Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: City of Everett
Project Title: Island End River (IER) Flood Resilience Project
Award Year (FY): FY22
Grant Award: $716,500
Match: $241,388
Match Source: Local Cash/In-Kind
One or Two Year Project: One Year Project
Municipal Department Leading Project: Planning & Development
Project Website URL: State Awards $716,500 for Flood Resilience Project – Everett Independent
North Suffolk Office of Resilience and Sustainability | City of Chelsea MA
Planning Studies and Reports | City of Chelsea MA
Planning & Development - Everett, MA - Official Website (cityofeverett.com)

Community Overview:

- What is the population size of your community and where is it located?
    - The City of Everett is home to over 50,000 residents and the City of Chelsea has a population of approx. 40,000 people. These communities are located along the northern side of the Mystic River between the Cities of Boston and Medford. The City of Everett is located within the southern extents Middlesex County and the City of Chelsea is located within the north extents of Suffolk County.
- Do you have any Environmental Justice or other Climate Vulnerable communities? (Think about both those who live and work in your town.)
    - The Project Site is in proximity to neighborhoods defined as Environmental Justice (EJ) Populations based on the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) 2020 EJ Map Viewer, which is derived on 2020 Census Block Groups. Within a 5-mile radius of the Project Site, there are 511 census block group that trigger seven EJ criteria, which include: Minority; Income; English Isolation; Income and Minority; Minority and English Isolation; Income and English Isolation; and Minority, Income, and English Isolation. Within a 1-mile radius, there are 46 census block group that trigger five EJ criteria, which include Minority; English Isolation; Income and Minority; Minority and English Isolation; and Minority, Income, and English Isolation.
- Other unique traits of your municipality like who the top employers are, geography, history, etc.
    - The Project Site and surrounding area, anchored by the Beacham Street corridor, were constructed on top of former tidal flats and marshes. The river and surrounding tidal flats were gradually filled for development starting in the late 1800s and accelerating through the 1960s, facilitating the introduction of the New England Produce Center. The Project Site and surrounding area are inherently vulnerable to coastal flooding because of the area's topography and

hydrology. Low-lying areas along the Island End River's original pathway experience frequent coastal and stormwater flooding, and the area's vulnerability to climate change was magnified by recent storms that occurred during the winter storms of 2015 and a string of nor'easters in 2018. The flooding problem in the area will continue to worsen with rising sea levels and increasing storm severity.

- According to a 2017 report titled "Designing Coastal Community Infrastructure for Climate Change," more than 35,000 residents and 16,000 jobs will be impacted by future flooding from IER. Businesses in this area are served by the Beacham/Williams Corridor, a federally designated Critical Urban Freight Corridor linking East Boston, Chelsea, and Everett to the interstate highway system while acting as a principal evacuation route. Already, principal arteries such as Beacham Street and Williams Street have exhibited signs of deterioration due to coastal flooding. Furthermore, the MBTA's Newburyport/Rockport commuter rail line, where CSX and Pan Am also provide freight rail service to industrial customers, parallels Beacham Street to the north.
- The project area supports the backbone of New England's fresh produce system, the Chelsea/Everett food cluster. In total, the food cluster in this area generates $2.3 billion in annual economic activity. The food cluster sustains approximately 11,000 indirect jobs and 3,000 direct jobs according to MA Office of Labor and Workforce Development's 2018 Local Labor Market Statistics. Based on the MAPC's 2017 study, jobs are held by a range of employees, including local Chelsea/Everett residents, as well as residents of Boston and other areas of the Commonwealth. The most prominent employer in the food sector is the New England Produce Center (NEPC). Due to the geographic concentration of food sector industries, IER flood events can severely impact the region's food supply chain, which would result in an increase of food prices and potential food scarcity. Damage to these facilities would also have cascading impacts on food availability throughout the region.

