

APPENDIX 1
SCOPE OF SERVICES

EXHIBIT "A"
SCOPE OF PROFESSIONAL SERVICES
TOWN OF OCEAN ISLE BEACH, NORTH CAROLINA
TERMINAL GROIN PROJECT
DESIGN & ENVIRONMENTAL PERMITTING

Coastal Planning & Engineering of North Carolina, Inc. (CPE-NC) will develop a design for a terminal groin and associated beach fill at the east end of Ocean Isle Beach, North Carolina adjacent to Shallotte Inlet to reduce the potential for upland property damages along the east end of the TOWN. CPE-NC will also work with the TOWN to prepare environmental documents and permit applications in support of obtaining permits for the proposed project. A detailed description of the work and estimated cost for each major task is presented below.

TASK 1 – PROJECT MANAGEMENT

Fees associated with TASK 1 include those efforts to plan, organize and monitor resources to achieve the specified goals of the project. In addition, TASK 1 includes efforts to control costs, and to coordinate with the TOWN on project schedule and periodic project updates. It is anticipated that there will be four (4) in person project meetings between CPE-NC and the TOWN over the anticipated 30 months to complete the contract. Additionally, five (5) conference call meetings are anticipated for a total of nine (9) meetings. This will allow for CPE-NC and the TOWN to hold quarterly progress meetings throughout the permitting process. In addition to these meetings, CPE-NC will provide the TOWN, with a monthly 1 page summary of activities, via e-mail.

TASK 1 - ENGINEERING PRODUCT DEVELOPMENT

A. Alternative Design

A range of alternatives will be formulated and evaluated. Based on recent studies for a terminal groin on Figure Eight Island and the associated coordination with resource agencies, this scope of work assumes the following alternatives will be considered: (1) no new actions, (2) demolition and/or relocation of threatened structures, (3) beach fill, and (4) beach fill with a terminal groin. The no new action alternative will be used as a basis of comparing the overall economic and environmental impacts of the other alternatives and will mimic the erosion response presently being attempted including the installation of sandbag revetments to protect threatened structures and infrastructure. The demolish and/or relocation alternative will assume no temporary measures, such as sandbags, would be used to delay the ultimate demise of structures and infrastructure. The beach fill alternative will evaluate two beach fill configurations along the extreme east end of Ocean Isle (Alternatives 3A and 3B) with both beach fill alternatives tying into the federal project near Shallotte Boulevard. Alternative 4, beach fill with a terminal groin, will evaluate the performance of beach fills on the east end of Ocean Isle Beach accompanied by a terminal groin on the extreme east end of the island. At least two terminal groins of varying length and associated beach fills will be evaluated.

If additional alternatives are to be considered based on agency comments, a new proposal will be developed to cover the analysis of the additional alternative(s) and a change order will be requested.

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A preliminary design for the terminal groins, consisting of both rubblemound and sheet piles will be developed. The sheet piles would be used to tie the landward end of the structure to stable ground and thus prevent flanking of the landward end of the structure. The rubblemound portion of the structure would extend seaward from a point yet to be determined with the size of the stone and cross-sectional configuration of the structure dictated by selected water level and wave conditions deemed to provide a reasonable level of stability during future storm events. In this regard, historic water levels and wave conditions applicable to Ocean Isle Beach will be evaluated and the appropriate design conditions selected based on the results of this analysis.

B. Alternative Analysis

The objective of the work described in this section of the proposal will be to evaluate the performance of alternatives using a variety of analytical and numerical modeling tools. The primary tool in this investigation will be the Delft3D morphological model (Deltares, 2011, <http://www.deltaressystems.com/hydro/product/621497/delft3d-suite>). This packages consists of two models, which are coupled together to determine changes in a topographic and bathymetric surface based on the effects of waves, water levels, winds, and currents.

Phase 1 – Hydrodynamic Measurements: In most Delft3D modeling studies, both Delft3D-FLOW and SWAN are calibrated based on local waves and currents. The existing catalog of wave and water measurements is summarized in Figure 1. The existing wave measurements are generally sufficient for calibrating the SWAN model on a regional basis. However, hourly water level or current measurements in Shallotte Inlet or its drainage basin cannot be located. For this reason, the existing hydrodynamic measurements are not sufficient for calibrating the Delft3D-FLOW model.

