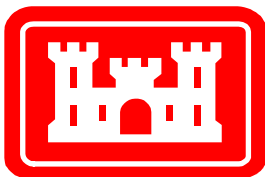

**FINAL
INTEGRATED
FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT
COASTAL STORM DAMAGE REDUCTION**

BOGUE BANKS, CARTERET COUNTY

NORTH CAROLINA

APPENDIX M

**PUBLIC AND AGENCY REVIEW
COMMENTS AND RESPONSES**



**US Army Corps
of Engineers
Wilmington District**

	<u>Appendix Reference</u>	<u>From</u>	<u>Comment</u>	<u>Corps Responses</u>	<u>Changes</u>
1	L-47	NCDENR DWR from DCM	The project will require a 401 permit application	Concur. The document indicates in several areas that a Section 401 Water Quality Certification is required.	No additional text is required.
2	L-47	NCDENR DWR from DCM	The use of berms to reduce the turbidity needs to be described in better detail as to the exact location of the berm for each section of beach and if it is located within the surf zone. The location of the discharge pipe is relation to the berm and the water. An alternative plan of how the turbidity may be reduce, if the turbidity exceeds the turbidity limits outside the 1000' mixing zone	The Corps will construct berms so they are inshore as much as practicable. If turbidity exceeds limits, the Corps will coordinate with the State to address issues.	None
3	L-47	NCDENR DWR from DCM	A plan for measuring the turbidity at the 1000' and 1500' limits of the project during daily operation needs to be included with the 401 application.	The Corps will not violate Water Quality standards because the sediment slurry is diffused as it is released from the terminal pipe in order reduce the flow velocity onto the beach and minimize the risk of creating scour holes. Dikes are constructed on one or two sides of the effluent area to allow for extended settlement time of suspended solids in order to reduce turbidity levels in the near shore environment.	None
4	L-48	Lauren Shaffer	Could the topmost layer be retained and held in a state that could protect the viability of the existing benthic community as well as other organisms, with the intention of returning this layer to the top of the dredged material after a section of the shoreline stabilization project has been finished?	Retaining benthic organisms would be cost prohibitive. Additionally the viability of these organisms being held is not known. The beach is a dynamic area and the re-colonization of the beach following placement of sand will occur.	None

5	L-14	BOEM	<p>Consistent with the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, the Corps has combined the preparation of an Environmental Impact Statement (EIS) with a planning instrument. The draft Integrated Feasibility Report (IFR) and EIS integrate alternative development, engineering and economic analyses, and environmental review in a single document. In the draft document, the elements required in an EIS are presented in an atypical order, and the re-organization presents some fundamental challenges to the reader. For example, the reader must first read the Tentatively Selected Plan chapter (Chapter 6), the practical description of the proposed action, to fully comprehend the site-specific discussion of in the Affected Environment chapter (Chapter 2). Environmental commitments are enumerated before the presentation of the impact analyses in the Environmental Effects chapter (Chapter 7). Therefore, the reader must first read the effects analyses to fully appreciate the need and purpose of the proposed mitigation.</p>	<p>The purpose of this document is to combine NEPA with the Planning process. CE 230.13 allows for integration to reduce paper and the size of the document. CEQ guidelines also allows for flexibility in how the document is structured. This current format has been used in the past with success and is the Corps preferred template.</p>	
6	L-14	BOEM	<p>BOEM recommends the Corps prepare preparatory guidance to better orient the reader to the organization of the document. Alternatively, the Corps could insert the Affected Environment chapter after the Tentatively Selected Plan chapter and before the Environmental Effects chapter. Mitigation should be linked in a logical manner to the effects analysis.</p>	<p>Section 1.01 outlines the report organization and is consistent with historical templates used in the past on the Brunswick and Topsail Beaches projects.</p>	None

7	L-14	BOEM	<p>Please include BOEM jurisdiction justification: Public Law 103-426 enacted 31 October 1994 gave BOEM the authority to convey, on a noncompetitive basis, the rights to OCS sand, gravel, or shell resources for shore protection; beach or wetlands restoration projects; or for use in construction projects funded in whole or part or authorized by the federal government. In implementing this authority, BOEM may issue a negotiated non-competitive lease agreement for the use of OCS sand to a qualifying entity. BOEM and the USACE are cooperating agencies having jurisdiction over different project facets and locations. OCS resources (beyond three mi) fall under BOEM's jurisdiction, as found in the OCS Land Act.</p>	Concur	<p>The following was added to section 10.02: Public Law 103-426 enacted 31 October 1994 gave BOEM the authority to convey, on a noncompetitive basis, the rights to OCS sand, gravel, or shell resources for shore protection; beach or wetlands restoration projects; or for use in construction projects funded in whole or part or authorized by the federal government. In implementing this authority, BOEM may issue a negotiated non-competitive lease agreement for the use of OCS sand to a qualifying entity. BOEM and the USACE are cooperating agencies having jurisdiction over different project facets and locations. OCS resources (beyond three miles) fall under BOEM's jurisdiction, as found in the OCS Land Act.</p>
8	L-14	BOEM	<p>Please indicate earlier in the document: BOEM and the USACE are cooperating agencies having jurisdiction over different project facets and locations. OCS resources (beyond three mi) fall under BOEM's jurisdiction, as found in the OCS Land Act.</p>	Concur	<p>A new section 1.07 was added to the Feasibility Report titled Cooperating Agencies. The following was put in the section: Pursuant to Section 1501.6 of the CEQ NEPA Regulations, eligible Federal, State, and local agencies, along with stakeholders interested in or affected by the Federal agency decision on this project have been requested to participate as a cooperating agency. The Bureau of Ocean Energy Management (BOEM) is the only Agency which has agreed to participate as a cooperating agency during the preparation of the Integrated Feasibility Report and Environmental Impact Statement. BOEM will assist in developing information and preparing environmental analyses in areas which the BOEM has special expertise. This assistance enhances the interdisciplinary capability of the study team. See Section 10.02 for more information about BOEM's involvement in this study.</p>

