FY19 Completed Action Grant Summaries

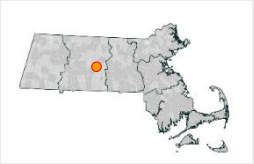
Municipal Vulnerability Preparedness Program

MA Executive Office of Energy and Environmental Affairs

Enhancing Water Supply Reliability: Resilient Water Storage and Water Conservation Planning

MVP Municipal Vulnerability Preparedness

Belchertown



AWARD $223,513 **MATCH** $75,530

PROJECT TYPE Redesign and Retrofit Nature-Based Drought Prevention

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions (NBS)

DESCRIPTION Project Priorities: Design and permit a replacement water storage tank that would increase storage capacity and drought resilience and complete a feasibility/concept design of a rainwater harvesting system at Belchertown High School to irrigate the athletic fields. Reduce demand on Town's water supply. Conserve potable water for essential uses. Enhance reliability of water system under existing and future climate conditions

Moakley Park

Boston FY19

AWARD $1,500,000 **MATCH** $619,595.00

PROJECT TYPE

Preliminary resiliency design, technical analysis, and pre-permitting

CORE PRINCIPLES DEMONSTRATED

Achieving broad and multiple community benefits

DESCRIPTION

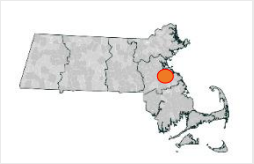
Project Priorities:

- Technical Analysis and Revised Vision Plan
- Schematic Design for Flood Protection Park and Berm Infrastructure
- Multi-faceted Community Engagement

Armstrong Dam & Ames Pond Dam Removals
Final Design & Permitting

MVP
Municipal Vulnerability Preparedness

Braintree FY19-FY21



Learn More:

[Braintree Dam Removal Project Website]

AWARD

$90,000

PROJECT TYPE

Final Design and Permitting

CORE PRINCIPLES DEMONSTRATED

Nature-Based Solutions and Ecological Restoration

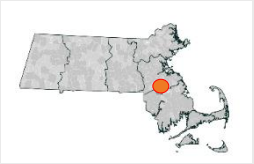
DESCRIPTION

The project is the final design and permitting for the removal of two obsolete dams, restoration of the Monatiquot River and its floodplain, construction of a fish bypass channel at a bedrock obstruction and construction of a public access trail and boardwalk along the restored river channel in an Environmental Justice Area.

Integrated Water Infrastructure Vulnerability Assessment for Climate Resiliency

MVP
Municipal Vulnerability Preparedness

Brockton FY19



Learn More:

[Brockton Resiliency Project Website]

AWARD

$294,698

PROJECT TYPE

Detailed Vulnerability and Risk Assessment/Nature-Based Flood Protection

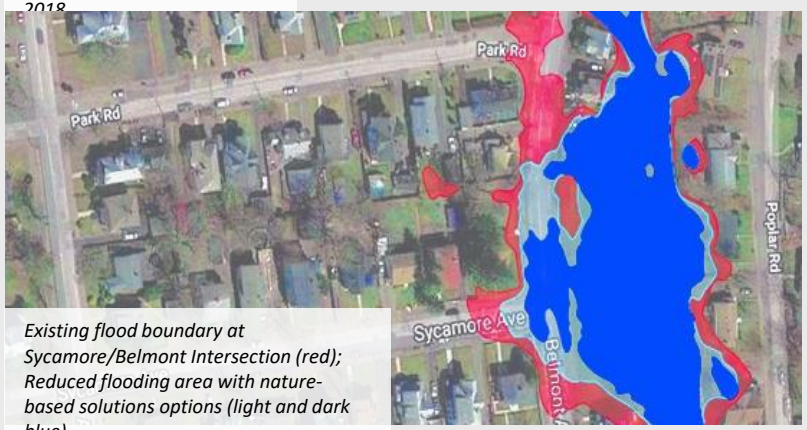
CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions; Increasing Equitable Outcomes for EJ Populations; Achieving Broad and Multiple Community Benefits

DESCRIPTION

- Identified nature-based solutions for up to 18” flood reductions along Salisbury Brook and Salisbury Plain River.
- Developed nature-based concept to integrate flood resiliency into planned redevelopment of the CSX railyard for floodplain reconnection, green space amenities, and increased neighborhood connectivity.

Sycamore/Belmont Intersection, January 13, 2018

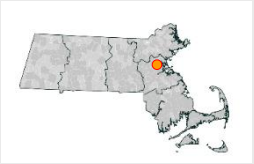


Existing flood boundary at Sycamore/Belmont Intersection (red); Reduced flooding area with nature-based solutions options (light and dark blue)

Completing a watershed-wide analysis to optimize and coordinate regional stormwater management in the Mystic River Watershed

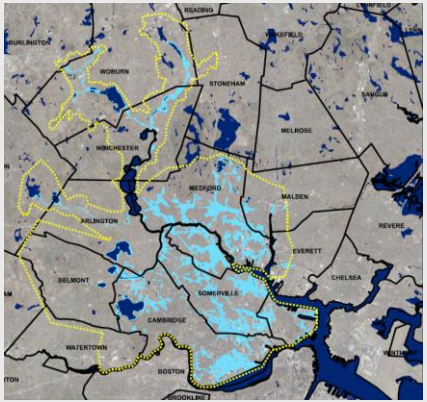
MVP
Municipal Vulnerability Preparedness

Cambridge FY19



Learn More:

Recording of a conference presentationon this modeling work



AWARD $350,000 **MATCH** $243,450

PROJECT TYPE Detailed Vulnerability and Risk Assessment

CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions (NBS)

Utilizing climate change data for a proactive solution

DESCRIPTION

Project Priorities:

- Improve watershed planning tools and data sharing
- Identify opportunities to scale up nature-based solutions, and
- Explore innovative technologies such as Active Reservoir Management (ARM).

