APPENDIX D

COMMENT- RESPONSE ON DEIS

Village of Bald Head Island Shoreline Protection Project
Final Environmental Impact Statement
Appendix D

Comments Received on Draft Environmental Impact Statement (DEIS) and Summary Table of Comment-Response

I. Summary Table of Comments on DEIS and EIS Updates

II. Federal Agency Comments

A. U.S. Fish and Wildlife Service (FWS – Benjamin)
B. U.S. Environmental Protection Agency (EPA – Mueller)
C. U.S. Department of Interior (DOI – Stanley)

III. State Agency Comments

A. NC Department of Administration - State Environmental Review Clearinghouse (NCDOA – Best)
B. NC Department of Environment and Natural Resources (NCDENR - Hardison)
C. NC Division of Coastal Management (NCDCM – Huggett)
D. NC Natural Heritage Program (NCNHP – Weakley)
E. Intergovernmental Review Form
F. NC Wildlife Resources Commission (NCWRC – Dunn)
G. NC Department of Cultural Resources – State Historic Preservation Office (SHPO – Gledhill-Earley) (No Comment)
H. NC Department of Transportation Statewide Planning (NCDOT – Atkinson) (No Comment)
I. NC Department of Public Safety – Emergency Management (NCDPS – Ashe)

IV. Non-Governmental Organization Comments

A. North Carolina Coastal Federation (NCCF – Zivanovic-Nenadovic)

V. Local Government Comments

A. Town of Caswell Beach and North Carolina Baptist Assembly at Fort Caswell (Kilpatrick Townsend & Stockton LLP – Roessler)

VI. Applicant Comments

A. Village of Bald Head Island (The Honorable J. Andrew Sayre, Mayor of the Village of Bald Head Island)

VII. General Public Comments

A. Ms. Patricia Blackwell
B. Mr. James Harrington
C. Mr. Louis Wetmore
D. Mr. Peter Meyer
E. Mr. David Hill
F. Mr. Joshua Diaz
G. Mr. Richard Walsh
H. Ms. Mirtha Escobar

Village of Bald Head Island Shoreline Stabilization Project
Summary of DEIS Comments and EIS Updates (July 18, 2014)

No.	Nature of Comment (Summary)*	Agency/Entity	Category	Included in EIS (Y/N)	Section Addressed	Notes/Comments
1	Change all references to the Division of Water Quality to the Division of Water Resources.	NCDCM	General	Y	Throughout EIS Document	All references updated.
2	Revise language regarding minor modification of CAMA Permit No. 9-95 to clarify CRC variance granted in July 2011 and modification issued in August 2011.	NCDCM	Project Purpose	Y	Section 1.4.4	Language revised to clarify as recommended.
3	Revise language to state per Session Law 2011-384 the NEPA document satisfies NCEPA requirements and that NC DCM is a commenting agency to the USACE.	NCDCM	Project Purpose	Y	Section 1.6	Language revised to clarify as recommended.
4	Note that the Coastal Area Management Act and the NC Dredge and Fill Law are two separate laws, both administered by the NC Division of Coastal Management.	NCDCM	Project Purpose	Y	Section 1.6	Language revised to clarify as recommended.
5	Factor in maintenance of the sand tube groinfield which may minimize the extent of retreat necessary.	NCDCM	Alternative 2	N	N/A	The Retreat Alternative by definition includes removal of the sand tube groinfield; Maintenance of the groinfield is not considered under this alternative.
6	Include evaluations of the likelihood of expanding the volume of sediment available from Bald Head Creek. Address whether sediment compatibility studies have been done on the referenced 200,000 cy of material in Bald Head Creek.	NCDCM	Alternative 3	Y	Section 3.2.3; Section 4.1.2; Appendix F (Olsen Geotech Report)	Applicant's engineer has identified the limits of the expanded sand source site. Updated geotechnical investigations and an archeaological assessement has been performed on the expanded borrow area. The findings of these assessments are summarized in Section 4.
7	Include any evaluations of the likelihood of expanding the volume of sediment available from Bald Head Creek. Address whether sediment compatibility studies have been done on the referenced 200,000 cy of material in Bald Head Creek.	NCDCM	Alternative 4	Y	Section 3.2.3; Section 4.1.2; Appendix F (Olsen Geotech Report)	See response to Comment #6 above.
8	Discuss avoidance, minimization or mitigative measures that would offset potential impacts associated with construction during turtle nesting season.	NCDCM	Alternative 5	Y	Reference in Section 3.2.5 refers reader to Section 6.0	Several avoidance, minimization, and mitigative measures have been identified to help offset potential impacts associated with the construction during the turtle nesting season. These measures are summarized in Section 6.0 of the FEIS. All conservation measures, reasonable and prudent measures (RPMs) and terms and conditions to offset potential effects to nesting sea turtles are identified in the Biological Opinion (Appendix S).
9	As a potential mitigative measure to turtle nesting, discuss whether relocation of one or more sand tubes would be consistent with existing variance/permit conditions.	NCDCM	Alternative 5	Y	Section 3.2.5	It is believed that the relocation of one or more sand tubes would require a modification to the existing sand tube groinfield permit (CAMA Major Permit No. 9-95). Such a modification was requested and subsequently issued in 2009 for the relocation of sand tube #16. This action was also deemed consistent with the DA General Permit No. 198000291.
10	Discuss the reliance on natural transport to create a fillet with regard to Session Law requirements that groins be pre-filled.	NCDCM	Alternative 5	Y	Section 3.2.5	The Applicant proposes to construct the Phase I structure (1,300 lf) which is predicted to impound rapidly as it is constructed immediately subsequent to the federal sand disposal. If this does not occur to a satisfactory level, the Applicant would implement a supplemental sand placement for the fillet formation.
11	Provide additional details on potential erosion response measures on West Beach.	NCDCM	Alternative 5	Y	Section 3.2.5; Appendix B - Inlet Management Plan; Section 6.2	Potential downdrift effects are identified in Section 3.2.5. Erosion response actions are detailed in Section 6.0 and within the Applicant's Inlet Management Plan (Appendix B).
12	Discuss whether changes in funding and altered ACOE construction or maintenance schedules (as in SMP) would negatively affect construction of the groin.	NCDCM	Alternative 5	Y	Section 3.2.5	Should the federal project be delayed, initiation of construction of the terminal groin will be similarly delayed.
13	Discuss relocation of one or more sand tubes as a possible modification and whether that would be consistent with CAMA variance/permit conditions.	NCDCM	Alternative 6	N	N/A	Alternative 6 includes removal of the sand tube groinfield. Question is not applicable to this alternative.
14	Discuss the reliance on natural transport to create a fillet in this alternative with regard to Session Law requirements that a groin be pre-filled.	NCDCM	Alternative 6	Y	Section 3.2.6	See response to Comment #10 above.
15	Provide additional details on potential erosion response measures on West Beach.	NCDCM	Alternative 6	Y	Reference in Section 3.2.6	See response to Comment #11 above.
16	Address the naturally accreting fillet verses Session Law requirements to pre-fill the groin. Discuss whether changes in funding and altered ACOE construction or maintenance schedules (as in SMP) would negatively affect construction of the groin.	NCDCM	Alternative 6	Y	Section 3.2.6	See response to Comment #12 above.
17	Detail assurances that schedules for groin construction and sand placement by the USACE will occur in a mutual fashion. Discuss the effect and contingency plan if groin construction is started and sand from the USACE becomes unavailable or delayed.	NCDCM	Alternative 6	Y	Section 3.2.6	Groin construction will occur immediately following the federal disposal event. If the federal disposal is delayed, then the groin construction will be similarly delayed.
18	Obtain NCDMF telemetry tracking data for sturgeon in the Cape Fear River for description of sturgeon distribution in the area.	NCDCM	Affected Environment	Y	Section 4.2.4 and Appendix N (DMF Summary of Telemetry Data)	Sturgeon telemetry data are discussed in Section 4.2.4. NCDMF summary of data is provided as an appendix (Appendix N)
19	Expand Soft Bottom Communities to include discussion of fish utilization of soft bottoms beyond foraging and of fish utilization of offshore shoals and inlets (i.e. borrow areas).	NCDCM	Affected Environment	Y	Section 4.3.3	Section 4.3.3 has been expanded to include the additional requested information.
20	Include a more accurate description of unconsolidated sediments.	NCDCM	Affected Environment	Y	Section 4.3.3	Text revised as recommended.
21	Use the term anadromous *fish* nursery areas.	NCDCM	Affected Environment	Y	Section 4.3.3	Text revised as recommended.
22	Provide discussion on recent scientific research related to larval fish transport through NC inlets.	NCDCM	Affected Environment	Y	Section 4.4	Section updated to include recent research including findings of the South Atlantic Bight Recruitment Experiment (SABRE).
23	Provide discussion on previously compiled data regarding larval fish geographic distribution and abundance in the area.	NCDCM	Affected Environment	Y	Section 4.3.3 and Appendix O (Annotated Bibliography)	Section updated to inlcude information on previously compiled larval fish distribution (including results of CP&L comprehensive monitoring program). In addition, an annotated bibliography of relevant studies is included as Appendix O.
24	Discuss construction activities that will occur during the sea turtle nesting season and mitigative measures.	NCDCM	Avoidance, Minimization and Mitigative Measures	Y	Section 3.2.5; Section 6.2; See USFWS Biological Opinion (Appendix S) with Conservation Measures, RPMs, and Terms and Conditions	Specific construction activities are described in Section 3.2.5. Mitigative measures are provided in Section 6.0 and within the project BO (Appendix S).
25	Post-construction monitoring for biological recovery of Frying Pan Shoals will likely be required.	NCDCM	Avoidance, Minimization and Mitigative Measures	N	N/A	Noted. Excavation of sand from a borrow site on Frying Pan Shoals is not part of the permit request. However, it has been identified as a future sand source site. It is understood that prior to authorization of its use, site-specific investigations and appropriate environmental documentation will need to be completed by the Applicant.

*Agency comments have been summarized. Please refer to individual agency letters for full content.

26	If a hopper dredge will be used, note as a minimization of impacts to offshore shoal habitat.	NCDCM	Avoidance, Minimization and Mitigative Measures	N	N/A	Hopper dredge not proposed to be used. In addition, USACE does not consider the use of a hopper dredge to necessarily be a minimization of impacts to offshore shoal habitat. Presumably, the commenter is referring to the fact that hopper dredges, when dredging an area, often tend to leave "stripes" of undisturbed sand between dredging passes, and that benthic organisms within these "stripes" can more rapidly recruit to adjacent areas. While this may indeed be a benefit, hoppers also tend to make shallower dredging passes, which can lead to an overall greater area of disturbance. We expect the applicant to select the appropriate dredge to do the work, based on efficiency and applicable environmental windows. Overall, the most efficient dredge is often the best tool for the job, based upon both cost and environmental considerations.
27	Provide additional detail on requirements of SB 151. Including: (1) determination and type of data to define a baseline (2) post-construction monitoring to compare baseline data and assess potential adverse impacts (3) timeframes for post-construction monitoring (4) specific thresholds for implementation of mitigative measures and (5) mitigative measures that may be implemented.	NCDCM	Appendix B-Inlet Management Plan	Y	Section 6.3; Appendx B (Inlet Management Plan)	Section 6.0 and the Applicant's Inlet Management Plan (Appendix B) have been updated to incorporate the items necessary to satisfy the requirements of SB 151.
28	The NCDCM's interpretation of SB 151 is that physical monitoring is required at the easternmost end of Oak Island.	NCDCM	Appendix B-Inlet Management Plan, Physical Monitoring	Y	Section 6.3; Appendix B (Inlet Management Plan)	Noted. A physical monitoring plan for the easternmost end of Oak Island has been developed and is identified in the Applicant's Inlet Management Plan (Appendix B).
29	Expand post-project physical surveying on Oak Island beyond three years. Increased monitoring frequency in years immediately following construction is recommended. After which time, an analysis of the data and conclusions regarding adverse impacts on Oak Island can be made. Include more detailed mitigative thresholds and descriptions of potential remedial actions.	NCDCM	Appendix B-Inlet Management Plan, Physical Monitoring	Y	Section 6.3; Appendix B (Inlet Management Plan)	Noted. See updated Inlet Management Plan and revised text in Section 6.0.
30	Describe anticipated volumes of sand to be borrowed from the fillet to nourish West Beach. Discuss anticipated impacts of same.	NCDCM	Appendix B-Inlet Management Plan, Mitigation	Y	Section 3.2.5	Any sand borrowing from the fillet would be for small-scale emergency responses (e.g. 5,000 to 10,000 cy). In light of the estimated volume of the updrift fillet (250,000 to 500,000 cy), such an action would have no measureable effect on the spatial extent of the fillet or the performance of the terminal groin.
31	Elaborate on the hierarchy of remedial actions and triggers to implement such actions (item # 30 above).	NCDCM	Appendix B-Inlet Management Plan, Mitigation	Y	Section 6.3; Appendix B (Inlet Management Plan)	See updated Section 6.3 and Inlet Management Plan (Appendix B).
32	The DCM states concern over reapportionment of sand under the WHSMP as a mitigative measure for this project.	NCDCM	Appendix B-Inlet Management Plan, Mitigation	N	N/A	Concur. The applicant should not presume that the navigation project would take any action to respond to a hot spot on Oak Island, particularly if that erosion were linked to the applicant's project. The burden for supplying required mitigation would logically be the applicant's. Refer to the updated IMP (Appendix B) for mitigation measures to be employed by the Applicant.
33	Describe timeframe and methodology for determining if fill equilibration has been reached.	NCDCM	Appendix B-Inlet Management Plan, Mitigation Thresholds	N	N/A	According to the Applicant's engineer, beach fill equilibration is best gaged by comparing surveyed beach profiles to both pre-project and to "naturally" receding beach profile conditions. Initial post-fill profiles along West Beach are typically extraordinarily "steep" due to the proximity of the inlet throat (i.e. deep water). Hence, initial fill profile equilibration (or reconfiguration) is generally very rapid and severe (particularly when compared to fill profile equilibration on South Beach where nearshore depths are much more modest and not directly influenced by the inlet gorge configuration.
34	Regarding an increase in shoreline recession rates by over 50%, discuss how long this condition needs to exist before action is taken and if the same threshold is appropriate for Caswell Beach.	NCDCM	Appendix B-Inlet Management Plan, Mitigation Thresholds	Y	See updated Appendix B (Inlet Management Plan)	Refer to updated Inlet Management Plan (Appendix B).
35	Regarding removal of armor rock to effectively eliminate the groin structure, address if buried rock would eventually expose and begin to trap sand again. Option should address total structure removal, not partial (per SB 151).	NCDCM	Appendix B-Inlet Management Plan, Terminal Structure Alteration	Y	Appendix B - Inlet Management Plan	See Inlet Management Plan. In the event event that the terminal groin structure is causing adverse affects, the terminal groin will be modifed or removed in its entirety.
35a.	The DEIS does not state the source of the species data and does not address the potential impacts to all the species	NC Natural Heritage Program	Threatened and Endangered Species	Y	Table 4.1; Section 4.2; Section 5.2	Sections 4.2 and 5.2 have been updated with species occurrence information and expanded discussion of potential impacts to listed species.
36	Include the Natural Heritage Database status for federally and state protected species within the project vicinity. Information on elemental occurrences is available.	NC Natural Heritage Program	Threatened and Endangered Species	Y	Section 4.2	Noted. Requested information included in Section 4.2.
37	Include Significant Natural Heritage Areas (SNHAs) within the project area, and rare species and natural communities within each SNHA.	NC Natural Heritage Program	Threatened and Endangered Species	Y	Section 4.2	Noted. Requested information included in Section 4.2.
38	Include Heritage Program records for high-quality Dune grass communities, least tern nest locations, and existing conservation/managed lands in the project vicinity.	NC Natural Heritage Program	Threatened and Endangered Species	Y	Section 4.2	Record of the high-quality dune grass community and least tern nests have been included. Protected lands on Bald Head Island include the Bald Head Island Natural Area (which comprises the estuarine waters adjacent to Middle Island), Bald Head Woods Coastal Reserve (comprising the maritime forest adjacent to Federal Road), the Silt Tracts (on East Beach), and the Smith Island Land Trust Tract (adjacent to Federal Road).
39	Recommends all work on the oceanfront for nourishment and groin construction be done outside the WRC sea turtle nesting moratorium of May 1st to November 15th.	NC WRC	Sea Turtles	N	N/A	Noted. Morratorium will be avoided to maximum extent practicable for nourishment. Groin construction during moratorium is unavoidable, but several mitigative measures will be employed to reduce potential adverse effects to sea turtles. These measures have been coordinated with, and approved by, USFWS.
40	Recommends all work be done outside the shorebird nesting season, April 1st to August 31st.	NC WRC	Shorebirds	N	N/A	Noted. Nourishment will avoid nesting season to the maximum extent practicable. Groin construction will be performed during the nesting season.
41	Requests pre-construction monitoring for overwintering birds to establish use of the inlet area by these species.	NC WRC	Shorebirds	Y	Section 6.4.2	No pre-construction monitoring is proposed other than the monitoring already performed by the Conservancy. More intensive site monitoring will be performed during construction and post-construction for a period of 3 years.
42	States concern over frequency of nourishment events necessary to maintain the groin and the potential impact to benthic invertebrate population (with nourishment events in frequencies greater than every five years).	NC WRC	Benthic invertebrates	Y	Section 5.3.5	Frequency and volume requirements for nourishment actions are expected to be less under the proposed action relative to those alternatives that consider nourishment as a component of a shoreline management strategy.
43	States concern over potential emergency beach nourishment events, resulting from increased erosion rates around the groin structure, if done during ecologically sensitive times of the year (nesting shorebird and sea turtle seasons).	NC WRC	Shorebirds, Sea turtles	Y	Section 5.3.5	Based upon analysis performed by the engineer, emergency fill operations in response to episodic erosion are not predicted to increase as a result of the implementation of Alternative #5.

*Agency comments have been summarized. Please refer to individual agency letters for full content.