9	L-14	BOEM	<p>Please note this earlier in the document: Since most of the borrow areas identified for the proposed project are located on the Outer Continental Shelf (OCS), BOEM may need to authorize their use for initial and/or maintenance construction. The BOEM, as a cooperating federal agency, may undertake a connected action (i.e., authorize use of the OCS borrow area) that is related, but unique from the Corps's proposed action (i.e., construction of the project). Consequently, the purpose and need of the BOEM's proposed action is different. Ideally, the EIS should provide a more accurate description of the BOEM's involvement under the Corps' proposed action. The BOEM's proposed action is the issuance of a negotiated agreement pursuant to its authority under the Outer Continental Shelf Lands Act. The purpose of that action is to authorize the use of OCS sand (or other sediment) resources in beach nourishment and coastal restoration projects undertaken by federal, state or local government agencies, and/or in other federally authorized construction projects. The BOEM's action will be needed because the localities and the Corps submitted authorization requests to the BOEM.</p>	Concur	Changes have been made to sections 1.03, 1.07 and 10.02 of the report.
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10	L-14	BOEM	The Environmental Effects chapter (Chapter 7) offers a robust discussion of the potential environmental impacts related to the Tentatively Selected Plan. In contrast, the document offers a limited discussion of potential impacts associated with other alternatives, including the no action alternative. BOEM suggests the Corps clearly indicate which alternatives were dismissed and on what basis. Otherwise, the direct and indirect impacts of alternatives should be discussed in more detail and in context of their relative significance in the Environmental Effects chapter.	In accordance with Corps policy, the impacts were integrated in the plan formulation process. We used Table 5.7 to address alternatives. Chapter 7 is only the NED plan.	None
11	L-14	BOEM	The biological assessment discusses protected species that are likely to occur in the proposed project area. However, the draft IFR/EIS does not address other marine mammals without protection status, such as dolphin species, that are likely to be present and may be affected by the proposed action. They are mentioned in App G but should be addressed within the document text.	Concur	Updated section 7.2.5 with marine mammal affects. We have added references to effects of dredging activities on marine mammals and sea turtles which are addressed in the NMFS South Atlantic Regional Biological Opinion (SARBO). See section 7.03.5.2 of this document for more information on the NMFS SARBO. Effects on marine mammals are also discussed in section 7.09.1 as well as Appendix G.
12	L-14	BOEM	Please add the OCS line to delineate Federal vs. State waters	Concur	Line was added to Figure 1.1
13	L-14	BOEM	No mention of the most recent 2013 Post Irene Renourishment Effort along Bogue Banks	Concur	Figure 1.2 was updated with Post Irene information.

14	L-14	BOEM	Please include a figure indicating hardbottom areas within and near offshore borrow areas. A more detailed description of offshore hardbottom would be helpful. A discussion of habitat association between benthic populations and habitat type (RSDs, hard bottom, sand and muddy substrate) should be provided. The benthic resources or hard bottom descriptions should include a detailed description of the occurrence and quality of benthic Sargassum, corals, and sponges.	Concur. In 2007, 2008 and 2009 the Corps contracted out with Geodynamics, Mid-Atlantic Technology and Environmental Research, Inc. and ANAMAR to record and identify benthic resources. Results of which are located in Sections 2.04.6 and 7.02.8.2.	Figure 2.1 was added. Added citations to section 7.02.8.2
15	L-14	BOEM	"In accordance with Section 7 (a)(2) of the ESA, the Corps has been in consultation with the USFWS and NMFS since beginning this study." Should indicate BOEM's involvement in the process to cover use of the OCS borrow site under ESA.	Concur	BOEM was added to the first paragraph of Section 2.07, Threatened and Endangers Species.
16	L-14	BOEM	Update with new info on spp. Atl sturgeon are now endangered	Concur	Updated table 2.4
17	L-14	BOEM	There is no discussion of the potential for archaeological resources in the vicinity of pump-out locations and pipeline corridors, and the likely areas for those operations are not identified. Consideration of these areas may be important as they are subject to bottom disturbing activities such as anchoring, anchor drag, and pipeline emplacement.	Concur. Included discussion of archaeological resource potential in the vicinity of pump-out locations and pipeline corridors.	Section 2.08 was updated.

18	L-14	BOEM	The Corps does not fully address the potential for prehistoric sites within the survey area. BOEM suggests that the following tasks relating to prehistoric site potential be addressed: 1. review current literature on late Pleistocene and Holocene geology, paleogeography, and sea level change in the area; marine and coastal prehistory; and previous archaeological resource reports in the area if available. 2. discuss relict geomorphic features and their archaeological potential that includes the type, age, and association of the mapped features; the acoustic characteristics of channels and their fill material; evidence for preservation or erosion of channel margins; evidence for more than one generation of fluvial downcutting; and the sea level curves used in the assessment. 3. discuss, based on the capabilities of current technology in relation to the thickness and composition of sediments overlying the area of a potential site, the potential for identification and evaluation of buried prehistoric sites. The DEIS should incorporate information that summarizes the potential for prehistoric sites within the project area.	Concur. Addressed the potential for prehistoric sites within survey area and incorporate suggestions 1, 2, and 3 based on available data.	Section 2.08 was updated.
19	L-15	BOEM	Ambient and anthropogenic noise in the marine environment is not described.	A discussion on noise was added to Section 2.	Added discussion on ambient and anthropogenic noise to Section 2.04.8 Added to citations: Clarke, D., C. Dickerson, and K. Reine. 2002. Characterization of Underwater Sounds Produced by Dredges. In Proceedings of the Third Specialty Conference on Dredging and Dredged Material Disposal. May 5–8 2002, Orlando, FL.
20	L-15	BOEM	Table 5.7 does not address potential impacts from the range of beach fill and non-structural alternatives proposed to physical processes and non-listed marine mammals.	Table 5.7 was updated to add marine mammal and physical processes.	Marine Mammals and Physical Processes were added to Table 5.7.