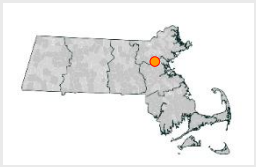
Project Results:

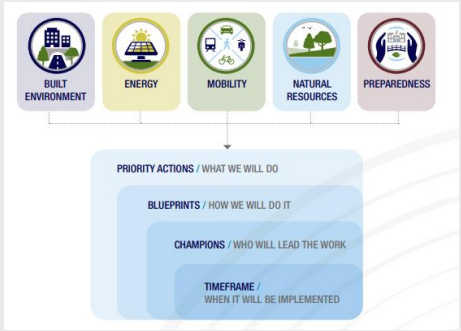
- Watershed flood model for current and future storms that incorporates operational procedures for Amelia Earhart Dam
- 10% concept designs for nature-based solutions at six sites

Climate Action and Resilience Plan

MVP
Municipal Vulnerability Preparedness

Concord FY19



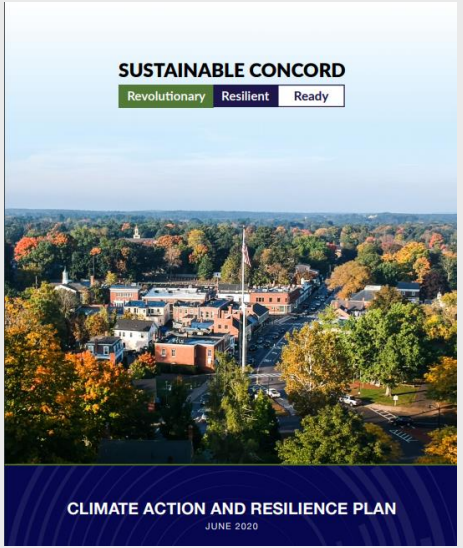


AWARD $100,095 **MATCH** $37,840

PROJECT TYPE Detailed Vulnerability and Risk Assessment Community Outreach and Education

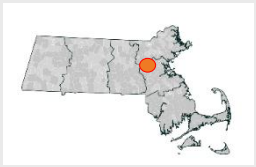
CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change impacts

DESCRIPTION Develop Climate Action & Resilience Plan which prioritizes climate strategies that are supported broadly for the community and are the best opportunities for increasing resilience and reducing GHG emissions.



Tree Reforestation and Resilience

Concord FY19



Learn more:

Concordma.gov/trees

AWARD

$130,000

PROJECT TYPE

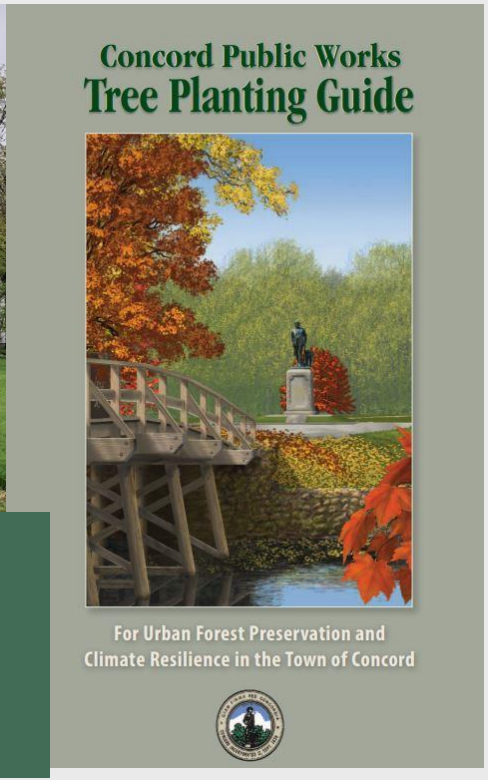
Nature-based Solutions; Community Outreach and Education

CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions; Achieving Broad and Multiple Community Benefits

DESCRIPTION

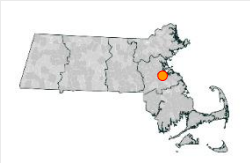
- Planted 159 new street and setback trees.
- Launched community engagement to identify locations for new tree plantings.
- Developed a Tree Guide for Concord residents, distributed with 150 native tree seedlings through Library.

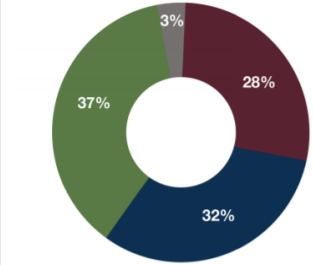


Climate Action and Resilience Plan

MVP
Municipal Vulnerability Preparedness

Dedham FY19





AWARD $185,895 **MATCH** $64,445

PROJECT TYPE

Detailed Vulnerability and Risk Assessment
Community Outreach and Education

CORE PRINCIPLES DEMONSTRATED

Furthering a community identified priority action to address climate change impacts

DESCRIPTION

Project Priorities: To develop a comprehensive climate action and resilience plan through an equitable engagement process that includes: updates to Dedham's existing hazard mitigation plan, a targeted infrastructure vulnerability assessment, a greenhouse gas emissions inventory and identified pathways to reduce them, and the development of a climate resilience framework.

Project Results: A final Climate Action & Resilience Plan that includes nearly 375 actions compiled from discussions with the public, surveys, Climate Action Stakeholder Group (CASG) meetings, targeted interviews, best practices research, and existing Dedham planning efforts.

Reducing Flooding Vulnerability in Deerfield

Deerfield FY19

AWARD $278,023 (FY19) Match: $111,066

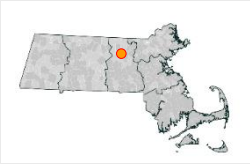
PROJECT TYPE Action

CORE PRINCIPLES DEMONSTRATED Community Outreach and Education, Local Bylaws, Ordinances, Plans, and Other Management Measures, Nature-Based Flood Protection, Nature-Based, Infrastructure, Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impact

DESCRIPTION Design of green infrastructure in the town center, Development of a municipal green infrastructure policy, Replacement of top priority Mill Village Road culvert with more resilient culvert with improved wildlife passage, and design of second culvert, Coordinating a community climate awareness event ("Climate Resiliency: Deerfield 2030"), Public education on the town's new Rave emergency alert system, Creating an evacuation action plan for potential dam failures on the Deerfield River, Developing a land conservation priority plan for protecting the Deerfield River floodplain

Climate Action and Resilience Plan

Devens 19



Learn More

[Devens Climare Action and Resilience Website]

