Deerfield Green Infrastructure

Deerfield | FY24/25 ACTION GRANT
Type 3: Construction and On-the-Ground Implementation

MVP REGION
Greater Connecticut River Valley

GRANT AWARD
$237,823

MATCH AMOUNT
$95,489

MATCH SOURCE
Town cash and in-kind

MUNICIPAL DEPARTMENT LEADING PROJECT
Deerfield MVP Core Group

Ou... ...iples exemplified

Bri... ...P core principles that your
... ...plifies.

... ...g Nature-Based Solutions (NBS)
... broad and multiple community

... ...g a community identified priority
action to address climate change impacts

community space in South Deerfield center with rain gardens, tree box filters and porous pavement; and installed a tree box filter to reduce flooding in Historic Deerfield.

Community Overview

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

  Deerfield has a population of 5,090 (2020 US Census) and is located in the Connecticut River valley of western Massachusetts.

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

Deerfield has no environmental justice communities, but climate vulnerable populations include seniors living independently, farmers, students and economically disadvantaged residents.

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

Deerfield includes the villages of South Deerfield and Old Deerfield, which is home to two museums: Pocumtuck Valley Memorial Association and Historic Deerfield, Inc. Some of Deerfield's largest employers include Pelican Products and Yankee Candle. Historic Deerfield is designated as a National Historic Landmark district, and the organization operates a museum with a focus on decorative arts and early American history. Deerfield has numerous schools, including Deerfield Academy, a private secondary preparatory school; Frontier Regional High School; Deerfield Elementary; and two private junior boarding schools, Bement School and Eaglebrook School.

Project description and goals

- Where was the project located?

Our project was located in three places in Deerfield, including Deerfield Elementary School, South Deerfield center and Historic Deerfield.

- What climate change impacts did the project address?

Deerfield's largest climate concerns are flooding and extreme rainfall events, which were addressed with the green infrastructure in this project.

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

The overall goals and objectives of this project were to reduce flooding and flood damages to the South Deerfield town center, public schools and historic Old Deerfield, and to increase the resiliency of these areas to climate impacts.
The three projects were chosen based on:
- Historic Deerfield: this area is on the National Register of Historic Places, with over 40 pre-Civil War homes, which is something not found anywhere else in the United States. Protecting these historic treasures from increased flooding is very important. They are threatened with increased flooding risks, and incurred significant damage during Hurricane Irene. The proposed tree box filter will improve stormwater management and on-site infiltration in this area.
- Deerfield Elementary School: The school entryway has caused safety problems for students, due to flooding and icing issues, which will worsen with climate change. The proposed new green entryway will address these concerns, making the school more resilient, and engaging students in the project.
- Leary Lot, Town Center: Deerfield will be constructing a new town center parking lot to promote economic development, using non-MVP funding. Due to Bloody Brook flooding problems in this area, Deerfield is designing this parking lot with nature based solutions to manage stormwater, and MVP funds are requested for the green

infrastructure components of the project to make the town center more climate resilient.

- Did your project meet the goals set forth in your application?

  Yes, all of the goals were met. The installation of two tree box filters, two rain gardens and porous pavement at the Leary Lot, the installation of three rain gardens at Deerfield Elementary School, and the installation of a tree box filter at Historic Deerfield will reduce flooding and flood damages to the South Deerfield town center, public schools and historic Old Deerfield, and increase the resiliency of these areas to climate impacts.

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.

The outcomes of this project are anticipated be a reduction in flooding and improved on-site recharge of stormwater at the three Deerfield project sites: South Deerfield center, Deerfield Elementary School; and Historic Deerfield. The Deerfield DPW, the Frontier Regional School District, and Historic Deerfield will monitor and track flooding and stormwater recharge at the sites of the newly installed green infrastructure over time, and report results to the Deerfield MVP Climate Resiliency Core Group.

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

Our project included the following deliverables: •Constructed a new green entryway at Deerfield Elementary School with three rain gardens to infiltrate stormwater runoff; •Constructed a green parking lot and community space at the Leary Lot in South Deerfield center with two rain gardens, two tree box filters and porous pavement; •Installed a tree box filter to reduce flooding in Historic Deerfield; Engaged students at Deerfield Elementary School in creating rain garden signs and in other aspects of the project. The project produced an Operation and Maintenance Plan for the rain gardens, tree box filters and other green infrastructure, as described in the scope.

Partners and Other Support

List all project partners and describe their role in supporting/assisting in the project.

This project engaged multiple partners in the construction and maintenance of the green infrastructure projects. Partners included: •Frontier Regional School District – partners in the construction of a new green entryway for Deerfield Elementary School, and FRSD provided matching funds; •   Deerfield Elementary School - partners in the construction of a new green entryway for Deerfield Elementary School, and provided space on their property for the project; •Historic Deerfield – partners in the green infrastructure to be constructed in Historic Deerfield; •Deerfield businesses in town center – supported the green infrastructure construction at the Leary Lot by providing letters of support and financial contributions. These businesses include: Leo's Table Restaurant; Ciesluk's Market; Gianni Fig's Restaurant; Berkshire Brewing Company; Hamshaw Lumber and Bueno y Sano Restaurant. The Deerfield DPW will maintain the Leary Lot green infrastructure, the Deerfield Elementary School and its Afterschool Program will maintain the rain gardens at the school, and Historic Deerfield will maintain the tree box filter near their property.

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.

  Deerfield now has fairly extensive experience with the construction/installation of green infrastructure. We have learned that the placement of tree box filters is very important, specifically to use the lowest lying location for drainage purposes, that will not block parking, business storefronts or snow removal sites. We have learned that plant selection and maintenance is very important for the successful functioning of rain gardens.

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

  Since our project is a site-specific construction project, the best way to learn about the project is to visit the sites, which are all on public property.

Website and additional links

https://www.deerfieldma.us/575/Municipal-Vulnerability-Preparedness-MVP