Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: Malden
Project Title: Malden River Works
Award Year (FY): FY21
Grant Award: $150,015
Match: $50,000
Match Source: In-kind, MIT Leventhal Prize
One or Two Year Project: One Year
Municipal Department Leading Project: Malden Redevelopment Authority
Project Website URL: www.maldenriverworks.org

Community Overview:

- What is the population size of your community and where is it located?
- Do you have any Environmental Justice or other Climate Vulnerable communities? (Think about both those who live and work in your town.)
- Other unique traits of your municipality like who the top employers are, geography, history, etc.

Malden is a mid-sized city with approximately 60,000 residents located just north of Boston on the MBTA Orange Line. Malden is known as a gateway community with a significant environmental justice population. Malden's increasing racial and ethnic diversity is often cited as a source of civic pride, as it is home to the most diverse public high school in the Commonwealth, and growing Asian, Black, and Latinx populations. Malden has also been cited as a city with increasing upward mobility, particularly for its Latinx and Black populations. However, Malden residents lack access to green spaces and particularly to the Malden River. Many residents, including municipal staff, have remarked at the first public meeting that they did not know they had a river to begin with. In the words of Mayor Gary Christenson, "For so long, people didn't even know that we [Malden] have a river."

Malden was a historic industrial employment anchor in the Metro Boston region, where mills and factories such as the Boston Rubber Shoe Company and the Converse Rubber Company once utilized its network of streams, ponds, and the Malden River for power. After years of industrial development and subsequent decline, Malden's portion of the Malden River is bracketed by a sea of asphalt parking lots and light industrial businesses (commercial food production, warehousing, and offices) today that offer little to no river access, and exacerbate water quality and surface flooding risks through poor site design and stormwater management. This project will be critical in increasing equitable community access to the river and greenspace for recreational enjoyment and to reduce the burden of climate impacts, such as the Urban Heat Island (UHI) effect and flooding via stormwater.

The COVID-19 pandemic has introduced an additional hurdle for environmental justice populations and has had a similar impact that climate change will/has had on the same

populations. The pandemic has served as a looking glass into understanding the racial disparities that have existed in the U.S. and in Malden for decades. Low-income and communities of color are left disproportionately isolated compared to affluent, white communities. Systemic injustices and a poor social safety net have increased their vulnerability, such as lower access to healthcare, secure jobs, and adequate housing. Additionally, due to environmental racism, neighborhoods of color face an increased burden of heat waves due to lower access to greenspaces and poorer air quality. Public spaces are becoming increasingly important areas of recreation as the typical indoor recreational spaces (e.g. malls, movie theaters, libraries) are closed or have limited access. This will become ever more important during the hot summer months, particularly for environmental justice communities. These groups also lack economic stability and therefore lack access to areas/homes that are air conditioned.

Malden River Works serves as a model in incorporating community leadership. The Steering Committee is composed of Malden residents of color, with strong Black leadership. It is imperative to include the community in the design and implementation process, particularly focused on advocating for the needs and values of the community as well as to prevent green gentrification. This project will not only increase Malden community resilience by reducing the negative impacts of climate change (UHI and flooding), but it will also increase community resilience through the careful, intentional and thoughtful community participation process.

Project Description and Goals:

- Where was the project located?
- What climate change impacts did the project address?
- What were the specific goals and tasks of the project as stated in your application?
- Did your project meet the goals set forth in your application in terms of:
    - Employing nature-based solutions
    - Improving equitable outcomes for and fostering strong partnerships with EJ and other Climate Vulnerable Populations
    - Providing regional benefits
    - Implementing the public involvement and community engagement plan set forth in your application
    - Finishing the project on time

The Malden River Works (MRW) project will transform the City's Department of Public Works (DPW) yard (356 Commercial Street) on the Malden River for better climate change preparedness and create a vibrant, resilient public riverfront park for all. This project will reduce climate vulnerability by introducing nature-based solutions at the DPW that also benefit the park, including green stormwater infrastructure to reduce surface flood risk, increased tree

canopy to mitigate the urban heat island effect, restored riparian landscape, and an elevated greenway path to serve as a flood barrier from sea level rise.

There are 3 main goals of the project:

1. To increase climate resilience by adapting the DPW facility for climate change
2. To build leadership coalitions and capacity among Malden's diverse communities of color through the ongoing project leadership of the MRW Steering Committee.
3. To create a new model for climate resilient development on the Malden River that creates new public green space with nature-based solutions, while preserving the riverfront as an industrial employment center.