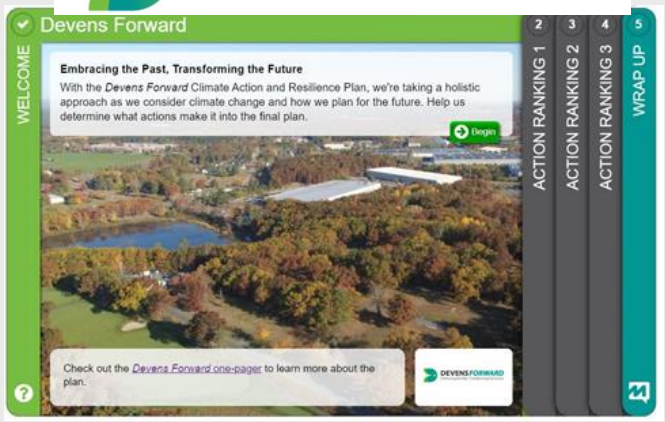
AWARD $142,170 **MATCH** $50,635

PROJECT TYPE Planning

CORE PRINCIPLES DEMONSTRATED Building community capacity for climate resilience

DESCRIPTION

Project Priorities: To enhance the community's resilience to climate change hazards and ensure Devens is doing its part to minimize contribution to climate change, by creating a detailed implementation strategy that will allow the community to address both climate mitigation and adaptation



Duxbury Climate Change Vulnerability Assessment and Adaptation Plan

MVP Municipal Vulnerability Preparedness

Duxbury FY19

Learn More:

[Duxbury Climate Assessment Project Website]

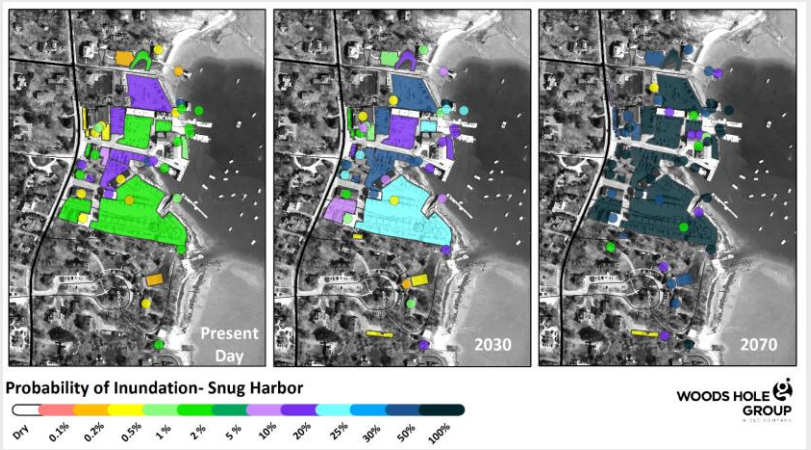
AWARD $131,712

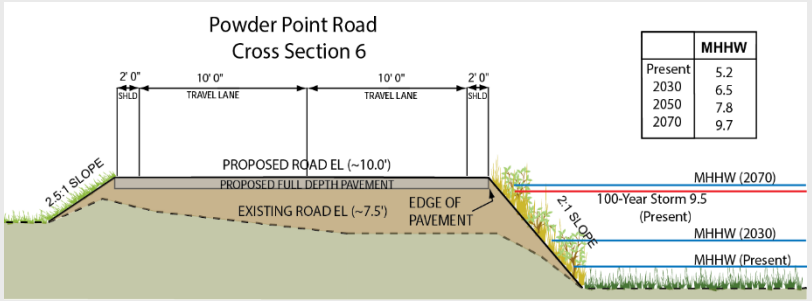
PROJECT TYPE Detailed Vulnerability and Risk Assessment

CORE PRINCIPLES DEMONSTRATED Utilizing climate change data for a proactive solution

DESCRIPTION

- Risk-based coastal vulnerability assessment using MC-FRM to evaluate potential community and business impacts of asset exposure to sea level rise and coastal storm surge.
- Developed recommendations for natural resource resilience and local regulatory improvements, and flexible/phased adaptation plans for high-risk priority assets and the vital Snug Harbor waterfront district.
- Collaboration with Snug Harbor business and non-profit community, and with Metropolitan Area Planning Council.

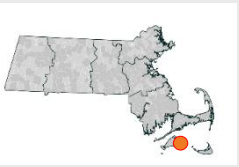




Edgartown Climate Change Vulnerability Assessment and Adaptation Plan

MVP
Municipal Vulnerability Preparedness

Edgartown FY19



AWARD

$90,035

PROJECT TYPE

Detailed Vulnerability and Risk Assessment

CORE PRINCIPLES DEMONSTRATED

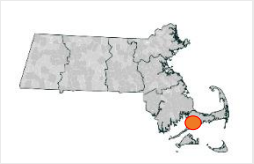
Utilizing climate change data for a proactive solution

DESCRIPTION

- Risk-based coastal vulnerability assessment using MC-FRM to evaluate potential community impacts of asset exposure to sea level rise and coastal storm surge.
- Developed recommendations for natural resource resilience and local regulatory improvements, and flexible/phased adaptation plans for high-risk priority assets and the downtown waterfront district.

Coonamessett River Restoration Project: Construction Phase 2

Falmouth FY19



AWARD $760,000 **MATCH** $1,130,305

PROJECT TYPE

Ecological Restoration and Habitat Management to Increase Resiliency

CORE PRINCIPLES DEMONSTRATED

Furthering a community identified priority action to address climate change impacts

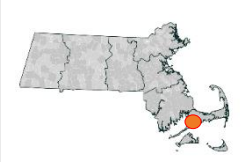
DESCRIPTION

- Remove “Middle Dam" and replace with a new pedestrian boardwalk
- Replace a failing public road-stream crossing (culvert)
- Restore remaining 39 acres of cranberry bog complex
- Reconstruct 3,000 linear feet of the Coonamessett River

Coastal Resiliency Planning for the Surf Drive Area

MVP
Municipal Vulnerability Preparedness

Falmouth FY19



Learn More:

[Falmouth Coastal Resiliency Project Website]