44	States concern over permanent, cumulative loss of shorebird habitat at the inlet complex. Requests more detailed discussion on potential mitigation thresholds and options.	NC WRC	Shorebird Habitat	Y	Section 6.0 and Appendix S (BO with Conservation Measures)	More detailed discussion of mitigation thresholds and actions are described in Section 6.0 and within the Inlet Management Plan. Conservation measures and terms and conditions to avoid and minimize potential adverse effects to piping plover and red knot are identified in the BO (Appendix S).
45	Requests biological and physical post-project monitoring for sufficient time periods to determine if the groin has any effect on the immediate and surrounding areas. Requests monitoring reports be provided to all regulatory and resource agencies and that cessation of monitoring not be allowed without agencies consultation. Requests mitigation if adverse impacts are found or performance is not as planned.	NC WRC	Fisheries	Y	Section 6 and updated Appendix B (Inlet Management Plan)	Biological monitoring is outlined in Section 6.0 and within the BO (Appendix S), Physical monitoring is described in Section 6.0 and the Inlet Management Plan (Appendix B).
46	Requests confirmation of compliance with the guidelines of EO 11988 regarding special floodhazard areas. The eight-step process for determining whether adverse impacts may occur through occupancy or modification of floodplains is provided for assessment.	NC Emergency Management	Floodplain Management	Y	Section 5.22	Discussion of compliance with EO 11988 is provided as requested.
47	Requests a hydraulic study be completed to assure any grading of sand dunes in floodzones V1-30, VE and V will not increase flood damage potential.	NC Emergency Management	Floodplain Management	N	N/A	No grading of sand dunes proposed
48	The Town of Caswell Beach favors the Village's preferred alternative	Town of Caswell Beach	Alternative 5	N	N/A	Noted.
49	Opposition of use of Jay Bird Shoals for the project or any other sand need by the Village	Town/Fort of Caswell Beach	Borrow Site	Y	Appendix B - Inlet Management Plan	The Applicant has developed an Inlet Management Plan that identifies a specific monitoring protocol and evaluation process (inlcuding the use of a Technial Advisory Committee) to determine any potential adverse effects to the shorelines of Fort Caswell and Caswell Beach. The plan also identifies adaptive management measures including mitigation for any potential impacts to the Town of Caswell Beach and Fort Caswell shorelines.
50	DEIS does not address distribution of sand from federal maintenance of navigation channel (SMP)	Town/Fort of Caswell Beach	Sand Management Plan	See note.	N/A	The scope of this EIS does not include any re-evaluation of the management of dredged material from the Wilmington Harbor Navigation Project; that will be conducted separately and on its own schedule. Given that the specifics of future sand placement (location, quantities, and a start date for any change in plan) are not currently known, it is appropriate for the applicant to run models of the existing situation. Prior to any future placement of dredged material, the applicant will have to demonstrate its need for renourishment, taking into account upcoming disposal from the navigation project based upon the plan as it exists at the time.
51	Inlet Management Plan must adequately satisfy monitoring requirements of terminal groin and associated borrow site(s)	Town/Fort of Caswell Beach	Inlet Management Plan - Monitoring	Y	Updated Appendix B (Inlet Management Plan)	Note that the updated Inlet Management Plan has been reviewed by NC DCM. DCM believes that the plan is sufficient to satisfy the inlet management plan requirements of Session Law 2013-384 (Senate Bill 151).
52	DEIS does not adequately address cumulative effects of use of JBS as borrow site	Town/Fort of Caswell Beach	Cumulative Effects	Y	Section 5.2; Appendix B (Inlet Management Plan)	Discussion of potential effects of utilizing JBS as a borrow site is provided in Section 5.2 and within the updated Inlet Management Plan (Appendix B). In addition, potential cumulative effects are discussed in the Cumulative Effects Analysis (Appendix W).
53	EIS should clarify nourishment cycles (with recommendation for table, chart or figure for such in Section 3 and 5)	USFWS	Nourishment Cycles	Y	Section 5.2.4; Table 5.5 (updated)	Table 5.5 updated to clarify predicted sand volume requirements and source site by alternative.
54	FWS is concerned with long-term impacts from frequent nourishment to both macro-invertebrates and nesting sea turtles	USFWS	Nourishment Cycles	Y	Section 5.3.5	See response to Comment #42 above.
55	Change no effect determination to "may affect, but not likely to adversely affect" piping plover for Alternative 1 and change language in Section 6.5.5	USFWS	Piping Plover	Y	Section 5.4.1	Revision made as requested. The language in Section 6.0 has been removed and re-written.
56	FEIS should provide a more specific construction schedule	USFWS	Construction Schedule	Y	Section 3.2.5	Noted. More detailed information regarding the construction timing and sequencing is provided in Section 3.2.5.
57	FEIS should provide more information regarding removal of sand tubes if they are not needed	USFWS	Sand Tube Removal	Y	Section 3.2.5; Section 6.4	Noted. Refer to updated text as referenced.
58	FEIS should discuss potential remediation plans if terminal groin fails or is shown to be causing significant negative impacts (including discussion of financing the remediation measures)	USFWS	Remediation/Mitigation	Y	Section 6.3.3; Appendix B (Inlet Management Plan)	Noted. Remedial actions are described in Section 6.3.3. In addition, proof of financial assurance has been submitted to the State of NC for verification of compliance with SB 151 and G.S. 113A-115.1(h) in the form of a general obligation bond and local government taxing or assessment authority adequate to cover the cost of the proposed action including long-term maintenance and monitoring of the terminal groin, implementation of mitigation measures, and modification or removal of the terminal groin.
59	States DEIS fails to identify and evaluate all combined, cumulative, comprehensive and indirect impacts. Requests potential, future erosion control measures (as discussed in the NC DCM's Cape Fear River Area of Environmental Concern Study) be considered in the scope of the EIS.	NC Coastal Federation	Scope of Project	Y	Section 5.4; Section 5.5.2	The Applicant has recently advocated for coastal management rules (via NC DCM's Cape Fear River AEC Study) that would greatly increase the number and variety of shore stabilization measures allowed on VBHI. It is reasonable to expect that the Applicant will continue to advocate for changes to regulatory systems that would allow for additional use of sandbags, rock groins, breakwaters, and jetties in and will continue to advocate for more lenient rules related to setbacks and static lines. That said, the Applicant has unequivocally stated that no such plan exists for these types of shoreline stabilization strategies. The Applicant has stated that the proposed action is intended to be a single and complete erosion control project for this part of the island.
60	States the DEIS fails to analyze unavoidable, adverse impacts should the proposed action be implemented. Specifically as related to mitigation from down-drift erosion on West Beach and to potential structures allowed under a future Cape Fear AEC.	NC Coastal Federation	Consistency with NEPA	Y	Section 5.5	Discussion of potential adverse effects of proposed action has been expanded throughout Section 5.5 to include the effects of implementing mitigative/remedial actions (if any) in response to down-drift erosion.
61	States the DEIS fails to adequately and logically discuss relevant information. Provides six items for which additional information is requested. Including: (1) modeling for each of the groin length alternatives (2) modeling for the 30 year life of the project (3) the effect of weather events/storms on modeling and cost (4) time frame for evaluating the effectiveness of Phase I and additional performance criteria for initiation of Phase II (5) benchmarks for groin performance (6) construction during the turtle moratorium, sand compaction and impact of sand borrowing on habitat of adjacent shoals.	NC Coastal Federation	Consistency with NEPA	Y	Section 5.2; Appendix V (Storm Simulation Response); Section 3.2.5; Section 6; Appendix B (Inlet Management Plan); Appendix S (Biological Opinion)	The engineer analyzed three conceptual groin lengths under the initial design process. Groin lengths that either did not accomplish the desired updrift influence or posed too large an impact to down-drift shorelines were not modeled. DELFT3D modeling analyses were performed for the 1,900-lf structure. During the progression of the design process, additional numerical modeling analyses for a 1,300 ft-long (Phase I) structure were specifically performed for purposes of comparison with existing DELFT3D modeling results for the full 1,900 ft-long (Phase II) terminal groin length. Both discussion of approach and comparative modeling results are addressed in Appendix I.
62	States the DEIS is not consistent with state regulations regarding a single, terminal groin. Considers the sand tubes to be groins, for a total of 17 groin structures.	NC Coastal Federation	Consistency with State Law	N	N/A	By way of NC DCM review; compliance with SB 151 will be ensured.

*Agency comments have been summarized. Please refer to individual agency letters for full content.

63	States the DEIS is inconsistent with NEPA for reasons previously listed. Requests a supplement to the DEIS to address future shoreline protection plans by the Village.	NC Coastal Federation	Consistency with NEPA	Y	Section 5.22	Noted. The proposed action is considered a single and complete project. Future stabilization actions not evaluated in the EIS would be subject to NEPA review.
64	States concern regarding potential erosion on adjacent beaches to the south (Oak Island to Sunset Beach). Requests information on potential cumulative and indirect impacts to these beaches and mitigation plans for the same.	Patricia R. Blackwell	Impacts to Adjacent Brunswick Beaches	Y	Section 5 and Appendix B (Inlet Management Plan).	The reader is also referred to the report entitled "Shoreline Stabilization Analysis" (Olsen 2013) which provides detailed analyses of predicted physical effects of the proposed project on Bald Head Island and Caswell Beach shorelines. This report is referenced throughout the EIS and is available through the Village of Bald Head Island on their website: http://www.villagebhi.org/government/development_services/OAI.html
65	Resident of Bald Head Island, Cape Fear Trail, West Beach. States concern for erosion on West Beach. Specifically, on quantifying the amount of sand allowed to by-pass to West Beach and on the lack of beach nourishment on West Beach. Requests protection of West Beach be addressed in the project design.	James E. Harrington	Impact to West Beach	Y	Section 3.2.5.2	The predicted increase in erosion on West Beach resulting from the construction of the maximum length of the proposed groin is identified in Section 3.5.2. Detailed analyses and findings related to potential downdrift effects are described in the engineering report. Mitigative actions to address any potential effects to downdrift shorelines (i.e. West Beach) are described in Section 6.0 and in the Applicant's Inlet Management Plan (Appendix B).
66	Resident of 230 S. Bald Head Wynd. States support of project. Perceives benefits to shipping, residents and visitors of Bald Head Island, and sea turtles/wildlife/birds.	Louis S. Wetmore	General	N	N/A	Noted.
67	Member of Coastwalk. States sand tube groin field makes recreational walking unpleasant. Requests DEIS more fully address impact of sand tubes on public beach recreation, particularly Alternatives 5 and 6.	Peter K. Meyer	Sand Tubes / Public Beach Recreation	Y	Section 5.11	The effect of the presence of sand tubes on recreational walking on South Beach has been included.
68	States primary purpose of project is for protection of private property, not public property.	Peter K. Meyer	Purpose	N	N/A	Noted.
69	Considers use of Corps dredge material for nourishment of Bald Head beaches to be use of public money for protection of private property and objects to same.	Peter K. Meyer	General			Disposal of dredged material on Bald Head Island, Fort Caswell, and Caswell Beach pursuant to the federal navigation project is done for purposes of least-cost, environmentally acceptable, and engineeringly feasible disposal, and not for any shore protection benefits. Any re-evaluation of the navigation project and its sand disposal practices is beyond the scope of this EIS, which focuses solely on the applicant's proposed project and its effects.
70	Considers sand tubes to be a hardened structure and finds them to be inconsistent with state laws regarding the same.	Peter K. Meyer	Sand Tubes	Y	Section 5.22	By way of NC DCM review, compliance with SB 151 and other applicable state statutes will be ensured.
71	States Bald Head Island is accessible by public trust beaches, by walking and biking, from Fort Fisher/Pleasure Island.	Peter K. Meyer	General	Y	Section 4.15	Text revised as recommended.
72	Requests DEIS include an estimate of the full cost to remove groin.	Peter K. Meyer	Groin Removal Cost	Y	Section 5.14.2	The estimated costs to remove the groin are identified in the EIS.
73	Disagrees with a terminal groin where sand tubes remain on the basis of allowing for future expansion of structures in an inlet hazard area.	Peter K. Meyer	Sand Tubes	N	N/A	Noted. The Bald Head Island Club is an existing, conforming use within the planned unit development. Any improvements to existing facilities at the Club will be in compliance with all federal and state regulatory requirements (including NC DCM oceanfront setback requirements as measured from the static vegetation line) and Village zoning requirements.
74	Believes land-based and water-based recreational activities would improve under Alternative 6 (as compared to Alternative 5) since the sand tubes would be removed.	Peter K. Meyer	General	Y	Section 5.11	Noted. See revised text.
75	Prefers Alternative # 1, No Action, on the basis hardened structures do not work in the long term.	David Hill	Alternative # 1	N	N/A	Noted.
76	Supports Alternative # 5. Anticipates alternative will protect infrastructure, property, beaches and habitat. Supports two-phase approach with performance monitoring of Phase I.	Joshua Diaz	Alternative # 5	N	N/A	Noted.
77	Property owner Bald Head Island, supports preferred alternative. Proposed work will not affect neighboring beaches due to lack of directly abutting communities (navigation channel directly abutting rather than other communities/towns).	Richard Walsh	Alternative # 5	N	N/A	Noted.
78	Suggests analysis of expected benefits for each alternative. Suggests cost benefit analysis for each alternative.	Mirtha Escobar	General- Alternatives	N	N/A	Expected benefits are discussed. NEPA and CEQ regulations do not require that an EIS include cost-benefit analyses. Specifically 40 CFR 1502.23. Also, 33 CFR 325, Appendix B, 9.5.d states that the Corps shall not prepare a cost-benefit analysis for projects requiring Corps authorization.
79	Questions whether there are any measures to minimize or mitigate potential impacts to at-risk properties (for each alternative).	Mirtha Escobar	At-Risk Properties	Y	Section 3.2.5; Section 6.3.2; Appendix B (Inlet Management Plan)	The noted sections of the EIS include measures identified by the Applicant to mitigate potential adverse effects of Alternative #5 (the Applicant's proposed action).
80	Requests list of construction practices to minimize in-water construction impacts.	Mirtha Escobar	In-water Construction	Y	Section 6.2	Noted. See updated text.
81	Questions public interest factors considered when developing alternatives.	Mirtha Escobar	General- Alternatives	Y	Section 1 and Section 2	Yes. Public interest factors considered during scoping and public review. Project objectives are identified in Section 1.0 of EIS. When alternatives are evaluated, public interest factors are considered in accordance with 33 C.F.R. 320.
82	Questions whether there are benefits associated with construction of groins in relation to sea level rise.	Mirtha Escobar	Groin-Sea Level Rise	Y	Section 3.2 and Section 5.2	Effective elevation of rock groin can be adjusted to address potential effects of sea-level rise.
83	Questions if measures to protect property which allow for shoreline migration will be included.	Mirtha Escobar	General	Y	Section 3.0	The proposed erosion control measures for each alternative are decribed in Section 3.0
84	Requests additional detail on how dune protection will be achieved with preferred alternative.	Mirtha Escobar	Alternative 5-Dune Protection	Y	Section 5.2	Maintenance and protection of the dune system on Bald Head Island is recognized to be of critical importance to the continued stability, health and safety of the residents of the Village of Bald Head Island. As a result, the Village enforces a dune protection ordinance prohibiting any person to traverse or walk upon, over or across or to damage, in any manner whatsoever, the Frontal Dune at any point within the corporate limits of the Village of Bald Head Island other than at “Beach Access Points”. In addition, the ordinance strictly controls the construction of private accesses across dunes. Dune protection is also ensured through the oceanfront setback requirements as measured from the static vegetation line and as enforced through NC DCM.
85	Requests elaboration on cumulative sedimentation and erosion trade-offs between Alternative # 3 and # 5.	Mirtha Escobar	Alternatives # 3 and # 5	Y	Section 5.2 (see also Figures 5.2 thru 5.7)	See Olsen Engineering Report entitled *Shoreline Stabilization Analysis* (Olsen 2013). The report is available on the Village of Bald Head Island website: (http://www.villagebhi.org/government/development_services/OAI.html)

*Agency comments have been summarized. Please refer to individual agency letters for full content.

86	Include information on existing water quality in the project area-303(d) listed waters, any TMDLs, other relevant water quality conditions.	US EPA	Water Quality-Section 4.5	Y	Section 4.5	Requested information added on pages referenced.
87	Include a matrix summarizing potential environmental consequences by alternative. Use alternatives matrix in Appendix L and expand to include other resources discussed in Chapter 5, such as water quality and air quality.	US EPA	Environmental Consequences	See referenced appendix and note.	Appendix Q.	An environmental consequent matrix is included and formatted to summarize the potential adverse direct, indirect, and cumulative effects to permit area habitats and federally-listed species. Effects on other resource or public interest factors are described in Section 5.
88	Discuss why sea level rise is not addressed for the 30-year life of the project.	US EPA	Sea Level Rise	Y	Section 5.2	According to the Applicant's engineer, the principal goal of the modeling was to be able to compare the impacts or benefits of each alternative considered and not to make predictions of performance over a 30-year time period. A 30-year analysis would compromise the level of accuracy desired for this type of morphological modeling.
89	FEIS or Appendix should: clearly define model assumptions for all alternatives, discuss selection of parameters and values; provide any sensitivity analysis, any calibration periods and forcing conditions.	US EPA	Delft 3-D Model	Y	Section 5.0	The level of detail requested by EPA is not in the EIS nor associated appendices, but it is within the engineering report. The report is referenced in the EIS and is available through the Village of Bald Head Island (www.villagebhi.org)
90	Provide analysis of compliance with Executive Order 12898, Environmental Justice.	US EPA	Environmental Justice	Y	Section 5.22	Information regarding compliance with EO 12898 is provided on p. 5-205.
91	Revise cumulative impacts discussion to include future actions that may affect resources. Such as impact to maritime forest/interdunal wetlands with construction of existing lots under Alternatives 5 and 6.	US EPA	Cumulative Impacts	Y	Section 5.5.2	Cumulative effects discussion has been expanded to include information on potential impact to these resources from increase in lot construction for all alternatives.
92	Recommends continued consultation with USFWS regarding species protected under ESA, particularly related to construction impacts during moratorium.	US EPA	Threatened and Endangered Species/EFH	N	N/A	Noted. Final conservation measures received from USFWS
93	Recommends consultation with NMFS regarding potential impact to essential fish habitat.	US EPA	EFH	N	N/A	Noted. Received final conservation recommendation from NMFS.
94	Include results of any consultation with USFWS and NMFS in FEIS.	US EPA	Threatened and Endangered Species	Y	Section 5-4	Formal ESA Section 7 consultation with USFWS completed (see BO - Appendix S). Section 7 consultation has been initiated with NMFS.
95	Recommends continued consultation with SHPO throughout construction and life of project to ensure protection of known shipwreck and to ensure location remains properly mapped.	US EPA	SHPO	N	N/A	Concur.
96	FEIS should clarify that post construction monitoring and mitigation triggers meets required state standards, particularly related to physical monitoring on Oak Island.	US EPA	Inlet Management Plan - Appendix B	Y	Section 5.22	NC DCM has provided indication that the Applicant's updated Inlet Management Plan is sufficient to satisfy the inlet management requirements of Session Law 2013-384 (SB 151). However, DCM will take into consideration any comments received on the plan during the CAMA Major Permit application review process, and if necessary, will initiate further coordination with the Applicant prior to taking final action on the permit application.
97	Include a map of stations referenced in table.	US EPA	Editorial Comment-Table 1.2	Y	Appendix P	This map was included in the DEIS. It is Appendix P of the FEIS.
98	Include table summarizing sand sources and sediment characteristics of each source.	US EPA	Editorial Comment-Section 4.1.2	See section and note.	Section 4.1.2. and Table 5.5	Geotechnical information for all prospective source sites is provided in Section 4.1.2. Specific geotechnical data for the Bald Head Creek Shoal borrow site is provided in Appendix F. In addition, Table 5.5 provides the sand volume requirements by alternative and identifies the likely sand source site over the 30-year project life.
99	FEIS should clarify reference for benthic abundance comparison.	US EPA	Editorial Comment-Section 4.3.1	Y	Section 4.3.1; p.4-24	Text revised as recommended to clarify.
100	Define SA, SB, and SC in text.	US EPA	Editorial Comment-Pg 4-33	Y	Section 4.5; p.4-42	Text revised as recommended.
101	Clarify the meaning/significant of arrow sizes in the description of the figure.	US EPA	Editorial Comment-Figure 4-30	Y	Updated Figure 4-30	Description provided to clarify the meaning/significance of the arrows in the figure.
102	Include discussion regarding potential reasons for erosional "hot spots" on Oak Island near profiles 35 and 40.	US EPA	Editorial Comment-Pg.4-51	N	N/A	Beyond scope of EIS
103	If a Phase I Baseline Environmental Assessment has been completed for the project area, mention so in this section of the FEIS.	US EPA	Editorial Comment-Section 4.19.1	Y	Section 4.19.1	A review of EPA's Envirofacts website, the US Coast Guard's National Response Center website, and NC DENR's Inactive Hazardous Sites Branch website did not indicate the potential for any contaminant threat to the sand of any one of the sand source sites under consideration. As a result, a Phase I basline environmental assessment was not performed.
104	In the text of the FEIS regarding Tables 5.2 and 5.4, more clearly define "Area 1" and "Area 2".	US EPA	Editorial Comment-Tables 5.2 and 5.4	Y	Section 5.2.2	Description already provided but note added referring reader to text describing these areas.
105	Include maps of areas that may be closed to the public during construction.	US EPA	Editorial Comment-Section 5.9 and 5.11	Y	Section 5.9 and 5.11; Figures 3.3	A map of the limits of work has been included (see Figure 3.3). All work areas would be clearly marked and cordoned off to protect public health and safety.
106	States that the project need results from severe and chronic erosion on western end of South Beach since relocation of Wilmington Harbor Shipping Channel. States erosion-related cost since 2000 to be in excess of $25 million dollars.	Village of Bald Head Island	Cover Letter Comments Project Purpose/Need	See note.	N/A	Noted. No response required. To the extent the comment intends to express a cause-and-effect relationship between the Federal project realignment and the project need, this Regulatory action is not the appropriate forum for that discussion.
107	Terminal groin predicted to reorient the shoreline and slow the annual rate of alongshore transport into the Channel, but beneficial sand placement from future Channel dredging operations would continue to be needed.	Village of Bald Head Island	Cover Letter Comments Future Sand Needs	See note.	N/A	Noted. For purposes of this EIS, disposal of dredged material from the federal navigation project on VBHI beaches will be assumed to continue throughout the project life, although nothing in this Regulatory document should be read to make any commitments with regard to the federal navigation project.
108	References documentation that finds sand loss from Bald Head beaches greatly exceeds that of Oak Island/Casewell Beach. States Corps has discretionary authority to distribute sand under SMP as appropriate for the Channel and mitigation of environmental impacts. States allocation of sand between the Village and Oak Island/Caswell Beach (under the SMP) is beyond scope of EIS.	Village of Bald Head Island	Cover Letter Comments Sand Management Plan-Future Allocations	See note.	N/A	Concur that any discussion of future disposal of, or allocation of dredged material from the federal navigation project is beyond the scope of this Regulatory EIS, and will not be addressed here. For purposes of this EIS, disposal trends from the previous decade are projected to continue.
109	Conclusions regarding shoaling rates in the Channel are not indicative of adjacent island losses or mitigation needs. States the latest SMP document was based on a 1997 ERDC model that provided littoral transport rates for Bald Head and Oak Island/Caswell Beach but did not address a ratio of shoaling rates in the Channel.	Village of Bald Head Island	Cover Letter Comments Sand Management Plan-Pg 4-53	See note.	Section 4.14	The referenced sentence from Page 4-53 is not necessary for evaluation of this Regulatory project and has been removed. The purpose of this EIS is not to link shoaling in the channel to any shoreline losses; it is only to provide a basic background of existing littoral processes for the evaluation of alternatives to the applicant's proposed project.

*Agency comments have been summarized. Please refer to individual agency letters for full content.

