial points
- **Environmental Justice and Public/Regional Benefits**
  - Project located in and providing benefits to Environmental Justice Population, can get partial points for projects benefitting a Climate Vulnerable Population
  - Degree to which project has broad and multiple community benefits
  - Regional benefits



# Competitive Evaluation Criteria

- **Public Involvement and Community Engagement**
  - Follow guidance to complete a Public Involvement and Community Engagement Plan (matrix and narrative) consisting of print, digital, and in-person equitable outreach
  - Degree to which feedback will be incorporated into process and mechanism by which to share results
  - Tasks identified in plan should be incorporated into scope/budget
- **Project Transferability, Measurement of Success, and Maintenance**
  - Transferability of project to other communities
  - Measurement and monitoring of project success
  - Plan for maintenance or updates to project
- **Need for Financial Assistance**
  - Narrative of why funding is needed (to be combined with an assessment by EEA)
  - See RFR for specifics of information to include

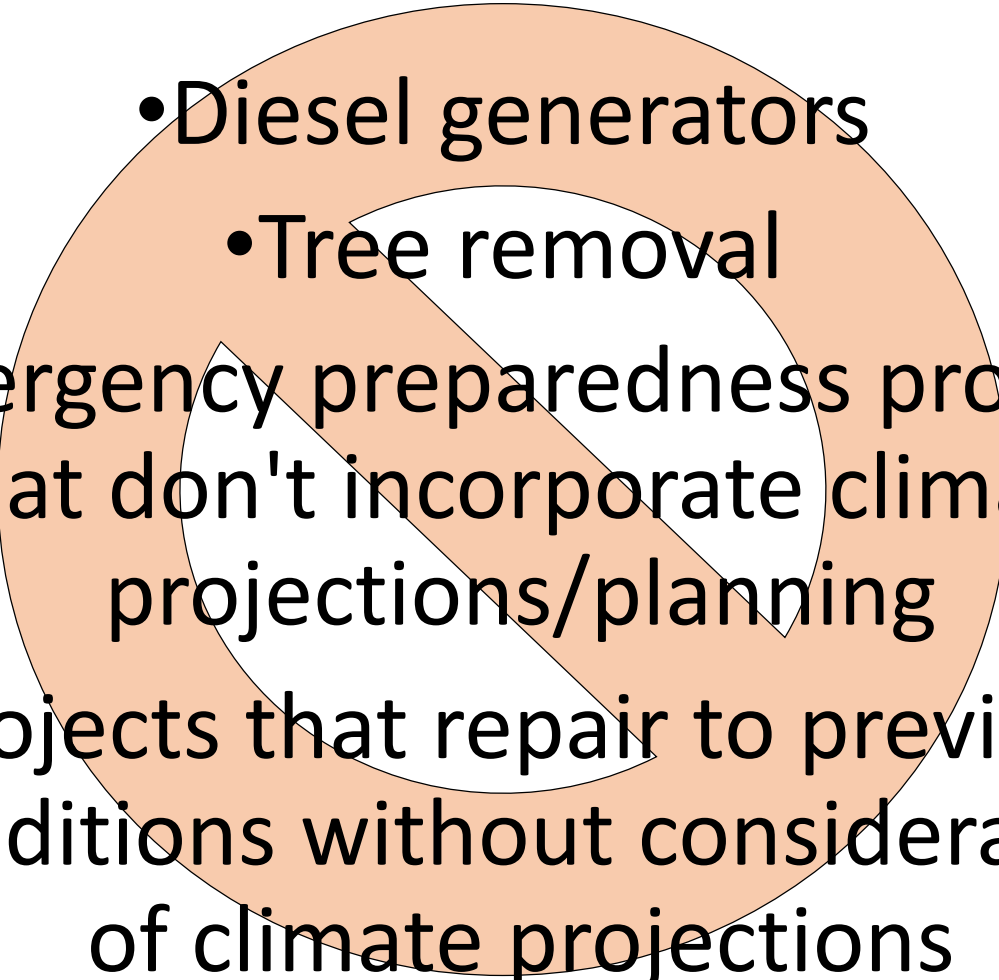


# Competitive Evaluation Criteria

- **Project Feasibility & Management**
  - Technical, financial, and management capacity to take on project
  - Landowner, public, and/or partner support
  - Good standing in MVP program, to be completed by MVP team
- **Timeline, Scope, and Budget** (including 25% match of total project cost)
  - Clear project scope—detail the steps of the project in the application and the summary in the scope/budget attachment
  - Clear project timeline with capability to be completed in the contract period
  - Identification of regulatory components (including NEW attachment for design and construction projects)
  - Clear budget (delineated by fiscal year if applying for FY22 funding)
- **Overall Project Quality**
  - Determined by reviewers



