

APPENDIX A

Ocean City, New Jersey, Proposal for the Hurricane Sandy Coastal Resiliency Competitive Grants:
Shooting Island Restoration Project, submitted to the National Fish and Wildlife Foundation, Federal
Financial Assistance Grant Number: 44068

Note: The Project grant application below is in a modified format of the original application

PROJECT DESCRIPTIONS AND SCOPE OF WORK

Ocean City

By implementing the shoreline restoration project, the City of Ocean City will restore up to 150 wetland acres in Great Egg Harbor Bay, New Jersey. The project is intended to provide flood resiliency to the City of Ocean City by restoring function and value to wetland areas. The project consists of restoration of the 1978 shoreline of Shooting Island by construction of 3,200 linear feet of shoreline restoration sill and 1,900 linear feet of oyster castle shoreline restoration / habitat. This gray and green infrastructure is intended to minimize and mitigate future storm impacts and provide healthier habitats.

The living shoreline (which will function as a low-crested sill) is approximately 3,200 linear feet constructed along the designated alignment at a height of 1.55 feet NAVD88 (0-foot MHW) with side slopes of 2 horizontal to 1 vertical (2H:1V). Constructed in the water parallel to the existing shoreline, the sill will function as an armoring for the Shooting Island wetlands, will absorb existing wave and current energy transitioning the marsh on Shooting Island into a depositional environment. The project will be designed in accordance with New Jersey Department of Environmental Protection (NJDEP) and U.S. Army Corps of Engineers (USACE) recommended technical manuals.

Construction materials will be transported to Shooting Island via shallow-draft barges. A long-reach excavator positioned on a barge will be used to place the sill core and armor materials.

Approximately 1,900 linear feet of oyster habitat will be constructed along the designated alignment of the western shoreline. The oyster habitat construction includes the placement of oyster habitat blocks, placed on top of a thin-gravel bedding layer to improve surface conditions and prevent settling.

The oyster habitat blocks are planned to be placed on top of a thin-gravel bedding layer, which is intended to improve surface conditions and reduce settlement of the blocks. The oyster habitat blocks have been shown to be successful at several previous restoration sites located in the northeast, mid-Atlantic, and southeast. Similar oyster habitat has been recently installed as a project component in the Mordecai Island Coastal Wetlands

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Restoration project, located in Barnegat Bay, in Ocean County, New Jersey. The Mordecai Island Coastal Wetlands Restoration project, co-sponsored by the NJDEP Bureau of Coastal Engineering, was designed and is being implemented with the goal of preserving and protecting Mordecai Island's diverse natural marine habitat by stabilizing the shoreline and reducing future erosion and limiting impacts to habitat.

The oyster habitat blocks are intended to be placed in a non-continuous manner along the designated alignment, providing designed breaks between the oyster habitat system to promote exchange of tidal water between the island marsh and the bay. The oyster habitat blocks would be assembled at the site in a stacked, four-high, interlocking design. The oyster habitat blocks will extend from below mean low water into the intertidal zone.

Somers Point City

The Somers Point City project involves the construction of a living shoreline embankment of 1,600 linear feet to provide ecological uplift and tidal flooding mitigation. The site currently consists of narrow linear growth of predominantly common reed (*Phragmites australis*), Japanese Knotweed (*Polygonum cuspidatum*), as well as other invasive and undesirable species that separates the marsh from the development, road and forest. The invasive species will be removed and replaced with native pollinator species, native butterfly host species, as well as native high and low marsh species to restore the marsh edge. The proposed embankment is also designed to discourage terrapins from crossing the road and increase their existing habitat.