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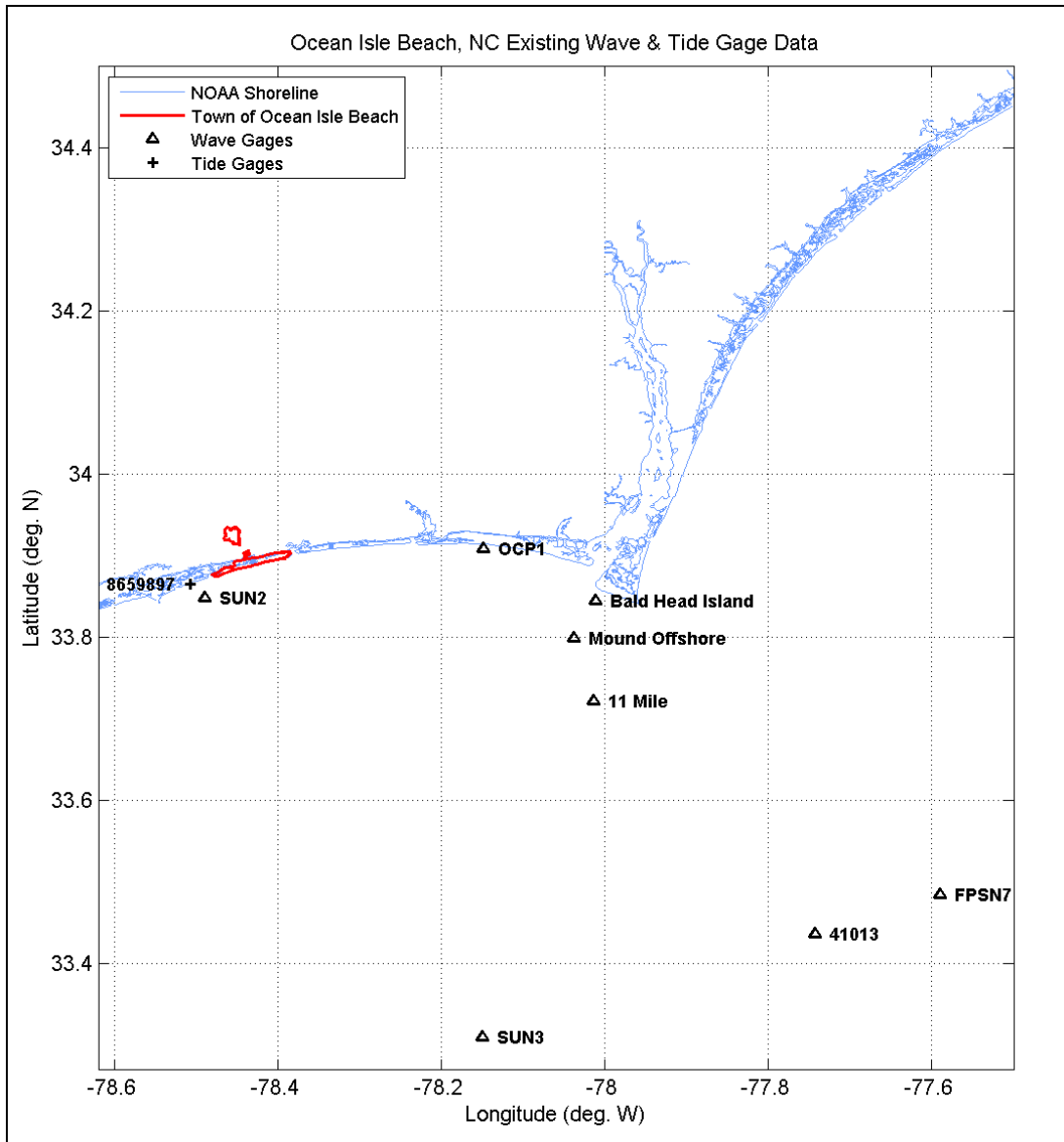


Figure 1: Ocean Isle Beach, NC Existing Wave & Tide Gage Data.

In order to acquire the necessary data for calibration two Acoustic Doppler Current Profilers (ADCPs) would be deployed along with two tide gages for a minimum of 30 days. The location of all 4 instruments to be deployed appears in Figure 2. It is important to note that the locations of the instruments are approximate. Actual locations will be determined based on field conditions, accessibility, public safety, etc. The two tide gages would be deployed to measure open-ocean tides and water levels in the AIWW to partially drive the Delft3D-FLOW and evaluate its results during the calibration process. To measure local wave conditions and currents along the beach near Shallotte Inlet, a Nortek AWAC ADCP or equivalent will be deployed near the depth of closure

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(-27 feet NAVD) offshore of Shallotte Blvd. To measure currents and waves in the throat of Shallotte Inlet itself, a Nortek Aquadopp ADCP or equivalent will be deployed in a location where the current is visually judged to be unidirectional the majority of the time.

