



COASTAL PROTECTION ENGINEERING OF NORTH CAROLINA, INC

4038 MASONBORO LOOP ROAD

WILMINGTON, NC 28409

910-399-1905

October 28, 2020

Cliff Ogburn

Town Manager

Town of Southern Shores

5375 N. Virginia Dare Trail

Southern Shores, NC 27949

Re: Invoice for September 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 518 – October 12, 2020**

Southern Shores 2022 Permitting and Design

- **Invoice 519 – October 12, 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 518 reflects services completed through September 30, 2020. Task 1 services are associated with data acquisition for the 2020 annual monitoring surveys. As previously reported, as of June 15, all the beach profile data had been collected, and by early August, the data acquisition report was completed. This report details data acquisition methods and includes beach profile cross sections and plan view survey charts as well as survey control information and survey field notes. It is our intention to provide this report as an appendix to the annual monitoring report upon completion of Task 2. If you would like for us to provide a digital copy of the data acquisition report, please let me know.

On August 21, CPE received written notice to proceed on Task 2, which includes data analysis and the annual monitoring report. Throughout September, CPE staff worked on the assessment and developing the draft monitoring report in which updated shoreline and volumetric changes are provided. At present, the shoreline and volumetric change analysis has been completed and the draft report is undergoing internal review. We anticipate providing the draft report by the end of next week.

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 #519 reflects services completed through September 30, 2020. Task 1 services are associated with the development of environmental documents. CPE staff continued the development of environmental documents through the month of September. These documents are being developed through cooperation with the Towns of Duck, Southern Shores, Kitty Hawk and Kill Devil Hills.

Regarding Task 2, setup of the numerical model that will be used in combination with the other Towns continued throughout September and October. Specific tasks completed and ongoing related to Task 2, include:

- Existing data review, setup of numerical modeling grids (regional and detailed grids for each of the 4 towns: Completed.
- Selection of extreme storms to calibrate the regional wave model: completed
- Calibration of regional wave model: completed
- Selection of wave cases, wind cases and development morphological tide for long term morphology simulation: Completed
- Calibration of sediment transport and morphology: ongoing
- Engineering report: draft is under development.

The engineering report associated with Task 2 will provide engineering justification for any project modifications proposed and will support our permit application.

No additional work on Task 3 is reflected on Invoice #519 in the month of September. In late September, our sub-contractor APTIM, finished mobilization of the vessel in preparation of conducting reconnaissance sand search investigations. 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 September, the native beach samples underwent sieve analysis to determine grain size characteristics. This analysis was completed in late September and grain size composites have been developed. Furthermore, the data obtained during the rock clast survey were compiled and will be incorporated into the borrow area design and sediment compatibility report include in Task 3.



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".

Ken Willson

Senior Program Manager

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