21	L-15	BOEM	Please indicate state vs. federal borrow sites or give some explanation to the difference.	Concur	The following sentence was added to section 1.03. Also figure 1.1 was revised to include the three mile limit line: The borrow areas within the three mile limit line indicated on Figure 1.1 are within the jurisdiction of the State of NC and the ones offshore of three mile limit are within the jurisdiction of the Bureau of Ocean Energy Management (BOEM). See Sections 1.07 and 10.02 regarding BOEM's involvement in this study.
22	L-15	BOEM	Note that the recent FEMA project off Bogue Banks went from January to March 25th on the ODMDS and did not catch any turtles during relocation trawling.	Concur	Information regarding FEMA turtle trawling was added to Section 4.02.3 in the BA (Appendix F).
23	L-15	BOEM	The description of and potential impacts to protected marine mammals and sea turtles are incorporated by reference to the biological assessment. BOEM recommends a brief summary be provided in the EIS, or, the biological assessment should be included as a physical attachment to the Final IFR/EIS.	BA is attached that includes descriptions of potential impacts to protected marine mammals and sea turtles.	Attached BA to Appendix. Updated Table 5.7 with marine mammal information.
24	L-15	BOEM	Suggest referencing some more recent literature which can be found the recent review on this subject (Near Shore) Michel et al, 2013.	Concur	Updated information and references in section 7.02.7
25	L-15	BOEM	It should be stated that cross-shore sediment transport will likely occur beyond the depth of closure, but ultimately depends on the forcing conditions and the profile state at the time of the forcing event.	Concur	Paragraph from section 7.02.8.2 change to: "The long-term and short-term limits of cross-shore sediment transport are important in engineering and environmental considerations of beach profile response. Significant quantities of sand-sized sediments can be transported and deposited seaward as a result of short-term erosional events and the equilibration of a constructed beach profile. Over time, the evolving profile advances seaward into deeper water until it approaches equilibrium, however, sediment particles can be in motion at greater depths than those at which profile readjustment occurs depending on the wave climate and state of cross shore profile. The seaward limit of effective profile fluctuation over long-term time scales is referred to as the closure depth. On the basis of the data reviewed to date, no hard-bottom features have been identified in the expected depth of closure for the study."

26	L-15	BOEM	What about potential impacts to benthic Sargassum? It is noted to be in the area but then not further addressed.	Section 7.02.8.5 will be updated to reflect that there will be no direct impacts to benthic Sargassum. All dive transects in which benthic Sargassum was identified were located on hard bottom communities, not within the sediments proposed for dredging. Considering that no direct impacts will occur from dredging and no indirect impacts are anticipated from sedimentation considering the incorporation of buffers, the Corps believes that the conclusion of no impacts to benthic Sargassum from the dredging activities is supported.	None
27	L-15	BOEM	Additional info from NASA Wallops Island EA (2013): "Dredging operations would cause sediment to be suspended in the water column. Studies of past projects indicate that the extent of the sediment plume is generally limited to between 1,640 – 4,000 ft from the dredge and that elevated turbidity levels are generally short-lived, on the order of an hour or less. (USACE 1983; Hitchcock et al. 1999; MMS 1999; Anchor Environmental 2003; Wilber et al. 2006)."	Thank you for the information.	Reference was incorporated into the document in Section 7.02.8.6.
28	L-15	BOEM	BOEM recommends a discussion of bird utilization of hard bottom areas and other offshore habitat.	Section 7.03.4 Birds describes utilization of offshore areas off Bogue Banks by birds. The Corps believes that all available scientific information pertaining to existing literature and survey data for bird resources within the project area was incorporated into the report. Recognizing all of the avoidance and minimization measures incorporated into the project planning and design, the Corps does not believe that mitigation for impacts to bird resources is warranted.	None