AWARD $109,560

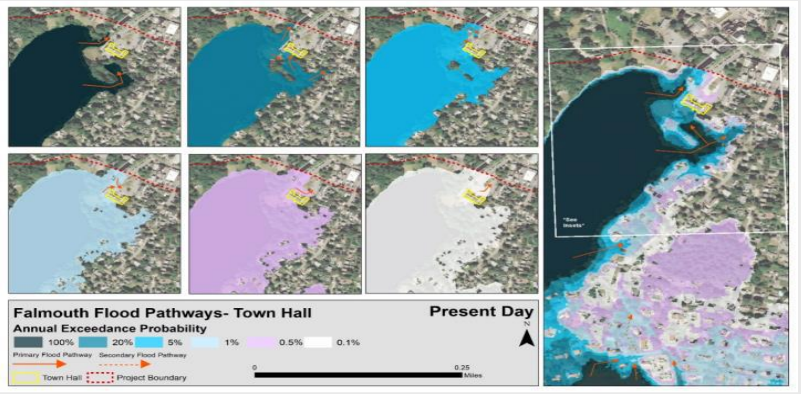
PROJECT TYPE Detailed Vulnerability and Risk Assessment

CORE PRINCIPLES DEMONSTRATED Future Coastal Resiliency Planning; Community Education and Outreach

Maintain and promote welcoming coastal resource and the marine environment.

DESCRIPTION Improve resiliency of the natural resources and infrastructure along Surf Drive.

Balance use, access, and enjoyment of the coastal resources while accounting for ecosystem shifts in response to sea level rise.



Pine Island Pond Watershed Lands (PIPWL) Project

MVP
Municipal Vulnerability Preparedness

Mattapoisett FY19

AWARD $960,000 **MATCH** $460,000

PROJECT TYPE Ecological Restoration and Habitat Management to Increase Resiliency

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions (NBS)

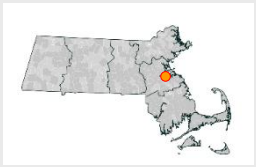
DESCRIPTION

Project Priorities:

Acquire 120 acres of undeveloped forest, wetland, and salt marsh vulnerable to climate change for permanent conservation

Flood Mitigation Strategy Feasibility Analysis and Conceptual Design

Medford FY19



AWARD $93,529 **MATCH** $93,529

PROJECT TYPE Nature-Based Flood Protection

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions (NBS)

DESCRIPTION

Project Priorities:
Build on a flooding vulnerability assessment funded by MVP in FY18. Assess the feasibility of installing a subsurface detention tank system and complementary green infrastructure elements at Tufts Park to address severe flooding in South Medford

Project Results: Concept designs for:
Subsurface detention tank system, Open vegetated swale, Water quality bioretention system, and Additional stormwater BMPs such as porous pavers and tree filter boxes

Resilient Nantucket: Designed for Adaptation

MVP
Municipal Vulnerability Preparedness

Nantucket FY20

Learn More:

- Resilient Nantucket Webpage
- Design Guidelines Document (to be posted)

AWARD

$78,000

PROJECT TYPE

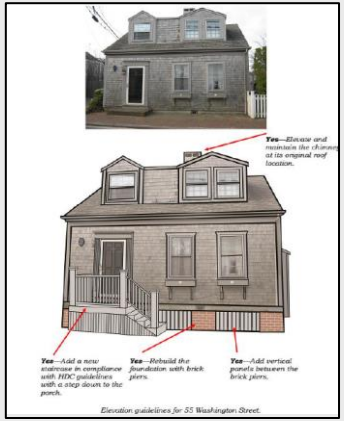
Planning, Assessments, Capacity-Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED

Furthering a community identified priority action to address climate change impacts and Pursuing innovative, transferable approaches

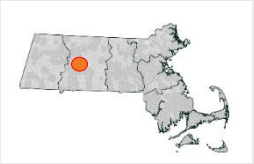
DESCRIPTION

- Developed “user friendly” guidelines incorporating photographs and drawings specific to Nantucket’s historic properties
- Recommends approaches to elevate and “harden” historic properties impacted by climate change
- Used as an addendum to “Building with Nantucket in Mind” to supplement design reviews by the Nantucket Historical Commission & Historic District Commission



Protecting Downtown: Northampton's Flood Control Levees

Northampton FY19/FY20



Learn More:

[Northampton Flood Control Project Website]

AWARD

$315,000

PROJECT TYPE

Engineering and Assessment

CORE PRINCIPLES DEMONSTRATED

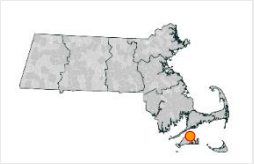
Further community identified priorities; Achieve broad and multiple community benefits; Pursue innovative, transferable approaches

DESCRIPTION

Investigate the downtown flood control levees to ensure they protect downtown from flooding, prepare for FEMA Certification and map modernization, identify new capital, maintenance, and operations needs

North Bluff Preservation Project

Oak Bluffs FY19



AWARD $1,088,451 MATCH $362,818

PROJECT TYPE

Redesigns and Retrofits Nature Based Solutions to Reduce Vulnerability

CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions (NBS)

DESCRIPTION

Project Priorities:

- Improve climate resiliency of vulnerable shoreline
- Dredge Sengekontacket Pond to improve water quality and habitat
- Use dredged material to create beach area to protect the seawall, boardwalk, coastal bank, road, and homes

Before

After

Culvert and Green Infrastructure Concept Design and Dam Resiliency Assessment
County Street and Perryville Pond Dam

MVP
Municipal Vulnerability Preparedness

Rehoboth FY19

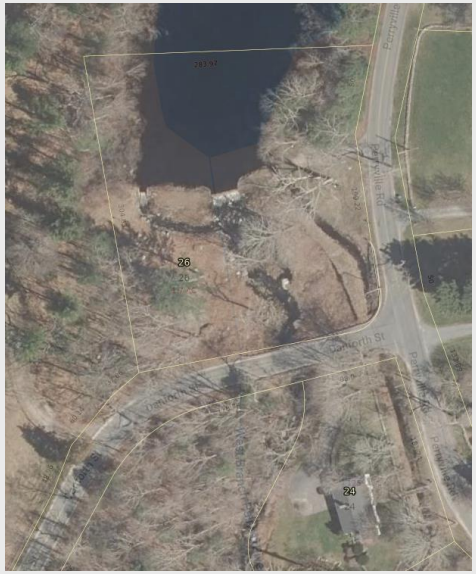
AWARD $119,622

PROJECT TYPE Culvert and Dam Assessment and Redesign

CORE PRINCIPLES DEMONSTRATED Green infrastructure solutions for improving resiliency to stronger, more frequent storm events caused by climate change