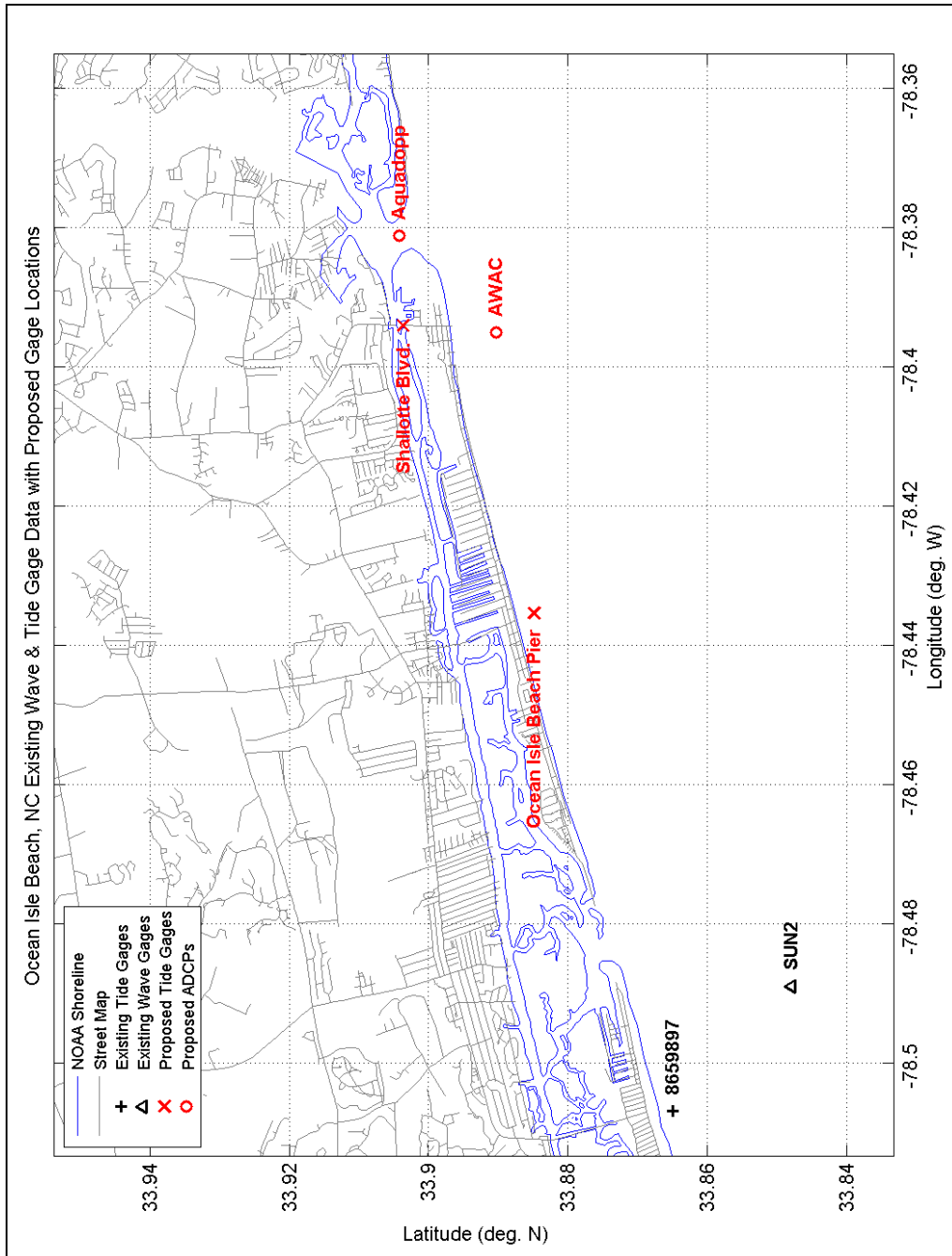


Figure 2: Ocean Isle Beach, NC Existing Wave & Tide Gage Data with Proposed Gage Locations.

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Phase 1 includes deployment of the tide gages, retrieval of the instruments, data reduction, documentation of the work, and supervision of the work by a registered Engineer. It also includes the permitting required, if any, to deploy the instruments. To the greatest extent possible, all 4 instruments will be deployed on the same day to provide concurrent measurement sets. Likewise, all 4 instruments will be retrieved on the same day, if possible. Buoys, frames, weights, chains, flags, and/or posts will be used as necessary to prevent loss of the instruments and facilitate their ready identification at the time of retrieval. Photographs will be taken during the deployment and retrieval of the tide gages and ADCPs for documentation and presentation purposes. Position fixes of the instruments will also be taken during deployment and retrieval of the tide gages and ADCPs. As part of the data reduction process, listings of all water levels relative to the North American Vertical Datum of 1988 (NAVD) versus date and time will be prepared in electronic format. Likewise, the raw ADCP data will be reduced to list wave height, wave period, wave direction, wave spectra, and other key wave parameters versus date and time in electronic form. In addition, current profiles (3D currents) and depth-averaged currents versus date and time will also be tabulated at each ADCP in electronic format. Graphs, photography, and other information will be provided as needed to document the information. The raw and reduced wave, water level, and current data, along with photographs, position fixes, and field notes will be provided on a CD-ROM to the TOWN as an appendix to the modeling report detailed later in this Scope of Work.

