

## **SCOPE OF WORK FOR COASTAL RESILIENCY PROJECT**

### **IDENTIFICATION:**

**Project Name:** Tilghman on the Chesapeake Resilient Green Infrastructure Design

**Project Number:** 14-21-2884 CZM 206

**County:** Talbot County, Maryland

### **PURPOSE:**

Talbot County, Maryland (County) will work with the Tilghman on the Chesapeake Community Association (TOCCA) and University of Maryland Sea Grant Extension to design a living shoreline (approximately 975 linear feet) with marsh migration corridor, meadow habitat, and stormwater outflow components that increase resilience of this waterfront community along Harris Creek (approximately 38°42'17.21"N, 76°20'3.98"W). Practices will be designed to adapt to sea level rise and coastal storm impacts, and address erosion and stormwater runoff. This project will serve as a demonstration site for the Talbot County Green Infrastructure Plan.

The goal of this project is to support implementation of the Talbot County Green Infrastructure Plan, increase the resilience of the Tilghman on the Chesapeake shoreline and community, and demonstrate how nature can address sea level rise, coastal storm impacts, erosion and stormwater runoff. The objectives include: 1) Design a living shoreline with marsh migration corridor, meadow habitat, and stormwater outflow components to address current and future erosion, sea level rise, and storm impacts on the Tilghman on the Chesapeake community on Tilghman Island. This project will serve as a local demonstration project and 2) Engage and educate local stakeholders about climate resiliency, nature-based solutions, and the Talbot County Green Infrastructure Plan.

The resulting design specifications and permits will support construction of these nature-based resiliency practices. The County will use this project as a demonstration site for the Green Infrastructure Plan Update and build off of project momentum to pursue other demonstration projects in the region.

### **DESCRIPTION:**

**Duties & Responsibilities:** *The design firm team must include a State of Maryland Registered Professional Engineer.* The design firm will be responsible for providing a site plan, grading plan, landscaping plan, and construction management plan with cost estimate and applicable permits. Climate resilient features, such as a marsh migration corridor, will be included within the design to ensure that the project is regenerative and able to recover or readjust following natural disturbance from extreme weather and climate-related events. ***The 2018 Maryland State Sea Level Rise Date and Projections must be integrated into the design.*** The contractor will work in close coordination with the DNR Technical Project Manager to review the existing concept designs, participate in pre-permit application meeting(s), address permitting and/or community concerns and prepare project drawings and specifications,

Final design drawings and specifications with applicable permit approvals are expected by the end of the grant term. The design firm will complete a Permit Application with 60% design, a general project description/narrative addressing climate resiliency components, construction cost estimates and bid package to inform the construction phase. Impact table metrics will be finalized once the fully permitted, ready-for-construction design is obtained. These deliverables will also assist with project evaluation and community outreach activities.

Following approval by all project partners, the permit package will be submitted to the relevant regulatory agencies to obtain all necessary State, Federal, and local government permits, licenses

or approvals as applicable.

***The selected design firm will follow any applicable specifications outlined in DNR's "Specifications for Consulting Engineering Services relating to Living Shoreline Projects."*** DNR personnel will work with project partners to engage and educate local stakeholders about the project design and benefits.

***For additional specifications for consulting engineering services relating to coastal resiliency projects, see Attachment A.***

Any final products shall include the following: This [report/video/etc.] was prepared by [recipient name] using Federal funds under award number NA19NOS4190162 from NOAA, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of NOAA or the U.S. Department of Commerce.

### **Monitoring, Maintenance & Adaptive Management Project**

The design firm and project partners (project team) will evaluate the monitoring potential of the project. Based on the findings, the project team will develop a monitoring protocol with pre-construction monitoring occurring to serve as a baseline for restoration activities and post-construction monitoring. At minimum, a standard MDE tidal marsh maintenance plan will be developed as part of project maintenance to keep track of project vegetation and stability and inform adaptive management. Additionally, a template maintenance plan under development by DNR staff will be reviewed and integrated as much as possible. Post-construction maintenance will be conducted by TOCCA as needed and tracked in accordance with permit requirements and the Maintenance Plan.

