Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: Millbury
Project Title: Armory Village Green Infrastructure Project – Phase II
Award Year (FY): 2021
Grant Award: $125,600
Match: $59,570
Match Source: Municipal appropriation and in-kind services
One or Two Year Project: 1 year
Municipal Department Leading Project: Department of Planning & Development
Project Website URL: https://www.millbury-ma.org/planning-development/pages/armory-village-revitalization-project

Community Overview:

- What is the population size of your community and where is it located?

  Millbury is a community of 13,732 residents (US Census 2015-2019 ACS Estimate) located within central Massachusetts.

- Do you have any Environmental Justice or other Climate Vulnerable communities? (Think about both those who live and work in your town.)

  Millbury Center is an Environmental Justice Income Area that is home to 1,174 people or 8.4% of Millbury's total population (US Census 2015-2019 ACS Estimate). The Armory Village Green Infrastructure Project- Phase II falls entirely within the boundaries of the Environmental Justice Income Area.

- Other unique traits of your municipality like who the top employers are, geography, history, etc.

  Encompassing a geographic area of 15.84 square miles, Millbury is bordered by Worcester to the north, Grafton to the east, Oxford and Auburn to the west, and Sutton to the south. The community has direct access to the regional and state highways of Route 20, Route 146 and Interstate 90 making it attractive for residential, commercial and industrial development. Millbury is home to the Shoppes of Blackstone Valley, the largest open-air shopping center in Central Massachusetts. Millbury is also attractive as a bedroom community for those working in Worcester, Boston and along the industrial corridor of Route 495.

  The Blackstone River bisects Millbury from north to south. Flowing 46 miles from Worcester, Massachusetts to Providence, Rhode Island, the Blackstone River and its tributary streams were early defining influences on Millbury's development as a prominent mill community. The success of these enterprises is the reason Millbury is

included within the Blackstone River Valley National Heritage Corridor, which is the birthplace of the American Industrial Revolution. Millbury has a growing opportunity to take advantage of the river and its industrial past to promote the community and attract new economic opportunities. The sensitive conversion of historic mill structures, including Cordis Mills and Felters Mill, into a mixture of uses celebrates Millbury's heyday as an industrial village while enabling new kinds of economic activity.

Project Description and Goals:

- Where was the project located?

  The "Armory Village Green Infrastructure Project – Phase II" is located within Millbury Center, the commercial and civic heart of Millbury. The improvements proposed by this Phase II project are within the limits of the publicly owned Elm Street right-of-way from its intersection with Harris Place to its intersection with River Street, within the municipal parking lot located between Elm Street and Grove Street, the private parking lot abutting it owned by CD Whitney Insurance Company, and the parking lots' pedestrian and vehicular connections.

- What climate change impacts did the project address?

  Vegetated bump outs, rain gardens, bioswales, deep sump catch basins, porous pavers, and street trees featured within the Phase II design will reduce heat island effects and stormwater runoff volumes/pollutant loads (sediment, nutrients and other pollutants such as pathogens) to the Blackstone River, increase groundwater recharge, and help address routine localized flooding and system capacity issues.

- What were the specific goals and tasks of the project as stated in your application?

  The "Armory Village Green Infrastructure Project – Phase II" strives to (1) reduce sediment, pathogens, oil and grease, metals and nutrient loads as well as the quantity/velocity of stormwater flows to the Blackstone River through the use of green infrastructure features; (2) improve local air quality, provide shade and increase evapotranspiration; (3) educate municipal officials and the public on the types and benefits of Green Infrastructure features; and (4) demonstrate the use of infiltration-based green infrastructure within Millbury's commercial and civic core as a way of promoting stakeholder support for its use in other areas of Millbury Center and the broader Blackstone River Watershed.

  The project consisted of the following specific tasks as described below:

  Task #1: Site Survey & Base Map - Topographic (T-2 level) and property boundary (A-2) surveys were performed of the project area and a base map was prepared.

Task #2: Soil Borings and Soil Observation Test Pits – Confirmatory test pits were excavated to determine geotechnical and structural design requirements for structures, foundations, and water recharge characteristics related to stormwater management system designs. The DPW assisted by performing the excavation activities.

