

PLAN OF STUDY
SHORELINE PROTECTION PROJECT
OCEAN ISLE BEACH, NORTH CAROLINA

Prepared for:

U.S. Army Corps of Engineers, Wilmington District



Prepared by:

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Ocean Isle Beach Shoreline Protection Project

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INTRODUCTION

According to Section III of the US Army Corps of Engineers (USACE) 3rd Party Contractor agreement, Coastal Planning & Engineering of North Carolina (CPE-NC) is required to develop and submit a Plan of Study to the USACE for approval. The Plan of Study, as described in full below, includes a description of the documents to be prepared, a description of the internal and external review procedures for quality control, the name and qualifications of the person performing each aspect of the work, detailed description of all work to be performed, the methodologies proposed to perform the work, estimated man-hours required for completion of each aspect, and the schedule for performing the work. Also, the Plan of Study includes a provision for a thorough literature search and bibliography of references and methodologies to be used in the acquisition of the environmental data and analyses and the development and preparation of the EIS. This Plan of Study (along with the 3rd Party Contractor agreement) will serve as the scope of work required of CPE-NC in the development and preparation of the EIS. The Plan of Study may be amended by the USACE from time to time as the work of CPE-NC or its subcontractors proceeds; however, amendments or changes may require the expenditure of additional funds by the Town of Ocean Isle Beach. In this event, the Town must agree to pay for these additional services prior to the completion of said services.

BACKGROUND

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 Review Team (PRT) 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 will assist the USACE in implementing the second phase of the NEPA scoping process. The PRT will hold meetings as deemed necessary by the USACE to review the

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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.

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

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 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

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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 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.

DESCRIPTION OF INTERNAL AND EXTERNAL REVIEW

Internal Review

Internally, the development of all environmental documents will be overseen by Brad Rosov, Project Biologist. Mr. Rosov will actively develop and direct a staff of supporting biologist to develop the EIS, BA, EFH, and CEA.

Mr. Rosov will request modeling results and engineering analysis and descriptions of the proposed plans from Mr. Robert Neal, Project Engineer. Under the oversight of Mr. Neal, Mr. Tom Jarrett will provide technical and historical review of engineering and modeling documents. Mr. Chris Day will be in charge of numerical modeling for this project, with oversight by Mr. Thomas Pierro.

Likewise Mr. Rosov will request geotechnical data and analysis for the proposed borrow area and native beach from Ms. Melany Larenas, Project Geologist. Ms. Larenas will coordinate field efforts with Mr. Ken Willson, working out of the Wilmington, NC office.

Mr. Rosov and his team will incorporate engineering, modeling, and geotechnical information into the documents as needed.

Upon completion of internal drafts of the documents, Mr. Rosov will provide the document to Mr. Neal and Ms. Larenas for their review. All changes will be tracked

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using Microsoft Word. Ultimately it will be up to the discretion of Mr. Rosov to accept or reject any changes to the document.

External Review

Mr. Rosov will coordinate closely with the USACE regulatory project manager on the development of the environmental documents. The first step in this coordination will be the establishment of an outline and table of contents of the EIS. Mr. Rosov will provide a draft outline and table of contents to the USACE regulatory project manager. The USACE will then request changes and/or provide concurrence.

CPE-NC will then begin drafting a preliminary Draft EIS. Upon completion of the preliminary Draft EIS, CPE-NC will provide the document to the USACE for their internal review. The USACE will review and provide comments to CPE-NC. Comments will be addressed and incorporated into the document. The revised version will be reviewed by the USACE; whereby if the document meets the approval of the USACE, the Draft EIS will be published in the Federal Registry and released to the public for comment.

During the public commenting period, the USACE will receive all written comments. The USACE will also hold a public hearing, whereby public comments can be delivered written or orally in person in a public setting. Once the commenting period is over, the USACE will coordinate with CPE-NC on proceeding with responding to comments. CPE-NC will address comments and provide a draft Final EIS to the USACE for their internal review. The USACE will review the document and provide feedback to CPE-NC. Any feedback requiring additional edits to the document will be addressed and incorporated into the document. The revised version will be reviewed by the USACE. If the document meets the approval of the USACE, the Final EIS will be published in the Federal Registry and released to the public for comment.

