

AECOM

Town of Fenwick Island Resiliency Plan Revised Draft

FENWICK ISLAND INFRASTRUCTURE COMMITTEE MARCH 14, 2023

Recommended Actions or Activities Short, Medium and Long Term

Action items to be started by 2030 and completed by 2040

Future tasks requiring additional engineering, planning, and surveying to begin by 2040 and completed by 2060

Long-term considerations for 2070 - 2080





Action items to be started by 2030 and completed by 2040

- Code Updates Ch. 81 Erosion Control specify bulkheads and standards (height, materials, approval process for installing/improving bulkhead)
- Improve Drainage continue evaluating Stormwater Infrastructure Inventory and making improvements; Town currently taking inventory of check valves and backflow preventors and replacing
- Participation in Future Studies Delaware Inland Bay and Delaware Bay Coast Coastal Storm Risk Management Study
- **Beach Replenishment -** effective in protecting oceanside; protect dune line; periodic conditions evaluation
- **Grant Funding -** Delaware Coastal Programs and UD IPA's searchable grants database
- Resiliency Funding method to pay for future projects and matching grants geared towards adaptation projects



Public Engagement - keep property owners involved in conversations regarding SLR









Future tasks requiring additional engineering, planning, and surveying to begin by 2040 and completed by 2060

- Raising Bulkheads (shown in green)
 - ► <u>All properties</u> to install/raise bulkheads to same elevation
 - Vinyl bulkheads high level of protection and cost effective
 - 2050 elevate bulkheads 4-ft NAVD88 to attenuate SLR and nuisance flooding
 - Intermediate SLR curve and max high tide recorded over past 15 months (Dec. 2022)
 - 2080 elevate bulkheads 6-ft NAVD88 to attenuate SLR and protect against storm surge
 - Upgrading bulkheads could cost between \$9 and \$38 million (6 miles +/- of coastline along bayside and approximating improvements at \$1200 per linear foot)



Tie-in – Route 1 (north) and bulkheads located along adjacent properties outside of Town limits (south)



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Future tasks requiring additional engineering, planning, and surveying to begin by 2040 and completed by 2060

- Riprap and Bulkheads (shown in teal)
 - Properties with existing riprap need to install bulkhead
 - DNREC does not permit removal of riprap currently
 - Riprap dissipates wave action
 - Bay front properties would benefit from using bulkheading and riprap - currently some properties are utilizing both types of shoreline protection
 - Opportunities for other bayfront properties to utilize both
 - Town street ends currently utilize riprap, add bulkheads for further protection







Future tasks requiring additional engineering, planning, and surveying to begin by 2040 and completed by 2060

- Berms (shown in orange)
 - Additional protection, enhance fortification, and facilitate stormwater drainage
 - Used as secondary source of protection
 - Option not as feasible on smaller residential lots
 - Could lead to inadvertent flooding on adjacent properties
 - Viable option on the northern part of Town tie in point for new bulkhead system







Future tasks requiring additional engineering, planning, and surveying to begin by 2040 and completed by 2060

- Dredging Town currently working on canal and bay dredging plan; restoration of Seal Island with dredging spoils could help reduce wave impact; limited in reducing flooding impacts on bayside
- Elevating Dwellings Older dwellings should be raised; protects personal property but does not keep property from flooding
- Raise Streets work with adjacent coastal communities and in conjunction with DelDOT's scheduled infrastructure improvement projects; North / South Schulz Roads a priority
- SLR Design Guidelines or Standards design measures could include elevation requirements, building materials, and landscaping requirements; require for future development and existing buildings be retrofitted to withstand harsh impacts of SLR





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Long-term considerations for 2070 - 2080

Structural Dune

- SLR and storms could threaten integrity of dunes
- Seawall (steel) covered with sand to form natural looking dunes
- Protect oceanside from SLR, tidal surges
- Large undertaking joint project with Town, State, USACE
- Completed in tandem with scheduled beach replenishment project



Long-term considerations for 2070 - 2080

Elevating Properties

- Elevate using fill
- Done uniformly and in concert with raising streets
 - Runoff could lead to nuisance flooding if both structures and roads are not raised simultaneously





Comments and Questions



