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Hepburn Family Preserve Living Shoreline Project



Clients:

Borough of Fenwick, Lynde Point Land Trust,
Connecticut River Conservancy

Project Highlights:

- CIRCA Municipal Resilience Grant application and award
- State DEEP pilot demonstration project
- Historical shoreline change assessment
- Metaocean data analysis
- Numerical wave modeling
- Numerical cross-shore sediment transport modeling
- Habitat assessment and rare species survey
- Design, permitting and construction monitoring
- Adaptive management implementation during construction



Poster Narration



GZA Natural
Resources Services



GZA Waterfront &
Coastal Services

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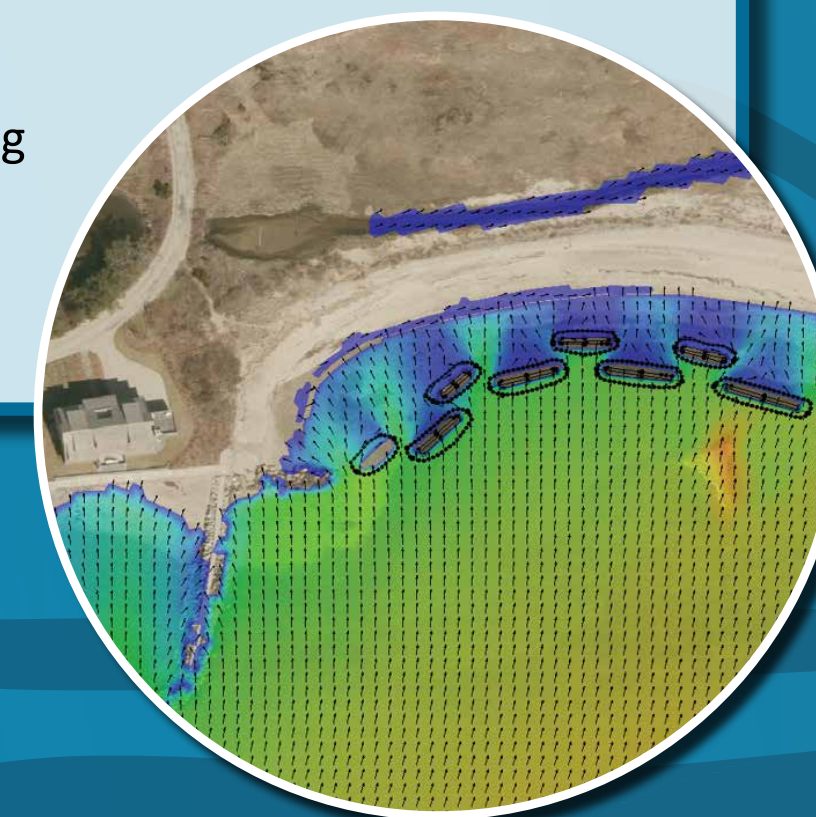
Design

- Relocation of a 400-foot segment of Crab Creek
- Installation of new culvert connecting the Creek to a tidal pond
- Creation of 450 linear feet of dune consistent with stable dunes to the east of the site
- Strategic placement of stone sill array for wave attenuation
- Creation of salt marsh and cobble intertidal habitats



Permitting

- Project was aligned with permit agency goals
- Permits included:
 - Certificate of Permission (CT Department of Energy and Environmental Protection)
 - Section 404 Individual Permit (US Army Corps of Engineers)
 - Coastal Site Plan Review (Borough of Fenwick)
- Protection of protected species through time-of-year restrictions and monitoring.
- Concerns about reduction of cobble beach and salt marsh impacts addressed with:
 - Maintaining cobble habitat and introducing cobbles into stone sills; and
 - Recreating salt marsh in tidal zone and relocating Crab Creek on the site.



Construction

- November 2020 – May 2021
- Monitoring and performance assessment of sill and nature-based features needed to be incorporated into schedule, necessitating delays in construction. Crew was added to maintain schedule.
- Lower elevations of the sill and marsh were only fully accessible during low tide. Upland construction was planned during high tides to maintain schedule.
- Coastal storm early in construction necessitated adaptive measures that delayed the timeline.
- Stakeholder education continued during construction to present local benefits of project.