This phase of the project involved developing a 25% design for the site, including cost estimates and beginning the permitting process. Below are the specific tasks stated in the MVP application:

Task 1: Kick-off meeting with City, EEA, and Consultant

Sub-task 1.1 Kick-Off Meeting/Site Review

Task 2: Site Assessments

Sub-task 2.1 Nature Based Solutions

Sub-task 2.2 Environmental and Hydrology Analysis

Sub-task 2.3 Preferred Concept Design

Task 3: Concept Design Planning

Sub-task 3.1 Concept Design Planning

Task 4: Public and Environmental Consultation and Workshops

Sub-task 4.1 Community Meeting #1

Sub-task 4.2 Digital Design Update

Sub-task 4.3 Online Survey Design and Analysis

Sub-task 4.4 Community Meeting #2

Sub-task 4.5 Outreach and Communications

Task 5: Site Information Gathering

Sub-task 5.1 Wetland/Resource Area Delineation

Sub-task 5.2 Topographic and Utility Survey

Sub-task 5.3 Bathymetric Survey

Task 6: 25% Design

Sub-task 6.1 25% Design

Task 7: Permitting

Sub-task 7.1 Notice of Intent

Sub-task 7.2 US Army Corps Filing

Sub-task 7.3 NOAA NMF Coordination

Sub-task 7.4 USCG Coordination

Sub-task 7.5 MEPA, NHESP, WQS

Sub-task 7.6 MADEP Chapter 91 Filing

Sub-task 7.7 SWPPP Filing

The project was successful in achieving the goals set forth in our application, including the following:

- The 25% design introduces over 200 new trees to address heat island effect, mitigates air-borne pollutants with a tree-planted phyto-buffer between the DPW yard and the new park, restores ⅓ acre of Malden River shoreline, and introduces green infrastructure to filter and store stormwater for 3 acres of previously untreated drainage area.
- The Malden River Works Steering Committee, led by residents of color, continued to drive community engagement during the 25% design phase.
- The project will implement a 300-ft section of the Malden River Greenway, which serves the cities of Malden, Medford, and Everett.
- We altered our original community engagement plan to respond to pandemic-related challenges. We held two community meetings, seven decentralized public meetings with other community groups, posted an in-depth digital design update to our website, and conducted a survey.
- All deliverables were completed and submitted on time.

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

We are measuring results through two lenses for the Malden River Works project: the process and the product. The process is a measure of how Malden's communities are involved in

developing the project. The product is a measure of results in the physical project itself, and how the nature-based solutions are contributing to improved resilience.

Process results:

- Since the start of the Malden River Works project in the fall of 2019, nearly 1,000 residents have been engaged: over 400 have attended 6 public meetings, and we have received over 700 survey responses.
- There have been over 15 local press pieces focused on the Malden River Works project, including the Boston Globe, MIT News, and local papers such as the Malden Observer and the Malden Blue and Gold newspaper.
- Website analytics: we launched the Malden River Works website, and reached over 2,200 unique visitors in the first four months of publication.
- Malden River Works Steering Committee leaders of color have been invited to speak at events and serve in leadership roles to share their knowledge on community engagement and resilience planning. 1 joined the Mystic River Watershed Association Board of Directors, 1 joined the Malden Conservation Commission, and 5 have spoken at state and federal convenings.

Product results:

- To reduce the urban heat island effect and promote habitat restoration, the project introduces over 200 new trees. Additionally, the design intentionally preserves 16 mature shade and habitat producing trees.
- To mitigate air-borne pollutants, the design includes a tree planted phyto-buffer between the DPW yard area and the new park.
- To promote riparian habitat restoration, ⅓ acre of Malden River shoreline is stabilized and restored with native plantings.
- Approximately 3 acres of drainage area that was previously untreated is stored and filtered with nature-based solutions when practicable.
- The project will implement a 300-ft section of the Malden River Greenway path. The project team is also actively collaborating with adjacent landowners to coordinate the width and alignment to ensure a contiguous pathway.

Project Deliverables**:**

- Existing Site Conditions drawing including:
    - Wetland/Resource Area Delineation
    - Topographic and Utility Survey
    - Bathymetric Survey
- Memo on Nature-Based Solutions
- Memo on Environmental Conditions
- Draft Concept Design drawing and Memo
- Final Concept Design drawing and Memo

- Community Meeting #1 Presentation and Flyer
- Digital Design Update: https://www.maldenriverworks.org/latest/latest-project-design-updates-and-community-conversations
- Online Survey and Memo of results
- Community Meeting #2 Presentation and Flyer
- Decentralized Public Meeting Presentation and Overview document
- Website overhaul: https://www.maldenriverworks.org/
- 25% Design Package and Memo
- Cost Estimate
- Permitting Memo

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

The most important lessons learned from this project were related to our community engagement strategies. We had initially committed to holding three community meetings during the course of the grant cycle, which was on top of the four meetings we held during the concept planphase. At our first meeting, we realized that our attendees were mostly folks that had been following the project from the beginning, and those numbers had been decreasing since we started the project. We were also battling Zoom fatigue, making it even more difficult to attract attendees to the remote meetings.

