

Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: Easthampton

Project Title: Emerald Place Resiliency

Award Year (FY): FY23

Grant Award: \$ 117,800

Match: \$ 40,250

Match Source: cash and in-kind staff hours

One or Two Year Project: one-year project

Municipal Department Leading Project: Department of Public Works

Project Website URL: EasthamptonMA.gov/MVP

Community Overview:

- Easthampton is a city with a little over 16,000 residents, located in the fertile Connecticut River Valley of Western Massachusetts.
- A significant portion of Easthampton's downtown residential neighborhoods are mapped as environmental justice communities based on income, including the neighborhood adjacent to New City to the west that backs up to Emerald Place, and extends west to downtown, along Lower Mill Pond and Brickyard Brook to the north and east, and south to Maple Street. Per the resilientma.org website, the 2020 median household income for this EJ community was \$52,667 (61.4% of the median for the state of Massachusetts), and 14% of residents are identified as minorities.
- Easthampton has evolved from a rural farming village at the base of Mount Tom to a flourishing mill town and now to a vibrant and diverse community with a wealth of artists, retail shops, award-winning restaurants and numerous recreational opportunities. Our old mill buildings, once bustling with manufacturing enterprises, now buzz with the excitement of creative and cultural activities. The boardwalk surrounding Nashawannuck Pond in the center of the city serves as a gathering place for many and affords residents and guests with an array of opportunities for leisure activity. Easthampton is a model small city of the 21st century. It retains its mill town soul, while fostering innovation. Community members treasure the abundant resources, dynamic downtown, and vibrant neighborhoods. By adapting, evolving, and making tough choices, Easthampton is sustainable, inclusive, balanced, and a great place to live.

Project Description and Goals:

This project focuses on the New City neighborhood, which flanks Lower Mill Pond. Originally created around 1930 as a residential housing area for workers in Easthampton's mills, the New City neighborhood is one of the City's most densely-developed areas. New City has a high concentration of low to moderate income residents, and a significant renter population. The interior streets of the neighborhood are primarily residential, with scattered commercial businesses located on Lincoln Street

and Parsons Street. The neighborhood sits at the top of slope above Lower Mill Pond, and drainage-driven erosion from increasingly frequent large storms, particularly along Emerald Place, has caused a loss of vegetation, ongoing erosion, and gulying which repeatedly undermine the slope. These growing drainage problems are well-known and much talked about by residents and DPW alike, particularly along Emerald Place where sinkholes have opened and the sidewalk partially collapsed within the last few years. DPW has attempted repairs and management, but a more holistic and long-term solution is needed to protect the road, drainage system, pond, and adjacent private properties. Lack of off-street parking worsens the situation, as residents park at the top of slope and attempt to self-manage drainage and erosion problems to protect their vehicles, further destabilizing the slope and transporting sediment and other pollutants into Lower Mill Pond. These problems ultimately stem from the density and high impervious cover built into the neighborhood's original design, which was never intended to accommodate the precipitation patterns we are seeing today. Drainage and erosion problems will persist and worsen with increasing precipitation unless something is done to revamp the neighborhood layout and incorporate new drainage patterns.

At the same time, due to the density of the neighborhood, Emerald Place hosts the only mature canopy cover in New City's ROW, which makes it an important asset for residents in the neighborhood as a shaded walking and biking corridor and provides the potential for it to serve as a respite for neighborhood residents in increasing heat. A recent neighborhood-wide inventory counted just 12 public street trees, most of which are located on Emerald Place, and ongoing outreach has highlighted that Emerald Place is highly sought out for passive recreation because it is the most natural environment in New City and provides the only access to shade and connection with the environment along Lower Mill Pond. However, current conditions are dangerous for pedestrians, cyclists, and drivers, due to the narrow roadway, lack of sidewalk, and haphazard parking, and the roadway and sidewalk are threatened by ongoing climate hazards. The project will identify a long-term solution and enhance benefits of this area for climate vulnerable populations, particularly the low and moderate income families that call New City home.

The Emerald Place project is a first step in a much larger effort to build resilience and long-term sustainability for the New City neighborhood as a whole.