DESCRIPTION

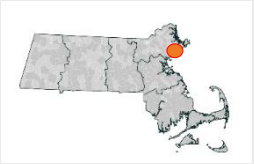
- Assessed 2 stream crossings at the Perryville dam and on County St
- Prepared concept designs to replace culverts so that they will more effectively handle storm events
- Incorporated Green Infrastructure at both crossings



Salem: Green Infrastructure for Stormwater Management in City Projects

MVP
Municipal Vulnerability Preparedness

Salem FY19



[Gallows Hill Park and Bertram Field project documents and presentations]

AWARD

$320,861

PROJECT TYPE

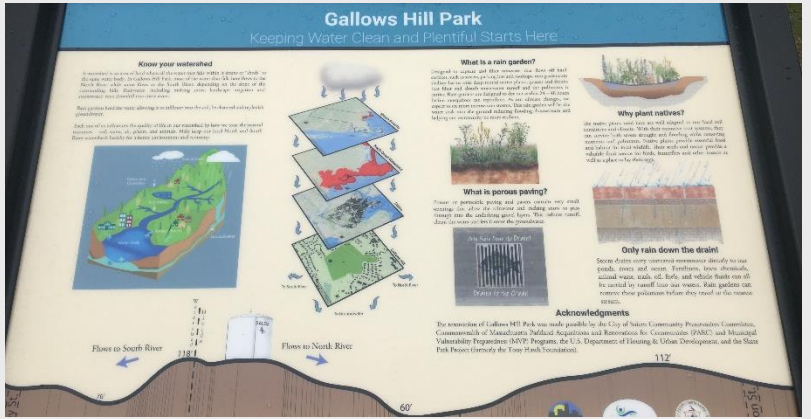
Construction and On-the-Ground Implementation

CORE PRINCIPLES DEMONSTRATED

Employing nature-based solutions, conducting robust community engagement,

DESCRIPTION

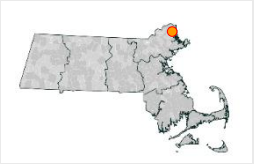
- Used pervious pavement and nature-based solutions to treat several acres of municipal property using green stormwater infrastructure at multiple sites
- Added new trees through the City
- Promoted local climate adaptation strategies through public engagement and educational signage



Communicating the Local Benefits of a Resilient Coast

MVP
Municipal Vulnerability Preparedness

Salisbury FY19



AWARD $157,500 **MATCH** $52,500

PROJECT TYPE

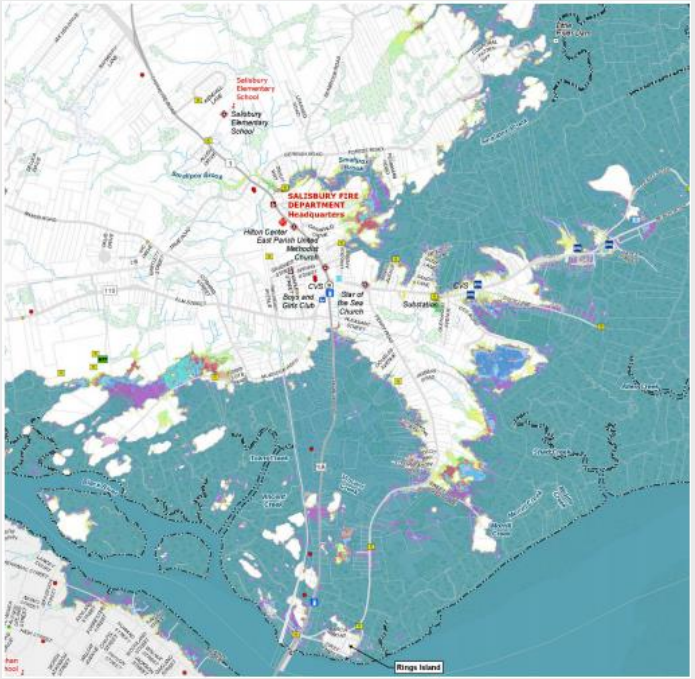
Redesigns and Retrofits Nature Based Solutions to Reduce Vulnerability

CORE PRINCIPLES DEMONSTRATED

Furthering a community identified priority action to address climate change impacts

DESCRIPTION

Project Priorities:
Study and design of culvert replacement and roadway elevations in Ring's Island, as well as a natural storm damage protection technique.

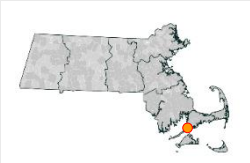


A map of inundation probability in Ring's Island by 2070

Communicating the Local Benefits of a Resilient Coast

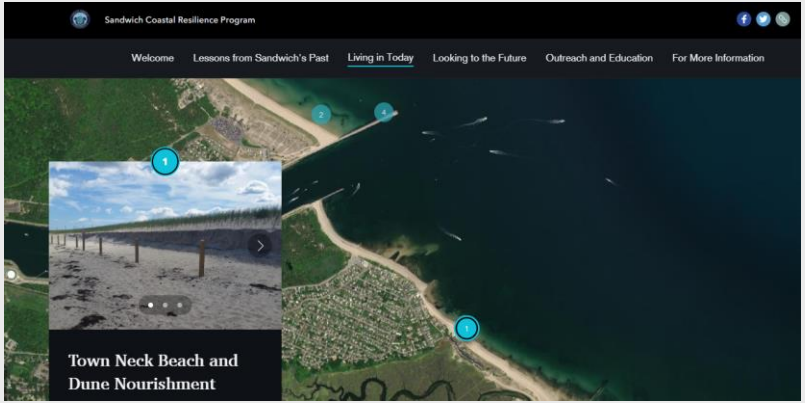
MVP
Municipal Vulnerability Preparedness