CPE-NC will draft a BA, EFH, and CEA for the purposes described above. Relevant data and descriptions developed for the EIS will be incorporated into these documents in compliance with NEPA and SEPA regulations and guidelines as mandated by the USACE. CPE-NC will provide a draft of each of the three documents to the USACE Regulatory staff for their review. Upon receiving comments back from the USACE Regulatory staff, CPE-NC will revise the documents accordingly and re-submit as Final documents to the USACE for distribution to the appropriate agencies.

In addition, CPE-NC will provide the USACE with a monthly project update to keep them informed of the status of the development of environmental documents.

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NAME AND QUALIFICATIONS OF PERSONNEL PERFORMING WORK

- **Brad Rosov** (MS, Marine Biology) is the Project Biologist for this project. Mr. Rosov has 12 years of professional experience in coastal biology and environmental science. His area of focus has been primarily in the preparation of NEPA/SEPA compliant environment documents in support of Federal and State permits for coastal projects. His experience includes the development of Environmental Impact Statements (EIS), Environmental Assessments (EA), Biological Assessments (BA), Essential Fish Habitat Assessments (EFH), and Cumulative Effects Assessments (CEA). Mr. Rosov has developed these documents for projects in Topsail Beach, North Topsail Beach, Emerald Isle, and Figure Eight Island in North Carolina as well as several municipalities in Florida. Currently, Mr. Rosov is leading the development of the first EIS in support of a terminal groin within the State of North Carolina since recent changes to state legislation. Along with documentation, he has experience with biological monitoring in support of these coastal projects.
- **Greg Finch** (BA, Environmental Studies) is a supporting biologist for this project. Mr. Finch joined CPE in the first quarter of 2012. Mr. Finch has over 10 years of experience as an environmental scientist and consultant in North Carolina. His area of focus has been CAMA Major Permit applications. His experience includes Environmental Site Assessment reports, 401 Water Quality Certifications, coastal wetland delineations, fisheries sampling, biological sampling and monitoring, water quality monitoring, Essential Fish Habitat reports, Submerged Aquatic Vegetation and shellfish surveys and reports. Mr. Finch also has extensive CAMA Major Permit project management experience and has worked on a wide variety of projects located though out eastern North Carolina.
- **Robert Neal, P.E.** is the project engineer for this project. Mr. Neal has over 15 years of experience in coastal and water resource projects. He is a designated expert in coastal planning for shoreline protection by Lee County, FL. Mr. Neal served as the Coastal Engineer for Lee County from 2002 to 2012 where he managed all aspects of 4 shoreline protection and 1 environmental restoration project. His experience covers actively constructing beach nourishments and channel maintenance projects to completing the design and engineering for similar events. Since joining CPE in March 2012, his responsibilities include project management for the construction of New River Inlet Channel Realignment and Beach Restoration in addition to analyzing shoreline stabilization alternative for the Town of Duck, NC. Mr. Neal is a licensed Professional Engineer in the State of North Carolina, Florida, and Texas. He received a B.S. from North Carolina State University and a M.S. from Old Dominion University in Civil Engineering.
- **Tom Jarrett, P.E.** is a supporting engineer for this project. Prior to joining CPE, Mr. Jarrett worked for the USACE – Wilmington District for 34 years in the field of

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Coastal Engineering. Tom Jarrett was Chief of the Coastal, Hydrology, & Hydraulics (CH&H) Section of the Wilmington District Corps of Engineers during the reevaluation of the Ocean Isle Beach storm damage reduction project. He was responsible for overseeing all aspects of the project formulation including the development of the Shallotte Inlet management plan that repositioned the main ebb channel of the inlet and provides a renewable source of beach fill material for the Ocean Isle Beach project. Since joining CPE in 2002, Mr. Jarrett has managed the permitting of four (4) major beach projects in North Carolina. Mr. Jarrett is recognized as one of the foremost experts in coastal engineering in the State of North Carolina. He is a member of the North Carolina Coastal Resource Commission's Science Panel on Coastal Hazards, which provides the Coastal Resources Commission (CRC) with scientific data and recommendations pertaining to coastal topics.