110	Delft 3-D modeling by Olsen and Associates predicts peak littoral transport rate between Bald Head Island and Oak Island to be at a 4.2:1 ratio. Inlet Management Plan estimates ratio to be 7.8:1. States three coastal engineering firms have found 1999 ERDC model to be inaccurate.	Village of Bald Head Island	Cover Letter Comments Littoral Transport Rates	See note.	N/A	The ratio of littoral transport rates between the two islands does not appear to be particularly relevant to the evaluation of alternatives considered in this EIS. The Corps does not know why Mr. Olsen's critique of a 1999 ERDC report is relevant to this permit action. If the statement that the attached critique is "noted for the record" is intended for any purpose beyond the Regulatory evaluation of this permit action by Regulatory staff, VBHI should submit such critique directly to the Wilmington District Chief of Engineering or to ERDC under separate cover. This is not the forum for discussion of the applicant's issues with the federal navigation project, and this report will not be included in any administrative record for the navigation project unless it is provided appropriately to Engineering and Navigation staff for their consideration.
111	States three factors outlined on Page 8 of SMP should continue to be used to guide present/future maintenance dredging events.	Village of Bald Head Island	Cover Letter Comments Sand Management Plan-Future Allocations	See note.	N/A	Any discussion of future disposal of, or allocation of dredged material from the federal navigation project is beyond the scope of this Regulatory EIS, and will not be addressed here. If the applicant intends any of these comments to be directed to the Wilmington District in its Navigation or Civil Works capacity, VBHI should submit such comments directly to the Wilmington District Chief of Engineering and Chief of Navigation under separate cover. This is not the forum for discussion of the applicant's issues with the federal navigation project.
112	States need for secondary source of sand to maintain equilibrium of beach system (beyond future channel maintenance).	Village of Bald Head Island	Cover Letter Comments Future Sand Needs	Y	Section 3.2.5	Noted. Should sand quantities within the federal channel be shown to be inadequate, then secondary sand sources can be considered. Jay Bird Shoals is specifically considered as an additional sand source.
113	Monitoring following 2009-2010 use of Jay Bird Shoals borrow site found area recovered quickly with no impact to Caswell Beach or Fort Caswell. Additional monitoring would violate NCGC 113-A-115.1(e)(5). States Corps data documents the erosional hotspot at Fort Caswell predated Jay Bird Shoals borrow activities. States there is no engineering basis to conclude the Jaybird Shoals borrow area affected hydrodynamics at Oak Island/Caswell Beach/Fort Caswell. No engineering basis for further survey or hydromechanical studies.	Village of Bald Head Island	Cover Letter Comments Jay Bird Shoals 2009-2010 Borrow Site/Fort Caswell Erosion	See note.	N/A	Noted. SB 151 requires assessment via establishment of baseline conditions and post-construction monitoring.
114	Generally finds potential impacts from project to be negligible, limited to Bald Head Island, and outweighed by potential benefits. Anticipates potential benefit to environment, coastal resources, and Channel maintenance.	Village of Bald Head Island	Cover Letter Comments	N	N/A	Noted.
115	Currently threatened structures were originally built many hundreds of yards setback from ocean. Disagrees with comments that allege improvident development of the oceanfront.	Village of Bald Head Island	Cover Letter Comments	N	N/A	Noted.
116	Clarify funding for 2007 Corps O&M Project and Village contributions, see comment #1.	Village of Bald Head Island	Technical Comments - Pg 1-8	Y	Section 1.4	Text revised as recommended.
117	Clarify repair of sand tubes in 2013 following Hurricane Irene, see comment #2.	Village of Bald Head Island	Technical Comments - Pg 1-10	Y	Section 1.4	Text revised as recommended.
118	No easement from the State Property Office will be needed, see comment #3.	Village of Bald Head Island	Technical Comments - Pg 1-19	Y	Section 1.6	Text revised as recommended.
119	Change word "endangered" to "threatened", see comment #4.	Village of Bald Head Island	Technical Comments - Pg 3-13	Y	Section 3.2.5	Text revised as recommended.
120	Revise language regarding Hurrican Irene damage, see comment #5.	Village of Bald Head Island	Technical Comments - Pg 4-23	Y	Section 4.3	Text revised as recommended.
121	Change "Emergency Management" staff to "Public Safety" staff here and in all references throughout document, #6.	Village of Bald Head Island	Technical Comments - Pg 4-34	Y	Section 4.7	Text revised as recommended.
122	Revise language regarding beach accesses, see comment #7.	Village of Bald Head Island	Technical Comments - Pg 4-35	Y	Section 4.9	Text revised as recommended.
123	Specify type of tax revenue and where it is going, see comment #8.	Village of Bald Head Island	Technical Comments - Pg 4-38	Y	Section 4.12	Text revised as recommended.
124	Specify type of tax revenue (referenced Norton), see comment #9.	Village of Bald Head Island	Technical Comments - Pg 4-39	Y	Section 4.12	Text revised as recommended.
125	Revise incorporation date, see comment #10.	Village of Bald Head Island	Technical Comments - Pg 4-39	Y	Section 4.13	Text revised as recommended.
126	Revise to reference the Village of Bald Head Island's Land Use Plan, see comment #11 and comment #25.	Village of Bald Head Island	Technical Comments - Pg 4-40	Y	Section 4.13	Text revised as recommended.
127	Revise land use classifications to reflect Village's Land Use Plan, see comment #12.	Village of Bald Head Island	Technical Comments - Pg 4-40	Y	Section 4.13	Text revised as recommended.
128	Include collection system permit number, see comment #13.	Village of Bald Head Island	Technical Comments - Pg 4-57	Y	Section 4.17	Text revised as recommended.
129	Revise information regarding waste collection by Village Public Works, see comment #14.	Village of Bald Head Island	Technical Comments - Pg 4-57	Y	Section 4.17	Text revised as recommended.
130	Revise language regarding description of aquifer, see comment #15 and comment #19.	Village of Bald Head Island	Technical Comments - Pg 4-57	Y	Section 4.18	Text revised as recommended.
131	Revise language regarding age and operation of water main, see comment #16, comment #22, comment #17.	Village of Bald Head Island	Technical Comments - Pg 4-57	Y	Section 4.18	Text revised as recommended.
132	Revise language regarding peak water use, see comment #18.	Village of Bald Head Island	Technical Comments - Pg 4-57	Y	Section 4.18	Text revised as recommended.
133	Revise language regarding water system and osmosis units, see comment #20 and comment #21.	Village of Bald Head Island	Technical Comments - Pg 4-57	Y	Section 4.18	Text revised as recommended.
134	Revise language regarding incorporation, see comment #23.	Village of Bald Head Island	Technical Comments - Pg 5-66	Y	Section 5.5	Text revised as recommended.
135	Specify type of tax revenue from Bald Head Island Club, see comment #24.	Village of Bald Head Island	Technical Comments - Pg 5-160	Y	Section 5.14	Text revised as recommended.
	Public Hearing Comments	Public citizens	Varied.	See note.	Multiple sections.	Oral comments presented during the Public Hearing held on March 4, 2014 can be found in the Public Hearing Transcript which is available on the USACE Wilmington District's website (http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/MajorProjects). All oral comments have been noted and/or addressed in the Final EIS.

*Agency comments have been summarized. Please refer to individual agency letters for full content.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

February 28, 2014

Mr. Ronnie D. Smith
U. S. Army Corps of Engineers
Wilmington Regulatory Field Office
P. O. Box 1890
Wilmington, North Carolina 28402-1890

Subject: Action ID #SAW- 2012-00040; Village of Bald Head Island
Brunswick County, NC

Dear Mr. Smith:

This letter provides the comments of the U. S. Fish and Wildlife Service (Service) on the subject Public Notice (PN), dated January 10, 2014, and the Draft Environmental Impact Statement (DEIS) for the Village of Bald Head Island (VBHI). VBHI proposes to construct a terminal groin structure on Bald Head Island in the Atlantic Ocean. These comments are submitted in accordance with the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661-667d). Comments related to the FWCA are to be used in your determination of compliance with 404(b)(1) guidelines (40 CFR 230) and in your public interest review (33 CFR 320.4) in relation to the protection of fish and wildlife resources. Comments related to the District Engineer's determination of project impacts in the BA, pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543) will be addressed during formal consultation.

Project Area, Proposed Activities, and Anticipated Impacts

The project area is South Beach and the adjacent Atlantic Ocean on Bald Head Island. The waters of the project area are classified as SB. The area is not designated as a Primary Nursery Area (PNA). The substrate of the project area is primarily sand.

The preferred alternative in the DEIS is Alternative 5, which includes the construction of a 1,900 linear foot terminal groin on the southeast end of Bald Head Island, concurrent with, and following a federal beach disposal operation. The terminal groin would be

constructed in two phases and would serve as a template for fill material placed eastward thereof. In Alternative 5, the existing groin field of 16 sand tube groins is proposed to remain. The terminal groin is intended to be a "leaky" structure, so as to provide for a level of sand transport to West Beach, which is located northwest of the proposed groin. The applicant proposes that the Wilmington District Corps of Engineers (Corps) place the sand first on the nearshore area (from regular dredging of the Wilmington Harbor Channel project), and then the Village will construct the terminal groin in two phases within the sand fillet. Because Phase 1 of the groin will be constructed after a winter dredging and nourishment project, the applicant states that construction will likely stretch into the piping plover and sea turtle nesting seasons.

Federally Protected Species

The Service has reviewed available information on federally-threatened or endangered species known to occur in Brunswick County. Our review indicates that several species may occur in the project area, including the West Indian manatee (*Trichechus manatus*), piping plovers (*Charadrius melodus melodus*), seabeach amaranth (*Amaranthus pumilus*), and the Kemp's Ridley (*Lepidochelys kempi*), hawksbill (*Eretmochelys imbricata*), leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), and green (*Chelonia mydas*) sea turtles. Of the five sea turtle species, the loggerhead (*Caretta caretta*), and green (*Chelonia mydas*) sea turtle may nest in the project area. Whales, shortnose sturgeon (*Acipenser brevisrostrum*), Atlantic sturgeon (*Acipenser oxyrinchus*), and sea turtles in the water are under the jurisdiction of NOAA Fisheries' Protected Species Division.

On September 30, 2013, the Service proposed listing the rufa red knot (*Calidris canutus rufa*) (or red knot) as threatened throughout its range. Please refer to Federal Register Notice 78 FR 60023. The Service also plans to publish a proposal to designate critical habitat for the red knot in the very near future.

The Service is also proposing to designate portions North Carolina beaches as critical habitat for the Northwest Atlantic (NWA) population of loggerhead sea turtles. Bald Head Island is located within Critical Habitat Unit LOGG-T-NC-06 (Baldhead Island, Brunswick County). From the Federal Register (FR) Notice (see http://www.regulations.gov/#!documentDetail;D=FWS-R4-ES-2012-0103-0001), this unit consists of 15.1 km (9.4 miles) of island shoreline along the Atlantic Ocean. The island is part of the Smith Island Complex, which is a barrier spit that includes Bald Head, Middle, and Bluff Islands. The island is separated from the mainland by the Atlantic Intracoastal Waterway, Cape Fear River, Battery Island Channel, Lower Swash Channel Range, Buzzard Bay, Smith Island Range, Southport Channel, and salt marsh.

The unit extends from 33.91433 N, 77.94408 W (historic location of Corncake Inlet) to the mouth of the Cape Fear River. The unit includes lands from the MHW line to the toe of the secondary dune or developed structures.

The Corps has made a determination of May Affect, Not Likely to Adversely Affect the West Indian manatee, piping plover, red knot, seabeach amaranth, and Kemp's Ridley, hawksbill, loggerhead, leatherback, and green sea turtle.

Service Concerns and Recommendations

1. The EIS should clarify the proposed nourishment cycles. In several places, the DEIS states that nourishment would occur at 3 years post-construction, and then on 9-year intervals. The Service understands that this schedule is due to the Corps' Wilmington Harbor Sand Management Plan (SMP). However, the language is not clear in many places. We recommend that in order to make the schedule completely clear, the EIS include a table, chart, or figure in Sections 3 and 5 to spell out the expected or proposed nourishment schedule from all sources, for each alternative.

2. The Service recognizes that a 3-year beach nourishment cycle is likely to be needed in many cases. As stated in Section 8.3.3 of the draft BA, "studies have shown that intertidal macrofauna can recolonize a nourished area within one or two seasons...." This is a concern of the Service, because as soon as the macrofauna are recovered (by the end of the second season), the SMP nourishment schedule typically provides for beach disposal that season or the very next season. The Service is concerned with the long-term impacts from frequent beach nourishment. The schedule of nourishing every three years or so results in a healthy macrofauna population for as little as one year out of every three.

   The FR notice concerning loggerhead critical habitat states: "In most cases, a significantly larger proportion of turtles emerging on engineered beaches abandon their nesting attempts than turtles emerging on natural or prenourished beaches, even though more nesting habitat is available (Trindell et al. 1998; Ernest and Martin 1999; Herren 1999), with nesting success approximately 10 to 34 percent lower on nourished beaches than on control beaches during the first year post-nourishment. This reduction in nesting success is most pronounced during the first year following project construction and is most likely the result of changes in physical beach characteristics (beach profile, sediment grain size, beach compaction, frequency and extent of escarpments) associated with the nourishment project (Ernest and Martin 1999). During the first post-construction

year, the time required for turtles to excavate an egg chamber on untilled, hard-packed sands increases significantly relative to natural beach conditions. Also during the first post-construction year, nests on nourished beaches are deposited significantly more seaward of the toe of the dune than nests on natural beaches. More nests are washed out on the wide, flat beaches of the nourished treatments than on the narrower steeply sloped natural beaches. This phenomenon may persist through the second post-construction year and result from the placement of nests near the seaward edge of the beach berm where dramatic profile changes, caused by erosion and scarping, occur as the beach equilibrates to a more natural contour."

Because of the potential on-going impacts from a short nourishment cycle, we encourage the Corps and VBHI to consider extending the beach nourishment cycles to 4 and 5 years when possible to minimize impacts to nesting sea turtles, to benthic macroinvertebrate fauna, and to surf fishes and shorebirds.

3. Although we agree that it is unlikely (given the documented history) that piping plover would nest on Bald Head Island, we do not believe that a determination of "no effect" can be made for any of the alternatives that include continued nourishment or beach management activities (such as Alternative 1). Please change the language on Page 5-27 for Alternative 1 to state that the SMP events may affect, but are not likely to adversely affect piping plover. Also, please change the language in Section 6.5.5 of the DEIS to state that "piping plovers *are not known to* nest within the project boundaries...."

4. In Sections 3.2.5, 3.2.6, 5.4.5, and 5.4.6 (discussions of Alternatives 5 and 6), the Final EIS should include a more specific proposed construction schedule for the terminal groin. These sections state that Phase 1 construction of the terminal groin could theoretically start in November and December, but that construction would probably extend well into the sea turtle nesting season. What amount of time is estimated to be needed solely for construction of the groin, after sand placement?

5. In Sections 3.2.5 and 5.4.5 (discussions of Alternative 5), the Final EIS should include more discussion of the potential removal of some or all of the sand-tube groins, if it is shown that they are not needed.

6. In Sections 3.2.5, 3.2.6, 5.4.5, and 5.4.6 (discussions of Alternatives 5 and 6), the Final EIS should include a discussion of the potential remediation plans if the terminal groin fails or is shown to be causing significant negative impacts. We

recognize that Appendix B contains information from the applicant concerning potential impacts of the terminal groin, physical monitoring plans, and potential remediation or mitigating actions. The text of the Final EIS should at least refer to Appendix B for monitoring and remediation. In addition, the potential for removal of the groin (an example of the type or severity of negative impact that would necessitate consideration of removal) should be discussed in the EIS. The applicant should also discuss the method for financing remedial or terminal groin removal actions.

The Service appreciates the continued opportunity to comment on this project. We look forward to working with the Corps during formal consultation. If you have questions regarding these comments, please contact Kathy Matthews at 919-856-4520, ext. 27 or by e-mail at <kathryn_matthews@fws.gov >.

Sincerely,

Peter Benjamin
Field Supervisor

cc:
Fritz Rohde, NOAA Fisheries, Beaufort
Maria Dunn, NCWRC, Washington
Doug Huggett, NC DCM, Morehead City
Debra Wilson, NC DCM, Wilmington
Chad Coburn, NC DWR, Wilmington
Karen Higgins, NC DWR, Raleigh

References:

Ernest, R.G. and R. E. Martin. 1999. Martin County Beach Nourishment Project: Sea Turtle Monitoring and Studies. 1997 Annual Report and Final Assessment. Ecological Associates, Inc., Jensen Beach, FL. 96 pp.

Herren, R.M. 1999. The effect of beach nourishment on loggerhead (*Caretta caretta*) nesting and reproductive success at Sebastian Inlet, Florida. M.S. Thesis. University of Central Florida. 150 pp.

Trindell, R., D. Arnold, K. Moody and B. Morford. 1998. Post-construction marine turtle nesting monitoring results on nourished beaches. Pages 77-92 in Tait, L.S. (compiler), Rethinking the Role of Structures in Shore Protection. – Proceedings of the 1998 National Conference on Beach Preservation Technology. Florida Shore and Beach Preservation Association, Tallahassee, Florida.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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March 4, 2014

Scott McLendon
Chief Regulatory Division
US Army Corps of Engineers
Wilmington District
Regulatory Field Office
69 Darlington Avenue
Wilmington, NC 28403

Subject: **EPA NEPA Comments on Draft Environmental Impact Statement (DEIS) for Village of Bald Head Island Shoreline Protection Project - CEQ Number: 20140000**

Dear Mr. McLendon:

Pursuant to Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA), EPA Region 4 has reviewed the Draft Environmental Impact Statement (DEIS) for the Village of Bald Head Island (VBHI) Shoreline Protection Project. This DEIS features an evaluation of the environmental consequences of several alternative plans that would address chronic erosion at the western end of South Beach of VBHI with a goal of protecting public infrastructure, roads, homes, businesses and rental properties, golf course, beaches, recreational assets, and protective dunes.[1] The ongoing erosion issues associated with South Beach have been highlighted in a U.S. Army Corps of Engineers (USACE) report (USACE 2011) in which it was estimated that the subject beach retreated 315 ft over a 9 year period during which 6 million cubic yards of material was placed on the shoreline through beach nourishment activities. This area of the island has experienced erosion issues for several years and various shoreline management responses have been implemented (beach nourishments, relocation, sand bag revetments, etc).

Bald Head Island is a south-facing three mile long island located east of the mouth of the Cape Fear River. The island forms the southern end of the Smith Island complex at Cape Fear Point. Inlet management has been ongoing at the Cape Fear River entrance since 1822.[2] Several modifications to the navigation channel have occurred over the years to accommodate larger ships. Since 2000 the Wilmington District USACE has implemented the Wilmington Harbor Sand Management Plan which has included disposing of beach-quality sand from the maintenance activities of the inlet onto Bald Head Island and Oak Island/Caswell Beach. One of the main objectives of this plan was to keep beach-quality sand in the littoral system of the islands. Since 2000 there have been seven disposal events that have deposited beach-quality

1 p. 1-1 of DEIS
2 p. 1-3 of DEIS

sand on South Beach (Federal and Island Funded).[3] In addition to these nourishment activities, a sand tube groinfield was constructed in 1995. Due to frequent storms the groinfield has had several maintenance events, which have include replacing sand tube groins as needed. In addition to the sand tube groindfield, bag revetments have been constructed in the project area to slow chronic erosion at South Beach.

It is stated in the DEIS that the "Project Goal and Objectives" for the proposed action are the following:

- To reduce sand losses from beach disposal or construction (either federal disposal actions or Village-sponsored beach nourishment projects) along the inlet margin; and
- To effectively control shoreline alignment along the westernmost segment of South Beach in such a manner to reduce alongshore transport rates and shoreline recession.

The USACE appropriately provided an opportunity for the public, interested stakeholders, and federal and state agencies to provide comments on this proposed action in 2012. In addition to hosting a meeting (Meeting Notes – Appendix C), the USACE also created a project review team (PRT) to solicit input on main issues related to the proposed action. A list of members of the PRT is provided in Table 2.1 of the DEIS. A summary of comments received during scoping is provided in Appendix C. Examples of some of the issues highlighted during scoping include:

- Concerns about timing of construction and coordination with the Wilmington Harbor SMP
- Concerns that nourishment may coincide with piping plover and sea turtle nesting periods
- Concerns that the terminal groin will alter larval transport and impact important fish habitat
- Concerns that the project may cause adverse impacts downstream
- Request for the EIS to include a description of monitoring and adaptive management
- Request for the EIS to include detailed information about storm impact and effects upon the terminal groin and also on the inlet dynamics and morphology, the beach profile, sand resources, residential structures, private property, adjacent properties, and the natural resources and environment of the permit area due to the placement of the terminal groin
- Request for the EIS to include detailed information and modeling on the impacts of sea level rise on the terminal groin and the resulting effects upon inlet dynamics, adjacent property, beach profiles, residential structures and the natural resources and environment of the island and adjacent islands and estuarine habitats and resources.[4]

EPA also notes that the DEIS considers detailed alternatives for responding to the on-going erosion along the west end of South Beach of the Village of Bald Head Island. The DEIS includes detailed discussions of each alternative, how each was formulated, and the costs of

3 Table 1.2 – p. 1-8 of DEIS

4 This is not meant to include a summary of all of the comments and issues noted during scoping – just a sampling. For additional scoping comments see Appendix C of the DEIS.

implementation. An economic impact assessment on the existing island development and infrastructure is also included in the DEIS (Chapter 5). As requested by EPA for similar coastal erosion projects studied by the USACE, both "no action" and "abandon/retreat" were considered in the DEIS among the detailed alternatives:

- **Alternative 1** – No Action
- **Alternative 2** - Retreat
- **Alternative 3** – Beach Nourishment/Disposal with Existing Sand Tube Groinfield to Remain in Place
- **Alternative 4** - Beach Nourishment/Beach Disposal and Sand Tube Groinfield Removal
- **Alternative 5** – Terminal Groin with Beach Nourishment/Beach Disposal (Sand Tube Groinfield Remaining)
- **Alternative 6** - Terminal Groin with Beach Nourishment/Disposal (Removal of Sand Tube Groinfield)

General EPA Comments:

Water Quality – Section 4.5 provides a discussion of existing water quality conditions for the project area. EPA notes that discussions relating to waters meeting their designated use as defined by State Water Quality standards are missing in this section. **Recommendation:** EPA recommends the FEIS include additional information on existing water quality in the project area, such as 303(d) listed waters, TMDLs developed for waters in the area, and any other relevant water quality conditions. Maps are often useful when conveying existing water quality conditions in and around project areas.