Task #3: Design, Permitting and Bidding – In November 2020, the Town hired BL Companies of New England as its consulting engineer in accordance with procurement law. They produced preliminary designs (25%, 50% and 75% design stage) for review and discussion purposes and bid-ready final design construction plans (100% design stage) and technical specifications for permitting and bidding will be completed by fall 2021. The designer developed procedures and an Operation & Maintenance Plan that supports the long-term operation and maintenance of open space areas, as well as drainage infrastructure and BMPs/green infrastructure installed as part of the project.

Task #4: Public Involvement & Community Engagement - The Director of Planning & Development worked with the DPW Supervisor, BL Companies, Inc. and the Assistant Planner to develop and execute a comprehensive public involvement and community engagement campaign. A Focus Group consisting of municipal officials and downtown business owners provided valuable feedback throughout the design process. The Focus Group also hosted a Community Forum in January 2021 via ZOOM video conferencing.

Task #5: Project Administration and Reporting – The Director of Planning & Development served as project manager. In that capacity, she coordinated all project activities, including interfacing with the designer, municipal staff, state officials, utilities, abutting property owners, and the public. She coordinated and attended all focus group meetings, prepared meeting minutes, reviewed plans and associated documents, facilitated the permitting process, responded to questions and requests for information, prepared press releases and informational fliers, paid invoices, tracked expenditures, prepared and submitted monthly progress updates and a final project report. She was supported in these efforts by the Assistant Planner and Planning Clerk.

- Did your project meet the goals set forth in your application in terms of:
    - Employing nature-based solutions - YES
    - Improving equitable outcomes for and fostering strong partnerships with EJ and other Climate Vulnerable Populations - YES
    - Providing regional benefits - YES
    - Implementing the public involvement and community engagement plan set forth in your application - YES
    - Finishing the project on time - YES

Results and Deliverables:

- Describe, and quantify (where possible) project results (e.g. square footage of habitat restored or created, increase in tree canopy coverage, etc.). Report out on the metrics outlined in your application.

  Under the proposed conditions, this project will add approximately 3,100 square feet of new porous pavers, 2,300 square feet of new bioswales, and 4,600 square feet of new rain gardens within the Elm Street right-of-way and within the municipal parking lot. The project will result in a net reduction in impervious area of approximately 2,040 square feet and provide 12,600 cf of retention. The required 80% TSS removal is provided for approximately 56% of the site. Bioswales, rain gardens and porous pavers will work together to remove 35% of the average annual Total Phosphorus load from the total post-construction impervious surfaces on the site.

- Provide a brief summary of project deliverables with web links, if available.

  Project deliverables include the following:

  - Existing Conditions Plan/Survey
  - Technical memorandum summarizing the results of the test pits and infiltration testing including test pit logs
  - Operation & Maintenance Plan
  - Inspection forms that facilitate catch basin cleaning and maintenance of BMPs
  - Post-construction Stormwater Management Permit application
  - 80% design drawings & specifications
  - Focus Group meeting minutes (7 meetings)
  - Community Forum meeting minutes and powerpoint presentation slides (meeting video uploaded onto project webpage)
  - Board of Selectmen update featuring the Director of Planning & Development, DPW Supervisor, and BL Companies design team was provided at the March 23, 2021 meeting (meeting video uploaded onto project webpage)
  - Copies of press releases prepared by the Director of Planning & Development that were published in the Millbury-Sutton Chronicle.
  - Copies of fliers that were widely distributed to municipal officials, downtown property owners, renters and business owners
  - Project webpage (https://www.millbury-ma.org/planning-development/pages/armory-village-revitalization-project) featuring the design plans at various stages, engineers construction cost estimates, video links to the community forum and Board of Selectmen design update meeting, project summary flier, tips that homeowners could use to incorporate Low Impact Development techniques on their property, fact sheets about green infrastructure and bumpouts, and links to Low Impact Development and green infrastructure resources.

- Monthly progress updates.
- Final project report.
- Project summary.