29	L-15	BOEM	It seems odd that T and E aren't addressed until the terrestrial section although it includes offshore species. Would be helpful to include a section in the marine environment on offshore T and E spp.	Concur	Moved T&E to section7.4 to avoid confusion.
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30	L-15	BOEM	<p>Additional info from the NASA/BOEM Wallops 2013 EA that may be useful: “During the initial Wallops Island beach fill in summer 2012, NASA partnered with BOEM and USACE (Reine et al, 2013) to record background in-water sound levels at the both offshore borrow area and the nearshore pump out area. Data were collected at two listening depths at each site; approximately 10 ft and 30 ft depths at the offshore shoal and 10 ft and 20 ft at the nearshore sites. During the study, the majority of data collected when winds were at least 4-7 miles per hour and wave heights were at least 1-2 feet. Therefore, the data do not reflect “calm” sea conditions. Background sound pressure levels (SPLs) averaged 117 dB across all sampling days, sites, water depths and weather conditions. Minimum measured sound levels ranged from 91 dB to 107 dB depending on sampling location and water depth; maximum levels ranged from approximately 128 dB to just under 148 dB (Reine et al. in prep). Highest SPLs were found at frequencies of less than 200 hertz. The authors note that sea state and the associated sounds generated by waves interacting with the survey vessel likely contributed to the elevated readings. Based upon data collected by Reine et al. (2013), sediment removal and the transition from transit to pump-out would be expected to produce the highest sound levels at an estimated source level (SL) of 172 dB at 3 ft. The two quietest dredging activities would be expected to be seawater pump-out (flushing pipes) and transiting (unloaded) to the borrow site, with expected SLs of approximately 159 and 163 dB at 3 ft, respectively.... Based upon attenuation rates observed by Reine et al. (in prep.), it would be expected that at distances approximately 1.6-1.9 mi from the source, underwater sounds generated by the dredges would attenuate to background levels. However, similar to in-air sounds, wind (and corresponding sea state) would play a major role in dictating the distance to which project related underwater sounds would be above ambient levels and potentially audible to nearby receptors”</p>	Thank you for the information.	Reference was incorporated into the document in Section 7.10.3
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31	L-15	BOEM	The Corps should also discuss the potential benefits/costs of a borrow area management plan that requires the rotational use of borrow areas over initial and maintenance construction cycles as a means to mitigate cumulative effects to benthic communities and habitat.	A site specific borrow area use plan has yet to be defined. The economic optimization of the use of the borrow areas for the life of the project will be further evaluated when the final borrow area data has been collected and fully analyzed during the Plans and Specifications (P&S) phase.	None
32	L-15	BOEM	The Corps has “lead agency” status for Section 7 and EFH consultations/coordination, and as “lead agency”, the Corps should notify NMFS HCD, NMFS PRD, and FWS of BOEM’s involvement in the proposed action.	Concur. In the informal consultation process, the Corps has informed these agencies on BOEM's involvement in the proposed action.	None
33	L-16	BOEM	Please indicates BOEM’s involvement with the Section 7 process within this Biological Assessment.	Concur	BOEM's involvement is addressed in comment #4/#8 above.
34	L-26	Town of Pine Knoll Shores	Pine Knoll Shores requests that the Integrated Feasibility Report and Draft Environmental Impact Statement for Bogue Banks be adjusted in Appendix I to require PKS to have 180 public parking spaces in support of our 11 PBA's.	The access mapping, and associated requirements are updated in the final report.	SAW is developing an updated parking and access map using the most recent CAMA information. This updated information will be included in both the Parking and Access appendix and any pertinent sections in the body of the Main Report.
35	L-27	Carteret County	Pertaining to the Draft Report & EIS, we would like to go on record specifically at this time regarding the parking and access requirements, which is supported in the document by Appendix I. We have long questioned the interpretation and unilateral judgments the District and Division/Headquarters have applied to their own internal regulations (ER 1105- 2-100 and ER 1165- 2-130) that sometimes seemingly have no consideration for larger issues such as cost, practicality, and “quantity over quality (i.e., amenities)” of the access/parking facilities existing or planned.	Noted. The concerns with the policies in question have been elevated through the USACE 'vertical chain' and are being addressed as such. This said, there is yet to be a resolution to this issue. The sponsor will be kept fully abreast of developments as they occur.	SAW is developing an updated parking and access map using the most recent CAMA information. This updated information will be included in both the Parking and Access appendix and any pertinent sections in the body of the Main Report.

36	L-27	Carteret County	Draft Report is Missing Six Accesses and Parking Locations in Pine Knoll Shores. We request the Draft Report to be modified to reflect these access/parking areas, and to also be considered to meet peak demand.	The access mapping, and associated requirements is updated in the final report.	SAW is developing an updated parking and access map using the most recent CAMA information. This updated information will be included in both the Parking and Access appendix and any pertinent sections in the body of the Main Report.
37	L-28	Carteret County	Waiver Requested in Indian Beach and Salter Path- we request a waiver be approved and formally incorporated into the Final Report, rather than undergoing a waiver decision-making process subsequent to its approval and Congressional authorization – especially considering the insignificant distances involved.	The 'insignificant distance' has been noted and deviation from policy, given the distance, will most likely be granted. Issues that involve USACE policy are elevated through our vertical command chain, and the ultimate decision will lie with USACE policy interpreters.	SAW is developing an updated parking and access map using the most recent CAMA information. This updated information will be included in both the Parking and Access appendix and any pertinent sections in the body of the Main Report.
38	L-28	Carteret County	Peak Demand Calculations Needs to be Revisited: We disagree with the parking requirements in the draft report and the peak demand methodology used to generate these numbers.	Noted. The concerns with the policies in question have been elevated through the USACE 'vertical chain' and are being addressed as such. This said, there is yet to be a resolution to this issue. The sponsor will be kept fully abreast of developments as they occur.	SAW is developing an updated parking and access map using the most recent CAMA information. This updated information will be included in both the Parking and Access appendix and any pertinent sections in the body of the Main Report.
39	L-28	Carteret County	We also contend the Corps' forecasts for increases in peak demand envisioned for the project, which were based on increases to beach width is a false premise, and again needs to be revisited.	Noted. The concerns with the policies in question have been elevated through the USACE 'vertical chain' and are being addressed as such. This said, there is yet to be a resolution to this issue. The sponsor will be kept fully abreast of developments as they occur.	SAW is developing an updated parking and access map using the most recent CAMA information. This updated information will be included in both the Parking and Access appendix and any pertinent sections in the body of the Main Report.
40	L-3	NCDENR DCM - CC	To solicit public comments, DCM circulated a description of the proposed project to State agencies that would have regulatory interest. No comments asserting that the proposed activity would be inconsistent with the State's coastal management program were received.	Noted	None