Sandwich FY19



Learn More:

StoryMap

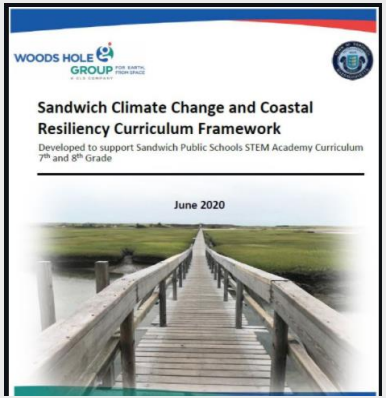


AWARD $46,795 **MATCH** $17,425

PROJECT TYPE Community Education

CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change impacts

DESCRIPTION Develop outreach and education materials – including an ArcGIS StoryMap, printed materials, and a 7th – 8th grade STEM curriculum unit – to communicate climate change vulnerabilities and the benefits that the Town's ongoing coastal resilience initiatives provide to the community as a whole.



Mapping Storm Tide Pathways in Scituate and Cohasset: Assessing Coastal Vulnerability to Storms and Sea Level Rise

MVP
Municipal Vulnerability Preparedness

Scituate & Cohasset FY19

Learn More:

[Data uploaded to National Weather Service for interactive mapping]

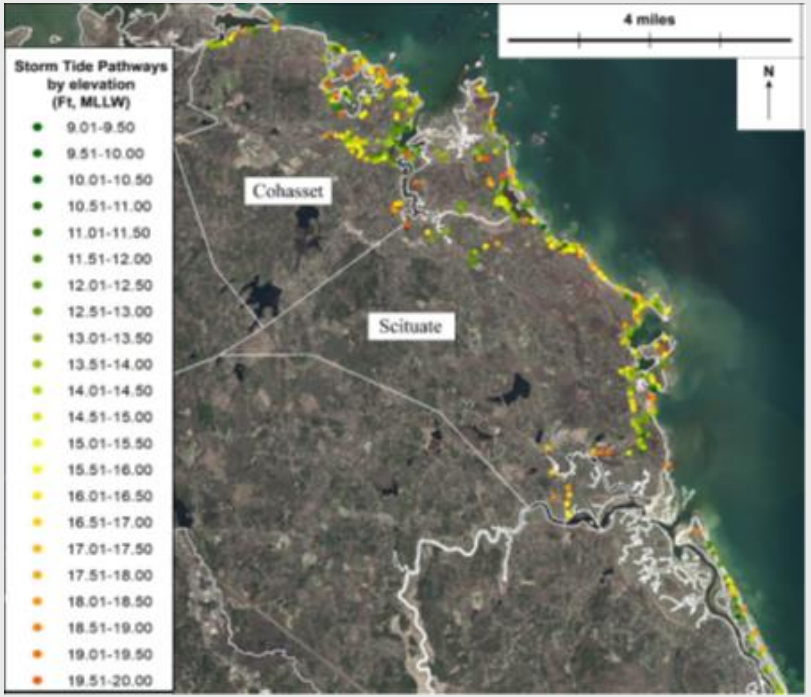
AWARD $112,668 **MATCH** $40,031

PROJECT TYPE Detailed Vulnerability and Risk Assessment Community Outreach and Education

CORE PRINCIPLES DEMONSTRATED Committing to monitoring project success and maintaining the project into the future

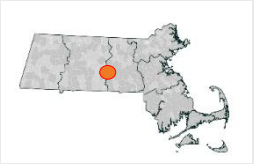
DESCRIPTION

Project Priorities: To identify and map storm tide pathways, and compile the data into a GIS database for use in short- and long-term planning efforts and to incorporate this data into the Southern New England Weather Forecast Office of the National Weather Service for public viewing.
Project Results: Every 6 inches of sea level rise results in approximately 100 acres of additional coastal land lost, many of these pathways have never been inundated, demonstrating historical knowledge is not enough to prepare effectively for climate change and sea-level rise



Green Infrastructure Implementation in Downtown Spencer Mechanic Street Parking Lot

Spencer FY19



Learn more:
https://www.spencerma.gov/highway-department/news/mechanic-street-green-infrastructure-parking-lot

AWARD $370,492

PROJECT TYPE Construction and On-the-Ground Implementation

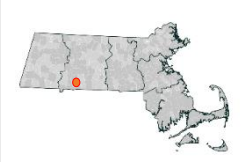
CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions

DESCRIPTION

- Showcasing green infrastructure in downtown Spencer using rain gardens/bioretention and below ground infiltration practices
- Co-benefits reduce runoff volume and pollutant loads, improve aesthetics, reduce heat island impacts

Community Resilience Through Urban Forestry

Springfield FY19



Learn More:

- Springfield MVP Initiative | (regreenspringfield.org)
- MVP Community Roundtable - March 24, 2021 - Bing video

REGION

Greater Connecticut River Valley

AWARD

$274,554 (FY19); $169,000 (match)

PROJECT TYPE

Construction and on-the-ground implementation

CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions; Achieving broad and multiple community benefits

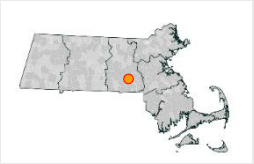
DESCRIPTION

- Conducted a thorough street tree resource assessment.
- Expanded municipal nursery operation including construction of a tree propagation greenhouse.
- Conducted environmental outreach and education including on-line roundtable and building urban forestry education center at Forest Park.

