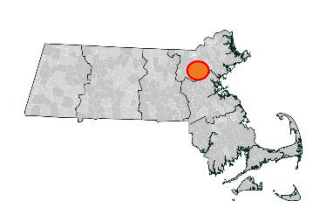
FY22 Completed Action Grant Summaries

Municipal Vulnerability Preparedness Program
MA Executive Office of Energy and Environmental Affairs

Climate Action Plan and Electrification Roadmap

MVP
Municipal Vulnerability Preparedness

Acton, Acton-Boxborough RSD FY22



Learn more:

- Climate Action Plan
- Electrification Road Map

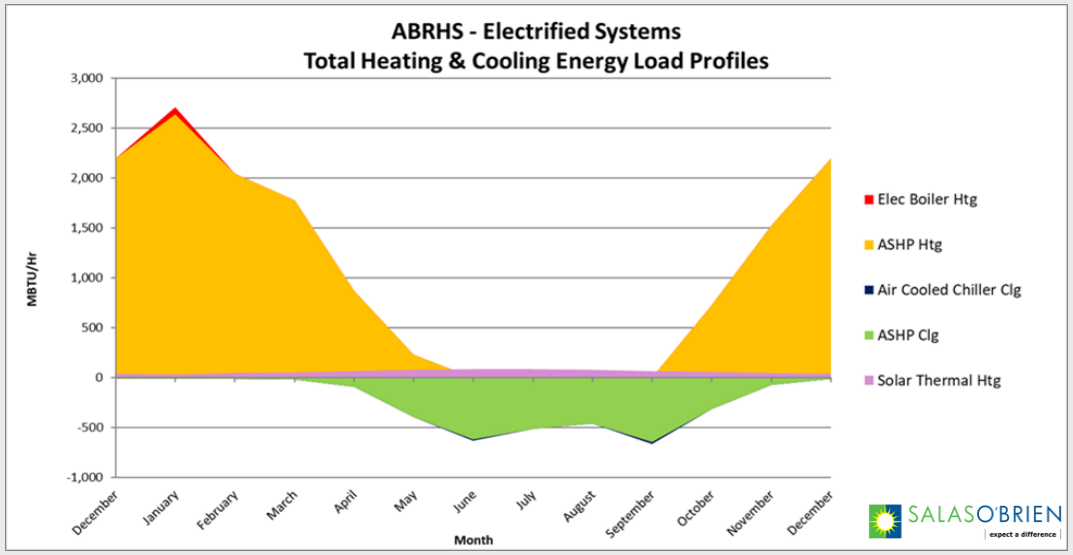
AWARD $157,940 **MATCH** $55,080

PROJECT TYPE Climate Action Plan + Electrification Roadmap

CORE PRINCIPLES DEMONSTRATED Conducting robust community engagement; Pursuing innovative, transferable approaches

DESCRIPTION

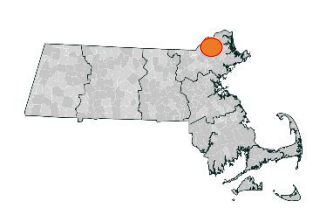
- Organized over 20 events to solicit broad and diverse public input on the Climate Action Plan.
- Partnered with Acton-Boxborough RHS students to engage youth; translated material to reach English-isolated population in Acton.
- Electrification Roadmap: analysis and electrification planning for seven key municipal/school buildings, including effective strategies and cost analysis (capital, operational). Final product transferable for other communities and municipalities pursuing electrification.



Shawsheen River Watershed Land Conservation Planning and Prioritization for Climate Resilience and Environmental Justice

MVP
Municipal Vulnerability Preparedness

Andover FY22



Learn More:

[Shawsheen River MVP Project Experience]

AWARD $131,700

PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Innovative approach to parcel assessment; Conducting robust community engagement; Achieving broad and multiple community benefits

DESCRIPTION

- Developed climate adaptation goals through climate data analysis and community stakeholder engagement; Identified gaps between current planning goals and climate adaptation goals
- Reviewed existing protected parcels and private parcels through a desktop site screening process and in-person field assessments to determine opportunities for flood resilient restoration solutions, and potential land acquisition
- Prioritized parcels for land acquisition and restoration potential, in accordance with the climate adaptation goals

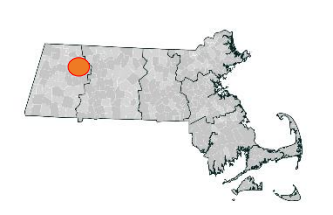
Photo credit: Jeff Cary

Photo credit: Joyce Losick-Yang

Baptist Corner Road Stream Crossing Ecological Improvements

MVP
Municipal Vulnerability Preparedness

Ashfield FY22



AWARD $548,600

MATCH $178,800

PROJECT TYPE Construction

CORE PRINCIPLES DEMONSTRATED Achieving Broad and Multiple Community Benefits; Building Community Capacity for Climate Resilience

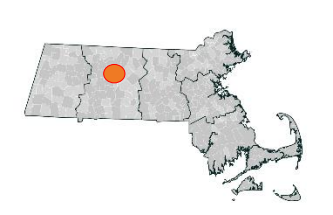
DESCRIPTION

- Replaced a deteriorated, perched and severely undersized 5-foot diameter CMP culvert with a 19-foot span by 4-foot rise precast concrete culvert.
- Greatly increased flood capacity, climate resilience, and aquatic / terrestrial wildlife passage.
- Organized numerous project partners to complete project

Greening Lord Pond Plaza, Phase 2

MVP
Municipal Vulnerability Preparedness

Athol FY22-23



Learn More:

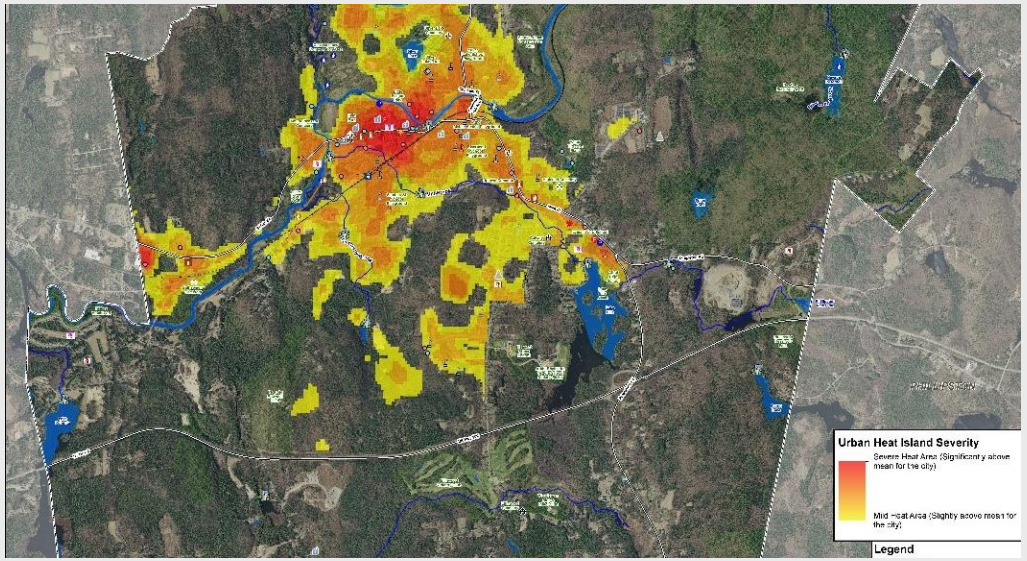
[Greening Lord Pond Plaza Project Website]

AWARD $189,030

PROJECT TYPE Design and Permitting

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Achieving broad and multiple community benefits; and Furthering a community identified priority action to address climate change impacts.

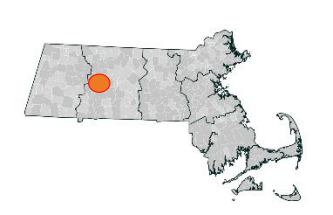
DESCRIPTION Applies nature-based solutions to daylight a culverted brook, create wetlands, add greenspace, and increase flood storage in downtown Athol. Additional co-benefits: significant reduction of impervious surface at the plaza, increased tree canopy cover, improved vehicular and pedestrian safety, and additional opportunities for public gathering spaces as well as new fish and wildlife habitat and improved stream connectivity.



Belchertown Land Conservation and Restoration of the Scarborough Brook Headwaters for Climate Resilience

MVP
Municipal Vulnerability Preparedness

Belchertown FY22



Learn More:

[Belchertown Climate Change Vulnerability and Resilience Website]

AWARD $480,025 **MATCH** $183,500

PROJECT TYPE Construction and On-the-Ground Implementation

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Supporting strong partnerships with Climate Vulnerable Populations

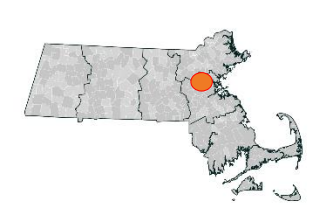
DESCRIPTION

- Multi-pronged approach to watershed resilience included land acquisition, right-sizing culverts, and dam removal/restoration.
- Project will ultimately result in removal of two dams within the Scarborough Brook Conservation Area, and replacement of downstream culverts for improved flood resilience and restored habitat value.

Stormwater Flood Reduction and Climate Resilience Capital Improvement Plan

MVP
Municipal Vulnerability Preparedness

Belmont FY22



Learn more:

[Belmont Flood Reduction and Climate Resilience Website]

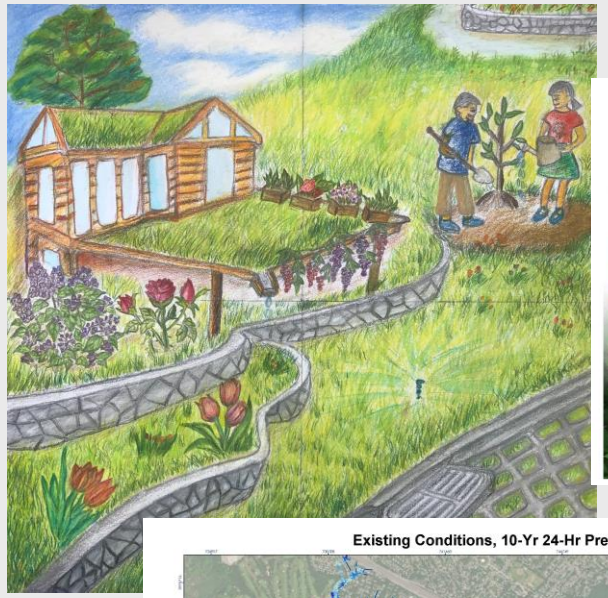
AWARD $195,000 **MATCH** $63,600

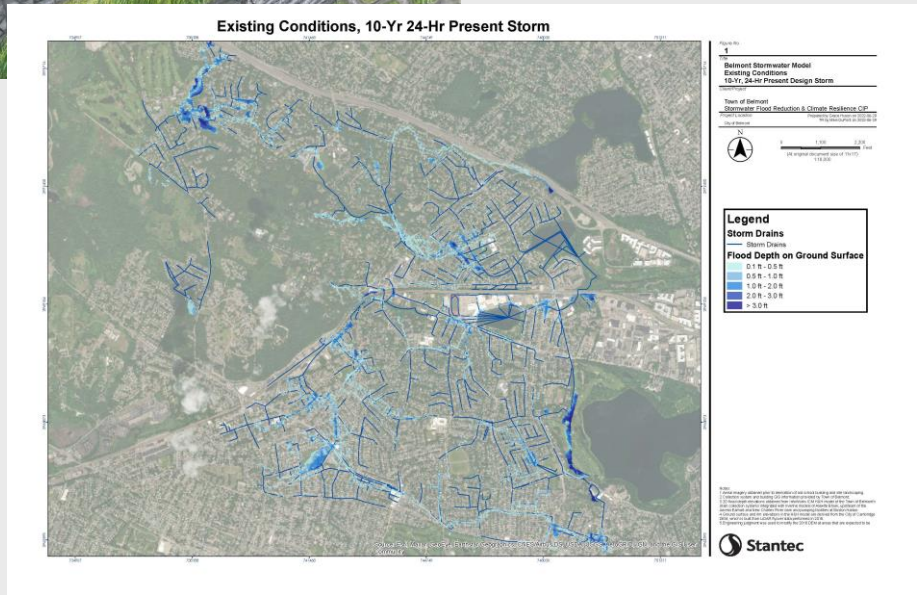
PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change impacts; Employing Nature-Based Solutions (NBS)

DESCRIPTION

- Update and use a revised hydraulic model to document current and future flooding problems
- Identify site-specific green infrastructure/ nature-based controls for implementation
- Create a capital improvement plan to equitably implement the identified projects

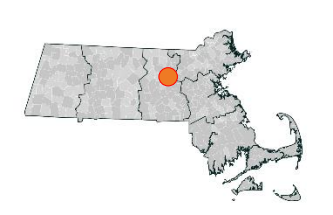




Nashua River Communities Resilient Lands Management Project

MVP
Municipal Vulnerability Preparedness

Bolton & Clinton FY22



Learn More

- Nashua River Communities Resilient Lands Website
- Story Map

AWARD $308,691 **MATCH** $77,800

PROJECT TYPE Planning Project

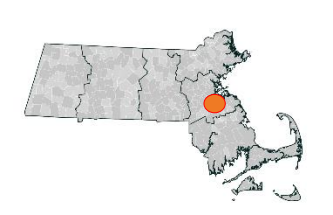
CORE PRINCIPLES DEMONSTRATED Achieving broad and multiple community benefits; Pursuing innovative, transferable approaches

DESCRIPTION

- Strengthen the health of these lands so that they remain resilient in providing ecosystem services, so that the communities can, in turn, build strength and resilience.
- Promote management practices that improve forest and wetland health
- Transform how existing maintenance time and resources are spent through the use of curated land management guides.
- Create Wetland bylaws and regulations that establish carbon storage/ sequestration and climate resilience interests for Clinton and Bolton wetlands bylaws and regulations and associated performance standards.