# Projects that are NOT MVP-competitive:

- 
- Diesel generators
  - Tree removal
  - Emergency preparedness projects that don't incorporate climate projections/planning
  - Projects that repair to previous conditions without consideration of climate projections



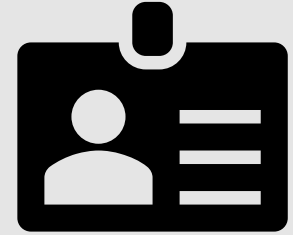


**DEADLINE  
AHEAD**



# Before you start writing a grant...

- Municipal Staff Capacity
- Partnerships
  - Regional Planning Agencies
  - Watershed and other environmental associations
  - Non-profit social, public health or related groups
  - Universities and colleges
  - Consultants
- Have a project or an issue to address, but don't know where to start? Consider an Assessment or Study as a first step





# Revisit Summary of Findings

- Top Hazards
- Priority Actions
- Stakeholders, public input
- Updating the Report



## High Priority Actions from Matrices

- Pursue CDBG/Green Community Grants to make required upgrades to shelter.
- Create better communication with Water District.
- Study consolidating water district, identify problem pipes.
- Conduct a study to identify and prioritize pipes to be replaced.
- There needs to be better development standards and updated storm water system. Bylaw.
- Study conditions of private chutes to determine Town's ability and responsibility to help maintain.
- Work with owner to remove Fisk Brook dam.
- Study, prioritize, engineer and go after grants to fix culverts.

### **The top three highest priority actions from the workshop were:**

- Promote and highlight low impact development and green infrastructure (14 votes)
- Develop an integrated resource management plan for the town (10 votes)
- Prioritize action plan for police/fire/DPW facilities located in the floodplain (9 votes)

Category	Resiliency Action	Priority	Time Frame
Environment	Mitigate non-point source pollution by upgrading storm drains, discouraging geese, and using green infrastructure	H	Long-Term
Environment	Stormwater Management: (i) Identify and map outfalls, (ii) research existing stormwater bylaws, and (iii) determine whether bylaw updates are required to meet future precipitation projections.	H	Ongoing
Environment	Perform a site feasibility study for new well in west Wrentham and create a water line on Madison.	H	Short-Term/Long-Term
Infrastructure	Elevate or move the Department of Public Works building to vacant parking lot or out of flood area. Make it ADA compliant. ADA compliant for showers.	H	Short-Term



# Climate Data and Projections



Maps   Data   Documents

Search for resources... QSearch

Providing the most up-to-date climate change science and decision-support tools for the Commonwealth. [More »](#)

### Climate Change Data

The Baker-Polito Administration is investing in the best science and data to understand how the climate is projected to change and to allow Massachusetts to plan and adapt for the future.

[More »](#)

State: Massachusetts

Calculated Variable: Maximum Temperature

Season: Annual

1 2 3 4 5

#### Annual Maximum Temperature Massachusetts

Year	Observed (°F)	Modeled (°F)
1971-2000	58.3	58.3
2020-2049		61.6
2040-2069		63.8
2060-2089		66.0
2080-2097		68.4

Download Data

Observed

5-yr Mean

Modeled °F

Max

Median

Min

Changes from 1971-2000 for:

