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**Via U.S. Mail and Email**

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Re: **Federal CZMA Consistency:  
USACE Wilmington Harbor 403 Navigation Project**

**COMMENTS SUBMITTED ON BEHALF OF THE VILLAGE OF BALD HEAD ISLAND**

This firm represents the Village of Bald Head Island (“**VBHI**”) in connection with the proposed Wilmington Harbor Navigation Project (“**Project**”). We are submitting these **VBHI CZMA Comments** to address issues relevant to the request by the United States Army Corps of Engineers (“**USACE**” or “**Corps**”) for a Federal Consistency review by your office of the USACE’s consistency determination (“**Determination**”) under the federal Coastal Zone Management Act (“**CZMA**”).

On 3 November 2025, we submitted to the Corps comments (“**VBHI USACE Comments**”) in response to its Notice of Draft Letter Report and Environmental Impact Statement, and we supplied you a copy of those on 6 November 2025.<sup>1</sup> On 17 November 2025, we filed with the Corps **VBHI Supplemental Comments**, addressing the Economic Impact of the Project, and again supplied you a copy of those. Each of those are incorporated by reference in these VBHI CZMA Comments.

**I. BACKGROUND AND SUMMARY OF RELEVANT VBHI USACE COMMENTS**

Bald Head Island (“**BHI**”) sits at the mouth of the Cape Fear River (“**River**”) and is immediately adjacent to the Corps-constructed and -maintained Wilmington Harbor Federal Navigation Channel (“**Channel**”) which is the subject of the Project. The historical Corps-navigation projects in the River have caused the Channel to be deepened and widened (collectively herein, “deepened”), interrupting the natural sand transport system across the River’s mouth. *See* Ex. 2, Attachment B (historical review of BHI impacts by Erik Olsen, consulting coastal

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<sup>1</sup> The Attachments to VBHI USACE Comments (A-K) attached for ease of reference, plus two additional Attachments (L and M) discussed below.

engineering expert). The last Corps navigation deepening project was the 2000 Wilmington Harbor Project, “**2000 WHP.**” As a result, of the 2000 WHP, the Bald Head Island Shoal (“Shoal”) supporting BHI and its beaches has eroded and collapsed, and the beaches have eroded dramatically. *Id.* See also Attachments G and L, Foth Review and Supplement. VBHI has spent over \$70 million to offset the erosion caused by the deepening and subsequent maintenance done pursuant to the 2000 WHP. See Attachment A. As has been demonstrated by the Foth Reviews, the new Project will further harm the sand transport system and its constituent parts, including ultimately the adjacent beaches and nearshore areas, including the Shoal. In the Draft Environmental Impact Statement (“**DEIS**”), the Corps did not analyze the impacts to North Carolina’s coast caused by the Project’s interference with the natural sand transport systems.

The Sand Management Plan (“**SMP**”) (*see* discussion below in V), Attachment C, was adopted as part of the 2000 WHP to satisfy the conditions set by NC DCM in its conditional CZMA concurrence. The SMP’s stated purpose is to protect valuable AECs by retaining sand in the defined littoral cell in order to protect the shoals and beaches adjacent to the Channel at the Cape Fear River entrance. The DEIS ignores the SMP and proposes work inconsistent with it. If the Project proceeds according to the DEIS, it will exacerbate damage to those shoals and beaches caused by both the 2000 WHP and the new proposed Project.

The DEIS is the major document identifying Project impacts and resulting costs incorporated into the Draft Letter Report (“**DLR**”) issued by the Corps for this Project. The DLR finds that the Project is “feasible,” meaning the national economic benefits over the fifty-year life of the Project are greater than the costs of constructing and maintaining the Project. Correctly identifying all Project impacts and the costs necessary to avoid or mitigate them is critical to DLR’s conclusion of feasibility: additional costs necessary to address the impacts discussed below could be determinative to authorizing this Project, as discussed in VBHI Supplemental Comments, Section III, pp. 9-13.

## **II. OVERVIEW OF VBHI CZMA COMMENTS**

The USACE Consistency Determination and the DEIS on which it relies fail to analyze material and significant Project impacts to areas of environmental concern (“**AECs**”) protected by the Coastal Area Management Act, N.C. Gen Stat. Chapter 113A, Article 7 (“**CAMA**”). As a result, the Corps’ submission to your office is incomplete, thus preventing you from conducting the analysis necessary for a CZMA consistency review. Even considering the incomplete Corps’ submission, it is clear that the Project will inflict extensive harm and injure significant North Carolina interests protected under CAMA and, in turn, the CZMA. The 2000 WHP presented the same threats, and NC DCM responded with a conditional CZMA concurrence. *See* SMP history in Section V A, below. The Corps promised to comply with the conditions set by your office to ensure that the Corps’ dredging activities would not cause a net removal of sand from the littoral system at the River’s mouth, and thus ultimately deprive VBHI and other AECs of sufficient sand to counteract dynamic erosional forces. *Id.* But the Corps broke that promise in the intervening years, triggering litigation that ultimately proved such Corps’ promises are worthless. *See* Section V B, below. Unsurprisingly, then, the Corps abandoned those previously promised conditions in the new DEIS, renewing old threats to these AECs and adding new ones. *Id.*

If the Project is to move forward in compliance with CZMA and North Carolina coastal policy, your office must require restoration of the previously promised conditions in a form that assures their continued performance. Given the long history of the Corps' activities in the Wilmington Channel and Harbor, we believe that similar, actually enforceable protections will be necessary for any other mitigation or avoidance identified by your office as necessary to protect the State's AECs.

### III. STATUTORY FRAMEWORK

#### A. Coastal Zone Management Act, 16 U.S.C. §§ 1451 to 1468.

The federal CZMA requires the Corps to seek NC DCM review of the Project's consistency with North Carolina coastal policy to insure the Project is "carried out in a manner which is **consistent to the maximum extent practicable with the enforceable policies of approved State management programs.**"

16 U.S.C.A. § 1456 (c)(1)(A) (emphasis added).

The term "consistent to the maximum extent practicable" means **fully consistent with the enforceable policies of [State] management programs** unless full consistency is prohibited by existing law applicable to the Federal agency.

15 C.F.R. § 930.32(a)(1) (emphasis added).

The "enforceable policies" here are North Carolina's CAMA and the policies and regulations adopted pursuant thereto, including all those regulations and policies incorporated into the State's approved plan. 16 U.S.C.A. § 1453(6a); 15 C.F.R. § 930.11(h).

#### B. North Carolina Coastal Area Management Act of 1974, N.C. Gen. Stat. §§ 113A-100 to 113A-134.3 ("CAMA").

CAMA includes a broad statement of purpose:

**...Unless these pressures [on the coast] are controlled by coordinated management, the very features of the coast which make it economically, esthetically, and ecologically rich will be destroyed. The General Assembly therefore finds that an immediate and pressing need exists to establish a comprehensive plan for the protection, preservation, orderly development, and management of the coastal area of North Carolina.**

In the implementation of the coastal area management plan, **the public's opportunity to enjoy the physical, esthetic, cultural, and recreational**

**qualities of the natural shorelines of the State shall be preserved to the greatest extent feasible;....**

N.C. Gen. Stat. § 113A-102(a) (emphasis added). CAMA also sets forth specific goals, three of which are particularly relevant here:

Goals.--The goals of the coastal area management system to be created pursuant to this Article are as follows:

(1) To **provide a management system capable of preserving and managing the natural ecological conditions of the estuarine system, the barrier dune system, and the beaches, so as to safeguard and perpetuate their natural productivity and their biological, economic and esthetic values;**

(2) To insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations;

(3) To insure the orderly and balanced use and preservation of our coastal resources on behalf of the people of North Carolina and the nation; ...

*Id.*, § 113A-102(b) (emphasis added).

CAMA specifically directs the Coastal Resources Commission to “designate geographic areas of the coastal area as areas of environmental concern [AECs]....” N.C. Gen. Stat. § 113A-113(a). Such areas include:

(6) Natural-hazard areas where uncontrolled or incompatible development could unreasonably endanger life or property, **and other areas especially vulnerable to erosion**, flooding, or other adverse effects of sand, wind and water, which may include:

a. Sand dunes along the Outer Banks;

b. **Ocean and estuarine beaches and the shoreline of estuarine and public trust waters;....**

N.C. Gen. Stat. § 113A-113(b) (emphasis added).

The regulations implementing CAMA (discussed below) must be interpreted and applied in light of the Act’s stated purpose and goals<sup>2</sup> and must further CAMA’s statutory goals.

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<sup>2</sup> See, e.g., *Mourning v. Family Publications Service, Inc.*, 411 U.S. 356 (1973) (rules issued pursuant to a statute are to be upheld if they are “reasonably related to the purposes of the enabling legislation.”); see also *Brown & Williamson Tobacco Corp. v. Food & Drug Admin.*, 153 F.3d 155

#### IV. NORTH CAROLINA'S COASTAL MANAGEMENT PROGRAM PROTECTS VBHI'S SAND SYSTEMS AND BEACHES.

##### A. The Determination concedes that the Project will impact certain AECs, but studiously ignores the restrictions imposed by North Carolina's coastal management program.

The Corps acknowledges that the “enforceable policies of approved State management programs plan” with which the Project must be consistent include the AEC regulations adopted by the Coastal Resource Commission and listed in 15A NCAC 7H. *See* Consistency Determination over letter and pp. 14-17. The BHI Shoal and beaches and the sand transport system on which they depend fall squarely within the definitions of protected AECs as “public trust areas” and “ocean hazard areas” especially vulnerable to erosion and thus requiring special safeguards. Public trust areas include the Shoal (“all natural bodies of water subject to measurable lunar tides **and lands thereunder** to the normal high water or normal water level,” 15A NCAC 7H .0207(a) (emphasis added), Determination, p. 15).<sup>3</sup> Ocean hazard areas include “frontal dunes, inlet lands, and other areas” “because of their vulnerability to erosion.” 15A NCAC 7H .0301, Determination, pp. 16-17. Specific areas include ocean erodible areas “where there exists a substantial possibility of excessive erosion and significant shoreline fluctuation,” 15A NCAC 7H .0304(1) and State Ports Inlet Management Areas (“SPIMA”). *Id.*, 7H .304(4). “These [SPIMAs] are unique due to the influence of federally-maintained channels, and the critical nature of maintaining shipping access to North Carolina's State Ports. **These areas may require specific management strategies not warranted at other inlets to address erosion and shoreline stabilization.**” *Id.* (emphasis added).

But omitted from the Determination's discussion are the regulations detailing the threats posed to these AECs and why these AECs therefore require special protection:

Significance of the ocean hazard category (a) Hazards associated with ocean shorelines are due to the **constant forces exerted by waves, winds, and currents upon the unstable sands that form the shore**. During storms, these forces are intensified and can cause changes in the bordering landforms and to structures located on them. Ocean hazard area property is in the ownership of a large number of private individuals as well as several public agencies and is used by a vast number of visitors to the coast. **Ocean hazard areas are critical** due to both the severity of the hazards and the intensity of interest in these areas.

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(4th Cir. 1998) (“it is the power [of agencies] to adopt regulations to carry into effect the will of Congress as expressed by the statute.”); *see also State v. Owen*, 242 N.C. 525, 88 S.E.2d 832 (1955) (“the validity of [an ordinance] must be tested by the limitations of the enabling act.”).

<sup>3</sup> Shoals are also AEC nearshore landforms: “the portion of the beach seaward of the mean low water that is characterized by dynamic changes in time and space as a result of storms.” 15A NCAC 7H .0305(2).

(b) **The location and form of the various hazard area landforms,<sup>[4]</sup> in particular the beaches, dunes, and inlets, are in a permanent state of flux, responding to meteorologically induced changes in the wave climate. For this reason, the siting of development on and near these landforms shall be subject to the provisions in this Section in order to avoid their loss or damage.** The flexible nature of these landforms presents hazards to development situated immediately on them and offers protection to the land, water, and structures located landward of them. The value of each landform lies in the particular role it plays in affording protection to life and property. **Development<sup>5</sup> shall not diminish the energy dissipation and sand storage capacities of the landforms essential to the maintenance of the landforms' protective function.**

15A NCAC 7H .0302 (emphasis added).

Management objective of ocean hazard area (a) The CRC recognizes that absolute safety from the destructive forces of the Atlantic Ocean shoreline is an impossibility for development located adjacent to the coast. **The loss of life and property to these forces, however, can be greatly reduced by the proper location and design of structures and by care taken in prevention of damage to natural protective features particularly primary and frontal dunes.** Therefore, it is the CRC's objective that development in ocean hazard areas shall be sited to minimize danger to life and property and achieve a balance between the financial, safety, and social factors that are involved in hazard area development.

(b) **The rules set forth in this Section shall further the goals set out in G.S. 113A-102(b),** to minimize losses to life and property resulting from storms and long-term erosion, prevent encroachment of permanent structures on public beach areas, **preserve the natural ecological conditions of the barrier dune and beach systems,** and reduce the public costs of development within ocean hazard areas, and protect common-law and statutory public rights of access to and use of the lands and waters of the coastal area.

15A NCAC 7H .0303 (emphasis added). *See also* 15A NCAC 7H .0207(d) (specifically addressing navigation channels as areas where development should not be “detrimental to the ...physical functions of the estuary.”)

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<sup>4</sup> The regulations define “landforms” as ocean beaches, primary dunes, frontal dunes and nearshore. 15A NCAC 7H .0305.

<sup>5</sup> “Development” includes dredging in any AEC. N.C. Gen. Stat. § 113A-103(5)(a).

## **B. The Project threatens impacts to Bald Head Island AECs.**

The studies leading to adoption of the SMP in 2000 showed the dynamics of the sand transport system at work and predicted that interrupting that system with a deeper, wider, and relocated Channel (closer to the toe of BHI) would degrade nearshore landforms (including the Shoal), beaches, and dunes—all protected AECs. Attachment B, Ex. 2. Those predictions proved to be accurate and, as a result of the 2000 WHP, the nearshore Shoal (7H .0305) supporting BHI has collapsed, dramatically accelerating beach erosion and vulnerability to waves and storms. Twenty years of subsequent monitoring of actual erosion rates have confirmed the ongoing sand deficit and significant sand loss rates that the Channel causes at BHI. Foth Reviews, Attachments G and L. That experience removes any doubt that the Channel’s construction, repeated deepening, and maintenance are “detrimental to public trust rights and the biological and physical functions of the estuary . . . , increase shoreline erosion, [and] cause adverse water circulation patterns [7H .0207(d)]; and, “diminish the energy dissipation and sand storage capacities of the landforms essential to the maintenance of the landforms' protective function.” 7H .0302(b). Plainly, these areas “require specific management strategies.” 7H .0304(4). But the DEIS provides none, which the Corps’ Determination fails to recognize.

Specifically, as detailed in the VBHI USACE Comments, pp. 8-10, the DEIS fails to comply with NEPA’s requirements to consider the cumulative impacts<sup>6</sup> of the historic navigation projects and the “connected actions” [40 CFR § 1501.9(e)] of this Project. Those connected actions most relevantly include maintenance dredging, which regularly renews the stress imposed on the sand sharing system. The Foth Supplemental Report (Attachment L) confirms that in addition to GenCade being an inappropriate model for the system at issue (detailed below), its method of application in the DEIS eliminated the impact of prior projects and, as a result, failed to analyze cumulative impacts or account for the costs to mitigate them.

DCM must consider this historical experience in analyzing whether to concur in the Corps’ consistency determination for the present Project. “Development shall not diminish the energy dissipation and sand storage capacities of the landforms essential to the maintenance of the landforms' protective function.” 15A NCAC 7H .0302. DCM cannot perpetuate the DEIS’s error in failing to analyze cumulative impacts—CAMA and the North Carolina coastal management program require DCM to consider those cumulative impacts. Indeed, had the Corps followed through on the 2000 SMP and complied with the conditions of DCM’s last concurrence (including adjusting the sharing ratio to reflect monitoring results), those cumulative impacts would not be as severe, if they existed at all.

The analyses on which the DEIS and Determination rely are also technically insufficient to provide any assurance that these AECs will be protected. The Corps’ DEIS consultant, Stantec,

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<sup>6</sup> See *Nat’l Audubon Soc’y v. Dep’t of Navy*, 422 F.3d 174, 185, 196 (4th Cir. 2005) (citing prior CEQ regulations substantively identical to the version of regulations applicable here); see 40 CFR 1508.1(g)(3) (version eff. May 20, 2022 to April 10, 2025).

adopted and relied on the earlier studies and models by the Project Sponsor’s consultant (Moffatt & Nichol, “M&N”), whose impartiality has been questioned by VBHI.<sup>7</sup> The Foth Review and Supplement detail the many technical defects and shortcomings of the DEIS. Attachments G and L. In many areas, the DEIS explanations of analytical assumptions are incomplete or opaque,<sup>8</sup> rendering the conclusions unverifiable and hence do not provide assurance “to the greatest extent practicable” that the AECs will be protected. In other studies, there are errors in technique<sup>9</sup> or use of over-simplified or inappropriate models, both leading to predictions demonstrably incorrect—contradicted by the observed surveys of beach conditions.<sup>10</sup>

In particular, as specifically related to the DEIS reliance on GenCade, the Foth reports explain why it is an inappropriate and unreliable tool to assess Project impacts to the BHI shoreline. GenCade (like any model) is premised on certain assumptions, but Foth found that **each** the four critical GenCade assumptions are conditions that do not exist at BHI. Attachment L, p.1, ¶ 1. In addition, it fails to “incorporate several critical physical processes that govern sediment transport along Bald Head Island.” *Id.*, p. 2, ¶ 2. These and other defects result in the model underpredicting the impacts actually observed over the last 20 years by a factor of **more than five-and-a-half times**. *Id.*, p. 2, ¶¶ 3, 4. The Foth Review concludes:

The application of GenCade at this location and for this purpose is **inappropriate for the intended use and the results are misleading**. ... As such, **results from the model cannot be used or relied upon** to drive project design decision making or conduct an impact assessment of the Bald Head Island Shoreline.

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<sup>7</sup> M&N’s employer, the Project’s Sponsor, denies impacts from the Project to the beaches. In addition, M&N is an advocate for the Town of Oak Island in recurring efforts to remove sand from the Channel and place it outside the littoral cell, permanently harming BHI and Caswell beaches in violation of the SMP. *See* VBHI USACE Comments, pp. 16-17.

<sup>8</sup> Attachment G, pp. 1-2, ##1, 3, 6, 7; p. 3 (Wave-related Sediment Transport: inadequate sensitivity analyses and justification of calibration and verification procedures); p. 4 (Channel Shoaling: unclear calculations, calibrations, verifications; polygon selection evaluation criteria); pp. 4-5 (Slope Avalanching: unclear calibration and sensitivity testing); pp. 5-6 (Vessel Wake: acknowledged failure to quantify recognized impacts; unexplained variations in grain size assumptions).

<sup>9</sup> *Id.*, pp. 1-2, ##2, 3, 4, 6, 8; p. 3 (Wave-related Sediment Transport, parameters calibrated incorrectly), p. 4 (Channel Shoaling: failure to distinguish shoaling rates and one-off dredge volumes); pp. 4-5 (Slope Avalanching: incorrect parameters); pp. 5-6 (Vessel Wake: incorrect/inconsistent median grain size assumptions and shear stress assumptions); pp. 6-9 (Use of GenCade: failure to incorporate critical physical processes; improper grain size for calibration; improper citation of prior studies).

<sup>10</sup> *Id.*, pp. 2-3, ##5, 9, p. 4 (Channel Shoaling: overpredicts).

*Id.*, p. 3 (emphasis added). Similarly, *see* Attachment G, p. 3, #9. In other words, **the Project's impact on BHI was not analyzed in the DEIS, despite a demonstrated history of adverse effects to BHI from the prior Channel project and maintenance.**

Without analyzing cumulative impacts and the impacts of connected actions, the DEIS is incomplete, and, accordingly, the Determination is unsupported. DCM's concurrence decision must apply the AEC regulations to further the goals of CAMA and must therefore be based on facts establishing clear evidence that these AECs will be protected. 15A NCAC 7J.0604; N.C. Gen. Stat. §§ 150B-4, 51. The Corps' Determination and related DEIS markedly fail to provide any basis for DCM to concur that the Project is consistent with North Carolina's coastal management program.

**C. The Determination ignores other BHI AECs, which, when considered, further show the Project's lack of consistency with the North Carolina coastal management program.**

BHI also contains AECs not considered in the Determination (collectively here, "protected natural areas").

Coastal areas that sustain remnant species

(a) Description. Coastal areas that sustain remnant species are those areas that support native plants or animals determined to be rare or endangered (synonymous with threatened and endangered), within the coastal area. Such places provide habitats necessary for the survival of existing populations or communities of rare or endangered species within the coastal area....

(b) Significance. The continued survival of certain habitats that support native plants and animals in the coastal area is vital for the preservation of our natural heritage and for the protection of natural diversity which is related to biological stability. These habitats and the species they support provide a valuable educational and scientific resource that cannot be duplicated.

(c) Management Objective. To protect unique habitat conditions that are necessary to the continued survival of threatened and endangered native plants and animals and to minimize land use impacts that might jeopardize these conditions.

15A NCAC 7H.0505. *See* N.C. Gen. Stat. § 113A-113(b)(4)(f).

Coastal complex natural areas:

(a) Description. Coastal complex natural areas are defined as lands that support native plant and animal communities and provide habitat qualities which have remained essentially unchanged by human activity. Such areas may be either significant components of coastal systems or especially notable habitat areas of scientific, educational, or aesthetic value. They may be surrounded by landscape

that has been modified but does not drastically alter conditions within the natural area. ...

(b) Significance. Coastal complex natural areas function as key biological components of natural systems, as important scientific and educational sites, or as valuable scenic or cultural resources. Often these natural areas provide habitat suitable for threatened or endangered species or support plant and animal communities representative of pre-settlement conditions. These areas help provide a historical perspective to changing natural habitats in the coastal area and together are important and irreplaceable scientific and educational resources. The CRC may determine significance of a natural area by consulting the Natural Heritage Priority List maintained by the Natural Heritage Program within the Division of Parks and Recreation....

(c) Management Objectives. The management objectives of this Rule are to protect the features of a designated coastal complex natural area in order to safeguard its biological relationships, educational and scientific values, and aesthetic qualities. Specific objectives for each of these functions shall be related to the following policy statement either singly or in combination:

(1) To protect the natural conditions or the sites that function as key or unique components of coastal systems. The interactions of various life forms are the foremost concern and include sites that are necessary for the completion of life cycles, areas that function as links to other wildlife areas (wildlife corridors), and localities where the links between biological and physical environments are most fragile.

(2) To protect the identified scientific and educational values and to ensure that the site will be accessible for related study purposes.

(3) To protect the values of the designated coastal complex natural area as expressed by the local government and citizenry. These values should be related to the educational and aesthetic qualities of the feature.

15A NCAC 7H. 0506. *See* N.C. Gen. Stat. § 113A-113(b)(4)(e).

VBHI has protected significant tracts of natural areas since it first authorized development on the island. These tracts include the 191- acre Bald Head Woods, which is a Dedicated Nature Preserve, authorized by G.S. 143B-135.250, and thus part of the State's Natural Heritage Program. *See* N.C. Gen. Stat. § 113A-113(b)(4)(a). In addition, the island's beaches and dunes provide important habitat for threatened and endangered species that also depend on those protected areas. A non-profit conservation group, the Bald Head Island Conservancy, filed comments with the Corps (*see* Attachment H) detailing how the past projects have impacted, and the proposed Project will continue to harm, nesting habitat for species of concern, including Loggerhead, Green, and Kemps Ridley sea turtles, and shorebirds such as Least Terns, American Oystercatchers, and Wilson's Plovers.

Negative Project impacts also extend to the impacts of erosion and sediment dynamics on back-barrier creeks and marshes, including tidal flushing and water quality. *Id.* These back-barrier creeks directly abut and influence the protected areas described above. The Channel deepening will also exacerbate saltwater intrusion threatening these delicate BHI freshwater natural ecosystems and their dependent flora and fauna. *Id.*

Maintenance dredging kills and injures numerous sea turtles and shorebirds, disrupts foraging and nesting behaviors, and damages the benthic community so important to sea turtles and fish species. *Id.* It appears (again, the DEIS is opaque) that the Conservancy’s concerns were ignored. These are equally concerns of VBHI, which has always placed a premium on protecting these natural resources.

These additional failures to identify—let alone analyze and address—these AECs demonstrate that the Corps has not met its burden of demonstrating protection of AECs “to the maximum extent practicable,” as CZMA requires. 16 U.S.C.A. § 1456 (c)(1)(A).

## **V. THE 2000 SAND MANAGEMENT PLAN CANNOT BE IGNORED.**

### **A. The SMP was intended to protect the same AECs threatened by the current Project.**

When the 2000 WHP proposed to deepen the existing Channel and re-aligned it closer to BHI, VBHI’s then-consultant, Erik Olsen, analyzed the affected sand sharing system and predicted devastating impacts to the island. The VBHI USACE Comments, pp. 4-7, detail his critique of the proposed 2000 WHP and the origins of the Sand Management Plan (“SMP”). *See also* Attachments B (Olsen correspondence) and C (complete SMP). The Corps responded to the concerns articulated by Mr. Olsen by studying the rate of longshore sediment transport moving toward the Cape Fear River entrance. SMP, ¶ 21, p. 10. The SMP recognizes **the critical importance to beach protection of retaining sand within the active littoral cell.** *Id.*, ¶ 20, pp. 9-10. The forecasted (and later realized) Project-induced harm was because the “Federal Standard” for maintaining navigation projects “has not included the disposal of littoral sands on the adjacent beaches or in the active littoral zone” and “did not consider the overall impact of removing littoral sediment from the littoral system.” *Id.*, ¶¶ 19, 20, p. 9. The SMP therefore committed to placing all beach-quality dredged sand on the **adjacent beaches** in the same littoral cell. *Id.*

In response to Olsen’s memo and similar concerns raised by DCM in its CZMA review, the Corps Wilmington District Chief Engineer, Col. James DeLony, sent a letter assuring that sand placement will be “according to the March 31, 2000 memorandum from Erik J. Olsen, consultant to [VBHI]” and “the Sand Management Plan.” DeLony Letter, 9 June 2000, pp. 2-3, Attachment D. In addition, he said:

The Corps will conduct a monitoring program ... [and] will use this monitoring data to **evaluate and adjust** the Sand Management Plan, as determined necessary, after coordination with the parties.

*Id.* p. 3 (emphases added). This letter formed the basis for DCM’s conditional CZMA concurrence back in 2000:

**Based upon** our review of the EA [Environmental Assessment] and the Corps of Engineers' response to comments [the DeLony Letter], we do not disagree with your determination that the proposed construction and changes in harbor maintenance procedures are consistent with the North Carolina Coastal Management Program to the maximum extent practicable, **provided that the project is performed according to the EA (including the Sand Management Plan** and other appendices)...and that the conditions below are met.

Letter from Donna Moffitt, Director, NCDENR/DCM, 15 June 2000 to Col. DeLony, USACE District Engineer, p. 2 (emphasis added), Attachment E. Among the other conditions then listed by DCM are: "impacts of this multifaceted project will be well documented in order to evaluate the effects on these resources on the overall coastal environment," including an **"integrated monitoring plan"** [Condition # 1]; **adherence to the SMP** [Condition # 3]; Corps request for review (supported by impact documentation) for any modification in future maintenance practices [Condition 4]; and, a separate consistency review of any proposal to place maintenance dredged material outside the locations established in the SMP [Condition 5]. *Id.*, pp. 3-4 (emphasis added).

Following the CZMA concurrence, the Corps issued its Finding of No Significant Impact (FONSI), relying specifically on the Moffitt Letter and its incorporation of the assurances in the DeLony Letter: **"We will comply with the indications in the [Moffitt] letter."** FONSI, § 3.00, p. 5, final bullet point, Attachment F (emphasis added). The final EA adopts the SMP goal that displaced "sand should be retained within the active coastal sand system." EA, §1.03, p. 3.

The sand management plan (Appendix A [to the EA]) for the deepened Wilmington Harbor project **requires** that **all** beach-quality maintenance material **be returned to the adjacent beaches**. This will result in enhancement of the regional sediment budget.

*Id.*, §5.01, p. 27 (emphasis added).

Accordingly, the final 2000 North Carolina CZMA consistency determination and the EA-FONSI were **specifically conditioned** on the Corps complying with the Moffitt letter Conditions, including the SMP, to maintain sand in the littoral system by placing it on the **adjacent** beaches—BHI and Caswell Beach—and not in the Ocean Dredge Disposal Site or other beaches beyond the littoral cell. **The SMP and the Moffitt letter are baseline conditions for protection of AECs.** Without the protection those conditions provide, the damage from the 2000 WHP and associated maintenance dredging will be amplified and added to the new damage from the proposed Project.

## **B. The Corps has effectively abandoned the SMP.**

Importantly for the present consistency review, the history of the Corps' actions shows that it does not consider its commitments to DCM as imposing actual restrictions on the Corps' actions. Specifically, in 2010, after the Corps repeatedly failed to follow the dredging schedule in the SMP, VBHI sued to enforce that schedule because delay was resulting in severe BHI erosion going un-

remediated. The US District Court for the Eastern District of North Carolina and then the Fourth Circuit Court of Appeals ruled against VBHI because “the Corps’ continuing implementation of the Wilmington Harbor Project, as revised, does not constitute final agency action that is subject to judicial review under the APA.” *Vill. of Bald Head Island v. U.S. Army Corps of Eng’rs*, 714 F.3d 186, 196 (4th Cir. 2013). Therefore, the Corps could not be forced to follow the SMP schedule. Importantly for the purposes of future CZMA objections, in that litigation the Corps argued that it never “agreed” to the SMP (the DeLony letter was characterized as a non-binding statement of intended future action) and that the Corps District Office could not legally enter into a binding agreement.

The Corps’ 2025 maintenance dredging project is continuing to disregard the SMP. Under the SMP, the 2025 maintenance dredge material should be deposited on Caswell Beach. However, based on funding needs, the Corps justifies depositing sand dredged from the Channel on Oak Island beaches east of Caswell Beach and thus outside the recognized River mouth littoral cell: there is more sand in the navigation Channel than the Corps says it has funding to remove, and the Town of Oak Island is paying to have it placed on its beaches. *See* Attachment K, Corps response, June 30, 2025, p. 4, to VBHI objection to 2025 maintenance contract. Placing this sand outside the Channel littoral cell is to the detriment and expense of VBHI, despite VBHI’s objections and in violation of the Conditions in the Moffitt letter (Attachment E, Conditions 3 and 5). Regardless of the Corps’ broad reading of its flexibility under the SMP,<sup>11</sup> that reading clearly does not protect the littoral cell identified in the studies leading to the SMP, and thus does not protect that AEC.

The DEIS for the Project proposes to continue these practices. DEIS p. 2-18, Table 2-7. The proposed Project is thus inconsistent with the North Carolina coastal management program and DCM’s prior conditional concurrence, and, if approved, will perpetuate and exacerbate the damage to BHI and the sand that forms it. Foth Review (Attachment G), p. 10, ¶¶ 1 and 2.

### **C. Lessons learned: the Corps’ 2000 WHP commitments are not enforceable**

The lesson to be learned is that **protection of AECs, including the BHI-Caswell sand transport system and the shoals and beaches it supports, requires legally binding, enforceable commitments by the Corps or Project Sponsor. Unfunded assurances of future mitigation and performance do not provide the protection necessary for a consistency concurrence.**

The form of such enforceable commitments is beyond the scope of these comments but such commitments should be sufficient to enforce compliance with the North Carolina coastal management program. This likely will require some combination of the following mechanisms: (a) incorporating the required action into an element of the initial Project construction as an explicit, mandatory term; (b) including an on-going commitment (like the SMP) into a judicial consent decree, enforcement of which is within the power of a US District Court; and/or (c)

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<sup>11</sup> Correspondence from the Corps regarding the 2025 O&M dredging focuses on areas where the SMP uses general language (“Oak Island”) and does not address the overall specifically articulated goal of littoral cell protection, which does not encompass all of Oak Island. *See* Attachment K.

establishing a protected fund to pay for the commitment. The City of Southport and VBHI have each recently passed resolutions (Attachment M) calling for an adaptive management plan with a dedicated fund placed in escrow before construction commences to ensure monitoring and remediation of Project impacts.

**D. The SMP should be re-instituted, updated, and made enforceable.**

The 2000 DeLony letter stated the Corps would monitor and adjust the placement volumes if the actual sharing ratio resulted in an imbalance with the demonstrated impacts. Attachment D, p. 3. No adjustment has been made despite the subsequent 20+ years of monitoring data showing a significant recurring sand deficit at BHI and excess sand at Caswell Beach: the correct ratio (BHI to Caswell) is closer to 7:1 instead of 2:1. *See* Foth Review, (Attachment G), p. 11. In addition, the new Channel design will reduce the frequency of necessary maintenance dredging, thus reducing the frequency and quantity of regular renourishment of the adjacent beaches, further exacerbating the deleterious effects on the beaches and their dependent habitats and infrastructure. *Id.*, ¶ 1.