### **Education, Communication & Outreach Activities**

The general public will have access to the project site for education, communication, and outreach purposes if accompanied by Talbot County, TOCCA, Maryland Sea Grant Extension, or DNR personnel with sufficient notification as to date, time, number, and affiliation to TOCCA. The project team will engage local stakeholders about this nature-based approach to resiliency throughout all phases of the project. At least two meetings will be held with the community to solicit input and provide details on the project and to share the shoreline design and solicit feedback from community members before submitting for permits. Stakeholders may include local residents, students and Talbot County officials, among others. If in-person gatherings are restricted due to COVID-19, then the project team will proceed with community engagement through online media or a virtual platform. If necessary, additional meetings will be held to inform the public.

**Supervision and Acceptance of Work:** The work shall be accomplished under contract with and the supervision of Talbot County or their assigns. The work shall be completed in all its parts and ready for use in the time specified and in strict accordance with the terms and conditions of the Contract. Any deviation shall be subject to approval of the County and Maryland Department of Natural Resources.

**Project Funding and Sponsorship:** This project is being funded by the Maryland Department of Natural Resources' Resiliency through Restoration Initiative, with Coastal Zone Management (CZM) funds.

**Location:** TOCCA represents a community of 95 homes and home sites on 186 acres in the Village of Tilghman, Maryland. The community is in the Lower Choptank watershed that sits along Harris Creek within the Choptank River. In response to shoreline and tidal marsh loss, TOCCA established a Wetland Committee in 2015 and developed a Wetland Management Recommendations Plan to begin exploring solutions to shoreline and habitat loss. Analysis

indicated loss of approximately 0.25 acres between 2013 and 2017, with greater erosion rates adjacent to gray infrastructure. The Committee explored alternative management approaches for open space in light of sea level rise and other climate change threats.

**Suggested Project Type:** Natural and nature-based solutions are needed to enhance shoreline resiliency to coastal and stormwater impacts, help protect residential infrastructure, and provide water quality and habitat benefits.

**Ranking Criteria:** The successful bid will be awarded based on ranking criteria – Innovation (35%), Cost (30%), Feasibility (20%) and Experience (15%). This Ranking Criteria shall be used in evaluating the proposals and shall be the basis for the Award of the Contract.

**Timing:** All work associated with this project shall be completed by March 31, 2022.

## **PROJECT SPECIFICS and CONSIDERATIONS:**

The conditions below may be modified as part of the contract for the purpose of providing a complete and functional project.

1. An investigation of opportunities to identify and treat stormwater runoff of the site is recommended for this project.
2. Topography and bathymetry surveys will need to be completed for this project and the Design Firm shall verify the accuracy of those surveys.
3. Standard soil borings, as necessary, will be required channelward of the existing bulkhead.
4. The Design Firm's evaluation of the existing project site should include consideration of, but not be limited to, the following factors: fetch, seasonal wind patterns, wave climate, tidal range, storms frequency, storm tides and surges, near-shore and off-shore depths, the state's 2018 sea level rise predictions for the area, erosion history and patterns and natural shoreline profiles.
5. The shoreline should be largely vegetated with the appropriate species of native vegetation.
6. The sand material for this project shall conform to the following minimum specification:

*Sand material shall contain less than 10% passing the number 100 sieve, not more than 10% by weight retained on a number 4 sieve, with no stone having a diameter greater than one-half inch. The material shall consist of rounded or semi-rounded grains with a median diameter of 0.6 mm (+/- 0.25 mm). No frozen material, trash, roots or other organic material will be permitted in the fill.*