Phase 2 – Setup and Calibrate Model: This phase consists of the setup and calibration of the Delft3D model. The existing sets of bathymetric and topographic data from the National Oceanographic and Atmospheric Administration (NOAA), USACE, North Carolina Floodplain Mapping Program, U.S. Geological Survey, and/or other sources will be acquired and reviewed to define the bottom bathymetry and initial conditions for the various model simulations. Wave and water level data from these sources (i.e. Figure 1) will also be acquired as needed for use in the calibration of the model and the characterization of the long-term wave and water level statistics.

Grids will be developed for the model. At a minimum, the grids will cover Shallotte Inlet, the AIWW between Causeway Drive and the midpoint of Holden Beach, and the oceanfront areas between Tubbs Inlet and the midpoint of Holden Beach. The highest resolution will be in the areas immediately surrounding Shallotte Inlet. A regional grid covering the offshore area between Frying Pan Shoals (FPSN7, Figure 1) and the coastline may also be needed to examine wave propagation on a regional basis. Using the bathymetric and topographic data acquired above, grid surfaces describing the present conditions and key conditions in the recent past (i.e. 2000-2011) will be created as needed as input for the Delft3D-FLOW and SWAN models.

The calibration of the model will be performed in 3 stages. First, the SWAN model will be calibrated based on the existing wave measurements provided by NOAA and/or USACE (see Figure 1). The results of each SWAN calibration run will be compared to

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the new wave measurements taken in and near Shallotte Inlet. As a second stage, currents and water levels within Delft3D-FLOW will be calibrated using the current and water level measurements collected as part of Phase 1. As a final stage, sediment transport, erosion, and deposition within the Delft3D-FLOW model will be calibrated based on observed beach erosion rates over the past 5-10 years.

Phase 3 – Alternatives Screening & Project Performance: After the calibration of the model has been completed, the various alternatives will be simulated in the Delft3D model over a 5-10 year period. An upper limit of one No Action scenario and six (6) beach fill and/or terminal groin alternatives will be considered. The results of the model will be evaluated in terms of beach fill performance, erosional impacts to adjacent beaches and Shallotte Inlet, and the ability of any proposed terminal groins to retain material on the beach. If nearshore or inlet borrow areas are proposed, they will be incorporated into the initial conditions for each alternative to examine the erosional impacts of the borrow areas. Both short-term (1-2 years) and long-term (5-10 years) performance and impact will be assessed using the model results.

C. Economic Analysis

The economic impact of the no new action alternative (Alternative 1) and the demolish/retreat alternative (Alternative 2) will build off of the analysis that CPE-NC conducted for the Assessment of Terminal Groin Feasibility study completed in April 2012. These alternatives were evaluated based on existing erosion rates along the east end of Ocean Isle Beach as derived from the analysis of LiDAR data. Damages to buildings and infrastructure will be updated based on current market values. Protocols developed for the feasibility study with regard to the position of the shoreline relative to the structures to determine when a structure or the TOWN's infrastructure is either destroyed or when it must be relocated will be reassessed to determine if additional consideration is required. The availability of vacant lots on Ocean Isle Beach will be determined and will dictate how many structures could be relocated and how many would have to be demolished under Alternative 2. The cost of any measures that would be taken to delay the destruction of structures and infrastructure under Alternative 1 and the cost to relocate threatened structures and infrastructure under Alternative 2 will be added to the predicted erosion damages to arrive at the overall economic impact of the alternatives.

Alternative 3, the beach fill only alternative, will be formulated to prevent future erosion damages on the east end of Ocean Isle Beach. The size of the beach fill and the periodic nourishment requirements needed to prevent future erosion damages will be determined from the results of the numerical modeling. The relative difference in shoreline changes indicated by the model for Alternatives 1 and 3 along with the measured shoreline changes developed from the LiDAR data will be used to evaluate the life expectancy of the beach fill and how often it must be nourished to prevent the shoreline from encroaching into the development. The economic impact of Alternative 3 will be the

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implementation cost for the initial beach fill plus the cost of future periodic nourishment operations.

The model results for the beach fill with terminal groin alternative (Alternative 4) will also be used to develop periodic nourishment requirements and costs that would be required to prevent future erosion damages on the east end of Ocean Isle Beach. The beach nourishment costs and the costs associated with constructing and maintaining the terminal groin will represent the economic impact of Alternative 4.