The SMP stressed the importance of maintaining sand within the littoral cell:

Thus, the removal of a cubic yard of littoral sediment from a tidal entrance or inlet with deposition outside the active littoral zone of the beach will ultimately cause a cubic yard deficit somewhere within the sand sharing system affected by that particular entrance or inlet. **The impact of the removal of littoral sediment from the active littoral zone through channel maintenance is identified as a major cause of man-induced erosion in the US Army Corps of Engineers Shore Protection Manual.** From an engineering perspective, the primary requirement of the Wilmington Harbor maintenance program, apart from assuring that the channel remains open year-round, is to **prevent project induced erosion of the adjacent beaches by conserving the limited natural resource, sand, through deposition directly on the adjacent beaches.**

SMP ¶ 20, p. 10 (emphasis added). It is now clear that the protection afforded by retaining sand within the littoral cell is secondary to the Corps' primary purpose of least-cost Channel maintenance. The Bald Head-Caswell sand sharing system is plainly no longer protected by the SMP. To protect the integrity of this AEC—to assure compliance with CAMA “to the maximum extent practicable”—the SMP should be updated and made enforceable as a consistency requirement.

**VI. CONCLUSION**

The Wilmington Harbor Project cost has ballooned to \$1.4 billion, of which North Carolina will have to pay \$339 million. Yet only \$60 million is set aside for mitigation, addressing only the loss of some freshwater wetlands and improving fish passages at Lock and Dam 1 and 2. By

comparison, the recent Savannah Harbor<sup>12</sup> deepening project cost \$973 million, of which almost half (over \$480 million) was dedicated for mitigation and monitoring. The scale of the Wilmington Project and the scope of potential harm to AECs over 28 miles of river plus ocean shoals and beaches mandate a comparable, significant commitment of resources to the protection of North Carolina's environment.

Since the 2000 WHP, it has become clear that the Corps' navigation projects are inflicting serious, on-going harm to numerous AECs, to the direct detriment and expense of VBHI. As the Foth Reviews demonstrate, the DEIS failed to analyze the integrated sand transport system at the mouth of the River and the DEIS **forecasts impacts more than five-and-a-half times less than those actually observed** based on historical data. VBHI has already spent \$70+ million in twenty-five years, and can anticipate spending more than twice that in the fifty-year life of the Project, if left un-mitigated. In light of the Corps' disregard of the prior commitments and the lack of analysis in the DEIS, it is clear that adequate protections of the AECs are not being provided "to the maximum extent practicable," as required by law. Indeed, it is clear that those AECs are actually at risk and will be harmed. We urge NC DCM to object to this Project and pursue **enforceable** methods of protecting North Carolina's coastal resources in fulfillment of our State's coastal management program, including specific, funded plans for future monitoring and on-going mitigation.

Very truly yours,



William P. H. Cary  
Counsel for Village of Bald Head Island

Cc: Peter Quinn, Mayor, Village of Bald Head Island  
Justin McCorcle, Wilmington District Counsel, U.S. Army Corps of Engineers  
Tancred Miller, Director, Division of Coastal Management, NC DEQ  
Heather Coats, Beach & Inlet Management Project Coordinator,  
Div. of Coastal Management, NC DEQ  
George Kassler, Mayor, Town of Caswell Beach  
Elizabeth White, Mayor, Town of Oak Island  
Dr. Joe Pat Hatem, Mayor, City of Southport  
Mike McIntyre, Ward & Smith  
The Honorable Thom Tillis  
The Honorable Ted Budd  
The Honorable David Rouzer

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<sup>12</sup> Savannah handles 16 times more containerized cargo than Wilmington, and its project has a BCR of 7.3, compared to the Corps' current estimate of 1.3 for Wilmington, and Dr. Ashar's estimate of less than 1:1. *See* VBHI Supplemental Comments.

# VILLAGE OF BALD HEAD ISLAND COMMENTS

**12 DEC. 2025**

## **ATTACHMENTS**

- Attachment A:** Bald Head Island Mitigation Costs of Navigation Channel Impacts
- Attachment B:** Olsen Letter to USACE 21 July 1999
- Attachment C:** Sand Management Plan
- Attachment D:** DeLony Letter 9 June 2000
- Attachment E:** Moffitt Letter 15 June 2000
- Attachment F:** Finding of No Significant Impact  
Wilmington Harbor 2000 (excerpt)
- Attachment G:** Foth Review of Wilmington Harbor DLR and DEIS for VBHI
- Attachment H:** Bald Head Island Conservancy  
Initial Scoping Comments-30 June 2023
- Attachment I:** E-Mails Regarding Public Participation in NED
- Attachment J:** E-Mails Regarding Comment Period Extension
- Attachment K:** Correspondence with USACE Regarding 2025 Maintenance Dredging
- Attachment L:** Foth Supplemental Report
- Attachment M:** Resolutions of City of Southport and Village of Bald Head Island

# **ATTACHMENT A**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**BALD HEAD ISLAND**

**MITIGATION COSTS OF NAVIGATION CHANNEL  
IMPACTS**



**Bald Head Island  
Mitigation Costs of Navigation Channel Impacts**

**The Terminal Groin Project (2015)**

- Terminal Groin GO Bond Expenditures @ 2-28-18 (2015 Project)
 

Engineering/Design/Modeling/NEPA EIS costs	\$	<b>1,177,000</b>
(Phase I Construction/Orion w/ Corps 2015 O&M Sand)		
• Terminal Groin Construction, part of the T6 project, placing approximately 1 million for the fillet sand to place behind the T6 structure	\$	7,876,858
• Harbor Jetty Extension w/ Spurs	\$	1,456,316
• West Beach and Row Boat Row (Bald Head Creek Dredging)	\$	1,261,026
o Army COE Reimbursement	\$	105,341
o MECA Reimbursement		830,514
o Contract Reimbursements		<u>140,363</u>
• Total	\$	1,076,218
		<u>\$ (1,076,218)</u>
Total Cost, Phase I		
		<u>\$ <b>9,517,982</b></u>
  
- Breakwaters Project:
  - Construction of two detached rock breakwaters located north of the Marina
    - o Intercoastal Maine, LLC

\$ **895,052**

**Sand Re-nourishment / Groin Tube Project (2018-19)**

- Sand Re-nourishment / Groin Tube Replacements (2019 Project)
 

(Phase II Construction/ SJ Hamill Construction, Bradley Textile Tubes)		
• Beach Nourishment 1million cubic yards, including mobilization	\$	11,767,000
• Groin Tube manufacture and installation		1,514,429
• Engineering Costs		445,000
• Legal Costs		<u>62,500</u>
Total Cost, Phase II		
		<u>\$ <b>13,788,929</b></u>

**Marina Channel Maintenance Program**

*(Grant received from Department of Environmental Quality Resource Development Project to reimburse the Village for 66% of the cost, current expiration of Grant May 2019.)*

- Village portion of expenses paid for Dredging the Channel:  
2017 – 2023: \$ **289,140**

**Bald Head Island  
Mitigation Costs of Navigation Channel Impacts**

**Sand Re-nourishment / Groin Tube Project (2024-25)**

- Sand Re-nourishment / Groin Tube Replacements (2025 Project)  
Beach Fill Construction/Marinex, Flint Textiles Geotubes, McPherson Marine Service
  - Beach Nourishment 1 million cubic yards, including mobilization \$ 16,175,000
  - Groin Tube Installation \$ 1,517,430
  - Tube manufacturing (Flint) \$ 446,425
  - Engineering Costs – JBS Borrow Site Permitting \$ 230,200
  - Beach Fill Design/Construction Document (including groins) \$ 350,000
  - Construction Management/observation \$ 425,000
  - Legal – Construction Contracts Review/Bid \$ 7,500

Total Cost \$ **19,151,555**

**Beach Monitoring**

Annual Shoreline Monitoring Program Expenses (last 10 years): **\$2,000,000**  
(Includes spring/fall surveying and aerial imagery documentation w/ final report from Coastal Engineer)

**Total Accumulated Costs Associated with the Mitigation of the Navigation Channel \$69,303,391**

Overall Total To Date - \$71,732,531

(25-year average expenditure annually - \$2.87M)

# **ATTACHMENT B**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**OLSEN LETTER TO USACE 21 JULY 1999**

July 21, 1999

District Engineer  
U.S. Army Corps of Engineers  
Wilmington District  
P.O. Box 1890  
Wilmington, NC 28402-1890



Coastal Engineering

Attn: Mr. John Meshaw, (CESQW-TS-PE)

Re: Wilmington Harbor Navigation Project - Ocean Bar Channel Realignment  
Comments To The File

Dear Mr. Meshaw:

This letter is submitted to the District on behalf of the Village of Bald Head Island and constitutes a second response to your Request-For-Comments dated June 22<sup>nd</sup>, 1999 regarding the above-referenced project improvements. This information serves to augment both our comments dated July 2, 1999 (see Exhibit No. 1) and a "Position Paper" dated March, 1999 (see Exhibit No. 2). The comments presented herein address both the selected entrance channel alignment, which will directly impact the existing Bald Head Island shoreline, and our ongoing request to the District regarding long-term project mitigation, appropriately placed beach disposal, and the placement of sand at Bald head Island during sea turtle nesting season of Year 2000. Accordingly, please consider the following additional information submitted to the file:

#### 1.) Project Impacts

a.) **Sediment Budget** - The proposed entrance channel realignment proposes to excavate well in excess of 6M cy of high quality sand from the existing *sand sharing system* directly seaward of Bald Head Island (BHI). For purposes of discussion, the latter can be considered to be all offshore portions of the seabed eastward of the existing Wilmington Harbor entrance channel centerline. In addition, project construction will remove several million cubic yards of "mixed quality" sand, (i.e., materials with greater than 10% fines) from existing shoals directly seaward of BHI.

It is reliably predicted that the adjacent shoal system seaward of BHI will adjust to the new channel alignment -- thereby resulting in the requirement for the continued removal of sand by maintenance dredging from the channel fairway as well as from project wideners. Within the first 10 years, or more, following entrance channel reconfiguration, the continuing loss of material from the BHI sand sharing system due to maintenance will be significant.

**olsen**  
associates, inc.

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Jacksonville, FL 32210  
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Meshaw/Wilmington District  
Page Two of Four  
July 21, 1999

*It is the position of the Village of Bald Head Island that the cumulative removal of material from the adjacent seaward sand-sharing system of Bald Head Island must be adequately mitigated by the project sponsor and the Wilmington District, COE.*

b.) **Alongshore Sediment Transport Potential** - A 2<sup>nd</sup> source of anticipated impact to Bald Head Island as a result of entrance channel construction is a modification of alongshore littoral transport potential. Although the District staff is performing analyses of this phenomenon, it is acknowledged that it's quantification is often difficult -- particularly, with the type of bathymetric conditions under consideration. Hence, predicted positive or negative changes in littoral transport potential often result in non-conclusive opinions regarding impacts, or the lack thereof.

*It is the position of the Village of Bald Head Island that any identification of project related mitigation predicated solely upon variations in littoral transport at BHI will be unacceptable. The Village will be satisfied with nothing less than mitigation based upon readily identified and easily quantified sediment budget impacts as discussed in item "a" above.*

c.) **Current Flow Field Modification** - The impinging hydraulic flow of the existing navigation channel along West Beach at BHI is considered to be a factor contributing to existing shoreline erosion at that location. Proposed channel modifications within the Jay Bird shoals segment of work could exacerbate existing West Beach impacts by way of increased flow magnitude. Moreover, the reorientation of the channel seaward of BHI from sta. 90+00 seaward could result in a meander phenomenon type impact along the West Beach shoreline between sta. 0+00 and sta. 60+00. The District has not performed any level of numerical hydrodynamic modeling to address such impacts.

*It is the position of the Village of Bald Head Island, that the District must recognize, monitor and directly mitigate, as necessary, any reconfiguration of the West Beach shoreline resulting from entrance channel reorientation. Such mitigation could potentially require structures necessary to restrict channel migration in the future.*

## **2. Timing of Mitigation**

It is relatively clear that no landform adjacent to the Wilmington Harbor Entrance Channel has been more adversely affected over time than BHI. Similarly, it is reasonable to assume that due to the reorientation of the entrance channel from sta. 90+00 seaward, BHI will experience substantial immediate and long term impacts to its sand sharing system. Hence, the timing of beach disposal operations at Bald Head is extremely important with respect to the mitigation of project impacts.

Meshaw/Wilmington District  
Page Three of Four  
July 21, 1999

*It is the position of the Village of Bald Head Island that the Wilmington District should initiate a contract sufficient to allow for beach disposal at Bald head Island at as early a date as possible during Year 2000. It is the opinion of the Village that a favorable Section 7 Consultation can be achieved in order to sufficiently protect sea turtle nesting at Bald Head Island during summer construction. The Village has volunteered to assist the District in this regard.*

### 3. Brunswick Beaches Consortium (BBC)

The Wilmington District has formulated a tentative broad-based, countywide beach disposal program utilizing the 8M cy+ of beach quality sand to be excavated as a result of the Entrance Channel improvements. As discussed above, the vast majority of that sand will be derived solely from the sand sharing system of BHI and as such must be ultimately mitigated for (by the District and the project sponsor) at that location.

Although the Village of Bald Head Island is a contributing member of the BBC, neither the potential lack of fiscal resources nor the global interests of that entity, or its individual members, should influence in any way the Wilmington District's beach disposal scheduling or mitigation requirements for Bald Head Island. The Village of BHI has the resources, expertise and intentions of assisting the District in the construction of a suitably sized beach disposal project at as early a date as possible next year. Based upon the total length of shoreline along South Beach and West Beach at BHI subject to sand placement, the District proposal of an initial disposal of 1.5M cy of sand at that location is considered to be insufficient to meet current needs and potential near term impacts of entrance channel realignment.

*The Village of Bald Head Island does not object to the initial construction of beach disposal projects at other Brunswick County locations which seek to maximize public benefits associated with channel construction. It is the position of the Village of BHI, however, that such disposal efforts must not reduce the direct mitigation commitments which need to be obligated at BHI for purposes of addressing both project construction and future maintenance.*

### 4. Legal Action(s)

As of this date, the Village is laboring under the assumption that the Environmental Assessment (EA) and other studies, or analyses, being prepared by the Wilmington District, COE will both adequately and equitably address the mitigation requirements of BHI. Those mitigation considerations should address a Beach Disposal Plan at that location which obligates both an adequately sized initial effort as well as the continued disposal of future maintenance material that consists of sand, at no cost to local interests.

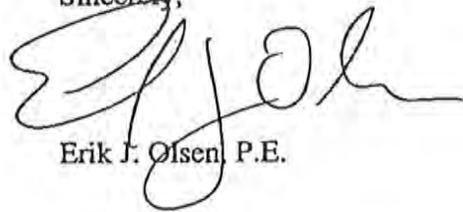
Meshaw/Wilmington District  
Page Four of Four  
July 21, 1999

*Without an appropriate finding and adequate assurances required to provide comprehensive project mitigation at BHI, the Village will consider legal recourse to protect its interests. Although it is not our intent, such legal action could unfortunately delay the proposed entrance channel improvement project.*

The Village of Bald Head Island appreciates the District's consideration of this submittal in your formulation of the final EA and attendant project formulations necessary to allow for construction of the reconfigured Wilmington Harbor Entrance Channel.

Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Olsen', written over the word 'Sincerely,'.

Erik J. Olsen, P.E.

EJO:lfm

Enc:

cc: Kitty Henson, Mayor  
Wade Horne, Village Manger  
Tom Jarrett, P.E.  
W. Bissett, P.E.

# EXHIBIT No.1

July 2, 1999

District Engineer  
US Army Corps of Engineers  
Wilmington District  
P.O. Box 1890  
Wilmington, NC 28402-1890



Coastal Engineering

Attn: Mr. John Meshaw, (CESAW-TS-PE)

Re: Wilmington Harbor Navigation Project - Ocean Bar Channel Realignment

Dear Mr. Meshaw:

This letter is submitted to the District on behalf of the Village of Bald Head Island and is in response to your solicitation of June 22<sup>nd</sup>, 1999 regarding the above-referenced project improvements. As the District files will show, the Village has requested beach disposal along the entirety of both West Beach and South Beach. Similarly, the Village is prepared to accommodate 3M cy or more of sand (in-place) in a design configuration (see attached correspondence dated June 14, 1999 to D. Wayne Bissette, P.E.).

As a result of chronic beach erosion, the Village of Bald Head Island requests an initiation of sand placement at as early a date as possible in Year 2000. Accordingly, we strongly urge the District to initiate a Section 7 Consultation for purposes of allowing beach fill placement during the turtle nesting season next year. I have both personally met and discussed this recommendation with various District staff. Accordingly, we are gratified that the District is presently considering this option by way of soliciting public comment.

It is our opinion that a favorable Section 7 Biological Opinion can be rendered by the U.S.F.& W.S. sufficient to allow oceanfront construction during turtle nesting season at Bald Head Island next year. We are relatively confident in that regard for the following reasons:

- The beaches of Bald Head Island are sufficiently eroded such that large scale nest relocation is presently necessary in order to protect the species,
- The local Bald Head Island Conservancy is well skilled at implementing a suitable *Sea Turtle Protection Plan* during the period of construction. Note - the Village is presently seeking the support of the Conservancy's Board in this regard.

olsen  
associates, inc.

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(904) 387-6114  
(Fax) 384-7368

- The placement of sand at Bald Head Island beginning in April of 2000 will advance both the Navigation Project construction schedule as well as the attendant COE beach disposal plan for other locations within Brunswick County, and
- The allowance of sand placement during turtle nesting season in areas where impacts can be avoided will allow for the preservation and beneficial use of over 8M cy of beach quality sand. Conversely, the placement, or transfer, of this resource to the ODMDS or other non-beach locations, due to scheduling constraints, would constitute an extremely significant adverse physical and economic impact to Brunswick County.

For the record, we would note that the Village formally objects to the potential placement of sand on their beaches where disposal is "limited to the area below the high tide line," as described in the District's Request For Information dated June 22, 1999. It is our position that the placement of disposal material in an appropriate beach nourishment design configuration will render the greatest level of protection to both existing development and endangered species. With regard to future turtle nesting habitat, it should be intuitively obvious that the highest level of benefit will be achieved through the construction of a wide, dry beach berm which exhibits longevity after restoration. The latter would be expected to provide the longest duration of nesting habitat, thereby offsetting the continuing need to relocate nests along any section of erosional shoreline so improved. Furthermore, we do not know of any scientific data, or turtle impact studies, which argue for sand placement below the MHWL. Our firm's collective personal observation is that sand placement at that location to either avoid Easement requirements, or to placate environmental "concerns," ultimately compromises nesting habitat. That is to say, such placement techniques commonly result in a saddle, or low area, in the beach between the existing dune or upland and the outer limit of sand fill. Such low areas can subject nests to inundation -- as well as obscure turtle crawl processes both during nesting and hatchling return to the ocean. Hence, such fill placement techniques should be avoided due to potential adverse impacts to the species.

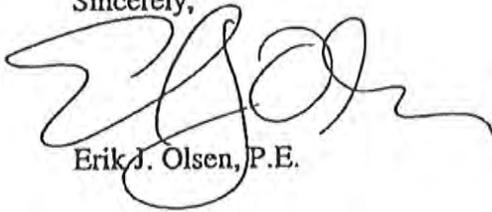
In summary, the Village supports the placement of beach compatible materials, but only in a strategic design configuration. It is the Village's intent to provide the District with a preferred design plan to be incorporated into project contract documents. The Village opposes the placement of beach quality sand within the ODMDS or in the nearshore littoral zone. The Village does not object to the placement of non-beach compatible material within the old ocean bar channel; however, it is requested that the Wilmington District develop a protocol for the definition of non-sandy sediments mutually acceptable to the Brunswick Beaches Consortium. The reconfiguration of the Cape Fear River Ocean Bar channel will necessitate both initial *and* long term mitigation at Bald

Page Three of Three  
July 2, 1999

Head Island. Hence, a disposal plan for sand derived from future channel maintenance is of significant interest to the Village of Bald Head Island.

Thank you for your consideration in these matters.

Sincerely,

A handwritten signature in black ink, appearing to read 'EJO', with a stylized flourish extending to the right.

Erik J. Olsen, P.E.

EJO:lfm

Enc:

cc: Wade Horne, Village Manager  
Bald Head Island Nature Conservancy, Inc.

# EXHIBIT No.2

## POSITION PAPER

### OPINIONS AND RECOMMENDATIONS REGARDING THE CAPE FEAR RIVER ENTRANCE CHANNEL AND BEACH EROSION AT BALD HEAD ISLAND, N.C.

Village of Bald Head Island  
March, 1999

#### *HISTORICAL PERSPECTIVE AND EXISTING CONDITIONS*

Since about 1974, beach erosion along Bald Head Island has been manifest as chronic and severe shoreline recession along the South Beach (most particularly the western portion) and selected reaches of the West Beach (ref. Figure 1). Most recently, erosion stress has accelerated along central South Beach. Long-term shoreline retreat has averaged over 30-ft per/yr at the former Inn location, 10 to 25 ft/yr elsewhere along the western portion of South Beach, and 3 to 5 ft/yr along the West Beach.

The island's erosion is the apparent result of several combined factors: (1) divergent alongshore sediment transport gradients, (2) tidal currents and proximity to the Cape Fear River Entrance, and (3) impacts of the adjacent federal navigation project.

Along South Beach, the net alongshore transport potential diverges at a nodal point between Sea Oats Trail and Silversides Trail. To the west, transport accelerates rapidly westward due to both wave and tidal current forces. To the east, transport accelerates rapidly eastward. Simplistically, this means that sand is stripped off of central South Beach and transported to the west and east. Toward the west, it deposits as a spit and/or is lost from the island to the Cape Fear River Entrance. To the east, predicted deceleration in the transport potential within 3000 ft west of the Point allows some deposition of this sand (and therefore local beach stability or periodic accretion), though most of the sand is ultimately lost to Frying Pan Shoals at Cape Fear.

Likewise, sand is lost from West Beach via wave stress that transports sand *northward* toward the marina entrance and marshes, and via ebb tidal currents that transport sand *southward* toward the spit between the South and West Beach. These ebb currents, in addition to the flood currents along South Beach, episodically "trim" the spit and ultimately move sand from the island toward the adjacent, deep navigation project channel. The proximity of West Beach to the federal navigation channel provides little width upon which to create (or enhance) a stable beach along much of the West Beach shoreline. The latter is similarly adversely affected by the orientation of the Smith Island Range navigation channel segment and the resultant directionality and impingement of ebb tidal flow upon the West Beach shoreline.

It is submitted that the construction and maintenance of the Cape Fear River Federal Navigation Project, at its current location, permanently interrupted the pre-existing natural sand bypassing system between Caswell Beach and Bald Head Island. Initially, the entrance channel severed the inlet's ebb tidal shoal, causing the eastern lobe (Bald Head Shoal) to migrate shoreward and onshore toward Bald Head Island. As a result, the western shore of the island responded by advancing some 1500 to 2000 feet between the late 1800's and the mid 1920's.

Between about 1925 and 1971, the net shoreline location remained relatively stable; however, during the same period, the submerged portions of the offshore shoal that had led to the previous unprecedented accretion were eroding as a result of the navigation project channel's interruption of easterly sand drift. Beginning in about 1974, the shoreline abruptly responded to the eroding seabed and commenced a trend of rapid retreat -- reaching 60 feet per year along portions of the recently developed Bald Head Island oceanfront.

It appears, therefore, that the island's present day beach erosion trend results predominantly from ongoing "deflation" (recession) of the beach growth that occurred in the early 1900's when Bald Head Shoal migrated onshore. That migration was associated with the early navigation project's severance of the natural ebb tidal shoal. The island's oceanfront was developed when the shoreline was at the anomalously advanced location that had resulted from the onshore movement of the severed shoal. The existing navigation project's continued interruption of the Cape Fear River sand bypassing system, including the historic removal of sand from the system by maintenance dredging, has led to the retreat of this "advanced" shoreline location and is expected to continue to contribute to beach erosion and shoreline recession in the future. It is likely that proposed navigation project improvements, and in particular realignment of the existing entrance channel, could further exacerbate the condition.

### *PRIOR FEDERAL ACTIONS*

In 1989, the Wilmington District, US Army Corps of Engineers, performed a Section 111 Reconnaissance Report at the request of the Village of Bald Head Island. The purpose of this preliminary study was to make an initial determination as to whether or not continued dredging of the Cape Fear River entrance channel was causing or accelerating erosion on the Island. Authority for the investigation was provided by Section 111 of the Rivers and Harbors Act of 1968.

The District concluded at the time that "no evidence exists to connect the severe erosion of the west end of Bald Head Island with maintenance dredging in the Cape Fear entrance channel." Hence, mitigation of the erosion under Authority of Section 111 was not determined to be warranted.

The District, however, did favorably determine that placement of beach quality, dredged material recovered from the Cape Fear River entrance channel on the westward end of Bald Head Island was feasible and satisfied the criteria necessary for 50-50 cost sharing under the provisions prescribed by Section 933 of WRDA (1996).

Likewise, in 1989, the coastal engineering firm of Olsen Associates, Inc. as consultant to the Village, rendered a contradictory opinion regarding the probability of a cause and effect relationship between ongoing erosion trends at Bald Head Island and the construction and maintenance of the adjacent navigation channel. Pragmatically, however, the firm noted that Section 111 of the Rivers and Harbors Act of 1968 held virtually no promise as a potential mechanism for seeking federal mitigation, solely on the basis that it requires a concurrent congressionally authorized Shore Protection Project. Accordingly, even if the federally constructed navigation works were definitely proven to have had a large scale quantifiable adverse impact on Bald Head Island, Section 111 expenditures by the Wilmington District to resolve the problem could, in all probability, not be made due to Policies implemented by Higher Authority.

As a result, Olsen Associates, Inc. supported the District's finding that beach disposal via Section 933 constituted the most advantageous (and timely) opportunity for initiating a program of erosion control along South Beach at Bald Head Island. Since that date, two Section 933 projects have been constructed: 350,000 cy in 1991 and 450,000 cy in 1997.

### *PROPOSED NAVIGATION PROJECT MODIFICATIONS*

Initial plan formulation of modifications to the Wilmington Harbor Navigation Project has resulted in a recommended increase in the authorized channel depth for the ocean entrance channel from -40 ft to -44 ft, MLW. Actual depths constructed would exceed the authorized depth by 2 to 3 feet. Unfortunately, geotechnical studies have shown substantial quantities of rock to exist above elevation -40 MLW, within portions of the existing entrance channel alignment.

Subsequent Value Engineering analyses by the Wilmington District have recommended for the adoption of an alternate ocean entrance channel alignment for purposes of avoiding the substantial additive costs of rock removal. Similarly, portions of the outer channel extension were found to have seabeds which include hard corals. Accordingly, several alternate alignments are presently under consideration. As shown by Figure 2, the channel alignments under evaluation all turn easterly directly seaward of Bald Head Island. Several alternatives likewise include modifications westward of BHI in the vicinity of Jay Bird Shoals. The latter would result in a more shore perpendicular alignment of ebb tidal flow from the Cape Fear River in the vicinity of Bald Head Island.

As of January 1999, Wilmington District staff were evaluating issues regarding potential post-construction shoaling; navigability; environmental impacts and construction costs for each alternative channel alignment.

#### *CONSIDERATIONS TO BALD HEAD ISLAND*

Long term impacts of the existing navigation project channel alignment and authorized dimensions are expected to be occurring at Bald Head Island as a result of:

- a.) the elimination of natural pre-project sand bypassing phenomena associated with shoal migration at the mouth of the Cape Fear River;
- b.) the fixation of the navigation channel alignment at one location in extremely close proximity to the Bald Head Island shoreline;
- c.) continuous and long-term impacts to the sediment budget of the local sand sharing system extending from the Cape Fear Shoals to portions of Oak Island;
- d.) resultant significant long-term deflation of the ebb tidal shoals seaward of Bald Head Island;
- e.) the accentuation of the hydraulic gradients of flood tidal flows along the South Beach and West Beach shorelines of Bald Head Island and the increase in magnitude and frequency of occurrence of a major nearshore marginal flood tidal channel at the western extremity of South Beach, and
- f.) The directionality of ebb tidal flow directly toward West Beach resulting from the artificially maintained alignment of the Smith Island Range.

All of these phenomena exist today; and it is abundantly clear that most (if not all) of these phenomena will be exacerbated by the implementation of a channel realignment within the corridor under consideration (see Figure 2). It is therefore altogether reasonable to expect that the shoreline of Bald Head Island will react both adversely and concurrently with both initial construction of a channel re-alignment -- as well as its continuing maintenance into the future at a new location within the existing, undisturbed portions of the ebb tidal shoal platform.

#### ***PROPOSED MITIGATION BY FEDERAL INTERESTS***

For purposes of offsetting anticipated navigation project impacts associated with channel realignment and project deepening, three (3) mitigation elements should be implemented as part of *both* project construction and future project maintenance. The work should be performed integrally with the federal navigation project at 100% federal cost. The mitigation elements are as follows:

- a.) *Beach Fill* - At a *minimum*, some 2-3 Mcy of beach quality sand should be placed along the South Beach shoreline on Bald Head Island as advance fill. The fill should address the entire 16,000 ft. of shoreline and should be placed in accordance with a rational design based upon both existing and anticipated future littoral transport trends. Depending upon the condition of the shoreline at the time of project construction and the channel alignment selected by the Wilmington District, additional limited advance filling of West Beach should likewise be performed as a mitigation measure.
- b.) *Fill Maintenance* - Continuing maintenance of both the South Beach and West Beach shorelines should be performed utilizing beach quality sand excavated during annual channel maintenance. The *minimum* initial equivalent annualized requirement is presently estimated at 350,000 cy/yr. An updated maintenance requirement should be continually computed in the future based upon the best available data. The stipulated volume should be updated annually based upon a comprehensive monitoring program of both affected shorelines on Bald Head Island. All fill should be placed in such a manner that it results in the greatest spatial and temporal benefit to the affected shorelines, both developed and undeveloped.
- c.) *Nearshore Disposal* - Should beach quality sand in excess of initial or annual fill requirements become available, preference should be given to additional beach width enhancement. Should annualized beach filling be restricted due to permitting conditions, or other extenuating circumstances, nearshore disposal of "excess" material below the MLWL should be considered in the immediate vicinity of Bald Head Island. All such material placement should be strategically performed *only* in the more dynamic portions of the nearshore zone where direct benefit to the active littoral system can be assured via onshore transport by natural forces.

- d.) *Damages* - In the event that mitigation via item "a" through "c" above prove insufficient to offset project related impacts to Bald Head Island, the District must commit to the construction of additional structural or non-structural alternatives. Such mitigation must be provided at no expense to local interests, although the consent of local interests must be obtained in the selection of a preferred alternative.

Just as various federal agencies have determined that rock removal during project construction is uneconomical and that associated resource impacts are environmentally unacceptable, the Village of Bald Head Island feels similarly compelled to be adequately considered in the issue of ongoing and future erosional impacts due to navigation channel modifications. As a stakeholder in the process of "resource" impact evaluation, the Village believes that partnering with the District is possible, assuming that an adequate comprehensive Mitigation Plan between the two parties is reached. To that end, the Village is of the opinion that existing North Carolina Statutory requirements, as well as the necessity to be consistent with the State's Coastal Zone Management Plan, provide ample justification for the implementation of the mitigation elements discussed herein.