Project Description and Goals:

- Where was the project located?
  - The Island End River is a tributary to the Mystic River and is tidally influenced. IER is abutted by Everett on its western bank and Chelsea on its eastern bank. The surrounding area is heavily developed with high amounts of impervious surfaces and undersized stormwater infrastructure. The area is home to critical infrastructure including the New England Produce Center, the regional FBI headquarters, Mass General Hospital, the Carter Street Pump Station, Williams Middle School, and Chelsea High School.
- What climate change impacts did the project address?
  - Incorporation of state-recommended Resilient Massachusetts Action Team (RMAT) design criteria in the design of flood resilience measures to account for

future sea level rise setting Design Flood Elevation (DFE) more than four feet above the current 100-year base flood elevation (BFE) of El. 10, NAVD88;
    - Protection of industrial sites that store hazardous chemicals and fuels that could pose a risk to the Mystic River watershed in the event of coastal storm;
    - Planting of native species, including 19 new shade trees, and reducing impervious surfaces throughout Project Site to address urban heat island effect in Chelsea and Everett;
    - Enhancing existing degraded salt marsh area by removing a thick wall of invasive species (phragmites) and replanting bare spots further into the marsh with native species;
    - Proposing salt marsh improvements that will improve habitat and awareness of the salt marsh resource area from adjacent publicly accessible areas; and
    - Utilizing efficient design and construction practices to minimize Project Site area to the maximum extent practicable and avoid unnecessary impacts to coastal resource areas and buffer zone areas along IER.
- What were the specific goals and tasks of the project as stated in your application?
    - This project focused on evaluating flood wall alignments in Everett and initiated design work on a selected alignment while continuing work in Chelsea related to permitting, design development, and climate modeling for benefit assessment and program validation. Community engagement through advisory groups of both residents and private business stakeholders continued in this phase of the project.
    - The project team determined the environmental permitting strategy and initiated permitting through pre-filing meetings with interagency federal, state, and local participants, develop an overall permitting strategy and timeline, and prepare initial permit application materials. The project team prepared a detailed benefit-cost analysis (BCA) on the preferred alternative for a major FEMA BRIC request in winter 2021.
    - Stakeholder outreach engaged both the business community in Everett through an established working group and Chelsea and Everett environmental justice residents through an existing equitable engagement framework.
- Did your project meet the goals set forth in your application in terms of:
    - Employing nature-based solutions
        - Nature-based solutions are included in the design of Flood Provisions East
    - Improving equitable outcomes for and fostering strong partnerships with EJ and other Climate Vulnerable Populations
        - Continued longstanding partnerships with MyRWA and GreenRoots.
        - Facilitated the development of a funded Community Advisory Group who provided feedback on project public benefits.
    - Providing regional benefits
        - Designed a flood protection system that provides regional flood hazard mitigation
        - Project is led by City of Everett and City of Chelsea, which models regional collaboration for other communities

- Implementing the public involvement and community engagement plan set forth in your application
  - Developed Stakeholder Working Group to obtain input on the project related private property operations and feasibility within the district
  - Facilitated the development of a funded Community Advisory Group who provided feedback on project public benefits.
- Finishing the project on time
  - All deadlines for grant reporting and deliverables were met to completion at the end of the grant period June 30, 2022, with progress reports, deliverables, and invoices submitted monthly.

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 entire Project will include approximately 4,640 linear-foot (lf) of protective flood barrier system, an approximately 2,150 square-foot underground surge control structure, wetland enhancements, and public amenities.
    - Enhancement of the coastline protection with a new 4,640 lf coastal and inland flood barrier alignment designed to range in height of four feet or more over the current Base Flood Elevation (BFE) to protect the area's industrial, commercial, and community uses;
    - Improvement of the waterfront of the Project Site through rehabilitation of the eroded shoreline;
    - Investment in existing Island End Park, including educational signage in multiple languages spoken in the community, new benches and other site furnishings, landscape plantings, and other amenities;
    - Improvement of waterfront public access through the construction of an approximately 10-foot wide elevated boardwalk;
    - Construction of accessible pedestrian sidewalk amenities to Beacham Street;
    - Protection of approximately 11,000 jobs in the Cities of Everett and Chelsea;
    - Creation of between 670 -1,000 construction jobs over the projected 36 months of construction for the Project;
    - Establishment of the Community Advisory Group, comprised of more than 6 community-driven individuals, to provide input on the public benefits of the Project; and
  - Formation of the Stakeholder Working Group, composed of over 20 representatives from private sector industrial businesses in Chelsea and Everett, to contribute feedback on the Project
- Provide a brief summary of project deliverables with web links, if available.
  - Task 0 – Project Kickoff Deliverables