Beach fill construction costs for the alternatives will be estimated based on the project design volumes, sand characteristics, construction requirements, and recent dredging costs for similar projects in the area. Construction costs for the terminal groin will be based on a preliminary design of the structure based on an appropriate storm water level and wave conditions deemed to limit future damages to the structure to an acceptable level. The structure will include a sheet pile section extending a sufficient distance landward of the existing erosion scarp to prevent possible flanking and a rubble mound seaward section. The cost to construct the terminal groin will be based on the quantity of materials needed as well as the cost of similar structures constructed along the east coast over the last few years.

D. Engineering Report

A comprehensive engineering report will be developed documenting the historical background, alternative design, alternative analysis, economic analysis, and final results and conclusions. For alternatives involving a terminal groin, an inlet management plan will be developed and will include a description of the post-construction monitoring required to assess the impacts of the project and will include the development of shoreline change thresholds that would dictate when mitigation would be required. The draft report will be distributed to the Town of Ocean Isle Beach, along with interested State and Federal agencies as an appendix to the DRAFT EIS.

In addition to the preparation of a DRAFT Engineering Report, CPE-NC engineers will provide the necessary information to the environmental personnel preparing the environmental documentation.

Following the submittal of the Draft EIS, and subject to comments received, a final Engineering Report will be developed to be submitted as an appendix to the Final EIS.

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TASK 3 – ENVIRONMENTAL PERMITTING AND DOCUMENTATION

Permitting

The construction of the terminal groin and associated nourishment along the east end of Ocean Isle Beach will require permits from the Department of the Army (U.S. Corps of Engineers, or USACE) and the State of North Carolina (major CAMA permit) in order to satisfy both the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA). In addition to the USACE, Federal agencies that will be involved in the project planning and formulation during the preparation of the environmental document will include (but not necessarily limited to) the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the Environmental Protection Agency (EPA). The lead State agency will be the North Carolina Division of Coastal Management (NC DCM), which is responsible for review and issuance of the major CAMA permit. Other State agencies include the North Carolina Division of Marine Fisheries (NC DMF), the North Carolina Wildlife Resources Commission (NC WRC), and the North Carolina Division of Water Quality (NC DWQ).

This Scope of Work includes the development and submittal of USACE Individual Permit (IP) application and the development and submittal of a major CAMA permit application under close coordination with various resource agencies listed above. The IP is used for projects proposing extensive impacts or impacts to rare or special aquatic types. CAMA Major Permits are necessary for activities that require other state or Federal permits, for projects that cover more than 20 acres or for construction covering more than 60,000 square feet. Applications for Major Permits are reviewed by ten (10) state and four (4) Federal agencies before a decision is made.

The permitting process for both the USACE and NC DCM will result in the issuance of additional approvals required by Federal and State agencies prior to the implementation of the terminal groin and beach nourishment project. These include:

- NEPA Compliance
- Coastal Area Management Act (CAMA) Major Authorization
- NCDWQ 401 Certification
- USACE Section 10/404 Permit
- U.S. Fish and Wildlife Service Biological Opinion (BO)
- National Marine Fisheries Service Concurrence
- NC State Historic Preservation Office (SHPO) Concurrence

Fourteen (14) and ten (10) hardcopies of the major CAMA Permit application and DOA IP application, respectively, will be produced and disseminated to relevant resource

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agencies. The submittal of complete major CAMA permit application and USACE IP application will serve as project deliverables.

It is possible that the State or the USACE will solicit a Request for Additional Information (RAI) in response to these permit applications. Should this occur, an additional task order will be submitted to the TOWN under a separate Scope of Work to address the specific RAI requirements.

Environmental Documentation

At the January 18, 2012 interagency pre-application meeting, it was determined that the construction of the terminal groin and associated beach nourishment project will require the development of four (4) distinct environmental documents. These include:

- An Environmental Impact Statement (EIS)
- A Cumulative Effects Assessment (CEA)
- An Essential Fish Habitat assessment (EFH)
- A Biological Assessment (BA)

EIS: North Carolina Senate Bill 110 specifies that an EIS must be developed in support of any project involving a terminal groin in order to satisfy SEPA requirements, although this document will serve to support the permit requests from both the USACE and NC DCM. As the designated Lead Federal agency for Environmental Impact Documentation and Assessment compliance under NEPA, the USACE will facilitate project coordination cooperatively with the TOWN. Preparation of the EIS will involve the formation of a Project Delivery Team (PDT) which will be made up of representatives from the Federal and State agencies mentioned above, as well as other stakeholders including private and/or non-profit interest groups or organizations.