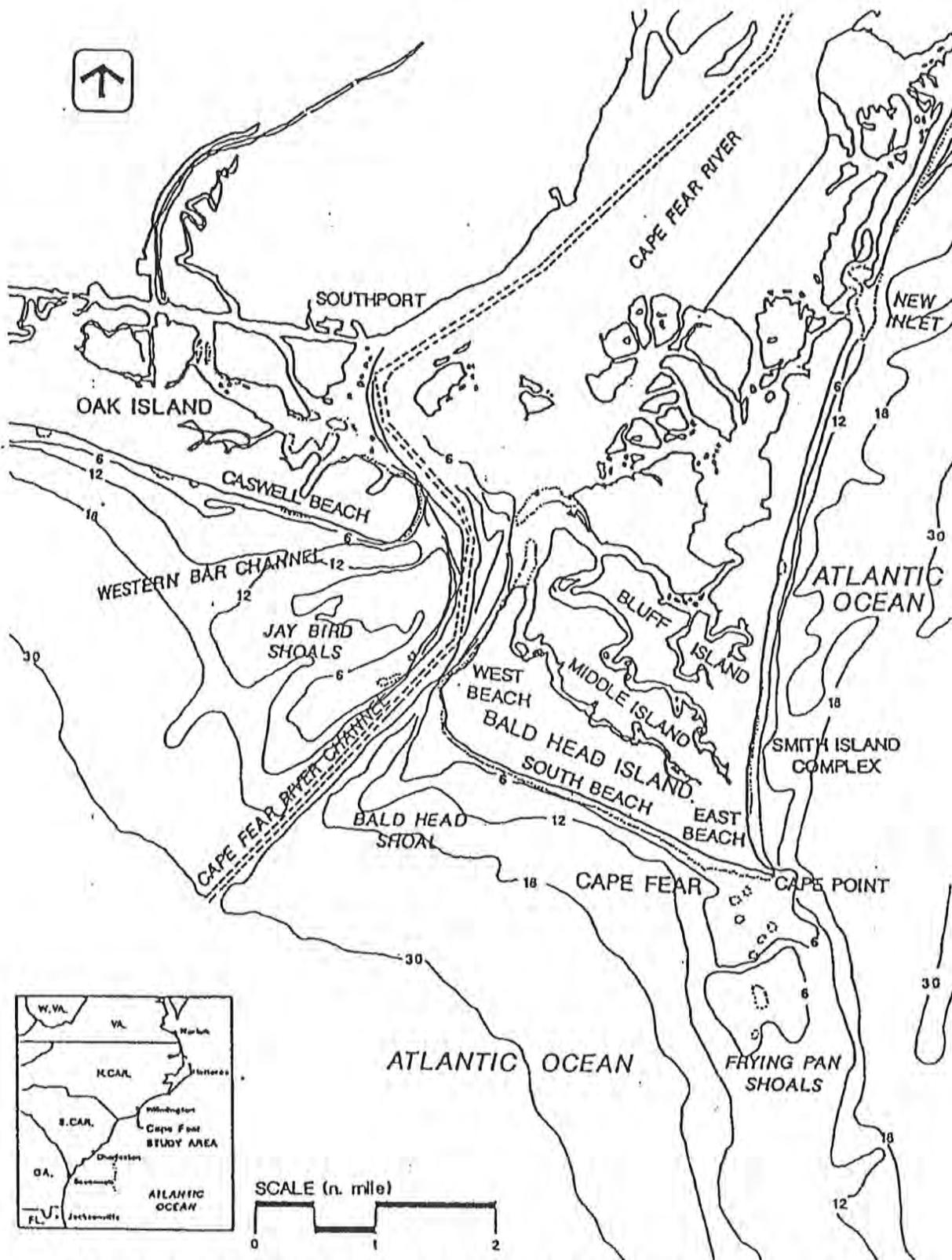
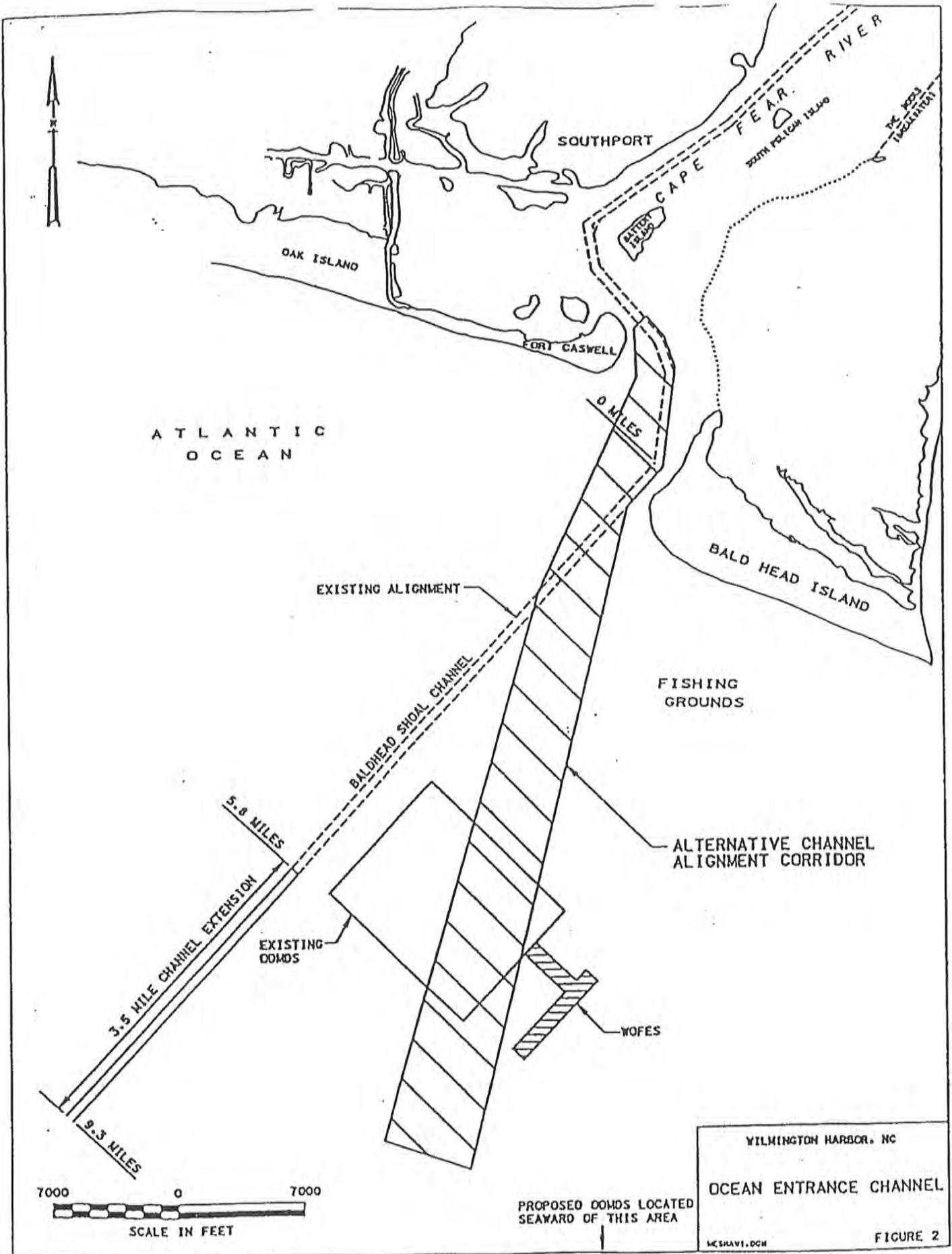


FIGURE 1 Vicinity map of Bald Head Island, North Carolina, USA.



# **ATTACHMENT C**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**SAND MANAGEMENT PLAN**

# WILMINGTON HARBOR

## SAND MANAGEMENT PLAN OCEAN ENTRANCE CHANNELS AND INNER HARBOR FROM SNOWS MARSH THROUGH HORSESHOE SHOAL CHANNELS

1. **General.** Deepening of Wilmington Harbor will involve the removal of large quantities of material including beach quality sand. Most of the beach quality material to be removed during deepening will come from the Ocean Entrance Channels consisting of the following ranges: Baldhead Shoal; Smith Island; Baldhead - Caswell; Southport; Battery Island, and Snows Marsh seaward of station 10+00. These ranges are shown on *Figure 1*. Beach quality sands will also be removed from portions of the Inner Harbor channel extending from the upper 1000 feet of the Snows Marsh Range through the Horseshoe Shoal Range. These Inner Harbor channel ranges are also shown on *Figure 1*. A maximum of 6.0 million cubic yards of beach quality material will be removed from the lower portion of the Snows Marsh Range seaward through the Baldhead Shoal Range. Approximately 0.6 million cubic yards of beach quality material will be removed from the upper Snows Marsh Range through the Horseshoe Shoal Range. Sand management plans for these two segments of the harbor are developed below for both the new work material; i.e., the beach quality material to be removed during deepening; and future maintenance of these harbor segments that will involve the removal of littoral shoal material.

### Ocean Entrance Channels - Sand Management Plan

2. **Introduction.** The sand management plan for the ocean entrance channels addresses dredging and disposal issues associated with the realigned Baldhead Shoal Channel as well as the Smith Island, Baldhead - Caswell, Southport, Battery Island, Lower Swash, and Snows Marsh Channels. Construction of the ocean entrance channels into Wilmington Harbor will entail the removal of approximately 15.5 million cubic yards of material, up to 6.0 million cubic yards of which is beach quality sand. Beach quality sand exists throughout all of the entrance channel except the new Baldhead Shoal Channel. Within the Baldhead Shoal Channel, beach quality sand is located between stations 0+00 and 120+00. Between station 0+00 and approximately 66+00, the entire channel prism is considered to be beach quality material. Between station 66+00 and 120+00, beach quality material is layered with the material lying above elevations ranging from -30 to -41 feet MLLW. Material below these depths contains a high percentage of clay and silt and is not suitable for beach disposal. Seaward of station 120+00, the new work material contains high concentrations of silt and clay and is not suited for placement on the beach. The beach quality material will be dredged primarily from the portion of Jay Bird Shoal which overlays the west side of the realigned bar channel and from Baldhead Shoal. Baldhead Shoal forms the east boundary of the existing channel, however, the realigned bar channel will cut across the seaward portion of this shoal. The present alignment of the ocean bar channel and that of the new bar channel are shown on *Figure 1*. As shown on *Figure 1*, the new bar channel passes through the eastern side of the existing Ocean Dredged Material Disposal Site (ODMDS).

3. The Brunswick County beach towns of Bald Head Island, Caswell Beach, Oak Island, and Holden Beach have expressed an interest in receiving the beach quality material. Under Section 933 of the Water Resources Development Act of 1986 (Public Law 99-662), the Federal Government can cost share up to 50 percent of the added cost of depositing the material on the beach providing certain criteria are met. The primary requirement for Federal participation is that any added cost for placing sand on a particular beach segment must be economically justified. A base disposal plan associated with the least costly means of placing the beach quality material and a Section 933 disposal plan are discussed in the following paragraphs. In addition, a disposal plan for the annual maintenance material is presented following the disposal plan for the new work material.

**4. Plan Formulation – Ocean Entrance Channels New Work Material Disposal Plan.**

The disposal plan for the new work material contained in the 1996 project feasibility report had all of the material from the Lower Big Island Range through the existing Baldhead Shoal Channel going to the ODMDS. It should be mentioned that the disposal plan in the feasibility report did not include consideration of the realigned Baldhead Shoal Channel. The alignment of the new Baldhead Shoal Channel came from a recommendation contained in a Value Engineering Study that demonstrated significant construction cost savings could be realized by avoiding rock in the existing Baldhead Shoal Channel. In any event, increased utilization of the existing ODMDS for disposal of maintenance and new work material has resulted in the existing ODMDS for Wilmington Harbor approaching full capacity. This combined with the passage of the realigned Baldhead Shoal Channel through the existing ODMDS has necessitated the development of a new ODMDS. The new ODMDS, which is being developed in cooperation with the Environmental Protection Agency (EPA), is located approximately 5 miles offshore of the existing ODMDS as shown on *Figure 1*. The new ODMDS is expected to be available for use by the end of 2001, consequently, the existing ODMDS must have sufficient capacity to accommodate the new work and maintenance material expected to be removed through the year 2001.

5. The remaining capacity of the existing ODMDS was estimated assuming that the area could be filled to an average elevation of 26 feet below mean lower low water (mllw). All future placement of dredge material in the existing ODMDS will take place west of the new channel alignment. In addition, no material would be placed in a 2,500-foot wide corridor parallel to and west of the new entrance channel in order to reduce the chance deposited material will move into and shoal the new channel (see *Figure 1*). The size of the corridor through the ODMDS is needed to prevent the return of deposited material into the channel and was based on the distance between the western toe of the existing ODMDS and the existing ocean entrance channel, which, as shown on *Figure 1*, is about 2,500 feet. Based on these assumptions, the remaining capacity of the existing ODMDS is approximately 17.8 million cubic yards.

6. Deepening of the Wilmington Harbor project is scheduled to begin in May 2000 with the award of a contract to construct the offshore portion of the Baldhead Shoal Channel seaward of station 120+00. The material to be removed from this segment of the new channel, which totals about 6.6 million cubic yards, contains significant quantities of silt and clay and will have to be deposited in the existing ODMDS. The contract for the

landward segment of Baldhead Shoal Channel and the other ocean entrance channels, which will include up to 6.0 million cubic yards of beach quality sand and 2.8 million cubic yards of material not suited for placement on the beach, will be awarded near the end of calendar year 2000. Work on the inner portions of the project from upper Snows Marsh Range to Horseshoe Shoal Range that contains 0.6 million cubic yards will also be performed in early 2001. The economic and engineering viability of options for the disposal of the beach quality material to be removed from upper Snows Marsh to Horseshoe Shoal is presented later in the section of this report entitled "Inner Harbor - Sand Management Plan." Finally, a contract for removal of rock and other sediments from the Big Island Range will be awarded in 2000 as a test to help determine contract scopes for rock removal from other sections of the harbor. All of the material from the Big Island Range (approximately 2.2 million cubic yards) will be deposited in the ODMDS. In summary, construction of the deeper channel between 2000 and 2001 will involve the removal of approximately 18.2 million cubic yards of material with all of this material scheduled to be placed in the existing ODMDS.

7. During the new ocean entrance channel construction period, periodic maintenance of the existing ocean entrance channel will have to continue as will the maintenance of the interior portions of the harbor. This maintenance material, which averages around 800,000 cubic yards per year from the entrance channel and 300,000 cubic yards from the interior channels, is normally placed in the ODMDS. In addition to the Wilmington Harbor maintenance material, material removed for maintenance of the Military Ocean Terminal at Sunny Point (MOTSU) is also normally placed in the ODMDS. Maintenance of MOTSU averages 1 million cubic yards per year. Thus, the combined volume of new work and maintenance material to be removed from Wilmington Harbor and MOTSU between 2000 and 2001 could total 22.4 million cubic yards, exceeding the remaining capacity of the existing ODMDS by more than 4.6 million cubic yards.

8. **Base Disposal Plan-New Work Material.** With the capacity of the existing ODMDS insufficient to accommodate the dredged material disposal volume requirements through 2001, the logical solution is to place up to 6.0 million cubic yards of beach quality material on adjacent beaches. The only other option would be to delay the construction of the harbor deepening project by at least one year which is not acceptable to the State of North Carolina, the project sponsor. Placement of up to 6.0 million cubic yards of new work material on the beach would reduce the volume of material to be placed in the existing ODMDS through the year 2001 to 16.4 million cubic yards, effectively depleting the remaining capacity of the existing ODMDS. Once the new ODMDS becomes operational, all future dredge material requiring ocean disposal will be placed in the new area.

9. The disposal of up to 6.0 million cubic yards of new work beach quality material would be distributed along 16,000 feet on Bald Head Island and 25,000 feet on Oak Island-Caswell Beach. Deposition on Bald Head Island would occur along 2,000 feet of West Beach, which faces the Cape Fear River Entrance, and along 14,000 feet of South Beach. Disposal on Oak Island-Caswell Beach would begin at the west boundary of the Fort Caswell Baptist Assembly grounds and proceed west. The 25,000-foot disposal area on Oak Island-Caswell Beach would extend the fill to the east end of the sea turtle habitat area

on Oak Island. These disposal areas are shown on Figure 2. The sea turtle habitat, which is basically a beach fill with a small dune feature to prevent nesting sea turtles from crossing into the ocean front road, will be constructed under authority of Section 1135 of the Water Resources Development Act of 1986. Construction of the sea turtle habitat will be completed in April 2001. The combined total of new work material to be deposited on Bald Head Island under the base plan would be 2,580,000 cubic yards. The balance of the new work beach quality material (up to 3,420,000 cubic yards) would be equally distributed along the 25,000-foot disposal area on Oak Island-Caswell Beach. The base plan beach fill placement characteristics associated with placement of up to 6.0 million cubic yards of new work material are presented in *Table 1*. Based on the characteristics of the sediment to be removed, about 83 percent of the dredged material is expected to remain in place. The lower placement rates used on West Beach and at the west end of South Beach are intended to reduce the possibility of increased sediment transport from the disposal area back into the navigation channel. Following initial adjustments, the deposited material will begin to erode at a rates comparable to or slightly faster than the erosion rates experienced on the existing beach. The base disposal plan addresses provisions for the disposal of up to 6.0 million cubic yards of beach quality material, however, the maximum volume may be reduced by 20 to 30 percent depending on the final quantitative and qualitative sand analysis and actual dredging operations associated with the dredging contractors decisions to obtain the total allowable overdepth.

**Table 1**  
**Base Plan Beach Disposal Characteristics**

Location	Length along Shoreline (feet)	Disposal Rate (cubic yds per ft)	Initial Placement Width Range (feet)	Adjusted Placement Width Range (feet)	Initial Placement Volume (cubic yds)	Net In-place Volume (cubic yds)
Bald Head Island	16,000				2,580,000	
West Beach	2,000	120	190 to 210	95 to 105	240,000	200,000
South Beach	2,000	120	190 to 210	95 to 105	240,000	200,000
South Beach	12,000	175	280 to 300	140 to 150	2,100,000	1,734,000
Oak Is - Caswell Beach	25,000	137	220 to 240	110 to 120	3,420,000	2,839,000
Totals	41,000				6,000,000	4,973,000

10. **Section 933 Disposal Plan – New Work Material.** The Brunswick County beach towns of Bald Head Island, Caswell Beach, Oak Island, Holden Beach, Ocean Isle, and Sunset Beach formed the Brunswick County Consortium for the purpose of working together to assure that the beach quality material is placed on the beach. Since Ocean Isle has received approval for a Federal Storm Damage Reduction Project, it is not vying for any of the Wilmington Harbor material. Construction of the Ocean Isle project is scheduled to begin in 2000. As mentioned above, a segment of Oak Island, lying between East 26<sup>th</sup> Street and East 58<sup>th</sup> Street, has been approved for a Section 1135 sea turtle habitat. The length of shoreline included in the sea turtle habitat consist of an 8,900-foot main section and 1,600-foot transitions on each end of the main fill. Construction of the sea turtle habitat will involve the removal of about 1.6 million cubic yards of material from an existing upland dredged material disposal area located adjacent to the Atlantic Intracoastal Waterway (AIWW). The expected in place volume resulting from this project is 1.34 million cubic yards. Within the main portion of the sea turtle habitat, the placement rate will be approximately 130 cubic yards/foot of beach. Accordingly, no material from the Wilmington Harbor project will be placed in the main portion of the sea turtle habitat. Some harbor material will be placed in the habitat transition areas to make up the difference in the volume that will be placed under Section 1135 and the rate of fill proposed under Section 933. This volume difference is around 25,000 to 30,000 cubic yards. As discussed below, disposal of material from the Wilmington Harbor project along Oak Island could occur at rates varying from 78 to 110 cubic yards/foot of beach. While these placement rates are less than the placement rate within the main portion of the Sea Turtle Habitat project, the relative protrusion in the shoreline resulting from the sea turtle project would be less than that which would have been produced in the absence of the harbor material. The reduction in the relative seaward protrusion of the shoreline within the habitat area resulting from the placement of the harbor material on the beach would also reduce the expected rate of loss from the habitat project due to end losses.

11. The shoreline segments that could receive material from Wilmington Harbor as a result of the Section 933 study include: 16,000 feet on Bald Head Island; 25,000 feet on Caswell Beach and the east end of Oak Island; 25,600 feet on the west end of Oak Island lying west of the sea turtle habitat; and 10,600 feet on the east end of Holden Beach. This represents a total shoreline length of 77,200 feet. These shoreline segments are shown on *Figure 2*. The distribution of available beach quality sand along the Brunswick County beaches will depend on the final results of the Section 933 study, analysis of project engineering and economic constraints, and the desires of the project sponsor and the Brunswick County consortium. To account for variations in sand placement along the Brunswick County beaches under the section 933 authority, *Table 2* presents the maximum beach fill disposal characteristics associated with the maximum beach fill for each beach segment resulting from the various possible distributions of beach quality material. Although the final distribution of the beach quality material for the Section 933 work along the Brunswick County beaches has not been determined, the total placement will not exceed 6.0 million cubic yards. Six million cubic yards of beach quality material to be removed from the channel equates to 5.0 million cubic yards of in place sand on the beach based on a retention rate of 83 percent discussed previously. Following the initial adjustments, erosion of the fill material will occur at rates equal to or slightly higher than the historic erosion

rates. The Section 933 disposal plan addresses provisions for the disposal of up to 6.0 million cubic yards of beach quality material, however, the maximum volume may be reduced by 20 to 30 percent depending on the final quantitative and qualitative sand analysis and actual dredging operations associated with the dredging contractors decisions to obtain the total allowable overdepth.

**Table 2**  
**MAXIMUM**  
**Section 933 Disposal Characteristics**

Location	Length along Shoreline (feet)	Disposal Rate (cubic yds per ft)	Initial Placement Width Range (feet)	Adjusted Placement Width Range (feet)	Initial Placement Volume (cubic yds)	Net In-place Volume (cubic yds)
Bald Head Island	16,000				2,200,000	1,826,000
West Beach	2,000	120	190 to 210	95 to 105	240,000	200,000
South Beach	2,000	120	190 to 210	95 to 105	240,000	200,000
South Beach	12,000	143	220 to 240	110 to 120	1,720,000	1,426,000
Oak Island	50,500				4,740,000	3,933,000
East Oak Island Caswell Beach	25,000	110	170 to 190	85 to 95	2,750,000	2,283,000
West Oak Island Caswell Beach	25,600	78	120 to 140	60 to 70	1,990,000	1,650,000
Holden Beach	10,600	78	120 to 140	60 to 70	830,000	690,000

### Inner Harbor – Snows Marsh Range to Horseshoe Shoal Range Sand Management Plan

12. **Introduction.** The sand management plan for the inner harbor addresses dredging and disposal issues associated with the Snows Marsh and Horseshoe Shoal channels. An estimated 0.6 million cubic yards of beach quality material will be removed from this

portion of the project. Disposal islands 3 and 4, located near the intersection of Horseshoe and Snows Marsh channels, are at maximum capacity and contain an estimated 1.3 million cubic yards of beach quality material. Maintenance material removed from this area is predominately sand of beach quality. Existing maintenance dredging operations in this area utilizes the offshore disposal area. The removal of the existing material from disposal islands 3 and 4 in conjunction with the new work dredging will facilitate placement of future maintenance material in islands 3 and 4. Future maintenance material placed in islands 3 and 4 would be used to nourish adjacent beaches.

**13. Plan Formulation.** The disposal plan for material presented in the June 1996 Cape Fear-Northeast Cape Fear Rivers project feasibility report proposed the placement of all dredge material from these channel reaches in the offshore disposal area. Subsequent investigations of material characteristics have shown that this material is of beach quality and this valuable resource would be best utilized to meet nourishment needs of the nearby beaches. Placement options for the 0.6 million cubic yards of new work material from the navigation channel includes potential placement of this material on Carolina Beach, Kure Beach, or Fort Fisher for 7,000 feet south of the southern terminus of the rock revetment. Placement options for the new work material from the navigation channel combined with pump out of islands 3 and 4 includes provisions for placement of 1.9 million cubic yards of material on adjacent beaches including Carolina Beach, Kure Beach, the Fort Fisher area, Bald Head Island, or Caswell Beach. Final placement decisions for the new work and maintenance material associated with the inner harbor from the Snows Marsh reach through the Horseshoe Shoal reach will assure that the dredge material disposal occurs in the least costly, environmentally acceptable manner, consistent with engineering requirements established for the project.

### **Maintenance Material Disposal Plan**

**14. Plan Formulation.** Maintenance of the Wilmington Harbor Entrance Channel has historically required the removal of between 850,000 to 1,000,000 cubic yards of material each year. The maintenance material has normally been deposited in the ODMDS. Of the total volume removed each year, about 300,000 to 400,000 cubic yards has been littoral material derived from the adjacent beaches on Oak Island and Bald Head Island. This volume of littoral sediment constitutes 40 to 50 percent of the gross littoral transport along the Brunswick County beaches. Littoral material deposits in the bar channel primarily as a result of the eastward movement of Jay Bird Shoal and the westward movement of Bald Head Shoal into the channel area. The littoral sands generally deposit in channel reaches between channel stations 0+00 and 120+00. Seaward of station 120+00, the shoal material consist primarily of riverine silts and clays. While the new ocean bar channel will have an alignment different from the existing bar channel, shoaling patterns in the new channel, particularly in the vicinity of Jay Bird Shoal and Bald Head Shoal, are expected to be similar to the existing channel. The rate of shoaling of littoral sand in the new channel is estimated to be 545,000 cubic yards per year. The higher rate of deposition of littoral material in the new bar channel compared to the existing is due to channel modifications that would widen the channel to the west along the Smith Island Range and portions of the Baldhead Shoal range and cut across the seaward portions of Bald Head Shoal, as shown

on *Figure 1*. The volume of riverine silts and clays that will shoal the seaward portions of the new entrance channel are projected to be 538,000 cubic yards per year or about the same as that which occurs in the existing entrance channel.

15. The dredged material disposal plan for the entrance channel maintenance material was developed in accordance with U.S. Army Corps of Engineers policy with regard to the disposal of dredged material from Federal navigation channels. The Corps policy is contained in 33 CFR Parts 335-338 reads as follows:

**"It is the Corps' policy to regulate the discharge of dredged material from its projects to assure that dredged material disposal occurs in the least costly, environmentally acceptable manner, consistent with engineering requirements established for the project."**

The policy further states:

**"The least costly alternative, consistent with sound engineering practices and selected through the 404(b)(1) guidelines or ocean disposal criteria, will be designated the Federal standard for the proposed project."**

(Note: Section 404 guidelines of the Clean Water Act apply to beach nourishment, island creation, or construction of underwater berms whereas ocean disposal is covered by the Ocean Dumping Act.)

Finally, with specific reference to the disposal of maintenance material, the policy states (33 CFR Part 337.9):

**"(a) District engineers should identify and develop dredged material disposal management strategies that satisfy the long-term (greater than 10 years) needs for Corps projects. Full consideration should be given to all practicable alternatives including upland, open water, beach nourishment, within banks disposal, ocean disposal, etc."**

16. The Federal policy notwithstanding, the State of North Carolina adopted a set of policies in 1992 designed to insure that beach quality sand not be removed from the active beach system. The U.S. Department of Commerce, pursuant to the Federal Coastal Zone Management Act of 1972, has incorporated these policies into the North Carolina Coastal Management Program. As a result, the State of North Carolina includes these policies in its consistency review of Federal activities. In 1993, the North Carolina General Assembly enacted a statute that put the coastal management policy into law. While there is continuing legal debate over the applicability of the State Law to Federal projects, the Federal Government is required to be consistent with the State's coastal management program to the maximum extent practicable. Accordingly, the disposal plan for the maintenance material removed from the Wilmington Harbor entrance channel will attempt to satisfy these State requirements.

17. Based on the Corps policy given above, 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 cost. These factors are discussed below.

18. **Engineering Requirements.** The construction and maintenance of a deep ocean entrance channel through a tidal inlet will have the same impact on the movement of littoral sediment past the entrance as stabilizing structures such as jetties. However, the impacts of a dredge channel on the adjacent shorelines are generally more subtle than the impacts associated with stabilizing structures. In the case of stabilizing structures, there is usually a visible build-up of material adjacent to the updrift structure with corresponding erosion downdrift of the opposite structure. These impacts are normally clearly visible and measurable within distances of thousands of feet of the structures. Navigation projects that include stabilizing structures are generally formulated to include some means to bypass sand from one side of the entrance to the other in order to prevent project induced erosion on the adjacent beaches. Dredged channels, on the other hand, do not cause material to build-up on one side of the inlet or the other, rather, the impact of sediment removal from the dredged channel tends to be diffused throughout the impacted area. Since this diffusion process can extend over miles of shoreline, the erosive impact of the sediment removed from the navigation channel and its deposition outside the active littoral zone is difficult to detect in the short term since the magnitude of the impact may be of the same order as normal temporal fluctuations in the shoreline position. Also, where stabilizing structures generally have a well-defined impact on the predominant downdrift beach, channel projects affect both sides as material is deposited in the navigation channel from both the updrift and downdrift beaches.

19. The Wilmington Harbor project, historically, has not included the disposal of littoral sands on the adjacent beaches or in the active littoral zone. This has been primarily due to the maintenance practices that were established with the inception of the project over 100 years ago. Dredging technology that existed during the early history of the project dictated maintenance procedures and dredged material disposal practices. In this regard, hopper dredges, with hopper doors that opened by swinging down, were highly efficient in removing shoal material from channels but were restricted by their loaded drafts and swinging hopper doors to depositing the dredged material in relatively deep water. As a result, the "Federal Standard" for maintaining navigation projects, like Wilmington Harbor, became the cost and impacts associated with hopper dredging and ocean disposal of the dredged material in water depths of 30 feet or more.

20. The early establishment of the "Federal Standard" for maintenance of Wilmington Harbor did not consider the overall impacts of removing littoral sediment from the littoral system. This was due in part to the limited coastal development that existed when the projects were first constructed, but also due to lack of sufficient scientific understanding of coastal processes and the sand sharing system associated with tidal inlets and adjacent beaches. Years of research by the U.S. Army Corps of Engineers and practical knowledge gained from the operation of the numerous coastal navigation projects around the country has resulted in the realization that littoral material must be conserved. Natural supplies

from rivers and streams are not replenishing littoral sediments, particularly on the East Coast of the United States. Thus, the removal of a cubic yard of littoral sediment from a tidal entrance or inlet with deposition outside the active littoral zone of the beach will ultimately cause a cubic yard deficit somewhere within the sand sharing system affected by that particular entrance or inlet. The impact of the removal of littoral sediment from the active littoral zone through channel maintenance is identified as a major cause of man-induced erosion in the U.S. Army Corps of Engineers Shore Protection Manual. From an engineering perspective, the primary requirement for the Wilmington Harbor maintenance program, apart from assuring that the channel remains open year-round, is to prevent project induced erosion of the adjacent beaches by conserving the limited natural resource, sand, through deposition directly on the adjacent beaches.

21. Wave transformation/sediment transport studies were conducted by the Coastal and Hydraulics Laboratory (CHL), U.S. Army Corps of Engineers, Engineer Research and Development Center, for the Wilmington District, to determine the theoretical rate of longshore sediment transport moving toward the Cape Fear River Entrance. The results of this study are reported in reference 3.

22. The results of the sediment transport analysis for the existing condition near the Cape Fear River entrance found that sediment transport potential to the east off Caswell Beach is 270,000 cubic yards per year while a comparable rate to the west off Bald Head Island is about 527,000 cubic yards per year. Combining these two transport rates results in a gross transport of littoral sediment moving into the entrance of 797,000 cubic yards per year. In terms of percentages, approximately 66 percent of the sediment shoaling the entrance channel comes from Bald Head Island while 34 percent is derived from Caswell Beach. In order to maintain the sediment balance on both islands, littoral material removed from the entrance channel will be placed back on the beach from whence it came. Accordingly, two out of every three cubic yards of littoral shoal material removed from the entrance channel will be placed back on Bald Head Island and the remaining cubic yard placed on East Oak Island-Caswell Beach. The disposal locations on each island will be based on the results of annual beach profile monitoring surveys. In general, the material will be placed primarily along portions of South Beach and West Beach on Bald Head Island and on East Oak Island-Caswell Beach beginning at a point just east of the Carolina Power and Light Company cooling water discharge canal.

23. The distribution of littoral shoal material between Bald Head Island and East Oak Island - Caswell Beach given above will be accomplished by placing material from two consecutive maintenance operations on Bald Head Island with the third operation involving placement on Oak Island-Caswell Beach. Historically, littoral sediment shoaling in the entrance channel has been the highest in the Smith Island Range as a result of the eastward encroachment of Jay Bird Shoal into the channel. In 1991, a 50-foot channel widener was constructed along the west side of the Smith Island Range and was effective in trapping east moving sediment off of Jay Bird Shoal but was not large enough to significantly increase the time between maintenance dredging operations. In 1996, the widener was increased to 100 feet, which increased the maintenance cycle for this segment of the entrance channel to approximately every two years. The design of the deeper

channel into Wilmington Harbor includes a 150-foot channel widener west of the Smith Island Range, as shown on *Figure 1*. Consequently, maintenance dredging of the Smith Island Range and the landward end of the Baldhead Shoal Range should only be required every two years. Based on a two year maintenance cycle, 1,090,000 cubic yards of littoral material will be placed on Bald Head Island in year 2 and year 4 following the initial deepening of the harbor with this same volume placed on Oak Island-Caswell Beach during the 6<sup>th</sup> year following channel deepening. This disposal cycle is planned for the life of the project. The equivalent annual deposition of material would be 363,000 cubic yards per year to Bald Head Island and 182,000 cubic yards per year to Oak Island-Caswell Beach.

24. **Environmental Impacts.** The dredged material disposal plan for the new work material and that for the sandy maintenance material would not only improve the condition of the beaches adjacent to the harbor entrance but would maintain the beaches in a more stable condition. The wider more stable beaches, particularly along Bald Head Island and the East Oak Island-Caswell Beach disposal areas, would provide improved sea turtle nesting habitat compared to the present condition of these beaches. Even in their present state, the shorelines of East Oak Island, Caswell Beach, and Bald Head Island provide some of the most important sea turtle nesting habitat in North Carolina. In this regard, statistics compiled by the North Carolina Wildlife Resources Commission over the last 6 years (1994 to 1999 inclusive) show that approximately 33 percent of the sea turtle nest in North Carolina occurred on these three beaches. This relative high percentage of the total statewide nests is even more impressive given that these beaches constitute only 5 percent of the entire shoreline of North Carolina.

25. The disposal of material on the beach will have some short term negative impacts including the temporary increase in turbidity during the disposal operation and the smothering or otherwise displacement of organisms that live in or near the beach foreshore. Turbidity caused by the disposal operation normally does not persist more than one or two tidal cycles (12 to 24 hours) following the cessation of the disposal operation. With regard to the smothering or displacement of the nearshore organisms, studies by the University of Virginia for the U.S. Fish and Wildlife Service on Pea Island have shown that the organisms generally return to the area in about one year. The disposal plan for the maintenance material discussed above would involve the placement of material on Bald Head Island in intervals of 2, 4, and 8 years while disposal on Oak Island-Caswell Beach would occur in 6 year intervals. Thus, the nearshore organisms would not be completely eliminated from the area as a result of the disposal operation. In summary, the positive environmental impacts associated with the deposition of the littoral shoal material on the beach versus depositing it in an ocean disposal site far outweigh the negative impacts.

26. **Cost.** The "Federal Standard" for constructing and maintaining navigation channels focuses on the least costly method of disposing the material, even though policy dictates that the environmental and engineering requirements must also be considered. With respect to the disposal plan for the new work entrance channel material, the limited capacity of the existing ODMDS dictates that the beach quality material be placed on the adjacent beaches, otherwise, the construction of the deeper project would have to be

delayed by about a year. Even if the project were to be delayed a year to allow ocean disposal of the beach quality material, cost comparisons indicate that beach disposal would still be the most cost effective disposal option.

