Case Study – Sustainable Dedham

Municipality/Nonprofit Organization: Town of Dedham, MA
Project Title: Sustainable Dedham: Climate Action and Resilience Plan
Grant Award: $ 185,895
Match: $64,445

Community Overview:

Provide a general description of your community as a brief introduction to the project.

The Town of Dedham is a close community where residents are proud of where they live. Located in Norfolk County, on Boston's southwest border, Dedham offers urban amenities as well as significant natural and recreational resources. Driven by shared values, Dedham residents are working together to reduce their carbon footprint and ensure that their neighborhoods, natural resources, and economy are resilient to the impacts of climate change. To date, Dedham has engaged in various planning efforts and educational initiatives to address the impact of pollution and climate change, and to ensure that its businesses and residents can continue to live, work, and play in the most sustainable manner.

In 2018, the Town of Dedham was selected by the Commonwealth of Massachusetts to participate in the Municipal Vulnerability Preparedness (MVP) Planning Grant Program to assess the Town's vulnerability to climate change by identifying community assets and natural hazards, as well as priority actions to improve resiliency. The Town was then certified as an MVP community and awarded MVP Action Grant funding in the summer of 2019 to support the next step to enhance community resiliency: the development of a Climate Action and Resiliency Plan.

The Sustainable Dedham Climate Action and Resiliency Plan is both the culmination of ongoing efforts and a springboard for the Town to advance its priorities. With key mitigation and adaptation actions identified, this Plan serves as a roadmap to help Dedham achieve its vision of being a strong, thriving community of the future.

Description of Climate Impact:

Address the community's current and potential future vulnerability to climate change impacts. What are the specific threats to the project area/site and reasons for applying to the grant program?

Through the MVP Community Resilience Building Workshops, the following climate hazards are identified as top priorities to consider in Dedham:

- *Drought* – More short- and long-term droughts and low stream flows, as well as increased potential for brush fires;
- *Flooding* – More flash and prolonged flooding due to heavy rain and rivers overtopping their banks;
- *Heat Waves* – Increased number of very hot days over 90 °F, and they may also occur consecutively

- *Intense Storms* – Increased frequency and severity of rain events as well as an elevated risk of high winds during these extreme storm events (i.e., Nor'easters).

And the following table summarizes key opportunities and potential vulnerabilities facing Dedham in this changing climate:

	Key Strengths/Opportunities	Key Vulnerabilities for Dedham
Infrastructure	» *Power and Communications Network*: System redundancies and backup capacity exist for power and telecommunication to withstand system disruptions and failures. » *Transportation System:* Town is connected via Route 1 corridor to regional resources and networks; various public transit options are available (if somewhat underutilized). » *Flood Control Measures*: Recent updates to culverts and critical dam infrastructure increase flood resilience.	» Flooding, snow, and ice can disrupt transportation patterns and cut off evacuation and rescue routes, harm the local economy, damage infrastructure, and cause flooding of homes and critical infrastructure. » More frequent extreme storm and flooding can result in increased stress on existing, aging stormwater infrastructure. » Increased precipitation volumes could impact water quality.
Environmental Assets	» *Wetlands:* Abundant (18 percent of the Town's total area) and provide important wildlife habitat and flood mitigation/control. » *Open Space & Tree Canopy:* Publicly owned spaces provide recreational opportunities and critical environmental services (flood mitigation, groundwater recharge, heat mitigation) » *Water Supply & Quality:* Groundwater sources provide local drinking water supply; redundancies available through the Massachusetts Water Resources Authority (MWRA). Water reuse technologies and protections for key waterways help maintain quality and manage flood flows.	» High winds produced by extreme storms may threaten Dedham's tree-lined streets, a defining characteristic of the town. » Temperature increases could cause impacts related to increases in the prevalence of invasive species and/or vector-borne diseases. » Flooding events may disproportionately affect vulnerable populations (e.g., low-income residents, aging populations). » Potential for increased brush fires.
Social and Economic Assets	» *Local Businesses:* Grocery and retail locations are accessible and connected to main transportation routes (e.g., Route 1), providing a reliable source of goods and services in times of need. » *Emergency Shelters:* Official and unofficial emergency shelters are available to shelter significant portions of Dedham's population if necessary. » *Communal Housing*: Quality housing options for the aging community are available and located at higher elevation to protect against flood risk. Substantial associated services specific to the elderly population's needs are available to connect these groups to critical resources and the broader community.	» Impacts from extreme weather events (as a result of extreme storms and/or heat waves) may inundate and/or overwhelm available resources and services of existing emergency facilities. At the same time, it can be difficult for residents to access stores and resources, particularly in East Dedham due to lack of grocery stores. » Vulnerable populations in the community (i.e., those with existing medical conditions, lack of cooling mechanisms, etc.) could be particularly hard hit by heat waves.