7. The Design Firm shall determine the finished grade elevations and appropriate slope for the sand fill placement. In general, sand fill should be placed on a gentle slope, such as a 10-ft. horizontal to 1-ft. vertical slope (10:1), and no slope shall be steeper than an 8-ft. horizontal to 1-ft. vertical (8:1) unless otherwise the Design Firm could provide sound reasoning to the project partners.
8. The Design Firm shall investigate the project area for construction access, staging and stockpile areas, which will minimize the need for disturbance of existing vegetation and other improvements.
9. The Design Firm shall provide "Key Project Data" or "Project Impact Table" from the plan on the first (Title) page (i.e.: sq. ft. of marsh created, area of disturbance, etc).
10. The Design Firm shall also provide details on their plans as to how they have incorporated Climate Resiliency within the proposed project. The project design shall incorporate scientifically-accepted sea level rise and storm predictions for Maryland.
11. The Design Firm shall provide an overlay of the most recent SAV's map on the design plan (*if SAVs are present in the project area*).
12. Property lines, right-of-ways, easements and community boundaries shall be shown on the Project Drawings for orientation only. A complete property line survey is not required.

13. The Engineer shall coordinate all phases of this project with the County and the project partners.
14. Prior to submitting the Joint Federal/State Permit Application, a pre-application meeting shall be held on-site with the MDE Tidal Wetlands Division Agent, US Army Corps of Engineers, MD Department of Natural Resources, State Critical Area Commission, and County to discuss the proposed project.
15. Community feedback on a preliminary design shall be obtained through a community meeting convened by the project team. Community feedback will be integrated into the project design as deemed reasonable and possible.
16. The Design Firm shall provide the necessary design computations for the proposed project and a detailed construction cost estimate, which quantitatively breaks out labor and material costs for the individual items of work being proposed.
17. All other conditions that may become evident during the course of the work shall also be considered. Any proposed changes to the overall intent of the project shall be discussed with the project partners.

### **GUIDELINES FOR PROJECT DRAWINGS AND SPECIFICATIONS**

For living shoreline projects, it is required that a topographic survey in sufficient detail be conducted so that cross sections of the shoreline can be plotted at approximately 50 foot intervals. The survey notes will be plotted and project Drawings developed to include:

- a) The location of all surveyed elevations in feet relative to 0' Mean Low Water (MLW). The Mean High Water (MHW) line will be shown on the Drawings. The survey will locate any property lines within 50 feet of the site.
- b) The proposed work shall be drawn to scale and shown in the plan view labeled to show: limit of contract; top and bottom of existing bank; existing vegetated areas; area to be vegetated; limit of planting; area of contractor's access; area for stockpiling fill, timber and brush; offshore bottom contours; areas of cut and fill; and location of any proposed fill containment measures, other protective devices, and sediment control practices.
- c) The Drawings (2' x 3' standard size sheets) shall also include the following information: the mean tidal range in feet; the method used to establish horizontal control; the method used to establish vertical control; and the date on which topographic and hydrographic information was collected.
- d) Cross sectional views and profiles, drawn to scale (same scale horizontally and vertically), of any proposed fill containment measures, other protective devices, and sediment control practices.
- e) Typical shoreline cross sections, drawn to scale (same scale horizontally and vertically), showing existing ground and shoreline; limit of fill and grading; limits of proposed marsh plantings; limits of tree clearing and pruning; reseeding and/or stabilization of disturbed areas; any sediment control and stormwater management practices; and the limit of contract.

## **Timeline**

The following items of work shall be accomplished within the assigned time periods. Based on this general timeframe, a formal work plan and schedule showing exact dates for completing work items will be developed for the project by the Design Firm.

This schedule will be subject to the approval of the County.

Bids Due	June 25, 2021
Design Contract Issued / Kick-Off Meeting	July 2021
Engineering Survey + 30% Design	October 2021
60% Design + Permit Application Meeting	November 2021
Community Meeting(s)/Outreach	TBD
Permitting	February 2022
Maintenance Plan	March 2022
Final Design	March 2022
Construction Bid Package	March 2022

**Please include any concerns related to the timeline within your proposal for consideration.**

**ENDORSEMENTS:** Approvals and concurrence must be obtained from the following entities:

U.S. Army Corps of Engineers	X
MDE Tidal Wetlands Division	X
MDE Non-Tidal Wetlands Division	X
MDE-Water Quality Certification	X
MDE-Sediment & Stormwater Admin.	X
State Critical Area Comm. Approval	X
Maryland Historical Trust	
DNR-Shoreline Conservation Service	X
DNR-Heritage Service	
DOT-Maryland Port Administration	
Soil Conservation District	X
County Permit(s)	X
Local Critical Area Certification	X
City/Town Permit Division	
Community Association	X
Project Property Owners	X
Adjacent Property Owner (s)	X
Other:	