We decided to forgo the second community meeting and instead develop a project overview presentation that we could take to other existing community groups to further raise awareness of the project and get more folks involved. This strategy was successful in reaching new audiences but our time constraints greatly hindered us. We learned that organizing multiple meetings, even if we were just plugging into a regularly scheduled meeting, takes a lot more time and effort than hosting one traditional community meeting. We also found that May/June is a challenging time of year to hold these meetings, with the end of the school year and summer approaching. We were only successful thanks to the tremendous dedication of our many Steering Committee and Project Team members. Providing compensation for our Steering Committee members has been a crucial part of ensuring their commitment to the project as well as simply recognizing the value of their expertise.

We also created a digital outreach strategy to complement the decentralized public meetings. We summarized the design updates and shared links to meeting kits and surveys in a blog post on our website, "Latest Design Updates and Community Conversations." This blog post was shared via social media and email to a 500+ person Malden River Works list as well as the Mystic River Watershed Association's e-news which is sent to 5,000+ people. This blog post became the most popular page on the website with over 200 views and more than 5 minutes spent on the page, telling us that people read the content. We've found that digital outreach

has become more important as a result of the pandemic. However, this strategy also requires significant staff time to manage and update, which we were able to accomplish with interns and in-kind services.

We also struggled with how to make our community engagement strategies effective when getting into the more technical design phase of the project. We had tremendous success when developing the concept plan because we gave attendees the opportunity to provide feedback and make a real impact on the design of the project. However, at this point in the process, we don't have a lot of areas that need more input - it's more about refining the design and developing technical drawings to move us closer to construction. We found that folks were less interested in conversations around nature-based solutions and stormwater infrastructure than the proposed landscaping of the park in a remote meeting setting. This could be addressed with more creative strategies like holding in-person events at the site where attendees would be able to better visualize how those features would work. In the future, our strategies could be less feedback-focused and more education-oriented.

Though we already knew about the soil contamination on the site, we learned the importance of understanding available options for nature-based solutions that avoid stormwater infiltration. These strategies are certainly relevant for other sites along the Malden River and are most likely useful for other urban communities with formerly industrial waterways where soil contamination is similarly prevalent.

We have been able to share our project and process with other communities in a few different ways. The simplest way is through our website, which we intentionally designed to feature as much information on the project as possible. We also have our full concept plan posted on the website as well, which further details our process. Additionally, we've been able to share our experiences at a few webinars, including the MVP Winter Webinar and Mystic River Watershed Steering Committee. However, because those often take place during the work day, it's difficult to include our resident Steering Committee members, who would be able to provide other communities even more insight on the importance of their role in the project. We're also sharing our process just by replicating it in other projects both in Malden and the surrounding communities.

Partners and Other Support:

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

Malden River Works (MRW) Project Team

> *The MRW Project Team is a partnership between the City of Malden, Malden Redevelopment Authority, Friends of the Malden River, Mystic River Watershed Association, and the Massachusetts Institute of Technology. This team was responsible*

for project implementation and providing technical assistance during the development of the Concept Design and continued to guide the community engagement process and fundraising efforts throughout the 25% design phase.

Malden River Works (MRW) Steering Committee

The MRW Steering committee, composed of resident leaders, environmental advocates and government representatives, serves to set and maintain the core values of the project, make strategic decisions, and control the funds.

Landing Studio - Design and Community Engagement Lead (Design Lead)

Landing Studio was responsible for maintaining the design intent from the community-led concept planning process in 2019-20 in this 25% design phase. Landing Studio controlled the overall plan layout and finish materials, taking into consideration input from the Engineering Team on factors related to probable cost, permitting, project schedule, and engineering feasibility and value of green infrastructure solutions, soil management, and floating dock system.

Landing Studio led the community engagement process with the MRW Project Team and MRW Steering Committee during the 25% design phase. This included the production of visual materials to communicate the design to a broad public audience, the design of surveys for feedback, and analysis of survey and community meeting results and incorporation of those results into the 25% design.

Horsley Witten Group - Engineering Team

Horsley Witten led the Engineering Team, which included Offshoots and CR Environmental, in conducting site assessments, developing nature-based solutions for climate resiliency and stormwater management, determining engineering feasibility, developing cost estimates, and assessing permitting requirements and processes.

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.

[Attached]