**27. Maintenance Material Disposal.** Even if beach disposal of the maintenance material resulted in some additional cost, the Corps of Engineers, under authority of Section 207 of the Water Resources Development Act of 1996, can elect to use a slightly more costly disposal method if there are overriding environmental and erosion control benefits associated with the more costly disposal scheme.

**28.** Future disposal of maintenance material in the ocean will be in the new ODMDS located 5 miles farther offshore than the existing ODMDS. This additional haul distance almost doubles the cost of ocean disposal. As a result, beach disposal of the beach quality maintenance material becomes the least costly option, particularly if maintenance of the beach quality material is only required every two years. While the intent of the sand management plan is to return littoral material to the beach, the primary purpose of the project is to provide safe navigation through the ocean entrance into Wilmington Harbor. In this regard, there may be occasions during the life of the project when problem shoals occur in the entrance channel between normal 2-year maintenance cycle. In order to prevent disruption of navigation, these shoals must be removed in an expedient manner. If the size of these problem shoals are small (for example less than 100,000 cubic yards), mobilization and demobilization of an ocean certified pipeline dredge may not be economical. Therefore, on these occasions, removal of the shoals could be accomplished with a hopper dredge with disposal of the material in the ODMDS. In any event, a comparison of the cost for ocean disposal versus beach disposal of the littoral material is provided in *Table 3*. This cost comparison is made over a 6 year period which corresponds to the time period associated with the sand sharing formula between Bald Head Island and Oak Island-Caswell Beach.

**29. Summary.** The sand management plan developed for the new work beach quality material and maintenance material to be removed from the entrance channels into Wilmington Harbor includes the following:

(a) Disposal of the new work beach quality material on Bald Head Island and Oak Island-Caswell Beach.

(b) In the absence of Section 933, up to 2,580,000 cubic yards of the new work material would be placed on Bald Head Island and up to 3,420,000 on Oak Island-Caswell Beach.

(c) Under Section 933, the material would be distributed along Bald Head Island, Caswell Beach, Oak Island, and Holden Beach.

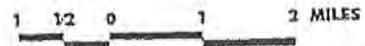
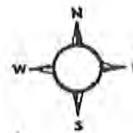
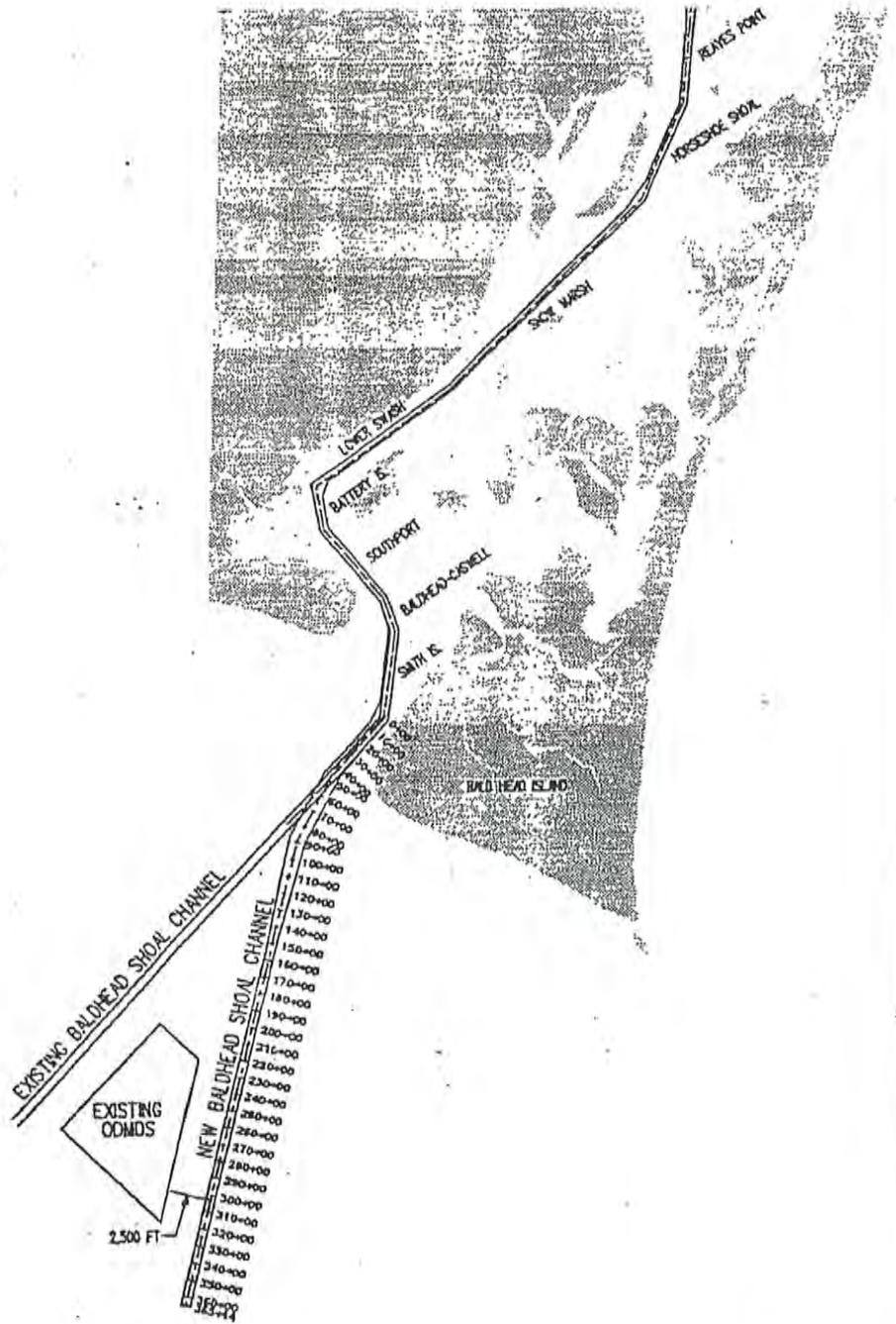
(d) Beach quality maintenance material will be deposited directly on Bald Head Island and Oak Island-Caswell Beach with Bald Head Island receiving 2 yards for every yard placed on Oak Island-Caswell Beach.

**Table 3**  
**Cost Comparison – Ocean Disposal versus Beach Disposal**  
**Ocean Entrance Channel Maintenance Material**

Item	Quantity	Unit	Unit Cost	Cost
<b>Beach &amp; Ocean Disposal – Maintenance Material</b>				
<b>Year 1: Hopper Dredge Silt &amp; Clay</b>				
Mob & Demob Hopper	1	job	\$331,000	\$331,000
Dredging w/ Ocean Disposal	538,000	CY	\$4.00	\$2,152,000
<b>Total Year 1 Dredging Cost</b>				<b>\$2,483,000</b>
<b>Year 2: Hopper Dredge Silt &amp; Clay</b>				
Mob & Demob Hopper	1	job	\$331,000	\$331,000
Dredging w/ Ocean Disposal	538,000	CY	\$4.00	\$2,152,000
Mob & Demob Pipeline Dredge	1	job	\$948,000	\$948,000
Dredging-Disposal on Bald Head	1,090,000	CY	\$3.10	\$3,379,000
<b>Total Year 2 Dredging Cost</b>				<b>\$6,810,000</b>
<b>Year 3: Hopper Dredge Silt &amp; Clay</b>				
Mob & Demob Hopper	1	job	\$331,000	\$331,000
Dredging w/ Ocean Disposal	538,000	CY	\$4.00	\$2,152,000
<b>Total Year 3 Dredging Cost</b>				<b>\$2,483,000</b>
<b>Year 4: Hopper Dredge Silt &amp; Clay</b>				
Mob & Demob Hopper	1	job	\$331,000	\$331,000
Dredging w/ Ocean Disposal	538,000	CY	\$4.00	\$2,152,000
Mob & Demob Pipeline Dredge	1	job	\$948,000	\$948,000
Dredging-Disposal on Bald Head	1,090,000	CY	\$3.10	\$3,379,000
<b>Total Year 4 Dredging Cost</b>				<b>\$6,810,000</b>
<b>Year 5: Hopper Dredge Silt &amp; Clay</b>				
Mob & Demob Hopper	1	job	\$331,000	\$331,000
Dredging w/ Ocean Disposal	538,000	CY	\$4.00	\$2,152,000
<b>Total Year 5 Dredging Cost</b>				<b>\$2,483,000</b>
<b>Year 6: Hopper Dredge Silt &amp; Clay</b>				
Mob & Demob Hopper	1	job	\$331,000	\$331,000
Dredging w/ Ocean Disposal	538,000	CY	\$4.00	\$2,152,000
Mob & Demob Pipeline Dredge	1	job	\$1,275,000	\$1,275,000
Dredging-Disposal on Oak Island-Caswell	1,090,000	CY	\$4.60	\$5,014,000
<b>Total Year 6 Dredging Cost</b>				<b>\$8,772,000</b>
<b>Total 6-Year Dredging Cost</b>				<b>\$29,841,000</b>

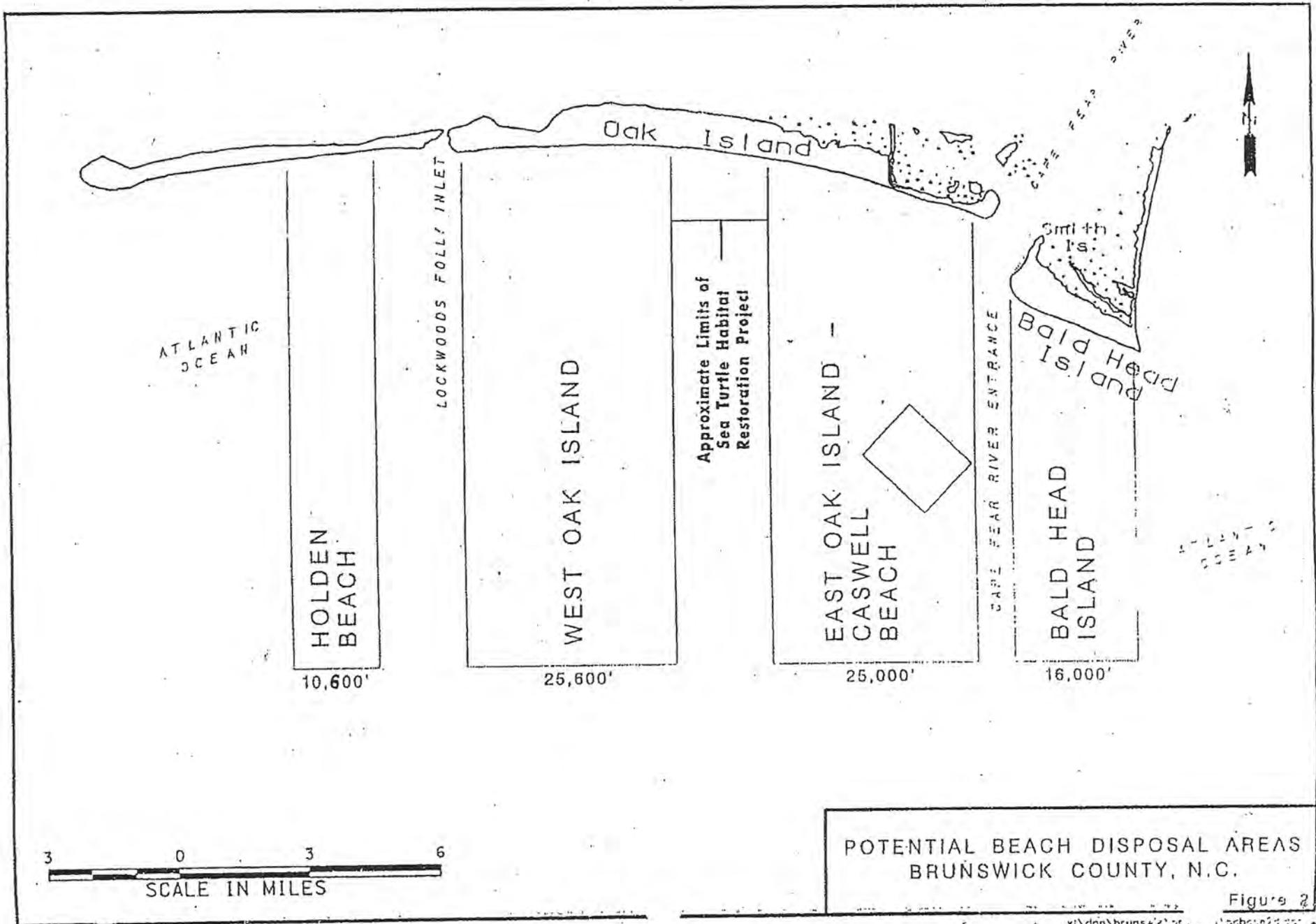
<b>Ocean Disposal of All Maintenance Material</b>				
Yearly Hopper Dredge Cost for Ocean				
Disposal of all Maintenance Material				
Mob & Demob	1	job	\$331,000	\$331,000
Dredging w/ Ocean Disposal	1,083,000	CY	\$4.40	\$4,765,200
<b>Total Annual Dredging Cost</b>				<b>\$5,096,200</b>
<b>Total 6-Year Dredging Cost</b>				<b>\$30,577,200</b>

**Date Revised: 02/04/00-sv**



WILMINGTON HARBOR  
SAND MANAGEMENT PLAN  
BALDHEAD SHOAL ALIGNMENTS

FIG :



# **ATTACHMENT D**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**DELONY LETTER 9 JUNE 2000**



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO

June 9, 2000

Project Management Branch

Honorable Freeman A. Berne  
Mayor of the Village of Bald Head Island  
Post Office Box 3009  
Baldhead Island, North Carolina 28461

Honorable Harry Simmons  
Mayor of Caswell Beach  
707 Caswell Beach Road  
Caswell Beach, North Carolina 28465

Honorable Joan Altman  
Mayor of Oak Island  
4601 East Oak Island Drive  
Oak Island, North Carolina 28465

Honorable James W. Lowell  
Mayor of Holden Beach  
110 Rothschild Street  
Holden Beach, North Carolina 28462

Dear Mayors:

After years of effort by many, it is a pleasure to see the various elements of the Wilmington Harbor Navigation project (hereinafter the "Project") coming together. As we approach the decision point for the Finding of No Significant Impact (FONSI), I want to bring everyone up to date on the status of our plan to place beach quality sand excavated for the project on Bald Head Island, Caswell Beach, Oak Island, and Holden Beach.

As you know, the details of our plan are presented in the Environmental Assessment, in particular, Appendix A - Sand Management Plan, in the Wilmington Harbor Monitoring Plan, and in the Section 933 Evaluation Report. The shoreline segments recommended to receive sand are the Village of Bald Head Island (up to 16,000 linear feet), Caswell Beach (up to 25,000 linear feet), Oak Island (up to 25,600 linear feet), and Holden Beach (up to 10,600 linear feet). This represents a maximum shoreline length of 77,200 linear feet.

Bald Head Island will be the site of initial beach disposal associated with construction. This site, along with the easternmost 25,000 linear feet of Caswell Beach-Oak Island, represents the least cost alternative of disposal available to the Project; accordingly, placement will be accomplished at Project cost and at no cost to the Village of Bald Head Island.

Placement will be according to the March 31, 2000 memorandum from Erik J. Olsen, consultant to the Village of Bald Head Island referencing the Village of Bald Head Island Beach Disposal Plan (2000/2001) (enclosed and incorporated by reference) to the U.S. Army Corps of Engineers, Wilmington District (hereinafter "Corps").

Once disposal has begun at the Village of Bald Head Island, fill operations will continue until the estimated minimum of 1,536,000 cubic yards of sand in the channel prism allocated to the Village of Bald Head Island (based on channel surveys conducted in October and December 1999) have been dredged and placed on the beach in accordance with the March 31, 2000 memorandum. Assuming a potential effective reduction of 20 percent in the gross fill dredged, the final in-place fill volume is expected to range between 1,228,000 cubic yards and 1,536,000 cubic yards.

Project construction beach disposal operations at the Village of Bald Head Island will be performed along both West Beach and South Beach, as indicated by the March 31, 2000 memorandum. The Village of Bald Head Island will provide all requisite easements necessary to construct the template(s) provided for by the March 31, 2000 memorandum.

Once the placement of beach quality sand at the Village of Bald Head Island is complete, placement along approximately 25,000 linear feet of shoreline at the easternmost end of Caswell Beach-Oak Island will be accomplished. Placement will be made in accordance with the template agreed to by the Corps, NCDENR, and the communities of Caswell Beach and Oak Island. The final in-place fill volume is expected to range between 1,451,000 cubic yards and 1,814,000 cubic yards. Since this reach comprises the balance of the least cost alternative for disposal available to the Project, placement will be at Project cost and at no cost to those communities. All requisite easements will be provided by the communities at no cost to the Project.

Under the provisions of the draft Section 933 report, the remaining beach quality sand will be placed along approximately 25,600 linear feet of the westernmost shoreline of Oak Island and along approximately 10,600 linear feet of the eastern shoreline of Holden Beach. Placement will be made in accordance with the template agreed to among the Corps, NCDENR, and the affected beach communities and cost shared at the rate of 65 percent Federal (currently estimated at \$6,500,000) and 35 percent non-Federal (currently estimated at \$3,500,000). The final in-place fill volume along the cost shared reach of Oak Island is expected to range between 1,272,000 cubic yards and 1,590,000 cubic yards. The final in-place fill volume along the cost shared reach of Holden Beach is expected to range between 528,000 cubic yards and 660,000 cubic yards. The communities will provide all required easements at no cost to the Project.

After construction of the Smith Island and Bald Head Island Shoal portions of the project, the U.S. Army Corps of Engineers will conduct periodic maintenance dredging of the navigation channels. The disposal of all beach quality dredged material will be accomplished in accordance with the Environmental Assessment of Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina, dated February 2000 and its Sand Management Plan (Appendix A), and the Wilmington Harbor Monitoring Plan (enclosed and incorporated by reference). The associated disposal will be as called for therein, namely:

- Year 2: Placement at Bald Head Island (estimated @ 1Mcy)
- Year 4: Placement at Bald Head Island (estimated @ 1 Mcy)
- Year 6: Placement at Caswell Beach and easternmost end of Oak Island (estimated @ 1 Mcy).

This disposal cycle is planned for the life of the project. As provided on page 8 of the Environmental Assessment and on page 12 of the sand management plan, in some cases problem shoaling involving small quantities of sand may develop in the channel between regular dredging events, making use of a pipeline dredge unfeasible and the sand may need to be deposited in the ocean disposal area.

Prior to each disposal operation at either the Village of Bald Head Island, or Caswell Beach, or the easternmost shoreline of Oak Island, the community receiving the sand may provide advance guidance to the Corps regarding placement distributions and fill template design. The Corps will follow that guidance to the maximum extent practicable.

The Corps will conduct a monitoring program as referred to in the Environmental Assessment and Sand Management Plan, and as set out in the Wilmington Harbor Monitoring Plan, which is enclosed and incorporated by reference. An annual report will be prepared, as described in the Monitoring Plan. The Corps will use this monitoring data to evaluate and adjust the Sand Management Plan, as determined necessary, after coordination with interested parties.

All initial and future disposal activities at the Village of Bald Head Island, Caswell Beach, and easternmost Oak Island, (as described in the Environmental Assessment and its Sand Management Plan, and in the Wilmington Harbor Monitoring Plan) will be at no cost to either community.

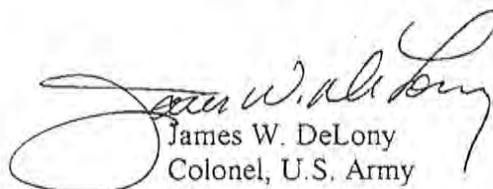
If the Project causes significant adverse effects on adjacent beaches, the Corps and the Sponsor will respond by adjusting the Sand Management Plan, after consultation with interested parties. If the Project causes significant adverse effects that cannot be dealt with by

modifications to the Sand Management Plan, the Corps and the Sponsor will promptly seek and use their best efforts to implement appropriate corrective measures, such as additional nourishment, subject to consistency review.

Our current schedule for execution of the FONSI is June 14, 2000. Our current schedule for our higher headquarters approval of the draft Section 933 Evaluation Report is July 31, 2000. We expect to award a contract to construct the inshore reaches of the Ocean Bar entrance channel on or about November 15, 2000. We are moving prudently but aggressively to make this important Project a reality.

The support of the members of the Brunswick Beaches Consortium and our Project sponsor represented by Mr. John Morris in optimizing this unique opportunity for nourishing your beaches has been wise, energetic, and timely. We salute your efforts and look forward to continued close coordination through to the successful completion and operation of the Project and the associated beneficial use of beach quality sand.

Sincerely,



James W. DeLony  
Colonel, U.S. Army  
District Engineer

Enclosures

Copies Furnished:

Mr. John N. Morris, Director  
Division of Water Resources  
North Carolina Department of Environment  
and Natural Resources  
1611 Mail Service Center  
Raleigh, North Carolina 27699-1611

Ms. Donna D. Moffitt, Director  
Division of Coastal Management  
North Carolina Department of  
Environment and Natural Resources  
1638 Mail Service Center  
Raleigh, North Carolina 27699-1638

# **ATTACHMENT E**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**MOFFITT LETTER 15 JUNE 2000**



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF COASTAL MANAGEMENT  
RECEIVED  
EXECUTIVE OFFICE

June 15, 2000

2000 JUN 26 A 11: 03

JAMES B. HUNT JR.  
GOVERNOR

BILL HOLMAN  
SECRETARY

DONNA D. MOFFITT  
DIRECTOR

Colonel James W. DeLony  
District Engineer  
U.S. Army Corps of Engineers  
Wilmington District  
P.O. Box 1890  
Wilmington, NC 28402-1890

Action: PM-C  
CF: DE  
DX  
DP  
TS  
OC

REFERENCE: DCM00-14 EA and CD - Preconstruction Modifications of Authorized Improvements, Wilmington Harbor 96 Project

Dear Col. DeLony:

On May 17, 2000 the State of North Carolina completed its review, pursuant to 15 CFR 930 Subpart C - Consistency for Federal Activities, of the referenced document describing proposed modifications to the authorized Wilmington Harbor 96 Project in New Hanover and Brunswick Counties, North Carolina. The Corps of Engineers submitted the document to the state on February 17, 2000, and the project was assigned the number DCM00-14 for our review purposes.

During the course of our review several environmental concerns were raised by state agencies regarding potential impacts on the resources of the coastal zone. These comments were forwarded to the Corps for its consideration. As the consistency deadline was approaching, we extended our original consistency deadline 15 days, pursuant to 15 CFR 930.41, at the end of March. On April 10, 2000, our review was again extended to allow concerned state agencies to review the Corps' responses to comments on the Environmental Assessment (EA). The Division of Coastal Management received the Corps' responses on May 3 and again solicited comments from concerned state agencies.

The modifications that the Wilmington District Corps of Engineers seeks authorization for are as follows:

1. Construction and maintenance of the Wilmington Harbor entrance channel along a new alignment across the ocean bar.
2. Backfilling the abandoned channel length with dredged material not suited for beach or littoral zone disposal.



MAILING: 1638 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27600-1638  
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DN

Col. James W. DeLony

June 15, 2000

Page 2

3. Placement of material dredged from the new channel alignment and other portions of the project on area beaches in New Hanover and Brunswick Counties.
4. Establishment of a comprehensive plan for dredging and disposal operations for each portion of the harbor, including hopper dredge with overflow.
5. Utilization of blast pressure criteria to measure impacts of blasting on aquatic resources and the elimination of the bubble curtain during blasting operations.
6. Placement of dredged material that does not go to the old channel, the littoral zone, the beaches, or other existing disposal sites, into the Offshore Dredged Material Disposal Site (ODMDS).

The Corps proposes to construct the new entrance channel alignment and place all suitable material on the nearby beaches over an approximately eighteen month period covering two winter seasons and one summer season. Turtle monitoring and shorebird surveys of affected beaches will be conducted. Details of the disposal operations for construction and maintenance of the channel are documented in a Sand Management Plan (SMP). In addition, the Corps has clarified details of the placement, timing, costs, and amount of sand to be deposited on the beaches of Bald Head Island, Caswell Beach, Oak Island, and Holden Beach in a letter dated June 9, 2000 from Colonel James W. DeLony, District Engineer, to the mayors of the respective beach towns. We understand that disposal of dredged material from construction and maintenance of the project will be conducted according to the SMP and letter, as agreed to by the NC Division of Water Resources, the Brunswick County beach communities and the Corps of Engineers. We also understand that the use of hopper dredge with overflow will be limited to times of year and reaches of the project in which impacts on coastal resources will be minimized.

Based upon our review of the EA and the Corps of Engineers' response to comments, we do not disagree with your determination that the proposed construction and changes in harbor maintenance procedures are consistent with the North Carolina Coastal Management Program to the maximum extent practicable, provided that the project is performed according to the EA (including the Sand Management Plan and other appendices) and the Corps' responses to comments from the EA, and to Colonel DeLony's letter of June 9, 2000 (including attachments), and that the conditions below are met.

Col. James W. DeLony

June 15, 2000

Page 3

1. Principal amongst the issues raised were potential impacts on sea turtles, shore and water birds, beach and benthic infauna, fisheries, and water quality parameters. It is extremely important that the impacts of this multifaceted project be well documented in order to evaluate the effects on these resources and on the overall coastal environment. The Corps of Engineers will pursue an integrated monitoring plan to address the resources noted in the first sentence of this paragraph, and will coordinate all monitoring efforts with the appropriate state agencies. This will include but not be limited to the North Carolina Division of Coastal Management, the Wildlife Resources Commission, the Division of Marine Fisheries, and the Division of Water Quality. We understand that the Corps intends to initiate monitoring coordination with the resource agencies in June of 2000.
2. As additional mitigation for impacts on fisheries resources, a fish passage structure will be constructed at Lock and Dam 1 on the Cape Fear River. In addition, fish passage alternatives for Lock and Dams 2 and 3 will be investigated. The Corps of Engineers and, as the Wilmington Harbor Project Sponsor, the State of North Carolina, have agreed to these actions.
3. The placement, timing, costs, and amount of sand to be deposited on Bald Head Island, Caswell Beach, Oak Island, and Holden Beach, both during construction and future maintenance; monitoring; and response to impacts shall be in accordance with Col. DeLony's letter of June 9, 2000, to the mayors of the respective towns receiving the sand (attached and incorporated by reference). If the towns, Corps, and project sponsor's representative mutually agree to modifications to the SMP or Col. DeLony's June 9, 2000 letter, those modifications shall be submitted to the North Carolina Division of Coastal Management for a determination of whether another consistency review is necessary on the modifications.
4. The state must have the opportunity to review the project, including monitoring results, to determine if it continues to be consistent with the North Carolina Coastal Management Program in two situations: 1) After five years from the date of this letter, and 2) before any subsequent modifications for future maintenance or other requests to modify the Wilmington Harbor 96 Project are considered. The Corps shall request this review and provide documentation of impacts (or lack thereof) on the coastal resources of concern.

Col. James W. DeLony

June 15, 2000

Page 4

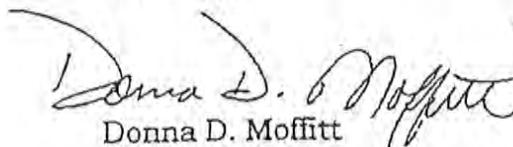
5. If in the future the Corps considers requesting authorization to conduct hopper dredging with over flow or to place maintenance dredge spoil on a beach, outside of the established time periods or locations, a separate consistency review will be required for each of these activities.

While the State of North Carolina supports beach nourishment and the placement of suitable spoil material on the beaches, we remain concerned about the short term and long term impacts on the biologic and ecologic resources of the coast. We maintain that the best time for such beach nourishment and renourishment is outside of the period of peak impacts on infauna, sea turtles, and fisheries. The State discourages individuals and agencies from seeking authorization to perform work outside established moratoria, and caution that our response is not to be interpreted as a precedent assuring authorization for future renourishment or disposal of sand on beaches outside of established dredging and disposal moratoria. We understand that summer beach disposal is necessary only during the construction phase of the project and that maintenance of the harbor channels will be conducted within established biological time frames.

Finally, with the increasing number of beach disposal and renourishment projects, much of the state's southern coast beaches will be in the placement or recovery phases in any given year. To this end, the Division of Coastal Management requests that the Corps consider combining the monitoring studies and environmental considerations of this project, the Wrightsville Beach, Carolina Beach, Kure Beach projects, and all of the Brunswick County Beaches projects to achieve a more comprehensive and cumulative impact analysis. Although these projects are separate in authorization and funding, we feel that concurrent studies could provide beneficial insights on impacts to resources from beach disposal and nourishment along this extended reach of shoreline.

If you have any questions regarding our findings, conditions, or recommendations, please contact Ms. Caroline Bellis, Division of Coastal Management, at (919) 733-2293. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,

  
Donna D. Moffitt

Col. James W. DeLony  
June 15, 2000  
Page 5

Attachment

cc: Bob Stroud, Division of Coastal Management, Wilmington  
Franklin McBride, NC Wildlife Resources Commission  
Bennett Wynne, NC Wildlife Resources Commission  
Ruth Boettcher, NC Wildlife Resources Commission  
Fritz Rohde, NC Division of Marine Fisheries  
Mike Street, NC Division of Marine Fisheries  
John Dorney, Division of Water Quality  
Frank Yelverton, US Army Corps of Engineers  
John Meshaw, US Army Corps of Engineers

# **ATTACHMENT F**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**FINDING OF NO SIGNIFICANT IMPACT**

**WILMINGTON HARBOR 2000 (EXCERPT)**



**US Army Corps  
of Engineers®**

Wilmington District

# **FINDING OF NO SIGNIFICANT IMPACT**

**PRECONSTRUCTION MODIFICATIONS  
OF  
AUTHORIZED IMPROVEMENTS**

**WILMINGTON HARBOR  
NORTH CAROLINA**

**August 2000**

and about \$20 million for elimination of the air curtains. Environmentally the new ocean bar channel would avoid live coral bottom. The air curtains are eliminated because they did not provide the environmental protection anticipated, and environmental impacts in their absence are anticipated to be minor.

**3.00 PUBLIC AND AGENCY COORDINATION:** On February 7, 2000, the EA referenced above was mailed to Federal and State agencies and the interested public for a 30-day review and comment period. Based on a request from the North Carolina Clearinghouse and others, the response date was extended about 2 weeks until April 3, 2000. Everyone providing comments on the EA will be mailed a copy of the Finding of No Significant Impact (FONSI). A notice of availability of FONSI will be mailed to others on the project mailing list. Comments on the EA were received from the following:

**Federal Agencies**

- US Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service
- US Environmental Protection Agency, Region IV
- US Department of the Interior, Fish and Wildlife Service

**State Agencies**

- North Carolina Ports
- NC Department of Environment and Natural Resources
- NC Division of Coastal Management
- NC Department of Cultural Resources
- NC Division of Water Quality
- NC Department of Commerce
- NC Wildlife Resources Commission
- NC Division of Marine Fisheries

**Local Agencies**

- Brunswick Beaches Consortium

**Elected Officials**

- New Hanover County Board of Commissioners
- Representative Daniel F. McComas
- Mayor Harry Simmons, Town of Caswell Beach
- Mayor Joan L. Altman, Town of Oak Island

**Conservation Groups**

- National Audubon Society

**Interested Businesses, Groups, and Individuals**

- Burlington Industries, Inc.
- H. Spalding Craft
- Star Shipping, Inc.
- Solar International Shipping Agency, Inc., General Agent for Yang Ming Line
- Andrew Koepfel

- OxyChem
- Morehead City Terminals, Inc.
- Hanjin Shipping Company, Ltd.
- North Carolina Citizens for Business and Industry
- Frank S. Conlon
- Laela S. Sayigh
- Brooks, Pierce, McLendon, Humphrey & Leonard, L.L.P, firm representing Village of Bald Head Island

In addition, all the required environmental clearances or coordination documents have been received for the proposed action. They were received after April 3, 2000, the end of the EA comment period, and are as follows:

- Water Quality Certification No. 3085 issued October 17, 1996, was modified by letter dated April 10, 2000 to cover the proposed action.
- Supplement to the Final Fish and Wildlife Coordination Act Report, Wilmington Harbor, North Carolina, 96 Act, New Hanover and Brunswick Counties, North Carolina, April 2000, transmitted by letter dated April 28, 2000. Responses to recommendations are indicated in Paragraph 5.06 above.
- US Fish and Wildlife Service Biological Opinion for the Proposed Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina, May 3, 2000. We will comply with the incidental take statement, associated reasonable and prudent measures, and terms and conditions implementing them.
- Environmental Protection Agency letter of May 1, 2000, indicating concurrence with our Tier 1 evaluation under the Ocean Dumping Act that the new work and maintenance dredged material is acceptable for ocean disposal in the Wilmington ODMDS.
- National Marine Fisheries Service Biological Opinion for the Proposed Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina, August 3, 2000. We will comply with the incidental take statement, associated reasonable and prudent measures, and terms and conditions implementing them.
- NC Division of Coastal Management letter of June 15, 2000, providing a statement of concurrence that the proposed action is consistent with the NC Coastal Management Program. We will comply with the conditions indicated in the letter.

**4.00 RESPONSES TO COMMENTS ON THE EA AND RESOLUTION OF ISSUES:** All comments received on the EA and other correspondence indicated above were considered in making the decision to sign a FONSI. Copies of the letters commenting on the EA are included in Attachment 1. Pertinent comments from each commentator are summarized and addressed below. All comments received on the EA have been resolved either through providing additional information in this FONSI or agreeing to develop appropriate monitoring as indicated in paragraph 11 of this FONSI. As indicated in paragraph 1.00 above, monitoring is proposed for limited aspects of the project where some uncertainty exists regarding project impacts. However, the results of this monitoring are not anticipated to alter the Corps position that the proposed modifications will not significantly affect the quality of the human environment.