Summary of Environmental Consequences – An alternatives matrix is provided in Appendix L. EPA notes that the table includes a summary of the alternatives in relation to threatened and endangered species and habitat type, but not other resources areas such as water quality and air quality. **Recommendation:** EPA appreciates the inclusion of this table in Appendix L; however we recommend that additional resources discussed in Chapter 5 be added.

Sea-Level Rise – It is stated in the DEIS that "Over a nine-year period, the range of potential sea level rise and corresponding influence on numerical morphological modeling is negligible."[5] While EPA agrees that sea-level rise over a 9-year period may be negligible, we are unclear on why the discussion of sea-level rise is not in the context of the entire project life (30-years). **Recommendation:** EPA recommends that additional discussion be added to the FEIS relating to why sea-level rise estimates are not discussed in the context of the entire project life (30 years).

Delft 3D Model Assumptions – The Delft 3D model is central to describing/predicting how the shoreline will respond to all of the alternatives evaluated in the DEIS. Several references are made regarding using a 9-year model simulation, however the project life is 30 years. EPA is

5 p. 5-2 of DEIS

unclear on why model runs were 9-years while the project life is estimated much longer. In addition, EPA notes that minimal information is provided on assumptions and calibration of the Delft 3D model. **Recommendation:** EPA recommends additional discussion be provided in the FEIS main document or appendix which clearly outlines Delft 3D model assumptions used to evaluate all alternatives. We also recommend that the FEIS include a discussion relating to the the selection of all modeling parameters and justification for the values specified. We also recommend that the results of sensitivity analyses (if applicable) of all modeling parameters and that the selection of calibration/validation periods and application of forcing conditions be provided in the FEIS.

Environmental Justice – EPA notes that no Environmental Justice analysis was provided in the DEIS. **Recommendation:** Consistent with Executive Order 12898 entitled "Federal Actions to Address Environmental Justice In Minority Populations and Low-income Populations" and the accompanying Presidential Memorandum, EPA recommends that USACE analyze the potential for disproportionately high and adverse effects on low-income or minority populations for this project.

Cumulative Impacts - CEQ defined a cumulative effect as "an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). EPA notes that for some resources discussed in the DEIS, consideration of future impacts from development may have not been fully considered. For example, for the discussion of the alternatives impacts on resources such as maritime thicket/forest and interdunal wetlands, it is stated that there will be no cumulative impacts associated with alternatives 5&6. However, it appears from Figure 3.1 that there may be undeveloped lots in the area that will be protected by alternatives 5&6. It's reasonable to anticipate additional future development in these areas, which would be considered a future impact on these resources. **Recommendation:** EPA recommends revising the cumulative impact discussions in the FEIS to include future actions (such as continued development of the island) that may impact resources.

Threatened and Endangered (T&E) Species – EPA notes that the construction of the terminal groin may require work to be conducted within the sea turtle moratorium.[6] EPA also notes that construction of the terminal groin and beach nourishment activities may impact nesting activities of shoreline birds such as the piping plover. EPA is concerned about these potential impacts to T&E species but defers to the US Fish and Wildlife Service. **Recommendation:** EPA recommends that the USACE continue consultation with the USFWS regarding species listed under the Endangered Species Act (ESA). In addition, EPA recommends that the USACE consult with the NMFS regarding potential impacts to essential fish habitat, if NMFS has not already been consulted. Additional information relating to consultations with USFWS or NMFS between the release of the DEIS and FEIS should be included in the FEIS.

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6 p. 5-23 of DEIS

Coordination with SHPO – EPA notes that the DEIS describes a potential historical shipwreck discovered during a 2012 marine remote-sensing survey that identified the remains of a 160- to 190-ft sailing vessel (potentially from the early 1900s) within the project area.[7] EPA also notes that the VBHI has engaged the State Historic Preservation Office (SHPO) and a 150ft buffer has been proposed to preserve the surviving vessel remains. **Recommendation:** EPA recommends continued coordination with the SHPO through the life of the project, and that all project construction operations avoid the shipwreck and follow-up investigations continue to keep this cultural resource accurately mapped in order to protect it during all construction activities, as well as future maintenance operations (including periodic nourishment).

Inlet Management Plan – Appendix B provides a copy of the VBHI Draft Inlet Management Plan, which is required by SB110. The plan is required to include the following elements:

1) Description of post-construction monitoring activities.
2) Define baseline for assessing adverse impacts and when these impacts must be mitigated.
3) Provide mitigation measures that would be implemented if impacts needed to be mitigated.
4) Provide for modification or removal of the terminal groin structure if the adverse impacts can't be mitigated.[8]

EPA is unclear on why post-construction surveys on Oak Island will terminate after 3 years "of monitoring subsequent to terminal groin structure completion fails to indicate any level of cause or effect relationship between structure installation and shoreline change."[9] Is this timeline defined in SB110? EPA is also unclear on what level of erosion or adverse impact to Oak Island would trigger mitigation and potentially the removal of the terminal groin structure. **Recommendation:** EPA recommends clarification of post-construction monitoring requirements and the triggers/thresholds for requiring mitigation be discussed in the FEIS.

Editorial Comments:

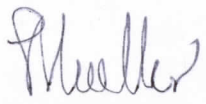
- **Table 1.2 –** Station numbers are referenced in this table with no reference to a map of the actual stations. EPA recommends adding a reference in the FEIS to a map of the station numbers for the description of this table.
- **Section 4.1.2 –** This section includes a description of several sources of sand for the sand fillet. EPA recommends these sources along with the sediment characteristics be summarized in a table in the FEIS for better comparison.
- **Section 4.3.1 (p. 4-20)** – End of 1st paragraph – The discussion of benthic taxa includes a statement from a report that says "In general, the mean taxa were low at all sites studied" What is the species abundance being compared to? Is the reference site comparable to the project site? EPA recommends this statement be clarified in the FEIS.

7 p. 5-146 of DEIS
8 Summarized from Appendix B
9 p. 5 of Appendix B – Inlet Management Plan

- **Page 4-33 –** SA, SB, SC should be defined in the text.
- **Figure 4-30 –** It is assumed that the size of the arrows in this figure correspond with amount of sediment is being transported. EPA recommends this be clarified in the Figure description in the FEIS.
- **Page 4-51 - 1st Paragraph** – This section includes a discussion of beach profiles 35 and 40 at Oak Island/Caswell Beach. It is indicated in this section that prior to 2000 the beach was growing seaward then after 2000 these profiles indicated that the beach is moving landward or eroding. EPA recommends additional discussion be added to the FEIS regarding the potential reasons for this erosional "hot spot."
- **Section 4.19.1** – A statement is made in this section that "there have been no known sources of contamination (i.e. spillage, treatment, or storage of toxic substances) within or near the project area." Has this statement been substantiated with Phase I Baseline Environmental Assessment of the project area? If so, it should be noted in the FEIS.
- **Tables 5.2–5.4** "Area 1" and "Area 2" should be defined more clearly in the text and in the description of table 5.2.
- **Section 5.9 and 5.11 –** These sections cover impacts associated with the alternatives on Public Safety and Recreation. EPA recommends providing maps of areas that may be closed to the public during construction activities.

Thank you for the opportunity to comment on this DEIS. Based upon our review, a NEPA rating of EC- 2 has been assigned to this DEIS, meaning we have environmental concerns and have requested that the FEIS include updated information (where available) on a number of areas and issues. If we can be of further assistance, please contact me at (404) 562-9611 or Dan Holliman at (404) 562-9531 at holliman.daniel@epa.gov.

Sincerely,



Heinz J. Mueller
Chief, NEPA Program Office
Office of Environmental Accountability

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

ER 14/0013
9043.1

February 21, 2014

Ronnie Smith
U.S. Army Corps of Engineers
Wilmington District - Regulatory Division
Attn: File Number SAW-2012-00040
69 Darlington Avenue
Wilmington, North Carolina 28403

Re: Comments and Recommendations on the Review of the Draft Environmental Impact Statement (DEIS) for the Installation of a Terminal Groin Structure at the Western End of South Beach, Bald Head Island, Adjacent to the Federal Wilmington Harbor Channel of the Cape Fear River, Brunswick County, NC

Dear Mr. Smith:

The United States Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Installation of a Terminal Groin Structure at the Western End of South Beach, Bald Head Island, Adjacent to the Federal Wilmington Harbor Channel of the Cape Fear River. We have no comments at this time.

Thank you for the opportunity to provide comments. I can be reached at (404) 331-4524 or via email at joyce_stanley@ios.doi.gov.

Sincerely,

Joyce Stanley, MPA
Regional Environmental Protection Specialist

cc: Christine Willis – FWS
Gary Lecain - USGS
Anita Barnett – NPS
Chester McGhee – BIA
Robin Ferguson - OSRME
OEPC – WASH

North Carolina
Department of Administration

Pat McCrory, Governor

Bill Daughtridge, Jr., Secretary

February 20, 2014

Mr. Ronnie Smith
Department of the Army
U.S. Army Corps of Engineers
Wilmington District
69 Darlington Avenue
Wilmington, North Carolina 28403

Re: SCH File # 14-E-0000-0287; DEIS; Proposed project is for the construction of a terminal structure at the western end of South Beach and supplemental beach nourishment.

Dear Mr. Smith:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

Crystal Best

Crystal Best
State Environmental Review Clearinghouse

Attachments

cc: Region O

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail state.clearinghouse@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

MEMORANDUM

TO: Crystal Best
State Clearinghouse

FROM: Lyn Hardison
Division of Environmental Assistance and Customer Service
Permit Assistance & Project Review Coordinator

RE: 14-0287
Draft Environmental Impact Statement
Proposed project is for the construction of a terminal structure at the western end of South Beach and supplemental beach nourishment
Brunswick County

Date: February 17, 2014

The Department of Environment and Natural Resources has reviewed the proposal for the referenced project. Based on the information provided, our agencies have identified permits that may be required. The Division of Coastal Management and NC Natural Heritage program has provide some specific guidance for the applicant consideration. These comments are attached.

The Department appreciates the cooperative efforts the applicant has with our agencies and we encourage these efforts to continue as they move forward with the project.

Thank you for the opportunity to respond.

Attachment

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-707-8600 \ Internet: www.ncdenr.gov

North Carolina Department of Environment and Natural Resources
Division of Coastal Management
Braxton C. Davis
Director

Pat McCrory
Governor

John E. Skvarla, III
Secretary

February 14, 2014

U.S. Army Corps of Engineers – Wilmington District
c/o Dale Beter, Project Manager
69 Darlington Avenue
Wilmington, NC 28403-1343

Dear Sirs:

The Division of Coastal Management (DCM) has completed our review of the Draft Environmental Impact Statement (DEIS) for the proposed Village of Bald Head Island Shoreline Management Project located in New Hanover County, North Carolina. As you are aware, in 2011 the General Assembly of North Carolina enacted Senate Bill 110 (SB 110), that amended the Coastal Area Management Act (CAMA) to allow for the permitting of up to four terminal groins in North Carolina. SB 110 was further amended by Senate Bill 151 (SB 151) in 2013. For communities pursuing a terminal groin project, the amended SB 151 set out several specific requirements that must be met before a CAMA permit can be issued. DCM staff have therefore reviewed the DEIS in light of these requirements, as well as the laws of the CAMA and Dredge and Fill, and the rules of the Coastal Resources Commission, and we provide the following comments for your consideration.

General Comments

- In multiple locations throughout the document, the Division of Water Quality is referenced. This agency has been reorganized and is now within the Division of Water Resources. The document should be updated accordingly.

Section 1. - Project Purpose

- **Section 1.4.4 (Page 1-11)** - The first paragraph states: *"In July 2011, the NC Division of Coastal Management (NCDCM) granted a minor modification of existing Permit No.9-95 thereby authorizing the construction of a 350 linear-foot sandbag revetment"*. Please change to reflect the minor modification was granted by CRC variance in July 2011 with the resulting modification being issued in August 2011.

400 Commerce Ave., Morehead City, NC 28557-3421
Phone: 252-808-2808 \ FAX: 252-247-3330 Internet: www.nccoastalmanagement.net

- **Section 1.6.11 (page 1-17)** - This section states: *"The NC Dept of Administration adopts rules to implement NCEPA, ensures compliance with the Act and maintains a State Environmental Review Clearinghouse of information; however, a state agency must take the lead on the NCEPA review of the project. The NC DCM will be the lead agency during the NCEPA review of the Village of Bald Head Island Shoreline Protection Project."* Please note that per Session Law 2011-384, an environmental impact statement prepared pursuant to the National Environmental Policy Act (NEPA) is considered to satisfy the NCEPA requirement. As such, the NC Division of Coastal Management is not the lead agency, but a commenting agency to the USACE.

- **Section 1.6.13 (page 1-18)** - This section refers to the *"CAMA Dredge and Fill Law"*. It should be noted that the Coastal Area Management Act (CAMA) and NC Dredge and Fill Law are two separate laws, both of which are administered by the NC Division of Coastal Management.

Section 2. Scoping

- **No comments**

Section 3. Project Alternatives

- **Alternative 1 - No Action/Status Quo Alternative**
  - No comments

- **Alternative 2 - Retreat**
  - The retreat alternative does not include maintenance of the sand tube groinfield which may minimize the extent of the retreat necessary. Please factor this into Alternative 2.

- **Alternative 3 - Beach Nourishment/Disposal with Existing Sand Tube Groinfield to Remain in Place**
  - Has there been any evaluation of the likelihood of expanding the volume of sediment available from Bald Head Creek?
  - Have any sediment compatibility studies been performed for this additional 200,000 cubic yards of material?

- **Alternative 4 - Beach Nourishment/Beach Disposal with Sand Tube Groinfield Removal**
  - Has there been any evaluation of the likelihood of expanding the volume of sediment available from Bald Head Creek?
  - Have any sediment compatibility studies been performed for this additional 200,000 cubic yards of material?

- **Alternative 5 - Terminal Groin with Beach Nourishment/Beach Disposal (Sand Tubes Remaining)**
  - Are there avoidance, minimization or mitigation measures that would offset potential impacts associated with the proposed construction during the turtle nesting season?

  - Example of modification activities would include the relocation of one or more sand tubes. Would such relocation be consistent with variance/permit conditions?

  - The legislation calls for the groin to be pre-filled and allow sand to flow past the structure. The descriptions in this alternative seem to rely on natural transport to create the fillet rather than hydraulic means.

  - *"The structure is not expected to resolve ongoing erosion issues on the downdrift side....West Beach is downdrift of the terminal structure and remains prone to sand losses which may be exacerbated by the groin."* This alternative is somewhat vague on the responses to exacerbating the erosion on West Beach. The document should include more detail about these potential erosion response measures.

  - The models used in the Alternatives Analysis assumed pre-filling of the groin as required by law but the description seem to indicate that the fillet will accrete "naturally" after beach fill associated with the SMP. What if the USACE does not have funding again for the project, or if this funding is delayed? Would construction and/or maintenance schedules associated with the terminal groin be negatively impacted?

- **Alternative 6 - Terminal Groin with Beach Nourishment/Beach Disposal (Sand Tubes Removal)**
  - Example of modification activities would include the relocation of one or more sand tubes. Would such relocation be consistent with the variance/permit conditions?

  - The legislation calls for the groin to be pre-filled and allow sand to flow past the structure. The descriptions in this alternative seem to rely on natural transport to create the fillet rather than hydraulic means. Please provide clarification on this issue.

  - *"The structure is not expected to resolve ongoing erosion issues on the downdrift side....West Beach is downdrift of the terminal structure and remain prone to sand losses which may be exacerbated by the groin."* This alternative should expand on the responses to exacerbating the erosion on West Beach. The document should include more detail about these potential erosion response measures.

- The models used in the Alternatives Analysis assumed pre-filling of the groin as required by law but the description seem to indicate that the fillet will accrete "naturally" after beach fill associated with the SMP. What if the USACE does not have funding again for the project, or if this funding is delayed? Would construction and/or maintenance schedules associated with the terminal groin be negatively impacted?

- The document should provide more information on how it can be assured that the schedules for construction of groin and sand placement behind the groin by USACE will take place in a mutually agreeable fashion. For example, what would happen if groin construction started based on an expected USACE sand placement event, and then for funding reasons the USACE project was postponed at the last minute?

Section 4. Affected Environment

- **Section 4.2.4 (Page 4-15/4-16)** - NCDMF has recently collected information about sturgeon distribution in the project area. Please contact Chip Collier (chip.collier@ncdenr.gov) for results of telemetry tracking of sturgeon in the Cape Fear River and update this section as appropriate.

- **Section 4.3.3 (Page 4-29/4-30)** - Soft Bottom Communities should be expanded to include discussions of the fish utilization of soft bottom beyond foraging and fish utilization of offshore shoals and inlets (ie. the borrow areas).

- **Section 4.3.3 Page 4-29** - A more accurate definition of unconsolidated sediments should be used.

- **Section 4.3.3 Page 4-29** – The document should utilize the term anadromous *fish* nursery areas.

- **General Comments** – The document should provide discussion on recent scientific research related to North Carolina regarding larval fish transport through inlets.

- **General Comments** – The document should provide discussion on the previously compiled data regarding larval fish geographic distribution and abundance in the area.

Section 5. Environmental Consequences

- **No Comment**

Section 6. Avoidance, Mitigation and Mitigative Measures

- **Section 6.5.1 (Page 6-9)** - What construction activities will occur during the sea turtle nesting season, and how will they be mitigated?

- **Section 6.2 (Page 6-4)** – It should be noted that post-construction monitoring for biological recovery of Frying Pan shoals will likely be required.

- **General Comments** - If a hopper dredge will be used, it should be included in Section 6 as a minimization measure to impacts of benthic offshore shoal habitat.

Appendices

- In general, the Division of Coastal Management does not believe that the Inlet Management Plan provided in Appendix B meets the requirements for such a plan set out in SB 151. Specifically, more detail should be provided on a) determination and type of data used for defining a baseline which will be used to assess potential adverse impacts associated with the terminal groin, b) post-construction monitoring that can be compared to baseline data for assessing potential adverse impacts, c) the timeframes for the post-construction monitoring, d) identification of specific thresholds which will in turn implement mitigative measures, and e) the potential list of mitigative measures that may be implemented. The Division would welcome the opportunity to meet with the applicant in an effort to provide additional guidance and/or comment on these issues. Specific comments on the Inlet Management Plan are provided below.

- **Inlet Management Plan (Page 4) Section II Physical Monitoring** - This section states: *"The Division of Coastal Management has taken the position that, despite the presence of the three mile distance and maintained navigation channel, some monitoring is required at the easternmost end of Oak Island at Caswell Beach"*. It should be noted that SB 151 requires the preparation of *"a plan for the management of the inlet and the estuarine and ocean shorelines immediately adjacent to and under the influence of the inlet"*. Oak Island is immediately adjacent to and under the influence of the Cape Fear River Inlet. Therefore, it is the Division of Coastal Management's interpretation of SB 151 that monitoring is required at the easternmost end of Oak Island at Caswell Beach. The language in this Appendix should be changed accordingly.

- **Inlet Management Plan (Page 5) Section II Physical Monitoring**- This section states: *"The Village's responsibility for post-groin physical surveying on Oak Island will terminate if three years of monitoring subsequent to terminal groin structure completion fails to indicate any level of cause or effect relationship between structure installation and shoreline change at Oak Island"*. Due to the scope and unpredictable nature of the impacts of the project due to varying conditions, the Division of Coastal Management does not believe that a 3-year limit on the required monitoring is adequate. The time limit on this monitoring should be expanded in a manner that would allow for the collection of

baseline and post-construction data that would allow for an analysis of the causes (impacts resulting from construction of the terminal groin versus impacts resulting from other causes) of any post-construction erosion. The Division suggests developing a plan that samples more frequently in the years immediately following construction. If the data collected after a reasonable time support the assertion that the project is not resulting in adverse impacts to down drift beaches or on eastern Oak Island, then the monitoring requirements could be reevaluated at that time. The plan should also establish more detailed mitigative thresholds, and offer more description of potential remedial actions.

- **Inlet Management Plan (Page 9-10) Section IV Mitigation** – This mitigation includes borrowing sand from the fillet to nourish West Beach. What would be the anticipated impacts of this proposed action? What would be the expected volumes of this borrowed sand?

- **Inlet Management Plan (Page 9-10) Section IV Mitigation** – As was discussed above, the plan should include more detail on the hierarchy of remedial actions and triggers to implement such remedial actions.

- **Inlet Management Plan (Page 10) Section IV Mitigation** - This section states: *"The most logical source of beach quality sand is the WHSMP. Accordingly, mitigation would occur through a reapportionment of some portion of the federal disposal sand to that hot spot, rather than the placement of the sand at a more stable or accreting location."* The Division has concerns about the reapportionment of sand under the WHSMP as a mitigative measure for this project. Any such change in the details of the sand management plan would require additional coordination between and/or approval of various parties, including the USACE, State of North Carolina, Caswell Beach and the Village of Bald Head Island.

- **Inlet Management Plan Section (Page 8-9) Section III Mitigation Thresholds** – What is the timeframe and methodology for determining if fill equilibration has been reached?

- **Inlet Management Plan Section (Page 8-9) Section III Mitigation Thresholds** – This section states: *"Have shoreline recession rates (volumes and MHWL) increased by over 50%?"*How long does this condition need to exist before action is taken, and is this threshold be appropriate for Caswell Beach as well?

- **Inlet Management Plan Section (Page 9-10) Section V Terminal Structure Alteration** – This section states: *"Pragmatically, lowering of the structure to grade through armor rock removal would constitute "effective" structure elimination"*. – Would this eventually expose buried rock which would effectively begin to trap sand again, or will the rocks be removed to grade as they are exposed? The Division of Coastal Management believes the SB 151 requires that this option be revised to address total structural removal, not partial.

