



# Regional Sediment Management Program

## Atlantic Coast of Maryland Sediment Budget Update



### Description

The Atlantic Coast of Maryland Shoreline Protection Project is located in Ocean City, Maryland. Constructed from 1990 – 1992, it provides: a steel sheetpile bulkhead along the boardwalk for 1.4 miles from 4<sup>th</sup> Street to 27<sup>th</sup> Street; the construction of a vegetated dune system which extends for approximately 6.9 miles from 27<sup>th</sup> Street to just beyond the Maryland – Delaware (MD-DE) line; and the construction of a storm berm for 8.3 miles from 3<sup>rd</sup> Street to the MD-DE state line, with an additional 0.3 mile long transition into Delaware. The Project Cooperation Agreement (PCA) provides for periodic beach re-nourishment and monitoring over the 50-year project life (1994-2044). On average, 1,000,000 cubic yards of sand are required to re-nourish the beaches every four years. The last re-nourishment was completed in January 2011, with the next scheduled for 2014. However, due to Tropical Cyclone Sandy, renourishment has been accelerated to take place in Fall 2013. Maintaining the re-nourishment cycles for the remaining life of the project will require 7-9 million cubic yards of sand. This project is located at the northern end of the Baltimore District’s area of responsibility (AOR), previous studies indicate the predominate littoral transport regime is from north to south. A series of sediment budgets have been generated along the life of the project, however, in the very recent past data has not been assimilated into a sediment budget. This effort consists of completing an update to the sediment budget for the coastal portion of the Baltimore District AOR, this includes the Atlantic Coast of Maryland Shoreline Protection Project, Manual Bypassing Effort at Ocean City Inlet, and Assateague Island Environmental Restoration Project. Since this is expected to take multiple years, the initial phase will consist of updating the Atlantic Coast of Maryland Shoreline Protection Project sediment budgets for the 2008 – 2012 epoch, the results of this effort will be integrated into future updates for the sediment budgets of the remaining projects.

### Issue/Challenges

By developing an updated sediment budget, the District hopes to optimize dredging activities and renourishment operations by working with natural processes within the system. Analysis of beach profiles and generation of a sediment budget within SBAS will be undertaken to complete the stated objectives.

### Successes Lessons Learned

A major challenge in development of a sediment budget is becoming familiar with the computing packages. Pairing this effort with a Dredging Operations Technical Support (DOTS) request to receive training will hopefully prove to be successful.

### Expected Products

- Sediment budget for the Atlantic Coast of Maryland Shoreline Protection Project
- Derivation of the nodal point which has historical fluctuated within the limits of the project
- Indications for optimization of the placement of material during renourishments
- Identification of hot spots (areas with higher rates of degradation)
- Comparison of diffusivity and end loss at the ends of the project relative to past studies
- Documentation of study findings

### Potential Users

USACE Baltimore District

### Projected Benefits

The District will be able to execute periodic renourishment efforts for the Atlantic Coast of Maryland Shoreline Protection Project and evaluate how the placement material is performing relative to historic findings.

### Leveraging Opportunities

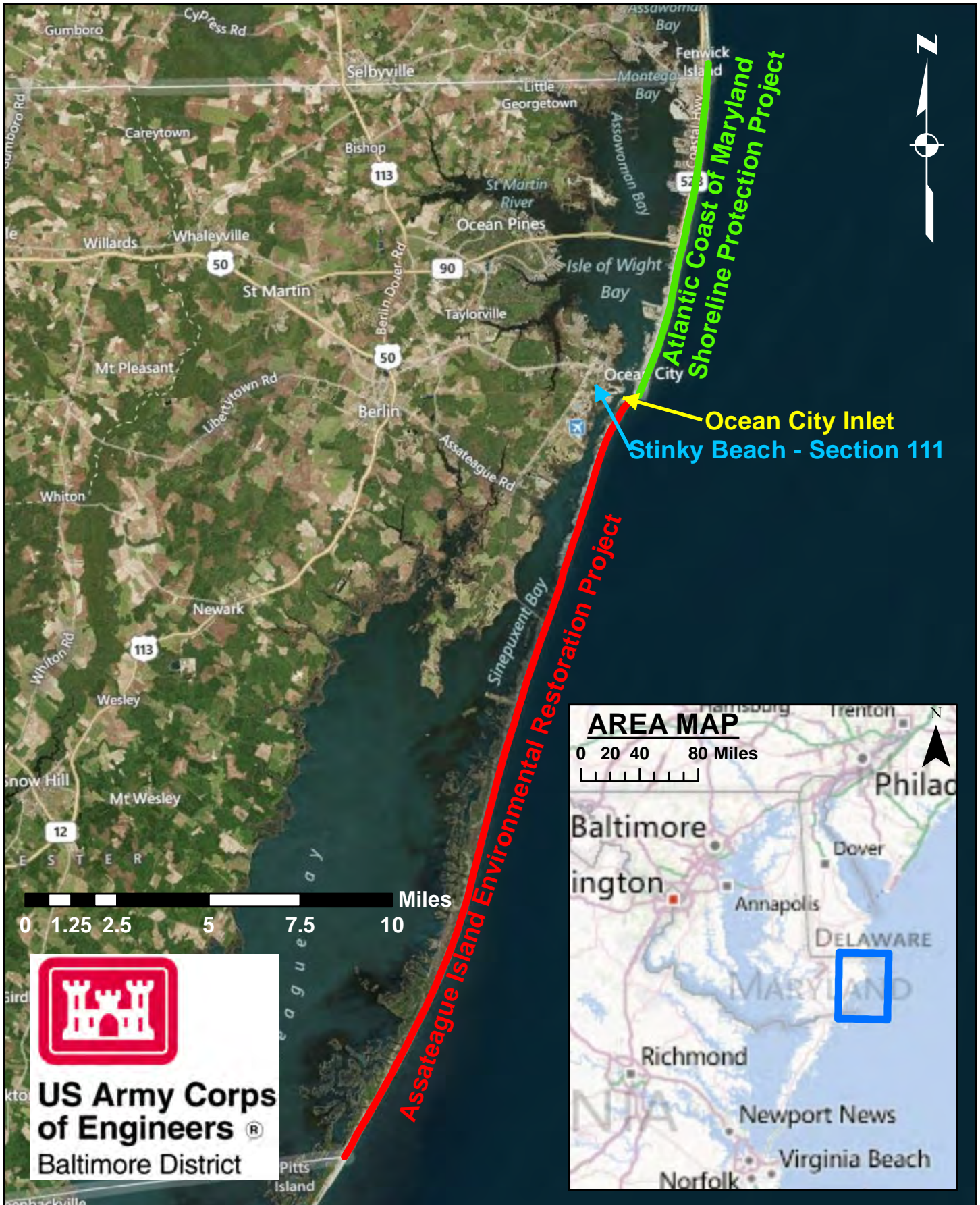
This model will combine the datasets collected by three projects and provide an overall regional sediment management approach to the coastal projects within the Baltimore District AOR. This model will be used to maximize placement of materials during bypassing efforts.

### Points of Contact

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### Participating Partners

The project Sponsor Maryland Department of Natural Resources supports the collection of monitoring data for the Atlantic Coast of Maryland Shoreline Protection Project. The project Sponsor for the Assateague Island Environmental Restoration Project, National Park Service, also supports the collection of the monitoring data for their respective project.



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