# **ATTACHMENT G**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**FOTH REVIEW OF WILMINGTON HARBOR DLR AND  
DEIS FOR VBHI**



## MEMORANDUM

Foth Infrastructure & Environment, LLC  
2618 Herschel Street  
Jacksonville, FL 32204  
(904) 387-6114

October 30, 2025

TO: The Village of Bald Head Island

FROM: Chris Creed, P.E.  
Steve Howard, P.E.

RE: Review of Wilmington Harbor 403 Letter Report and Draft Environmental Impact Statement for the Village of Bald Head Island

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Foth Infrastructure & Environment, LLC has reviewed the Wilmington Harbor 403 Letter Report and Draft Environmental Impact Statement (DEIS) and identified deficiencies in engineering analyses and conclusions therein. Our review focused on potential effects from channel deepening and subsequent channel use by commercial ship traffic to areas of the Village of Bald Head Island's shoreline. Our specific concerns are related to shortcomings in the numerical modeling approach and an underestimation of the proposed project's contributions to shoreline erosion. In summary, several important points discussed in detail in this report are noted below:

- 1) The version of the Delft3D model applied in this study was not clearly stated in the DEIS, nor whether the same version was used consistently across all phases of the modeling effort.
- 2) According to the DEIS, wave-driven suspended and bedload sediment transport in Delft3D were disabled reducing total transport to only current components. Waves play a critical role in shaping morphology along the ocean-facing sandy beaches like those of Bald Head Island bounding the Cape Fear River Entrance. The omission of all explicit wave-related sediment transport terms in the Delft3D model was not explained and the calibration/verification procedures used to justify this decision was not detailed in the DEIS.
- 3) The model calibration and evaluation appear to emphasize channel shoaling, which may not represent sediment dynamics on adjacent shorelines unless sediment sources and alongshore transport rates for Bald Head and Oak Islands were explicitly computed and

used in the calibration. There is no clear documentation in the DEIS if this was performed.

- 4) The DEIS attributes channel shoaling variability largely to differences in dredge quantities. The DEIS also acknowledges that dredged quantities and measured shoaling rates are not directly comparable. There is no apparent attempt to distinguish between actual shoaling rates and one-off dredge events, and this conflation complicates interpretation of the model's predictive capabilities.
- 5) Based upon tabulated comparisons in the DEIS for the Inner Ocean Bar Channels in the vicinity of Bald Head Island, the model significantly overpredicts shoaling in the Smith Island reach and underpredicts shoaling in the Bald Head Island reaches—by as much as 2.9 times while the overall total shoaling volumes are similar. This indicates that similar total shoaling volumes may be coincidental rather than evidence of model accuracy. Such discrepancies risk misrepresenting the real-world sand distribution with significant inlet management implications.
- 6) The gravity-driven process of slope avalanching is of critical importance to the Village of Bald Head Island, given the proximity of the planned channel deepening to the shoreline. According to the DEIS, this functionality was implemented by using default values for the critical subaqueous slope parameter and time-dependent function. However, if this functionality was activated, one would expect significant slope modifications throughout model results, including along the navigation channel side slopes. Such slope modifications are not readily apparent in the DEIS results, as such it is not apparent if this functionality was correctly implemented in the model.
- 7) A primary objective of the DEIS was to quantify potential impacts to adjacent shorelines. However, the DEIS states "*Higher observed bed shear stresses suggest a potential for increased sediment resuspension and erosion, but no quantification of erosion rates or shoreline change is presented in this report.*", suggesting the investigation is incomplete.
- 8) The median grain size parameter (D50) is highly influential to morphological model results. However, different values for D50 were applied in the morphological model (0.22 mm) while significantly higher values were used for the evaluation of secondary ship wakes (e.g. 0.38 mm at "Bald Head Shoal 1"). This discrepancy for such an influential and easily verifiable model parameter was not explained.
- 9) The DEIS predicts shoreline impacts adjacent to the inlet using the one-line GenCade model. However, the application of GenCade in this context represents a severe oversimplification of the physical processes governing sediment transport in the areas of concern to the Village of Bald Head Island. Furthermore, the DEIS mischaracterizes prior work by other consultants to support a poorly

calibrated GenCade model. Specifically, sediment transport rates computed by GenCade are more than five and a half times lower than both the works cited and those derived from long-term beach profile monitoring. This discrepancy underscores the model's inability to reliably estimate sediment transport along Bald Head Island.

As presented in the DEIS, GenCade is not capable of accurately computing sediment transport in this setting and should not be relied upon for impact assessment or project design decisions affecting the Bald Head Island shoreline.

- 10) Additional observations on the DEIS which are not specifically related to numerical modeling are also included.

### **Wave-related Sediment Transport**

According to the DEIS, the calibrated non-cohesive sediment transport model applied values of zero (0.0) to both the *susW* and *bedW* parameters. In a Delft3D coastal morphology model, setting these parameters to zero disables the wave-related components of suspended load (*susW*) and bed load (*bedW*) sediment transport. These parameters normally scale the magnitude of wave-induced transport formulations, where waves influence sediment dynamics through enhanced bed shear stress, orbital velocities, asymmetric effects, and interactions with currents. Under this calibration, the model ignores these processes and reduces total transport to current-only components, controlled by the analogous parameters *sus* and *bed*, which were each set to their default values of 1.0.

The coastlines bounding the Cape Fear River Entrance are ocean-facing sandy beaches where waves play a critical role in shaping morphology. With the published calibration, bed-level changes driven by wave propagation would be absent or substantially diminished. Instead, morphological updates rely solely on current-driven processes, making the simulations potentially suitable for current-dominated cases but inaccurate for combined wave-current systems. This approach may affect depth-integrated mass conservation and bed updating equations, potentially producing stable but unrealistic bed compositions or elevations over time.

The appropriateness of omitting all explicit wave-related sediment transport terms from modeling the physics governing morphological changes along Bald Head and Oak Islands was not explained in the DEIS. Additionally, a description of how the calibration and verification procedures justified this decision was not provided in the DEIS. It is unclear in the DEIS if wave-current interactions were represented through alternative mechanisms (e.g., eddy diffusivity or other coupling approaches) and how sensitivity analyses of these settings influenced predicted sediment transport along the beaches adjacent to the inlet.

## **Channel Shoaling**

It appears that the model calibration and evaluation were focused primarily on shoaling rates within the navigation channel. However, depending on the origin of the shoal material, these rates may or may not reflect sediment dynamics along the adjacent islands. It is unclear in the DEIS if sediment transport rates along the shorelines of Bald Head and Oak Islands were computed or otherwise considered during calibration and verification.

The cited variability in channel shoaling is largely attributed in the report to differences in dredge quantities. By extension, model skill is assessed relative to these uncertainties. Yet, as acknowledged in Section B-9.5.2 (*Data Uncertainty*), dredged volumes and measured shoaling rates are not directly comparable metrics. Table 9-11 does not attempt to distinguish between actual shoaling rates and one-off dredge volumes, which complicates interpretation of model skill.

Further, based on Table 9-8 alone, the model significantly overpredicts shoaling in the Smith Island reach and, except for one data point, underpredicts shoaling in the Bald Head Island reaches—by as much as 2.9 times (Bald Head Shoal 2, relative to the 2015/16 condition survey). These discrepancies could lead to serious misinterpretations regarding sand distribution and inlet management, suggesting that similarities in total shoaling volumes may be more coincidental than indicative of model accuracy.

Finally, page B-207 states: *“The extents of the polygon used to extract sedimentation volumes should be carefully considered when interpreting modeled output.”* How should a reviewer interpret this statement in the context of evaluating the polygon selection described in the report? Clear guidance on this point is essential for assessing the reliability of the reported sedimentation volumes.

## **Slope Avalanching**

The Village has repeatedly requested that the modeling effort accurately consider the effects of slope avalanching resulting from dredging of the nearshore beach platform. The gravity-driven process of slope avalanching is of critical importance to the Village of Bald Head Island, given the proximity of the planned channel deepening to the shoreline. The most recent response to this request indicated slope avalanche was considered and directed us to review the relevant appendix in the DEIS document. Based on the information provided there, it appears the modelers attempted to activate subaqueous dune-front slumping within Delft3D.

According to the DEIS, this was implemented by specifying a critical subaqueous slope using the parameter *WetSlope* and a time function for resolving slope adjustments using *AvalTime*. Default values were applied, establishing a critical slope of 1V:10H (i.e., 0.2V:1H per the DEIS) and an *AvalTime* of one day (86,400 seconds).

These settings create a threshold in the model whereby wet slopes steeper than 1V:10H are automatically adjusted to the critical slope. If this functionality was active, one would expect significant slope modifications throughout the model domain, including along the navigation

channel side slopes. However, such erosion and sedimentation patterns are not readily apparent in the DEIS results. To initiate dune-slumping functionality in Delft3D, the parameter DuneAvalan must be specified in the input ".mor" file. The DEIS does not provide the full input files; therefore, evaluation of the incorporation of slope avalanche is hampered.

It is unclear in the DEIS if dune slumping was initiated nor what if any calibration and sensitivity-testing procedures were performed for these parameters. Specifically, missing was an explanation of how the default values were determined to be suitable for use, as they do not appear appropriate for the slopes present in the model domain or for the time frame required to resolve avalanching. There was no clarification as to the extent to which the critical slope criteria were applied to non-dune portions of the model. Sectional views of the modeled bathymetry were not provided which would illustrate both the calibration results and any slopes that were automatically adjusted based on these parameters.

### **Vessel Wake**

Per page B-270, the report states: *"Higher observed bed shear stresses suggest a potential for increased sediment resuspension and erosion, but no quantification of erosion rates or shoreline change is presented in this report."* One of the essential objectives of this study was to quantify potential impacts to adjacent shorelines. This admission suggests the investigation is incomplete. The DEIS is unclear as to how discrete, project-related increases in bed shear stress predicted to influence sediment transport on the adjacent beaches.

The median grain size parameter (D50) is identified in the DEIS as being highly influential to morphological model results. Even small changes in median grain size are reported to significantly alter predicted sediment transport volumes. A D50 of 0.20 mm was selected for the morphological model, yet Table 11-22 applies higher values of D50 when evaluating erosion from secondary ship wakes (e.g., 0.38 mm at "Bald Head Shoal 1"). For reference, the median grain size of sand placed in the 2025 renourishment project was 0.36 mm. The DEIS does not explain why such substantial differences exist in a key and easily verifiable model parameter, and to what extent do larger D50 values reduce predicted erosion in the wake model.

Section B-11.3 concludes: *"These findings suggest the consideration of localized impacts is crucial when evaluating the feasibility and environmental implications of the alternative channel modifications."* It also states: *"Certain model domains, such as Fort Caswell and Bald Head Island, exhibit minimal differences in bed shear stress increases along shorelines, with small clusters of higher shear stress in specific regions where wave energy might be expected to concentrate."* These increases are described in the text as being on the order of 17% (p. B-266), although Table 11-5 indicates potential for larger increases at Bald Head 2 and Fort Caswell. If location matters in quantifying impacts, the report should not summarily dismiss all impacts as minimal without providing a clear, technical, and unbiased basis for that determination.

Moreover, Section 11.3 asserts without basis that impacts are minimal because increases in shear stress are less than 0.5 lbf/ft<sup>2</sup>. However, Table 11-17 cites critical shear stress values ranging from 0.003 to 0.006 lbf/ft<sup>2</sup> for grain sizes used in the morphological and wake models.

The predicted changes exceed these critical values by more than two orders of magnitude, yet no quantification of erosional potential is provided. There is no explanation in the DEIS for the rationale for describing these predicted increases as minimal and quantify the resultant erosion. The investigation is incomplete without these results.

### **Use of GenCade**

The DEIS evaluates potential impacts to the oceanfront shorelines of Oak Island, Caswell Beach, and Bald Head Island using the one-dimensional shoreline change model GenCade. While GenCade accounts for changes in the incident wave climate, it does not incorporate several critical physical processes that govern sediment transport along Bald Head Island. These omitted processes include:

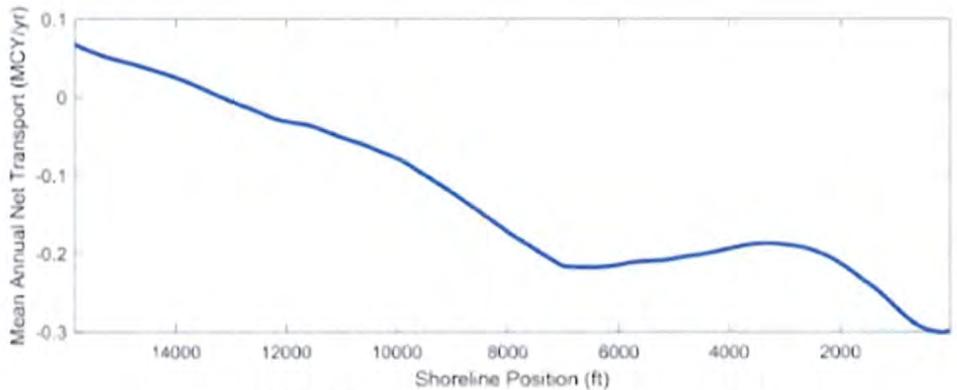
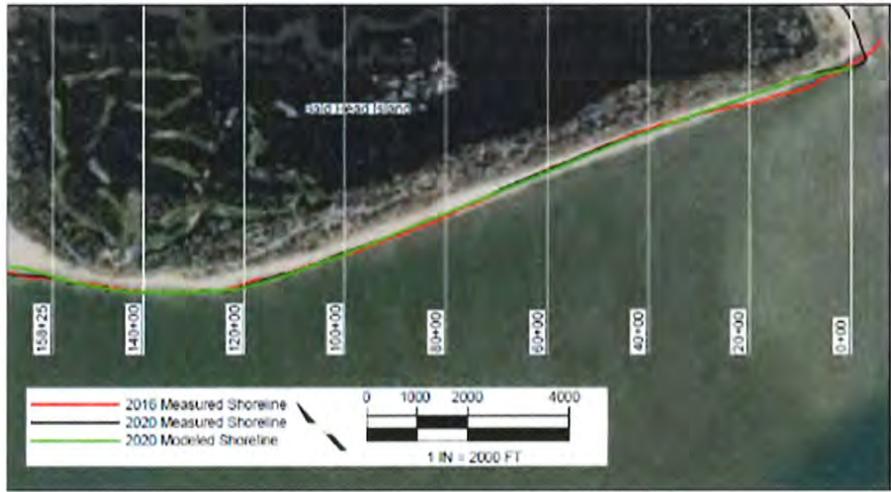
- Inlet morphodynamics
- Wave-current interactions
- Sediment scour, resuspension, and deposition within the channel
- Morphological feedback mechanisms

The exclusion of these processes represents a significant oversimplification of the sediment transport system in this region.

Additionally, the GenCade model calibration utilized a median sediment grain size of 0.25 mm, which differs from the values used in other modeling efforts: 0.20 mm in the Delft3D model and 0.38 mm in the ship wake analysis. The DEIS does not provide a rationale for this inconsistency in a key model parameter. The GenCade model was subsequently used to estimate sediment transport rates along Bald Head Island and reported the following (DEIS p. B-163):

*“Based on the modeling, there is a net westerly transport of 50,000 cubic yards per year toward the Cape Fear River and a net easterly transport of 300,000 cubic yards per year.”*

These results are presented in Figure 8-6 of the DEIS, reproduced below. Based on the narrative in the DEIS (partially quoted above), positive values represent westerly directed transport while negative values reflect easterly directed sediment transport. The magnitude and direction of sediment transport shown in the graph appear to be consistent with the referenced narrative from the DEIS.



**Figure 8-6 Modeled net annual sediment transport along BHI.**

*Location map from DEIS Fig 8-5 (above) and sediment transport from DEIS Fig 8-6 (below).*

The DEIS references a prior study by Olsen Associates, Inc. (2012<sup>1</sup>) as supporting this magnitude and pattern of transport. However, this citation is inaccurate. The Olsen report describes measured sediment transport along the western portion of Bald Head Island as being directed westward, with rates “ranging between -278,200 and -355,600 cy/yr, based on best-fit analysis of available data (Olsen Associates, 2012, p. 95)”. These

<sup>1</sup> Olsen Associates, Inc. (2012). Calibration of a Delft3D model for Bald Head Island and the Cape Fear River Entrance, Phase I. Prepared for the Village of Bald Head Island, North Carolina.

estimates do not account for the influence of the terminal groin, yet they still differ significantly from the published GenCade result of 50,000 cy/yr directed westward.

Further, the 2025 Physical Monitoring Report for the Bald Head Island renourishment project, prepared by Foth Infrastructure & Environment, LLC<sup>2</sup>, provides updated long-term sediment transport estimates. Using survey data from November 2000 through May 2025, the report concludes that measured net transport along western Bald Head Island averages 280,400 cy/yr over the last 25 years. For reference, the following figures are excerpted from the 2025 monitoring report. The blue dashed line represents measured sediment transport rates from the terminal groin to STA 118+00, while the black line reflects the full monitored shoreline.

The sediment transport rates computed by GenCade are more than five and a half times lower than those derived from long-term beach profile surveys. As presented in the DEIS, the GenCade model is not capable of accurately computing sediment transport along Bald Head Island and should be deemed unreliable in terms of assessing impacts to said shoreline.

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<sup>2</sup> Foth (2025). "Village of Bald Head Island; Beach Monitoring Program, Report No. 23 (April 2024 to May 2025)", Report Prepared for Village of Bald Head Island. Foth Infrastructure & Environment, LLC, 2618 Herschel St., Jacksonville, FL 32204. 62 pp plus app. (November 2025, not yet published).

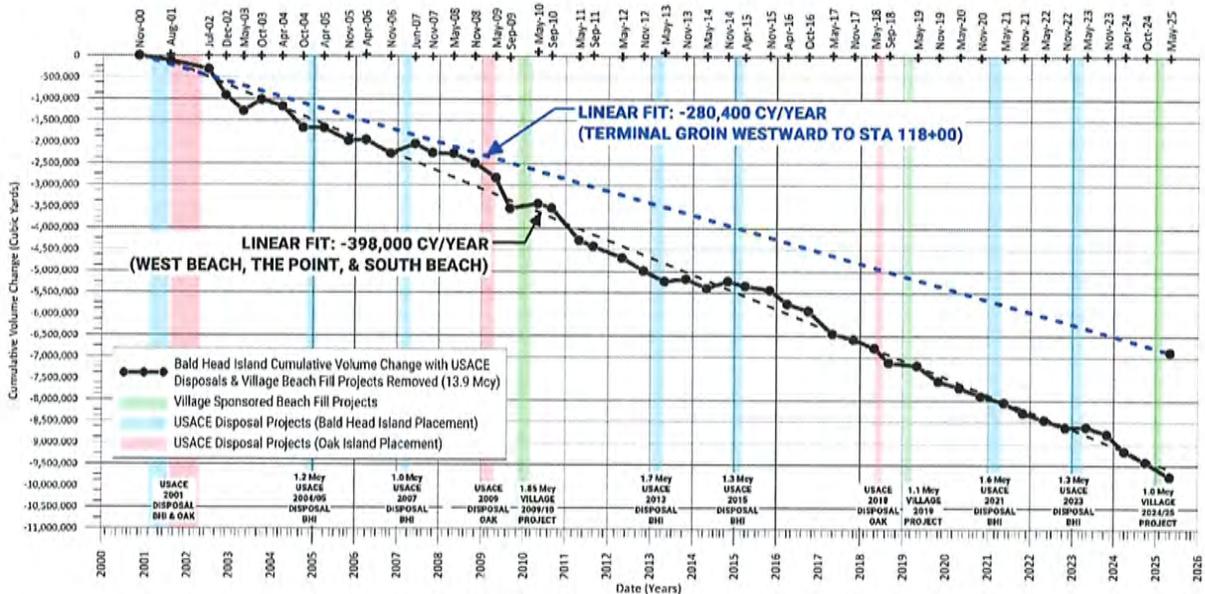


Figure 1: Cumulative volume change along Bald Head Island West Beach, the Point, and South Beach shorelines (above -16 ft-NGVD) through time relative to November 2000 conditions, excluding nourishment events.

Location map (above) and sediment transport rates (below) along Bald Head Island as reported in Foth (2025, to be published).

### **Additional DEIS Observations Not Directly Related to Numerical Modeling**

1. Channel width expansions have been incorporated into the proposed next deepening project that expand federal navigation channel into naturally deeper waters. For example, the Smith Island Range will be expanded from 650 ft to 900 ft. This was an obvious shortcoming of the last deepening project which resulted in additional annual maintenance dredging. This will likely reduce both the frequency and volume of sand periodically dredged from the channel to maintain authorized conditions. This will potentially reduce the quantity of sand available for distribution to the adjacent island beaches.

2. Coincident with the probability of reduced dredge volumes and/or less frequent maintenance dredging for the 3 inner bar channel reaches of interest, the DEIS does not speak to how this will impact the tenets of the existing Wilmington Harbor Sand Management Plan ("WHSMP"). Rather, it generally speaks to sand disposal placement along the adjacent shorelines being "similar" to existing practices following Project implementation. However, the DEIS designated disposal area on Oak Island continues to extend beyond the western limit of the Town of Caswell Beach, or the littoral drift nodal point on Oak Island (ref: Appendix D, page 36). Sand placement west of the nodal point will be detrimental to the Cape Fear River Inlet sediment budget. This is a continuation of the District's current operational plan for sand placement on Oak Island which is not consistent with the intent and tenants of the WHSMP. As such, this approach defeats the mitigation aspect of the Federal Project by not ensuring that sand placed on the two barrier island beaches moves back toward the mouth of the Cape Fear River. Rather, sand placed beyond the nodal point will move westward away from the river mouth and not be available for future mitigative sand placement along the VBHI and CB shoreline, which is contrary to the WHSMP.

3. During the 2000 channel deepening & widening project which included realignment through Jay Bird Shoal, significant beach quality sand was encountered and placed on the two barrier island beaches. Although the DEIS cites the predicted project related to dredging of some 5.8M cy of beach quality sand, it is expected that only 2.3 M. cy is available for beach disposal (Ref: Appendix D, page 36). Where the bulk of the remaining sand goes is not explained. It is noted that the District is modifying the WH ODMDS to now include a corner segment to be used for the dumping of "beach quality" sand for future possible access and reuse via hopper dredge (Ref. Appendix P, pages 54-55). This potentially implies that quantities of beach quality sand will not necessarily be returned to the barrier island beaches but rather dumped offshore by hopper dredge and possibly available as beach fill along beaches that are not directly adjacent to the Cape Fear River Inlet. This would violate the intent and agreement of the SMP. Moreover, this could impact future maintenance material, further reducing sand available for placement along the VBHI and CB shorelines.

4. In Appendix B it is acknowledged that the USACE consultant Stantec interfaced with M&N (the prior Section 203 Report author and consultant to the W.H. Port Authority) and essentially adopted the M&N model setups, grid files, bathymetry, spatial parameters, boundary conditions, etc. This is tantamount to their utilizing the same DELFT3D hydraulic model, ship wake model, etc. Most protocols analyzing project impacts, or lack thereof, were similarly adopted. Hence, the DEIS report findings are anything but independently derived.

Stantec likewise adopted the results of the simplistic GENCADE 1-D shoreline evolution model performed by the District several years ago which were shown to be erroneous when compared to the more sophisticated littoral transport modeling. The latter VBHI sponsored DELF3D modeling was associated with the permitting of a terminal structure on BHI bordering the subject navigation project— and as such included detailed site-specific littoral transport analyses of sand transport rates toward the Cape Fear River at both Caswell Beach and South Beach at Bald Head Island. Interestingly those analyses computed the ratio of annual littoral contributions from the two barrier islands to the inlet at a ratio of 4.7:1. This finding contrasts with the 2:1 ratio adopted by the Wilmington District in the WHSMP in approximately 1999, at which time the District Commander also said that the Plan would be adjusted as necessary, based on monitoring results. No adjustments have been made. The discrepancy between an appropriate and equitable ratio of sand management viz. disposal of beach quality maintenance material has been well substantiated. More recently, a more current estimate (based upon recent comprehensive beach surveys) of the ratio between littoral contributions could be as high as 7:1.

The adopted 2:1 ratio for the location of episodic disposal of dredged channel maintenance sand from the 3 inner ocean entrance channel segments has been a subject of debate since its inception. That is to say, the littoral transport rates proffered by the federal feasibility study prior to construction in 2000 (ref: Tech Report CHL 99-18) are clearly technically unsupportable and contrary to ongoing dredge records, as well as observed shoreline erosion rates at Caswell Beach and BHI.

The net result of this inequity has manifested itself in an ongoing lack of appropriate mitigation of the channel project's historical impacts and the requirement for the VBHI to expend over \$70M for beach erosion control since the 2000 Harbor Deepening Project. Conversely, the Town of Caswell Beach at the eastern end of Oak Island has expended zero dollars on inlet related impacts over the same period of time. This ongoing fiscal discrepancy is directly attributable to the imbalance of maintenance sand sharing erroneously codified and subsequently implemented by the District's interpretation of the original Wilmington Harbor Sand Management Plan.

## References

Foth (2025), "*Village of Bald Head Island; Beach Monitoring Program, Report No. 23 (April 2024 to May 2025)*", Report Prepared for Village of Bald Head Island. Foth Infrastructure & Environment, LLC, 2618 Herschel St., Jacksonville, FL 32204. 62 pp plus app. (November 2025).

USACE (1999), "*Wave Climate and Littoral Sediment Transport Potential, Cape Fear River Entrance and Smith Island to Ocean Isle Beach, North Carolina*" Technical Report CHL-99-18, U.S. Army Corps of Engineers (September 1999).

# **ATTACHMENT H**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**BALD HEAD ISLAND CONSERVANCY**

**INITIAL SCOPING COMMENTS**

**30 JUNE 2023**



Bald Head Island Conservancy  
PO Box 3109  
700 Federal Road  
Bald Head Island, NC 28461

June 30, 2023

Ms. Chrisa Waite, Public Involvement Specialist  
USACE Wilmington District  
69 Darlington Avenue  
Wilmington, NC 28403  
Attn: Wilmington Harbor 403

Dear Ms. Waite,

We are writing on behalf of Bald Head Island Conservancy, a 501(c)(3) nonprofit organization on Bald Head Island, NC (BHI), to relay concerns and share information about the Wilmington Harbor Port Expansion Project during this Scoping Period of the 403 Process. Our organization has focused on our mission to Discover, Learn, Conserve, and Preserve Bald Head Island for 40 years. We specialize in sea turtle nesting biology and barrier island conservation, and conduct a number of environmental monitoring projects and studies on behalf of the Village of Bald Head Island. Our staff includes specialists in marine and environmental science (3 PhD level, 1 MS, 1 BS), and we collaborate closely with state and federal conservation organizations and academic institutions throughout North Carolina and the region. Our education and outreach programs serve the Brunswick and New Hanover county populations beyond just BHI; for example, all sixth graders in Brunswick County (~1,000 students) experience a field trip to BHI each year, and overnight summer science camps are offered to underserved Wilmington youth.

The goal of this letter is to share potential impacts of the Port Expansion project that should be considered fully during the 403 process, and to also offer data and resources to the project as needed. Bald Head Island, at the mouth of the Cape Fear River adjacent to the current Cape Fear channel, is in a vulnerable location relative to this proposed project. Bald Head Island also consists of rare and special ecosystems that should be preserved and protected at all costs. We are also concerned about river-wide impacts that have been more broadly discussed already, which would undoubtedly affect the natural resources throughout the entire watershed, including BHI.

Specifically, our concerns include:

- **Impacts of channel deepening to sediment dynamics at the river mouth.** Erosion of BHI beaches and sediment movement from east to west (from BHI's south and west

beaches to the river channel) were severely underestimated during the 2000 channel realignment. Sediment fluxes along BHI's incredibly dynamic south and west beaches need to be carefully measured, and a fine-scale 3D model of sediment movement at the river mouth should be constructed, using *current* and *location-specific* data. This is a complex and vulnerable area and great care should be taken to be as accurate as possible with predicted impacts. Further impacts of erosion include:

- a. Loss of beach nesting habitat for listed species of concern, including Loggerhead, Green, and Kemps Ridley sea turtles, and shorebirds such as Least Terns, American Oystercatchers, and Wilson's Plovers. Tides/storms have been the largest threats to BHI sea turtle nests over the past 5 years, and these impacts are also expected to increase with climate change and sea level rise.
  - b. Impacts of erosion and beach loss to individual home and business owners and the local and state economy
  - c. Increasing vulnerability of barrier islands (BHI, Oak Island) and other coastal communities to climate change related sea level rise and predicted increased storminess
  - d. Impacts of erosion and sediment dynamics on back-barrier creeks and marshes, including tidal flushing and water quality
- **Impacts of channel deepening to the freshwater aquifer.** A location-specific 3D model of aquifer-surface water dynamics should be created, including scenarios for channel deepening/widening at different potential depths, and the impacts of sea level rise. This model should include impacts to the Castle Hayne aquifer, but also interactions with specific semi-confined aquifers on barrier islands. Model should also include scenarios for changes to riverine tides and salinity that will result from changes to the hydrogeography.
    - a. Saltwater intrusion is already occurring on BHI's west and south beaches. Further encroachment of salinity caused by channel deepening/widening will reduce the size of BHI's only freshwater source to island ecosystems
    - b. BHI's maritime forest (Bald Head Woods Coastal Reserve) is fed by this aquifer, is the second-largest maritime forest in the state, is considered a globally-imperiled forest subtype, and is protected by the NC Natural Heritage Program. Several listed plant species are found on BHI.
    - c. Loss of a drinking water resource to the public. Most of BHI's drinking water is groundwater-derived. The Village of BHI has invested in careful environmental monitoring and study of responsible water use to not impact natural resources on the island.
    - d. Loss of/salinization of freshwater wildlife habitat. The freshwater ponds and lagoons fed by the aquifer are home to one of the largest breeding populations of protected American alligators in the state, and also provide important roosting and feeding grounds for a variety of waterbird species.
  - **Impacts of dredging and increased shipping on wildlife and fisheries.** The initial impacts of increasing channel depth and width will be substantial. It is currently unknown how often channel maintenance dredging will occur, but we expect that it will need to occur more often and for longer periods than currently.

- a. Already, channel maintenance dredging kills or injures numerous sea turtles and shorebirds each year. BHI Conservancy leads emergency wildlife response on the island, and we spend hundreds of hours each year transporting and providing care for animals hit by boats or caught in dredging equipment (those that survive the initial injury). These animals are also cared for by nonprofit organizations such as Sea Biscuit Wildlife Shelter and the Karen Beasley Sea Turtle Hospital, who rely solely on donations for support.
  - b. The lights and noise from dredging equipment can disturb and change behavior of foraging and nesting sea turtles. We have observed this directly causing false crawls and misorientation of emerging hatchlings.
  - c. Dredging has immediate impacts on the benthic environment, including benthic invertebrates that provide the forage base for sea turtles and important fisheries species. Increasing the magnitude, geographic scale, and frequency of this dredging will have longer-lasting effects throughout the food chain, and impacts on the fisheries economy in the Cape Fear watershed.
- **Impacts throughout the Cape Fear River and watershed.** The Port of Wilmington is 28 miles from the Atlantic Ocean, which is 28 miles of direct impact to the river. Other regional ports such as Savannah (18 miles) and Charleston (5.5 miles) have shorter distances to the open sea. The scale of hydrodynamic impacts of a project of this size cannot be underestimated. Our concerns include:
    - a. An estimated 32 million cubic yards of dredge material will need to be transported and disposed of, not including maintenance dredge materials.
    - b. Placement location of dredge spoil material and quality of the material
    - c. Potential contamination of dredge spoil and impacts of this on water quality (heavy metals, methyl mercury, PFAS)
    - d. Large scale of perturbations and fluidization of the seabed, and impacts on biogeochemical cycling
    - e. Exacerbation of existing acceleration of sea level rise in the Cape Fear Watershed
    - f. Erosion, flooding, and salinization impacts to marshes and wetlands, including the Bald Head Island/Smith Island Complex. Eroding marshes bordering developed areas will have no space to migrate, and marsh loss due to sea level rise may be accelerated. Marshes provide buffer to storm surge, habitat to wildlife and fisheries species, water filtration, and carbon sequestration benefits.
    - g. Increased flooding impacts to vulnerable areas and resources which have already been stressed by Hurricane Florence, PFAS contamination, and are not fully recovered (e.g., residential areas in downtown Wilmington and Brunswick County, wastewater treatment facilities).

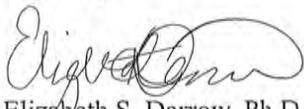
We urge you to fully consider the potential impacts of this proposed project by collecting the necessary scientific data and allowing adequate input from local and regional experts and the public to make an informed decision. We would be glad to provide data we have already collected if it can be of use, or partner with the USACE to collect future data or samples on Bald Head Island as part of the NEPA process.

Available datasets:

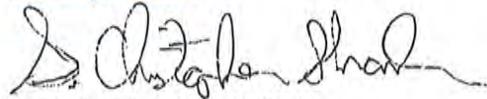
- Bald Head Island Sea turtle nesting (1983-present), including annual trends, locations, and impacts of erosion/washover/disturbance on nesting and hatching
- Bald Head Island aquifer volume (2009-present) and water quality (2014-present)
- Bald Head Island aquifer modeling study (Dr. Peter Zamora, 2021)
- Bald Head Creek water quality (2012-present)
- Bald Head Island Bird monitoring (2015-present)
- Bald Head Woods Coastal Reserve maritime forest study (Dr. Jodi Forrester, 2020)
- Bald Head Island alligator population monitoring (2007-present)
- Bald Head Creek siltation and sediment characteristics (2018-2019)
- Bald Head Island wildlife emergency response (2020-present)

Thank you for considering our concerns.