Smith’s Beach Stormwater BMP Design

Braintree FY22



Learn more:

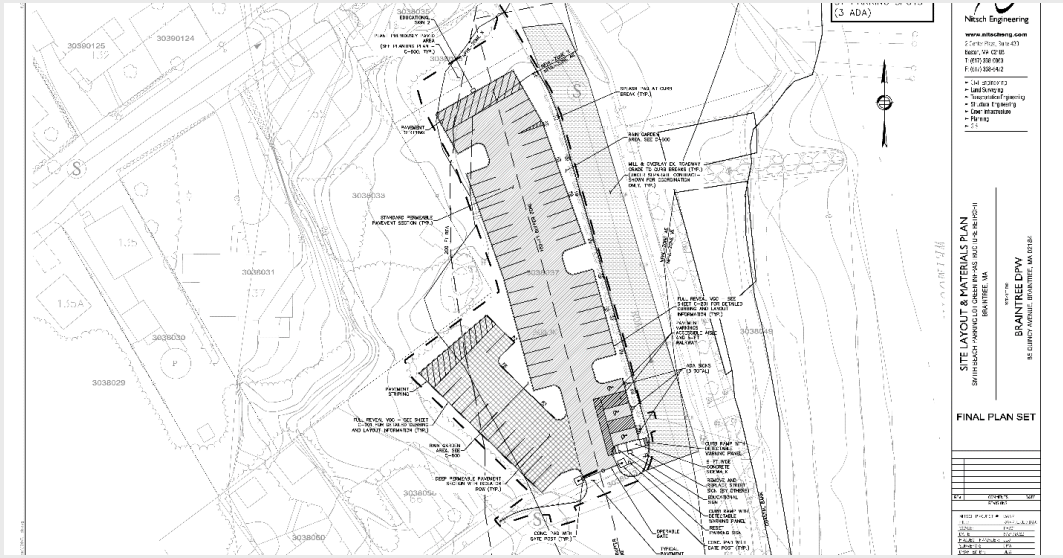
- Braintree Stormwater Division
- Stormwater Grants Page

AWARD $47,500 **MATCH** $16,340

PROJECT TYPE Design & Permitting

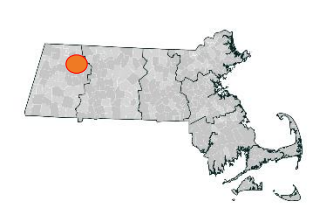
CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Utilizing Climate Data Proactively

DESCRIPTION The project redesigned a typical gray-infrastructure parking lot to include permeable pavement, landscaped islands, and subsurface infiltration suitable for treating stormwater flows from the upland residential neighborhood. The new resilient parking lot would mitigate stormwater flows as well as heat island effects.



Clesson Brook Watershed Based Assessment & Climate Resiliency Plan

Buckland FY22/FY23



Learn More:

- ArcGIS Map Viewer
  - Username: Clesson_Brook
  - Password: Clesson_Brook22!
- Project StoryMap

AWARD $ 100,117 **MATCH** $ 41,650

PROJECT TYPE Planning and assessment

CORE PRINCIPLES DEMONSTRATED Conducting robust community engagement; Employing Nature-Based Solutions (NBS)

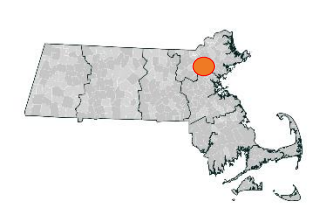
DESCRIPTION

- Build partnerships and Public outreach focused on landowners and stakeholders in the Clesson Brook watershed.
- Identify the causes and locations of channel instability that will then be used to identify, prioritize, design, permit, and implement projects.
- Prepare a Watershed-Based Assessment and Climate Resiliency Plan.

Vine Brook Watershed Flood and Urban Heat Island Assessment

MVP
Municipal Vulnerability Preparedness

Burlington FY22



Learn More:

[See project videos, StoryMap, and reports here]

AWARD $108,500 **MATCH** $37,245

PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Utilizing Climate Change Data for a Proactive Solution; Employing Nature-Based Solutions

DESCRIPTION A multi-pronged stakeholder assessment and field-data collection effort were utilized to identify a set of overarching resilience actions to address flooding, urban heat, and provide additional co-benefits using Nature-based Solutions (NbS). Detailed recommendations were developed at six representative locations throughout the project study areas as well as an opportunities matrix which scores value and feasibility of various NbS at commercial, residential, and municipal locations across the watershed. NbS recommendation memos can be used to by public and private entities to scope implementation projects.

NATURE-BASED SOLUTIONS ECOLOGICAL RESTORATION AND RESILIENCY OPPORTUNITIES TABLE

Value	GOOD	BETTER	BEST
Feasibility *	low	mid	high

Number = sitemap location, A = multiple locations or entire area

* Feasibility is based on property ownership or techical access

This table is intended for use in conjunction with the Project Location maps attachment 8 And Storymap case study sites illustrated. (site map references in green)

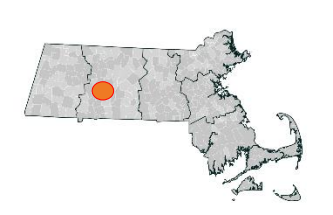
Vine Brook Watershed Study Area

	RESTORATION/RESILIENCY OPPORTUNITY												
	Site Map Reference & Individual Site Map #s	Woods Corner	Burlington Mall South	New England Executive Park - South	New England Executive Park - North	Lexington Street - Neighborhood South	Burlington High School	Lexington Street - Neighborhood North	4th Avenue - North	Terrace Hall Ave (Lord Baron Apartments)	4th Avenue - South	4th Avenue-South (Water Treatment Facility)	
	Ownership	Commericial/Infrastructure	Commericial/Infrastrcuture	Commericial/Infrastructure	Commericial/Infrastructure	Residential/Infrastructure	municipal	Residential/Infrastructure	Commericial/Infrastructure	Residential/Infrastructure	Commercial/Infrastructure		
		Map 1	Map 2	Map 3	Map 4	Map 5	Map 6	Map 7	Map 8	Map 9	Map 10	Map 11	
	Nature Based Solutions (NBS)												
1	Invasive species management	mid	mid	mid	mid	high	mid	mid	mid	high	high	high	
2	River / pond bank revegetation	low	mid	mid	low	high			low				
3	Grassland meadow management restoration		low				mid	low		mid	mid	mid	
4	Forest / shrubland heath management or restoration		mid	mid	mid	high	mid	low	mid	low	low	high	
5	Wetland management restoration	low	low	low	low	high	mid	low	low	low	low	mid	
6	Habitat enhancements	high	low	low	high	high	mid	low	high	mid	low	high	
7	New wetland or floodplain construction / expansion	low	low	low	low	low	mid		low	low	low	mid	
8	Pond creation / alteration		low	low	low	low			low	low	mid	mid	
9	Stream flow alteration	low	low	low	low	low			low	mid	low	low	
10	Species monitoring protocol					mid	high						
11	Pollinator hedgerow buffer		low	mid	mid	low	mid	mid	mid	mid	high	high	
12	Pocket forest		mid	low		low				low	mid	high	
13	Back-water wetland	low	mid	mid	low	mid	low	mid		low	mid	mid	
	Built Environment Best Management Practice (BMP)												
14	Stormwater treatmont wetlands		low	mid		high		low		mid	mid	mid	
15	Daylighting of streams												
16	Upstream BMPs rain-garden, bio-swale, etc.	mid	mid	mid	mid	high		high	mid	mid	mid	high	
17	Shade-habitat/ Infiltration tree plantings	mid	mid	low	mid	mid	high	high	mid	mid	high	high	
18	MSCS culvert improvement	low			low	mid		mid	low	low			
19	Dam modification / controls		low	low		low				low	low	low	
20	Roof Top Gardens/Green Walls		low	low		low	low		low	low	low	mid	
21	Vertical Parking		low	low		low				low	low	low	
22	Pervious parking walking areas		high	low	mid	low	mid		mid	mid	low	low	
23	Aquatic algae / invasive treatment												
24	Lighting modifications / upgrades	mid	high	low		mid	mid	mid		mid	mid	mid	
25	Species crossing protections	low	low	mid	low	high			low	low	mid	high	
26	Beaver deceiver / promoter												

Healthy Soils, Green Infrastructure Policy and Climate Resiliency Public Engagement in Deerfield

MVP
Municipal Vulnerability Preparedness

Deerfield FY22



Learn More:

[Deerfield Climate Resiliency Project Website]

AWARD $40,951 **MATCH** $23,572

PROJECT TYPE Action Grant

CORE PRINCIPLES DEMONSTRATED Deerfield has important MVP Plan goals to reduce the town's carbon footprint and engage citizens in climate action and resiliency

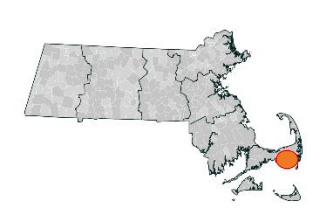
DESCRIPTION This project included:

- A regional Climate Forum with 32 speakers in 9 workshops
- Creation of a Healthy Soils initiative, with strategies for protection of carbon sequestering soils
- Implementation of a Green Infrastructure Policy
- Establishing a climate change curriculum at Frontier Regional School with student engagement activities

Pound Pond Flood Mitigation & Storm Drainage Improvements

MVP
Municipal Vulnerability Preparedness

Dennis, MA FY22



AWARD $120,000 **MATCH** $40,000

PROJECT TYPE Design and Permitting

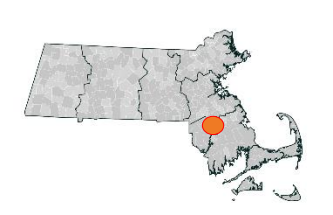
CORE PRINCIPLES DEMONSTRATED Employing Nature Based Solutions; Committing to monitoring project success and maintaining the project into the future

DESCRIPTION The project goal is to restore Pound Pond at Seaview Park in Dennis to provide water quality, habitat and flood plain improvements. The tasks included:

- Completing hydrologic and hydrologic modeling using climate change data, topographic and wetlands survey
- Ongoing public engagement with EJ community and local stakeholders
- Preparing permit level design and opinion of preliminary construction costs (OPCC)
- Preparing and submitting relevant local, state and federal permits
- Completing a Wetland Monitoring and Site Maintenance Plan

Wetland Restoration – Removal of Abandoned Structures (Sam Wright Field)

Easton FY19-22



Learn More:

- Easton Sam Wright Field Project Website
- Easton Canoe River Resiliency Website

AWARD $177,620.00 actual is $70,832.49

MATCH $ 77, 590.52 actual is $35,189.42

PROJECT TYPE Construction and On-the-Ground Implementation

CORE PRINCIPLES DEMONSTRATED Furthering Community Priorities, Employing Nature Based Solutions, Achieving Multiple Community Benefits, Pursuing Innovative/Transferable Approaches

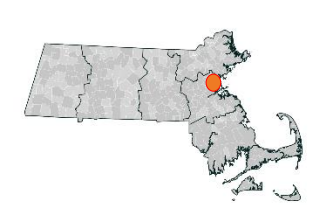
DESCRIPTION Restore historic wetland/floodplain at former agricultural site

- Remove derelict buildings/ impervious cover
- Remove 23,000 sf of fill to restore wetland/floodplain
- Volunteer invasive species monitoring program

Island End River (IER) Flood Resilience Project

MVP
Municipal Vulnerability Preparedness

Everett FY22



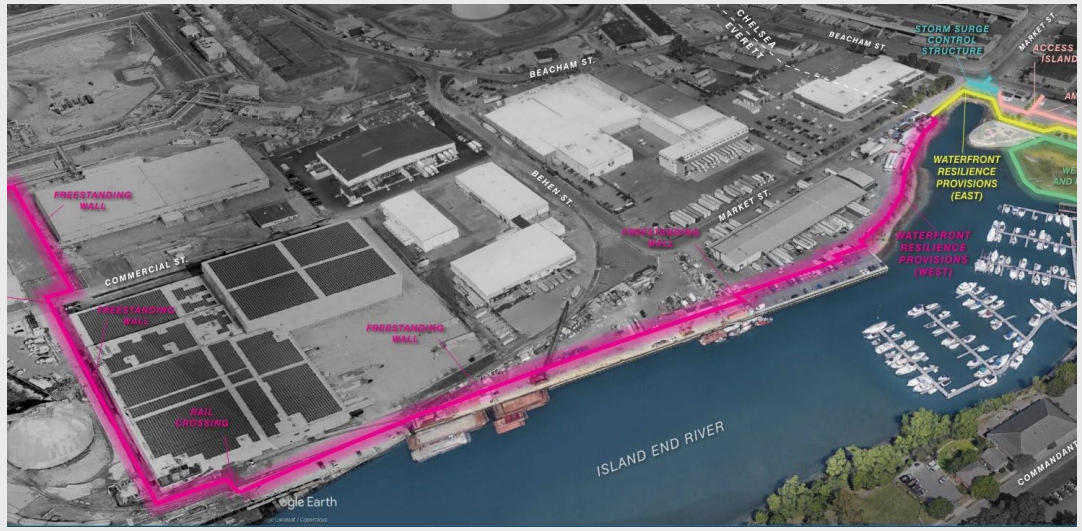
Learn More:
- State Awards $716,500 for Flood Resilience Project – Everett Independent
- North Suffolk Office of Resilience and Sustainability | City of Chelsea MA
- Planning Studies and Reports | City of Chelsea MA
- Planning & Development - Everett, MA - Official Website

AWARD $716,500 **MATCH** $241,388

PROJECT TYPE Design and Permitting

CORE PRINCIPLES DEMONSTRATED Utilizing Climate Change Data for a Proactive Solution, Utilizing Regional Solutions Toward Regional Benefit

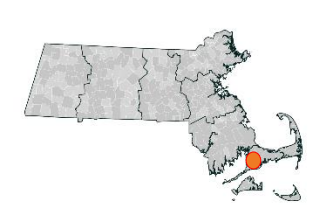
DESCRIPTION
- Worked closely with industrial stakeholders to develop project design and long-term O&M
- Facilitated and funded community advisory group to provide input on public benefits for project
- Modeled storm events against proposed flood provisions and existing site conditions
- Developed design from alternatives analysis to conceptual design to permit-ready plans



Conceptual Design of Flood-Resiliency Improvements for Sewer Infrastructure – Town of Falmouth, MA

MVP
Municipal Vulnerability Preparedness

Falmouth FY22



Learn More:

- Falmouth Wastewater Division Website
- Resilient Woods Hole News and Events

AWARD $104,040 **MATCH** $35,780

PROJECT TYPE Planning, Assessment, Capacity Building, and Regulatory Upgrades

CORE PRINCIPLES DEMONSTRATED Utilizing climate change data for a proactive solution; Assessing Nature-Based Solutions

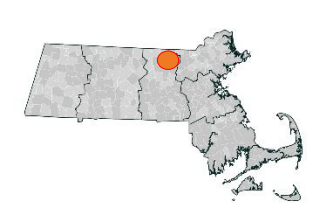
DESCRIPTION

- Established design flood elevations for four vulnerable lift stations and a force main with consideration for future sea level rise.
- Evaluated alternatives to protect vulnerable sewer infrastructure from design floods and developed conceptual drawings for recommended alternatives.
- Community engagement included public informational meetings and participation in the Resilient Woods Hole Public Forums to discuss this project.