After coordinating and attending an official NEPA scoping public meeting, during which issues and concerns associated with the project will be described and prioritized, CPE-NC will assist the USACE in implementing the second phase of the NEPA scoping process. The PDT will hold meetings as deemed necessary by the USACE to review the formulation of the project and offer specific recommendations on significant issues that must be considered to avoid or minimize the potential direct and indirect environmental consequences of the project. Recommendations for pre-construction, construction, and post-project monitoring activities (and mandated mitigative measures, if required) for project specific environmental impacts will be developed by CPE-NC and presented to the PDT for review and approval. These monitoring measures will be the basis for development of an effect determination by the resource protection agencies and issuance of project permits.

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The EIS process requires an assessment of the direct, indirect, and cumulative impacts of the proposed actions on various species and their habitats. The document will include six (6) main sections including:

1. Introduction
2. Purpose and Need
3. Project Alternatives
4. Affected Environment
5. Environmental Consequences
6. Avoidance and Minimization

The time required to prepare the Draft EIS, Final EIS, and to obtain the necessary State and Federal permits for the construction of the terminal groin and nourishment project could take between 24 to 36 months, which means the earliest the project could be initiated would be during the fall 2014.

Specific tasks that must be undertaken to prepare the Draft EIS and Final EIS include:

- Conduct scoping meeting and coordinate project development with the PDT through periodic meetings.
- Conduct a baseline biological assessment and characterization of project area habitats including beach dune, submerged aquatic vegetation, salt marsh and shellfish habitats.
- Map identified habitat types (salt marsh, sand flats, shellfish, submerged aquatic vegetation) within project area using aerial mapping with groundtruthing.
- Develop an area-wide Geographic Information System (GIS) database to incorporate collected geotechnical, biological, and other relevant data.
- Utilize the GIS to evaluate potential project impacts and analyze project alternatives.
- Conduct a detailed assessment of potential physical impacts the project may have on adjacent beaches, inlet shoals, and estuarine environments.
- Conduct pre-project monitoring of birds, beach infauna, seabeach amaranth, sea turtles, significant habitats, and possibly benthic macroinvertebrates once these monitoring requirements have been specified by the PTD and following funding approval by the TOWN.
- Evaluate project alternatives including no action, the TOWN's preferred alternative, temporary protective measures, and relocation/abandonment for each phase of the project.
- Compile and analyze data and develop three EIS documents (Draft EIS and Final EIS) in compliance with NEPA and SEPA regulations and guidelines as mandated by the USACE.

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- Develop required mitigation (if necessary) and resource monitoring plans for potential effects to significant resources.
- Participate in Draft EIS Public Hearing and respond to comments provided.
- Respond to comments and revise the Draft EIS and Final EIS documents.

Following the release of the Draft EIS and the Final EIS, governmental agencies, stakeholders, and the general public will be given an opportunity to provide comments in response to the documents. CPE-NC will respond to all comments submitted during the commenting period and, if necessary, will edit the EIS accordingly. Based on previous experience, CPE-NC finds that it is difficult to predict both the number of comments submitted and the nature of these comments. Therefore, we have proposed an estimated cost to respond to comments to be billed on a time and materials basis as opposed to the lump sum basis on which all other Tasks are proposed to be completed.

CEA: A Cumulative Effects Assessment will be drafted and submitted as an appendix to the EIS and therefore will undergo review by the USACE, the lead agency for the EIS. The Council on Environmental Quality (CEQ) defines cumulative effects as “

“...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other action” (40 CFR 1508.7).

The CEA document describes the methods, rationale, and results of the assessment for the proposed terminal groin and beach nourishment project in terms of the eleven (11) step process identified by the CEQ. Cumulative effects analysis is an iterative process in which consequences are assessed following incorporation of avoidance, minimization, and mitigation measures into the alternatives considered. Monitoring is the last step in determining the cumulative effects that ultimately results from the action. The significance of cumulative effects depends upon the ecosystem, resource baseline conditions, and relevant resource stress thresholds.

Cumulative impacts result from spatial (concentration of a multiple impacts in a given area) and temporal (repeated occurrence of impacts in a given area) crowding of environmental perturbations. In general, many environmental effects could be considered as cumulative and almost all systems have already been modified, degraded or enhanced, through anthropogenic forces.

EFH: The EFH is utilized by the NMFS to ensure that the project will identify and protect important marine and estuarine fish habitat in accordance to the amended Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The MSFCMA was enacted by the U.S. Congress to protect marine fish stocks and their habitat, prevent and stop overfishing and minimize bycatch. Congress defined Essential

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Fish Habitat (EFH) as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." The MSFCMA requires that EFH be identified for all fish species Federally managed by the Fishery Management Councils (FMCs) and the NMFS. This document will evaluate the potential impacts to the various essential fish habitats within the designated Permit Area.