The area is prone to nuisance tidal flooding and is located partially in FEMA flood zone "V" and in the limits of moderate wave action. This impacts the commercial uses at the western end before the bridge (a repetitive loss property), Somers Point –Mays Landing Road and the residential neighborhoods along its southern edge from the bridge to the Garden State Parkway. The flooding occurs with a recurrence interval of 1.67 years for flooding over 3.7 feet (NAVD 88) in height. The proposed height of the embankment and parking area was designed to mitigate nuisance tidal flooding, reduce damaging wave action from larger storms. The embankment will also provide protection of the marsh from storm water runoff from the road by naturally filtering the storm water with vegetation.

The parking lot area of approximately 34,280 square feet of uplands area is also proposed to be filled with the above referenced dredge sediment as beneficial reuse of the material

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for protection against tidal flooding. It is proposed to be dewatered using dry Portland cement to obtain a maximum moisture content of 30 percent to provide structural stability. No portion of the embankment with plants is proposed to use Portland cement.

The dredge material will originate from a City owned marina facility located at Lots 2 & 2.01, Block 1612 in Somers Point, Atlantic County, New Jersey. The site has a long history as a legally existing marina since at least the 1940s. The City purchased the marina in 1993 using New Jersey Green Acres funds to provide public access and to maintain and enhance the marina. A portion of the pier is leased to a commercial "day fisher" boat known as the Duke of Fluke. This pontoon boat is the only type of boat that can utilize the facility, due to the shallow waters. At this time, this is the only feasible method of utilizing this facility for public access.

The maintenance dredging of the marina is limited to the same length, width, and depth as previous dredging operations which is approximately 30,988 square feet and a depth of six (6.0) feet below Mean Low Water (MLW) (-8.0 NAVD). Dredging is proposed to be completed by mechanical dredging.

This dredge material of approximately 7,084 cubic yards will be beneficially reused to create a predominately narrow living shoreline embankment with proposed slopes of 2:1 along the fringe of the marsh in place of the existing phragmites and other invasive species and to elevate an upland parking lot.

PERMITTING STATUS

Permit applications have been submitted to the New Jersey Department of Environmental Protection (NJDEP) and U.S. Army Corps of Engineers (USACE) for both City's projects.

The City of Somers Point has received NJDEP approval. USACE approval is pending.

The City of Ocean City's NJDEP and USACE permit applications are completed and were submitted on, or about, April 5, 2018. The NJDEP permit application has a 90-day review 'clock'. The USACE permit application is also under review.

All approvals, for both City projects, are expected by the end of August 2018.

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PROJECT SCHEDULE

Both projects are expected to take approximately 3 months for construction. Permits are expected by the end of August 2018. Construction is scheduled to commence September 1, 2018 and be completed on, or before, December 31, 2018.

PROJECT COSTS

Enclosed herewith, please find a Construction Cost Estimate dated February 5, 2018, provided by Mott Associates, LLC for the work in Somers Point. The Somers Point cost estimate for items using NFWF funding total \$625,643.00. The estimate for items using city funds total \$255,924 for a grand total of \$881,567.00 for the construction cost estimate for the Somers Point Project.

As for Ocean City's project, the Construction Cost Estimate has not been finalized. The 30% bid documents were completed in March and the final bid documents are in progress. The project is fully designed for permitting purposes but refinements to means and methods and the project bid specifications are required to publicly bid the project and the final construction cost estimate will be completed as part of that process for the Ocean City portion of Grant #44068. When the construction set is closer to completion, a cost estimate will be provided. It is anticipated that this estimate will be provided by the end of May, 2018.

For planning purposes, the currently estimated construction costs are approximately \$1.6M-\$2.4M. The final estimate will vary depending on materials availability, final selection of upland support facilities, and final refinements to construction approach.

METRICS:

- 2 communities involved – Ocean City, Cape May County and Somers Point, Atlantic County, New Jersey
- 20 research studies completed
- 50 volunteers participating
- 122 jobs created
- 150 acres of wetland restored
 - 150 acres with restored hydrology
 - 150 acres under Improved Management
- 3,200 linear feet of living shoreline sill created
- 1,900 linear feet of living shoreline oyster castles created
- 1,600 linear feet of shoreline embankment created