Integrated Water Infrastructure Vulnerability Assessment and Climate Resiliency Plan

MVP Municipal Vulnerability Preparedness

Uxbridge FY19



Learn More:

Uxbrige Water Infrastructure Project Website

AWARD $288,904 **MATCH** $96,647

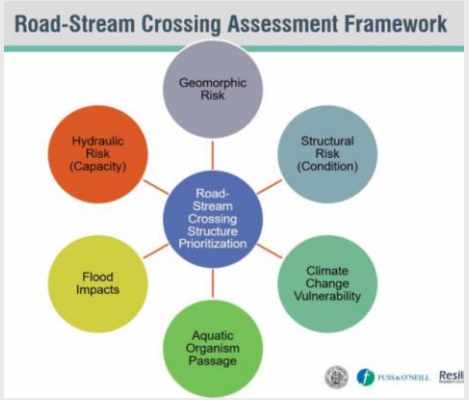
PROJECT TYPE Planning

CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change impacts

DESCRIPTION

Project Priorities: To conduct a detailed vulnerability assessment of water-related infrastructure and develop planning recommendations to enhance flood resilience in the community. Identify water-related infrastructure at risk of flooding under present day and projected future climate change conditions

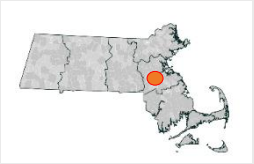
- Prioritize at-risk infrastructure
- Recommend site-specific and community-wide adaptation measures
- Engage municipal staff and the public



Integrated Water Infrastructure Vulnerability Assessment and Climate Resiliency Plan

MVP
Municipal Vulnerability Preparedness

Walpole FY19



Learn More:

[Walpole Climate Resiliiency Plan Project Website]

AWARD

$146,496

PROJECT TYPE

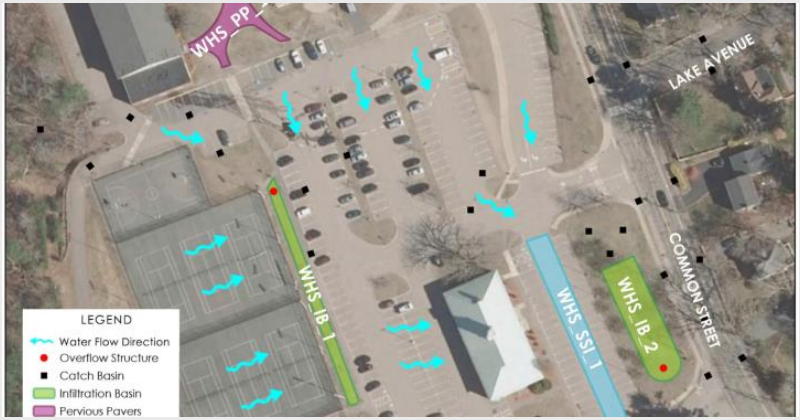
Planning and Assessment

CORE PRINCIPLES DEMONSTRATED

Employing Nature Based Solutions; Utilizing best available Climate Projections and Data; Broad & Multiple Community Benefits

DESCRIPTION

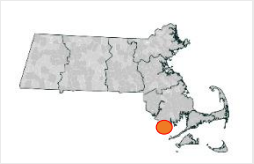
- Vulnerability assessment of all road stream crossings in Town
  - Including scoring and prioritization based on structural condition, current hydraulic capacity, future hydraulic capacity, geomorphic vulnerability
- Assessment of stormwater infrastructure and identification of opportunities to install Green Infrastructure
  - Including conceptual designs for 10 locations to install Green Infrastructure



East Beach Corridor Vulnerability Study

MVP
Municipal Vulnerability Preparedness

Westport FY19



Learn More:

[Westport Vulnerabiity Study Project Website]

AWARD

$75,000

PROJECT TYPE

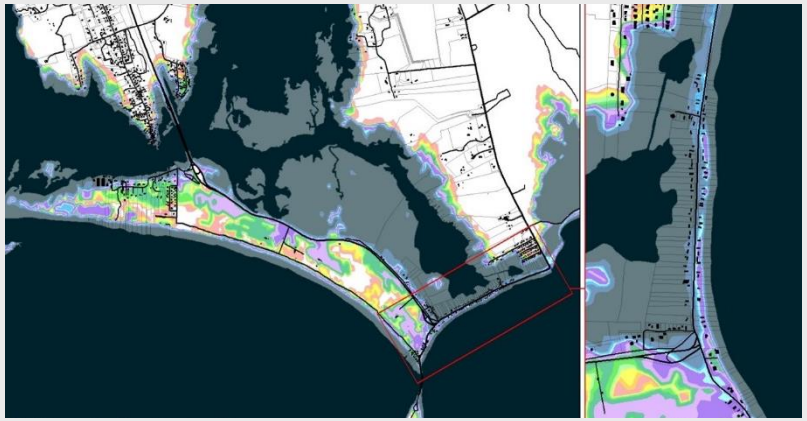
Detailed Vulnerability and Risk Assessment

CORE PRINCIPLES DEMONSTRATED

Utilizing climate change data for a proactive solution

DESCRIPTION

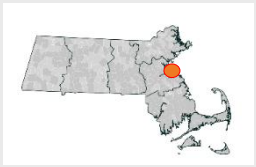
- Developed a probabilistic vulnerability assessment for East Beach Corridor leveraging available coastal erosion data, sea level rise projections, MC-FRM and local cross-shore modeling.
- Recommended phased adaptation alternatives to enhance property, infrastructure and resource resilience on a vulnerable barrier beach.



Climate Resilient Land Use and Zoning: Winthrop Flood Resilience Checklist

MVP Municipal Vulnerability Preparedness

Winthrop FY2019



Learn More:

[Addendum, checklist, and mapping tool]

AWARD

$99,740.00

PROJECT TYPE

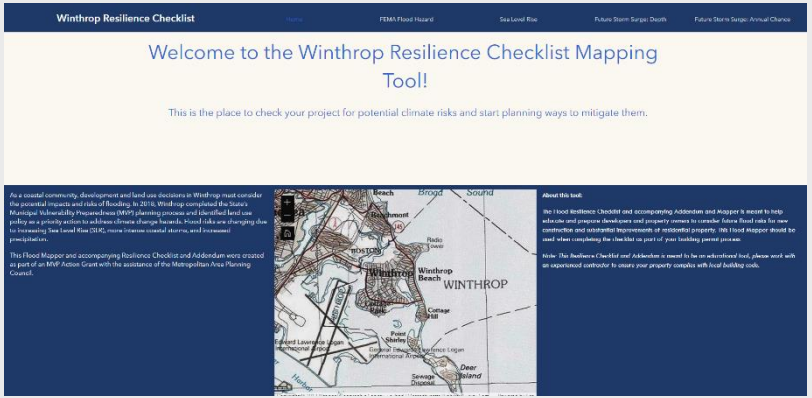
Planning and Policy (Action Grant)