Based on these findings, the Sustainable Dedham: Climate Action and Resilience Plan serves as a comprehensive and actionable roadmap to help address potential climate impacts as well as exploring opportunities to further enhance resilience of the Town, its residents, businesses, and visitors.

Project Goals:

What were the specific goals of the project?

For residents, sustainability intersects many facets of life in Dedham, from the built environment, to health and livelihoods, to the natural world. The Plan is therefore organized around seven "plan elements," each with the following specific goals:

Buildings and Energy:

- Municipal greenhouse gas emissions are reduced 80 percent by 2050, using 2010 as a baseline.
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- All new construction meets net zero energy building standards.
- Existing buildings are energy efficient and utilize renewable energy.
- 80 percent of municipal energy consumed in Dedham comes from renewable sources by 2050.

Economic Development

- Businesses are prepared for the impacts of climate change.
- All residents have access to skills trainings and professional development opportunities.
- Commercial centers are vibrant, connected, and accessible spaces.

Public Health and Safety

- All residents have equitable and timely access to health care services and providers across Dedham's neighborhoods.
- All residents, especially vulnerable populations, are prepared for and can recover quickly from future climate-related impacts and disasters.

Infrastructure

- Critical utilities, systems, and infrastructure are repaired and enhanced to withstand climate stressors.
- Water resource management and protection are effectively coordinated at the regional level.
- All future projects, new and improvement, incorporate green infrastructure measures and best practices.

Natural Resources

- Dedham's tree canopy is enhanced to 65 percent of the community.
- Dedham's trails provide accessible connections between economic centers and neighborhoods.
- The Town's wetland areas provide their full ecological value, including providing essential habitat, and water storage and purification.
- Air and water quality meet or exceed state and federal standards.

Transportation and Land Use

- Future developments in Dedham prioritize transit access, walkability, and a diversity of uses, while fostering affordability and inclusivity.
- Zoning and design tools incorporate sustainability and climate resilience.
- Neighborhoods across Dedham are connected and accessible by a multimodal transportation and public transit system.

