PROJECT SUMMARY

This MVP Action grant involved funding support for final design of the ***Ipswich River Sewer Interceptor and Siphon Risk Mitigation and Resiliency Improvements Project – Bank Biostabilization Construction***. This case studies provides an over of the project.

MUNICPALITY

- Town of Ipswich, Massachusetts

GRANT AWARD & FUNDING MATCH

- $ 117,802.50 MVP Action Grant; $ 46,710 Town of Ipswich Cash Match; $8,000 Town of Ipswich In-Kind Services Match

DELIVERABLES

- Kickoff Meeting Summary; Record Drawings; Construction Photos
- Contractor Pay Requisitions; Engineer Invoices; Letter of Substantial Completion
- Informational project kiosk; multilingual project brochure (Greek, Spanish, English); Project Webpage
- Progress reports; case studies

COMMUNITY OVERVIEW

The Town of Ipswich is a coastal North Shore community with a population of approximately 4,000. Ipswich is home to over 900 acres of clam beds; Crane Beach a 5-mile barrier beach stretching from the Ipswich River to Essex Bay drawing 250,000 users annually; many businesses.

DESCRIPTION OF CLIMATE IMPACT

Ipswich is an active participant in the Municipal Vulnerability and Preparedness program, having become an official MVP Community in 2019. During the Ipswich Community Resiliency Building (CRB) Workshop in February 2019 participants overwhelmingly agreed that wastewater infrastructure, in particular the Ipswich River Sewer Interceptor and Siphon, is one of the greatest current concerns and challenges presented by the town's top hazards that include: coastal storm surge & sea level rise; inland flooding; extreme cold / winter storms; heat/drought/fire.

PROJECT GOALS

This project will lessen the impacts of climate hazards and build resilience of the Town's vulnerable wastewater infrastructure and help mitigate the impending hazards identified in the Town's MVP Plan while achieving:

- **Nature-based Solutions** - The project's Biostabilization plan implemented nature-based solutions to improve natural systems for community and ecosystem adaptation by using coir fabric encapsulated soil lifts combined with salt tolerant native plantings to reestablish the riparian area and provide habitat while also protecting the critical sewer infrastructure. These nature-based improvements transformed the vulnerable and unsightly project area into a scenic community asset, while protecting commercial, residential, and Town property.

- **Improve Water & Air Quality** - This Biostabilization project helps stabilize the bank thus preventing turbid water from erosion during increased rain / storm events while also reducing the risk of sewage overflows from upland sewer pipe into the Ipswich River. Native plantings and nature-based access roads promotes photosynthesis, improving air quality in project area in lieu of a paved access road surrounded by a non-vegetated cleared site
- **Promote Biodiversity –** Habitat toe stone sized and spaced to create and support marine habitat, a habitat that has long been lost due to scour of stones once along the northern bank of the Ipswich River. Native plantings create new habitat to support birds, bees, and other insects the former invasive species could not support.

APPROACH & RESULTS

Public & Stakeholder Meetings and Outreach – Held multiple meetings, phone calls, public site walks. Ipswich Conservation Commission held multiple public hearings to discuss the project, provide feedback on plantings selection, and generate OOC. Website and Social Media posting for project updates. Ipswich High School Environmental Club and Ipswich Council on Aging developed and translate community education materials including articles, poster, multilingual brochure (Spanish, Greek, English).

Abutter Outreach - Communicated with abutters throughout design process. Wastewater Department staff met and corresponded tirelessly with abutters to keep abreast of project progress and to solicit feedback.

Outreach Impact on Design – Community feedback has helped shape the look of this project. Design features resultant of community input includes: native species planting plan; originally proposed permanent gravel or paved access road (heat sink), replaced with nature-based geo-fabric supported native grasses permanent access road; revetment stone placement to support marine habitat; resilient manhole covers along sewer system for vulnerable infrastructure to withstand 500-yr storm flood.

LESSONS LEARNED

Communities embrace an attractive, functional, natural-based solution to traditionally hard infrastructure projects. Bio-design for riverbank stabilization and access roads can provide improved functionality while also being a more sustainable, resilient, and aesthetic option than tradition construction methods. It is never too early to engage regulatory and non-regulatory stakeholders. Allow time and budget for additional meetings and submissions.

PARTNERS AND OTHER SUPPORT

MVP Program - The Project Team is grateful for the EEA guidance Ms. Rowden and Ms. Runsten provided through the MVP Program including project funding support for the Biostabilization and construction design phases, as well as suggesting creative community outreach methods.

Regulatory - Support and guidance has been provided from project concept and throughout with particular thanks and recognition to Mass Office of Coastal Zone Management, MassDEP, and the Army Corps of Engineers.

Town of Ipswich – Leadership from Vicki Halmen - WW Director, Emily Sadoway - WW Engineer; Brendan Lynch - Conservation Agent; Ipswich Council on Aging; Ipswich High School Environmental Club.