2020 - 2049

2040 - 2069

2060 - 2089

2080 - 2097



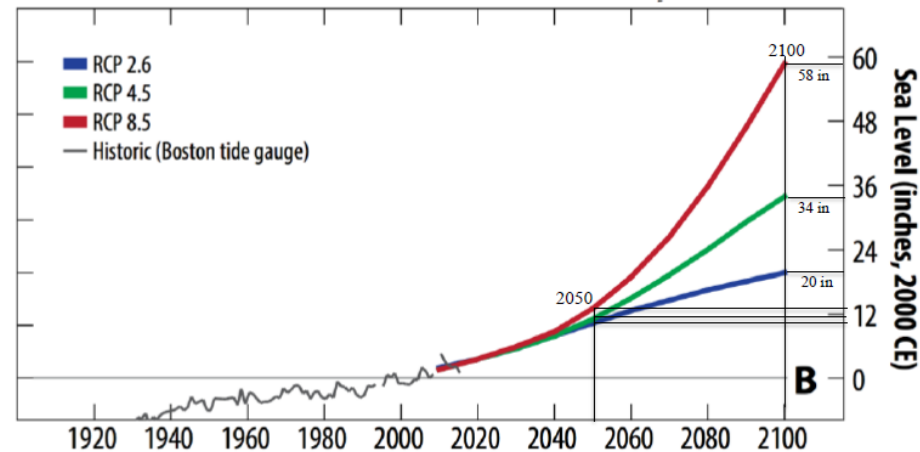
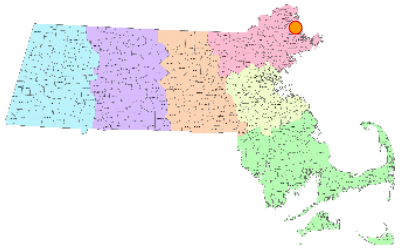




# MVP Action Grants: Climate Data and Projections

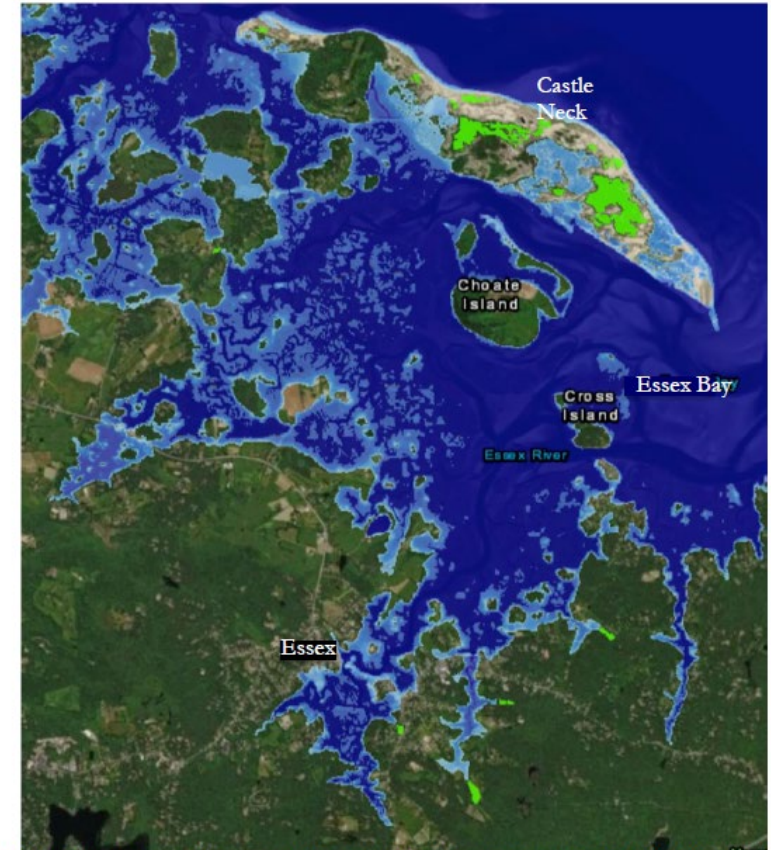
FY19 Action Grant: Impacts of future storminess, greater wave energy, and increased sediment transport along Castle Neck and into Essex Bay

## Essex & Ipswich



**Figure 5.** Projected relative sea levels for three climate scenarios for Boston, MA using RCPs 2.6, 4.5, and 8.5, (from Kopp et al., 2014). For 2050, the projected sea level positions are within two inches of one another, but for 2100, the projected levels are quite different.

- Through data collection and various models, the Town is quantifying how **future sea-level rise** and **increased storminess** will impact the relationships amongst the longshore transport, erosion/depositional patterns, and spit growth/retreat along Castle Neck Island in Ipswich and into Essex Bay.
- The Town will also determine how to *work with the system* to improve the resilience of the coastline around Essex via **nature-based solutions**.



**Figure 2.** Map showing areas within the 100-yr flood for the Essex region (NOAA, 2019) using the projected relative sea levels in 2050 for three climate scenarios for Boston, MA based on RCPs 2.6, 4.5, and 8.5, which are within 2 inches of one another (from Kopp et al., 2014). Note extensive flooding of Castle Neck and reaching far interiors of Essex.