Bolstering Public and Private Action to Improve Flood Resiliency in Baker Brook

MVP
Municipal Vulnerability Preparedness

Fitchburg FY22



Learn More:

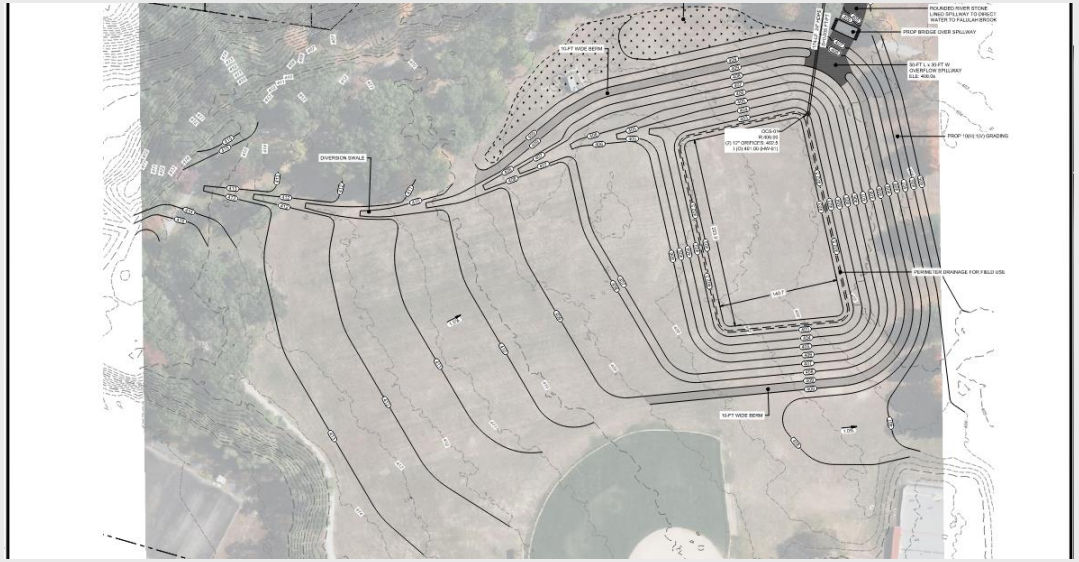
[Fitchburg Baker Brook Flood Resiliency Website]

AWARD $173,000 **MATCH** $58,800

PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED
Employing Nature Based Solutions
Achieving Broad and Multiple Community Benefits

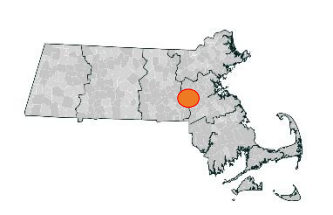
DESCRIPTION The project team revised and enhanced the existing stormwater model to further evaluate potential flood prone areas and nature-based solutions. The improvements were scored and prioritized for the benefits to environmental justice populations, reduction of urban heat island, and other co-benefits to the community. The final products were several preliminary designs (both private and public), a targeted plan to identify and develop public properties and specific private properties for future development, and the development of a feasibility assessment to finance this program through a stormwater and climate resilience utility.



Walnut Street Flood Mitigation – Design & Permitting

MVP
Municipal Vulnerability Preparedness

Framingham, FY22



Learn more:

[Walnut Street Neighborhood Flood Mitigation Project Website]

AWARD $250,394 **MATCH** $81,321

PROJECT TYPE Design & Permitting

CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change impacts; Employing Nature-Based Solutions (NBS); Conducting robust community engagement; Achieving broad and multiple community benefits.

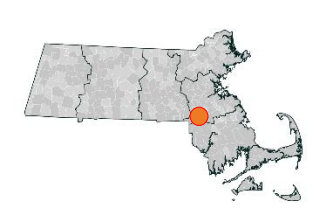
DESCRIPTION

- Restoring and creating flood storage within existing wetlands
- Installing an elevated boardwalk to restore habitat and stream connectivity
- Stream restoration to reestablish flow patterns and restore flood storage

Advancing Green Infrastructure in Foxborough for Enhancing Climate Resilience through Planning and Design

MVP
Municipal Vulnerability Preparedness

Foxborough FY22



Learn More:

[Foxborough Green Infrastructure Project Website]

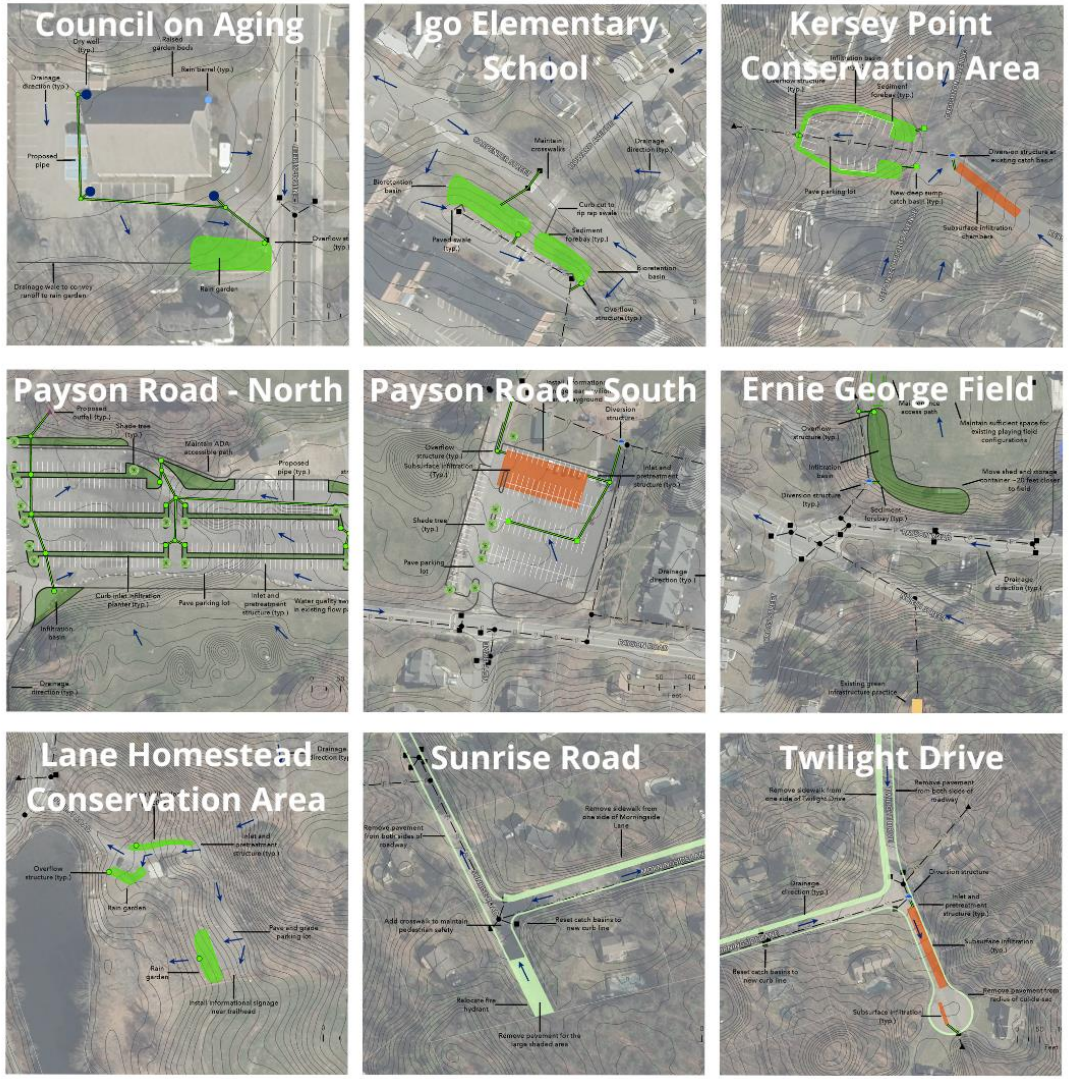
AWARD $ 166,543 **MATCH** $ 54,326.00

PROJECT TYPE Design and Permitting

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions (NBS); Conducting robust community engagement

DESCRIPTION

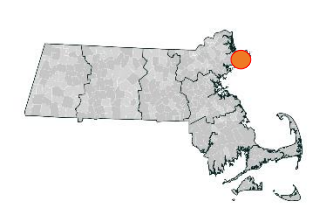
- Gathered and incorporated meaningful project input from residents
- Designed 9 green infrastructure concept plans
- Devised 3 green infrastructure solutions to the flooding at the Cocasset St. railway underpass



Gloucester Climate Action and Resilience Plan (CARP)

MVP
Municipal Vulnerability Preparedness

Gloucester FY 22



Learn More:

[Gloucester Climate Action Project Website]

AWARD $63,396 **MATCH** $28,253

PROJECT TYPE Planning

CORE PRINCIPLES DEMONSTRATED

Achieving broad and multiple community benefits.

Involving Environmental Justice Populations in meaningful decision making

DESCRIPTION

Gloucester has long been committed to addressing climate change. The creation of a Climate Action and Resilience Plan (CARP) provides a broader, public facing strategy and identifies clear goals to move the community forward.

The completed CARP includes both community-wide and municipal goals, an inventory of GHG emissions in Gloucester, and individual and integrated actions to achieve the City's goals.

Goals

Goals

1. Access to transit, walkability, and connectivity are prioritized in all municipal and development planning.
2. All residential neighborhoods, commercial centers, and community spaces are interconnected by multimodal transportation systems that are also affordable, reliable, and climate resilient.
3. Gloucester and neighboring communities are serviced with affordable, reliable, and accessible carbon-free regional transportation systems.
4. The City leads by example with transitioning all municipal fleets to low- or zero emissions.

Strategies

M7 - Advocate for electrification of regional public and private transit systems (ex: CATA busses, trolleys, water shuttles)	State/Federal/Regional
M8 - Advocate for community transit upgrades including supporting regional transit needs, route expansions, bus stop upgrades, and bus rapid transit.	State/Federal/Regional
M9 - Promote neighbor-to-neighbor transit options including carpool options, car shares, and volunteer ride request for those with limited mobility access.	Residents/Businesses
M10 - Ensure that the cost of electricity usage and financing mechanisms are considered to allow for payment of EV charging use now or in the future.	City
M11 - Promote adoption of EV charging stations at local businesses, multi-family, and rental developments.	Residents/Businesses

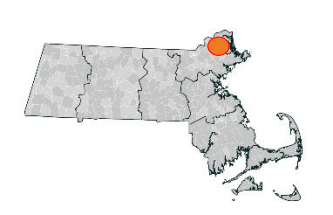
Implemntation Blueprints

M5 – Pursue electric buses with School District.

Sphere of Influence	City
Key Next Steps	• Continue research and discussions with potential EV school bus vendors with the School Department. • Scope the scale of install adoption, including considering the upfront level of investment in EV charging and piloting of EV busses.
Improving Equity	• Ensure that initial adoption of EV in a pilot includes benefits to Environmental Justice communities. • Map out potential complementary funding sources – i.e. combine EV charging station incentives and grants with grants for electric busses.
Potential Co-benefits	• Improved air quality. • Educational benefits for students.
Implementation Partners	• **Government and Municipal Bodies:** School Board, Clean Energy Commission, Gloucester Youth Council, Mayor's Office • **City Departments:** School Department, Planning, Community Development
Funding Sources	• CDBG • ARPA • EPA • National Grid
Measures of Success	• All Gloucester's school buses are electric.