The Division of Coastal Management appreciates the opportunity to comment on this project, and we look forward to further discussions on the issues raised in this letter. If you have any questions concerning any of these comments, please feel free to contact me at (252) 808-2808 ext. 212.

Sincerely

Doug Huggett

Doug Huggett
Manager, Major Permits & Federal Consistency Section

Cc: Braxton Davis, DCM
Lyn Hardison, DENR

North Carolina Department of Environment and Natural Resources
Office of Land and Water Stewardship

Pat McCrory
Governor

Bryan Gossage
Director

John E. Skvarla, III
Secretary

February 7, 2014

MEMORANDUM

TO: Lyn Hardison, NCDENR State Clearinghouse Coordinator

FROM: Allison (Schwarz) Weakley, North Carolina Natural Heritage Program AEW

SUBJECT: Draft EIS – Bald Head Island, South Beach Terminal Groin and Beach Nourishment, Brunswick County, North Carolina

REFERENCE: Project No. 14-0287

Thank you for the opportunity to provide information for the proposed project referenced above. The DEIS document includes a list of "Federally and State Protected Species Known to Occur in the Vicinity of the Study Area" (pg. 4-9) but does not state the source of those data, and does not address the potential impacts to all the species listed.

The NCNHP database (as of January 2014) contains records for a number of federally and state protected species within the project vicinity (see attached table). Please note the statuses for each species. We are happy to provide more information on the element occurrences for these species if requested. The use of Natural Heritage Program data should not be substituted for actual field surveys where they are needed, particularly if the project area contains suitable habitat for rare species or important natural communities.

The following four significant natural heritage areas (SNHA) are within the vicinity of the project:

SITE NAME	OVERALL SITE RATING
Bald Head Island	Exceptional
Fort Caswell Dunes and Marshes	Very High
Middle Island	Very High
Lower Cape Fear River Aquatic Habitat	Moderate

Please see the attached site reports that contain descriptions and a list of the rare species and important natural communities present in each SNHA.

The NCNHP database also shows records for a high-quality Dune Grass (Southern Subtype) natural community and a significant colony of least tern nests on the southeastern end of South Beach, and a number of records for conservation/managed lands within the project vicinity. Conservation/managed lands include properties owned by Bald Head Island Conservancy and Smith Island Land Trust, with conservation easements held by the Conservation Trust for North Carolina, and the Bald Head Island

State Natural Area Dedicated Nature Preserve (DNP) and Bald Head Coastal Reserve DNP, owned by the State of North Carolina.

The applicant may wish to visit the new NCNHP website (www.ncnhp.org) that offers access to data and other information on rare species, natural communities, significant natural areas, and lands managed for conservation. The online map viewer currently available shows boundaries of SNHAs conservation/managed areas, including those listed above, and can be searched for NCNHP records that occur within one mile to five miles of the project location.

Please feel free to contact me at 919-707-8629 or Allison.Weakley@ncdenr.gov if you have questions or need further information.

Table 1. Rare species within vicinity of South Beach, Bald Head Island. January 2014.					
SCIENTIFIC NAME	COMMON NAME	ELEMENT OCCURRENCE STATUS*	ACCURACY	NC STATUS*	USA STATUS*
Acipenser brevirostrum	Shortnose Sturgeon	Current	Very Low	E	E
Acipenser oxyrinchus	Atlantic Sturgeon	Current	Low	SC	E
Amaranthus pumilus	Seabeach Amaranth	Current	Medium	T	T
Arenaria lanuginosa var. lanuginosa	Spreading Sandwort	Historical	Unknown	SR-P	----
Baccharis glomeruliflora	Silverling	Historical	Low	SC-H	----
Caretta caretta	Loggerhead Seaturtle	Current	High	T	T
Charadrius wilsonia	Wilson's Plover	Current	Medium	SC	----
Cheilolejeunea rigidula	A Liverwort	Current	Very Low	SR-P	----
Chelonia mydas	Green Seaturtle	Current	Medium	T	T
Columbina passerina	Common Ground-Dove	Historical	Low	SR	----
Cyperus tetragonus	Four-angled Flatsedge	Current	Medium	SC-V	----
Dermochelys coriacea	Leatherback Seaturtle	Current	Low	E	E
Dichanthelium aciculare ssp. *neuranthum*	Nerved Witch Grass	Historical	Medium	SC-V	----
Dichanthelium caerulescens	Blue Witch Grass	Historical	Very Low	E	----
Elymus virginicus var. halophilus	Terrell Grass	Current	Low	SC-V	----
Erythrina herbacea	Coralbean	Historical	Low	E	----
Euphorbia bombensis	Southern Seaside Spurge	Historical	Low	SR-T	----
Falco peregrinus	Peregrine Falcon	Current	Medium	E	----
Haematopus palliatus	American Oystercatcher	Current	Medium	SC	----
Ipomoea imperati	Beach Morning-glory	Current	Medium	T	----
Malaclemys terrapin	Diamondback Terrapin	Obscure	Very Low	SC	FSC, in part
Masticophis flagellum	Coachwhip	Current	Low	SR	----
Neotoma floridana floridana	Eastern Woodrat	Historical	Low	T	----
Oplismenus hirtellus ssp. setarius	Shortleaf Basket Grass	Current	Low	SR-P	----
Papilio cresphontes	Giant Swallowtail	Current	Low	SR	----
Parietaria praetermissa	Large-seed Pellitory	Historical	Very Low	SC-V	----
Passerina ciris ciris	Eastern Painted Bunting	Current	Low	SC	FSC

SCIENTIFIC NAME	COMMON NAME	ELEMENT OCCURRENCE STATUS*	ACCURACY	NC STATUS*	USA STATUS*
Plagiochila dubia	A Liverwort	Current	Low	SR-P	----
Polygonum glaucum	Seabeach Knotweed	Historical	Low	E	----
Sabal palmetto	Cabbage Palm	Current	Medium	T	----
Sideroxylon tenax	Tough Bumelia	Current	Low	T	FSC
Sporobolus virginicus	Saltmarsh Dropseed	Historical	Low	T	----
Sternula antillarum	Least Tern	Current	Low	SC	----
Syrrhopodon incompletus	Cuban Schliessmund	Historical	Low	SR-P	----
Teloschistes flavicans	Sunrise Lichen	Current	Medium	SR-P	----
Trichechus manatus	West Indian Manatee	Current	Very Low	E	E
Trichostema sp. 1	Dune Bluecurls	Current	High	SR-L	FSC
Yucca gloriosa	Moundlily Yucca	Current	Medium	SR-P	----

Significant Natural Heritage Area Report

07 February 2014

Name Bald Head Island **Site ID** 1360

LOCATORS

County Brunswick (NC) **Quad** Cape Fear, Kure Beach, Southport **Watershed** Lower Cape Fear

Latitude 335135N **Longitude** 0775903W

Directions Bald Head Island proper, the southernmost and largest island of the Bald Head-Smith Island Complex at the mouth of the Cape Fear River.

Site Relations Middle Island lies about 1/2 mile to the north. Bluff Island and East Beach is about 1 miles to the north.

OWNERS

Owner	Details	Comments
NC DENR, Division of Coastal Management	Bald Head Woods Coastal Reserve	DNP
NC DENR, Division of Parks and Recreation	Bald Head Island State Natural Area	Part DNP
Private	Bald Head Development Corporation	

SITE DESCRIPTION

	Feet	Meters
Minimum Elevation:		
Maximum Elevation:	35 Feet	11 Meters

Site Description Island has a diversity of high quality maritime communities, including Dune Grass, Maritime Evergreen Forest, and Salt Marsh. Once one of the largest patches of Maritime Evergreen Forest, it has been severely reduced by development, but a significant area has been protected. The forests of the Baldhead Complex are unique in North Carolina in having cabbage palm (Sabal palmetto) and other more southern species as components. The open dunes support the newly discovered Bald Head blue curls (Trichostema sp.). Large number of loggerhead sea turtles nest on the island's beaches.

Land Use History

Cultural Features

SITE DESIGN

Designer **Mapped Date**

Boundary Justification The boundary was revised in 2008 to exclude high density beachfront development (using 2006 aerial photos). The undeveloped sand dunes are important habitat for Trichostema sp. 1.

Acreage 1,322.07

Site Comments The western part of the island has already been developed. The rest of the island is threatened.

Ground Survey Date 1999-08-09 **Aerial Survey Date** 2006 **Survey Intensity** I

SITE SIGNIFICANCE

Representational Rating R1 **Collective Rating** C1

Defining Element Occurrences Dermochelys coriacea, Maritime Evergreen Forest (South Atlantic Subtype), Trichostema sp. 1

PROTECTION

Conservation Intentions Conservation acquisition, dedication

Designation State Park
Dedicated Nature Preserve

Protection Comments State Division of Coastal Management owns and has dedicated 173 acres on Bald Head Island. State Division of Parks and Recreation owns 8 acres at Cape Fear itself. Other State-owned land (10,000 acres) is located on the nearby Bluff Island site and in the marshes.

MANAGEMENT

Management Comments

Land Use Comments

Significant Natural Heritage Area Report

07 February 2014

Name Bald Head Island **Site ID** 1360

Natural Hazards

Exotics Comments

Offsite Developed area adjoin the remnant natural areas.

Information Needs Need to update site boundaries to reflect current remnants.

Management Needs

Managed Area Relations Bald Head Island Coastal Reserve Bald Head Island State Natural Area

ELEMENT OCCURRENCES

Scientific Name	Common Name	G Rank	S Rank	EO Rank	EO ID
Charadrius wilsonia	Wilson's Plover	G5	S2B	B	13905
Chelonia mydas	Green Seaturtle	G3	S1B,SUN	CD	20094
Columbina passerina	Common Ground-Dove	G5	SXB	X	15215
Dermochelys coriacea	Leatherback Seaturtle	G2	S1B,SUN	D	31880
Falco peregrinus	Peregrine Falcon	G4	S1B,S2N	C	5457
Haematopus palliatus	American Oystercatcher	G5	S2S3B,S3?	CD	27223
Lasiurus intermedius	Northern Yellow Bat	G4G5	S1	E	26220
Masticophis flagellum	Coachwhip	G5	S3	E	4781
Neotoma floridana floridana	Eastern Woodrat - Coastal Plain population	G5T5	S1	X	17129
Passerina ciris ciris	Eastern Painted Bunting	G5T3T4	S3B	A	16484
Sternula antillarum	Least Tern	G4	S3B	D	14325
Papilio cresphontes	Giant Swallowtail	G5	S2S3	B?	10534
Gull-Tern-Skimmer Colony	Colonial Waterbirds Nesting Site	G5	S3	BC	19172
Gull-Tern-Skimmer Colony	Colonial Waterbirds Nesting Site	G5	S3	D	20020
Amaranthus pumilus	Seabeach Amaranth	G2	S2	D	1618
Baccharis glomeruliflora	Silverling	G4	S1	H	19
Carex calcifugens	Calcium-fleeing Sedge	G2G4	S2?	A	23775
Cyperus tetragonus	Four-angled Flatsedge	G4?	S1	A?	10370
Dichanthelium aciculare ssp. neuranthum	Nerved Witch Grass	G5T3	S1	X?	13484
Elymus virginicus var. halophilus	Terrell Grass	G5T5	S1	E	28866
Oplismenus hirtellus ssp. setarius	Shortleaf Basket Grass	G5T5	S1	E	27016
Polygonum glaucum	Seabeach Knotweed	G3	S1	F	18615
Sabal palmetto	Cabbage Palm	G5	S1	A	7153
Sabal palmetto	Cabbage Palm	G5	S1	B	23235
Sideroxylon tenax	Tough Bumelia	G3?	S1	C?	4830
Sideroxylon tenax	Tough Bumelia	G3?	S1	E	23364
Sideroxylon tenax	Tough Bumelia	G3?	S1	X?	23363
Trichostema sp. 1	Dune Bluecurls	G2	S2	A	22845
Trichostema sp. 1	Dune Bluecurls	G2	S2	A	4034
Trichostema sp. 1	Dune Bluecurls	G2	S2	D	28838
Trichostema sp. 1	Dune Bluecurls	G2	S2	B?	28106
Trichostema sp. 1	Dune Bluecurls	G2	S2	B?	22844
Cheilolejeunea rigidula	A Liverwort	G5	S2	E	2137
Plagiochila dubia	A Liverwort	G4G5	S1	E	22058
Syrrhopodon incompletus	Cuban Schliessmund	G5	S1	H	8338
Teloschistes flavicans	Sunrise Lichen	G4G5	S1	A	10214
Dune Grass (Southern Subtype)		G3	S2	C	10109
Maritime Evergreen Forest (South Atlantic Subtype)		G2	S1	A	17316

REFERENCES

Significant Natural Heritage Area Report

07 February 2014

Name Bald Head Island

Site ID 1360

Reference Code	Full Citation
F99NHP01NCUS	NCNHP Staff, 1999 Field Survey
U95LEB02NCUS	LeBlond, R.J. 1995. Inventory of the natural areas and rare species of Brunswick County, North Carolina. NC Natural Heritage Program, Division of Parks and Recreation, Raleigh, NC.
I06DOQ01NCUS	2006 NAIP aerial photography
R88NCV01NCUS	North Carolina Vegetation Survey. 1988. Vegetation sample data.

VERSION

Version Date	1999-12-01
Version Author	Schafale

Significant Natural Heritage Area Report

07 February 2014

Name Fort Caswell Dunes and Marshes **Site ID** 2080

LOCATORS

County Brunswick (NC) **Quad** Southport **Watershed** Lower Cape Fear

Latitude 335421N **Longitude** 0780236W

Directions At the eastern end of Oak Island, ranging west to the CP& L cooling canal.

Site Relations Fort Caswell Dunes and Marshes cover the far eastern end of Oak Island. Contiguous to the east is the Lower Cape Fear River Aquatic Habitat. Battery Island and Bald Head Island are the next significant terrestrial areas to the east, within 1 and 1.25 miles respectively. On the mainland opposite Oak Island are three additional sites: Sunset Harbor/Ash Swamp, Big Cypress Bay and Ponds, and the Boiling Spring Lakes Wetland Complex, which is less than 4 air miles to the northeast.

OWNERS

Owner	Details	Comments
Private	PRIVATE	
North Carolina Coastal Land Trust	NCCLT	

SITE DESCRIPTION

Minimum Elevation: 0 Feet 0 Meters

Maximum Elevation: 20 Feet 6 Meters

Site Description Fort Caswell Dunes and Marshes consists of several rows of dunes at Fort Caswell, plus extensive salt marshes on the back side of Oak Island. The lawns and developed areas at the fort are excluded from the site. The marshes are extensive and unaltered by mosquito ditching, making this one of the best examples of the Salt Marsh natural community in the state. The dunes, beaches, and marshes support several rare plant and animal species, including Federal and State Threatened seabeach amaranth (*Amaranthus pumilus*), loggerhead (*Caretta caretta*), and green turtle (*Chelonia mydas*). Other rare plants growing on the dunes include Yucca gloriosa, Ipomoea imperati, Erythrina, Trichostema sp. This natural area is an integral component of a large complex of natural areas associated with the lower Cape Fear River, including Bald Head Island, Battery Island, and Lower Cape Fear River Bird Nesting Islands.

Land Use History

Cultural Features

SITE DESIGN

Designer **Mapped Date**

Boundary Justification Site originially designed by Peacock and Moore (no year).

Acreage 1,306.26

Site Comments

Ground Survey Date 2000-01 **Aerial Survey Date** **Survey Intensity**

SITE SIGNIFICANCE

Representational Rating R2 **Collective Rating** C4

Defining Element Occurrences Amaranthus pumilus, Ipomoea imperati, Yucca gloriosa

PROTECTION

Conservation Intentions

Designation

Protection Comments

MANAGEMENT

Management Comments

Land Use Comments

Significant Natural Heritage Area Report

07 February 2014

Name Fort Caswell Dunes and Marshes **Site ID** 2080

Natural Hazards

Exotics Comments

Offsite

Information Needs

Management Needs

Managed Area Relations

ELEMENT OCCURRENCES

Scientific Name	Common Name	G Rank	S Rank	EO Rank	EO ID
Caretta caretta	Loggerhead Seaturtle	G3	S3B,S3N	B	7050
Haematopus palliatus	American Oystercatcher	G5	S2S3B,S3	CD	27222
Amaranthus pumilus	Seabeach Amaranth	G2	S2	B	28745
Amaranthus pumilus	Seabeach Amaranth	G2	S2	C	7049
Euphorbia bombensis	Southern Seaside Spurge	G4G5	S2?	H?	28780
Ipomoea imperati	Beach Morning-glory	G5	S1	A	15283
Yucca gloriosa	Moundlily Yucca	G4?	S2?	A	18212
Salt Marsh (Carolinian Subtype)		G5	S4	A	16017

REFERENCES

Reference Code	Full Citation
F87NHP01NCUS	NHP Staff. 1987. Field Survey.

VERSION

Version Date 2006-09-20
Version Author Sinclair

Significant Natural Heritage Area Report

07 February 2014

Name Lower Cape Fear River Aquatic Habitat **Site ID** 1167

LOCATORS

County Brunswick (NC)
New Hanover (NC)

Quad Carolina Beach
Wilmington
Kure Beach
Southport

Watershed Lower Cape Fear

Latitude 340336N **Longitude** 0775548W

Directions The Cape Fear River from its merger with the Brunswick River south to Smith Island.

Site Relations

OWNERS

Owner	Details	Comments
Public Waters		

SITE DESCRIPTION

Minimum Elevation: **Feet** **Meters**

Maximum Elevation: **Feet** **Meters**

Site Description The lower Cape Fear River is brackish and contains numerous rare animals. The shortnose sturgeon is rare, whereas manatees occasionally occur, especially in summer. Alligators are present mainly in tributary streams. Freckled blenny and spinycheek sleeper are rare marine fishes of the river.

Land Use History

Cultural Features

SITE DESIGN

Designer **Mapped Date**

Boundary Justification

Acreage 22,509.44

Site Comments

Ground Survey Date 1987-12 **Aerial Survey Date** **Survey Intensity** R

SITE SIGNIFICANCE

Representational Rating R? **Collective Rating** C4

Defining Element Occurrences Acipenser brevirostrum

PROTECTION

Conservation Intentions Outstanding Resource Water or High Quality Water designation.

Designation

Protection Comments No protection status.

MANAGEMENT

Management Comments

Land Use Comments

Natural Hazards

Exotics Comments

Offsite

Information Needs

Significant Natural Heritage Area Report

07 February 2014

Name Lower Cape Fear River Aquatic Habitat **Site ID** 1167

Management Needs

Managed Area Relations

ELEMENT OCCURRENCES

Scientific Name	Common Name	G Rank	S Rank	EO Rank	EO ID
Acipenser brevirostrum	Shortnose Sturgeon	G3	S1	B	12176
Acipenser oxyrinchus	Atlantic Sturgeon	G3	S3	E	32417
Malaclemys terrapin	Diamondback Terrapin	G4	S3		3796

REFERENCES

Reference Code	Full Citation

VERSION

Version Date	1995-02-09
Version Author	Smith

Significant Natural Heritage Area Report

07 February 2014

Name Middle Island

Site ID 2044

LOCATORS

County Brunswick (NC) **Quad** Cape Fear
Kure Beach **Watershed** Lower Cape Fear

Latitude 335216N **Longitude** 0775917W

Directions Middle Island, between Bald Head and Bluff islands in the Bald Head-Smith Island Complex at the mouth of the Cape Fear River.

Site Relations

OWNERS

Owner	Details	Comments
Private	Charles Young	
NC DENR, Division of Parks and Recreation	N.C. Division of Parks and Recreation	
NC DENR, Division of Coastal Management	NC Division of Coastal Management	

SITE DESCRIPTION

Minimum Elevation: **Feet** **Meters**

Maximum Elevation: **Feet** **Meters**

Site Description Long, narrow sand ridge island covered with maritime forest, surrounded by salt marsh. The maritime forests of the Smith Island Complex are unique in North Carolina in containing cabbage palm (Sabal palmetto) and other more southern species as components.

Land Use History

Cultural Features

SITE DESIGN

Designer **Mapped Date**

Boundary Justification

Acreage 1,042.89

Site Comments The narrow island is disturbed by roads running the length of the island.