BA: The purpose for the development of the BA is to document analyses for actions that may affect federally listed species which will serve to satisfy the USFWS. The document is prepared for the Section 7 process to determine whether a proposed major construction activity under the authority of a federal action agency is likely to adversely affect listed species, proposed species, or designated critical habitat. The TOWN is required to determine whether the project related actions may affect listed or proposed species and designated and proposed critical habitat.

This Scope of Work includes the production costs associated with distributing six (6) hard copies of the Draft and Final environmental documents to the relevant agencies.

As mentioned previously it is difficult to gage the level of effort necessary to respond to comments to the Draft and Final EIS. Therefore we have split TASK 3 Environmental Documentation and Permitting into two sub-tasks. SUB-TASK 3A includes permitting, meetings, the development of the Draft EIS, Final EIS, CEA, EFH, BA, and production and distribution of all documents. SUB-TASK 3B includes responding to comments to the Draft and Final EIS.

TASK 4 – GEOTECHNICAL SUPPORT

Introduction: The State of North Carolina has adopted specific sediment criteria which must be adhered to for the emplacement of beach fill along the oceanfront shoreline (15A NCAC 07H.0312). These rules were adopted by the North Carolina Coastal Resource Commission (CRC), in February 2007, and later amended in April 2008. Beach fill projects for the purpose of this rule include beach nourishment, dredged material disposal, habitat restoration, storm protection, and erosion control projects. The material used for nourishment and/or to pre-fill a terminal groin fillet must adhere to these standards in order to obtain a Major CAMA Permit.

The proposed source of sand for the terminal groin project is the existing authorized borrow source within Shallotte Inlet used by the USACE for the Federal Storm Damage Reduction Project for Ocean Isle Beach (Figure 3). Despite the fact that the USACE has dredged sand from this borrow area to nourish and twice re-nourished the Ocean Isle Beach project since 2001, the TOWN will be required to comply with the state sediment criteria. In this regard, the USACE operates under the Federal consistency requirement of the Federal Coastal Zone Management Act (CZMA). This requires Federal actions

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likely to affect any land or water in the coastal zone to be consistent with the state's coastal management program to the maximum extent practicable but does not require the USACE to obtain a state permit. As a result, the geotechnical information for the USACE borrow area for the Federal project may not meet the sediment criteria specified in the state rules, specifically with regards to density of data collection.

The current sediment criteria rules include special conditions for projects using sand from Federal or State maintained navigation channels. Recently, CPE-NC and other private and public entities have proposed revisions to the state sediment criteria. The proposed changes focus on the special condition exceptions in the rules for Federal or State maintained navigation channels. The proposed changes would modify the rules to allow for the inclusion of projects associated with inlet sources of sand that are not confined to Federal or State maintained navigation channels. The basis for this modification is that material that is removed from a portion of the inlet repeatedly and has been historically demonstrated to be of good quality should not be held to the same standards as unproven sand sources. The State is currently reviewing these proposed changes and may adopt the changes as early as October 1, 2012. If adopted, these changes would reduce the level of effort necessary for the Town of Ocean Isle Beach to obtain State permits.

Based on the proposed rule change, CPE-NC does not anticipate collecting any new data to characterize the borrow area. Proposed changes to the sediment criteria would allow for historic data to be used to characterize the borrow source for the purposes of permitting. No additional vibracores, bathymetric surveys, or cultural resource surveys are proposed as part of this scope.