Johnson Creek Watershed Flood Resiliency Project

Groveland FY22



Learn More:

[Groveland Flood Resiliency Project Website]

AWARD $82,186 **MATCH** $27,843

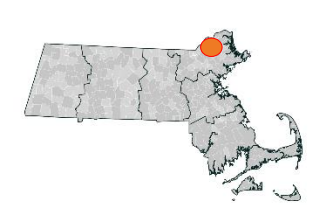
PROJECT TYPE Planning

CORE PRINCIPLES DEMONSTRATED Employing Nature Based Solutions, Achieving Broad and Multiple Community Benefits

DESCRIPTION There are several areas in the Johnson Creek Watershed that have potential flood risk. The purpose of this project was to develop a prioritized action plan to increase resiliency to climate change throughout watershed.

Little River Dam Removal and River Restoration

Haverhill FY22/23



Learn More:

[Little River Dam Project Information]

AWARD $475,000

PROJECT TYPE Design and Permitting

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Supporting strong partnerships with Environmental Justice Populations; Conducting robust community engagement; Achieving broad and multiple community benefits

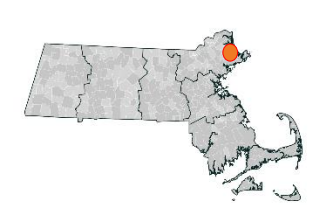
DESCRIPTION

- Completed design and permitting for removal of Little River Dam, including restoration of 2,000+ linear feet of river, contaminated sediment management, and public river access improvements
- Developed concept graphics and photo renderings for the proposed dam removal and river restoration
- Utilized a Community Liaison model for successful engagement with the EJ community and hosted bi-lingual public forums and on-site open house with dozens of attendees

Ipswich River Sewer Interceptor and Siphon Risk Mitigation and Resiliency Improvements Project – Bank Biostabilization Construction

MVP
Municipal Vulnerability Preparedness

Ipswich FY22



Learn More:

Ipswich River Bank Biostabilization Project Website

AWARD $117.8k **MATCH** $54.7k

PROJECT TYPE Construction and On-the-Ground Implementation

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

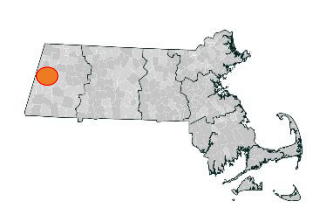
DESCRIPTION

- Biostabilization plan implemented nature-based solutions to improve natural systems for community and ecosystem adaptation sources to make a broad impact in the community and protect sewer.
- Native plantings and toe stone create new habitat
- Community feedback and participation helped shape project: design coordination, plantings selection, Council on Aging Site Walk, Multi-lingual Project handouts, project poster designed by H.S. Environmental club.

Housatonic Stream Restoration for Regional Flood Resilience

MVP
Municipal Vulnerability Preparedness

Town of Lenox (*regional lead*) FY 22 - 23



Learn More:

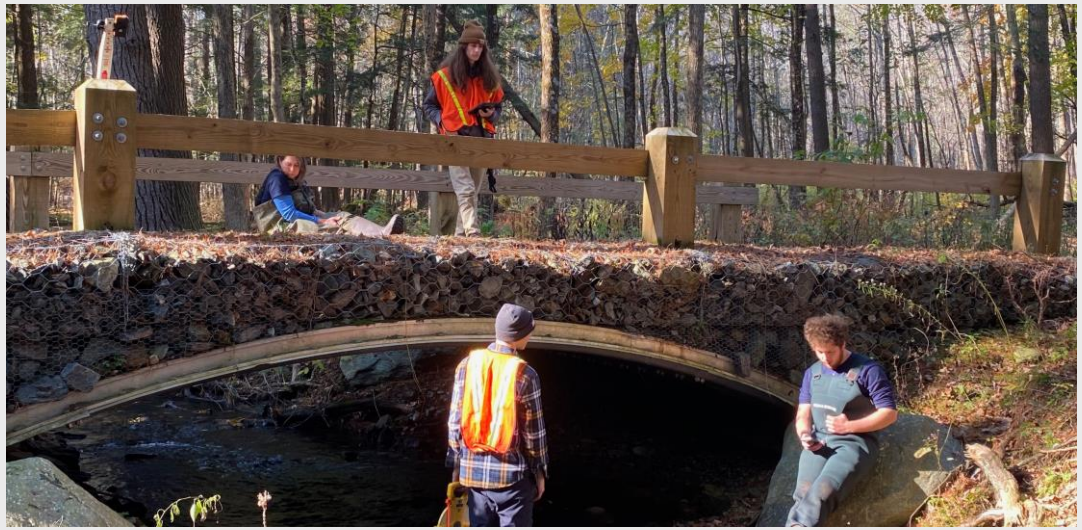
[Regional Culverts Project StoryMap]

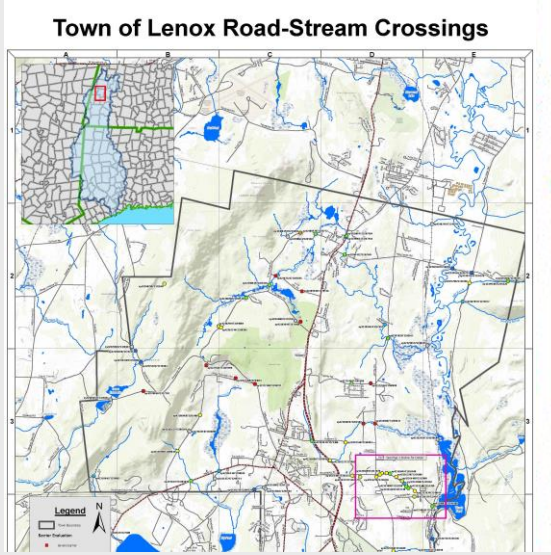
AWARD $295,190 **MATCH** $99,720

PROJECT TYPE Planning, Assessments, Capacity-Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Conducting robust community engagement & Utilizing regional solutions toward regional benefit

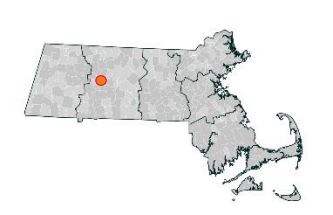
DESCRIPTION Project provided Road-Stream Crossing management plans for four communities - Lenox, Pittsfield, Stockbridge, and New Marlborough. This included community-wide culvert assessments completed by locally trained and employed youth, designs for replacement of three priority culverts, and nature-based solutions analysis for flood resilience. In addition, partnerships with community-based organizations resulted in a series of engaging public events and classroom education around climate change.





Shutesbury Road Culvert Enhancement

Leverett FY 22 and 23 (extension)



AWARD $258,750 **MATCH** $66,890

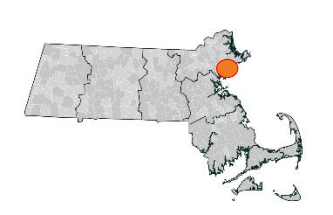
PROJECT TYPE Construction and On-the-Ground Implementation

CORE PRINCIPLES DEMONSTRATED Nature Based solution; Protect area from flooding; Promotes biodiversity

DESCRIPTION The project's primary goal was to enhance the resiliency of the whole ecosystem of the area surrounding the culvert by replacing the 60 year old, asphalt coated deteriorated corrugated steel culvert with a new embedded concrete culvert with a natural substrate. In addition, this project will help keep Shutesbury Road open. Failure of this culvert and subsequent closure of the two-lane road would cause significant economic impact to Leverett and surrounding towns. Shutesbury Rd is a vital corridor that connects larger employment centers with smaller towns. Many students and staff commute using this road to and from the schools within the Five College system. Shutesbury Rd also provides an important connection to the Amherst area and Routes 202 and 2.

Barry Park Green Infrastructure Project

Lynn FY22 & FY23



Learn More:

[Lynn Green Inrastructure Project Website]

AWARD $476,242.00 **MATCH** $172,830.00

PROJECT TYPE Construction & On-the-ground Implementation

CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change impacts, Employing Nature-Based Solutions (NBS), and Increasing equitable outcomes for and supporting strong partnerships with Environmental Justice (EJ) Populations and Climate Vulnerable Populations

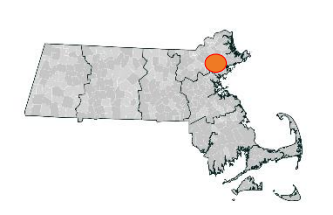
DESCRIPTION Construction of Low Impact Design solutions in and adjacent to Barry Park. The project mitigates neighborhood flooding and improves stormwater quality.

LID elements included the construction of:

- pervious parking with sub-surface storage & infiltration
- bioswale along the perimeter to the parking area
- four bio-swales at the intersection of Batchelders Court and Ainsworth Place.

Richardson Green Conservation Acquisition

Lynnfield FY22



Learn More

[Lynnfield Conservation Acquisition Project Website]

AWARD $1,638,750 **MATCH** $758,950

PROJECT TYPE Richardson Green Conservation Acquisition – Action Grant

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Utilizing Regional Solutions Toward Regional Benefits

DESCRIPTION

Perpetual CR protection of 21 acres of undeveloped forest in Ipswich River watershed; 1) promotion of biodiversity through habitat protection and restoration, 2) reduction of development in climate vulnerable areas, 3) protection of water quality and groundwater recharge, 4) improved air quality 5) climate mitigation through extensive carbon sequestration, and 6) mitigation of inland flooding risks.

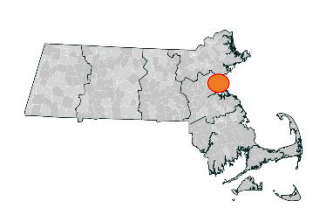
Property is one component/phase of a larger project known as "A Vision for Willis Woods" - a regional effort led by Lynnfield to create a vision/work plan for ~700 acres of open space that are adjacent to this Richardson Green parcel.

Significant project success stemming from public-private collaboration of seven partners; Greenbelt | Essex County's Land Trust, Ipswich River Watershed Association, Lynnfield Center Water District, the Towns of Lynnfield, Middleton, North Reading, and the City of Peabody. A planned future outcome is the development of an extensive recreational trails network with connections to abutting partner communities, and beyond.

Malden River Works for Waterfront Equity and Resilience

MVP
Municipal Vulnerability Preparedness

Malden FY22-23



Learn more:

- Project webpage
- Project budget and timeline

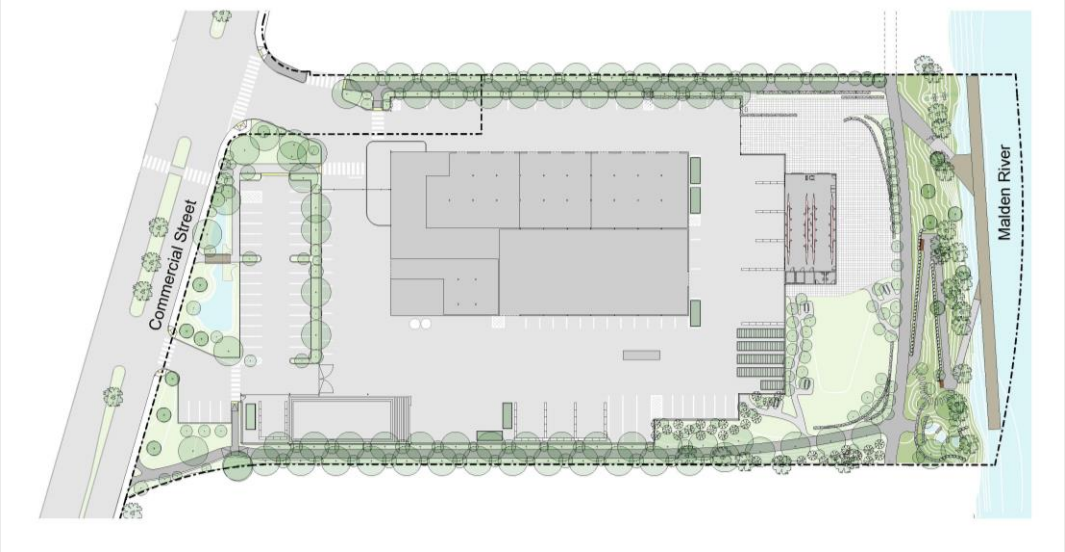
AWARD $554,650.00 **MATCH** $310,661.20

PROJECT TYPE Design/Permitting

CORE PRINCIPLES DEMONSTRATED Conducting robust community engagement and supporting strong partnerships with EJ and other priority populations; pursuing innovative, transferable approaches.