Solid Waste Resources

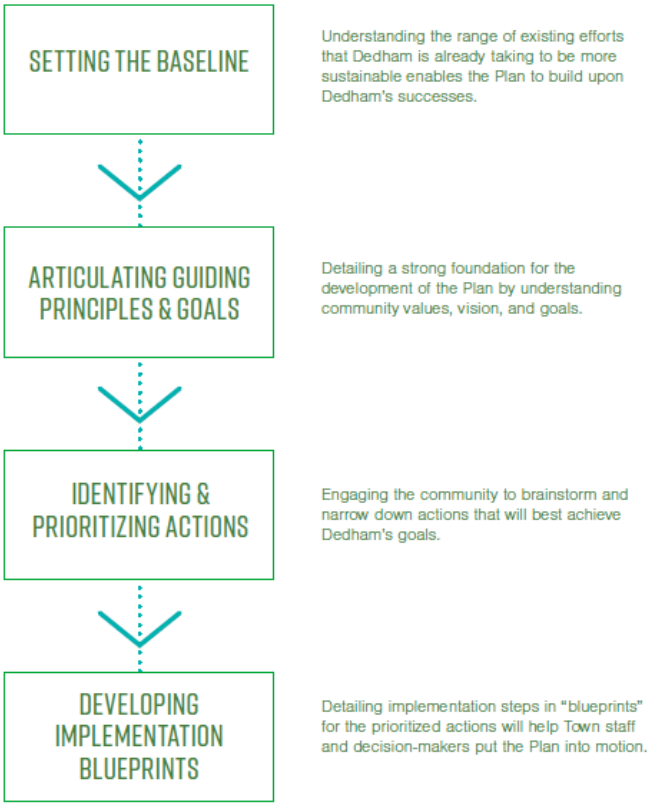
- Reduce solid waste generation by 30 percent by 2030.
- Waste diversion practices throughout the community have eliminated contamination.
- Dedham achieves zero waste by 2050.

- Dedham creates a circular economy through creative solutions for production, consumption, and waste management.

Approach and Result:

How did the project team implement the project? Describe the methodology or your approach to achieve the project goals. Describe, and quantify (where possible) project results (e.g. square footage of habitat restored or created). Provide web links, if available, to your project deliverables.

Over a year of planning efforts, Dedham went through the following process to set goals and identify strategies for the Plan. The Plan was also guided majorly by stakeholder and community feedback. Nearly 375 actions from discussions with the public, surveys, Climate Action Stakeholder Group (CASG) meetings, targeted interviews (with town departments, commissions, associated groups, etc.), in addition to best practices research, as well as existing Dedham planning efforts.



In addition to creating a final planning document, Dedham also developed an online engagement dashboard, sustainablededham.org, where community members can stay up to date on the latest sustainability progress.

Lessons Learned:

What lessons were learned as a result of the project? Focus on both technical matter of the project and process-oriented lessons learned.

- The Project Team was able to adapt quickly and provided continued stakeholder engagement virtually due to COVID-19 restrictions during spring 2020.

Partners and Other Support:

Include a list of all project partners and describe their role in supporting/assisting in the project.

The following Dedham residents and representatives from regional and local community organizations have graciously agreed to participate in this Project as part of the Climate Action Stakeholder Group. This critical group advised and supported the climate action planning process by providing guidance on generating goals and actions, prioritizing actions, and developing appropriate steps for implementation.

CLIMATE ACTION STAKEHOLDER GROUP

Nancy Baker, Assistant Town Manager
Paquita Bass, Friends of Dedham Heritage Rail Trail
Michael D'Entremont, Police Chief
Eileen Commane, Dedham-Westwood Water District
William Spillane, Fire Chief
Kerry Snyder, Neponset River Watershed Association
Joseph Flanagan, DPW Director
Julie Wood, Charles River Watershed Association
Jason Mammone, Engineering Director
Sheila Pransky, Council on Aging
Denis Moroney, Facilities Director
Johanna McBrien, Dedham Historical Society
Jeremy Rosenberger, Town Planner
Janet Holmes, Dedham Civic Pride
Mike Welch, School Superintendent
Michelle Persson Reilly, Dedham Community House
Kenneth Cimeno, Building Commissioner
Jack Lopes, Eversource
Jon Briggs, Park and Recreation Commissioner
Melissa von Hamme, Dedham Library
Elissa Brown, Conservation Commission Agent
Jean Ford Webb, Mother Brook Arts & Community Center
Stephanie Radner, Open Space Committee
David Ray, Dedham Housing Authority
Jessica Tracey, Board of Health, Nurse
Robert Blaney, Youth Commission
John Sisson, Economic Development Director
Vicky Berg, Commission on Disability
Jessica Porter, Planning Board
Paul Reynolds, Former Selectmen

This Project was also supported by consultants VHB and KLA.