# What are Nature Based Solutions (NBS)?

Projects that **restore, protect,** and/or **manage** natural systems and/or mimic natural processes to address hazards like flooding, erosion, drought, and heat islands in ways that are **cost-effective, low maintenance,** and **multi-beneficial** for public health, safety, and well-being.

From - **Conserving Land** -  
to - **Restoration** and **green stormwater management** -  
And anything in between!





# Why Nature Based Solutions (NBS)?

Incorporating NBS in local planning and design projects produces long-term solutions that benefit both human and natural systems:



**Enhanced public safety** by reducing risks from flooding, erosion, drought, and heat risks to vulnerable populations and community assets.



**Avoided infrastructure costs** of short- and long-term maintenance, unplanned repairs and safety improvements due to flooding and failure from intense rain events.



**Promotes biodiversity**, important for environmental health and safeguarding natural resources like water, food, and shelter.

And other **ecosystem services**, such as improving air and water quality, flood protection, groundwater recharge, carbon sequestration, human health and well-being

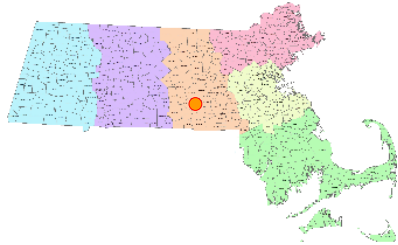




# MVP Action Grants: Nature Based Solutions

## FY19 Action Grant: Armory Village Green Infrastructure Project

# Millbury

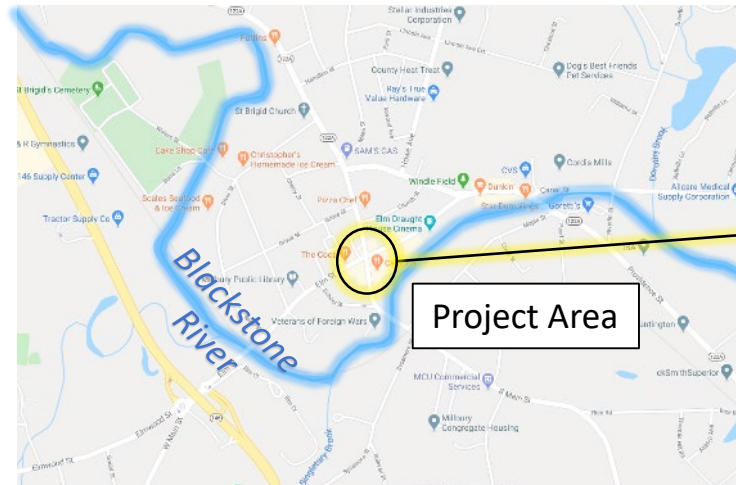


Weston & Sampson

### Project Goal:

Install green infrastructure as part of Town Center revitalization project to provide multiple benefits to the community:

- Install trees to reduce heat island impacts, absorb environmental pollutants, infiltrate & cleanse stormwater, provide habitat
- Intercept and infiltrate 70% of total stormwater flow to reduce flooding and pollution to the Blackstone River.
- Create welcoming public spaces that attract business, private investment, patrons, and residents.
- Create a model to educate residents, visitors, and other municipalities about the benefits of green infrastructure.



### REVIVING A DOWNTOWN: ARMORY VILLAGE GREEN INFRASTRUCTURE PROJECT

### MILLBURY MASSACHUSETTS

**What is Green Infrastructure?**

A cost-effective, resilient approach to managing stormwater that restores and mimics the natural water cycle. It uses the capability of natural, undisturbed areas like meadows and forests, urban forests, and urban green infrastructure. Green infrastructure uses plants, soil, rocks, and gravel to soak up stormwater and store it for later use. Unlike traditional storm drains that carry stormwater away from the site, green infrastructure uses plants, soil, rocks, and gravel to soak up stormwater and store it for later use. Unlike traditional storm drains that carry stormwater away from the site, green infrastructure uses plants, soil, rocks, and gravel to soak up stormwater and store it for later use.

**Why Change Now?**

Because the engineering of drainage systems is changing. Today's engineers are designing systems that can handle the increasing volume of stormwater runoff. They are also designing systems that can handle the increasing volume of stormwater runoff. They are also designing systems that can handle the increasing volume of stormwater runoff.