41	L-4	NCDENR DCM	the Applicant, prior to initiating berm construction activities shall submit to DCM final project plans to ensure that the proposed project remains consistent with North Carolina's coastal management program.	Concur	None
42	L-4	NCDENR DCM	At this time, DCM's sediment criteria has not been certified by the NOAA Office of Ocean and Coastal Resource Management (OCRM) as being certified enforceable policy of North Carolina's coastal management program (NCCMP). Furthermore, in this case, DCM accepts the Corps sediment criteria as adequately complying with the NCCMP in protecting coastal resources.	Noted	None
43	L-42	USFWS	At this time, the Service cannot concur with the Corps' determination of May Affect, Not Likely to Adversely Affect (MA-NLTAA) for the piping plover, and loggerhead, leatherback, and green sea turtles. More information is needed on the compatibility of the sediment to be dredged and placed on the beach, including sand grain size (percent fines and percent granular and gravel), density, shear resistance, and color. In addition, no monitoring is proposed to be conducted during construction or maintenance events for piping plover, and the length of monitoring for sea turtle nests is not clear in the draft BA.	Sufficient data regarding compatibility of sediment to be dredged and placed on the beach are provided in Section 5.05.1 in the EIS and in the Geotech Appendix C. For clarity, that information was not repeated in the BA. Color of the sediment was not investigated and historically has not in previous projects. The Corps does not do daily visual surveys for piping plover during construction or maintenance events because placement of material is timed to minimize impacts to piping plovers and therefore surveys are not necessary. A visual survey is performed before placing pipe along the beach to avoid piping plover impacts. The locals, through the NC Sea Turtle Project, monitor sea turtle activity along the entire coast of North Carolina and the data is collected by Dr. Matthew Godfrey of NCWRC. The Corps will not and historically has not monitored for sea turtle nests when placement is within the environmental window.	Environmental Commitments Appendix was updated. An email was sent to USFWS addressing changes and an updated BA will be included in the Appendix.

44	L-42	USFWS	<p>The Service recommends that the proposed Critical Habitat for the loggerhead sea turtle and the candidate species red knot be added to the list of considerations under Section 7 of the Endangered Species Act. Consideration of proposed critical habitat and candidate species in project planning is prudent and should not delay or impede decision-making.</p>	<p>Concur</p>	<p>Section 4.02.3 and 6.0 of the BA was updated with proposed loggerhead Critical Habitat information and the Corps determined the proposed project will not result in an adverse modification of critical habitat for the threatened loggerhead sea turtle. Section 4.02.10 and 6.0 of the BA was updated with a Red Knot evaluation and includes the Corps determination that the disposal of sediment on the Bogue Banks beaches may affect not likely adversely affect the Red Knot. Consideration and analysis was added to the EIS in section 2.07.3 and 2.07.4 for loggerhead critical habitat and red knots. Table 2.4(Threatened and Endangered Species Potentially Present in Carteret County, North Carolina) was updated and Figure 2.4 (Proposed Loggerhead Critical Habitat) was also added to the EIS.</p>
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45	L-43	USFWS	<p>The Service recommends that the Corps commit to using only sediment that complies with the NC Sediment Criteria Rule, and also has a wet Munsell color of 5 or greater. Specifically, the Service recommends that the Corps commit to meet the following criteria: The average % by weight of fine grained sediment (less than 0.0625 mm) in each borrow site shall not exceed the average % by weight of fine grained sediment of the recipient beach characterization plus 5%. The average % by weight of granular sediment (Greater than or = to 2 mm and less than 4.76mm) in a borrow site shall not exceed the average % by weight of coarse sand sediment of the recipient beach plus 5%. The average % by weight of gravel (greater than or = to 4.76 mm) in a borrow site shall not exceed the average % by weight of gravel sized sediment for the recipient beach characterization plus 5%. The average % by weight of calcium carbonate in a borrow site shall not exceed the average % by weight of calcium carbonate on the recipient beach characterization plus 15%. Use of material that meets the above criteria and is similar in color to the native beach would be a minimization measure under Section 404(b)(1) of the Clean Water Act, and would minimize potential impacts to piping plover, red knot, and sea turtles, as well as beach invertebrates, surf fishes, and other shorebirds. The service recommends that Section 5.00 of the BA include a commitment to monitoring sediment each day as it is being placed on the beach to ensure that it is similar to the existing sediment on the beach.</p>	<p>The Wilmington District guideline with regard to the percentage of fine-grained sediments is that borrow areas containing more than 10 percent fines passing the #200 sieve, or more than 10 percent by weight finer than 0.074 mm in mean grain size diameter, are generally considered to be incompatible for placement on the beach due to potential problems with turbidity and siltation during placement. Though the State of North Carolina has recently enacted sediment compatibility criteria, it is not a part of their Coastal Zone Management Program. Additionally, previous experience with Wilmington District beach nourishment projects (i.e., Wrightsville, Carolina, Kure, and Ocean Isle Beaches) have shown that high quality beaches can be constructed using sand with up to 10 percent fines passing the #200 sieve with no adverse environmental impacts. Therefore, the Wilmington District will continue to follow the no more than 10 percent fines criteria for sediment compatibility. Extensive Native Beach sampling was also performed and is located in Geotech Appendix C. Should the dredging operations encounter sand deemed non-compatible with the native grain size or sorting characteristics of the native beach, the dredge operator shall immediately cease operation and contact the DCM. Dredge operations will resume only after the issue of sand compatibility is resolved. The Corps agrees with visually monitoring sediment each day as it is being placed on the beach to ensure that it is similar to the existing sediment on the beach. The contractor will perform the daily survey.</p>	<p>Section 5.0 of the BA was updated to include daily visual surveys.</p>
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46	L-43	USFWS	The Service recommends that Section 5.00 of the BA include a commitment to conduct visual surveys each morning in the area of work for that day, to determine if piping plovers are present and allow those individuals to move out of the area.	The Corps does not do daily visual surveys for piping plover during construction or maintenance events. Placement of material is timed to minimize impacts to piping plovers and therefore surveys are not necessary. However, the Corps will coordinate with NCWRC prior to mobilization and demobilization of the pipeline to avoid piping plover impacts.	None
47	L-43	USFWS	The Service recommends that Section 5.00 of the BA include a commitment to conduct surveys for seabeach amaranth both before and for three years after sediment placement in order to avoid direct burial and to monitor recovery of the plant, for the life of the project.	The Corps is not required to monitor for seabeach amaranth, but surveys have been performed along all of Bogue banks, NC since 1991. For this project, the Corps has decided to monitor for seabeach amaranth to assess whether availability of habitat would facilitate growth of more plants or whether burial of seeds hinders growth. Though plant numbers have been shown to increase following disposal operations from navigation dredging projects; it is believed that the beneficial use of navigation dredged material contained a seed source. Considering that the borrow areas for this project are well offshore, no seabeach amaranth seed source is expected to be within the nourishment material.	Updated Appendix G and BA.