DESCRIPTION

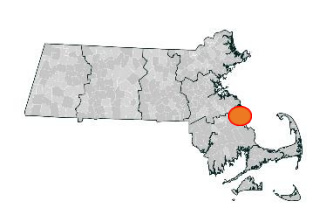
- Project is led by a majority-BIPOC Steering Committee with decision making power
- The park will both provide new green space on the Malden River and make the Malden DPW more resilient to storm and tidal flooding



Marshfield Long-term Coastal Resiliency Plan

MVP
Municipal Vulnerability Preparedness

Marshfield FY22



Learn more:

[Marshfield Coastal Resiliency Project Website]

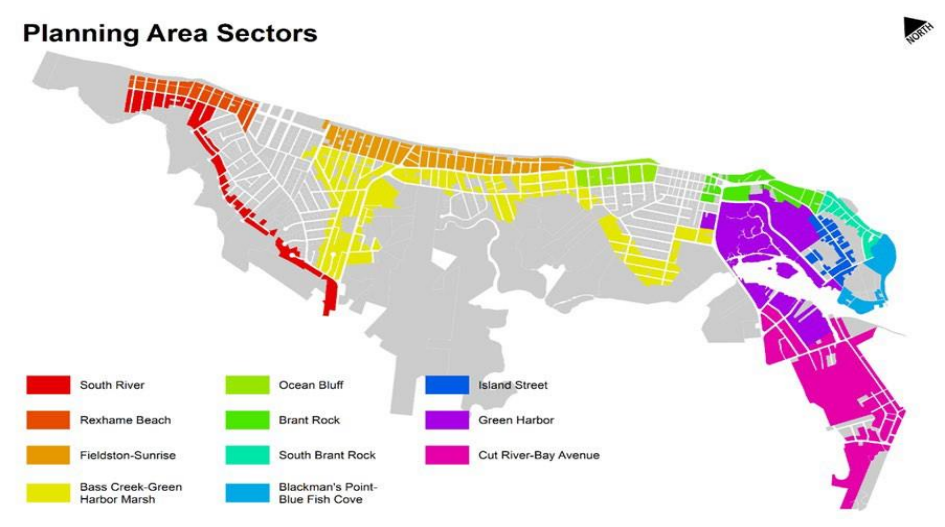
AWARD $78,030 **MATCH** $26,010

PROJECT TYPE Planning, Assessments, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change impacts; Utilizing climate change data for a proactive solution; Conducting robust community engagement

DESCRIPTION

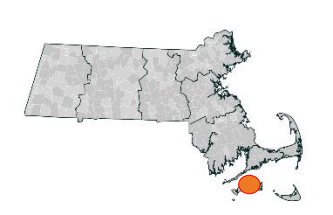
- Evaluated risk factors and collected asset inventory
- Drafted Zoning Recommendations
- Conducted a Benefit Cost Analysis
- Conducted Public engagement and outreach



Martha’s Vineyard & Gosnold Climate Action Plan Phase 2

MVP
Municipal Vulnerability Preparedness

Martha’s Vineyard and Gosnold FY21/22



Learn More:

[The Vinyard Way Climate Action Plan]

AWARD $173,843 **MATCH** $68,021

PROJECT TYPE Planning

CORE PRINCIPLES DEMONSTRATED Locally facilitated and stakeholder based; coordinated action for mitigation and adaptation

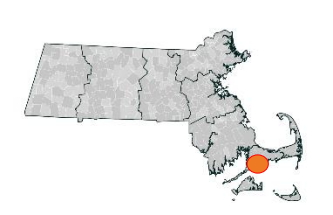
DESCRIPTION

- Over 40 thematic working group meetings were held and over 108 participants (including representatives from Towns, the Tribal Community, NGOs businesses, and students) developed goals, objectives, and actions
- Climate action week - 7 days with over 40 organizations that hosted events and 1400 participants
- 19 monthly public events/presentations and 6 student led climate cafes (focused on thematic working group topics)

Watershed-based Solutions to Increase Resilience to Harmful Algal Blooms in Santuit Pond in a Warmer and Wetter Climate

MVP
Municipal Vulnerability Preparedness

Mashpee FY22



Learn More:

[Mashpee Santiut Pond Algal Bloom Project Website]

AWARD $131,691 **MATCH** $52,452

PROJECT TYPE Design and Permitting

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Supporting Strong Partnerships with Climate Vulnerable Populations; Achieving Broad and Multiple Community Benefits

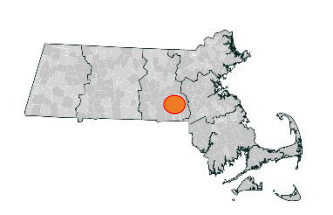
DESCRIPTION

- Developed concept designs for nutrient pollution reduction at key wet weather input locations around Santuit Pond and carried one design forward to permitting
- Provided recommended changes to municipal bylaws to reduce nutrient impacts to all surface waters in Mashpee
- Robust public education and outreach program that incorporates the knowledge and perspective of the Wampanoag, installation of signage focused on key themes of the project, and collaboration with Mashpee TV

Mendon Town Hall Campus Green Stormwater Infrastructure: Design, Permitting and Implementation

MVP
Municipal Vulnerability Preparedness

Mendon FY22



Learn More

[Mendon Stormwater Infrastructure Project Website]

AWARD $169,905 **MATCH** $61,072+

PROJECT TYPE Nature-based Solutions for Ecological and Public Health

CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions

Pursuing innovative, transferable approaches

DESCRIPTION

The Mendon Town Hall campus includes the new police station building and the historic Town Hall and old Taft Public Library buildings with minimal landscaping and mostly asphalt. This grant funded the first year of a two-year project. Year one included the design and permitting of green stormwater infrastructure (GSI) using a suite of nature-based solutions to manage, treat, and infiltrate stormwater runoff using practices such as rooftop runoff capturing planters, bioretention, pervious pavers, infiltration systems and depaving a portion of the parking lot. The second year was the construction phase, and this was funded by the Town of Mendon.

The project will showcase the Low Impact Development (LID)/GSI techniques used and educate local businesses, residents and area towns through workshops , signage, brochure/QR code tour and a website.

① PERVIOUS PAVEMENT

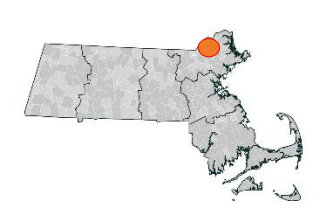
② PLANTER BOX WITH UNDERDRAIN

③ BIORETENTION

Searles Pond/Bloody Brook Corridor Resilience Plan

MVP
Municipal Vulnerability Preparedness

Methuen FY22



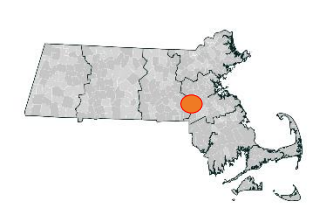
Learn More:

StoryMap

AWARD	$80,250	MATCH	$27,002
PROJECT TYPE	Assessment & Capacity Building		
CORE PRINCIPLES DEMONSTRATED	Utilizing regional solutions toward regional benefit and achieving broad and multiple community benefits		
DESCRIPTION	Joint planning effort of Gateway cities Methuen and Lawrence with Merrimack River Watershed Council & Groundwork Lawrence to set implementation agenda for mitigating flooding impacts of climate change in environmental justice corridor.		

Millis Flood Resiliency Plan

Millis (FY22)



Learn More:

- Millis Flood Resiliency Plan – Downtown Project Area
- Millis Flood Resiliency Video

AWARD $170,000.00 **MATCH** $57,000

PROJECT TYPE Planning

CORE PRINCIPLES DEMONSTRATED

Achieving broad and multiple community benefit

Furthering a community identified priority action to address climate change impacts

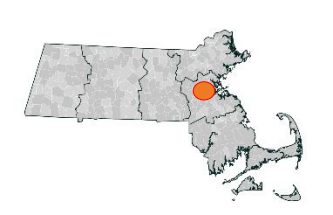
DESCRIPTION

Millis originally set out to look at the threat of storm water flooding on a town-wide basis. During the investigation, two issues came to the forefront: 40A/3A required rezoning would create greater density in the Town's center and the effect of beaver dams on the built environment. The project was amended to shift the project's emphasis to address these issues. The project also complements the Charles River Watershed Assn.'s river flood study, which Millis is also currently participating in.

Building Resilience Across the Charles River Watershed

MVP
Municipal Vulnerability Preparedness

Natick FY22



Learn More:

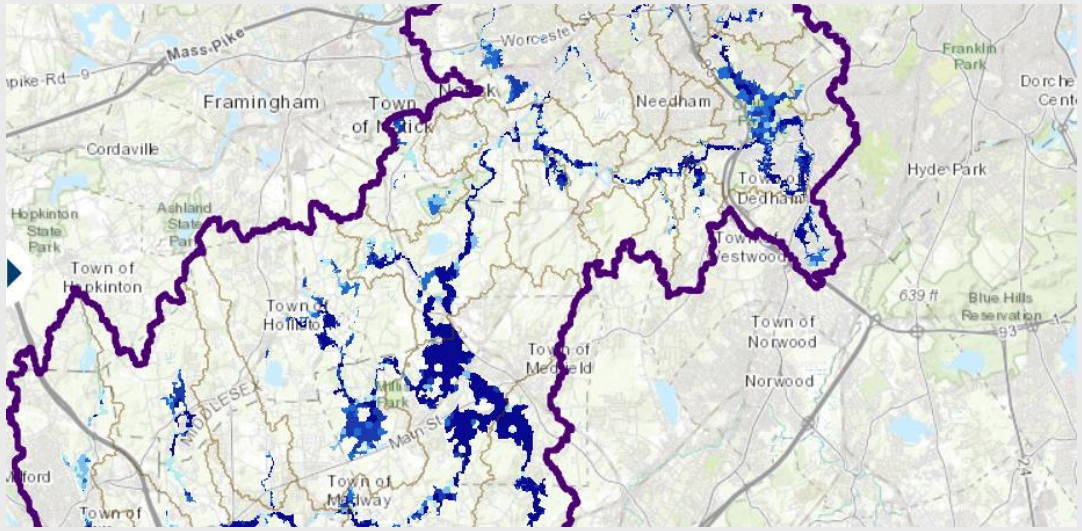
[Natick Watershead Resilience Project Website]

AWARD $233,085.00 **MATCH** $84,037.00

PROJECT TYPE Planning project

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Utilizing regional solutions toward regional benefit

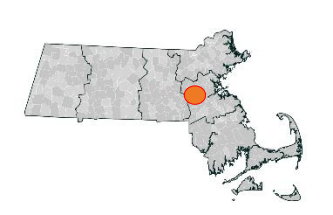
DESCRIPTION Twenty communities in the Charles River watershed partnered to develop initial flood reduction recommendations and plans, based on the results of future flooding simulations from the Charles River Flood Model. Additionally, over 50 flood mitigation project sites were identified across the watershed and 3 were designed and modeled.



MetroWest Climate Equity Project

MVP
Municipal Vulnerability Preparedness

Natick, Framingham and Ashland FY22-23



Learn more:

[MetroWest Climate Equity Project Website]

AWARD $127,150 **MATCH** $45,600

PROJECT TYPE Planning

CORE PRINCIPLES DEMONSTRATED Conducting robust community engagement and supporting strong partnerships with EJ populations

DESCRIPTION

- Built lasting relationships with EJ neighborhoods in collaboration with Community Climate Liaisons
- Co-designed data collection with Community Liaisons to identify EJ climate priorities
- Held trainings and developed tools to increase municipal staff's knowledge of climate equity and improve capacity to engage EJ residents

NEWS

What's needed to fight climate change? Equity project liaisons aim to find out

Lillian Eden
MetroWest Daily News

Published 4:56 a.m. ET May 20, 2022 | Updated 12:23 p.m. ET May 20, 2022

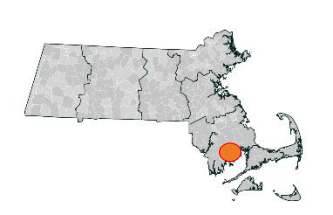
For Roxanna de la Rosa, talking to local residents about climate change is really exciting — and she does it whenever she has a chance in both English and Spanish, the latter of which is her first language.

One might see her volunteering for, or talking about the so-called MetroWest Climate Equity Project at the grocery store, laundromat or even as she gets her nails done.

Green Infrastructure Master Strategy and Implementation Roadmap

MVP
Municipal Vulnerability Preparedness

City of New Bedford FY22



Learn More:

- Public Presentation May 2022
- NB Green Infrastructure Project Website

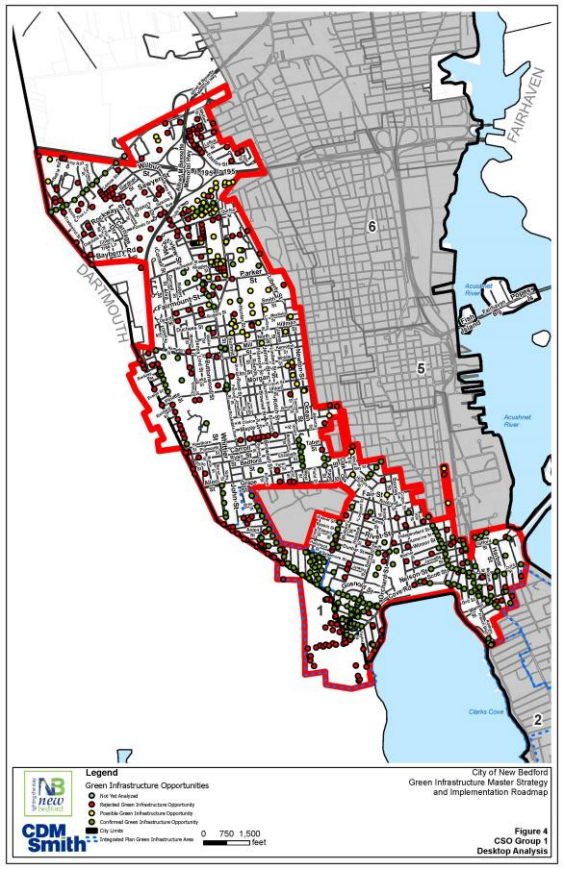
AWARD $432,440 **MATCH** $156,830

PROJECT TYPE Planning, Assessments, Capacity-Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Assessing the feasibility of a specific climate adaptation strategy

DESCRIPTION Evaluated city-wide G.I. opportunities and developed recommendations and BMPs to:

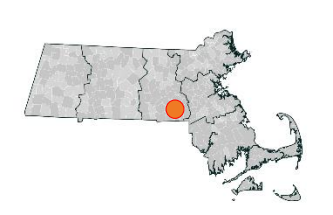
- Reduce volume of stormwater discharge;
- Improve stormwater quality; and
- Equitably reduce urban heat island impacts



Northbridge Carpenter Road Causeway Alternatives Analysis and Source Water Green Infrastructure Protection Plan

MVP
Municipal Vulnerability Preparedness

Northbridge FY22



Learn More

[Northbridge Green Infrastrucutre Project Website]