This project specifically included:

- Geotechnical assessment and development of conceptual design for nature-based slope stabilization techniques along Emerald Place
- Hydrologic and hydraulic analysis and infiltration testing as initial steps toward designing green infrastructure solutions and improved drainage to handle larger, more frequent storm events and also alleviate the ever-growing problem with erosion along the top of slope
- Engagement with residents of Emerald Place and surrounding streets to refine conceptual designs that would incorporate on-street parking, green

infrastructure, pedestrian access, and potential reconfiguration of the street to one-way traffic

- Continued engagement with Easthampton Public Schools students to build understanding about nature-based solutions and how they relate to climate adaptation and water quality in our community
- Opportunities for homeowners to explore ways they can manage stormwater on their own property to contribute to a larger effort to build resilience
- Did your project meet the goals set forth in your application in terms of:
 - Employing nature-based solutions and improving equitable outcomes for and fostering strong partnerships with EJ and other Climate Vulnerable Populations
 - Our approach to drainage and slope stabilization integrates streetscape improvements with green infrastructure in the right-of-way to create long-term solutions for improved stormwater management and infiltration. Adding curbing and formalizing parking will address the root causes that have contributed to erosion and gullyng at the top of slope. The green infrastructure solutions proposed through the project will have multiple benefits to this community directly by:
 - helping to limit flooding risks in the neighborhood and address acute drainage problems
 - attenuating the impacts of increasingly heavy precipitation
 - infiltrating and/or treating stormwater in place to enhance groundwater recharge (where slopes allow) and limit transport of sediments and nutrient pollution
 - protecting the quality of streams and ponds in and adjacent to the EJ and low-income neighborhoods
 - improving the level of stormwater management service provided to these neighborhoods (currently, stormwater infrastructure in these neighborhoods is some of the oldest in the City)
 - providing aesthetic and quality of life benefits in low-income neighborhoods
 - increasing shade along Emerald Place for increased cooling during extreme heat
 - increasing walkability, bikeability, and safety along sidewalks and shared use paths
 - ADA accessibility for improved connectivity between the EJ neighborhood and downtown recreation, public transit, and other resources
 - Providing regional benefits
 - The larger region will also benefit from the proposed Emerald Place project and ultimately the long-term plan for green infrastructure improvements throughout New City because Easthampton sits on top of the Barnes Aquifer, which serves the communities of Easthampton, Southampton, Holyoke, and Westfield. By treating stormwater pollutants before they make their way into groundwater or surface water, this project has co-benefits for

maintaining the quality of water in this valuable regional aquifer and the Manhan River and Connecticut River downstream. Notably, the Broad Brook Basin of the Barnes Aquifer is designated by EPA Region 1 as a Sole Source Aquifer. While individual green infrastructure projects may not have regional-scale benefits, this project represents a larger shift in thinking about stormwater management that the City is pursuing through its resilience and adaptation work, building on the initial pilot project installed at Cherry Street, upstream of Emerald Place.

- Implementing the public involvement and community engagement plan set forth in your application
 - The project was very successful in engaging the public, particularly the residents who would be most immediately impacted. Building on lessons learned on our FY22/23 Cherry Street implementation project, we used an on-site workshop that featured an on-the ground layout of our conceptual design for residents to react to. This garnered tremendous turnout and discussion from residents and was key to an engaged discussion about design tradeoffs and project goals.
 - This project also offered the opportunity to continue building on our very successful engagement program with the schools. The highlight of this project's youth engagement was a suite of hands-on design activities with the 4th graders of Mountain View School. The students circulated through stations where they made models of stormwater pollutants and runoff; tested different types of erosion controls in a model system; and built their own soil lifts to see how nature-based approaches to slope stabilization work. The students then toured the school grounds to see green infrastructure in action on the grounds of their newly constructed school.
 - We used this project as an opportunity to expand our audience and reach for homeowner's DIY stormwater management materials developed under our FY22 grant as well. Following on successes from our prior project, we hosted a Homeowner's workshop in the New City neighborhood in which we toured the neighborhood with residents, stopping at homes of people who had signed up for rain garden/green infrastructure consults. We also shared project information and distributed copies of our "Sinking the Storm: Easthampton Homeowner's Guide to Do-It-Yourself Stormwater Management Solutions that Improve Community Resilience" guide (developed under FY22 funding) during Easthampton's popular Cultural Chaos festival.
- Finishing the project on time
 - Despite some delays getting started, we were able to finish all elements of the project on time and on budget and are well positioned to move forward with the next design phase.