48	L-44	USFWS	<p>Each construction or maintenance event should start at the southern project limit and move northward in order to avoid potential impacts to nesting piping plovers. All construction for shaping the beach within the southern mile of the project area should be completed by March 1 and all construction equipment removed from this area. Equipment access points should be within the day's work area or as close as possible, to minimize impacts from movement of heavy equipment along other stretches of beach. Also, the Corps should coordinate with the Service and North Carolina Wildlife Resources Commission prior to mobilization and demobilization of the pipeline on the beach, to determine the best location for the pipeline route.</p>	<p>First, it is assumed by the Corps that the Service meant to say the construction and maintenance events should start at the westernmost project limits and move east instead of the southernmost project limits and move north due to Bogue Banks running in a west to east direction (Bogue Inlet to Beaufort Inlet). Placement is dependent on where the sand is needed and its distance from the borrow areas. Also, placement is timed (December 15-March 31) to avoid piping plover impacts. Piping plover Critical Habitat Unit NC-10 is located west, but not in, the project area. Therefore a west to east construction plan is not practical or necessary to protect piping plovers. It will be up to the contractor to insure placement of material and removal of all construction equipment is performed within the December 15-March 31 window and equipment access point are as close as possible to minimize impacts.</p>	None
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49	L-44	USFWS	The Service recommends that the Corps investigate the necessary minimum maintenance interval for storm damage reduction, which may be greater than 3 years. A longer interval between maintenance events would be a minimization measure under Section 404(b)(1) of the Clean Water Act, and would minimize potential impacts to piping plover, red knot, and sea turtles, as well as beach microinvertebrates, surf fishes, and other shorebirds. A longer maintenance interval would also require a smaller amount of compatible borrow material for the life of the project. We recommend that the final EIS consider the non-economic benefits of longer maintenance intervals.	Non-economic benefits were considered in the planning process. Longer renourishment intervals increase the risks between renourishment events by allowing accumulated erosion to create escarpments, narrow the non-dune portion of the beachfill, erode the toe of the dune, and damage dune vegetation. As the renourishment interval increases, the large volumes needed would require additional hopper dredges and/or expansion of the dredging window. This presents a greater risk for impacts to benthic invertebrates and surf zone fishes by extending construction into more biologically productive periods. Therefore the estimated beach replacement cycle of between 3-5 years was selected as the recommended plan. Survey will be conducted prior to each construction event to assure need.	None
50	L-33	USFWS	DEIS incorrectly lists red knots as endangered. A determination to list the red knot has not been made by the Service, although it is a candidate species.	Noted. Changes will be made to the document as necessary.	Updated Table 2.4
51	L-33	USFWS	Atlantic sturgeon is listed in the DEIS as a Federal Species of Concern, when in fact, the Carolina Distinct Population Segment has been listed by the NMFS as endangered.	Concur. Changes will be made to the document as necessary.	Updated Table 2.4

52	L-39	USFWS	The DEIS does not identify a Least Environmentally Damaging Practicable Alternative (LEDPA), which is required by the Clean Water Act. Appendix L does check "yes" next to the box stating "The discharge represents the least environmentally damaging practicable alternative...", however, there is no information or data to support this supposition. The LEDPA may be the same alternative as the NED; however the information used to make this determination was not provided in the DEIS.	There are no other practicable alternatives that would have less adverse impacts to the aquatic ecosystem. Water quality impacts are addressed in section 7.09.2.	Updated section 7.09.2 to reflect that the TSP is the LEDPA.
53	L-32	USFWS	The Corps should investigate the potential to collect intertidal invertebrates such as <i>Donax</i> and <i>Emerita</i> immediately prior to beach nourishment activities, holding them, and then restoring those collected individuals in the new fill material behind the dredge pipeline.	Retaining benthic organisms would be cost prohibitive. Additionally the viability of these organisms being held is not known. The beach is a dynamic area and the re-colonization of the beach following placement of sand will occur.	None
54	L-35	USFWS	As proposed in the DEIS, the initial construction of the preferred alternative is proposed to take place during the winter months (Nov 15 to March 31), which may adversely affect overwintering piping plovers. The Service does not agree with the statements in Section 4.02.7 d.(1) and (2) (no page numbers) that since only a portion of the beach on Bogue Banks will be nourished at any given time during pump-out, adjacent habitat is still available, and that recovering foraging habitat is available in the project area for the duration of construction. Studies show that recently nourished areas will not provide adequate forage for months, if not years after the nourishment project. In addition, the proposal by the Corps is to nourish the entire beach in one work season, and once an area has been nourished, it will likely not provide suitable foraging for the remainder of the winter and spring.	Beach placement of sand for this project during initial construction and each periodic nourishment interval is scheduled to avoid the breeding and nesting season as well as peak recruitment periods for benthic invertebrate forage base; however, short term impacts to foraging may occur. Also, the entire length of Bogue Banks will not be filled in any given year. The initial construction, with the largest estimated footprint will have multiple areas not filled due to adequate sand already in place.	None