Sincerely,



Elizabeth S. Darrow, Ph.D.  
Chief Scientist  
Bald Head Island Conservancy  
910-338-0942  
[darrow@bhic.org](mailto:darrow@bhic.org)



G. Christopher Shank, Ph.D.  
Executive Director  
Bald Head Island Conservancy  
910-338-0910  
[shank@bhic.org](mailto:shank@bhic.org)

# **ATTACHMENT I**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**E-MAILS REGARDING PUBLIC PARTICIPATION IN NED**

## Bill Cary

---

**From:** Walters, Bret L CIV USARMY CESAW (USA) <Bret.L.Walters@usace.army.mil>  
**Sent:** Monday, July 22, 2024 5:20 PM  
**To:** Bill Cary  
**Cc:** Hill, Suzanne CIV USARMY CESAS (USA); Charles S. Baldwin, IV; Chris McCall; Stolba, Andrea M CIV USARMY CESAW (USA)  
**Subject:** RE: Wilmington Harbor 403  
**Attachments:** 10-R-4\_NED\_DeepDraft.pdf

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Mr. Cary,

Thank you for your message and the conversation at the meeting last month. We have considered your request for detailed information. The information you are asking for is too preliminary to share at this stage of the process. The analysis and documentation currently being developed will be refined substantially over the next several months and incorporated into the draft report and provided for public review, with a public comment period in the Fall of 2025 ( a little over a year from now).

Please see the attached US Army Corps of Engineers' Institute for Water Resources' National Economic Development Manual for Deep Draft Navigation. This manual describes accepted economic analysis procedures for deep draft navigation projects and describes the fundamentals of containership analysis. The analysis for the Wilmington Harbor 403 Letter Report and Environmental Impact Statement will follow the guidance in this manual.

I hope this helps.

Bret Walters  
Chief, Planning and Environmental Branch  
Wilmington District, US Army Corps of Engineers  
(910) 251-4505 (desk)  
(910) 690-0852 (cell)

**From:** Bill Cary <BCARY@brookspierce.com>  
**Sent:** Thursday, June 27, 2024 2:02 PM  
**To:** Walters, Bret L CIV USARMY CESAW (USA) <Bret.L.Walters@usace.army.mil>  
**Cc:** Hill, Suzanne CIV USARMY CESAS (USA) <Suzanne.Hill@usace.army.mil>; Charles S. Baldwin, IV <CBaldwin@BrooksPierce.com>; Chris McCall <cmccall@villagebhi.org>  
**Subject:** [Non-DoD Source] Wilmington Harbor 403

I am writing on behalf of the Village of Bald Head Island to ask that the more detailed Project economic justification and analyses currently being prepared can be shared prior to the July 22, 2024 deadline for NEPA initial comments. I note that the ASACW Review Assessment (A-4, C-4, C-6, and C-8) is critical of the 203 assumptions and analysis and requires a new analysis, which your team is apparently undertaking, and you have shared some initial observations in the public sessions. If the 203 had originally done a thorough and well-founded analysis, the NEPA public comments would be informed and could focus on analytical concerns and make suggestions for additional study, but we are currently shooting largely in the dark. Our (the Village of Bald Head Island) 203 Scoping Comments specifically asked that this

process be opened up to public involvement (since the public was unable to meaningfully participate in the 203, as explained in those comments), but that was apparently not feasible.

We ask that the new analyses be shared in detail now (even if still in draft) so that meaningful comments can be made prior to the current deadline for consideration during the NEPA process, **before** the Draft EIS is prepared. Alternatively, we ask that once the analyses are available, they be provided and an additional comment period be allowed. Meaningful public comment, which will require study and review of the analysis, should be received before the Draft EIS is prepared. Thank you for your consideration to this request.

Bill

---

Bill Cary



t: 336.271.3115

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2000 Renaissance Plaza  
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P.O. Box 26000 (27420)

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# **ATTACHMENT J**

**VILLAGE OF BALD HEAD ISLAND COMMENTS**

**12 DEC. 2025**

**E-MAILS REGARDING COMMENT PERIOD EXTENSION**

## Bill Cary

---

**From:** McCorcle, Justin P CIV USARMY CESAW (USA) <Justin.P.Mccorcle@usace.army.mil>  
**Sent:** Monday, October 27, 2025 4:23 PM  
**To:** Bill Cary; Daniel F. E. Smith; Charles S. Baldwin, IV; Jayant Joshi  
**Cc:** Nygren, John T CIV (USA); Stolba, Andrea M CIV USARMY CESAW (USA); Fiocchi, Elizabeth C CIV USARMY CESAW (USA); Morgan, Brad A COL USARMY CESAW (USA); Walters, Bret L CIV USARMY CESAW (USA)  
**Subject:** FOIA Interim Response and Comment Extension  
**Attachments:** WH 403 Public Econ IPR Nov 2024 - Presentation with Notes.pdf

### This Message Is From an External Sender

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Messrs. Cary, Baldwin, Smith, and Joshi,

This is an interim response to FOIA request 26-012, related to the economic data supporting the Wilmington Harbor 403 Draft EIS and Letter Report. Much of that data is derived from others and likely will not be able to be made available, as further detailed below:

1. We have in our possession seven documents derived from the NC State Ports Authority, potentially exempt under Exemption 4, which covers trade secrets and commercial or financial information obtained from a person or corporation that is privileged or confidential. Four of those appear to be economic forecasts for industries which may utilize waterborne commerce, two are documents related to port expansion or re-design, and one is a set of notes from interviews held with the Ports and its customers. We have sent these documents to the NCSPA for its review and potential objection to release.
2. The author of our Economics Chapter and Appendix obtained the data used to create his forecasts from several subscription or proprietary sets of data, which he signed Non-Disclosure Agreements (NDAs) in order to access. These include documents from our license agreements with IHS-Fairplay, Lloyds Registry-Fairplay, and S&P Global, as well as government databases or applications to include commerce statistics from the US Census Bureau, the USACE Waterborne Commerce Statistics Center, and the Institute of Water Resources (IWR) Deep Draft Vessel Operating Cost (DDVOC) database. This data is not releasable subject to these non-disclosure agreements and licensure restrictions. We are working with our Deep Draft Navigation Center of Expertise (DDNPCX) and our respective experts at the IWR to more thoroughly describe these restrictions, but it appears unlikely at this time that there will be much releasable data.

I have attached to this request a presentation prepared by our Economist to help explain his analysis. The presentation was accurate as of the date it was made, but we caveat that the report will continue to evolve as the data evolves.

As you have also requested an extension of time for comments on the DEIS, I wanted to extend to you on behalf of the Commander an extension for comments for your client, the Village of Bald Head Island, commensurate with the time your request was under review up to this point. Accordingly, **we will extend the comment period for your client two weeks, until November 17, 2025.** It is recommended that you seek some of the subscription/license services listed above for your own access to their data, as it does not appear to be within our authority to grant it to you.

Respectfully,

Justin P. McCorcle  
District Counsel  
USACE, Wilmington District  
69 Darlington Avenue, Wilmington NC 28403  
Office: (910) 251-4699  
Cell: (910) 366-3822

**ATTACHMENT K**  
**VILLAGE OF BALD HEAD ISLAND COMMENTS**  
**12 DEC. 2025**

**CORRESPONDENCE WITH USACE REGARDING 2025**  
**MAINTENANCE DREDGING**

Attachment	Description
K-1	Letter dated June 20, 2025, to Corps and Contractor regarding Contract No. W912PM25CA005.
K-2	Letter dated June 30, 2025, from Justin P. McCorcle.
K-3	Letter dated July 18, 2025, to Justin P. McCorcle regarding Dredging Contract.
K-4	Letter dated September 4, 2025, from Justin P. McCorcle responding to WPHC



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June 20, 2025

Colonel Brad A. Morgan  
District Commander  
Wilmington Regulatory Field Office  
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Wilmington, NC 28403  
[brad.a.morgan@usace.army.mil](mailto:brad.a.morgan@usace.army.mil)

Norfolk Dredging Company  
110 N. Centerville Turnpike  
Chesapeake, Va. 23220  
Attn: Michael Haverty  
[mhaverty@norfolkdredging.com](mailto:mhaverty@norfolkdredging.com)

Re: Contract No. W912PM25CA005, Maintenance Dredging, Wilmington Harbor Bar

Dear Colonel Morgan and Mr. Haverty,

As counsel for the Village of Bald Head Island (“VBHI”), we have been asked by our client to submit this letter in light of the recent Notice of the above Contract, which Notice indicates that sand from this year’s maintenance dredging of the Wilmington Harbor Chanel will “be strategically placed to nourish the beaches of Oak Island (Town Caswell Beach and Town of Oak Island).” See Attachment 1. **Placement of such sand on any beaches other than Caswell Beach or VBHI would be a violation of the existing terms of the Wilmington Harbor Project (WHP), authorized in 2000.** The purpose of this letter is to alert you to the existing restrictions on sand placement and to seek assurance that the Contract’s Placement Plan (Section 1.7.2) will comply with the WHP.

## A. Summary

VBHI opposes any placement of sand dredged pursuant to the Contract on the beaches of the Town of Oak Island (TOI), west of Caswell Beach, as indicated in the Notice. The placement of sand removed from the Cape Fear River Wilmington Harbor Channel onto TOI beaches will remove that sand from its natural sand-sharing system and place it in a different littoral cell, to the permanent harm of VBHI as part of the originating system and in violation of the terms of the WHP's underlying Environmental Assessment (EA), discussed below. In particular, the EA addressed concerns over the WHP's adverse effects to the **adjacent** beaches and incorporated a Sand Management Plan (SMP) to assure displaced sand would remain in the same littoral system. The ultimate Finding of No Significant Impact (FONSI) specifically relied on and affirmed the SMP as an integral part of the necessary conclusion of no significant environmental impact. The proposed recipient TOI beaches are outside that littoral system and are not part of the SMP. Moreover, the proposed work will endanger VBHI infrastructure, will disrupt the regular maintenance schedule and re-nourishment of the beaches impacted by the WHP, and will exacerbate damage to those beaches and the VBHI infrastructure.

## B. Background and VBHI Interest

### 1. Geography

VBHI is situated on Bald Head Island, North Carolina, at the mouth of the Cape Fear River. Bald Head Island is directly adjacent to and eastward of the Wilmington Harbor Channel, a federally maintained navigation channel that connects the port city of Wilmington to the Atlantic Ocean. Immediately to the west of the Channel at this point is the eastern tip of Oak Island, on which is situated Fort Caswell and Caswell Beach. The central and western portion of Oak Island, abutting Lockwood Folly to the west, is the Town of Oak Island (TOI). A stretch of the Channel is situated directly between Bald Head Island (to the east) and Caswell Beach (to the west). As the stretch of the Channel between Bald Head Island and Caswell Beach is periodically dredged, it gradually is refilled with sand eroding from those two **adjacent** beaches in what is sometimes referred to as a sand sharing system between two littoral cells. Caswell Beach and Bald Head Island, being immediately adjacent to the Channel, are directly affected by the dredging and maintenance of that Channel and are integral components of that littoral system. The TOI beaches comprise a distinct littoral cell and are not part of the Bald Head Island-Caswell Beach sand sharing system.

## 2. Historical Impacts

VBHI has a long history of having to endure and respond to the impacts of the Corps' historical deepening and realignment of the Channel. The Channel was deepened in 1976 and several times subsequently. As part of the 2000 WHP, the section of the Channel directly adjacent to Bald Head Island was reoriented closer to the Island, widened, and deepened by approximately four feet (40 to 44 feet).

Since those Channel alterations, Bald Head Island's beaches have experienced accelerated erosion, which has resulted in destabilization of the Island's nearshore environs and increased incident wave energy immediately adjacent to the Island. In effect, the sand of Bald Head Island shores is both sliding into the Channel and being swept away by increased tidal forces. Despite the assurances in the Environmental Assessment (EA) of the WHP, the Channel alterations have caused dramatic increases in erosion and sand volume loss on and near Island beaches—as VBHI's consultant had projected. Faced with an ongoing sand budget deficit, VBHI has taken a number of actions to mitigate or minimize impacts of the prior Channel alterations and protect its beaches, critical habitats,<sup>1</sup> infrastructure, and residents. VBHI's actions since 1995 have included permitting and constructing a terminal groin at the point of the Island (adjacent to the Channel); constructing and periodically replacing the sand-filled geotextile tubes in the groin field behind the terminal groin; and, undertaking two storm mitigation re-nourishment projects to replenish lost sand on the Island's western and southern beaches. The costs incurred by VBHI to plan, permit, and implement mitigation measures are over \$69 million, as shown on Attachment 2 hereto—and are ongoing.

While the SMP designates the Town of Caswell Beach as the recipient of the sand dredged in this year's cycle, VBHI is nevertheless harmed if, instead, sand is diverted to any other beach, as documented in the EA and SMP.

### C. The EA and the SMP

Sand losses from the adjacent beaches were anticipated during the planning and implementation of the 2000 WHP, and the SMP was incorporated into the project's required Environmental Assessment (EA). The goal of the SMP was that the displaced "sand should be retained within the active coastal sand system". EA, §1.03, p. 3.

The sand management plan (Appendix A [to the EA]) for the deepened Wilmington Harbor project **requires** that **all** beach-quality maintenance material **be returned to the adjacent beaches**. This will result in enhancement of the regional sediment budget.

---

<sup>1</sup> The subject beaches are nesting areas for endangered turtles and birds, as discussed in the EA.

*Id.*, §5.01, p. 27 (emphasis added). This requirement is the result of the fact that:

Natural supplies from rivers and streams are not replenishing littoral sediments, particularly on the East Coast of the United States. Thus, the **removal of a cubic yard** of littoral sediment from a tidal entrance or inlet with deposition outside the active littoral zone of the beach **will ultimately cause a cubic yard deficit** somewhere within the sand sharing system affected by that particular entrance or inlet.

SMP, ¶ 20, pp. 9-10 (emphasis added). Such removal has been identified by the Corps as “a major cause of man-induced erosion.” *Id.*

From an engineering perspective, **the primary requirement** for the Wilmington Harbor maintenance program, apart from assuring that the channel remains open year-round, is to **prevent project induced erosion of the adjacent beaches** by conserving the limited resource, sand, **through deposition directly on the adjacent beaches.**

*Id.* (emphasis added). The SMP finds that 66% of the sediment shoaling at the Channel entrance comes from Bald Head Island, and 34% from Caswell Beach. *Id.*, ¶ 22, p. 10.

In order to maintain the sediment balance on both islands, littoral material removed from the entrance channel **will be placed back on the beach from whence it came.**

*Id.* (emphasis added). To be clear, the placement will be on “Bald Head Island” and “on East Oak Island-Caswell Beach beginning at a point just east of the Carolina Power and Light cooling water discharge canal.” *Id.* TOI is west of the canal.

These protections for the Bald Head Island-Caswell Beach littoral system did not happen accidentally. VBHI had engaged a coastal and oceanographic engineering expert, Erik J. Olsen, to study the historical effects of Channel deepening projects and the potential impact of the 2000 WHP. His analyses, as well as the Corps’ studies as part of the Environmental Assessment of the WHP, concluded there would be severe impacts to the beaches adjacent to the Channel.

In response to the concerns raised, the Corps Wilmington District Chief Engineer, Col., James DeLony, sent a letter assuring the local mayors that sand placement will be “according to the March 31, 2000 memorandum from Erik J. Olsen, consultant to [VHBI]...” DeLony Letter, June 9, 2000, p. 2. Attachment 3. More specifically, he stated:

The disposal of **all beach quality dredged material** will be accomplished in **accordance with** the Environmental Assessment [...dated February 2000] and its **Sand Management Plan....**”

*Id.* p. 3. Because the WHP required the State of North Carolina to conduct its own consistency review under the Coastal Zone Management Act, the NC Department of Environment and Natural Resources (now, NC Department of Environmental Quality), Division of Coastal Management, conducted that review and raised serious concerns about impacts to the sand systems. The final State determination states:

**Based upon** our review of **the EA** [Environmental Assessment] **and the Corps of Engineers’ response to comments [the DeLony Letter]**, we do not disagree with your determination that the proposed construction and changes in harbor maintenance procedures are consistent with the North Carolina Coastal Management Program to the maximum extent practicable, **provided that the project is performed according to the EA (including the Sand Management Plan** and other appendices)...[and other conditions stated therein].

Letter from Donna Moffitt, Director, NCDENR/DCM, June 15, 2000 to Col. DeLony, USACE District Engineer, p. 2 (emphasis added). Attachment 4.

The Corps then issued its Finding of No Significant Impact (FONSI), relying specifically on the Moffitt Letter and its incorporation of the assurances in the DeLony Letter: “We will comply with the indications in the [Moffitt] letter.” FONSI, § 3.00, p. 5.

Thus, the final North Carolina consistency determination, the EA, and the FONSI were *specifically conditioned* on the Corps complying with the SMP to maintain sand in the littoral system by placing it on the **adjacent** beaches—Bald Head Island and Caswell Beach.

#### **D. Proper Use of Contract-dredged Sand**

To meet the goals of the SMP, sand should not be placed westward of the “nodal point” on Caswell Beach, where the directionality of net littoral transport changes from east to west. As defined by the Corps and as validated by Delft 3-D modeling, that point has historically been understood to be approximately at the nuclear Powerplant channel and outfall. Because erosion experienced at Caswell Beach has been less than been forecast by the SMP (and greater at Bald Head Island), the sand this year is apparently not needed at Caswell Beach and hence the suggestion to place it on TOI beaches. If the current dredging Contract will produce more sand than Caswell Beach needs or can accept, the alternative contemplated in the SMP, as

stated in Colonel DeLony's letter, is to adjust the placement to reflect the actual impacts by placing excess sand on the VHBI beaches. The sand from the Smith Island range (closest to Caswell Beach) could be placed on Caswell Beach while the sand from the remaining two sections closest to Bald Head Island could be placed on Bald Head Island. Because of the immediate proximity, there should be no incremental cost. If there is, VBHI is open to discussing bearing that cost.

#### **E. The Contract As Described in the Notice Would Violate 33 USC § 408**

The 2000 WHP, including on-going maintenance of the Channel to assure efficacy of that Project (*i.e.*, navigability), is an "authorized project" which cannot be interfered with:

It shall not be lawful for **any person ... to take possession of** or make use of for any purpose, or ... alter, deface, destroy, move, injure, ... **or in any manner whatever impair the usefulness of any ... work built by the United States**, ... in whole or in part, for the preservation and improvement of any of its navigable waters or to prevent floods, or as boundary marks, tide gauges, surveying stations, buoys, ... **nor remove for ... other purposes any stone or other material composing such works ....**

33 USC § 408(a) (emphasis added). The proposed removal of sand to a TOI beach violates this provision in several ways. First, the SMP is a Project "condition," and violating its specific conditions and purpose will impair "the ability of the project to function **as authorized**" (emphasis added).

Second, sand is an element of the WHP which cannot be removed from the Project *or* received by anyone not a part of the Project. The beaches of TOI are not included in the disposal plan in the SMP for the simple reason that they are in a different littoral cell and are not part of the Channel entrance littoral system being impacted by the WHP<sup>2</sup> and its on-going need for maintenance dredging. The TOI beaches are not part of the WHP of deepening and maintaining the Wilmington Harbor Channel. Therefore, the sand being deposited in the Channel by the natural and anticipated consequences of the WHP, and its planned use on the adjacent beaches as part of the Project, is "stone or other material composing such work" and may **not** be removed from the system *and* may not be received by TOI. 33 USC § 408(a).

---

<sup>2</sup> The pre-WHP studies confirmed that the littoral transport of sand along most of the TOI beaches is westward, away from the Cape Fear Channel entrance, and hence not a part of the that littoral system.

**F. VBHI is a named, intended third-party beneficiary of the SMP.**

As discussed above, the SMP, and the Corps' commitment to comply with it, were specifically because of the projected negative impacts to VBHI, which was forecast to suffer 2/3rds of the sand loss caused by the WHP. The SMP protects the public interest from the detrimental effects of the WHP on the adjacent beaches, as explained above, and any proposed deviation from it will therefore negatively impact the public interest as well as VBHI's interests.

Even with the SMP maintenance of adjacent beaches, the negative impact of the WHP has been significant, as detailed above. The on-going, necessary projects are costing VBHI millions of dollars. Permanent removal of significant quantities of beach quality sand from this littoral system will further exacerbate these damages, including: conservation and environment (the eroded beaches negatively impact nesting habitat for endangered birds and turtles, as detailed in the EA), flood hazards (storm resilience), economic development (the on-going and increasing financial burden on VBHI in protecting its residents' properties), recreation (usability of beaches), residual risk, induced damages, and shore erosion. Accordingly, deviating from the SMP to benefit TOI interferes with VBHI's rights.

**G. Allowing Deviation from the SMP Undermines Credibility in Corps Permitting**

In 2000, the Corps evaluated the WHP and its environmental consequences. It undertook to assuage the public by assurances of protective measures, specifically adherence to the SMP as a method of protecting the adjacent beaches from project-induced erosion. *See* assurances in DeLony Letter, including implementation of the SMP and even enhancing it with additional nourishment if it is inadequate.

From an engineering perspective, **the primary requirement** for the Wilmington Harbor maintenance program, apart from assuring that the channel remains open year-round, is to **prevent project induced erosion of the adjacent beaches** by conserving the limited resource, sand, **through deposition directly on the adjacent beaches.**

SMP ¶ 20, p. 10. "We will comply with the indications in the [Moffitt] letter [conditioning North Carolina CZMA concurrence on Col. DeLony's assurances of adherence to the SMP]." EA, § 3.00, p. 5.

The Corps is currently evaluating a new Wilmington Harbor project, which would further deepen and widen the Cape Fear Channel. The impacts of that proposed project are currently being studied and plans for mitigation of the effects are being drawn and vetted. **Now** is the time to demonstrate that this evaluation of

project impacts and the Corps' commitment to fairly evaluating and offsetting project impacts is not ephemeral and its promises of mitigation are not illusory.

## H. Conclusion

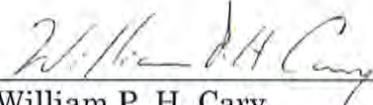
Dredging the Cape Fear River to ensure and enhance its navigability comes at a price beyond the financial cost: it affects the transport of sand within that immediate littoral system, which in turn impacts the systems (beaches) on which that sand depends. Recognizing those impacts, and mitigating those damages, is part of the price of the Project. The displaced sand is not a bonus to be applied where convenient. It is owed to the communities whence it came. TOI has a legitimate need for beach sand, but the Channel sand is not a legitimate source. The system described in the EA and SMP—where every cubic yard of sand removed from the littoral system results in a cubic yard deficit on the adjacent beaches—demonstrates that the sand in this littoral system is a constituent part of the system, migrating to and from the Channel. The proposal to use Channel sand at TOI is equivalent to directly removing the sand from the beaches at VBHI and Caswell Beach and trucking it to TOI. It should not be allowed, under any conditions.

Accordingly, we ask the Norfolk Dredging Company to confirm it will not submit a Placement Plan that places sand anywhere other than on Caswell Beach or VBHI beaches, and we ask the Corps to confirm that it will not approve any Plan other than one that is confined to Caswell Beach and VBHI beaches.

We look forward to hearing from you on the intending Placement Plan. Please feel free to contact me if you have any questions.

**Brooks, Pierce, McLendon, Humphrey, and  
Leonard, LLP,**

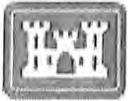
Attorneys for the Village of Bald Head Island

By:   
William P. H. Cary  
[bcary@brookspierce.com](mailto:bcary@brookspierce.com)  
(336)-271-3115

Cc: Peter Quinn, Mayor, Village of Bald Head Island  
Justin McCorcle, Wilmington District Counsel, U.S. Army Corps of Engineers  
Tancred Miller, Director, Division of Coastal Management, NC DEQ  
Cameron Luck, Federal Consistency Coordinator,  
Div. of Coastal Management, NC DEQ  
Heather Coats, Beach & Inlet Management Project Coordinator,  
Div. of Coastal Management, NC DEQ  
George Kassler, Mayor, Town of Caswell Beach  
Elizabeth White, Mayor, Town of Oak Island  
Mike McIntyre, Ward & Smith  
The Honorable Thom Tillis  
The Honorable Ted Budd  
The Honorable David Rouzer  
Rosalind M. Shoemaker, Contracting Officer  
USACE Wilmington Regulatory Field Office

# **ATTACHMENT 1**

## **NOTICE OF CONTRACT AWARD**



US Army Corps  
of Engineers®

USACE Wilmington

News Release

# Contract award: maintenance dredging of the Wilmington Harbor Inner Ocean Bar will benefit Oak Island beaches

Published May 19, 2025

**WILMINGTON, N.C. --**

**WILMINGTON, N.C. (May 19, 2025)** – The U.S. Army Corps of Engineers (USACE) Wilmington District has awarded an \$18.6 million contract to Norfolk Dredging Company for the crucial maintenance dredging of the Wilmington Harbor Inner Ocean Bar. With the inclusion of all options, the total contract value is estimated at \$25.3 million.

This essential project will remove approximately 1.3 million cubic yards of beach-compatible material, which will be strategically placed to nourish the beaches of Oak Island (Town of Caswell Beach and Town of Oak Island). To protect sea turtle nesting, this work is scheduled to be completed within the current beach placement window, from November 16th to April 30th.

Maintaining the navigability of Wilmington Harbor is vital to the economic health of the region. This dredging project will ensure safe and efficient passage for commercial vessels while also providing the valuable benefit of beach nourishment for Oak Island.

Maintenance dredging is a necessary process to remove accumulated sediment from the Inner Ocean Bar, ensuring the harbor maintains its authorized depth. The USACE Wilmington District remains dedicated to its mission of maintaining the nation's waterways and supporting the economic vitality of the region through projects like this.

--30--

**U.S. ARMY CORPS OF ENGINEERS –WILMINGTON DISTRICT**

**69 DARLINGTON AVE, WILMINGTON, N.C. 28403**

**WWW.SAW.USACE.ARMY.MIL**

**Contact**

David Connolly

910.251.4626

Release no. 25-005



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
69 DARLINGTON AVENUE  
WILMINGTON, NORTH CAROLINA 28403-1343

15 May 2025

REPLY TO:  
Contracting Division

**VIA EMAIL**

SUBJECT: Award of Contract No. W912PM25CA005, Maintenance Dredging,  
Wilmington Harbor Inner Ocean Bar

**CONTRACTOR:**

Via Email [mhaverty@norfolkdredging.com](mailto:mhaverty@norfolkdredging.com)  
Norfolk Dredging Company  
ATTN: Mr. Michael Haverty  
110 N Centerville Turnpike  
Chesapeake, VA 23320

Mr. Haverty:

Congratulations on your award of the subject contract. Attached is a copy of the signed contract for your records. Award was made on 15 May 2025, in the amount of **\$18,645,765.00**, for Line items 0001-0004, (funded base line items).

I, **Rosalind M. Shoemaker**, will be the Contracting Officer on your contract. In my absence, the following Contracting Officer may sign actions under this contract: Ms. Jenifer M. Garland and Mr. Troy D. Small. We will be working with you and your team on this contract until completion. The Administrative Contracting Officers for this project will be Mr. Jeremiah L. Smith.

Rosalind M. Shoemaker, Contracting Officer	910-251-4436
Jenifer M. Garland, Contracting Officer	910-251-4134
Troy D. Small, Contracting Officer	910-251-4650
Jeremiah L. Smith, Administrative Contracting Officer	910-241-4642

This letter is not a notice-to-proceed. Notice to Proceed will be issued as part of the preconstruction meeting.

It is emphasized that only a warranted Contracting Officer (either a Contracting Officer or an Administrative Contracting Officer (ACO)), acting within their appointed limits, has the authority to issue modifications or otherwise change the terms and conditions of this contract. If an individual other than the Contracting Officer attempts to make changes to the terms and conditions of this contract, you shall not proceed with the change and shall immediately notify the Contracting Officer. Proceeding with any work not authorized by the Contracting Officer will be at the Contractor's own risk.

SUBJECT: Award of Contract No. W912PM25CA005, Maintenance Dredging,  
Wilmington Harbor Inner Ocean Bar

Timely and successful completion of this project is critical to the mission of the Wilmington District, U.S. Army Corps of Engineers. Accordingly, we are looking forward to a great partnership with your company, as you perform this important work. If you have any questions, do not hesitate to contact me. I look forward to working with you to meet the needs of our nation.

Sincerely,

Rosalind M. Shoemaker  
Rosalind M. Shoemaker  
Contracting Officer

Digitally signed by  
Rosalind M. Shoemaker  
Date: 2025.05.15  
08:58:52 -04'00'

Copy Furnished  
Official Contract file/Contracting Division

# **ATTACHMENT 2**

## **VBHI MITIGATION COSTS**



**Bald Head Island  
Mitigation Costs of Navigation Channel Impacts**

**The Terminal Groin Project (2015)**

- Terminal Groin GO Bond Expenditures @ 2-28-18 (2015 Project)  
Engineering/Design/Modeling/NEPA EIS costs \$ **1,177,000**  
(Phase I Construction/Orion w/ Corps 2015 O&M Sand)
  - Terminal Groin Construction, part of the T6 project, placing approximately 1 million for the fillet sand to place behind the T6 structure \$ 7,876,858
  - Harbor Jetty Extension w/ Spurs \$ 1,456,316
  - West Beach and Row Boat Row (Bald Head Creek Dredging) \$ 1,261,026
    - Army COE Reimbursement \$ 105,341
    - MECA Reimbursement 830,514
    - Contract Reimbursements 140,363
    - Total \$ 1,076,218 \$ (1,076,218)

Total Cost, Phase I \$ **9,517,982**
  
- Breakwaters Project:
  - Construction of two detached rock breakwaters located north of the Marina
    - Intercoastal Maine, LLC \$ **895,052**

**Sand Re-nourishment / Groin Tube Project (2018-19)**

- Sand Re-nourishment / Groin Tube Replacements (2019 Project)  
(Phase II Construction/ SJ Hamill Construction, Bradley Textile Tubes)
  - Beach Nourishment 1million cubic yards, including mobilization \$ 11,767,000
  - Groin Tube manufacture and installation 1,514,429
  - Engineering Costs 445,000
  - Legal Costs \$ 62,500

Total Cost, Phase II \$ **13,788,929**

**Marina Channel Maintenance Program**

*(Grant received from Department of Environmental Quality Resource Development Project to reimburse the Village for 66% of the cost, current expiration of Grant May 2019.)*

- Village portion of expenses paid for Dredging the Channel:  
2017 – 2023: \$ **289,140**

**Bald Head Island  
Mitigation Costs of Navigation Channel Impacts**

**Sand Re-nourishment / Groin Tube Project (2024-25)**

• Sand Re-nourishment / Groin Tube Replacements (2025 Project)	
Beach Fill Construction/Marinex, Flint Textiles Geotubes, McPherson Marine Service	
• Beach Nourishment 1 million cubic yards, including mobilization	\$ 16,175,000
• Groin Tube Installation	\$ 1,517,430
• Tube manufacturing (Flint)	\$ 446,425
• Engineering Costs – JBS Borrow Site Permitting	\$ 230,200
• Beach Fill Design/Construction Document (including groins)	\$ 350,000
• Construction Management/observation	\$ 425,000
• Legal – Construction Contracts Review/Bid	\$ 7,500
Total Cost	<u>\$ 19,151,555</u>

**Beach Monitoring**

Annual Shoreline Monitoring Program Expenses (last 10 years): **\$2,000,000**  
(Includes spring/fall surveying and aerial imagery documentation w/ final report from Coastal Engineer)

**Total Accumulated Costs Associated with the Mitigation of the Navigation Channel** **\$69,303,391**

Overall Total To Date - \$71,732,531

(25-year average expenditure annually - \$2.87M)

# **ATTACHMENT 3**

**DELONY LETTER**



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890

June 9, 2000

IN REPLY REFER TO

Project Management Branch

Honorable Freeman A. Berne  
Mayor of the Village of Bald Head Island  
Post Office Box 3009  
Baldhead Island, North Carolina 28461

Honorable Harry Simmons  
Mayor of Caswell Beach  
707 Caswell Beach Road  
Caswell Beach, North Carolina 28465

Honorable Joan Altman  
Mayor of Oak Island  
4601 East Oak Island Drive  
Oak Island, North Carolina 28465

Honorable James W. Lowell  
Mayor of Holden Beach  
110 Rothschild Street  
Holden Beach, North Carolina 28462

Dear Mayors:

After years of effort by many, it is a pleasure to see the various elements of the Wilmington Harbor Navigation project (hereinafter the "Project") coming together. As we approach the decision point for the Finding of No Significant Impact (FONSI), I want to bring everyone up to date on the status of our plan to place beach quality sand excavated for the project on Bald Head Island, Caswell Beach, Oak Island, and Holden Beach.

As you know, the details of our plan are presented in the Environmental Assessment, in particular, Appendix A - Sand Management Plan, in the Wilmington Harbor Monitoring Plan, and in the Section 933 Evaluation Report. The shoreline segments recommended to receive sand are the Village of Bald Head Island (up to 16,000 linear feet), Caswell Beach (up to 25,000 linear feet), Oak Island (up to 25,600 linear feet), and Holden Beach (up to 10,600 linear feet). This represents a maximum shoreline length of 77,200 linear feet.