Ground Survey Date **Aerial Survey Date** **Survey Intensity** P

SITE SIGNIFICANCE

Representational Rating R2 **Collective Rating** C5

Defining Element Occurrences Salt Marsh (Carolinian Subtype)

PROTECTION

Conservation Intentions

Designation

Protection Comments No protection status

MANAGEMENT

Management Comments

Land Use Comments

Natural Hazards

Exotics Comments

Offsite

Information Needs

Significant Natural Heritage Area Report

07 February 2014

Name Middle Island

Site ID 2044

Management Needs

Managed Area Relations

ELEMENT OCCURRENCES

Scientific Name	Common Name	G Rank	S Rank	EO Rank	EO ID
Baccharis glomeruliflora	Silverling	G4	S1	H	19
Cyperus tetragonus	Four-angled Flatsedge	G4?	S1	H	6587
Ludwigia alata	Winged Seedbox	G3G5	S2	H	6544
Sabal palmetto	Cabbage Palm	G5	S1	B	23235
Sabal palmetto	Cabbage Palm	G5	S1	C	9867
Sporobolus virginicus	Saltmarsh Dropseed	G5	S1	H	16057
Salt Marsh (Carolinian Subtype)		G5	S4	A	19097

REFERENCES

Reference Code	Full Citation

VERSION

Version Date

Version Author

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Project Number: 14-0287 Due Date: 2/3/14

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
☐	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
☐	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
☐	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
☐	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner.On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and FederalDredge and Fill Permit.	55 days (90 days)
☐	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
☐	Permit to construct & operate Transportation Facility as per 15 A NCAC (2D.0800, 2Q.0601)	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
☐	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
☐	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950.		
☐	Complex Source Permit required under 15 A NCAC 2D.0800		
☒	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) At least 30 days before beginning activity. A fee of $65 for the first acre or any part of an acre. An express review option isavailable with additional fees.		20 days (30 days)
☐	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		(30 days)
☐	Mining Permit	On-site inspection usual. Surety bond filed with ENR Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
☐	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "If more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
☐	Oil Refining Facilities	N/A	90-120 days (N/A)
☐	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of $200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to drill exploratory oil or gas well	File surety bond of $5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
☐	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
☐	State Lakes Construction Permit	Applicationfee is charged based on structure size. Must include descriptions & drawings of structure & proof of ownership of riparianproperty.	15-20 days N/A
☑	401 Water Quality Certification	N/A	60 days (130 days)
☐	CAMA Permit for MAJOR development	$250.00 fee must accompany application	55 days (150 days)
☐	CAMA Permit for MINOR development	$50.00 fee must accompany application	22 days (25 days)
☐	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
☐	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
☑	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
☐	Tar Pamlico or Neuse Riparian Buffer Rules required.		
☐	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq. Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
☐	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days

* Other comments (attach additional pages as necessary, being certain to cite comment authority)

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

☐ **Asheville Regional Office**
2090 US Highway 70
Swannanoa, NC 28778
(828) 296-4500

☐ **Fayetteville Regional Office**
225 North Green Street, Suite 714
Fayetteville, NC 28301-5043
(910) 433-3300

☐ **Mooresville Regional Office**
610 East Center Avenue, Suite 301
Mooresville, NC 28115
(704) 663-1699

☐ **Raleigh Regional Office**
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 791-4200

☐ **Washington Regional Office**
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481

☐ **Wilmington Regional Office**
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 796-7215

☐ **Winston-Salem Regional Office**
585 Waughtown Street
Winston-Salem, NC 27107
(336) 771-5000

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

MEMORANDUM

To: Crystal Best
State Clearinghouse

From: Lyn Hardison
Division of Environmental Assistance and Customer Service
Environmental Assistance and Project Review Coordinator

RE: 14-0287 Additional Comments
Draft Environmental Impact Statement
Proposed project is for the construction of a terminal structure at the western end of South Beach and supplemental beach nourishment
Brunswick County

Date: February 18, 2014

Please find attached additional comments from the NC Wildlife Resource Commission which was received in this office after the response due date. They have some recommendations that need to be forwarded to the applicant and assembled into our previous comment package.

Thank you for the opportunity to respond.

Attachment

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-707-8600 \ Internet: www.ncdenr.gov

North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

MEMORANDUM

TO: Lyn Hardison
Office of Legislative and Intergovernmental Affairs
North Carolina Department of Environment and Natural Resources

FROM: Maria T. Dunn, Coastal Region Coordinator
Habitat Conservation Program

DATE: February 18, 2014

SUBJECT: Draft Environmental Impact Statement, Village of Bald Head Island Shoreline Protection Project, Brunswick County, North Carolina.
OLIA No. 14-0287

Biologists with the NC Wildlife Resources Commission (NCWRC) have reviewed this Draft Environmental Impact Statement (DEIS) with regards to potential impacts to fish and wildlife resources. Our comments are provided in accordance with provisions of the Coastal Area Management Act (G.S. 113A-100 through 113A-128), as amended, and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). Representatives from the NCWRC were present at Project Development Team meetings during the planning and scoping phases of this project.

The Village of Bald Head Island has submitted a DEIS to describe an inlet management plan and terminal groin project proposed to address erosion and beach restoration. The project includes the construction of a terminal groin as allowed in the North Carolina General Assembly's 2011 Senate Bill 110 and 2013 Senate Bill 151 as well as subsequent nourishment activities around the structure and along the beaches.

Projects that affect oceanfront beaches and natural inlet processes such as beach nourishment, inlet dredging, inlet relocation and the construction of hardened structures on or along beaches may adversely affect nesting sea turtles and shorebird foraging and nesting areas.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

Due to the scope of this project and the documented use of the beaches by sea turtles and shorebirds, the NCWRC has the following comments and recommendations:

- The NCWRC has an established sea turtle nesting moratorium that reduces the potential for unintended impacts to nesting sea turtle species that frequent the coast of North Carolina. To avoid impacts to these species, all work on the oceanfront shoreline, including mobilization and demobilization for all beach nourishment events and the construction of the terminal groin structure, should be conducted outside of the sea turtle nesting season which runs from 01 May until 15 November, or until the last known sea turtle nest has hatched.

- Inlet areas provide suitable nesting, foraging and roosting areas for multiple shorebird species. Nesting birds are sensitive to increased human activity and other disturbances around their nesting areas. To limit unintended impacts to nesting bird species in and near the project area, please avoid all work during the shorebird nesting period which runs from 01 April until 31 August.

- Preconstruction monitoring should be incorporated into the EIS for overwintering birds to better establish the use of the inlet area by these species. This information is beneficial in evaluating any impacts to the use by these bird species post construction during seasons that may not have been previously monitored by the applicant outside of the breeding season.

- The NCWRC is concerned that building a structure that is dependent upon regular nourishment events could potentially impact benthic invertebrate populations found in intertidal habitats. Benthic invertebrates are an important food source for foraging birds, both resident and migratory, during both the breeding and nonbreeding seasons. Regular beach nourishment events, such as every five years, can reduce benthic populations when populations are not given appropriate time for recovery.

- The NCWRC is concerned that the construction of a terminal groin may lead to a possible increase in requests to conduct emergency beach nourishment during ecologically sensitive times of the year, i.e. the nesting shorebird and nesting sea turtle moratoriums, due to potential increases in erosion rates around the groin structure.

- The NCWRC is concerned about permanent, cumulative habitat loss and changes to the inlet complex. "Coastal engineering projects can potentially create, enhance, degrade, or destroy foraging and nesting habitat at important coastal bird breeding, stopover, or wintering sites" (Harrington 2008). Senate Bill 110 (e)(5)(c) states the plan must provide for mitigation measures to be implemented if adverse impacts reach the thresholds defined in the plan. Mitigation would need to create or protect a similar habitat type that would offset the loss of this inlet area. Please provide a discussion on the potential mitigation options that may be available to offset any unintended direct and indirect impacts from the proposed terminal groin.

- Biological and physical post-project monitoring should be conducted for a long enough period of time to determine the effect a terminal groin structure has on the immediate and surrounding areas. Due to the dynamic nature of barrier islands, ocean facing beaches, and inlets, this period of time should be long enough to capture a "normal" period of time. Monitoring reports should be provided to the appropriate parties and consultation should be done with regulatory and resources agencies prior to ceasing any monitoring activity. If it is determined during this period of time the project has had a significant adverse impact or is not performing as intended, mitigation may have to be implemented.

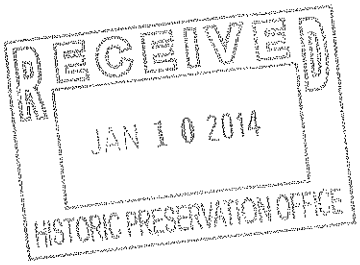
Thank you for the opportunity to review and comment on the DEIS for this project. Please feel free to contact me at (252) 948-3916 if there are any questions or comments pertaining to this project.

Works Cited

Harrington, B. R. 2008. *Coastal inlets as strategic habitat for shorebirds in the southeastern United States*. DOER Technical Notes Collection. ERDC TN-DOER-E25. Vicksburg, MS: U.S. Army Engineer Research and Development Center. http://el.erdc.usace.army.mil/dots/doer/.

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: BRUNSWICK **H12:** OTHER



STATE NUMBER: 14-E-0000-0287
DATE RECEIVED: 01/08/2014
AGENCY RESPONSE: 02/03/2014
REVIEW CLOSED: 02/07/2014

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORDINATOR
DEPT OF CULTURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
MSC 4617 - ARCHIVES BUILDING
RALEIGH NC

12-0437

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DENR LEGISLATIVE AFFAIRS
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION

Due 1/28/14

PROJECT INFORMATION

APPLICANT: Department of the Army
TYPE: National Environmental Policy Act
Draft Environmental Impact Statement

DESC: Proposed project is for the construction of a terminal structure at the western end of South Beach and supplemental beach nourishment. - View documents at: http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/MajorProjects

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☒ NO COMMENT ☐ COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley DATE: 2.6.14

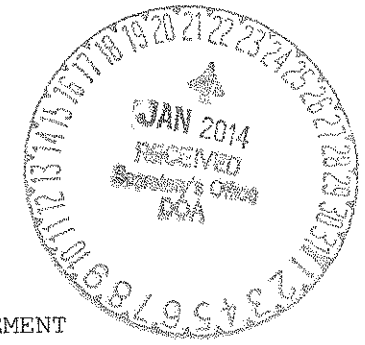
JAN 13 2014

Kerry Morrow

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: BRUNSWICK **H12:** OTHER

STATE NUMBER: 14-E-0000-0287
DATE RECEIVED: 01/08/2014
AGENCY RESPONSE: 02/03/2014
REVIEW CLOSED: 02/07/2014



MS CARRIE ATKINSON
CLEARINGHOUSE COORDINATOR
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

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DEPT OF CULTURAL RESOURCES
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If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: [✓] NO COMMENT [ ] COMMENTS ATTACHED

SIGNED BY: _____ DATE: 1/17/14

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: BRUNSWICK **H12:** OTHER

STATE NUMBER: 14-E-0000-0287
DATE RECEIVED: 01/08/2014
AGENCY RESPONSE: 02/03/2014
REVIEW CLOSED: 02/07/2014

MS CAROLYN PENNY
CLEARINGHOUSE COORDINATOR
CC&PS - DIV OF EMERGENCY MANAGEMENT
FLOODPLAIN MANAGEMENT PROGRAM
MSC # 4719
RALEIGH NC

Rec'd 1/10/2014

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DEPT OF TRANSPORTATION

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If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☐ NO COMMENT ☒ COMMENTS ATTACHED

SIGNED BY: _____ DATE: 1/14/14

North Carolina Department of Public Safety

Emergency Management

Pat McCrory, Governor
Frank L. Perry, Secretary

Michael A. Sprayberry, Director

January 14, 2014

State Clearinghouse
N.C. Department of Administration
1301 Mail Service Center
Raleigh, North Carolina 27699-1301

Subject: Intergovernmental Review State Number: 14-E-0000-0287
Terminal Structure and Supplemental Beach Nourishment, Brunswick County

As requested by the North Carolina State Clearinghouse, the North Carolina Department of Crime Control and Public Safety Division of Emergency Management Office of Geospatial and Technology Management (GTM) reviewed the proposed project listed above and offer the following comments:

1) All federal agencies are required to follow the guidelines of Executive Order 11988, signed May 24, 1977. Any work within the Special Flood Hazard Area, based on the current Flood Insurance Rate Map, should follow these guidelines in order to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains. The guidelines address an eight-step process that agencies should carry out as part of their decision-making on projects that have potential impacts to or within the floodplain. The eight steps are summarized below.

    a. Determine if a proposed action is in the base floodplain (that area which has a one percent or greater chance of flooding in any given year).

    b. Conduct early public review, including public notice.

    c. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.

    d. Identify impacts of the proposed action.

    e. If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain, as appropriate.

    f. Reevaluate alternatives.

    g. Present the findings and a public explanation.

    h. Implement the action.

MAILING ADDRESS:
4218 Mail Service Center
Raleigh NC 27699-4218
www.ncem.org

GTM OFFICE LOCATION:
4105 Reedy Creek Road
Raleigh, NC 27607
Telephone: (919) 825-2341
Fax: (919) 825-0408

2) 44 CFR 60.3.e prohibits man-made alteration of sand dunes and mangrove stands within Zones V1-30, VE, and V on the community's FIRM which would increase potential flood damage. Grading activity within one of these zones shall be accompanied by a hydraulic study to assure there will be no increase in flood damage potential.

If you have any questions, please contact Dan Brubaker, P.E., CFM, the NC NFIP Engineer at (919) 825-2300, by email at dan.brubaker@ncdps.gov or at the address shown on the footer of this document.

Sincerely,

Kenneth W. Ashe, P.E., CFM
Assistant Director
Geospatial and Technology Management Office

cc: John Gerber, NFIP State Coordinator
Dan Brubaker, NFIP Engineer

North Carolina
Coastal Federation
Working Together for a Healthy Coast

March 17, 2014

Ronnie D. Smith
Project Manager
US Army Corps of Engineers
Wilmington Regulatory Field Office
69 Darlington Avenue
Wilmington, North Carolina 28403-1343

RE: Corps Action ID: SAW- 2012-00040

Dear Mr. Smith:

Please accept the following comments on the proposed terminal groin project on Bald Head Island on behalf of the N.C. Coastal Federation. For the past 33 years the federation has been taking an active role in the protection of North Carolina's coastal water quality, habitat, and public beach access.

The Draft Environmental Impact Statement (DEIS) is not consistent with National Environmental Policy Act (NEPA) because it segments the environmental evaluation of the project by disclosing and evaluating the direct effects of only one component of what is clearly planned to be a larger plan. Taking into account recent meetings and reports by the N.C. Division of Coastal Management as well as the Town of Bald Head, it is clear that plans to address erosion problems on Bald Head Island will encompass much more than the preferred alternative identified in the DEIS.

NEPA requires that this DEIS provide a comprehensive evaluation of all components of the proposed project. These components should be evaluated together and not in a piecemeal way into separate documents and analyses that fail to account for the *combined, cumulative, comprehensive and indirect impacts* of the overall plan to address the erosion issue at Bald Head Island.

The federation requests that the U.S. Corps of Engineers produce a supplemental EIS to address the significant new circumstances of information relevant to environmental concerns, described below, and bearing on the proposed action or its impacts, as required by the 40 CFR, Section 1502.9(c)(1)(ii).

Northeast Regional Office
128 Grenville Street
Manteo, NC 27954
252.473.1607

NC Coastal Federation Headquarters and Central Regional Office
3609 Highway 24 (Ocean) • Newport, NC 28570 • 252.393.8185 • www.nccoast.org

Southeast Regional Office
530 Causeway Drive Suite F1
Wrightsville Beach, NC 28480
910.509.2838

1. **The DEIS fails to identify and evaluate combined, cumulative, comprehensive and indirect impacts of the proposed project.**

The recent Draft Report entitled Cape Fear River Area of Environmental Concern Feasibility Study (Study) (November 5, 2013) prepared by the N.C. Division of Coastal Management resulted from various meetings and workshops that involved the city of Bald Head Island among other stakeholders. On pages 3 and 4 the reports states:

> "While the *Village is currently seeking a permit for the construction of a terminal groin, they do not believe it will address all of the issues confronting Bald Head Island. The Village indicated that the existing groin field on South Beach may need to be modified and there may also be a need for rock groins and/or breakwaters. The Village believes that there would be a public benefit to pursuing engineered solutions to non-natural beach erosion in reducing the need for and frequency of dredging to maintain the federal navigation channel."*

Furthermore, in the Study (as summarized on page 18) the city proposes a number of new rules that would allow it to greatly expand upon the scope of the terminal groin project. The city indicates that it plans to build:

(1) Permanent erosion control structures: This includes rock groins, terminal structures, breakwaters, jetties and other structures currently prohibited under CAMA.
(2) Temporary erosion control structures: It wants rules that remove restrictions on size, configuration, orientation, sandbag dimensions, underlayments and the time limits.
(3) Change of the definition of "imminently threatened" structures: It wants this to be determined by a certified coastal engineer rather than by the DCM director.
(4) Grandfathering existing oceanfront structures: Structures would be exempted from having to meeting current setbacks should they need to be replaced.

Moreover, as stated repeatedly in the DEIS, the dredging of the Cape Fear River is considered to be the major cause of the erosion problems on Bald Head. These dredging activities are subject to periodic NEPA review, and alternative dredging requirements should also be considered as part of the scope of this project.

2. **The DEIS fails to properly analyze the unavoidable, adverse impacts should the proposed be implemented.**

40 CFR, Section 1502.16 states that the DEIS needs to comprehensively address the direct as well as indirect impacts of the proposed project, "as well as any *adverse environmental effects which cannot be avoided* should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, *and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented... including*:

(b) Indirect effects and their significance
(c) Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned
(h) Means to mitigate adverse environmental impacts."

On page 3-15 of the DEIS it is stated that the proposed terminal groin is not expected to necessarily resolve the ongoing erosion on the down-drift side of the island, and that it may in fact exacerbate down-drift erosion on the West Beach. This is clearly an indirect effect of the proposed project. However, the DEIS does not discuss in detail how this problem will be mitigated and resolved.

Taking into account this statement along with the recent DCM Study it is very clear that Bald Head plans a much more aggressive and comprehensive project that has as just one component the construction of the proposed terminal groin. NEPA requires that all components of the project be included and thoroughly analyzed in the DEIS, and that all indirect consequences be adequately addressed and analyzed.

3. **The DEIS fails to adequately and logically discuss relevant information pertaining to the proposed project.**

The Council of Environmental Quality requires federal agencies to clearly and logically present all relevant information pertaining to the environmental impacts of the proposed project in the NEPA process. For this reason, a number of components of the proposed project need further analysis:

(1) The modeling of performance of the three terminal groin lengths considered in the project was only done for the preferred 1900 feet groin alternative, whereas the performance of the shorter and the longer groin was extrapolated from the numbers obtained for the middle length groin. The modeling should be done for all three groin lengths.

(2) The Delft3D modeling of the preferred alternative was done for the time period of nine years, whereas the life of the project is 30 years. The modeling should include the entire life of the proposed project.

(3) None of the models take into account expected and normal weather events, such as major hurricanes and northeasters. These events, which will occur, cause all the predicted results of the computer models to be wrong, and the cost figures of the proposed structural alternatives to be grossly underestimated. This also skews the cost-benefit analysis since the cost of structural alternatives is not accurately estimated due to the failure to include normal storm conditions as part of the modeling.

(4) The DEIS states that before the second phase of the project is implemented two to four years will be necessary to observe the performance of the first phase of the groin. Several concerns arise with this proposal:

   (a) The timeframe given for the observation of the first phase is too short. As stated in the DEIS the proposed groin will reorient the South Beach shoreline. In the Appendix E of the DEIS it is stated that it took the shoreline 12 years to reorient clockwise, yet measurable outcomes are expected to be seen from Phase I only after two to four years. It is clear that this time frame is too short.
   (b) The DEIS needs to specify the criteria that will be used to determine whether the performance of the first phase was successful or not. No such information can be found in the DEIS.

(5) According to the DEIS, the engineer claims that the groin will be able to reorient the South Beach shoreline, as well as to decrease the effective angle between the shoreline and the incident breaking wave, and to reduce the rate of sand transport from the beach. Therefore, this goal should be the main benchmarks of the performance of the proposed terminal groin.

(6) The DEIS does not provide relevant discussion about how the proposed project would affect the natural habitats located inside the mouth of the inlet. These areas are important bird nesting habitats and shoals used as critical foraging areas by many species. Additional environmental concerns that need to be discussed in more detail include:

   (a) impacts of construction during the month of turtle moratorium;
   (b) impacts of sand compaction on turtle nesting; and
   (c) impact of sand borrowing sand from the surrounding shoals on natural habitat.

4. **The DEIS describes a project that is not consistent with state regulations.**

Terminal groins as commonly defined in N.C. have been repeatedly characterized as a single structure at the terminus of a barrier island (or inlet) that is designed to prevent beach erosion. Elsewhere in the nation, the term terminal groin has also been used to describe the last groin in a field of groins that stretches along an oceanfront beach. Lawmakers, local governments, and state regulators have repeatedly stated that terminal groins should not result in the expanded use of structures that harden the beachfront such as multiple groins or seawalls. This project that includes 17 groin structures, and not one single terminal groin, and is described by the town on numerous occasions in other public documents as a “groin field”, is likely in the future to also include additional rock structures, sand bags, and other erosion control measures that are not identified in the DEIS.

5. **In conclusion, the DEIS is inconsistent with the requirements of NEPA.**

In conclusion, Section 1.1 of the DEIS states that:

The purpose of the Village of Bald Head Island Shoreline Protection Project is to address on-going and chronic erosion at the western end of South Beach and to thereby protect public infrastructure, road, homes, businesses and rental properties, golf course, beaches, recreational assets, and protective dunes.

The DEIS is inadequate because it does not provide a comprehensive description or evaluation of all components of the project as have been described elsewhere in other government documents. The complete project needs to be clearly described, alternatives and costs of various options for achieving the project purpose need to be more fully identified, and the environmental and economic effects of this expanded number of options need further analysis and review. This can only be accomplished by producing a supplement to the DEIS that addresses all these additional elements of the city's plans that are not identified or evaluated in this DEIS.

Thank you.