- **Thomas Pierro, P.E., D.CE.** Mr. Pierro will serve as director of numerical modeling studies. Mr. Pierro is a Senior Coastal Engineer with broad experience in project management, planning, design and permitting, engineering, plans & specifications, field investigation, construction oversight, and feasibility studies of coastal engineering projects. Mr. Pierro currently serves as the engineer of record for the Ft. Story Numerical Modeling Study where Delft 3D and SBEACH are being used to assess multiple shoreline management alternatives. With a broad and extensive experience in coastal engineering and a strong background in numerical modeling, Mr. Pierro is uniquely qualified to direct numerical modeling studies.
- **Christopher Day, P.E., D.CE.** Mr. Day is a Lead Engineer with CPE, and has extensive experience using the GENESIS, Delft3D, SBEACH, and Mike21 modeling packages. Mr. Day also has experience with the design and permitting of beach restoration projects, including the 2007 South Siesta Key, FL Beach Restoration Project and the 2005-2006 Longboat Key, FL Beach Renourishment Project, whose performance was successfully predict using the GENESIS model. His experience in the State of North Carolina includes the Delft3D and GENESIS modeling study for the Figure Eight Island Inlet and Shoreline Management Project, the Delft3D borrow area impact analysis for the Topsail Beach Emergency Beach Nourishment, and the beach fill design and ADCIRC modeling for the Bogue Inlet Channel Erosion Response Project and North Topsail Beach Inlet Realignment Project. Mr. Day has been able to combine his knowledge of coastal oceanographic and erosion modeling with practical experience in beach fill design, coastal permitting, and construction phase inspection and engineering.
- **Melany Larenas P.G.** is the project geologist for this project. She is responsible for detailed review, processing and analysis of all geological and geophysical data for CPE-NC projects. She is in charge of all borrow area development and design for CPE-NC. Ms. Larenas holds a professional geologist (PG) license in North Carolina, Florida, and Alabama and is responsible for sampling design and

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acquisition of geological and geotechnical data as well as managing the processing of geotechnical and remote sensing data. Ms. Larenas is able to isolate beach compatible material through the integration of geotechnical and remote sensing data within a GIS framework. To date, Ms. Larenas has processed the geotechnical data and designed and/or permitted borrow areas for over 20 coastal restoration projects including The Town Emerald Isle, NC; The Town of North Topsail Beach, NC; The Town of Topsail Beach, NC; Anna Maria Island, FL; Collier County, FL; Bay County, FL; Estero Island, FL; Captiva Island, FL; and Nantucket Island, MA.

- **Ken Willson** (M.S., Geology). Mr. Willson, will coordinate field efforts in North Carolina and assist Ms. Larenas with developing work products. With 10 years of experience, Mr. Willson's primary responsibilities have included comprehensive project management, North Carolina office management, project geologist, and directing and assisting data collection including geophysical surveys, vibracoring operations, jet probe operations, hydrographic surveys, and beach profile surveys. He has managed projects in North Carolina for The Town of North Topsail Beach and New Hanover County. He assists in data analysis and reduction, product preparation, report preparation and presentation of findings of marine sand searches along the Atlantic and Gulf Coast of the United States. Mr. Willson has coordinated extensively with the North Carolina, Coastal Resources Commission (CRC) with regards to the recently adopted technical standards for beach fill projects (15A NCAC 07H.0312), including publications and presentations describing real world application of the standards.
- **Heather Vollmer** (GISP) is a GIS Analyst with CPE-NC. She has a Bachelor's of Science in environmental science and a Master of Science from Florida International University in Environmental Science with an emphasis in GIS. Heather is also a Florida Master Naturalist graduate from the University of Florida. As a research assistant at the Laboratory for Coastal Research at the International Hurricane Research Center, she began work with remote sensing data and models to determine the accuracy of storm surge modeling utilizing the analysis capabilities of GIS. She has over thirteen years of GIS data analysis, data creation, maintenance, remote sensing analysis, ground-truthing and GPS field experience. She designed, implemented and performed habitat delineations for various projects within Florida, North Carolina and New Jersey both within the field and using remote sensing. Most recently she has been involved with seagrass delineations, geomorphological unit delineations and analysis, and remote sensing of benthic habitats.