Bald Head Island will be the site of initial beach disposal associated with construction. This site, along with the easternmost 25,000 linear feet of Caswell Beach-Oak Island, represents the least cost alternative of disposal available to the Project; accordingly, placement will be accomplished at Project cost and at no cost to the Village of Bald Head Island.

Placement will be according to the March 31, 2000 memorandum from Erik J. Olsen, consultant to the Village of Bald Head Island referencing the Village of Bald Head Island Beach Disposal Plan (2000/2001) (enclosed and incorporated by reference) to the U.S. Army Corps of Engineers, Wilmington District (hereinafter "Corps").

Once disposal has begun at the Village of Bald Head Island, fill operations will continue until the estimated minimum of 1,536,000 cubic yards of sand in the channel prism allocated to the Village of Bald Head Island (based on channel surveys conducted in October and December 1999) have been dredged and placed on the beach in accordance with the March 31, 2000 memorandum. Assuming a potential effective reduction of 20 percent in the gross fill dredged, the final in-place fill volume is expected to range between 1,228,000 cubic yards and 1,536,000 cubic yards.

Project construction beach disposal operations at the Village of Bald Head Island will be performed along both West Beach and South Beach, as indicated by the March 31, 2000 memorandum. The Village of Bald Head Island will provide all requisite easements necessary to construct the template(s) provided for by the March 31, 2000 memorandum.

Once the placement of beach quality sand at the Village of Bald Head Island is complete, placement along approximately 25,000 linear feet of shoreline at the easternmost end of Caswell Beach-Oak Island will be accomplished. Placement will be made in accordance with the template agreed to by the Corps, NCDENR, and the communities of Caswell Beach and Oak Island. The final in-place fill volume is expected to range between 1,451,000 cubic yards and 1,814,000 cubic yards. Since this reach comprises the balance of the least cost alternative for disposal available to the Project, placement will be at Project cost and at no cost to those communities. All requisite easements will be provided by the communities at no cost to the Project.

Under the provisions of the draft Section 933 report, the remaining beach quality sand will be placed along approximately 25,600 linear feet of the westernmost shoreline of Oak Island and along approximately 10,600 linear feet of the eastern shoreline of Holden Beach. Placement will be made in accordance with the template agreed to among the Corps, NCDENR, and the affected beach communities and cost shared at the rate of 65 percent Federal (currently estimated at \$6,500,000) and 35 percent non-Federal (currently estimated at \$3,500,000). The final in-place fill volume along the cost shared reach of Oak Island is expected to range between 1,272,000 cubic yards and 1,590,000 cubic yards. The final in-place fill volume along the cost shared reach of Holden Beach is expected to range between 528,000 cubic yards and 660,000 cubic yards. The communities will provide all required easements at no cost to the Project.

After construction of the Smith Island and Bald Head Island Shoal portions of the project, the U.S. Army Corps of Engineers will conduct periodic maintenance dredging of the navigation channels. The disposal of all beach quality dredged material will be accomplished in accordance with the Environmental Assessment of Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina, dated February 2000 and its Sand Management Plan (Appendix A), and the Wilmington Harbor Monitoring Plan (enclosed and incorporated by reference). The associated disposal will be as called for therein, namely:

- Year 2: Placement at Bald Head Island (estimated @ 1Mcy)
- Year 4: Placement at Bald Head Island (estimated @ 1 Mcy)
- Year 6: Placement at Caswell Beach and easternmost end of Oak Island (estimated @ 1 Mcy).

This disposal cycle is planned for the life of the project. As provided on page 8 of the Environmental Assessment and on page 12 of the sand management plan, in some cases problem shoaling involving small quantities of sand may develop in the channel between regular dredging events, making use of a pipeline dredge unfeasible and the sand may need to be deposited in the ocean disposal area.

Prior to each disposal operation at either the Village of Bald Head Island, or Caswell Beach, or the easternmost shoreline of Oak Island, the community receiving the sand may provide advance guidance to the Corps regarding placement distributions and fill template design. The Corps will follow that guidance to the maximum extent practicable.

The Corps will conduct a monitoring program as referred to in the Environmental Assessment and Sand Management Plan, and as set out in the Wilmington Harbor Monitoring Plan, which is enclosed and incorporated by reference. An annual report will be prepared, as described in the Monitoring Plan. The Corps will use this monitoring data to evaluate and adjust the Sand Management Plan, as determined necessary, after coordination with interested parties.

All initial and future disposal activities at the Village of Bald Head Island, Caswell Beach, and easternmost Oak Island, (as described in the Environmental Assessment and its Sand Management Plan, and in the Wilmington Harbor Monitoring Plan) will be at no cost to either community.

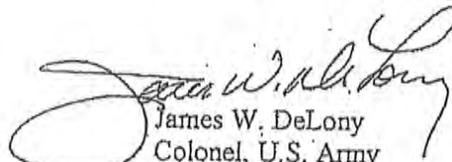
If the Project causes significant adverse effects on adjacent beaches, the Corps and the Sponsor will respond by adjusting the Sand Management Plan, after consultation with interested parties. If the Project causes significant adverse effects that cannot be dealt with by

modifications to the Sand Management Plan, the Corps and the Sponsor will promptly seek and use their best efforts to implement appropriate corrective measures, such as additional nourishment, subject to consistency review.

Our current schedule for execution of the FONSI is June 14, 2000. Our current schedule for our higher headquarters approval of the draft Section 933 Evaluation Report is July 31, 2000. We expect to award a contract to construct the inshore reaches of the Ocean Bar entrance channel on or about November 15, 2000. We are moving prudently but aggressively to make this important Project a reality.

The support of the members of the Brunswick Beaches Consortium and our Project sponsor represented by Mr. John Morris in optimizing this unique opportunity for nourishing your beaches has been wise, energetic, and timely. We salute your efforts and look forward to continued close coordination through to the successful completion and operation of the Project and the associated beneficial use of beach quality sand.

Sincerely,

  
James W. DeLony  
Colonel, U.S. Army  
District Engineer

Enclosures

Copies Furnished:

Mr. John N. Morris, Director  
Division of Water Resources  
North Carolina Department of Environment  
and Natural Resources  
1611 Mail Service Center  
Raleigh, North Carolina 27699-1611

Ms. Donna D. Moffitt, Director  
Division of Coastal Management  
North Carolina Department of  
Environment and Natural Resources  
1638 Mail Service Center  
Raleigh, North Carolina 27699-1638

# **ATTACHMENT 4**

## **MOFFITT LETTER**



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF COASTAL MANAGEMENT

RECEIVED EXECUTIVE OFFICE

June 15, 2000

2000 JUN 26 A 11:03

JAMES B. HUNT, JR. GOVERNOR

BILL HOLMAN SECRETARY

Colonel James W. DeLony
District Engineer
U.S. Army Corps of Engineers
Wilmington District
P.O. Box 1890
Wilmington, NC 28402-1890

Action: PM-C
CF: DE
DX
DP
TS
OC

DONNA D. MOFFITT DIRECTOR

REFERENCE: DCM00-14 EA and CD - Preconstruction Modifications of Authorized Improvements, Wilmington Harbor 96 Project

Dear Col. DeLony:

On May 17, 2000 the State of North Carolina completed its review, pursuant to 15 CFR 930 Subpart C - Consistency for Federal Activities, of the referenced document describing proposed modifications to the authorized Wilmington Harbor 96 Project in New Hanover and Brunswick Counties, North Carolina. The Corps of Engineers submitted the document to the state on February 17, 2000, and the project was assigned the number DCM00-14 for our review purposes.

During the course of our review several environmental concerns were raised by state agencies regarding potential impacts on the resources of the coastal zone. These comments were forwarded to the Corps for its consideration. As the consistency deadline was approaching, we extended our original consistency deadline 15 days, pursuant to 15 CFR 930.41, at the end of March. On April 10, 2000, our review was again extended to allow concerned state agencies to review the Corps' responses to comments on the Environmental Assessment (EA). The Division of Coastal Management received the Corps' responses on May 3 and again solicited comments from concerned state agencies.

The modifications that the Wilmington District Corps of Engineers seeks authorization for are as follows:

- 1. Construction and maintenance of the Wilmington Harbor entrance channel along a new alignment across the ocean bar.
2. Backfilling the abandoned channel length with dredged material not suited for beach or littoral zone disposal.



Col. James W. DeLony

June 15, 2000

Page 2

3. Placement of material dredged from the new channel alignment and other portions of the project on area beaches in New Hanover and Brunswick Counties.
4. Establishment of a comprehensive plan for dredging and disposal operations for each portion of the harbor, including hopper dredge with overflow.
5. Utilization of blast pressure criteria to measure impacts of blasting on aquatic resources and the elimination of the bubble curtain during blasting operations.
6. Placement of dredged material that does not go to the old channel, the littoral zone, the beaches, or other existing disposal sites, into the Offshore Dredged Material Disposal Site (ODMDS).

The Corps proposes to construct the new entrance channel alignment and place all suitable material on the nearby beaches over an approximately eighteen month period covering two winter seasons and one summer season. Turtle monitoring and shorebird surveys of affected beaches will be conducted. Details of the disposal operations for construction and maintenance of the channel are documented in a Sand Management Plan (SMP). In addition, the Corps has clarified details of the placement, timing, costs, and amount of sand to be deposited on the beaches of Bald Head Island, Caswell Beach, Oak Island, and Holden Beach in a letter dated June 9, 2000 from Colonel James W. DeLony, District Engineer, to the mayors of the respective beach towns. We understand that disposal of dredged material from construction and maintenance of the project will be conducted according to the SMP and letter, as agreed to by the NC Division of Water Resources, the Brunswick County beach communities and the Corps of Engineers. We also understand that the use of hopper dredge with overflow will be limited to times of year and reaches of the project in which impacts on coastal resources will be minimized.

Based upon our review of the EA and the Corps of Engineers' response to comments, we do not disagree with your determination that the proposed construction and changes in harbor maintenance procedures are consistent with the North Carolina Coastal Management Program to the maximum extent practicable, provided that the project is performed according to the EA (including the Sand Management Plan and other appendices) and the Corps' responses to comments from the EA, and to Colonel DeLony's letter of June 9, 2000 (including attachments), and that the conditions below are met:

Col. James W. DeLony  
June 15, 2000  
Page 3

1. Principal amongst the issues raised were potential impacts on sea turtles, shore and water birds, beach and benthic infauna, fisheries, and water quality parameters. It is extremely important that the impacts of this multifaceted project be well documented in order to evaluate the effects on these resources and on the overall coastal environment. The Corps of Engineers will pursue an integrated monitoring plan to address the resources noted in the first sentence of this paragraph, and will coordinate all monitoring efforts with the appropriate state agencies. This will include but not be limited to the North Carolina Division of Coastal Management, the Wildlife Resources Commission, the Division of Marine Fisheries, and the Division of Water Quality. We understand that the Corps intends to initiate monitoring coordination with the resource agencies in June of 2000.
2. As additional mitigation for impacts on fisheries resources, a fish passage structure will be constructed at Lock and Dam 1 on the Cape Fear River. In addition, fish passage alternatives for Lock and Dams 2 and 3 will be investigated. The Corps of Engineers and, as the Wilmington Harbor Project Sponsor, the State of North Carolina, have agreed to these actions.
3. The placement, timing, costs, and amount of sand to be deposited on Bald Head Island, Caswell Beach, Oak Island, and Holden Beach, both during construction and future maintenance; monitoring; and response to impacts shall be in accordance with Col. DeLony's letter of June 9, 2000, to the mayors of the respective towns receiving the sand (attached and incorporated by reference). If the towns, Corps, and project sponsor's representative mutually agree to modifications to the SMP or Col. DeLony's June 9, 2000 letter, those modifications shall be submitted to the North Carolina Division of Coastal Management for a determination of whether another consistency review is necessary on the modifications.
4. The state must have the opportunity to review the project, including monitoring results, to determine if it continues to be consistent with the North Carolina Coastal Management Program in two situations: 1) After five years from the date of this letter, and 2) before any subsequent modifications for future maintenance or other requests to modify the Wilmington Harbor 96 Project are considered. The Corps shall request this review and provide documentation of impacts (or lack thereof) on the coastal resources of concern.

Col. James W. DeLony  
June 15, 2000  
Page 4

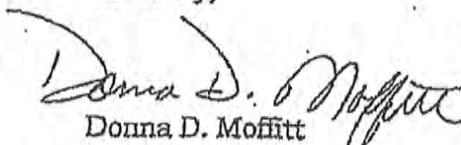
5. If in the future the Corps considers requesting authorization to conduct hopper dredging with over flow or to place maintenance dredge spoil on a beach, outside of the established time periods or locations, a separate consistency review will be required for each of these activities.

While the State of North Carolina supports beach nourishment and the placement of suitable spoil material on the beaches, we remain concerned about the short term and long term impacts on the biologic and ecologic resources of the coast. We maintain that the best time for such beach nourishment and renourishment is outside of the period of peak impacts on infauna, sea turtles, and fisheries. The State discourages individuals and agencies from seeking authorization to perform work outside established moratoria, and caution that our response is not to be interpreted as a precedent assuring authorization for future renourishment or disposal of sand on beaches outside of established dredging and disposal moratoria. We understand that summer beach disposal is necessary only during the construction phase of the project and that maintenance of the harbor channels will be conducted within established biological time frames.

Finally, with the increasing number of beach disposal and renourishment projects, much of the state's southern coast beaches will be in the placement or recovery phases in any given year. To this end, the Division of Coastal Management requests that the Corps consider combining the monitoring studies and environmental considerations of this project, the Wrightsville Beach, Carolina Beach, Kure Beach projects; and all of the Brunswick County Beaches projects to achieve a more comprehensive and cumulative impact analysis. Although these projects are separate in authorization and funding, we feel that concurrent studies could provide beneficial insights on impacts to resources from beach disposal and nourishment along this extended reach of shoreline.

If you have any questions regarding our findings, conditions, or recommendations, please contact Ms. Caroline Bellis, Division of Coastal Management, at (919) 733-2293. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,

  
Donna D. Moffitt

Col. James W. DeLony  
June 15, 2000  
Page 5

Attachment

cc: Bob Stroud, Division of Coastal Management, Wilmington  
Franklin McBride, NC Wildlife Resources Commission  
Bennett Wynne, NC Wildlife Resources Commission  
Ruth Boettcher, NC Wildlife Resources Commission  
Fritz Rohde, NC Division of Marine Fisheries  
Mike Street, NC Division of Marine Fisheries  
John Dorney, Division of Water Quality  
Frank Yelverton, US Army Corps of Engineers  
John Meshaw, US Army Corps of Engineers



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
69 DARLINGTON AVENUE  
WILMINGTON, NORTH CAROLINA 28403-1343

CESAW-OC

June 30, 2025

SUBJECT: Response to VBHI Letter of June 20, 2025, re: Contract No. W912PM25CA005, Maintenance Dredging, Wilmington Harbor Bar

William P.H. Cary, Esq.  
Attorney for the Village of Bald Head Island  
[bcary@brookspierce.com](mailto:bcary@brookspierce.com)

VIA EMAIL ONLY

Dear Mr. Cary,

This correspondence is in reference to your letter to Wilmington District Commander COL Brad A. Morgan, dated June 20, 2025, asserting that "[p]lacement of [Wilmington Harbor] sand on any beaches other than Caswell Beach or VBHI would be a violation of the existing terms of the Wilmington Harbor Project (WHP), authorized in 2000." It is the position of the Wilmington District, Corps of Engineers that the Wilmington Harbor Inner Ocean Bar Contract, Contract No. W912PM25CA0005, is consistent with the Environmental Assessment (EA), the Sand Management Plan (SMP), COL DeLony's letter of June 9, 2000, and the relevant Coastal Zone Management Act Consistency concurrence.

In the SMP, incorporated as Appendix A of the EA dated February 2000, the Corps addressed its intent as it related to the Maintenance Material Disposal Plan, and noted as follows:

In order to maintain the sediment balance on both islands, littoral material removed from the entrance channel will be placed back on the beach from whence it came. Accordingly, two out of every three cubic yards of littoral shoal material removed from the entrance channel will be placed back on Bald Head Island and the remaining cubic yard placed on **East Oak Island-Caswell Beach**. The disposal locations on each island will be based on the results of annual beach profile monitoring surveys. **In general**, the material will be placed primarily along portions of South Beach and West Beach on Bald Head Island and on **East Oak Island-Caswell Beach** beginning at a **point just east of the Carolina Power and Light Company cooling water discharge canal**. [Emphasis added]  
See SMP, Page 10.

SUBJECT: Response to VBHI Letter of June 20, 2025, re: Contract No. W912PM25CA005, Maintenance Dredging, Wilmington Harbor Bar

On page 4 of your letter, you opine that the westerly limit on our placement is “on East Oak Island-Caswell Beach beginning at a point just east of the Carolina Power and Light cooling water discharge canal.” However, given the estimated quantities of future maintenance dredging and the short distance between the cooling water discharge canal and the North Carolina Baptist Assembly property (approximately 8,000 feet), it is not reasonable to interpret our placement area to be so limited in size.<sup>1</sup> Additionally, your position that the Town of Oak Island is not to receive sand because it is west of the canal is inconsistent with the EA and the SMP. Both documents contain the following diagram that clearly identifies the extent of “East Oak Island-Caswell Beach”. See Figure 4 of the EA; and Figure 2 of the SMP.

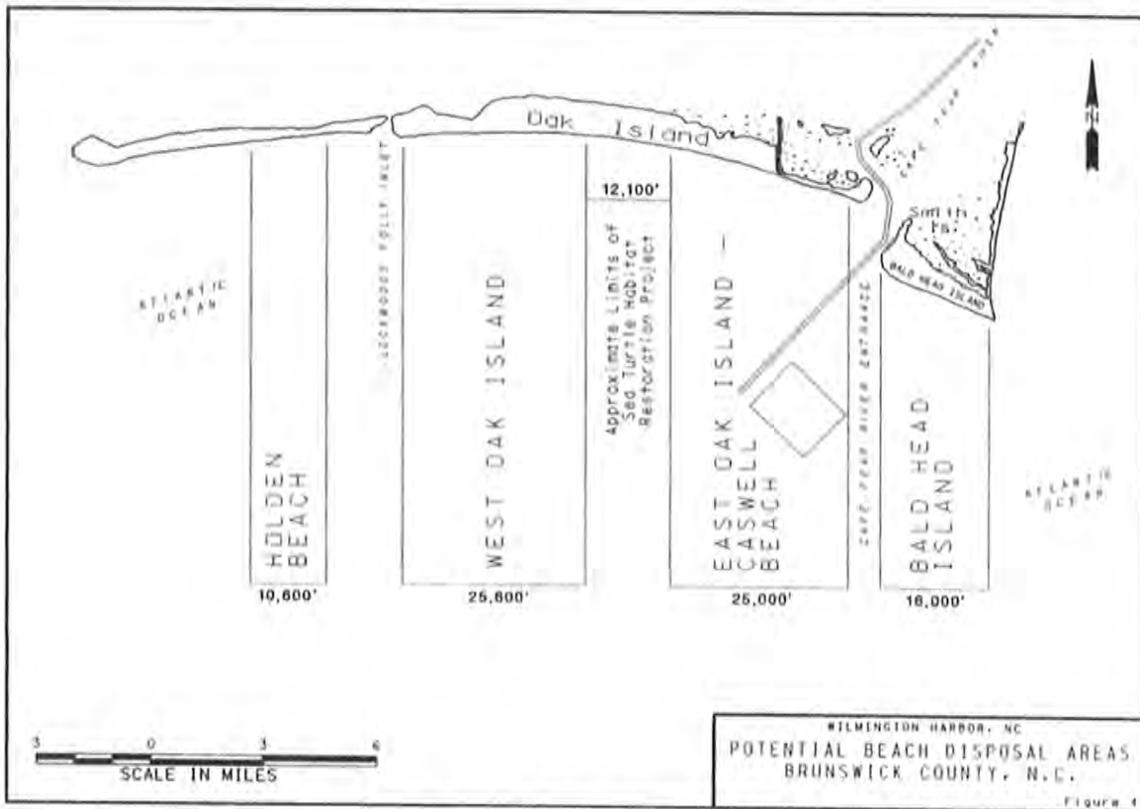


Figure 4 of the EA (the same figure is identified as Figure 2 of the SMP)

This figure shows that “East Oak Island-Caswell Beach” refers to the 25,000 feet of beach extending all the way to the Turtle Habitat Restoration Project boundary, an area that clearly extends into the Town of Oak Island. The text of the SMP also makes it clear that the cooling water discharge canal is not the western limit of the disposal area, as it states:

<sup>1</sup> By way of comparison, the placement area on VBHI is approximately 16,000 feet on South Beach, with some area on West Beach also authorized.

SUBJECT: Response to VBHI Letter of June 20, 2025, re: Contract No. W912PM25CA005, Maintenance Dredging, Wilmington Harbor Bar

Disposal on **Oak Island-Caswell Beach** would begin at the west boundary of the Fort Caswell Baptist Assembly grounds and proceed west. The 25,000-foot disposal area on **Oak Island-Caswell Beach** would extend the fill to the east end of the sea turtle habitat area on Oak Island. [Emphasis added] See SMP, Page 3.

While this referenced text is contained in the section talking about initial construction, references to both "East Oak Island-Caswell Beach" and "Oak Island-Caswell Beach" are echoed in the section discussing the Maintenance Material Disposal Plan. See SMP Page 10 ("[t]he distribution of littoral shoal material between Bald Head Island and **East Oak Island - Caswell Beach** given above will be accomplished by placing material from two consecutive maintenance operations on Bald Head Island with the third operation involving placement on **Oak Island-Caswell Beach**") and Page 11 ("[b]ased on a two year maintenance cycle, 1,090,000 cubic yards of littoral material will be placed on Bald Head Island in year 2 and year 4 following the initial deepening of the harbor with this same volume placed on **Oak Island-Caswell Beach** during the 6th year following channel deepening.")

A review of COL DeLony's letter dated June 9, 2000 also reveals that sand was intended to be placed within the same approximately 25,000 linear foot portion of Oak Island that includes portions of both the Town of Caswell Beach and the Town of Oak Island, as described in the SMP. The letter states as follows:

After construction of the Smith Island and Bald Head Island Shoal portions of the project, the US Army Corps of Engineers will conduct periodic maintenance dredging of the navigation channels. The disposal of all beach quality dredged material will be accomplished in accordance with the Environmental Assessment of Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina, dated February 2000, and its Sand Management Plan (Appendix A), and the Wilmington Harbor Monitoring Plan (enclosed and incorporated by reference). The associated disposal will be as called for therein, namely:

Year 2: Placement at Bald Head Island (estimated@ 1 Mcy)  
Year 4: Placement at Bald Head Island (estimated@ 1 Mcy)  
Year 6: Placement at **Caswell Beach and easternmost end of Oak Island** (estimated @ 1 Mcy). [Emphasis added] See DeLony letter, Page 3.

The North Carolina consistency concurrence from the North Carolina Department of Environment and Natural Resources, Division of Coastal Management (NCDENR, DCM) dated June 15, 2000, states as follows:

SUBJECT: Response to VBHI Letter of June 20, 2025, re: Contract No. W912PM25CA005, Maintenance Dredging, Wilmington Harbor Bar

We understand that disposal of dredged material from construction and maintenance of the project will be conducted **according to the SMP and letter**, as agreed to by the NC Division of Water Resources, the Brunswick County beach communities and the Corps of Engineers. [Emphasis added] See Consistency, Page 2

With this understanding, NCDENR, DCM provided their concurrence with the Corps' Consistency Determination as follows:

Based upon our review of the EA and the Corps of Engineers' response to comments, we do not disagree with your determination that the proposed construction and changes in harbor maintenance procedures are consistent with the North Carolina Coastal Management Program to the maximum extent practicable provided that the project is performed according to the EA (including the Sand Management Plan and other appendices) and the Corps' responses to comments from the EA, and to Colonel DeLony's letter of June 9, 2000 (including attachments), and that the conditions below are met. See Consistency, Page 2

While the intent of the sand management plan is to return littoral material to the beach, the primary purpose of the project is to provide safe navigation through the ocean entrance into Wilmington Harbor. SMP page 12. The Corps routinely receives appropriated funds that are allocated to the maintenance dredging of the Wilmington Harbor Federal Navigation Project, a portion of which are intended to dredge the portion of the channel identified as the Inner Ocean Bar. The Town of Oak Island expressed an interest in providing non-federal funding to enable the Corps to dredge an additional amount of material from within the authorized project dimensions. Since this is a benefit to the federal navigation mission, the Corps entered into a memorandum of agreement with the Town to fund work identified in optional bid items. The Village of Bald Head Island is very familiar with this process, as it has requested and received the same consideration. Since the additional work funded by the Town of Oak Island merely supplements the work performed by the Corps in this iteration of the Inner Ocean Bar Contract, the Corps performing the work funded accordingly is not a violation of 33 U.S.C. 408.

In conclusion, the Wilmington District, Corps of Engineers has reviewed your correspondence and determined that the Wilmington Harbor Inner Ocean Bar Contract, Contract No. W912PM25CA0005, is consistent with the Environmental Assessment (EA), the Sand Management Plan (SMP), COL DeLony's letter of June 9, 2000 and the Consistency concurrence. However, we do intend to verify that the placement of material will be limited to East Oak Island-Caswell Beach, and will modify the contract to the extent necessary to ensure that the placement does not extend into the turtle habitat restoration area.

SUBJECT: Response to VBHI Letter of June 20, 2025, re: Contract No. W912PM25CA005, Maintenance Dredging, Wilmington Harbor Bar

Sincerely,



Justin P. McCorcle  
District Counsel

Cc: Peter Quinn, Mayor, Village of Bald Head Island  
Michael Haverty, Norfolk Dredging Company  
Tancred Miller, Director, Division of Coastal Management, NC DEQ  
Cameron Luck, Division of Coastal Management, NC DEQ  
Heather Coats, Division of Coastal Management, NC DEQ  
George Kassler, Mayor, Town of Caswell Beach  
Elizabeth White, Mayor, Town of Oak Island  
Mike McIntyre, Ward & Smith  
The Honorable Thom Tillis  
The Honorable Ted Budd  
The Honorable David Rouzer



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July 18, 2025

*Via Email ([justin.p.mccorcle@usace.army.mil](mailto:justin.p.mccorcle@usace.army.mil))*

Justin P. McCorcle  
District Counsel  
Wilmington Regulatory Field Office  
69 Darlington Avenue  
Wilmington, NC 28403

Re: Contract No. W912PM25CA005, Maintenance Dredging, Wilmington Harbor Bar

Dear Justin:

Thank you for your letter dated June 30, 2025. My client, the Village of Bald Head Island (VBHI), respectfully disagrees with the conclusions reached in that letter for the reasons stated below.

When the Sand Management Plan was prepared, it addressed two issues, as alluded to but conflated in your letter: first was the initial construction of the project, and the second was the maintenance dredging of the channel, which is the subject of our current concern. Disposal of beach quality sand during the initial construction phase was pursuant to a Section 933 study and plan, under which the 25,000 feet of East Oak Island-Caswell Beach referred to in the SMP was scheduled to receive over 2,750,000 yd.<sup>3</sup> of sand at a disposal rate of 110 yd.<sup>3</sup>/foot. Table 2. Assuming it was distributed evenly along the 25,000 feet, the section east of the canal (8,000 feet) would have received 880,000 yd.<sup>3</sup>

The Maintenance Material Disposal Plan section of the SMP, beginning at section 14, first recognizes that North Carolina policy has established that “beach quality sand not be removed from the active beach system.” SMP § 16. As a result, the US Dept. of Commerce incorporated these policies into the NC Coastal Zone Management Program and the NC legislature enacted this Program. “Accordingly, the disposal plan for maintenance material removed from the Wilmington Harbor

entrance channel will attempt to satisfy these State requirements.” *Id.* Recognizing that the Wilmington Harbor project “historically, has not included the disposal of littoral sand on adjacent beaches or in the active littoral zone”, the SMP explains this as “maintenance practices that were established with the inception of the project over 100 years ago”, based on then-existing dredge technology, the lack of coastal development, and “a lack of sufficient understanding of coastal processes and the sand sharing system associated with tidal inlets and adjacent beaches.” SMP §§ 19-20. The SMP goes on to address and attempt to correct these historical mistakes by applying facts and science as the Corps then understood them<sup>1</sup> (2000) to the conditions at the channel entrance, emphasizing the importance of maintaining sand within the impacted littoral system. SMP §§ 20-22. It finds that it is “Caswell Beach” (270,000 yd.<sup>3</sup>/yr.) and Bald Head Island (527,000 yd.<sup>3</sup>/yr.) that are suffering the sand loss into the channel as part of that littoral system. SMP § 22. As the SMP points out, removal of sand from this littoral system is equivalent to removing it directly from the affected beaches. Hence, the SWP states: “In order to maintain the sediment balance on both islands, littoral material removed from the entrance channel will be **placed back on the beach from when it came.**” *Id.* (emphasis added). It is here that the section of Caswell Beach east of the canal is identified. *Id.* **There is no evidence in the SMP or your letter that the littoral system extends further west.** The intention to place sand outside the bounds of the littoral system impacted by the Project is a deviation from the SMP without an evidentiary basis.

The 8,000 feet of Caswell Beach east of the canal is more than adequate to accept the annual amounts (538,000 yd.<sup>3</sup>) projected in the SMP, which is only 63% of the amount deposited there during initial construction. If the amount to be deposited this year exceeds that amount, or if the section of Caswell Beach east of the canal does not need the amount of sand available this year, the intent of the SMP is clearly to maintain that sand within the impacted littoral system and hence it should be placed on Bald Head Island. The VBHI stands ready to cooperate in that placement, which should be at no incremental cost to the contractor, given the proximity of the beaches. If there is claimed to be a cost impact, the VBHI is equally ready to address that. In addition, the DeLony Letter (June 9, 2000) committing the Corps to comply with the SMP also provides for adjustments to the SMP if monitoring determines it necessary, which would appear to apply, especially in light of the historical monitoring data showing the sand loss ratios between Bald Head Island and Caswell beach are approximately 4:1.

Therefore, we reiterate that placement of sand pursuant to this Contract west of the canal would violate the SMP and 33 USC § 408(a) and would undermine the

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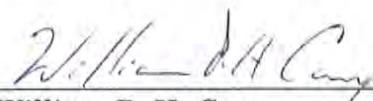
<sup>1</sup> Subsequent events, as discussed in our earlier letter, have demonstrated that the beach impacts of the WHP have been significantly greater than projected, and even the maintenance practices under the SMP have been insufficient—hence our concern that its protections not be eroded even further.

Corps's assurances that it will protect the impacted littoral system from the effects of this project and thereby comply with State law and the CZMA Program. We again ask the Norfolk Dredging Company to confirm it will not submit a Placement Plan that places sand anywhere other than on Caswell Beach east of the canal or VBHI beaches, and we ask the Corps to confirm that it will not approve any Plan other than one that is confined to Caswell Beach east of the canal and VBHI beaches.

We look forward to hearing from you on the Placement Plan. Please feel free to contact me if you have any questions or to discuss placement on Bald Head Island.

**Brooks, Pierce, McLendon, Humphrey, and Leonard, LLP,**

Attorneys for the Village of Bald Head Island

By:   
William P. H. Cary  
[bcary@brookspierce.com](mailto:bcary@brookspierce.com)  
(336)-271-3115

Cc: Colonel Brad A. Morgan, District Commander  
Michael Haverty, Norfolk Dredging Company  
Peter Quinn, Mayor, Village of Bald Head Island  
Tancred Miller, Director, Division of Coastal Management, NC DEQ  
Cameron Luck, Federal Consistency Coordinator,  
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Heather Coats, Beach & Inlet Management Project Coordinator,  
Div. of Coastal Management, NC DEQ  
George Kassler, Mayor, Town of Caswell Beach  
Elizabeth White, Mayor, Town of Oak Island  
Mike McIntyre, Ward & Smith  
The Honorable Thom Tillis  
The Honorable Ted Budd  
The Honorable David Rouzer  
Rosalind M. Shoemaker, Contracting Officer  
USACE Wilmington Regulatory Field Office



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
69 DARLINGTON AVENUE  
WILMINGTON, NORTH CAROLINA 28403-1343

CESAW-OC

September 4, 2025

SUBJECT: Response to VBHI Letter of July 18, 2025, re: Contract No. W912PM-25-CA-005, Maintenance Dredging, Wilmington Harbor Bar

William P.H. Cary, Esq.  
Attorney for the Village of Bald Head Island  
[bcary@brookspierce.com](mailto:bcary@brookspierce.com)

VIA EMAIL ONLY

Dear Mr. Cary,

The Wilmington District has reviewed your correspondence dated July 18, 2025, and we are still of the opinion that the placement of sand on East Oak Island as part of the FY26 Wilmington Inner Ocean Bar Contract is proper, and we will continue as planned. While I understand your desire to assert the Village of Bald Head Island's (VBHI's) entitlement to sand within the channel, I must remind you that the Sand Management Plan (SMP) is merely a plan for disposing of material dredged from a portion of the Wilmington Harbor federal navigation channel. The SMP is not an independent beach nourishment plan or project, and confers no rights on VBHI, Oak Island, or Caswell Beach. In operating our navigation project, we try to balance various concerns, as acknowledged in the SMP as follows: "*[w]hile the intent of the sand management plan is to return littoral material to the beach, the primary purpose of the project is to provide safe navigation through the ocean entrance into Wilmington Harbor.*"

During each maintenance operation, there is more sand in the federal navigation channel than we have available funding to dredge. Therefore, decisions related to the work conducted are made on the basis of navigation needs and available funding. The local communities of VBHI and Oak Island have often provided non-federal funding to pay for additional dredging with placement of material on their respective beaches, which is in the interest of the federal navigation mission. The maintenance dredging project continues to be consistent with the enforceable policies of the NC Coastal Management Plan. As stated in detail in my last correspondence, this contract also is in complete compliance with the Environmental Assessment (EA), the Sand Management Plan (SMP), and applicable environmental and project commitments.