Sincerely,

Ana Zivanovic-Nenadovic
Program and Policy Analyst

KILPATRICK TOWNSEND
ATTORNEYS AT LAW

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March 17, 2014

Via Electronic Mail and First Class Mail

Mr. Ronnie Smith
U.S. Army Corps of Engineers – Wilmington District
69 Darlington Avenue
Wilmington, NC 28403

Re: Town of Caswell Beach and North Carolina Baptist Assembly at Fort Caswell Comments Regarding Village of Bald Head Island Shoreline Protection Project – Draft Environmental Impact Statement

Dear Mr. Smith:

The Town of Caswell Beach (the "Town") and the North Carolina Baptist Assembly at Fort Caswell ("Fort Caswell") appreciate the opportunity to provide comments on the draft Environmental Impact Statement ("EIS") Village of Bald Head Island (the "Village") Shoreline Protection Project. As discussed below, the Town and Fort Caswell generally support the Village's preferred alternative of constructing a terminal groin with beach replenishment and the sand tube groinfield remaining; however, the Town and Fort Caswell have concerns regarding the proposed borrow area and inlet management plan. As a result, the draft EIS is inadequate and fails to comply with the National Environmental Policy Act, 42 U.S.C. § 4321 *et seq.* ("NEPA"). The Town and Fort Caswell, therefore, request that the U.S. Army Corps of Engineers (the "Corps" or "USACE") prepare a revised EIS that addresses the deficiencies in the current document and complies with NEPA by: (i) adequately evaluating the potential impacts of using Jay Bird Shoals as a borrow site; (ii) confirming that if the Village receives all the dredged material from Year 4 of the Sand Management Plan, the Towns of Caswell Beach and Oak Island will receive the dredged material during Year 6 of the Sand Management Plan; and (iii) revising the inlet management plan to adequately monitor the impacts of the borrow area and mitigate any adverse impacts identified during monitoring.

1. The Town and Fort Caswell support the Village's preferred alternative of constructing a terminal groin with beach replenishment and the sand tube groinfield.

The Town and Fort Caswell believe that it is appropriate to construct a terminal structure in the vicinity of the Point with beach replenishment to address the long-term, chronic erosion in this area and protect island residences, public infrastructure, roads, and beaches and dunes, including their associated functions (*e.g.*, recreations) and values (*e.g.*, storm protection). We understand that the terminal groin is intended to partially capture the longshore transport of sand

resulting in reduced erosion in this area and is not a structure that "armors" the shoreline. In addition, the proposed groin will likely also reduce shoaling into the channel therefore providing benefits to navigation.

2. **Because the modified channel essentially eliminates sand bypassing and the two littoral systems act independently, the Town and Fort Caswell oppose the Village obtaining any sand from Jay Bird Shoals during the construction of the terminal groin or at any other time.**

The Village has proposed a two-phased construction of the terminal groin. First, a 1,300-foot terminal groin would be constructed with concurrent beach fill. The Village proposes that dredged material from Jay Bird Shoals and possibly the maintenance of the federal navigation project (if timing allows), approximately 1.2 million cubic yards (250,000 cubic yards for the fillet), would be used for the Phase I beach fill. The Draft EIS states that if timing of the groin construction can coincide with a Wilmington Harbor maintenance project, sand from Jay Bird Shoals may not be needed for Phase I. Draft EIS, pp. 3-12 and 5-15. Second, the terminal groin would be extended seaward to its full design length (1,900 feet) with concurrent beach fill. The Village proposes that dredged material from Jay Bird Shoals, approximately 1.2 million cubic yards, would be used for beach fill during Phase II (500,000 cubic yards for the fillet). Draft EIS, pp. 3-12 and 5-15. However, it would appear that if Phase II groin construction is also coordinated with the Wilmington Harbor maintenance dredging, use of Jay Bird Shoals would not be required.

Consistent with past studies, the draft EIS recognizes that large-scale dredging has resulted in a segmentation of the ebb tidal delta and two distinct features. "[T]hese two littoral systems can be thought of as largely independent with little sand sharing between the islands." Draft EIS, p. 4-53 (citing USACE 2011 Reevaluation Report). Not only are there two independent littoral systems, tidal currents have the potential to move sand from each island to the ebb tidal delta and then back to the island from which the sand originated. "According to the applicant's engineer, material tidally removed from Oak Island appears to be directed towards Jay Bird Shoals and the navigation channel, suggesting to him that the material deposited into the shoals may remain in the local littoral system and/or be transported back onto Oak Island." Draft EIS, pp. 4-43 to 4-44.

The Town and Fort Caswell oppose using Jay Bird Shoals as a borrow area for construction of the terminal groin or at any other time. The systems act independently with little sand sharing between the two systems, and, as recognized by the Village's engineer, sand within Jay Bird Shoals may remain with the local littoral system and be transported back onto Oak Island; therefore, any sand removed from Jay Bird Shoals has the potential to cause a deficit within the Oak Island littoral system and result in adverse impacts, including erosion, to Oak Island's beaches. In fact, Fort Caswell, which was recently included in the National Register of Historic Places for its significance in the areas of military history, engineering, architecture, and archaeology, has experienced significant erosion and dune loss in recent years (and a significant portion of the measured change over the last decade has been experienced within the last few

years based on USACE reports), which may be (at least partly) influenced by the Village's prior use of Jay Bird Shoals as a borrow site. Finally, use of Jay Bird Shoals as a borrow site has the potential to influence wave refraction and tidal currents resulting in impacts to sediment transport patterns, which again have the potential to adversely impact Oak Island. The Town and Fort Caswell appreciate the efforts that the Village has made to quantify potential wave impacts, but it must be realized that sediment transport patterns are influenced by waves and tidal currents. To date it does not appear that the potential effects of using Jay Bird Shoals as a borrow area on the local hydrodynamics have been quantified. The tidal current model runs shown in the report for larval transport could possibly be used for this effort; however, it appears that these model runs used pre-dredged bathymetry for Jay Bird Shoals.

The draft EIS fails to consider and evaluate the significant adverse impacts to the human environment that may result from using Jay Bird Shoals as a borrow area, and the Town and Fort Caswell oppose this alternative.

3. **The draft EIS does not address how sand from maintenance dredging associated with the federal navigation project will be allocated between the Village and the Towns of Caswell Beach and Oak Island (collectively, the "Towns"). Consistent with the Sand Management Plan, if the Village receives all the sand for next maintenance cycle, the Towns must receive all the sand the following maintenance cycle.**

The Corps has developed a Sand Management Plan ("SMP") and recently proposed a draft Revised SMP to address the disposal of dredged material associated with the deepening and maintenance of the Wilmington Harbor Channel. The SMP establishes a two-year dredging cycle for the Inner Ocean Bar. Based on numerical modeling results, the Corps determined that two-thirds of the sand shoaling into the channel originates from Bald Head and one-third is derived from Oak Island and Caswell Beach. These modeled ratios have closely tracked the actual shoaling rates. Based on a "back-passing" approach, the Corps indicated that dredged material would be placed on the adjacent beaches from which it originated. Thus, Bald Head Island would receive sand in Years 2 and 4, and Caswell Beach and Oak Island would receive sand in Year 6.

The Corps recently re-evaluated the SMP, and in January 2011 issued a draft Revised SMP. In the draft Revised SMP, the Corps proposed to no longer follow a fixed ratio to allocate sand between the adjacent islands. Rather, sand dredged from Baldhead Shoal Range (Reaches 1 and 2), which originates from Bald Head Island, would be returned to Bald Head Island, and sand dredged from Smith Island Range, which originates from Jay Bird Shoals (Oak Island is primary feeding mechanism for Jay Bird Shoals), would be returned to Caswell Beach and Oak Island. The Corps also recognizes that "longer time frames between sediment placements will result in larger beach recessions." (Corps 2011 Reevaluation Report, p. 23) As a result, the Corps proposed a "shoaling plan" in which dredged material would be placed on each island every two (2) years: the distribution of material would be based on shoaling location in the channel with sand dredged from Baldhead Shoal Channel Reaches 1 and 2 going to Bald Head and sand from Smith Island Range going to Oak Island and Caswell Beach.

The Corps has not adopted the Revised SMP and is currently operating under the existing SMP. The Village received approximately 1.524 million cubic yards of sand from maintenance of Inner Ocean Bar in 2013, representing "Year 2" of the SMP. If the Village receives all of the sand from the next maintenance cycle of the Inner Ocean Bar (Year 4), the Towns must receive all of the sand from the following maintenance cycle (Year 6).

While the Town and Fort Caswell appreciate the modeling efforts completed by the Village to evaluate the proposed alternatives, model runs with assumptions from the Revised SMP in which the Village would receive some volume of sand every 2 years (or 3 years as assumed in the EIS) would be helpful along with model runs with the Phase I groin length to estimate interim behavior. Considering the favorable modeling results with the terminal groin (shoreline positions and volumes of sand remaining after three years), additional model runs with a reduced nourishment volume should be performed to investigate whether locally funded projects by the Village could be avoided (especially if the Revised SMP is adopted).

4. **As required by N.C. Gen. Stat. § 113A-115.1, the inlet management plan must be adequate for the purposes of monitoring the impacts of the proposed terminal groin and mitigating any adverse impacts identified as a result of the monitoring.**

If Jay Bird Shoals is used as a borrow area (which the Town and Fort Caswell oppose), the inlet management plan must be adequate to monitor the impacts of the borrow area and mitigate any adverse impacts identified during monitoring.

For purposes of assessing post-construction shoreline conditions on the eastern end of Oak Island, the Village proposes to utilize survey data acquired by the Corps. The inlet management plan further provides that the Village's obligation to monitor Oak Island "will terminate if three (3) years of monitoring subsequent to terminal groin structure completion fails to indicate any level of cause or effect relationship between structure installation and shoreline change at Oak Island." Draft Inlet Management Plan, p. 5. First, the Town and Fort Caswell believe that Fort Caswell should be included in the monitoring plan. Second, the number of profiles to be utilized (12 are proposed by the Village if the USACE stops their monitoring program) would need to be increased to include areas of Fort Caswell and the final agreed upon number of profiles would also be influenced by whether Jay Bird Shoals is utilized or not. Third, three (3) years is not a long enough time period in these dynamic systems for trends to emerge; six (6) to nine (9) years would be more reasonable given the time frames used for assessing alternatives in the EIS.

The draft inlet management plan provides that "[b]orrow sites utilized for locally funded sand placement operations at Bald Head Island shall be monitored in accordance with the Permit Condition associated with each project." Draft Inlet Management Plan, p. 6. The inlet management plan is required to set forth the monitoring plan to adequately address impacts of the proposed terminal groin project. Relying on future permit conditions not only does not meet the statutory requirements, but the Town and Fort Caswell are unable to adequately review these permit conditions at this time. Moreover, the inlet management plan suggests there is sand

"remaining (1 Mcy) [in the] unexcavated (permitted) portion of the Jay Bird Shoals borrow area." Draft Inlet Management Plan, p. 6. The permit obtained to use Jay Bird Shoals as a borrow site in 2009 was for a one-time event, and if the Village seeks to use Jay Bird Shoals as a borrow area for sand to be used as fill for its terminal groin, a new permit is required. Finally, because the Village's modeling results using Jay Bird Shoals as a borrow area showed the potential for increased wave height at Middle Ground Shoal, this area (Middle Ground Shoal) should also be surveyed. These borrow area surveys should be completed with multibeam surveys so that 100 percent coverage is achieved.

The draft inlet management plan fails to define the baseline for assessing any adverse impacts and the thresholds for when the adverse impacts must be mitigated. The draft inlet management plan sets forth certain conditions that will be considered in determining whether the terminal groin project adversely impacts eastern Oak Island, but states that it will be "difficult, if not impossible, to verify any increase in erosion on the Caswell Beach section of Oak Island that is attributed to the proposed . . . terminal groin." Draft Inlet Management Plan, pp. 9-10. The inlet management plan must be revised to clearly define baseline conditions and thresholds for when the adverse impacts must be mitigated. These conditions must also make the distinction between potential effects from the terminal groin and the borrow area to be meaningful.

The draft inlet management plan fails to provide adequate mitigation measures to be implemented if adverse impacts caused by the terminal groin project are identified. Although the Village provides that other measures may be considered, the Village proposes that any such impacts would be mitigated through direct sand placement through a reapportionment of some portion of the maintenance dredged material from the Inner Ocean Bar. With respect to Fort Caswell, dredged material from the Wilmington Harbor Navigation Project cannot be placed on Fort Caswell so additional options would need to be included and considered. With respect to Caswell Beach, if dredged material from the Wilmington Harbor Navigation Project is the source of sand for mitigation, the "reapportionment" should be to increase the Towns' allocation (*i.e.*, decrease the Village's allocation), not take it away from another area on Oak Island that is "more stable or accreting."

5. The draft EIS does not adequately evaluate the cumulative impacts of using Jay Bird Shoals as a borrow area.

The Village dredged 1.85 million cubic yards of sand from Jay Bird Shoals for a beach replenishment project in 2009. The Village now proposes to potentially use Jay Bird Shoals as a borrow area (which the Town and Fort Caswell oppose) for beach fill during both Phase I and Phase II of the construction of the proposed terminal groin. The Village is required to evaluate the cumulative impacts of removing sand from Oak Island's independent littoral system.

In closing, subject to the concerns raised above, we support the Village's preferred alternative of constructing a terminal groin with beach replenishment and the sand tube

groinfield remaining and appreciate the opportunity to comment on the Village's proposed terminal groin project.

Sincerely,

KILPATRICK TOWNSEND & STOCKTON LLP

Todd S. Roessler

cc: The Honorable Harry Simmons, Mayor of Caswell Beach
Richard Holbrook
Johnny Martin
Charles S. Baldwin IV

The Village of Bald Head Island

March 17, 2014

VIA EMAIL

Corps of Engineers, Wilmington District
Wilmington Regulatory Field Office
69 Darlington Avenue
Wilmington, North Carolina 28403-1343
Email: ronnie.d.smith@usace.army.mil

ATTENTION: Mr. Ronnie Smith

Re: Village of Bald Head Island Terminal Groin ("Project")
Corps Action ID#: SAW-2012-00040

Ladies and Gentlemen:

The Village of Bald Head Island thanks the Wilmington District, Corps of Engineers ("Corps") for its work with the Village, other regulatory agencies and stakeholders in the preparation and review of permitting documents for this Project. In response to those public notices dated January 10 and February 13, 2014, the Village of Bald Head Island, North Carolina ("Village") submits its comments on the draft Environmental Impact Statement for the Project.

Simplistically, the need for this Project arises from the well-documented severe and chronic erosion experienced at the western end of South Beach, which threatens public infrastructure, roads, homes, beaches, dunes and wildlife habitat. Since deepening and relocation of the Wilmington Harbor Shipping Channel ("Channel") through the protective shoals at Bald Head Island, the Island has experienced unprecedented levels of erosion. In response to this erosion, the Village, at its cost, has incurred expenses since 2000 in excess of $25.0 million for beach nourishment projects and erosion control structures, such as the sixteen (16) tube geotextile groinfield at South Beach.

Following decades of study and extensive state of the art Delft3D numerical modeling by the Village's coastal engineering consultant, Olsen Associates, Inc., it was determined that a terminal groin structure, as proposed by the Village, would not solve but would assist to reduce

erosion nearest the Channel by reorienting the shoreline and slowing the annual rate of alongshore sediment transport into the Channel. Following completion of the terminal groin Project however, beneficial sand placement from future Channel dredging operations would continue to be required on the Island's beaches.

The applicant is cognizant of comments by Caswell Beach and others on the Western side of the Channel that they should receive all the Channel maintenance sand from the Smith Island Reach and that Bald Head Island should only receive sand from the dredging of Bald Head Reaches 1 and 2. We hope that following construction of the Terminal Groin in 2014-15, assuming it can be built in that time window, the Bald Head Island beaches may be improved sufficiently to allow for an approximately 2/3 – 1/3 future sand split. However, monitoring to date and sound coastal engineering advise that if the Terminal Groin is not built concurrent with Channel dredging in 2014-15, substantial environmental harm would result and many millions of dollars of property and roads would be put in jeopardy. In that event, the Bald Head Island beaches would require, at a minimum, as shown by numerical modelling and beach surveys to date, the beneficial placement of all sand from the Channel maintenance dredging of the Smith Island Reach and Bald Head Reaches 1 and 2 during each dredging event. It is well documented by monitoring studies that Bald Head Island beaches lose in excess of 400,000 cubic yards/year, while the Oak Island and Caswell Beach beaches lose only a small fraction of that amount annually. The allocation of sand between the Village and the towns of Caswell Beach and Oak Island ("Towns") pursuant to the Sand Management Plan regarding disposal of dredged material associated with the maintenance of the Wilmington Harbor Channel is beyond the proper scope of the EIS for this local Project and need not be addressed by the Corps in any definitive manner. The Corps has consistently maintained that it has discretionary authority to distribute sand as appropriate for the Navigation Channel and to address environmental impacts.

The statement on Pages 4-53 regarding Bald Head Reaches 1 and 2 and the Smith Island Reach inaccurately characterizes the genesis and purpose of the year 2000 Sand Management Plan ("SMP") when it states that "the shoaling rates within those two channel reaches have occurred in a one-third to two-third proportion reflecting the basic assumption of the original Sand Management Plan" (emphasis added). The latter SMP document, based upon a 1997 Corps of Engineers Research and Development Center ("ERDC") study, concluded that littoral transport rates along the two islands was in the ratio of 2:1 (BHI:OI). It did *not* address a ratio of shoaling rates within the navigation channel. Hence, one cannot make the conclusion that location of Channel sand shoaling is indicative of adjacent island shoreline losses or need to mitigate impacts.

A reinvestigation of littoral transport rates utilizing a Delft 3D model (Olsen 2013) – Pg. 56 – predicts that the ratio of "peak" littoral transport rates between Bald Head Island and Oak Island is closer to 4.2:1. Furthermore, an inlet sediment budget prepared for the 2011 Beach and Inlet Management Plan report of the NC DENR, Division of Coastal Management, suggests a ratio closer to 7.8:1. It is noted for the record that the 1999 ERDC model was proven to have been in material error in its predictions by at least three (3) coastal engineering firms. An in-

depth evaluation of the ERDC Study by the Village Consultant, Olsen Associates, Inc., is included as Attachment A.

Further, the SMP stated that "three factors were considered in the development of a dredged material disposal plan for maintenance of the harbor entrance, namely; engineering requirements of the Project, environmental impacts, and costs." Sand Management Plan, Page 8, Paragraph 17. These three factors should continue to guide present and future disposal for Channel maintenance dredging events.

It is a fundamental precept for the success of the terminal groin Project that a secondary sand source necessary to maintain the equilibrium of the beach system after groin construction be obtained from the proven and previously permitted sources of Jaybird Shoals and the entrance to Bald Head Creek, or potentially from Frying Pan Shoals in the more distant future, since the Channel, as dredged for navigation, contains insufficient sand for both supplemental sand budget purposes as well as sand fillet maintenance.

Jaybird Shoals was previously used as a borrow site by the Village in 2009-2010. The monitoring performed in connection with that project has proven adequate. Further, studies and monitoring have shown that the project area quickly recovered and that there was no impact associated with the project at Caswell Beach or Fort Caswell. Additional monitoring is not required and would violate N.C.G.S. §113-A-115.1(e)(5), "The inlet management plan monitoring and mitigation requirements must be reasonable and not impose requirements whose costs outweigh the benefits." Several decades of monitoring by the Corps established that the hotspot at Fort Caswell long pre-dated the Village project at Jaybird Shoals and there is no causal relation. The most recent Division of Coastal Management erosion rate maps indicate that the shorelines at the Towns have accreted and have the minimal erosion rates applicable of two (2) feet per year. The Towns have provided no engineering study or data to refute the Village's Jaybird Shoals project studies. There is no engineering basis to conclude that the Jaybird Shoals project has an effect on hydrodynamics at the Towns or Fort Caswell. Only wave energy is typically evaluated and the Village's coastal engineer has performed and published such studies. The predicted increased energy level at middle ground resulting from a fully-excavated Jaybird Shoal borrow site (as proposed) was almost unmeasurable. There is no engineering basis to survey middle ground or perform further hydromechanics study, as suggested by the Towns. Such an exercise would be extraordinarily expensive and non-productive.

The terminal groin Project considers extensive federal channel surveys and represents the results of in-depth Delft3D computer modeling as well as sound engineering practice. The terminal groin will result in healthier beaches and an improved sand budget for the benefit of the beaches of Bald Head Island. There do not appear to be any realistic or practical alternatives to the construction of a terminal groin. The draft Environmental Impact Statement shows that any potential impacts from a terminal groin are negligible, are limited to Bald Head Island and are far outweighed by the potential benefits. This Project can likewise be considered beneficial to the environment, coastal resources, maintenance of the shipping Channel and the State Port.

Bald Head Island was developed as an environmentally sound and sustainable community. Its Nature Conservancy and sea turtle monitoring programs are world class. The roads, homes and infrastructure now threatened were built many hundreds of yards set back from the oceanfront. This is not a case of improvident development at the oceanfront, as some public comments have alleged.

We look forward to working with you to see this Project to its successful conclusion. If the window of opportunity represented by the 2014-2015 channel dredging project is not met and the fillet of the terminal groin cannot be supplemented by the federal sand, a tremendous opportunity will be lost and substantial environmental harm will occur. We must, therefore, work together to ensure that unfortunate circumstance does not result. Following as Exhibits 1 and 2 are certain technical comments to the draft Environmental Impact Statement of January 2014.

Sincerely yours,

Debra M. Straub for J. Andrew Sayre

J. Andrew Sayre
Mayor

pc: Colonel Steven A. Baker, USACE District Commander
Doug Huggett, NC Division of Coastal Management
Honorable Mike McIntyre
Harry Simmons, Mayor, Caswell Beach
Justin McCorkle, Esquire
Calvin R. Peck, Jr., Village Manager
Chris McCall, Assistant Village Manager and Shoreline Protection Manager
Erik J. Olsen, P.E.
George W. House, Esquire
Charles S. Baldwin, IV, Esquire

Enclosures: Exhibits 1 and 2
Attachment A

EXHIBIT 1

1. Page 1-8. Sec. 1.4.2, Table 1.2 - 2007 Corps O&M Project was not 100% Federally funded, as stated. The State of North Carolina paid $3.9M and the Village paid $1.3M to the Corps $9.4M. It was agreed the Village would be refunded any amount left over and the Village ultimately paid approximately $900,000.00.