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PLAN OF WORK

Task 1: Scoping

Description:

The first item in the work plan includes planning and holding a public scoping meeting. The goal of this meeting is to present the proposed project to the public and receive public comments on what information should be included in the EIS.

Methodology:

CPE-NC shall participate in the Public Scoping Meeting, which will be scheduled and coordinated by the USACE. CPE-NC shall provide technical background information to the public regarding the proposed project. CPE-NC shall coordinate with the USACE following the meeting to acquire copies of all comments submitted during the scoping meeting as well as the public commenting period and determine how to address these comments in the EIS.

Estimated Man Hours to Perform Task 1:

Position	Hours
Director	6
Program Manager	29.5
Engineer 3	27.5
Engineer 2	N/A
Engineer 1	N/A
Scientist 4	N/A
Scientist 3	34
Scientist 2	9.75
Scientist 1	N/A
GIS/CAD Manager	1
GIS/CAD Tech	3.5
Technician	N/A
Clerical	N/A

Task 2: Development of Preliminary Draft EIS

Description:

Following the scoping process CPE-NC will develop a Preliminary Draft of the EIS document. This document shall be developed and provided to the USACE for an internal review. All required aspects of the EIS will be included in this preliminary draft including:

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

Methodology:

Upon receiving public input on what is to be included in the EIS, CPE-NC will develop an outline and table of contents for the EIS. The outline and table of contents will be submitted to the USACE for approval.

Once approved, CPE-NC will begin compiling all relevant data and information to develop the preliminary draft document. This will require an extensive literature review, the collection of pertinent environmental data, integration of geotechnical data, the creation of a project GIS, and an assessment of engineered designs.

Formulation of Project Alternatives: CPE-NC engineers will coordinate with the Town of Ocean Isle Beach on developing the preferred alternative. Development of the preferred alternative will include a numerical modeling study using Delft 3D. This model is a 3-dimensional numerical model capable of modeling wave, current, and morphological changes to a system for various alternatives. Engineers will use this tool to develop an alternative that involves a terminal groin and beach fill. The model will be used to determine an optimal length to minimize environmental effects and achieve maximum cost savings through a decrease in the erosion rates on the east end of Ocean Isle Beach. In addition, engineers will use the model to assess other alternatives that will be considered in the EIS.

Once the modeling is and other engineering analyses are complete, a final description of each alternative will be developed and provided to CPE-NC environmental scientists to develop Chapter 3 of the EIS, Project Alternatives.

Literature Review:

In order to include the most recent and up-to-date information regarding the environmental setting and anticipated environmental impacts, CPE-NC scientists will search scholarly journals, government reports, and other sources and will cite these sources within the environmental documents including the EIS, BA, and EFH.

Collection of Environmental Data: CPE-NC will reach out to public and private entities to obtain available environmental data relevant to this study. This includes compiling and interpreting existing data pertaining to birds, sea turtle nests, seabeach amaranth and other species found in proximity to the project location. As available data are collected, they will be incorporated into an area wide Geographic Information System (GIS) database. CPE-NC will map identified habitat types (salt marsh, sand flats, shellfish, submerged aquatic vegetation, etc.) within the project area using high resolution aerial

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mapping with groundtruthing and determine acreages of each habitat utilizing the GIS. The GIS will also be used to evaluate potential project impacts and analyze project alternatives.