A goal of the SMP, as you have noted, is to return littoral material to the beaches from whence it came in a proportion commensurate with the loss rates identified. These rates historically worked out to approximately 2/3 of the losses to the channel experienced on

SUBJECT: Response to VBHI Letter of July 18, 2025, re: Contract No. W912PM-25-CA-005, Maintenance Dredging, Wilmington Harbor Bar

the Bald Head Island side, and 1/3 on the Oak Island side. The SMP states that “[b]ased on a two year maintenance cycle, 1,090,000 cubic yards of littoral material will be placed on Bald Head Island in year 2 and year 4 following the initial deepening of the harbor with this same volume placed on Oak Island-Caswell Beach during the 6<sup>th</sup> year following channel deepening.” While funding has not always allowed us to dredge every two years, we have maintained this basic cycle, now in its third full iteration. VBHI has received material on six occasions, including each of the two most recent events. It is now Oak Island/Caswell Beach’s turn, and this placement will successfully complete another cycle.

Your letters seek to constrain our placement of material on the Oak Island/Caswell Beach side of the channel, ostensibly to limit our placement of material there and maximize the amount of material VBHI will receive either now or in the future. In your more recent letter, you point to the volumes placed on Oak Island during initial construction as an indication that this small stretch of beach can hold large volumes of material, up to 880,000 cy in the estimation of your engineer. Actual volumes were not placed in this amount. Under the initial deepening contract, on the order of 5 million cubic yards of sediment (in-place beach volume measurement) were placed on Brunswick County beaches. Of this total and within the limits of the sand management zone, Bald Head Island received 1,849,000 cubic yards between February-July 2001. Oak Island/Caswell Beach then received a total of 1,181,800 cubic yards between July-August 2001, extending to station 294+00, an area of approximately 23,000 feet with a 4,000-foot gap. As indicated in the table, the balance of new work dredged material went to western Oak Island (1,269,800 cubic yards) and Holden Beach (501,400 cubic yards).

LOCATION	PLACEMENT LIMITS			PLACEMENT DATES		BEACH VOLUME (INPLACE)
	APPROX BL STA	NORTHING (ft, NAD83)	EASTING (ft, NAD83)	START	STOP	
Bald Head Island	41+60	43,692.25	2,300,542.01	2/23/2001		1,849,000
	205+50	35,750.21	2,314,236.42		7/4/2001	
Caswell Beach	60+00	52,126.62	2,295,138.57	7/5/2001		133,200
	80+00	52,847.44	2,292,954.85			
Oak Island East	121+00	53,711.05	2,289,255.43			1,048,600
	294+00	58,418.34	2,272,322.77		8/12/2001	
Oak Island West	415+00	60,332.24	2,260,537.66	8/13/2001		1,269,800
	665+50	59,778.68	2,235,486.44		4/25/2002	

SUBJECT: Response to VBHI Letter of July 18, 2025, re: Contract No. W912PM-25-CA-005, Maintenance Dredging, Wilmington Harbor Bar

Holden Beach	84+00	60,092.96	2,222,254.95	12/9/2001		501,400
	195+00	58,820.26	2,211,433.72		2/20/2002	

**Table 1 – Initial Construction**

Historical placement of material on both the VBHI side and the Oak Island side in the past two cycles has ranged between roughly 1.1M-1.5M cy of material in total, a larger volume of material than good engineering would support being placed on the small stretch of beach in Caswell Beach that you wish to constrain us to.

You also state as evidence for the constrained placement area the language from the SMP discussing losses of sand to the channel from Caswell Beach, which you apparently take to imply that Oak Island is not also suffering losses toward the channel. I find this to be an unduly narrow reading of the language and context of the SMP. Because Caswell Beach sits next to the channel, *only* Caswell Beach can suffer losses *directly to the channel*. That does not mean that losses experienced on Oak Island, with the sand moving east toward the channel, are not also important to the littoral system. It is important to note that the SMP consistently references Oak Island *and* Caswell Beach as the placement area. For example, the SMP states: “[t]he distribution of littoral shoal material between Bald Head Island and **East Oak Island - Caswell Beach** given above will be accomplished by placing material from two consecutive maintenance operations on Bald Head Island with the third operation involving placement on **Oak Island-Caswell Beach**.” [Emphasis added] I do not find that the SMP language that you cited states, either explicitly or implicitly, that Oak Island/East Oak Island is not in the littoral system, and I cannot support an artificial restriction of the placement area that does not fit with the general context of the project, the plan, and navigational needs.

In both of your letters, you claim that the United States, through issuance of a dredging contract which includes placement of dredged material in a location to which you object, is in violation of 33 USC § 408. This allegation is misplaced; the United States cannot be considered a “person” under § 408. The law protects the United States from injuries to navigation or civil works projects from persons operating outside our permission. Courts have consistently applied a presumption that the term “person” in federal statutes does not include the sovereign unless there is some clear evidence to the contrary, which is not found in this instance.

Finally, I must respectfully request that that you direct your communications to the District rather than our contractor. Such communications directed toward the contractor could constitute improper interference with the contract, potentially resulting in adverse effects to the economic interests of the Corps and disruption of the operation and maintenance of the federal navigation project. Our contractor has no independent ability to alter the placement area for the contract.

SUBJECT: Response to VBHI Letter of July 18, 2025, re: Contract No. W912PM-25-CA-005, Maintenance Dredging, Wilmington Harbor Bar

While we appreciate the partnership we have shared with VBHI in previous dredging and placement events, we respectfully but firmly state that we are operating within our established and approved plans, and plan to proceed as indicated in the fall.

Sincerely,



Justin P. McCorcle  
District Counsel

Cc: Peter Quinn, Mayor, Village of Bald Head Island  
Michael Haverty, Norfolk Dredging Company  
Tancred Miller, Director, Division of Coastal Management, NC DEQ  
Cameron Luck, Division of Coastal Management, NC DEQ  
Heather Coats, Division of Coastal Management, NC DEQ  
George Kassler, Mayor, Town of Caswell Beach  
Elizabeth White, Mayor, Town of Oak Island  
Mike McIntyre, Ward & Smith  
Charles S. Baldwin IV, Brooks Pierce

**ATTACHMENT L**  
**VILLAGE OF BALD HEAD ISLAND COMMENTS**  
**12 DEC. 2025**

**FOTH SUPPLEMENTAL REPORT**



## MEMORANDUM

Foth Infrastructure & Environment, LLC  
2618 Herschel Street  
Jacksonville, FL 32204  
(904) 387-6114

December 12, 2025

TO: The Village of Bald Head Island

FROM: Chris Creed, P.E.

RE: Supplemental Information to the 30-October-2025  
Review of Wilmington Harbor 403 Letter Report and Draft Environmental Impact  
Statement for the Village of Bald Head Island

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This technical memorandum serves as a supplement to the Foth Infrastructure & Environment, LLC review dated 30-October-2025 of the Wilmington Harbor 403 Letter Report and Draft Environmental Impact Statement (DEIS). This supplement focuses on the use and shortcomings of the GenCade model for the applied analysis. Several important points regarding the use of GenCade are noted below:

- 1.) The DEIS attempts to predict project related impacts to the shoreline adjacent to the project using the USACE model GenCade. The USACE Model Theory and User's Guide for the GenCade model (USACE, 2012) specifically states:

*"GenCade is a one-line model that is constrained by the standard assumptions upon which this type of model is based. These assumption are:*

- *The beach profile shape remains constant;*
- *The shoreward and seaward depth limits of the profile are constant;*
- *Sand is transported alongshore by the action of breaking waves and longshore currents; and*
- *The detailed structure of the nearshore circulation is ignored."*

For the area where the model is applied along Bald Head Island, each of these conditions upon which the model is based do not exist. For example, the beach profile shape along the southern shoreline varies significantly as the shoreline transitions from east to west toward the Cape Fear River. Likewise, the seaward depth limit along this reach of this island is not constant and varies significantly as the shoreline transitions from the open coast to the deep Cape Fear River. Sediment transport along the area that will be impacted most by the proposed project is affected by the combined effects of breaking waves, longshore currents, and the tidal flows of the Cape Fear River.

2.) In addition, while GenCade accounts for changes in the incident wave climate, it does not incorporate several critical physical processes that govern sediment transport along Bald Head Island. These omitted processes include:

- Inlet morphodynamics
- Wave-current interactions
- Sediment scour, resuspension, and deposition within the channel
- Slope avalanching
- Morphological feedback mechanisms

The exclusion of these processes represents a significant oversimplification of the sediment transport system in this region and the proposed project's potential impact to the Bald Head Island beach and dune system.

3.) The GenCade model calibration utilized a median sediment grain size of 0.25 mm, which differs from the values used in other modeling efforts: 0.20 mm in the Delft3D model and 0.38 mm in the ship wake analysis. The DEIS does not provide a rationale for this inconsistency in a key model parameter which dictates sediment transport potential – smaller grain sizes equate to higher transport rates, and vice-versa. The GenCade model was subsequently used to estimate sediment transport rates along Bald Head Island and reported the following (DEIS p. B-163):

*“Based on the modeling, there is a net westerly transport of 50,000 cubic yards per year toward the Cape Fear River and a net easterly transport of 300,000 cubic yards per year.”* These results are presented in Figure 8-6 of the DEIS, reproduced below, see **Figure 1**. Based on the narrative in the DEIS (partially quoted above), positive values represent westerly directed transport (towards Cape Fear Inlet) while negative values reflect easterly directed sediment transport.

4.) Further, the 2025 Physical Monitoring Report for the Bald Head Island renourishment project, prepared by Foth Infrastructure & Environment, LLC<sup>1</sup>, provides updated long-term sediment transport estimates. Using survey data from November 2000 through May 2025, the report concludes that measured net transport along western Bald Head Island averages 280,400 cy/yr over the last 25 years. For reference, **Figure 2** is excerpted from Foth's 2025 monitoring report. The blue dashed line represents measured sediment transport rates from the terminal groin to STA 118+00 (i.e., western portion of South Beach), while the black line reflects the full monitored shoreline.

In short, the sediment transport rates computed by GenCade are more than five and a half times lower than those derived from long-term, measured beach profile surveys.

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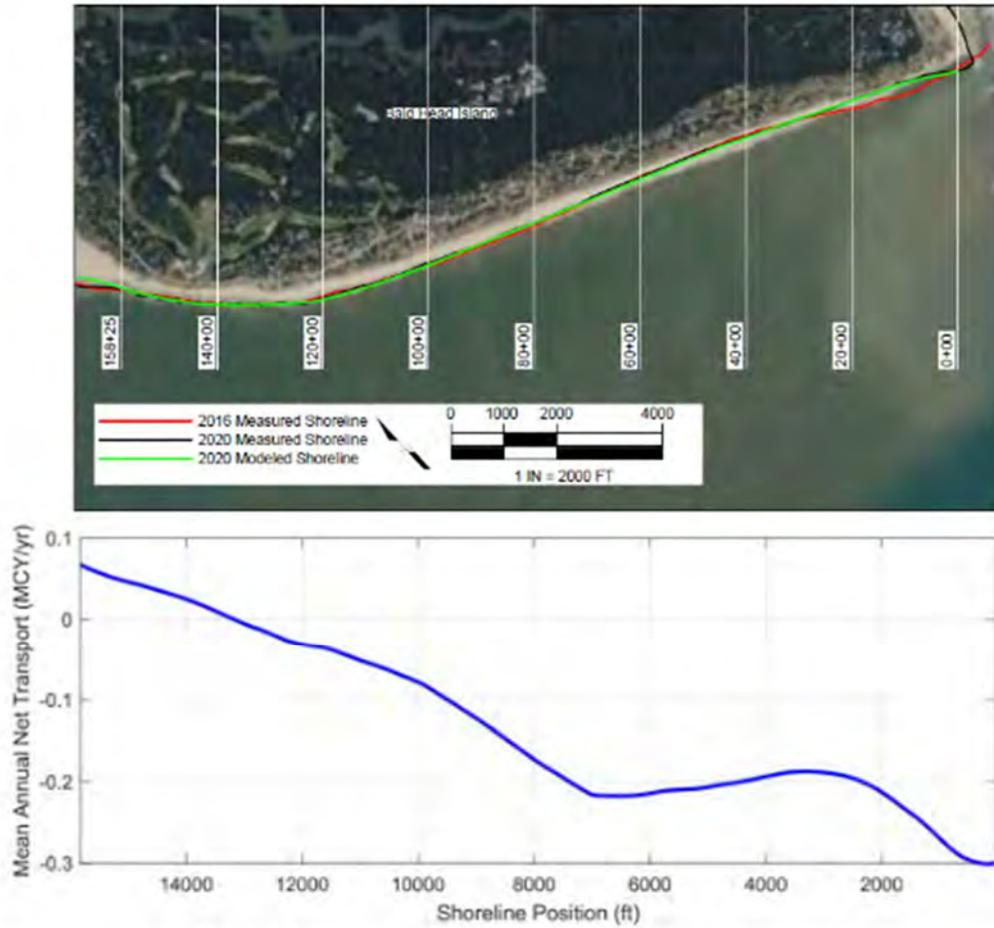
<sup>1</sup> Foth (2025). "Village of Bald Head Island; Beach Monitoring Program, Report No. 23 (April 2024 to May 2025)", Report Prepared for Village of Bald Head Island. Foth Infrastructure & Environment, LLC, 2618 Herschel St., Jacksonville, FL 32204. 62 pp plus app. (November 2025, not yet published).

This discrepancy underscores the GenCade model's inability to reliably estimate sediment transport along Bald Head Island. As presented in the DEIS, the GenCade model is not capable of accurately computing sediment transport along Bald Head Island nor the potential project related effects to the island. The model should be deemed inappropriate for this use and unreliable in terms of assessing impacts to said shoreline.

- 5.) The DEIS mischaracterizes prior work by other consultants to support a poorly calibrated GenCade model. The DEIS references a prior study by Olsen Associates, Inc. (2012) as supporting the magnitude and pattern of transport computed by the GenCade model. However, this citation is inaccurate. The Olsen report describes measured sediment transport along the western portion of Bald Head Island as being directed westward, with rates "*ranging between -278,200 and -355,600 cy/yr, based on best-fit analysis of available data* (Olsen Associates, 2012, p. 95)". The Olsen (2012) estimates of sediment transport differ significantly from the published GenCade result of 50,000 cy/yr directed westward (**Figure 1**).

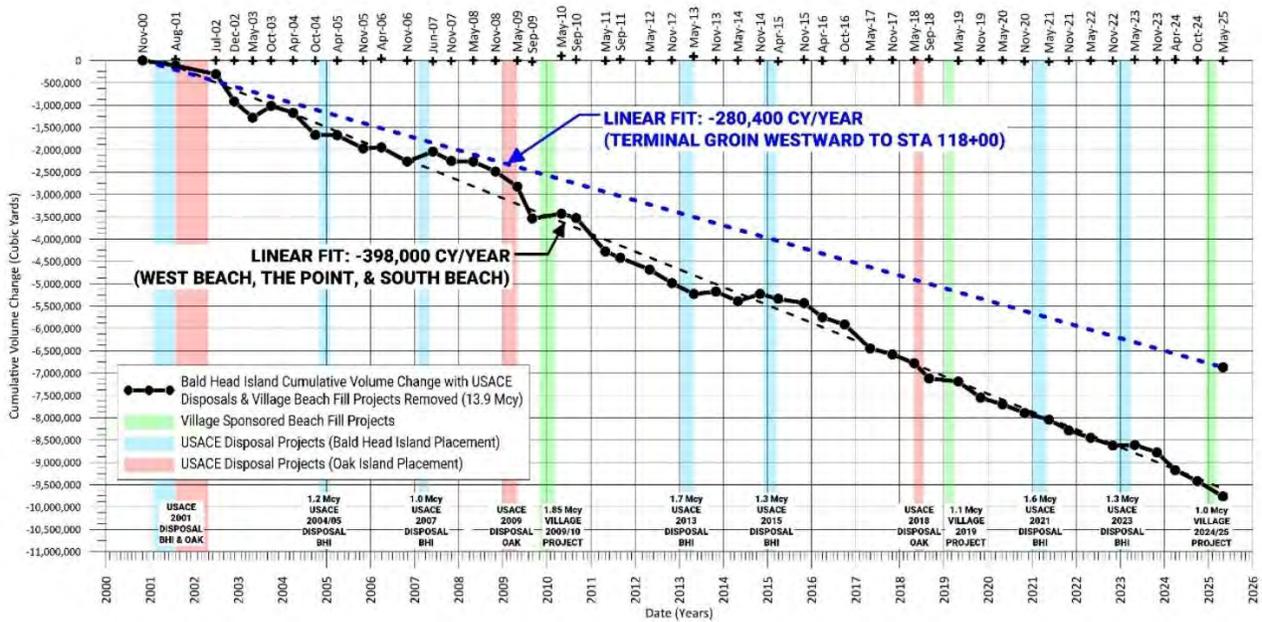
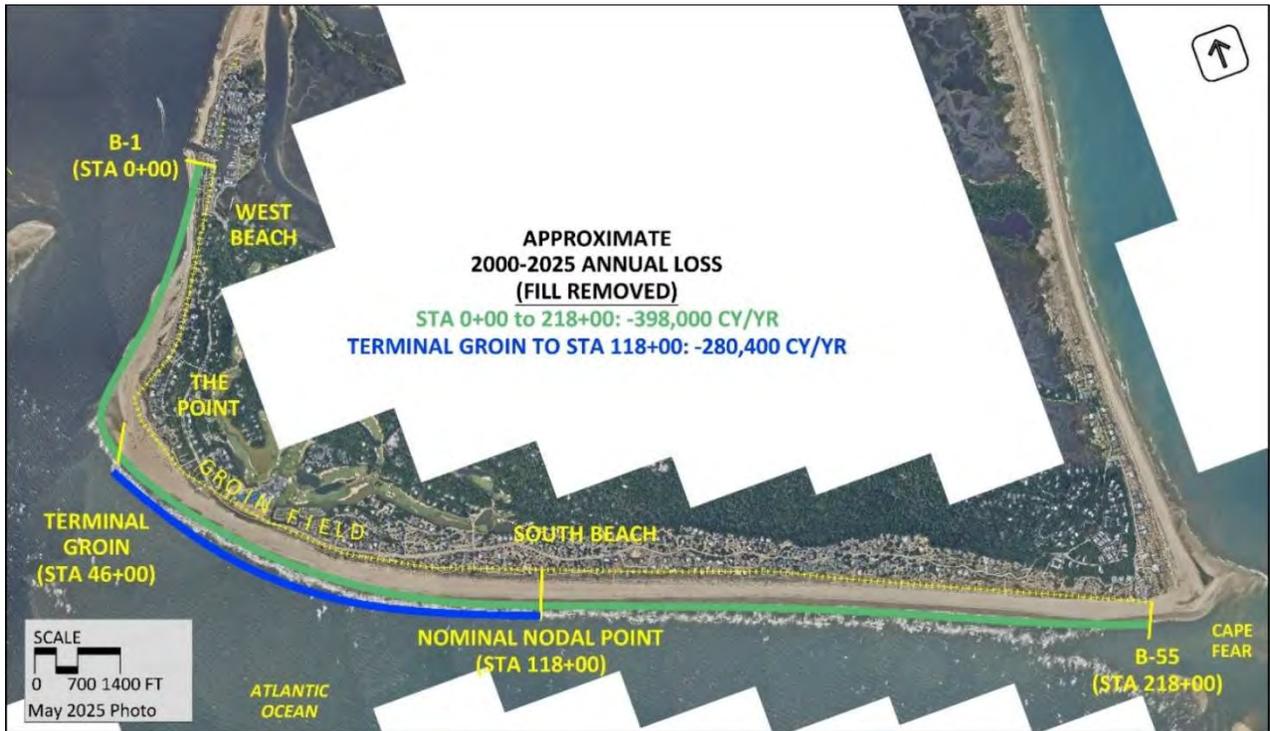
## **CLOSING**

The application of GenCade at this location and for this purpose is inappropriate for the intended use and the results are misleading. Fundamentally, the GenCade model cannot represent the hydrodynamic, sediment transport, and morphological processes that affect the Bald Head Island shoreline and the changes to the same will be produced by the proposed project. As such, results from the model cannot be used or relied upon to or drive project design decision making or conduct an impact assessment of the Bald Head Island shoreline.



**Figure 8-6 Modeled net annual sediment transport along BHI.**

**Figure 1:** Location map from DEIS Fig 8-5 (above) and sediment transport from DEIS Fig 8-6 (below).



**Figure 2:** Location map (above) and sediment transport rates (below) along Bald Head Island as reported by Foth (2025, to be published).

## References

Foth (2025), "*Village of Bald Head Island; Beach Monitoring Program, Report No. 23 (April 2024 to May 2025)*", Report Prepared for Village of Bald Head Island. Foth Infrastructure & Environment, LLC, 2618 Herschel St., Jacksonville, FL 32204. 62 pp plus app. (November 2025).

Olsen Associates, Inc. (2012), "*Calibration of a Delft3D model for Bald Head Island and the Cape Fear River Entrance, Phase I*", Report Prepared for Village of Bald Head Island. Foth Infrastructure & Environment, LLC (FKA, Olsen Associates, Inc.), 2618 Herschel St., Jacksonville, FL 32204. (2025).

USACE (1999), "*Wave Climate and Littoral Sediment Transport Potential, Cape Fear River Entrance and Smith Island to Ocean Isle Beach, North Carolina*" Technical Report CHL-99-18, U.S. Army Corps of Engineers (September 1999).

**ATTACHMENT M**  
**VILLAGE OF BALD HEAD ISLAND COMMENTS**  
**12 DEC. 2025**

**RESOLUTIONS OF CITY OF SOUTHPORT  
AND VILLAGE OF BALD HEAD ISLAND**



**Resolution #25-1202.01**

**A RESOLUTION OF THE SOUTHPORT BOARD OF ALDERMEN URGING ROBUST MITIGATION, LONG-TERM MONITORING, AND ADAPTIVE MANAGEMENT FOR THE WILMINGTON HARBOR 403 PROJECT**

**WHEREAS**, the City of Southport is located at the confluence of the Cape Fear River and the Atlantic Ocean, a uniquely sensitive estuarine environment that supports diverse wildlife, coastal communities, and natural systems; and

**WHEREAS**, the proposed Wilmington Harbor 403 Project seeks to deepen, widen, or otherwise modify the federal navigation channel, changes that may significantly alter hydrodynamic patterns, sediment transport, and shoreline stability in the Lower Cape Fear River region; and

**WHEREAS**, these alterations have the potential to increase erosion risk to sensitive shorelines, marsh platforms, and riverfront areas, and increase the likelihood of subsidence of adjacent riverbed and shoreline areas into the dredge prism, particularly within and adjacent to the City of Southport, threatening natural buffers that protect homes, public spaces, cultural resources, and community infrastructure; and

**WHEREAS**, the region's barrier and estuarine islands—including Battery Island, Shellbed Island, and others—play a critical ecological role in supporting fisheries, marsh nurseries, colonial waterbirds, and migratory shorebirds; and

**WHEREAS**, Battery Island in particular is recognized as one of the most significant colonial waterbird nesting sites on the East Coast, and in total all bird nesting islands on the Lower Cape Fear River provide habitat for approximately 30% of North Carolina's nesting coastal waterbird population, and are highly vulnerable to erosion, sea level rise, and habitat loss that may be exacerbated by channel deepening activities; and

**WHEREAS**, the environment surrounding Southport is an essential part of the city's core values, contributing to residents' quality of life, recreational enjoyment, cultural heritage, and long-standing community identity rooted in conservation and stewardship; and

**WHEREAS**, the economic resilience of Southport is directly connected to the integrity of its surrounding natural resources, with tourism, recreation, waterfront businesses, and property values all depending on a healthy, stable coastal environment; and

**WHEREAS**, any federal navigation project that increases environmental risk must include robust mitigation, long-term monitoring, and adaptive management measures proportionate to both the scale of the project and the sensitivity of the affected ecosystems and communities; and

**WHEREAS**, the billion-dollar Savannah Harbor Expansion Project (SHEP) spent approximately 500 million on mitigation and included funding for post-construction monitoring and adaptive management, ensuring that resources would be available to modify or enhance mitigation if environmental conditions changed unexpectedly; and

**WHEREAS**, the non-federal sponsor for SHEP, acting through the Georgia Ports Authority, agreed to set aside, in advance, their cost-shared portion of the monitoring and adaptive

management funds in an escrow account upon approval of the project, guaranteeing rapid response capability and honoring the principle that those benefiting from the project must share responsibility for preventing or repairing environmental harm; and

**WHEREAS**, projects such as the Wilmington Harbor 403 effort must match or exceed this level of commitment by establishing a dedicated and adequately funded adaptive management program that extends over the full period of environmental risk, not only the construction phase or initial years of project operation; and

**WHEREAS**, safeguarding Southport's environment, wildlife habitats, and economic well-being requires that mitigation and monitoring measures be both enforceable and financially secure before any project authorization or construction proceeds;

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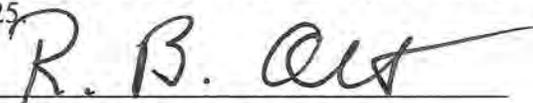
**NOW, THEREFORE, BE IT RESOLVED** that the City of Southport urges state and federal decision-makers, including the U.S. Army Corps of Engineers and the North Carolina General Assembly, to require a **comprehensive, long-term, and fully funded environmental mitigation and adaptive management plan** for the Wilmington Harbor 403 Project, modeled on or exceeding the commitments made in the Savannah Harbor Expansion Project; and

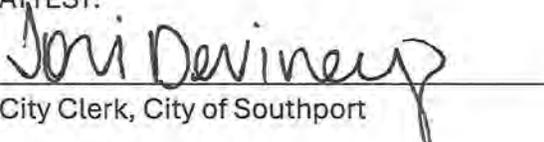
**BE IT FURTHER RESOLVED** that the City of Southport calls for the establishment of a **dedicated adaptive management fund**, placed in escrow prior to construction and sized proportionally to the project's potential impacts, ensuring that corrective actions, ecological restoration, and shoreline protections can be implemented promptly whenever monitoring indicates environmental degradation; and

**BE IT FURTHER RESOLVED** that the City of Southport urges all agencies and project sponsors to protect Battery Island and the surrounding Cape Fear River islands as irreplaceable ecological assets, ensuring that mitigation measures fully safeguard the habitats supporting 30% of North Carolina's coastal shorebird population; and

**BE IT FINALLY RESOLVED** that copies of this Resolution be forwarded to the North Carolina General Assembly, the North Carolina Congressional Delegation, the U.S. Army Corps of Engineers, the North Carolina Department of Environmental Quality, the Brunswick County delegation, and other relevant agencies, urging their support in ensuring that environmental protection, community values, and economic resilience remain at the forefront of all decisions related to the Wilmington Harbor 403 Project.

Approved and adopted by the City of Southport Board of Aldermen on this 2<sup>nd</sup> of December 2025

  
\_\_\_\_\_  
Mayor, City of Southport

ATTEST:  
  
\_\_\_\_\_  
City Clerk, City of Southport





Resolution # 2025- 1207

**A RESOLUTION OF THE VILLAGE OF BALD HEAD ISLAND COUNCIL URGING  
ROBUST MITIGATION, LONG-TERM MONITORING, AND ADAPTIVE  
MANAGEMENT FOR  
THE WILMINGTON HARBOR 403 PROJECT**

**WHEREAS**, Bald Head Island is located at the confluence of the Cape Fear River and the Atlantic Ocean, a uniquely sensitive estuarine environment that supports diverse wildlife, coastal communities, and natural systems; and

**WHEREAS**, the proposed Wilmington Harbor 403 Project seeks to deepen, widen, or otherwise modify the federal navigation channel; and

**WHEREAS**, earlier Harbor deepening projects have caused extensive damage to Bald head Island and its protective shoals, requiring the Village of Bald Head Island to expend millions of dollars of public funds to alleviate the harm; and

**WHEREAS**, after consultation with respected experts, it appears highly probable that the Wilmington Harbor 403 Project will continue to significantly alter hydrodynamic patterns, sediment transport, and shoreline stability in the Lower Cape Fear River region and the ocean front at Bald Head Island, to the continuing detriment of the Village and Island; and

**WHEREAS**, these Project impacts are likely to increase erosion risk to sensitive shoals, shorelines, marsh platforms, and riverfront areas, and increase the likelihood of subsidence of adjacent shoreline areas into the dredge prism, particularly along the ocean beaches at Bald Head where severe erosion has been experienced from the prior projects, threatening natural buffers that protect homes, public spaces, cultural resources, and community infrastructure; and

**WHEREAS**, experience since the last deepening project has shown that the periodic maintenance dredging of the Channel likewise has deleterious impacts to the adjacent shoals, shorelines, beaches and dunes, such that Project impacts can be expected to persist for the full fifty-year life of the Project; and

**WHEREAS**, the region's waters and barrier and estuarine islands play a critical ecological role in supporting threatened and endangered species of sea turtles, fisheries, marsh nurseries, colonial waterbirds, and migratory shorebirds; and

**WHEREAS**, those sensitive areas provide important habitat for numerous species, including sea turtles and approximately 30% of North Carolina's nesting coastal waterbird population, and are highly vulnerable to erosion, sea level rise, and habitat loss that may be exacerbated by channel deepening activities; and

**WHEREAS**, the ocean environment, beaches, and dunes at Bald Head are an essential part of the Island's core values, contributing to residents' quality of life, recreational enjoyment, cultural heritage, and longstanding community identity rooted in conservation and stewardship; and

**WHEREAS**, the economic resilience of the Village is directly connected to the integrity of its surrounding natural resources, with tourism, recreation, waterfront businesses, and property values all depending on a healthy, stable coastal environment; and

**WHEREAS**, any federal navigation project that increases environmental risk must include robust mitigation, long-term monitoring, and adaptive management measures proportionate to both the scale of the project and the sensitivity of the affected ecosystems and communities; and

**WHEREAS**, the billion-dollar Savannah Harbor Expansion Project (SHEP) spent approximately \$500 million on mitigation and included funding for post-construction monitoring and adaptive management, ensuring that resources would be available to modify or enhance mitigation if environmental conditions changed unexpectedly; and

**WHEREAS**, the non-federal sponsor for SHEP, acting through the Georgia Ports Authority, agreed to set aside, in advance, their cost-shared portion of the monitoring and adaptive management funds in an escrow account upon approval of the project, guaranteeing rapid response capability and honoring the principle that those benefiting from the project must share responsibility for preventing or repairing environmental harm; and

**WHEREAS**, projects such as the Wilmington Harbor 403 effort must match or exceed this level of commitment by establishing a dedicated and adequately funded adaptive management program that extends over the full period of environmental risk—i.e., the life of the Project—not only the construction phase or initial years of Project operation; and

**WHEREAS**, following the last deepening project, the Village learned the expensive lesson that unfunded assurances of remediation for project impacts may not be legally enforceable, leaving the Village with the financial burden of funding the needed remediation; and

**WHEREAS**, safeguarding Bald Head's environment, wildlife habitats, and economic well-being therefore requires that mitigation and monitoring measures be both enforceable and financially secure before any project authorization or construction proceeds.

**NOW, THEREFORE, BE IT RESOLVED** that the Village of Bald Head Island urges state and federal decision-makers, including the U.S. Army Corps of Engineers and the North Carolina General Assembly, to require a **comprehensive, long-term, and fully funded environmental mitigation and adaptive management plan** for the Wilmington Harbor 403 Project, modeled on or exceeding the commitments made in the Savannah Harbor Expansion Project; and

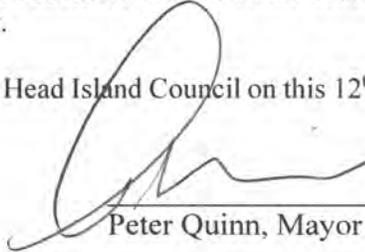
**BE IT FURTHER RESOLVED** that the Village of Bald Head Island calls for the establishment of a **dedicated adaptive management fund**, placed in escrow prior to construction and sized proportionally to the Project's potential impacts, ensuring that corrective actions, ecological restoration, and shoreline protections can be implemented promptly whenever monitoring indicates environmental degradation; and

**BE IT FURTHER RESOLVED** that the Village of Bald Head Island urges all agencies and project sponsors to protect all Bald Head Island and Cape Fear River areas of environmental

concern as irreplaceable ecological assets, ensuring that mitigation measures fully safeguard those resources; and

**BE IT FINALLY RESOLVED** that copies of this Resolution be forwarded to the North Carolina General Assembly, the North Carolina Congressional Delegation, the U.S. Army Corps of Engineers, the North Carolina Department of Environmental Quality, the Brunswick County delegation, and other relevant agencies, urging their support in ensuring that environmental protection, community values, and economic resilience remain at the forefront of all decisions related to the Wilmington Harbor 403 Project.

Approved and adopted by the Village of Bald Head Island Council on this 12<sup>th</sup> of December 2025.



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Peter Quinn, Mayor

ATTEST:



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Darcy Sperry, Village Clerk