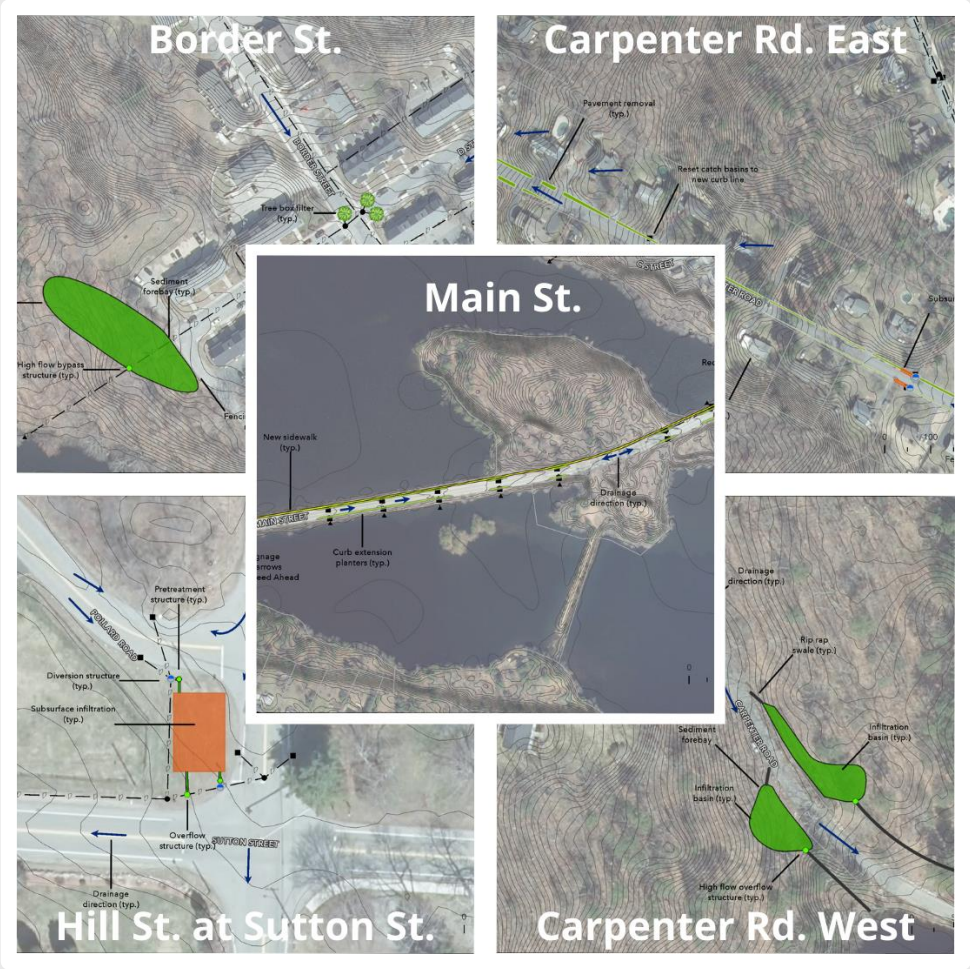
AWARD $ 145,100 **MATCH** $ 50,933

PROJECT TYPE Planning, Assessments, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions (NBS); Conducting robust community engagement

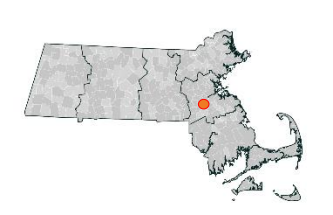
DESCRIPTION

- Gathered and incorporated meaningful project input from residents
- Designed 5 green infrastructure concept plans
- Devised 3 alternatives to the Carpenter Causeway



Traphole Brook Flood Prevention and Stream Restoration Project

Town of Norwood FY22-2023



Learn More:

Norwood Traphole Brook Project Website

AWARD $991,967 **MATCH** $335,781

PROJECT TYPE Construction and On-the-Ground Implementation

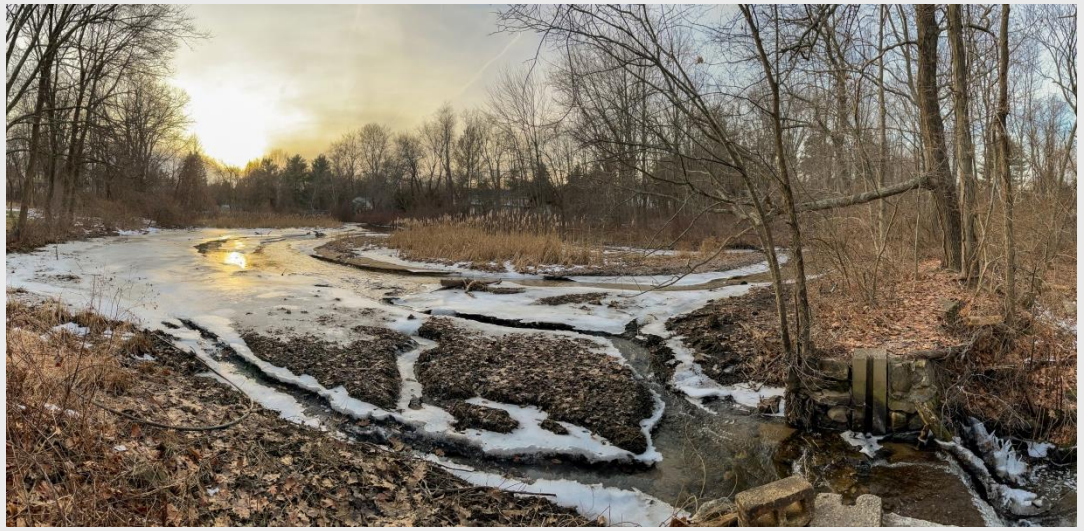
CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Achieving Broad and Multiple Community Benefits

DESCRIPTION

Worked with landowners and the Division of Ecological Restoration to remove an at-risk dam, removed 5000 tons of sediment which threatened downstream apartments in the event of dam failure.

Restored nearly 500 feet of stream channel, removing a physical, thermal, and habitat barrier to fish passage. Connected 2 distinct Brook Trout populations

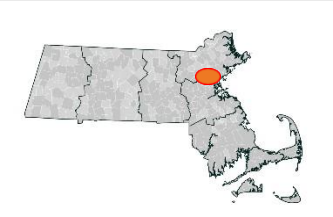
Community engagement included education on biodiversity and opportunities for green infrastructure.



Peabody – Salem Resilient North River Corridor & Riverwalk Project

MVP
Municipal Vulnerability Preparedness

City of Peabody FY22



Learn More

[Peabody Resilient North River Project Website]

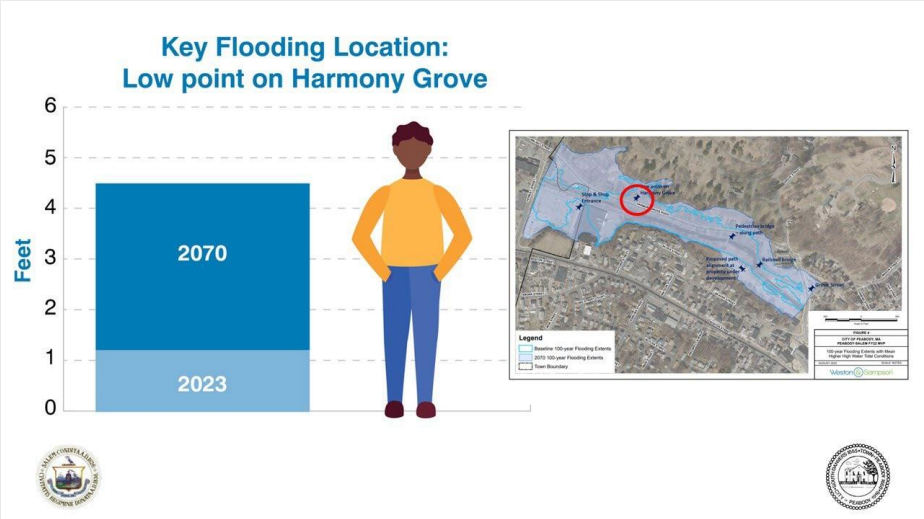
AWARD $150,000 **MATCH** $58,100

PROJECT TYPE Design and Permitting

CORE PRINCIPLES DEMONSTRATED Furthering a community identified priority action to address climate change; utilizing climate change data for proactive solution; employing nature-based solutions (NBS); utilizing regional solutions toward a regional benefit; pursuing innovative solutions, transferable approaches.

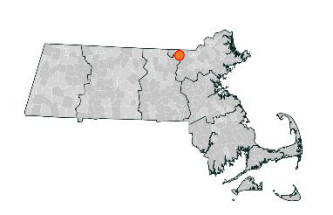
DESCRIPTION

- Collaboration between two communities, City of Peabody and City of Salem, to increase resilience in both communities against climate change by addressing riverine and coastal flooding.
- Assessed potential streambank/slope restoration and stabilization alternatives, including NBS, along North River in the project area to accommodate flood and storm waters, and provide protection against further riverbank erosion and critical infrastructure in the target area.
- Advanced greenway development of a “trail gap” in the region’s greenway network, Border to Boston Trail, to create a 1.6-mile pedestrian/bicycle alternative mode of transportation connection between Peabody Square and Salem MBTA Train Depot.



Sucker Brook Continuity Restoration Project

Pepperell FY22 & FY23



Learn More:

- Sucker Brook Continuity Restoration Project
- Project Photos

AWARD $840,142 **MATCH** $206,238

PROJECT TYPE Construction and On-the-Ground Implementation

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions; Utilizing climate change data for a proactive solution

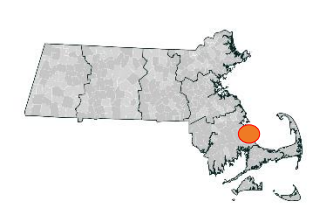
DESCRIPTION

- On-the-ground construction phase to remove a dam and replace 2 undersized, failing culverts on Sucker Brook, a cold-water fishery of high ecological value
- Will improve ecological conditions and water quality/quantity, remove public safety hazards, eliminate flooding risks, enhance climate resiliency
- Aiming to restore stream continuity & mimic the natural stream processes with larger culverts and restore free-flowing conditions

Subterranean Resiliency: Predicting, Assessing and Mitigating Saltwater Intrusion

MVP
Municipal Vulnerability Preparedness

Plymouth FY 22 & 23



Learn More:

- Pine Barrens Alliance
- One Water Living Observatory
- Project Facebook Page

AWARD $304,915 **MATCH** $169,127.25

PROJECT TYPE Planning and Capacity Building

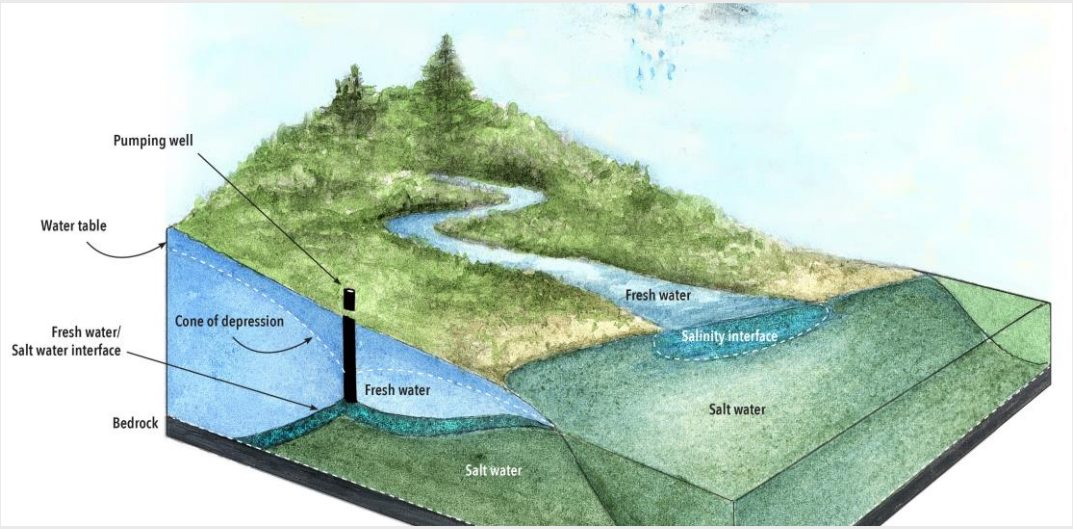
CORE PRINCIPLES DEMONSTRATED

Pursuing Innovative, Transferable Processes

Building Community Capacity for Climate Resilience

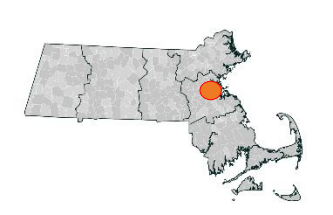
DESCRIPTION

Subterranean Resilience: Predicting, Assessing and Mitigating Saltwater Intrusion is a first-of-its-kind evaluation of the community's susceptibility to saltwater intrusion. Researchers from the UMass-Amherst School of Earth and Sustainability, and a dozen local non-profit environmental and civic organizations undertook a parallel program to raise awareness of climate resiliency issues regarding the water quality of Plymouth's sole source aquifer. The grant also allowed for the creation of two legacy elements: the establishment of a community water testing station providing low or no cost testing to residents, and the creation of 'OneWater,' an ongoing digital chronicle of local water-related projects and programs. (https://onewater.livingobservatory.org/projects)



Gibson Park Resiliency and Recreation

Revere FY22



Learn More:

[Revere Gibson Park Project Website]

AWARD $153,955.72 **MATCH** $51,318.57

PROJECT TYPE Design + Permitting

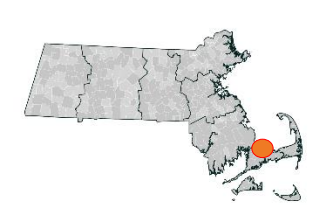
CORE PRINCIPLES DEMONSTRATED Utilizing climate change data for a proactive solution; Employing nature-based solutions

DESCRIPTION The project combines resiliency with recreational assets to design an open space that will create stronger resiliency introducing bioswales, rain gardens, marsh restoration, and a living shoreline with 500K gal of sub surface storm water storage while increasing the practical recreational use of the space with a multipurpose field, tennis courts and raised walkways.