55	L-37	USFWS	<p>In Item 6, Section 5.00 of the draft BA, the Corps commits to monitoring of sea turtle nesting activities in beach nourishment areas. However, the length of monitoring has not been provided. The Service recommends that Item 6 be modified to reflect that sea turtle nesting activities will be monitored annually for the life of the project.</p>	<p>The locals, through the NC Sea Turtle Project, monitor sea turtle activity along the entire coast of North Carolina and the data is collected by Dr. Matthew Godfrey of the North Carolina Wildlife Resources Commission (NCWRC). The data is in turn provided to the USFWS. Also, placement of material is timed through environmental windows to minimize impacts. Throughout the duration of each nourishment contract, during initial construction and each periodic nourishment event, the Contractor will be responsible for the protection of threatened and endangered species. The Contractor is responsible will take such measures as may be required to assure that any activities conducted do not kill, injure, capture, pursue, or otherwise harm any species. The Contractor will be aware of the protected species that frequently occur in the project area and work will be planned accordingly.</p>	<p>Section 5.00 of the BA was updated to remove commitment of post nourishment nest activity for clarification.</p>
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56	L-41	USFWS	<p>The DEIS does not provide enough information to support the statement that the non-structural alternative would result in a "long-term decrease in sea turtle nesting habitat and nest success due to beach erosion, scarping, and scouring of the dunes." The DEIS also does not provide any information to support the statement that the non-structural alternative would cause a "risk of increased beach lighting impacts to sea turtles as dune erodes", or the supposition that both seabeach amaranth and piping plover habitat would suffer long-term losses due to beach erosion. The resumption of natural beach processes may allow the movement of dunes and beach shoreward, which, in the long-term, could provide ample habitat for sea turtle nests, piping plovers, and seabeach amaranth. We recognize that this alternative is not preferred because of the failure to provide storm damage protection for structures on the beach, and because it is currently not economically feasible. However, we recommend that the language of the table be revised to reflect the more likely long-term benefits of allowing natural processes to resume on Bogue Banks.</p>	<p>The Corps disagrees. Table is accurate with regard to effects to non-structural alternatives. Bogue Banks is populated and the houses are likely to remain.</p>	None
57	L-53	EPA	<p>Causes of erosion and project need should be more clearly identified and discussed in the FEIS. EPA recommends adding additional information in the FEIS related to property damage and beach erosion issues due to actual past storms events. Providing such information would better support the project need statement. EPA is unclear from the DEIS if storms are the sole cause of erosion on the island or if other causes of erosion exist. EPA recommends that the causes of erosion on Bogue Banks be fully discussed in the FEIS.</p>	Concur	<p>There are no detailed records of previous damages caused by erosion, but major erosion can be caused by northeasters that normally occur in the colder months and tropical cyclones occurring in the warmer months. Erosion related to individual storms are not listed separately be are included in the average erosion rates. This information has been added to sections 1.04, 4.06.2 and 9.10.</p>

58	L-53	EPA	EPA recommends providing additional details from actual storm events in the economic report for the FEIS that support these average annual damage estimates.	The Corps does not formulate for specific storm events.	None
59	L-54	EPA	The DEIS appears to provide for multiple average annual project costs and total project cost for the TSP (Alternative 9). EPA recommends the Corps clarify the total project cost and average annual project cost in the FEIS. We also recommend that the Corps clearly state which total project cost and/or average annual cost the benefit cost ratio is based on in the FEIS.	Costs used in the report reflect the time which that action was performed. For instance, initial alternative screening was performed in FY 2012 and the Selected plan was analyzed in FY 2013. Both of these time periods carry different discount rates, but are never compared against one another at these different rates. Producing different iterations of costs would be time consuming and expensive from a manpower perspective, so in many cases the approach presented in the report is the most pragmatic way to define the economics of screening and plan selection. However, additional language will be included into the document to clarify any confusing areas to the reader, in the pertinent sections.	SAW is developing an updated parking and access map using the most recent CAMA information. This updated information will be included in both the Parking and Access appendix and any pertinent sections in the body of the Main Report.

60	L-54	EPA	<p>EPA recommends the Corps provide significantly more information in the FEIS regarding existing water quality for Bogue Sound, Bogue Inlet, White Oak River, Newport River, and Beaufort Inlet. This additional information should include but not be limited to recent water quality assessments of these areas, maps of sampling locations, and existing water quality classifications of potentially impacted waters. Furthermore, we recommend that additional information be provided in the FEIS regarding existing permitted NPDES discharges and wastewater treatment facilities and infrastructure in the project area. Significant storms have the potential of damaging this infrastructure which can cause runoff to marine and sound waters of bacteria and other pollutants that can cause public health issues following storm events. If the proposed project provides protection for this infrastructure then it should be disclosed in the FEIS.</p>	Concur.	<p>Section 2.02.1 was updated with Bogue Sound information. Section 7.09.2 was updated with infrastructure runoff information and identified all NPDES sites in Carteret County.</p>
61	L-55	EPA	<p>EPA recommends the Corps provide significantly more information in the FEIS on how the TSP meets the CW A Section 404(b)(1) Guidelines ("Guidelines"; 40 C.F.R.230). The rationale of how the LEDPA was determined in the context of the other alternatives presented in the DEIS should be provided in the FEIS. Actions to avoid and minimize adverse impacts to the environment should be included in this additional information in the FEIS. In addition, it is also unclear from the DEIS if the Corps considers the TSP, Alternative 9, as the environmentally preferable alternative, therefore EPA also encourages the Corps to identify the environmentally preferable alternative in the FEIS.</p>	<p>As stated in section 7.09.2, the Corps planning process has brought us to the conclusion the TSP was the LEDPA. There are no other practicable alternatives that would have less adverse impacts to the aquatic ecosystem. Water quality impacts are addressed in section 7.08.2.</p>	None