Results and Deliverables:

- The key metrics of success for our project are primarily focused on the end solution, following design and implementation.
 - Further development of the conceptual design during this phase helped us to understand where infiltration would and would not be feasible. Because of the proximity to steep slopes and the existing instability of that slope, the areas where infiltration is possible will be limited. This finding emphasizes the importance of dispersed infiltration elsewhere in the upgradient neighborhood, and will shape our approach to thinking about decoupling peak stormwater flows from different areas to achieve the goals of decreasing output and velocity.
 - As we further refine the design, we are confident that we will be able to meet the goals of increasing the number of trees and total shade cover along the roadway, as well as increasing native plant cover to both help stabilize the slope and sustain pollinators and other urban wildlife.
 - Correcting and eliminating the ongoing erosion problems and sinkholes on the Emerald Place slope is a core goal of the project, and one which is supported in each of our conceptual design alternatives. The on-site neighborhood outreach event was very successful in communicating the importance of this goal to residents, and helped frame discussions about the potential design alternatives and associated tradeoffs of each.
 - New information gathered from the geotechnical borings and investigations during this project phase helped advance the design concepts for nature-based bank stabilization practices and identify the key areas where these techniques will be used in the design.
 - Integration of social resilience into the design was also a key goal, and residents had very positive feedback and good ideas to incorporate into the design to better integrate New City with pedestrian and cycling transport networks within the neighborhood and along the pond.
- Provide a brief summary of project deliverables with web links, if available.
 - Key deliverables for this project phase include:
 - Field data reports on inland wetlands, infiltration testing, geotechnical borings and analysis
 - Hydrologic and hydraulic analysis for the neighborhood
 - Revised conceptual design alternatives based on feedback from the on-site layout workshop
 - Project material and information are available on the City's MVP website at: easthamptonma.gov/MVP

Lessons Learned:

- Strong public engagement early and often through the design process is a successful strategy; we were able to build off of initial neighborhood engagement through a prior CDBG funded project prior to this grant phase to help guide conceptual design and to reconnect with residents who were already interested and engaged in the larger effort.

- At the same time, community outreach and engagement is often volatile and dependent on who shows up. Decisions made with one group of stakeholders from the neighborhood may indicate strong support for a particular design direction. When the next meeting happens and a slightly different group of stakeholders show up, they may not be supportive of the previously chosen design direction.
- It is tempting to switch directions based on who shows up most recently but it is important to keep in mind that people who don't like a particular design direction will keep showing up but those who liked it will stop coming. Design decisions can't just be based on advocacy of who shows up and is the most vocal.
- Keeping the community members engaged over a multi-year project is difficult. People move from the neighborhood, lose interest in the process or outcome, or just have something else to do that night.
- Community engagement around design decisions needs to be iterative and show the community that each iteration builds on the previous design and takes their concerns into account.
- Gather community member's email addresses early and regularly and keep updating the project webpage.
- On the other hand, breaking a project into small pieces can be an effective way to work within funding constraints and keep moving gradually forward.
- Where nature-based solutions and green infrastructure are in play, soil testing is extremely important (we encountered highly varied and sometimes unexpected results on Emerald Place)—testing in the actual locations you intend to implement different solutions is key to making sure the conditions are right.
- We have been very successful with layering grants from multiple sources over the years to get projects done (the larger New City neighborhood project has so far mixed CDBG and MVP funds for different project elements and phases, and we may draw on other grants in the future as well. This is an excellent strategy to leverage different sources to get larger projects done.

Partners and Other Support:

- City of Easthampton Project Team
 - Diane Rossini-Smith, Project Lead, Staff Engineer
 - Jamie Webb, Assistant Planner
 - Greg Nuttelman, DPW Director
 - Jeff Bagg, City Planner
 - Dan Murphy, City Engineer
 - Nicole LaChapelle, Mayor
 - Julie Anne Levin, Easthampton Public Schools Director of Curriculum
- Fuss & O'Neill Project Team
 - Julianne Busa, PhD, Project Manager, Senior Resilience Scientist
 - Lara Sup, PE, Senior Climate Resilience Engineer
 - Jeff Sires, EIT, Climate Resilience Engineer
 - Sarah Frisby, EIT, Climate Resilience Engineer
 - Michael Soares, Wetland Scientist, wetland, soils, and groundwater investigations
 - Ed Cofrancesco, PE, Structural engineering
- O'Reilly, Talbot, and Okun Project Team – Geotechnical Engineering

Ashley Sullivan, PE, Principal

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.