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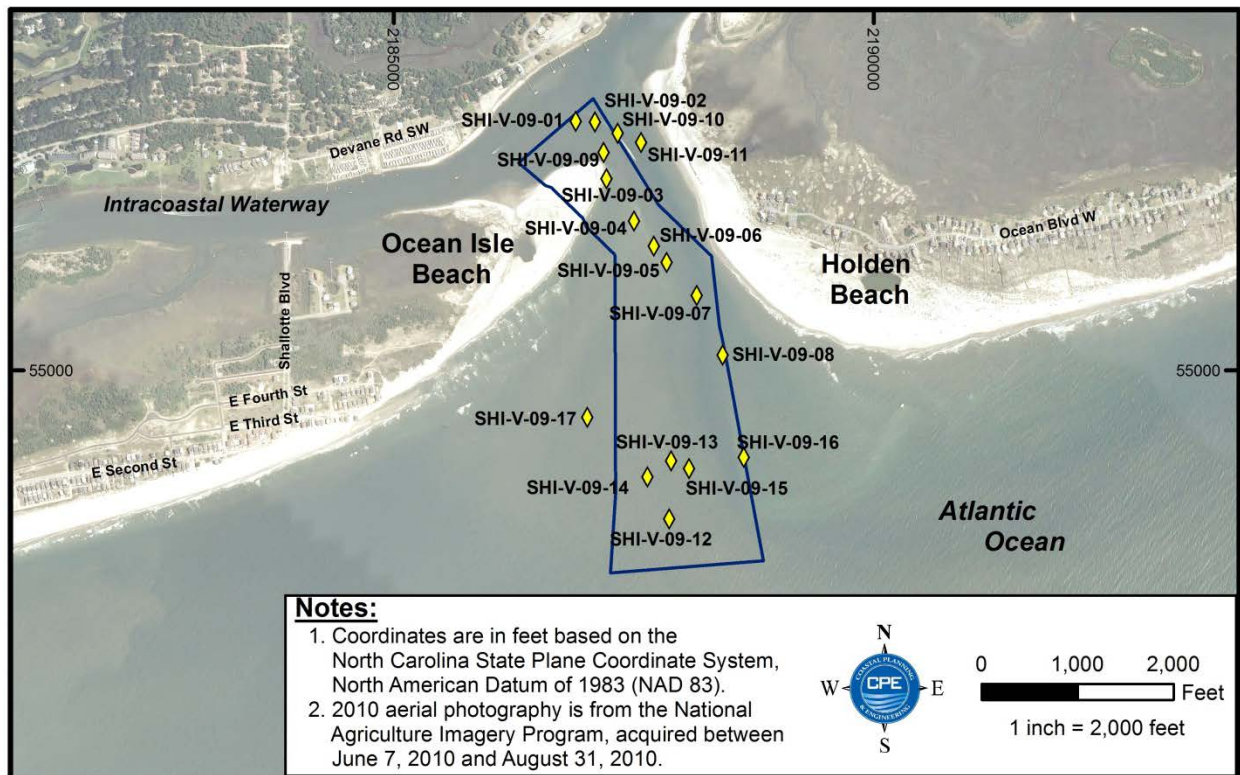


Figure 3. Map of the borrow area at Shallotte Inlet. Note locations of vibracores taken by USACE in 2009.

Assumptions made in developing the Geotechnical Scope:

- The anticipated schedule for developing the Draft EIS will allow for the geotechnical work to be put on hold until October 2012.
- The Coastal Resources Commission (CRC) will adopt the modified sediment criteria rules discussed herein by October 2012.
- The USACE will conduct pre-construction investigations including bathymetric surveys of the borrow area and beach profile surveys.
- The USACE will furnish historic native beach characteristic, bathymetric, and vibracores data collected within the Shallotte Inlet borrow area.
- The NC DCM will allow previously collected native sand samples (USACE, 1994) to be used as part of the required samples to characterize the native beach.

Native Beach: A State permit for disposal of material onto Ocean Isle Beach as part of the proposed terminal groin project will require the characterization of native material. During preparation of the General Reevaluation Report for the Ocean Isle Beach project, completed in 1994, the USACE collected beach samples along three profiles within the project area. Samples were collected from the Dune out to a depth of -30 ft NGVD29. The state sediment standards dictate a specific number of samples along at least five

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profiles within the project area (15A NCAC 07H.0312)(1)(c and d). However, 15A NCAC 07H.0312 (1)(i) provides language that would allow special consideration of projects which were constructed prior to the adoption of the rules.

CPE-NC will obtain and analyze 13 sand samples along three (3) transects along the eastern end of Ocean Isle Beach. Samples will be collected from the frontal dune, frontal dune toe, mid berm, mean high water (MHW), mid tide (MT), mean low water (MLW), trough, bar crest and at even depth increments from 6 feet (1.8 meters) to 20 feet (6.1 meters) or to a shore-perpendicular distance 2,400 feet (732 meters) seaward of mean low water, whichever is in a more landward position. These data along with previously collected USACE data will be reviewed and analyzed to develop native beach characteristics as required by the sediment criteria.

In addition to the native beach samples, the state sediment criteria require a quantification of clasts larger than 3 inches in diameter along a representative section of the beach. The total number of sediments and shell material greater than three (3) inches (76 millimeters) in diameter, observable on the surface of the beach between mean low water (MLW) and the frontal dune toe, will be calculated for an area of 50,000 square feet (4,645 square meters) within the beach fill project boundaries. This area shall be considered a representative sample of the entire project area and referred to as the "background" value.

Supporting Documents: CPE-NC will coordinate with the USACE to identify and obtain the necessary data to support the permit application based on the adoption of proposed modifications to the sediment criteria. The data and documents will be reviewed and formatted to conform with the modified sediment criteria rules. A final geotechnical report will be developed to be included as an appendix to the EIS. The report will include a description of the data obtained and the methodology used to collect new data, available volume of sand, borrow area and native beach composite summary tables of sediment characteristics, vibracores logs, and vibracores sample reports.