Through the review of available literature, existing data, and the GIS, CPE-NC will conduct a detailed assessment of potential physical impacts the project may have on adjacent beaches, inlet shoals, and estuarine environments. Furthermore, an evaluation of project alternatives including no action, the Town's preferred alternative, temporary protective measures, and relocation/abandonment of the project will be conducted.

Development of Mitigation and Monitoring Plan: Based on the requirements of similar projects and guidance received from the USACE, CPE-NC will draft a Mitigation and Monitoring plan for the Ocean Isle Beach Shoreline Protection Project. The plan will focus on codifying mitigation and monitoring protocols that will be required in order to avoid and mitigate potential effects to significant resources.

Collection of Geotechnical Data: 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. 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 Technical Standards for Beach Fill Projects (15A NCAC 07H.0312). In this regard, the USACE operates under the Federal consistency requirement of the Federal Coastal Zone Management Act (CZMA). This requires Federal actions 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 available geotechnical information collected by the USACE associated with the Shallotte Inlet borrow area does not meet the state Technical Standards, specifically with regards to density of data collection.

CPE-NC geologists will obtain existing data from the USACE. Necessary supplemental data will then be collected to meet the state Technical Standards. A report will be developed, which will provide geological framework, methodology, and results of the geotechnical analysis. All necessary geotechnical information for the native beach and the borrow area will be reported. This data will be provided to the CPE-NC environmental staff to be incorporated into the environmental documents.

Project Review Team (PRT) Meetings: Two PRT meetings are anticipated to take place under Task 2. The first meeting will occur early on in the process and will serve as an introduction to the project. PRT members will be briefed on the reasons the Town of Ocean Isle Beach has chosen to pursue the proposed action. CPE-NC will provide the PRT members with a list of available data that they will be using to document environmental impacts. It is the intention that if PRT members are aware of additional sources that they will make CPE-NC and the USACE aware of such sources. This meeting is also intended to provide an opportunity for PRT members to provide input on the alternatives that will be assessed.

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The second meeting will be held following the conclusion of the engineering/modeling portion of the alternative analysis. At this meeting, the PRT members will be briefed on the results of the engineering/modeling analysis. The PRT will also be briefed on how the results will be interpreted and used so that environmental impacts can be assessed.

Estimated Man Hours to Perform Task 2:

Position	Hours
Director	268
Program Manager	33.75
Engineer 3	565.5
Engineer 2	464.75
Engineer 1	5
Scientist 4	33
Scientist 3	1027.75
Scientist 2	461.5
Scientist 1	150
GIS/CAD Manager	26
GIS/CAD Tech	292
Technician	79.75
Clerical	43

Task 3: Development of Draft EIS

Description:

Upon completion of the Preliminary Draft, the document will undergo an internal review within the USACE Regulatory Branch. CPE-NC will then revise the document based on USACE guidance and provide a revised version to the USACE for publication in the Federal Registry.

Methods:

The Preliminary Draft will be provided to the USACE Wilmington Regulatory Field Office for an internal review. The USACE Wilmington Regulatory staff will review the document and provide comments to CPE-NC so that the necessary revisions can be made prior to the Draft EIS being published in the Federal Registry.

In the past, this process has occurred in a piecemeal fashion as the document is returned to CPE-NC section by section. Comments can range from requests for additional information, to editorial comments, to formatting. CPE-NC environmental staff will coordinate all revisions, which may entail requesting clarification or additional information by engineers, geologists, or other support staff.

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Upon completing the revisions, CPE-NC will provide a final Draft EIS to the USACE for one final review. If the USACE finds the document is acceptable, CPE-NC will provide the USACE with six (6) hard copies and digital versions to be published in the Federal Registry.