Resilient Design Solutions for Historic Sandwich Village

MVP
Municipal Vulnerability Preparedness

Sandwich FY22



Learn More:

- StoryMap
- Flooding Map
- Important Spots Map
- Adaptation Map

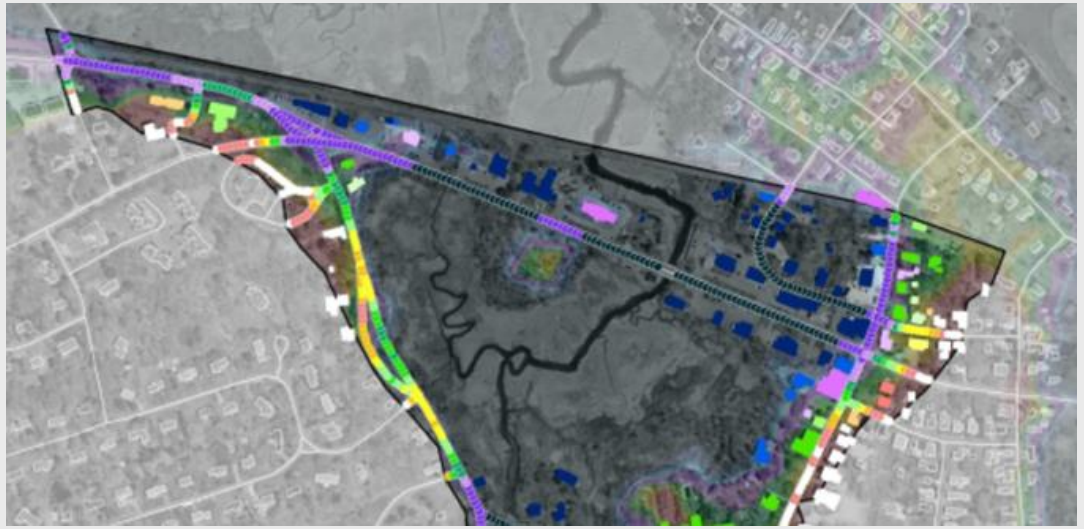
AWARD $79,789 **MATCH** $51,275

PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Utilizing climate change data for a proactive solution

DESCRIPTION

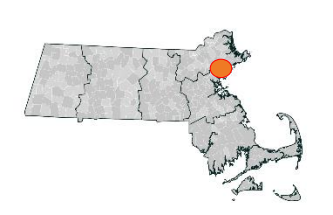
- Community-wide vulnerability assessment
- Dynamic adaptation pathways planning
- Business resilience guide
- Concept plans and renderings for municipal demonstration projects, including road realignment, salt marsh migration, and protective landscape berm



Saugus Climate Adaption and Resilience Plan

MVP
Municipal Vulnerability Preparedness

Saugus FY23



Learn more:

[Saugus Climate Adaption and Resilience Plan]

AWARD $75,000 **MATCH** $25,000

PROJECT TYPE MVP Action Grant

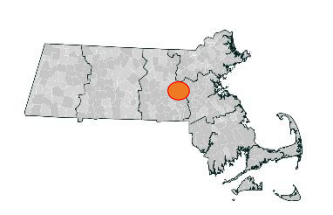
CORE PRINCIPLES DEMONSTRATED Climate Adaption-understanding climate change impacts; Climate Resiliency-preparing for identified impacts through nature based solutions

DESCRIPTION

- Assess risk and vulnerability due to Saugus' top hazards identified in the planning process (flood, heat, severe storms, and drought)
- Examine and communicate how the impacts of these hazards can be reduced through investment in adaptation
- Recommend next steps to reduce risk and build resilience in Saugus

Planimetric Impervious Surfaces Mapping Project

Southborough FY22



Learn More:

[Southborough Impervious Surfaces Mapping Project Website]

AWARD $22,875.00 **MATCH** $7,625

PROJECT TYPE Planning, Assessments, Capacity-Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Utilizing Climate Change Data for a Proactive Solution; Pursuing Innovative, Transferable Approaches

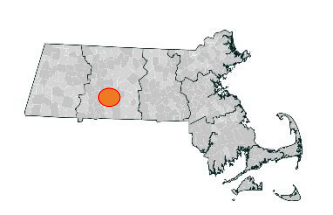
DESCRIPTION

- Creation of GIS data layer for all impervious surfaces
- Understand the amount of impervious per parcel and compare to different use types
- Analyze impacts of impervious surfaces in relation to stormwater discharges to wetland resources

Queensville Dam Removal Feasibility Study & Buttery Brook Watershed Enhancement

MVP
Municipal Vulnerability Preparedness

South Hadley FY22



Learn More:

[Watershead Enhancement Project Website]

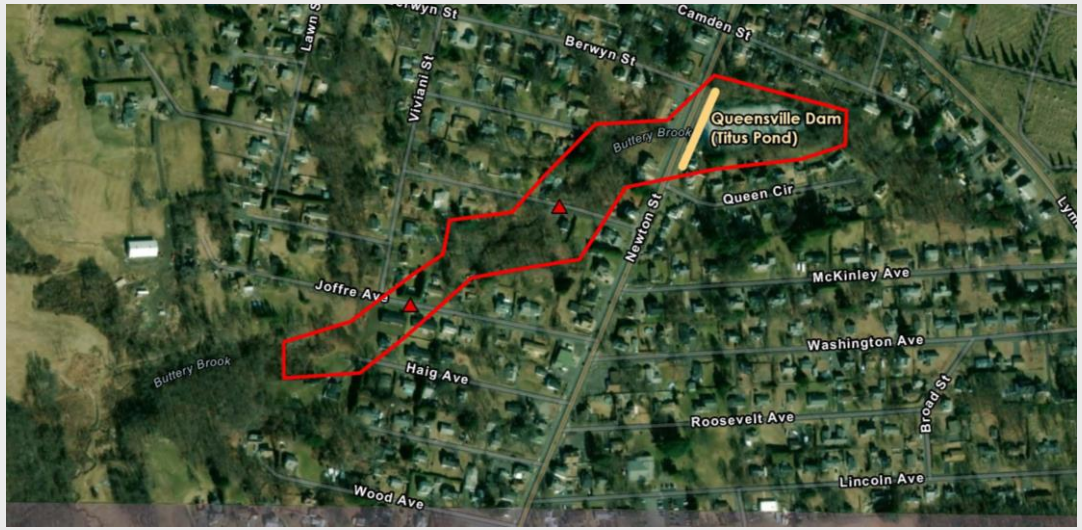
AWARD $125,000 **MATCH** $40,750

PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions, Committing to monitoring project success and maintaining the project into the future

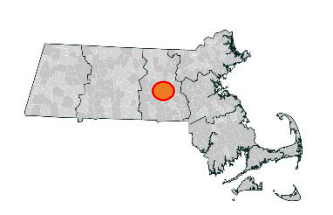
DESCRIPTION

- Eliminate the jurisdictional status and hazard threat associated with Queensville Dam by reducing the impounded area below jurisdictional thresholds
- Address water quality issues in the existing impoundment
- Create an improved Conservation Area with benefit to local residents, including the adjacent school, which is utilizing the area as a living laboratory, as well as adjacent neighborhood residents
- Facilitate management of stormwater in the restored impoundment through the use of nature-based solutions (e.g., wetland step pools) and thereby reduce downstream flooding risk and erosion problems along Buttery Brook



Regulatory Update of Parking Requirements

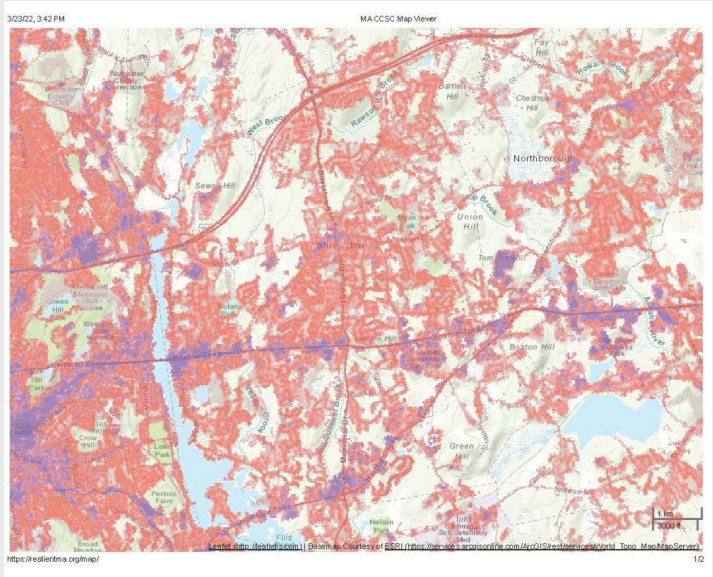
Shrewsbury FY22



Learn More:

[Project Website]

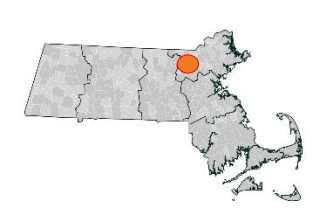
AWARD	$82,501.60	MATCH	$26,870.37
PROJECT TYPE	Review and Draft of Shrewsbury Zoning Bylaws		
CORE PRINCIPLES DEMONSTRATED	Achieving broad and multiple community benefits Pursuing innovative, transferable approaches		
DESCRIPTION	Comprehensive regulatory parking update employing innovative approaches to reduce overall impervious area, and minimize impacts from pavement		



Stormwater Analysis for Nature-Based Solutions and Community Co-Benefits

MVP
Municipal Vulnerability Preparedness

Tewksbury FY22



Learn More:

- [Tewksbury Stormwater Nature-Based Solutions Project Website]
- [Project ArcGIS Story Map]

AWARD $193,935 **MATCH** $64,646

PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

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

DESCRIPTION

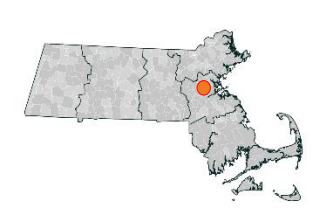
- Five sites across four parcels were identified as sites where nature-based solutions to respond to flooding could be implemented.
- The sites identified as possible candidates for nature-based solution climate resiliency planning are ones that serve some of our most climate vulnerable populations.
- As a result of this project, far more people in Tewksbury are engaged in the ideas of flooding, the causes, and how we can respond as a municipality.

Photo by Paige Impink

Bringing Climate Resilience to Beaver Brook

MVP
Municipal Vulnerability Preparedness

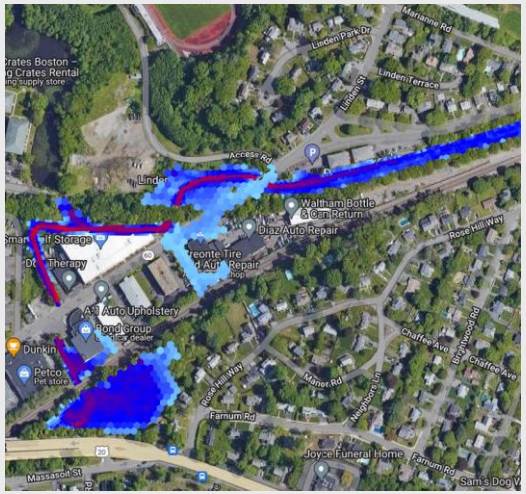
Waltham FY23

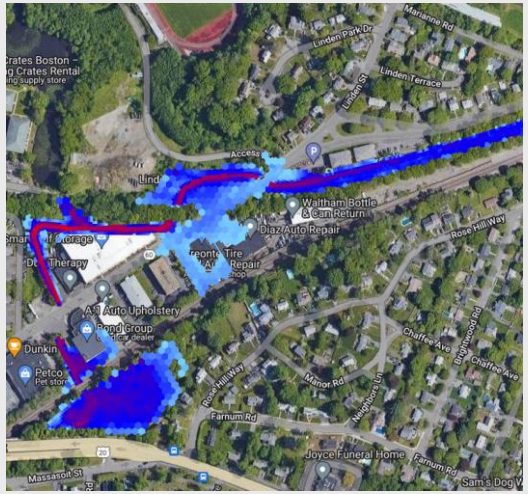


Learn More:

[Waltham MVP Grant Program]

AWARD	$273,562.50	MATCH	$120,980.63
PROJECT TYPE	Design and Permitting		
CORE PRINCIPLES DEMONSTRATED	Furthering a community identified priority action to address climate change impacts; Utilizing climate change data for a proactive solutions		
DESCRIPTION	This two-year project designed and initiated permitting for a suite of flood mitigation actions: • Stream restoration and habitat creation • Reconnection of floodplain • Sediment and organic debris removal		



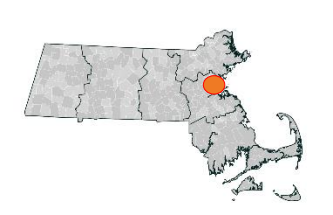


Figures visualize the 2D model results for the 2-year 24-hour rain event in present day (left) and 2070 (right) under a no-action scenario.