62	L-55	EPA	EPA recommends the Corps provide a clear adaptive management strategy in the FEIS that includes performance and/or success criteria that will adequately capture the dynamic nature of the proposed project and help direct any future changes to the project that may be needed to avoid and minimize impacts to the environment.	Beach FX was used to formulate beach renourishment intervals. Furthermore, the Corps plan formulation process includes pre and post construction surveys to help manage coastal storm damage reduction.	None
63	L-56	EPA	We recommend the Corps provide additional discussion in the FEIS about the difference in historical material placement presented in Figure 1.2. Specifically, we recommend the Corps make clear distinctions between storm damage reduction activities and disposal of navigational dredge material that may not provide storm damage reduction benefits. In addition, if historical nourishment activities associate with Bogue Inlet AIWW Crossing Disposal, MHC Inner Harbor Maintenance Dredge Disposal, etc. are to continue through the life of the currently proposed project, we recommend providing additional discussion in the FEIS on how these activities are interrelated with the currently proposed project.	This project is not related to previous navigation projects. Previous projects were designed for the least cost disposal and not designed for coastal storm damage reduction. The document will be changed to identify navigation and coastal storm damage reduction.	Section 1.09 was updated to reflect the changes.
64	L-57	EPA	EPA recommends continued coordination with the USFWS. EPA recommends the Corps revise and update Table 2.4 in the FEIS to reflect the current status of federally listed species. EPA also recommends that the linear feet of beach and acreages be provided in the FEIS with respect to piping plover critical habitat. EPA also recommends that the Corps provide additional details about the on-going study of <i>Atrytonopsis</i> sp. I. Including details in the FEIS about the study such as when the study started, projected completion date, and any interim results would be helpful for reviewers.	Concur. Piping plover critical habitat is located west and out of the project area.	Federally listed species are updated in Table 2.4.

65	L-57	EPA	EPA recommends the Corps revise the FEIS by adding additional data and citations to support the proposed 500 meter buffer for hardbottom areas. Any loss of the existing hard bottom features offshore should be investigated promptly to determine causal factors and appropriate action.	The State of North Carolina's hard bottom buffer rule language requires that dredging should not be conducted "on or within 500 meters of significant biological communities, such as high relief hard bottom areas." North Carolina Coastal Resources Commission [CRC Rule 15A NCAC 07H .0208(b)(12)(A)(iv)].	Add North Carolina Coastal Resources Commission [CRC Rule 15A NCAC 07H .0208(b)(12)(A)(iv)] to section 7.02.7
66	L-58	EPA	EPA recommends the Corps provide addition clarification in the FEIS regarding historical beach renourishment activities in North Carolina as they relate to the sand compatibility criteria proposed in this DEIS and impacts on federally listed species. Specifically, if the Corps has conducted species surveys and /or other studies of historical beach nourishment activities using the proposed sand criteria for this project and impacts to species, we recommend the Corps include these in the FEIS.	Previous projects the used the Corps sand compatibility in North Carolina are the Wrightsville Beach, Carolina Beach, Cure Beach and Ocean Isle. No long term consequences have been documented to protected species that use the area for these projects.	The specific compatibility criteria used for this project is included in USFWS BA (Appendix F) which assesses impacts to protected species. The Corps has not conducted studies on varying sand compatibility impacts to protected species; therefore no change has been made to the document.

67	L-58	EPA	<p>EPA recommends the Corps provide additional support in the FEIS for selection of the 3 year interval versus a longer renourishment interval which EPA believes would be more protective of federally-listed species.</p>	<p>The TSP is a balance between longer and shorter dredging intervals. Reducing the renourishment interval could be justified by concerns regarding dredging window constraints and impacts on turtle nesting, recreation, and storm protection due to loss of the berm and scarping of the dune during long cycles. Longer renourishment intervals increase the risks between renourishment events of allowing accumulated erosion to create escarpments, narrow the non-dune portion of the beachfill, erode the toe of the dune, and damage dune vegetation. The potential reduction in the project's ability to sustain recreational uses and to provide a suitable habitat for sea turtles and other species on the beach outweigh the slight gain in net storm damage reduction benefits. Therefore the recommended renourishment interval is 3-5 years which captures most of the economic benefits and better sustains other benefits.</p>	None
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68	L-59	EPA	<p>EPA recommends that the FEIS include an EJ analysis that includes descriptions of the local demographics and identifies low-income and minority populations that have the potential to be impacted by the proposed action; Should the demographic analysis identify minority and low-income populations, the FEIS should describe efforts made to meaningfully engage these populations in the decision-making process. In addition, EPA recommends the FEIS identify communities with EJ concerns that may engage in subsistence activities within the project area (i.e., subsistence fishing). A summary of EJ comments or concerns identified during the public involvement process along with agency responses to those concerns and efforts to avoid, minimize or mitigate potential impacts should also be included in the FEIS.</p>	<p>No subsistence fishing is known in the project area. It is not likely that low-income and minority populations are going to be impacted by the proposed action. EJ section of the document was updated to clarify the above determinations.</p>	<p>Section 9.15 was added along with Figure 9.1 and 9.2 Text discussing demographics was added to Section 2.11. Added fishing information to section 7.06.1</p>
69	L-59	EPA	<p>EPA recommends that general repair, maintenance, inspection, monitoring requirements, and environmental commitments being made by the project sponsor and the Corps be documented in the ROD. The ROD should also clearly outline adaptive management plan commitments for the 50 year life of the project.</p>	<p>Concur</p>	<p>This information will be added to the ROD when written.</p>