Estimated Man Hours to Perform Task 3:

Position	Hours
Director	83
Program Manager	11
Engineer 3	37
Engineer 2	N/A
Engineer 1	N/A
Scientist 4	6
Scientist 3	221
Scientist 2	270
Scientist 1	20
GIS/CAD Manager	8
GIS/CAD Tech	20
Technician	N/A
Clerical	28

Task 4: Addressing Comments, Development of the Draft Final EIS, and Development of the EFH, CEA, and BA

Description:

After the public commenting period is over, CPE-NC will coordinate with the USACE Regulatory staff to compile comments received and determine how to address said comments. Comments will be used to determine what additional information should be provided for the Final EIS. CPE-NC will address comments and revise the Draft EIS into a Draft Final EIS to be submitted to the USACE for internal review. Concurrently, CPE-NC will integrate relevant data into a BA, EFH, and a CEA.

Methods:

Addressing Comments: Upon publishing the Draft EIS in the Federal Registry, the public as well as Federal Resource Agencies will have a predetermined commenting period dictated by the USACE Regulatory Project Manager. During this commenting period a Public Hearing will be held so that the public has an opportunity to comment in person on the Draft EIS. Once the commenting period has ended, CPE-NC and the USACE Regulatory staff will coordinate to determine how comments are to be addressed and who will be charged with addressing the comments. Some comments can be addressed directly by the USACE. The USACE will often charge the 3rd Party Contractor with addressing comments.

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After this coordination and during the time in which comments are being addressed, a 3rd PRT meeting will be held. The focus of this meeting will be to brief the members on the most important comments and provide them with insight into how comments will be addressed.

Development of the Draft Final EIS: Comments will be addressed through revisions to the Draft EIS. Supplemental data will be provided as needed as well as clarification or elaboration on any of the engineering/design aspects of the project. A Draft Final EIS will then be provided to the USACE for an internal review.

Development of BA, EFH, and a CEA: CPE-NC will draft a BA, EFH, and CEA for the purposes described above. Relevant data and descriptions developed for the EIS will be incorporated into these documents in compliance with NEPA and SEPA regulations and guidelines as mandated by the USACE. CPE-NC will provide a draft of each of the three documents to the USACE Regulatory staff for their review. Upon receiving comments back from the USACE Regulatory staff, CPE-NC will revise the documents accordingly and re-submit as Final documents to the USACE for distribution to the appropriate agencies.

Estimated Man Hours to Perform Task 4:

Position	Hours
Director	115
Program Manager	48
Engineer 3	69
Engineer 2	N/A
Engineer 1	N/A
Scientist 4	6
Scientist 3	586
Scientist 2	530
Scientist 1	24
GIS/CAD Manager	6
GIS/CAD Tech	30
Technician	N/A
Clerical	8

Task 5: Development of Final EIS

Description:

Upon completion of the draft Final EIS, the document will undergo an internal review within the USACE Regulatory Branch. CPE-NC will then revise the document based on USACE guidance and provide a revised version to the USACE for publication in the Federal Registry.

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Methods:

The draft Final EIS will be provided to the USACE Wilmington Regulatory Field Office for an internal review. The USACE Wilmington Regulatory staff will review the document and provide comments to CPE-NC so that the necessary revisions can be made prior to the Final EIS being published in the Federal Registry.

Similar to the review process prior to the release of the Draft EIS, this process may occur in a piecemeal fashion. CPE-NC environmental staff will coordinate all revisions, which may entail requesting clarification or additional information by engineers, geologists, or other support staff.

Upon completing the revisions, CPE-NC will provide a Final EIS to the USACE for their final review. If the USACE finds the document is acceptable, CPE-NC will provide the USACE with six (6) hard copies and digital versions to be published in the Federal Registry.

Estimated Man Hours to Perform Task 5:

Position	Hours
Director	47
Program Manager	41
Engineer 3	44
Engineer 2	N/A
Engineer 1	N/A
Scientist 4	4
Scientist 3	200
Scientist 2	180
Scientist 1	N/A
GIS/CAD Manager	3
GIS/CAD Tech	N/A
Technician	N/A
Clerical	24

