



U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Factsheet

Overview

The U.S. Army Corps of Engineers' (USACE) Philadelphia District received funding to repair the Bethany/South Bethany and Fenwick Island Coastal Storm Risk Management projects in Delaware. USACE awarded a contract to the Great Lakes Dredge & Dock Company of Oak Brook, IL. Great Lakes has completed beachfill contracts in Delaware in previous years.

Dredging & Construction Process

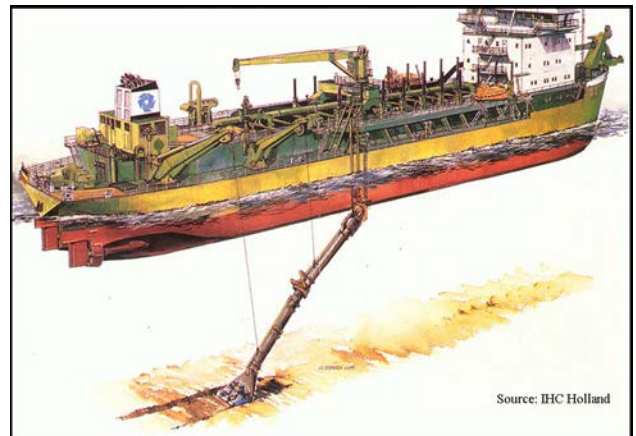
Work involves dredging sand from approved offshore borrow areas. The sand is pumped through a series of pipes onto the beaches. The sand is then graded into a dune and berm template designed to reduce potential storm damages to infrastructure, businesses and homes.

Pipe and other construction equipment is mobilized to staging areas prior to dredging and beachfill operations. The hopper dredges *Dodge Island* and *Padre Island*, owned and operated by Great Lakes, will be used to complete work. The dredges will work in tandem from a pipe landing (typically in the middle of a community and then first work north or south and then flip and work in the other direction). During construction, communities can expect construction crews to close no more than 1000 feet of beach as work progresses (closed sections are "rolling" and advance as the beachfill progresses).



Above - The Dodge Island is a hopper dredge owned and operated by Great Lakes Dredge & Dock Company. It will work in tandem on the project with the Hopper Dredge Padre Island. *Source: GLDD*

Below - Hopper dredges are designed to suck up material from the sea floor through drag arms and then load the material into the hold. The vessel transits back and forth between a sand borrow site and pump out buoy near the shoreline.



Source: IHC Holland

Work also involves repairing and/or constructing dune crossovers/access points and planting dune grass. Dune crossover work takes place within 14 days of beachfill work completing in a given area. Dune grass will be planted in late 2018 after the first frost consistent with best practices.

The Bethany/South Bethany project was first constructed in 2008. The design template includes a 150 foot berm backed by a dune at elevation 16 feet (North American Vertical Datum). The current contract involves pumping 659,000 cubic yards of sand onto Bethany and 500,000 cubic yards of sand onto South Bethany. The Fenwick Island project was first constructed in 2005. The design template includes a 200 foot berm backed by a dune at elevation 17.7 feet. The current contract involves pumping 278,000 cubic yards of sand onto Fenwick Island.



Above - sand is screened at the dredge drag arm intake and on baskets on the beach.

Below - dune grass planting takes place in the winter timeframe consistent with best practices.



Left - a crew constructs fencing after beachfill operations were completed at Rehoboth Beach in 2016-2017.

Right - the CRAB (Coastal Research Amphibious Buggy) is used to survey the surf zone as part of beachfill operations.