        - Meeting notes, sign-in sheet
    - Task 1 – Administration & Management Deliverables
        - Meeting notes, sign-in sheets, presentation materials, and other documentation
    - Task 2 – Alternatives Analysis for Everett Flood Resilience Alignments
        - Updated alignment sketches (5-7 options) and supporting memorandum
        - Selected 3 alignment sketches and supporting memorandum
        - Final alignment sketch and supporting memorandum
        - Environmental due diligence report and supporting record materials
        - Meeting notes, sign-in sheets, presentation materials, handouts
    - Task 3 – Preliminary Design – Everett Flood Resilience Alignment
        - Base plan, data records, boring logs and profiles, etc.
        - Compiled record data and utility memorandum
        - Design development plan set
        - Compliance documents, ongoing monitoring reports/logs
        - Draft easement plans, appraisal documents, and legal documents/research
        - 50% design plan & specifications
        - Cost estimate
    - Task 4 – Project Permitting
        - Deliverables – Meeting notes, sign-in sheets, project schedules and permitting memorandums, initial permit application materials
    - Task 5 – Modeling, Compliance, BCA, Design Updates, and Land Acquisition
        - Memorandum describing coastal and inland storm modeling
        - ASTM Phase I Report and MCP Phase I Report for contaminated materials on barrier/river walk sites
        - Cost-benefit analysis (BCA) updated modeling inputs
        - Updated plans based on easement, community, and permit feedback; copies of minutes from meetings with permit agencies;
        - Minutes from meetings with abutters over easements, LSP memorandum in support of items around hazardous materials management/regulatory, updated easement plans
    - Task 6 – Community Engagement
        - Meeting notes, sign-in sheets, presentation materials, handouts
        - Event notes/media, flyers, presentation materials, handouts
        - Event notes/media, flyers, presentation materials, handouts
        - Educational materials, including handouts/flyers, digital imagery, and recordings of public forums where appropriate, and other materials.
        - Meeting notes, sign-in sheets, presentation materials, handouts
    - Task 7 – Reporting
        - Monthly progress reports submitted by the 30th of each month of the grant period to your MVP Regional Coordinator
        - Final case study report, PowerPoint slide, project photos

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 importance of regional collaboration and good communication
    - The value of creating multiple stakeholder working groups to gather feedback from a diverse set of stakeholders
    - The critical nature of building relationships with private properties owners in order to implement district-wide flooding solutions
    - The value of multiagency pre-filing meetings to shape a project and encourage dialogue between regulators
    - The support available from MEMA and their technical assistance consultants to aid municipalities in federal grant application process
    - The significance of nonprofit partners and their relationships within communities to engage with EJ communities
- What is the best way for other communities to learn from your project/process?
    - Other communities can collaborate with Resilient Mystic Collaborative to learn more about the project in addition to the City of Everett's Planning & Development Department page and the City of Chelsea's Housing & Community Development Department page. The project team will also publish a project website in Fall 2022 pending FY23/24 MVP Action Grant funding, where project history, updates, and public engagement outlets will be found.

Partners and Other Support:

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

Roles	Project Partners
Municipal Partner	City of Chelsea – Department of Housing and Community Development
Planning/Permitting	Fort Point Associates, A Tetra Tech Company
Civil & Structural Engineering Design	AECOM Tetra Tech Weston & Sampson
Land Surveying	Beals + Thomas LandTech
Geotechnical Engineering	Tetra Tech Northeast Geotechnical Weston & Sampson
Community Outreach	GreenRoots Mystic River Watershed Association
Coastal Modeling	Woods Hole Group

Roles	Project Partners
Stormwater Modeling	Dewberry
Wetlands Science	Weston & Sampson
Licensed Site Professional Services	Tetra Tech Weston & Sampson
Property Appraisals	Eric Reenstierna Associates, LLC
Legal Services	Blatman, Bobrowski, Haverty & Silverstein, LLC City of Chelsea City Solicitor City of Everett City Solicitor

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.