



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*. This case studies provides an over of the project.

MUNICIPALITY

- Town of Ipswich, Massachusetts

GRANT AWARD & FUNDING MATCH

- \$18,945 MVP Action Grant
- \$5,000 Town of Ipswich Cash Match
- \$2,093 Town of Ipswich In-Kind Services Match

DELIVERABLES

- 100% Construction Documents

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.

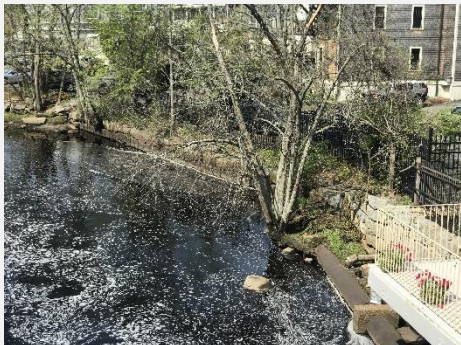
DESCRIPTION OF CLIMATE IMPACT

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 described below:

- **Nature-based solutions** will be implemented as a part of this project to stabilize and help improve natural systems for community and ecosystem adaptation by removing invasive species and re-vegetating with native plantings. These nature-based improvements will transform the vulnerable and unsightly project area and adjacent into a scenic community asset, while protecting commercial, residential, and Town property. Manhole resiliency improvements will keep flood waters out of the sewer system
- **Reduce Scour** - Current conditions allow for scour on the riverbed undermining supports for the Interceptor and further exposing the



siphon putting both pipes at a greater risk of failure. This will be intensified by increased storm events. Greater installation depths, anchoring, and replenishment of riverbed with native cobbles will protect the siphon.

- **Marine Habitat** - Installing toe stone at the base of the interceptor designed to protect from undercutting while also providing habitat for marine species.
- **Redundancy** - The current sewer siphon does not provide any redundancy, and any hydraulic issue or blockage could cause sewer discharge into the river or backup into residential and commercial properties creating damage and potential business closures. The current risk of discharge could mean raw sewage in the river flowing downstream to shellfish beds and bathing beaches requiring closures and posing potential health and economic risk.

APPROACH & RESULTS

Public & Stakeholder Meetings and Outreach – Held multiple meetings, phone calls and site walks. Ipswich Conservation Commission held multiple public hearings to discuss the project, provide feedback, and generate OOC. Website and Social Media posting for project updates.

Abutter Outreach - Communicated with abutters throughout design process. Wastewater Department staff have met with and sent letters to 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 geofabric 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

Nature based permanent access road can provide same functionality while also being a more sustainable, resilient, and more 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. Lessons may be learned during construction.

PARTNERS AND OTHER SUPPORT

MVP Program - The Project Team is extremely grateful to the guidance through the MVP Action Grant Project provided by Ms. Rowden and Ms. Runsten, who provided project funding support for the final design phase, as well as helping to recommend creative community outreach methods.

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

Town of Ipswich – Leadership from Vicki Halmen - WW Director, Emily Sadoway - WW Engineer; John Parkhurst - WW Superintendent; Brendan Lynch - Conservation Agent, and Anthony Marino - Town Manger.