**Interested in doing your part? Clean water can start with you**

**MILLBURY MASSACHUSETTS**

**What is a rain garden and how do I build one?**

Rain gardens, also called bioswales or rain gardens, are beautiful landscaped areas designed to treat and infiltrate stormwater runoff. They collect a low volume of water, and the plants and soil help to filter out pollutants. Rain gardens are designed to treat and infiltrate stormwater runoff. They collect a low volume of water, and the plants and soil help to filter out pollutants.

Click on the following links for more step-by-step information on how to locate and build a rain garden:

<https://www.thirdsource.com/news/2016/04/01/how-to-build-a-rain-garden-to-filter-out-pollutants/>

<https://www.weston.com/2016/04/01/how-to-build-a-rain-garden-to-filter-out-pollutants/>

<https://www.weston.com/2016/04/01/how-to-build-a-rain-garden-to-filter-out-pollutants/>

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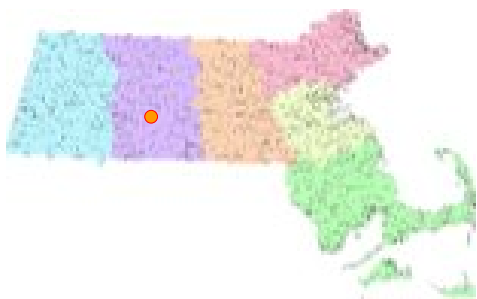




# MVP Action Grants: Nature Based Solutions

FY20 Action Grant: Restoring Pine Grove Golf Course through removing drainage infrastructure, restoring wetlands and afforestation

## Northampton



Nature-based solutions

Pilot potential



Aerial image of forests and a golf course  
Credit: MassGIS



Outreach  
and  
Engagement

Sample Public Involvement and Community Engagement Plan			
	Print	Digital	In-person
Principal	Posters hung in Local Businesses, Community Centers, or other publicly accessible venues, with a minimum of 20 throughout the town	Podcasts that address your project and articulate community resiliency goals	Hosting a community meeting
Assisting	"Backpack Mailer" to students and families.  Signs posted on site that inform residents of projects and resiliency strategy that it addresses	Project webpage  Email to distribution list that includes community stakeholder groups	Tabling event during local cultural festival  Presentation at community group meeting
Equitable Engagement Modifier	Translation of content into three (3) most-prevalent languages spoken within the municipality and distribute via principal and assisting methods	Identifying and sharing content with non-English alternative language online media outlets that services residents of the EJ/Climate Vulnerable Population	Providing professional grade interpretive services during public meeting event  Providing childcare  Providing food
How community feedback will be incorporated into project and mechanism by which results will be shared:			
-Reserve time on all biweekly project team calls to review public comments to date and discuss how they can be addressed and incorporated into the project.			
-Publish a comprehensive response to all comments received from the public and how they were addressed on project website that is translated into the (3) most prevalent languages, along with an itemization of all deliverables.			
-Establish and advertise one or more information repositories (to hold all project documents) in town that are convenient and accessible to the impacted community.			

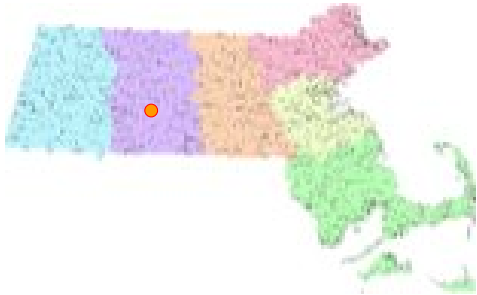




# MVP Action Grants: Outreach and Engagement

## FY20 Action Grant: Climate Action, Adaptation and Resilience Plan

### Amherst



Climate Vulnerable Populations

Outreach & Engagement

#### ***Project Goals:***

- Place Climate Justice at the center of Town's decarbonization efforts
- Equitable transition for 40% of community living below the poverty line
- Specific outreach undertaken to bring people into the planning process
- Translation, Interpretation, Childcare and Food provided for eight community gatherings



Image: 2019 CRB Workshop Outreach and Engagement, citizens providing feedback on printed media  
Credit: Town of Amherst