2. Page 1-10. Sec. 1.4.3, paragraph 1, 3rd sentence - Passage of Hurricane Irene occurred in late summer of 2011 in which the ends of five (5) groins were damaged. Groins #16, #1, #2, #3, and #4 were replaced as part of the FEMA project in conjunction with the Corps O&M project that was completed in 2013.

3. Page 1-19, Section 1.6.15. It is incorrect that the project requires an easement from the North Carolina State Property Office. No easement is required for this project as the Village is a political subdivision of the State and exempt from this requirement. N.C.G.S. § 146-12(n)(3).

4. Page 3-13. Sec. 3.2.5.2 - Terminal Groin Design Goals Item #3 - revise the word "endangered" to "threatened".

5. Page 4-23. Sec. 4.3.2 (A), 2nd paragraph, 3rd sentence - revise to indicate (damaged by Hurricane Irene in 2011).

6. Page 4-34. Sec. 4.7, Public Safety - Recommend revising "Emergency Management Staff" to "Public Safety" staff in all references contained within document.

7. Page 4-35. Sec. 4.9, 2nd paragraph, 2nd sentence - Revise to state there are approximately 27 "public beach accesses".

8. Page 4-38, Sec. 4.12, 2nd paragraph, 1st sentence - Recommend specifying the type of tax revenue and where it is going.

9. Page 4-39, Sec. 4.12, 1st paragraph, last sentence - Recommend specifying the type of tax revenue referenced in the personal communication of Robert Norton.

10. Page 4-39, Sec. 4.13, 1st paragraph, last sentence - Revise to indicate the Village of Bald Head Island incorporated as a municipality in 1985.

11. Page 4-40, Sec. 4.13, 1st paragraph, 1st sentence - Revise to indicate that the Village does NOT fall under the auspices of the Brunswick County Land Use Plan as the Village developed its own CAMA Land Use Plan certified by the CRC on May 22, 2008. Prior to that the Village did fall under the BC CAMA Land Use Plan with a limited number of policies specific to BHI.

12. 2nd paragraph, 2nd sentence - reference is made to Brunswick County Land Use Plan... would recommend that the Village's CAMA LUP be the reference for all land use classifications/descriptions etc.

13. Page 4-57, Sec. .4.17, 1st paragraph, 2nd sentence - Include the collection system permit number WQC500276.

14. Page 4-57, Sec. 4.17, 3rd paragraph - recommend revising to indicate the Village Public Works provides routine collection of yard debris and can take receipt of recyclable materials as its facility to be transported off island to the Brunswick County facility. In terms of household waste, the Village has a contract through Brunswick County for Waste Industries to provide household waste collection services.

15. Page 4-57, Sec. 4.18, 1st sentence - recommend revising to remove "the shallow" and "water table" as the aquifer is generally located approximately sixty (60') feet below.

16. Recommend revising the 3rd sentence to remove "recently" and that the water main is coming from Caswell Beach to BHI.

17. Recommend revising the 4th sentence to indicate the line is operated by the Village of Bald Head Island.

18. Recommend revising the 6th sentence to indicate a peak water usage average of 340,000 gallons per day.

19. Recommend revising the 2nd paragraph, 2nd sentence to indicate that the water supply wells are situated at an average depth of sixty (60') feet below the ground surface and remove "shallow".

20. Recommend revising the 2nd paragraph, 3rd sentence to remove "can".

21. Recommend revising the 2nd paragraph, 4th sentence to include three (3) reverse osmosis "units".

22. Page 4-57, Sec. 4.18, 1st paragraph, 3rd sentence - recommend revising to indicate the ten (10") inch water main was constructed in 2002???, not recently.

23. Page 5-66, Sec. 5.5, 1st paragraph, 2nd sentence - include the word "in" between the words incorporated and to.

24. Page 5-160, Sec. 5.14.2, 1st paragraph, 7th sentence - recommend revising to specify what type of tax revenue is the BHI Club the largest source of and for whom i.e. Brunswick County.

25. Page 5-176, Sec. 5.15 - refer to comments made regarding Sec. 4.13 above.

EXHIBIT 2

[Charles Baldwin's handwritten comments to the DEIS]

February 16, 2014

Mr. Ronnie Smith
Corp of Engineers, Wilmington District
Wilmington Regulatory Field Office
69 Darlington Ave
Wilmington, NC 28403-1343

Re: Draft Environmental Impact Statement for the Village of Bald Head Island Shoreline Protection Project (SAW-2012-00040).

Dear Mr. Smith,

My name is Pati Blackwell and I have vacationed for the past 26 years and for the foreseeable future at the beaches of Brunswick County located southwest of this proposed project. I am voicing concern about the scope of Draft Environmental Impact Statement (DEIS) for the Village of Bald Head Island Shoreline Protection Project. I feel that the DEIS for this project has not undergone full examination and that additional review of the existing studies and comments relating to the DEIS are necessary to help insure that adjacent islands and beaches are not negatively impacted by the project.

In light of recent legislation by the North Carolina General Assembly that changes long held policy regarding the use of terminal groins for erosion control, both cumulative and indirect impacts to the ecosystem of nearby islands is imminent. Some of the alternatives contained in the DEIS for the Bald Head Island project and potential future projects at newly approved inlets at Holden Beach, Ocean Isle Beach and Figure Eight Island are likely to create a domino effect of down-drift erosion issues for adjacent beaches. Terminal groins, coupled with intensive long-term beach nourishments has had some success in anchoring ends of barrier islands but the success of a groin and its associated maintenance has been shown to be site specific. The fact that portions of Bald Head Island continue to erode rapidly despite nearly 20 years of groin placement and beach nourishment projects designed to slow this erosion leaves much doubt to the economic and ecological prudence of several of the DEIS alternatives.

Many prominent coastal scientists have questioned the science behind using structures to retard erosion. To quote an open letter from 43 of the country's top coastal scientists,".....structures placed at the terminus of a barrier island near an inlet, will interrupt the natural sand bypass system, deprive the ebb and flood tide deltas of sand and cause negative impacts to adjacent islands." And, "permitting the construction of terminal groins will harm the coast and place down-drift property at risk." I urge you to reconsider allowing this project to advance without additional review and amendment to the DEIS with the following considerations: 1) What are the potential cumulative impacts to the adjacent islands from Bald Head Island heading southwest to the last island in the chain, Sunset Beach? 2) What mitigation plan will be put in place to protect both the ecosystem and the property owners of the down-drift islands and beaches from these cumulative impacts? 3) Please provide additional study with an eye toward revision to the DEIS regarding potential indirect ecological and economic impacts on these down-drift beaches resulting from some of the DEIS alternatives for the Bald Head Island project.

Given, the proximity of these areas to the Bald Head Island project any failure to address and consider these points would be reckless and outside of the spirit of the DEIS. Attempting to rectify a beach erosion problem using strategies that are likely to result in negative environmental impacts to the entire Brunswick County shoreline does not reflect sound public policy. The interests of the Village of Bald

Head Island reflected in this DEIS appear to be prioritized ahead of the property owners and citizens of Brunswick County as a whole, not to mention the rest of the citizens of North Carolina and tourists who enjoy all of the beaches, not just Bald Head Island. I ask you to insert new and additional alternatives into the language of the current DEIS that will address my concerns on the impact on these down-drift beach locations.

Respectfully submitted,

Patricia R. Blackwell
42483 Cortez Terrace
Ashburn, VA 20148

Reference: Corps Action ID # SAW-2012-00040

VBHI Shoreline Protection Project

My name is James E. Harrington. I am a long-time (30+ years) resident at 21 Cape Fear Trail, Bald Head Island. My residence is located mid-way along Cape Fear Trail, and offers an observation point for activities along the western shore of Bald Head Island, the shipping channel, and the sand deposition/erosion history along this shore to and including the southwest corner ("point") of the island. I submit that my experience with coastal management and on-site observations are pertinent. My preference is Alternative #5, subject to the following comments.

The littoral sand drift along the south shore of Bald Head Island is predominantly east to west, with a majority of the sand drifting into the shipping channel, and a significant minority drifting around the "point" and then south to north along the west shore. This natural flow resulted in a buildup of the "point" westward toward the original shipping channel and significant accretion along the western shore. In my time observing this, the western shore has accreted and grown westward an estimated 700 +/- feet. Three new dune lines have been added to the west of the primary dune as it existed at the time of my initial occupancy.

During the relocation of the shipping channel, the then existing "point" was eliminated, as were protective dunes adjacent to and overlooking the "point". Dredging for this relocation was undertaken at what was at the time high ground. The natural sand drift was interrupted, with the effect that the normal accretion at the "point" no longer occurred, with the sand flow increased into the shipping channel and the south to north sand flow reduced. This probably resulted in the need for more frequent dredging of the shipping channel. Extension of the sandbag groin field at and north of the "point" further interrupted the natural littoral drift, and contributed to increased erosion along the west shoreline.

The proposed terminal groin is likely to result in restraining the littoral east-west drift of sand along the south shore, and reduce the shoaling in the shipping channel. I have concern that interruption of that portion of the littoral drift that normally would flow south to north from the 'point" will result in increased erosion along the western shore. I understand that the proposed groin is intended to be "semi-permeable", but I see no calculation as to whether the amount of sand movement that would be allowed to flow to the north of the "point" would be sufficient to mitigate erosion along the west shore. The proposed post-construction beach fill is shown as entirely along the south beach.

Attention to maintaining an adequate by-pass sand flow to and along the west beach, and additional beach fill in this area is necessary.

The notice indicates that the purpose of the project is to address erosion along the south beach, and relates this purpose to protection of elements in that area. I submit that a major beneficiary of the project will be reduced frequency of channel maintenance dredging, and that protection of properties and infrastructure on the western side of the island is also important and should be addressed in the project design.

Without current access to the DEIS I'm not able to comment on its content, but I hope to have an opportunity to review it and comment further.

Louis S. Wetmore

4152 1st Street Place NW
P.O. Box 2262
Hickory, NC 28601

February 24, 2014

US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403

ATTENTION: Mr. Ronnie Smith

IN RE: Corps Action ID: SAW-2012-00040

Dear Mr. Smith:

My address on Bald Head Island is 230 South Bald Head Wynd. I have owned this home since 1999 and have seen on numerous occasions the severe erosion occurring on the South and West beaches.

I have also reviewed the DEIS and believe it to be an accurate assessment if the environmental issues concerning this project. I further believe that any negative impact of this project will be significantly offset by the positive benefits of the proposed project.

While I am not an expert in these matters, it seems entirely reasonable to me that protecting the Channel for continued unfettered shipping will benefit the people and the economy of our entire state. If this project, then, also assists in slowing the erosion on the areas around the channel the potential long term benefit is widespread.

It also seems to me that increasing the depth of the beach would benefit our Loggerhead Turtle nesting sites and would offer greater areas for all forms of wildlife including fish, crabs, oysters, all manner of birds and certainly the residents of and visitors to Bald Head Island.

Sincerely,

Louis S. Wetmore

March 4, 2014

Comments for the Public Record on
The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014

I am here to speak for public users of the beach — the beachcombers, beachwalkers, kayakers, surf fishermen — all the recreational beach users.

I am a Coastwalker.

My wife and I have walked the entire North Carolina coast, every foot of every barrier island beach accessible to the public, a hike of some 425 miles. I don't think many people know about this resource, that state laws of public trust grant us all unrestricted beach access. People are unaware that they can walk our beaches, from the SC border to the VA border. The public is unaware of Coastwalk North Carolina: a flatter, shorter, kinder Appalachian Trail — for beachcombers.

If they were aware, the public would be angry. Because, from walking the beaches of NC, we came to an inescapable conclusion: Hard structures on the beach impair the use of public trust beach. As such, placement of any hard structure on the shoreline should be avoided if at all possible — unless the structures are absolutely, positively necessary.

We have walked the 13-mile circuit of Bald Head Island/Ft. Fisher beaches many times. Overall, it's one of the best walks on the NC coast. Unfortunately, a groin field of enormous sand tubes makes walking on one section of BHI beaches one of the most *unpleasant* shorelines to walk in North Carolina. The mile of south beach marred by giant sand tubes is a painful pimple on the face of an otherwise beautiful set of island beaches.

I'm asking that the importance of the recreational use of public trust beach be considered before proceeding with this terminal groin proposal. The DRAFT EIS does NOT address this issue — it does not adequately consider the impact of the groin on the recreational use of public trust beach, *especially* with the option of leaving the infernal sand tubes in place. In fact, the brief opinion that is given in the EIS on the impact of this project on public beach recreation, especially comparing options #5 and #6, is absolutely incorrect.

The issue of public trust beach — how the recreational beach of Bald Head Island would be protected, and not adversely affected — should be properly addressed *before* this project proceeds.

Peter K. Meyer
Wilmington, NC

Further written points:

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

The purpose of the Village of Bald Head Island Shoreline Protection Project is to address ongoing and chronic erosion at the western end of South Beach and to thereby protect public infrastructure, roads, homes, businesses and rental properties, golf course, beaches, recreational assets, and protective dunes.

Clearly, the groin is intended to protect private property, not public property. To do so at the expense of damage to public beaches is unacceptable. The beaches and dunes will take care of themselves if no groin is constructed.

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

Since completion of the deepening project in 2002, the Corps dredged the channel with beach disposal in 2004/2005, 2007, 2009 and 2013.

Clearly, this project is dependent of ongoing public funding of beach renourishment. Since the result is to protect private structures on Bald Head Island, this project is an unacceptable use of public funds to protect private property.

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

The sand tube groinfield was authorized by CAMA Major Permit No. 9-95 (USACE Action ID No. SAW-1994-04687). Note that the CAMA Major Permit was issued by way of a variance in 1995 and is compliant with North Carolina G.S. 113A-115.1(c).

The sand tube groinfield should never have been authorized. Clearly, it was and is *illegal* under the rules established by CAMA: The rules permit an exception to the ban on construction of hardened structures only if a bridge or waterway vital to the pubic interest, or a historic site of national significance, is threatened.

CAMA should not have succumbed to political pressure and allowed sand tubes, thus opening the door to short-term shoreline protection, which resulted in more extensive and expensive building, more private homes and businesses, which are now said to need protection by a bigger and more expensive hardened structure.

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

The Island is accessible by boat only with daily ferry service providing access from Southport, NC.

Bald Head Island is accessible by way of public trust beach access, walking or bicycling, from Fort Fisher and Pleasure Island beaches to the north.

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

In the event of unanticipated negative impacts to the coastal and marine environment, removal of the groin structure may be necessary. Initial estimates for the physical costs associated with groin removal are $3.1 million (Erik J. Olsen, P.E., personal communication).

A formal, written estimate of the full cost of removal of the groin structure should be provided for consideration in the DRAFT EIS.

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

Additional costs will include reduced recreation, diminished aesthetic appeal and habitat disturbance during the removal process. It should be noted that 100 percent removal of the proposed rock structure may not be feasible or desirable given the nature of the marine environment and substrate.

A formal, written estimate of the full cost of removal of the entire groin structure should be provided for consideration in the DRAFT EIS.

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

As noted in Parsons and Powell (2001), active mitigation efforts such as beach armoring may also serve to encourage additional use and/or development. Such additional development can reasonably be anticipated in the case of the Bald Head Island Club, in the form of a planned $6 million expansion which is unlikely to transpire absent a hardened structure solution to the chronic erosion that characterizes South Beach. and

Further, given the location of the Club relative to the existing footprint of the groinfield, it is not known whether the proposed future expansion will take place under Alternative No. 6.

These statements are ironic. Because of poorly-planned development — that is the building of structures in an inlet hazard area — the whole issue of building hardened structures on the beach has reared its ugly head. So, by placing a large groin, the construction of *more* expensive structures/expansion of present structures will be encouraged, making the defense of these structures even more "necessary" and "cost-effective."

The anticipated development from the placement of the large, rocky groin and leaving the groinfield sand tubes in place is a reason *not* to proceed with these projects. Do we not learn from our folly?

The Village of Bald Head Island Shoreline Protection Project DRAFT Environmental Impact Statement, January 2014, states:

(6) Terminal Groin with Beach Nourishment/ Removal of Sand Tube Groinfield (Alternative #6)
a. Direct, Indirect and Cumulative Impacts: Under Alternative #6, impacts to land-based and water-dependent recreation would be comparable to those discussed under Alternative #5.5-136

This statement is absolutely incorrect: Land-based and water-based recreation would improve significantly with Alternative #6, due to the removal of the sand tubes. The sand tubes are a hardship and potential menace to people walking the beach, beachcombing, surf fishing, kayaking from the beach, etc.

If ever a decision is made to allow this giant groin, let it stand on it's own merits. At least remove the sand tubes and heal the festering pimple on the face of beautiful Bald Head Island beaches.

Christian Preziosi

From: tolberthill@att.net
Sent: Thursday, March 06, 2014 11:45 AM
To: Smith, Ronnie D SAW
Subject: [EXTERNAL] Bald Head Island Terminal Groin DEIS

Sent from Windows Mail

Mr. Smith:

I would like to comment on the Bald Head Island Terminal Groin DEIS. In my mind, the only acceptable choice on this project is Alternative #1, the No Action Alternative. This, and all hardened beach structures, do not work in the long term, per Dr. Orrin Pilkey. They are a waste of money. North Carolina should re-enact a total ban on all hardened beach structure projects along the entire length of our coast.

Thank you for listening.

David Hill
Graham, NC

Public Notice- Bald Head Island Project

Over the past 18 years, South Beach has experienced a tremendous amount of beach erosion and all areas are being impacted due to the persistent sand loss. Out of the six (6) proposed project alternatives, I personally feel that the best option would be Alternative #5. This specifies that a "Terminal Groin with Beach Nourishment/Beach Disposal (Sand Tube Groinfield)" will be utilized. The defined purpose of the project is to address erosion at the western end of South Beach and to protect the stated resources affected. One of the major issues and problems that are causing the erosion is due to the deep level channel that was cut in by the Army Corps of Engineers. With the implementation of "Alternative #5" the loss of sand will slow down progressively and the public infrastructure, roads, homes, beaches, dunes and wildlife habitat will be better off than they currently are. What really drew my attention to this particular method is the two separate phases in which they will be implemented. Phase II of the groin construction would be based upon two to four years of performance monitoring which is necessary for the overall effectiveness of the project.

Joshua Diaz

Christian Preziosi

From: wwyc@sbcglobal.net
Sent: Monday, March 10, 2014 11:33 PM
To: Smith, Ronnie D SAW
Subject: [EXTERNAL] The Terminal Groin at Bald Head Island, NC

Hello Mr. Smith,

I wanted to express my opinion about the proposed Terminal Groin that is being considered for Bald Head Island. I do own a home on the Island which gives me a direct interest in seeing that the Groin is constructed. What makes Bald Head Island unique is that as the name implies, we are an Island. We have no neighboring towns and no neighboring beaches. Unlike other communities who are threatened with gaining sand on their beaches at the cost of their neighbors beach, we have no such problem. Our only neighbor is the navigation channel that abuts the Island and who,whether right or wrong has been blamed for the brunt of our erosion. If our Island is willing to foot the bill for what could be a very successful project if it works, the only harm if it does not will be to the residence of the Island. If this project does not materialize, we and other vacationers who enjoy our beaches may not have any beaches left to enjoy not to rule out what the loss of beach has and will have on our wildlife.
Please help us save our beaches by voting in favor of this project. Thank You, Richard Walsh

Sent from Yahoo Mail on Android

Christian Preziosi

From: Mirtha Escobar <mescobar@vt.edu>
Sent: Sunday, February 23, 2014 6:46 PM
To: Smith, Ronnie D SAW
Subject: [EXTERNAL] Comments for the Village of Bald Head Island Shoreline Protection Project

Thanks for the opportunity to comment on the EIA for this Project. I would like to submit for your consideration the following:

· The objective of the project is listed as to address recently accelerating erosion at the western end of South Beach with the intent to protect wildlife habitat, public infrastructure, roads, homes, beaches and protective dunes. The assessment focuses on mainly on the impacts, whether direct or indirect, but does not describes how this measures protect wildlife habitat, public infrastructure, roads, homes, beaches and protective dunes.

· The analysis on expected benefits it is also relevant when analyzing each one of the alternatives. I understand that the current practice is beach nourishment with sand tube groin field and that the preferred alternative would be a terminal groin with beach nourishment and the sand tube groin field. In order to make an informed decision it would be important to include cost associated to each one of the alternatives. As the information is presented in the EIA is difficult to weight benefits against costs and impacts.

· The assessment includes information in relation to at-risk properties in every alternative analyze. What are the measures that will be put in place to minimize the impact or to provide compensation, mitigation for the affected properties?

· It would be important to include a list of construction practices that would minimize in-water construction impacts.

· What are the public interest factors that were taking into consideration to come up with each one of the alternatives?

· Are there any benefits associated to the constructions of groins in relation to the effects of climate change, particularly in relation to accelerated sea-level rise?

· Would the final assessment include information on measures to protect property, such as adding freeboards, allowing for shoreline migration, etc.?

· Although, the protection of protective dunes is included as one of the main objectives of the project, the document does not elaborate further on how this would be achieved.

· Please elaborate on the tradeoffs between alternatives 3 and 5 in terms of cumulative sedimentation and erosion.

I hope this comments are helpful during the finalization of the EIA for this Project.

Best,

Mirtha Escobar

mescobar@vt.edu

571-839-8798