



COASTAL PROTECTION ENGINEERING OF NORTH CAROLINA, INC

4038 MASONBORO LOOP ROAD

WILMINGTON, NC 28409

910-399-1905

November 30, 2020

Cliff Ogburn

Town Manager

Town of Southern Shores

5375 N. Virginia Dare Trail

Southern Shores, NC 27949

Re: Invoice for October 2020 and Project Update

Dear Mr. Ogburn:

This letter serves as an update to you and your staff on our progress with regards to task orders on which Coastal Protection Engineering of North Carolina, Inc. (CPE) is currently providing services to the Town of Southern Shores. Along with this update letter, please find attached the following Invoices:

Southern Shores 2020 Annual Monitoring and Initial Permitting Coordination

- **Invoice 580 – November 17, 2020**

Southern Shores 2022 Permitting and Design

- **Invoice 581 – November 17, 2020**

Southern Shores 2020 Annual Monitoring and Initial Permitting Coordination:

This work is associated with the agreement executed on May 7, 2020 between CPE and the Town of Southern Shores. Invoice #580 reflects services completed through October 31, 2020. Task 1 services are associated with data acquisition for the 2020 annual monitoring surveys. As previously reported, the data acquisition report was completed in August. The report describes data acquisition methods and includes beach profile cross sections, plan view survey charts, survey control information and survey field notes. A digital copy of the report was provided via email on November 23, 2020. Final Hard Copies of the report will be provided as an appendix to the 2020 monitoring report.

Throughout October and into November, CPE staff continued working on the assessment and finalizing the draft monitoring report in which updated shoreline and volumetric changes are provided. A draft version of the report was provided to you on November 23. At present we are waiting for comments on the draft to be provided, at which time those comments will be incorporated into the final report and hard copies will be provided.

As previously reported, Task 3 services are 100% complete.

Design and Environmental Permitting Services, 2022 Beach Nourishment Project:

This work is associated with the agreement executed on July 13, 2020 between CPE and the Town of Southern Shores. Invoice #581 reflects services completed through October 31, 2020. Task 1 services are associated with the development of environmental documents. CPE staff continued the development of environmental documents through the month of October. These documents are being developed through cooperation with the Towns of Duck, Southern Shores, Kitty Hawk and Kill Devil Hills.

Regarding Task 2, Engineering and Design, progress continued throughout October and November on the numerical model that will be used in combination with the other Towns. As previously reported, the regional wave model has been setup and calibrated and modelers are finalizing calibration of the sediment transport and morphology model. Once the sediment transport and morphology model are calibrated, the optimization of different fill configurations can be completed. Engineering staff are also working on reviewing monitoring results to update advanced fill estimates for the 2022 project. Work associated with evaluating berm height elevations is also underway. These aspects of the project are being incorporated into a working draft of the engineering report associated with Task 2, which will provide engineering justification for the project proposed and will support our permit applications.

Task 3 reflects an increase from 1% complete to 13% complete. This effort is mostly reflective of the mobilization cost for the offshore surveys, which was billed to CPE by APTIM in the month of October. Some of this effort is also associated with CPE coordination with APTIM during the month of October as field operations were taking place.

Between October 6 and October 11, the APTIM crew collected approximately 112 line miles of geophysical data and 14 vibracores. Upon inspection of the vibracores at the dock, sediment samples were collected from representative vibracores and transported to CPE's sieve analysis lab in Wilmington. After obtaining the results of the sieve analysis, the CPE and APTIM team discussed the fact that the material located in the reconnaissance area was darker in color than desired and had a mean grain sized considerably finer than the native beach.

On October 14, a recommendation was made by CPE to the Towns of Duck, Southern Shores, Kitty Hawk, and Kill Devil Hills to terminate the sand search and forego the design level geophysical and geotechnical surveys based on the likelihood that any borrow area that could be designed within the investigation area, would be sub-optimal for beach nourishment of the Town's beaches. Each of the four towns concurred with the recommendation and the sand search was called off. We are currently working with APTIM to de-scope Task 3; however, preliminary discussions suggest the cost to the client will be approximately 50% of the contracted amount for that Task.



Regarding Tasks 4 and 5, as previously reported, CPE staff conducted the native beach sampling described in Task 4 and the rock clast surveys described in Task 5 of the scope of services in June 2020. Throughout October, grain size composites were finalized. This data will be incorporated into both the engineering report associated with Task 2 and the Geotech report associated with Task 3. No additional work was completed in the month of October associated with Task 5.

Please let me know if you have questions or comments on the invoice or project status.

Sincerely,

A handwritten signature in black ink, appearing to read "Ken Willson", written over the printed name.

Ken Willson
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Coastal Protection Engineering of North Carolina, Inc.

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