Equity-Based Community Greening Program

MVP
Municipal Vulnerability Preparedness

Watertown, FY 2021



Learn More:

[Watertown Equity-Based Community Greening Project Website]

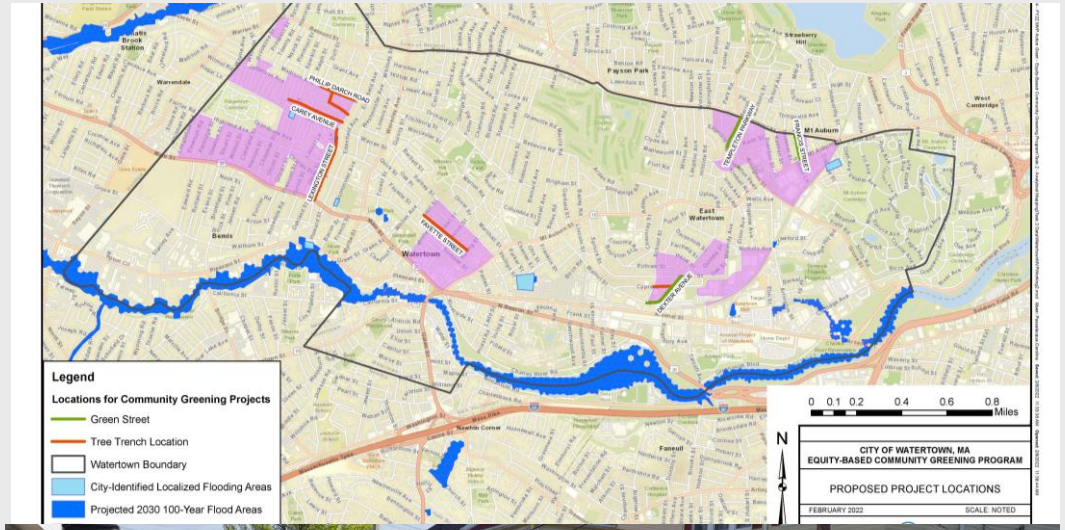
AWARD $94,240 **MATCH** $47,378.19

PROJECT TYPE Planning and Design

CORE PRINCIPLES DEMONSTRATED Employing nature-based solutions and Increasing equitable outcomes for climate-vulnerable communities

DESCRIPTION

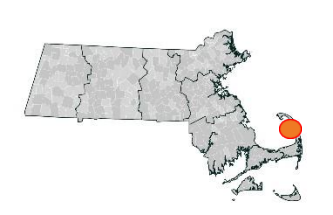
- Utilized data to develop map of climate-vulnerable areas of Watertown
- Identified 3 potential Green Streets and other streets suitable for tree trenches; 75% designs
- Conducted general and targeted engagement with public and abutters on benefits of GSI and solicited input on Green Streets designs



Herring River Restoration Project, Phase 1 Final Construction Plans and Bid Specifications

MVP
Municipal Vulnerability Preparedness

Wellfleet FY22



Learn more:

- Town of Wellfleet Project Website
- Friends of Herring River

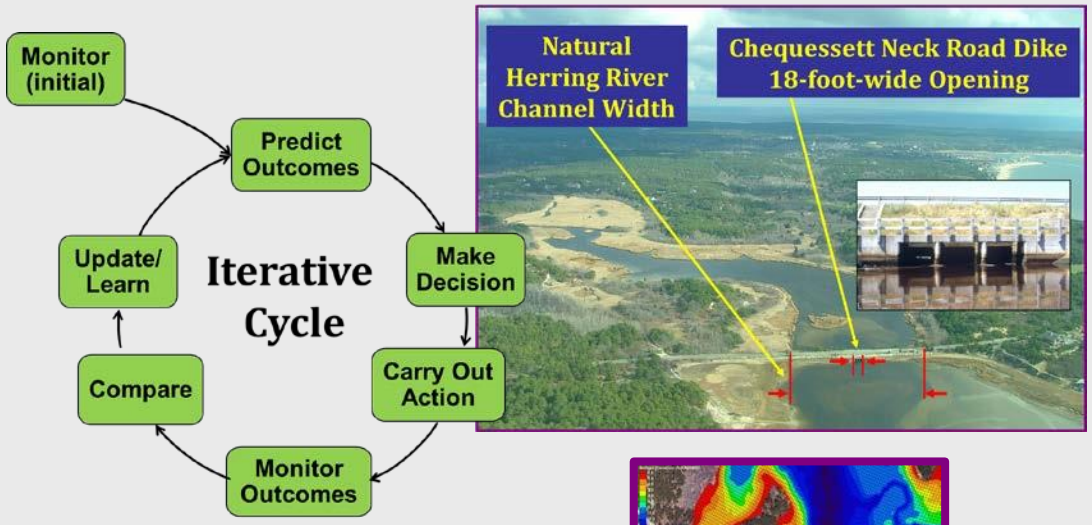
AWARD $589,960 **MATCH** $237,171.51

PROJECT TYPE Design and Permitting

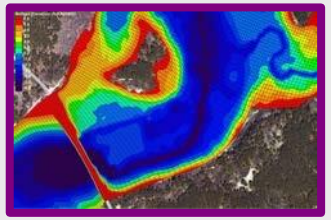
DESCRIPTION Employing Nature-Based Solutions; Pursuing innovative, transferable approaches; Achieving Broad and Multiple Community Benefits

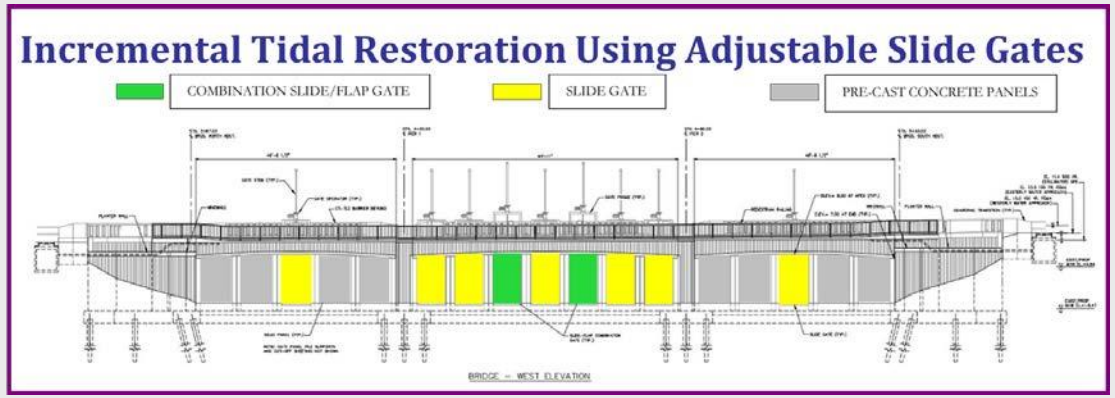
CORE PRINCIPLES DEMONSTRATED

- Phase 1 includes construction of all infrastructure and mitigation measures needed for full tidal restoration of over 1,000 acres of degraded marsh
- Completed final (100%) design for 5 Project elements (*incl.* Chequessett Neck Road Bridge water control structure) and developed Project Manuals (*incl.* construction-level design plans, specifications, and contract/bid documents)



STRUCTURED DECISION MAKING → ADAPTIVE MANAGEMENT

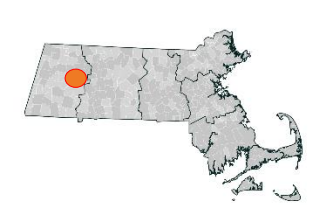




Resilient Westhampton Master Plan and Open Space and Recreation Plan

MVP
Municipal Vulnerability Preparedness

Westhampton, MA FY22-23



Learn More at:

[Westhampton Open Space and Recreation Project Website]

AWARD $237,516.00 **MATCH** $77,550

PROJECT TYPE Planning, and Assessments

CORE PRINCIPLES DEMONSTRATED

Conduct robust community engagement

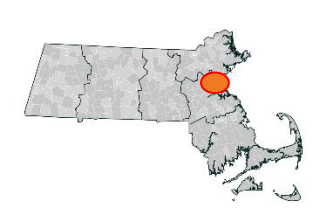
Furthering a community identified priority action to address climate change impacts

DESCRIPTION Community visioning and resilience planning project included preparation of a resilience-focused Master Plan and Open Space/Recreation Plan; diversity, equity, and inclusion training workshops for staff, boards, and residents; youth climate education projects at Hampshire Regional High School with student climate resilience project exhibits at the annual Westhampton Fall Festival.

Belle Isle Marsh: Evaluating Nature Based Solutions to Protect Abutting Communities and Critical Shorebird Habitat from Coastal Inundation

MVP
Municipal Vulnerability Preparedness

Winthrop FY22-23



Learn More:
Winthrop Coastal Inundation Project Website

Community Advisory Group meets with consultant Woods Hold Group to discuss Belle Isle Marsh, habitat diversity, environmental and anthropogenic stressors, and opportunities for restoration.

AWARD $145,307 **MATCH** $54,500

PROJECT TYPE Planning, Assessments, Capacity Building, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Utilizing regional solutions toward regional benefit; Utilizing climate change data for a pro-active solution; Increasing equitable outcomes for and supporting strong partnerships with Environmental Justice (EJ) Populations and Climate Vulnerable Populations; Employing Nature-Based Solutions (NBS)

DESCRIPTION

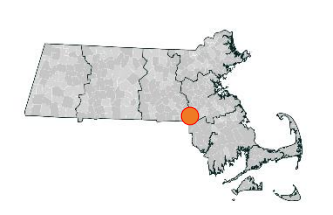
Belle Isle Marsh is the largest remaining salt marsh in Boston Harbor, designated an Area of Critical Ecological Concern (ACEC). The marsh is surrounded by the low-lying, densely developed communities of East Boston, Revere, and Winthrop. Past flooding has damaged both public and private infrastructure, and has impaired critical services, such as public transportation and evacuation routes. All the while, the marsh is suffering increasing environmental stressors, negatively impacting marsh health and longevity. Climate change threatens to exacerbate such risks to both community and marsh. This project emerged from a recognition by stakeholders of the necessity for addressing near-term climate vulnerabilities through regional collaboration.

This Climate Vulnerability Assessment investigates community risk to sea level rise and storm flooding and opportunity for nature-based strategies to minimize coastal flood damage to Winthrop, East Boston, and Revere and, where possible, maximize the habitat value of Belle Isle Marsh Reservation.

Wrentham Low Impact Development Regulatory Integration and Green Infrastructure Master Plan

MVP
Municipal Vulnerability Preparedness

Wrentham FY22



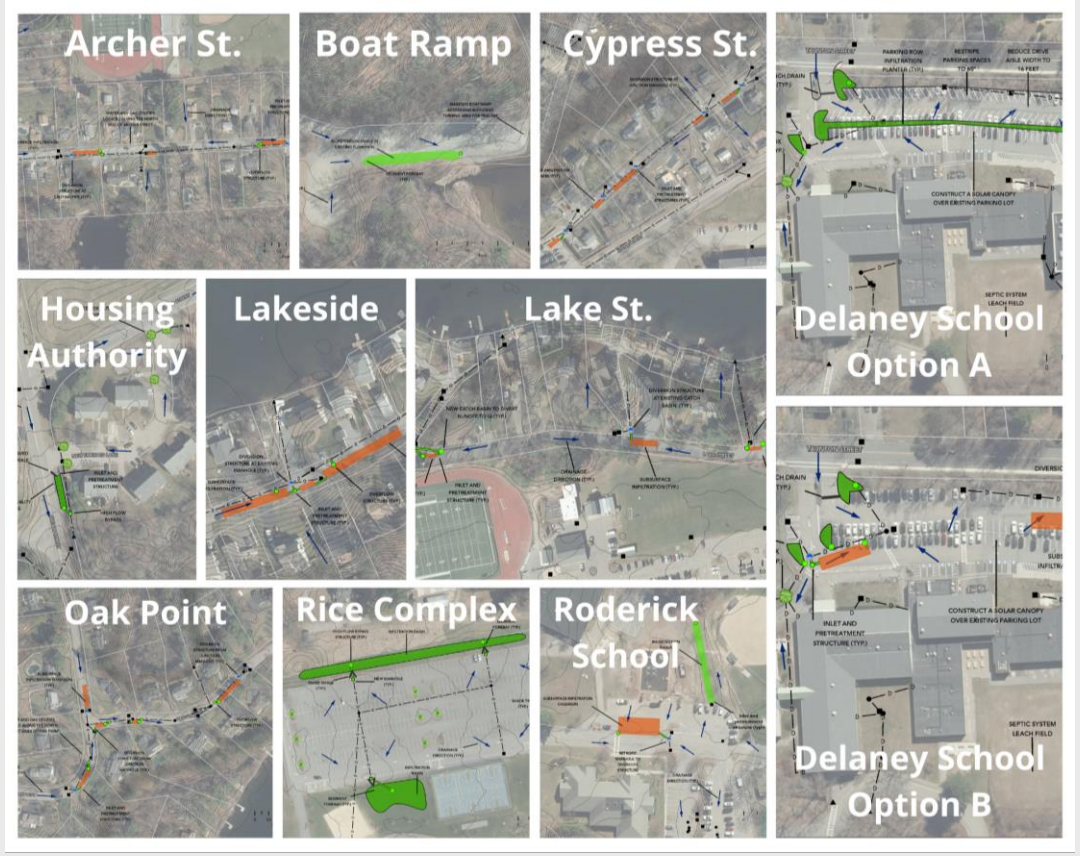
Learn More:

[Wremtham Green Infrastructure Project Website](#)

AWARD $ 113,344 **MATCH** $ 36,895

PROJECT TYPE Planning, Assessments, and Regulatory Updates

CORE PRINCIPLES DEMONSTRATED Employing Nature-Based Solutions (NBS); Conducting robust community engagement

DESCRIPTION

- Gathered and incorporated meaningful project input from residents
- Designed 11 green infrastructure concept plans
- Drafted a new Stormwater Bylaw and Regulations