**21610 Island Club Rd, Tilghman, MD 21671**

## PROPOSAL FOR DESIGN SERVICES

DATE

RE: Tilghman on the Chesapeake Resilient Green  
Infrastructure Design  
Talbot County, Maryland

Miguel Salinas  
Planning Officer  
Talbot County Department of Planning and Zoning  
215 Bay Street, Suite 2  
Easton, Maryland 21601

We hereby submit our **Design proposal** for the following:

Proposed **CLIMATE RESILIENCY PROJECT at Tilghman on the Chesapeake, Talbot County, Maryland**, along approximately 975 feet (L.F.) of shoreline.

In accordance with your written request, we are pleased to submit a proposal in connection with the design of the necessary climate resiliency project for the above-referenced property.

Based on an inspection of the project site, having carefully reviewed the Scope of Work together with the General Work Schedule, and other supporting documents, and having received clarification on any conflicting item, it is proposed to provide the required design/build services for the stipulated sum of:

### **DESIGN LUMP SUM FEE**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
(Words) (Numbers)

The Lump Sum Fee stated above is divided as follows:

- |   |     |   |
|---|-----|---|
| 1. For field surveying, property line work, soil borings, etc., the Lump Sum of...  | (\$ | ) |
| 2. For preparing all the required data pursuing unto issuance all the necessary permits, licenses, and approvals, the Lump Sum of...                                  | (\$ | ) |
| 3. For drafting and engineering services connected with the preparation of the Plans and Specifications and related bid documents for the project, the Lump Sum of... | (\$ | ) |



Time schedules for completion of the work will be as follows:

If the undersigned is notified of the acceptance of this proposal within sixty (60) calendar days after its submission, the undersigned agrees to execute a contract for the above-stated compensation and supply all required documents within ten (10) calendar days of the notification and to guarantee the completion of this work within ten (10) calendar days thereafter.

Other conditions of this Proposal are as follows:

1. This Proposal does not include construction inspection or supervision.
2. This Proposal does not include construction stakeout.
3. Formal progress reports will be made to the County on a monthly basis up to the Final Submittal.
4. This Proposal does not include providing services following the Final Submittal except as called for in Section VII of the Specifications.
5. In addition to condition 3 above and the meetings requirements in accordance with the Specifications for Consulting Engineering Services, the Engineer will be required to provide a formal presentation to the surrounding community on the proposed preliminary plans, specifications and permits application submittal, prior to submitting for local, state and federal permits.

\_\_\_\_\_  
(Sign for Identification)

\_\_\_\_\_  
Professional Engineer's License Number

\_\_\_\_\_  
Date Issued

\_\_\_\_\_  
Place of Issuance

\_\_\_\_\_  
Construction Firm License Number

\_\_\_\_\_  
Date Issued

\_\_\_\_\_  
Place of Issuance

Identification: (Enter Applicable Number)

Federal Employer Identification Number: \_\_\_\_\_

or if not an employer, Social Security Number: \_\_\_\_\_

Contract Representative: (List individual with authority to act for firm)

Name: \_\_\_\_\_ Telephone No. (\_\_\_\_) \_\_\_\_\_.  
Address: \_\_\_\_\_.

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(Sign for Identification)

Key Personnel: (List two individuals essential to the design/build services)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
- .

**INDIVIDUAL PRINCIPAL**

NAME: \_\_\_\_\_

FIRM: \_\_\_\_\_

SIGNED: \_\_\_\_\_

In Presence of Witness:

ADDRESS: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

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**CO-PARTNERSHIP PRINCIPAL** *(as necessary)*

NAME: \_\_\_\_\_

FIRM: \_\_\_\_\_

SIGNED: \_\_\_\_\_

In Presence of Witness:

ADDRESS: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

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