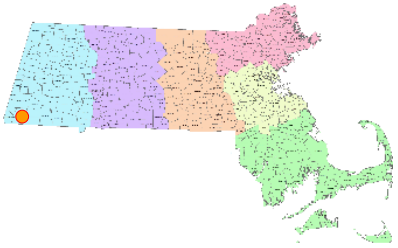




# MVP Action Grants: Outreach and Engagement

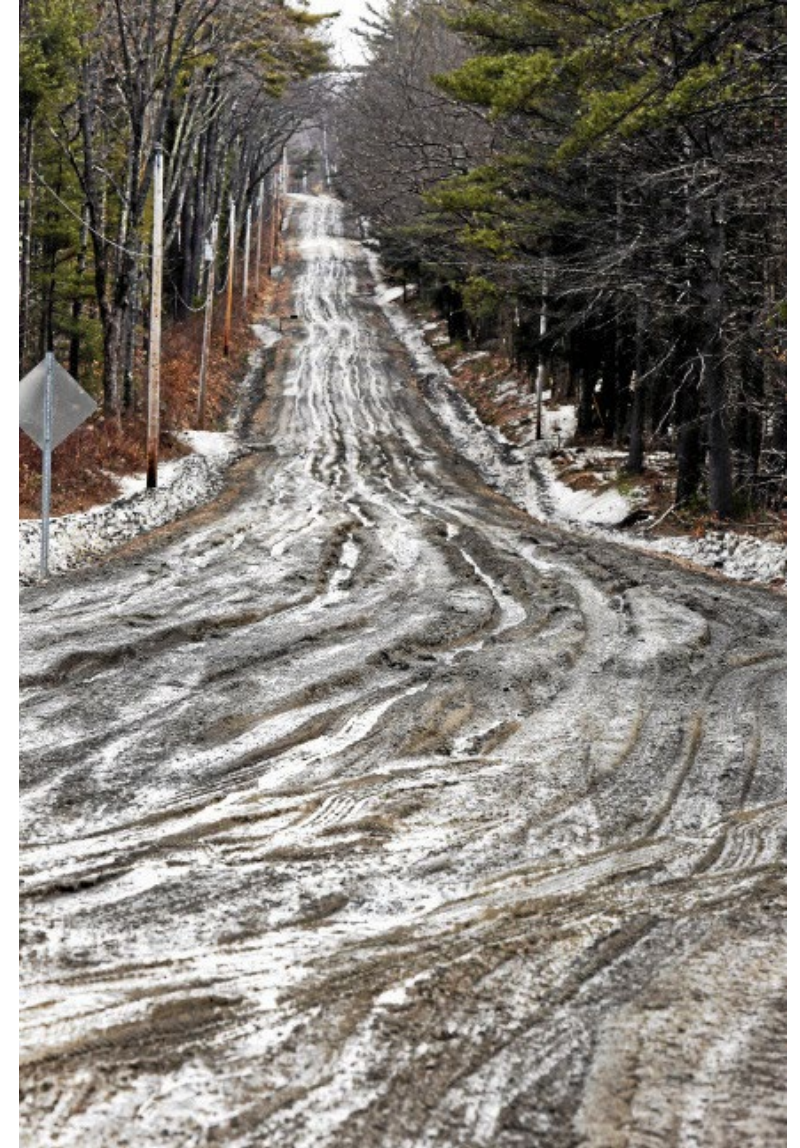
## FY20 Action Grant: Rural Dirt Road Resilience: Assessment, Pilot Study & Recommendations

Sheffield, Sandisfield, New  
Marlborough



### Engagement Scope

1. Community Survey located on each Towns' website asking for details from community on any dirt roads of concern.
2. Community Engagement Meetings, 1 per town, introducing project and increasing community participation.
3. Final workshop of findings to be presented at Berkshire County District 1 Highway Superintendents Association Meeting.





# Municipal Vulnerability Preparedness Program Action Grant Projects

Find a summary of all FY18 action grant projects as well as detailed deliverables below.

[FY18 MVP Action Grant Summary](#)

## TABLE OF CONTENTS

- ▼ [Adams](#)
- ▼ [Arlington](#)
- ▼ [Belchertown](#)
- ▼ [Boston](#)
- ▼ [Brookline](#)
- ▼ [Cambridge](#)

**To view more examples of MVP Action Grant Projects:**

<https://www.mass.gov/info-details/municipal-vulnerability-preparedness-program-action-grant-projects>



# Questions?