Lessons Learned:

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

  The Town learned a number of lessons during Phase I design and construction and during Phase II design that will inform construction of the Phase II project, which is expected to get underway in spring 2022. More specifically, lessons learned are:

  - The best time to bid a project is December/January to ensure maximum interest and the most competitive pricing.
  - A creative way to fund a downtown revitalization project and minimize long-term capital costs is to accomplish multiple, interrelated goals simultaneously.
  - The Fire Department was in the midst of designing a new fire station to be located at 130 Elm Street, within the Phase II design scope, during the same time that this project was underway. To ensure that the projects dovetailed nicely and met each other's needs, the Fire Chief and design team for the new fire station and the Planning Director and design team for the Phase II downtown project spent a considerable amount of time working together, sharing survey and engineering work, brainstorming ideas, and determining the appropriate split between streetscape /intersection improvements that would be associated with each project.
  - Because grant funding is not guaranteed and the Town hopes to fund a significant amount of the construction costs with grant funds, the Town worked with BL Companies to identify upfront how to best reduce the scope of the construction project should funding fall short.
  - The Town intends to set aside at least 15% as a project contingency for unforeseen issues. Should the bids come back higher than anticipated, the project will be scaled back to ensure that a 15% contingency is funded and available.
  - The bumpouts installed as part of the Phase I project, particularly those abutting crosswalks on Elm Street and Main Street, are as wide as parking spaces. The resulting choke points are difficult for bicyclists to navigate and motor vehicles to exit driveways/roadways immediately abutting bumpouts due to the radii of the bumpouts. This has resulted in a handful of traffic accidents and damage to vertical granite curb and landscape features from mounting vehicles. Phase II of the downtown revitalization project features bumpouts that are 2' shallower with

adjusted radii at driveways/roadway openings to make them easier to navigate by bicyclists, automobiles and snowplows.

- It is important to develop a financial and staffing strategy early on with regards to long-term maintenance of landscape features, which need to be mulched annually, pruned, weeded and trash and sediment removed in accordance with maintenance procedures. Prior to completion of Phase II construction, the DPW must be adequately staffed and personnel trained.

- What is the best way for other communities to learn from your project/process?

  Communities are welcome to visit our project webpage, tour our downtown to view the green infrastructure features installed in Phase I and proposed for Phase II in action, and/or contact me directly at lconnors@townofmillbury.net.

Partners and Other Support:

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

  Project Visioning – In winter of 2015, the Town received technical assistance from a multi-disciplinary team consisting of Mass Audubon, the Central Massachusetts Regional Planning Commission, the Horsley Witten Group, and the Blackstone River Coalition. The Town also engaged Weston & Sampson Engineers to assist with the project. Funded by the Environmental Protection Agency through the New England Interstate Water Pollution Control Commission, the technical assistance resulted in a plan for addressing stormwater impacts and minimizing nonpoint source pollutants while simultaneously revitalizing Millbury Center through implementation of Low Impact Development and Green Infrastructure measures. This plan became the basis for both the Phase I and Phase II projects.

  Town of Millbury – The Town of Millbury contributed a total of $45,690 towards the design of the Phase II project by the June 30, 2021 grant deadline. The Town also contributed in-kind services in the amount of $14,080 for the services provided by the Department of Planning & Development and the Department of Public Works.

  Millbury Center Beautification Initiative – The Initiative was heavily involved in initial visioning activities as well as shaping the design of both the Phase I and Phase II projects. The Initiative contributed $12,000 towards the purchase and installation of streetscape furniture (decorative LED lighting, benches and trash barrels) for the Phase I project and $5,000 to the preparation of concept plan for the Phase II project.

  Groups represented on the Focus Group (excluding the Department of Planning & Development and the Department of Public Works) included CD Whitney Insurance,

Mulhane Funeral Home, Sudz City Laundromat & Drycleaner, Board of Selectmen, Fire Department, Asa Waters Mansion, Millbury Public Library, Millbury Council on Aging, Millbury Veterans Commission, and Millbury Disabilities Commission. A number of other individuals and groups provided feedback during the Community Forum, the Board of Selectmen design update and through private meetings with the Project Manager and/or design team.

Project Photos:

- In your electronic submission of this report, please attach (as .jpg or .png) a few high-resolution (at least 300 pixels per inch) representative photos of the project. Photos should not show persons who can be easily identified, and avoid inclusion of any copyrighted, trademarked, or branded logos in the images. MVP may use these images on its website or other promotional purposes, so please also let us know if there is someone who should receive credit for taking the photo.

  See attached.