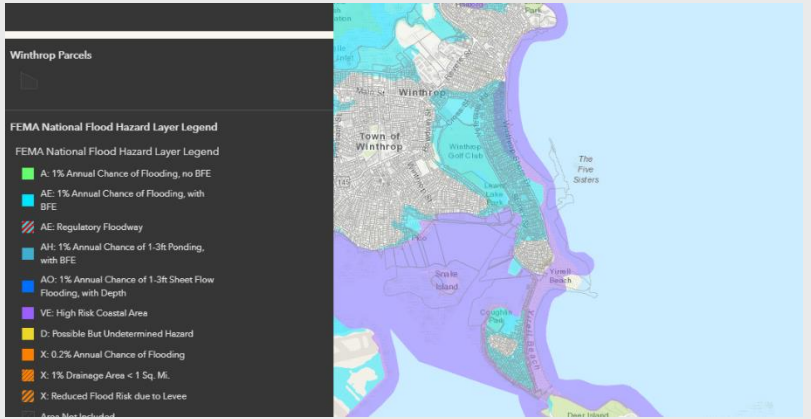
CORE PRINCIPLES DEMONSTRATED

Provide flood resiliency education to residents and developers. Ensure new development considers future flood risk by implementing best practices.

DESCRIPTION

- Provides educational information and awareness to developers and property owners and allows them to make informed decisions about their property's flooding risks.
- Mapping tool provides an accessible for residents to educate themselves on the flooding risks, chance of flooding, sea level rise, and storm surges that may impact their property as well as all of Winthrop.
- The checklist offers solutions and best management practices to minimize future flood risks, and provides resources for additional education and research, allowing users to easily gather more information.





Climate Resilient Land Use and Zoning: Metro Mayors Coalition

Winthrop and Metro Mayors Coalition FY2019

Online resources for municipalities:

[Climate Resilient Land Use Strategies – MAPC]

[Climate Resilient Land Use Trainings and Videos – MAPC]

AWARD

$99,749.00

PROJECT TYPE

Planning and Policy (Action Grant)

CORE PRINCIPLES DEMONSTRATED

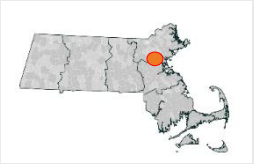
Developing replicable resources and training to advance climate resilient land use policies in the region.

DESCRIPTION

- Provided a website with information resources and examples on climate resilient land use and zoning.
- Developed and presented a workshop on the topic, including a primer for local governments, and best and emerging practices from around the country
- Provided template resources to Metro Mayors communities.

Horn Pond Brook Improved Fisheries Habitat and Flood Control

Woburn FY20/FY21



Learn More:

[Woburn Horn Pond Brook Project Website]

AWARD

$235,355

PROJECT TYPE

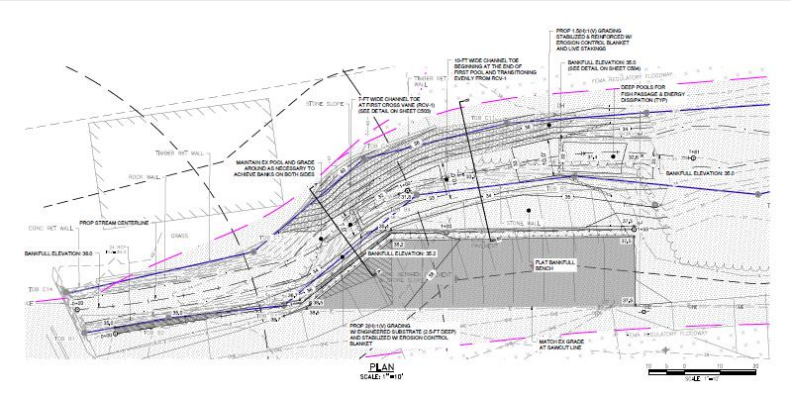
Design and Permitting

CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions; Achieving broad and multiple community benefits; Utilizing regional solutions toward regional benefit

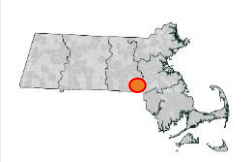
DESCRIPTION

- Developed design and permitting set for the restoration of Horn Pond Brook and a nearby rain garden that collects runoff from a parking lot
- Planted trees at the Senior Center
- Worked with the Mystic River Watershed Association to engage the community and to bring regional perspectives to the design process



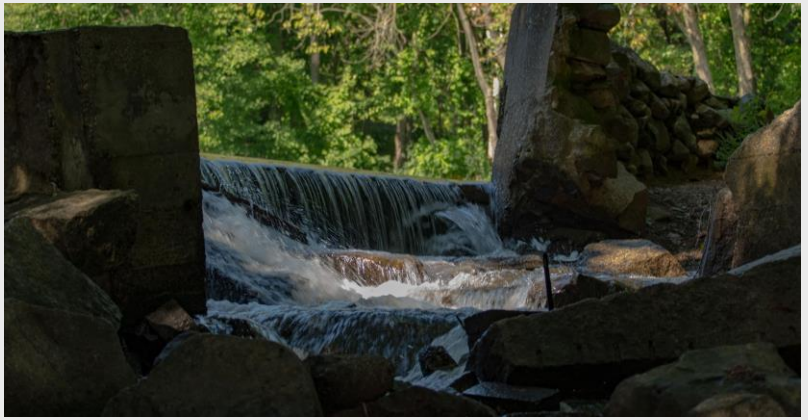
Eagle Dam Removal

Wrentham FY219



Learn more:
[Charles River Watershed Association Web Site]

AWARD	$46,000
PROJECT TYPE	Dam removal feasibility study
CORE PRINCIPLES DEMONSTRATED	Employing Nature-Based Solutions; Achieving Broad and Multiple Community Benefits; Furthering a community identified priority action to address climate change impacts
DESCRIPTION	Completion of an initial feasibility assessment investigating removal of Eagle Dam that identified dam removal as a viable option with further study. Initiated community conversation around dam removal.



https://www.mass.gov/mvp