

## **APPENDIX D**

### **SECTION 404(b)(1) GUIDELINES ANALYSIS**

#### **Wrightsville Beach Coastal Storm Risk Management**

#### **Emergency Repair – Evaluation of Borrow Area Alternatives**

#### **New Hanover County, North Carolina**

**JANUARY 2023**



Prepared by:

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# Wrightsville Beach Coastal Storm Risk Management Project

## New Hanover County, North Carolina

### Preliminary Evaluation of Section 404 (b) (1) Guidelines 40 CFR 230

This evaluation covers the placement of all fill material into waters and wetlands of the United States required for the emergency repair of Wrightsville Beach, New Hanover County, North Carolina. The proposed project plans to place offshore sediment on the ocean beach of Wrightsville Beach. Please note, prior to any construction, the required Section 401 Water Quality Certificates from the NC Division of Water Quality will be obtained for the project and all conditions/restrictions will be complied with.

- |  | Preliminary <u>1/</u>   | Final <u>2/</u>  |
|--|---|--|
| 1. <u>Review of Compliance (230.10(a)-(d))</u><br>A review of the NEPA Document indicates that:  |   |  |
| a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and NEPA document);   | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>   | YES <input type="checkbox"/> NO <input type="checkbox"/> |
| b. The activity does not:<br>1) violate applicable State water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of federally listed endangered or threatened species or their habitat; and 3) violate requirements of any federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies); | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>   | YES <input type="checkbox"/> NO <input type="checkbox"/> |
| c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organism's dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2);   | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>   | YES <input type="checkbox"/> NO <input type="checkbox"/> |
| d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 3.03).  | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> * | YES <input type="checkbox"/> NO <input type="checkbox"/> |

2. Technical Evaluation Factors (Subparts C-F)

**N/A      Not Significant      Significant**

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)

- (1) Substrate impacts.
- (2) Suspended particulates/turbidity impacts.
- (3) Water column impacts.
- (4) Alteration of current patterns and water circulation.
- (5) Alteration of normal water fluctuations/hydroperiod.
- (6) Alteration of salinity gradients.

	X	
	X	
	X	
	X	
NA		
NA		

b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)

- (1) Effect on threatened/endangered species and their habitat.
- (2) Effect on the aquatic food web.
- (3) Effect on other wildlife (mammals birds, reptiles, and amphibians).

	X	
	X	
	X	

c. Special Aquatic Sites (Subpart E)

- (1) Sanctuaries and refuges.
- (2) Wetlands.
- (3) Mud flats.
- (4) Vegetated shallows.
- (5) Coral reefs.
- (6) Riffle and pool complexes.

NA		
NA		
NA		
NA		
NA		
NA		

d. Human Use Characteristics (Subpart F)

- (1) Effects on municipal and private water supplies.
- (2) Recreational and commercial fisheries impacts
- (3) Effects on water-related recreation.
- (4) Aesthetic impacts.
- (5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

NA		
	X	
	X	
	X	
	X	

3. Evaluation of Dredged or Fill Material (Subpart G) 3/

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)

- |  |                                     |
|--|-------------------------------------|
| (1) Physical characteristics   | <input checked="" type="checkbox"/> |
| (2) Hydrography in relation to known or anticipated sources of contaminants  | <input type="checkbox"/>            |
| (3) Results from previous testing of the material or similar material in the vicinity of the project   | <input checked="" type="checkbox"/> |
| (4) Known, significant sources of persistent pesticides from land runoff or percolation  | <input type="checkbox"/>            |
| (5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances   | <input type="checkbox"/>            |
| (6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources   | <input checked="" type="checkbox"/> |
| (7) Known existence of substantial material deposits of substances, which could be released in harmful quantities to the aquatic environment by man-induced discharge activities | <input type="checkbox"/>            |
| (8) Other sources (specify).   | <input type="checkbox"/>            |

b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to result in degradation of the disposal site.\*

YES  NO \*

Proceed to Section 4

4. Disposal Site Determinations (230.11(f)).

a. The following factors as appropriate, have been considered in evaluating the disposal site.

- |  |                                     |
|--|-------------------------------------|
| (1) Depth of water at disposal site  | <input checked="" type="checkbox"/> |
| (2) Current velocity, direction, and variability at disposal site                                      | <input checked="" type="checkbox"/> |
| (3) Degree of turbulence   | <input checked="" type="checkbox"/> |
| (4) Water column stratification  | <input checked="" type="checkbox"/> |
| (5) Discharge vessel speed and direction   | <input checked="" type="checkbox"/> |
| (6) Rate of discharge  | <input checked="" type="checkbox"/> |
| (7) Dredged material characteristics (constituents, amount and type of material, settling velocities). | <input checked="" type="checkbox"/> |
| (8) Number of discharges per unit of time  | <input checked="" type="checkbox"/> |
| (9) Other factors affecting rates and patterns of mixing (specify)                                     | <input checked="" type="checkbox"/> |

Reference: Draft Environmental Assessment, Wrightsville Beach Coastal Storm Risk Management Emergency Repair using Offshore Borrow Areas, New Hanover County, North Carolina, October 2022.

b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable.

YES  NO \*

5. Actions to Minimize Adverse Effects (Subpart H).

All appropriate and practicable steps have been taken, through application of recommendations of 230.70-230.77, to ensure minimal adverse effects of the proposed discharge.

YES  NO \*

6. Factual Determinations (230.11).

A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge as related to:

- |   |   |                               |
|---|---|-------------------------------|
| a. Physical substrate at the disposal site<br>(review sections 2a, 3, 4, and 5).      | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |
| b. Water circulation, fluctuation, and salinity<br>(review sections 2a, 3, 4, and 5). | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |
| c. Suspended particulates/turbidity<br>(review sections 2a, 3, 4, and 5).             | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |
| d. Contaminant availability<br>(review sections 2a, 3, and 4).                        | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |
| e. Aquatic ecosystem structure and function<br>(review sections 2b and c, 3, and 5).  | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |
| f. Disposal site<br>(review sections 2, 4, and 5).                                    | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |
| g. Cumulative impact on the aquatic<br>ecosystem.                                     | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |
| h. Secondary impacts on the aquatic<br>ecosystem.                                     | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> * |

7. Findings.

- a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines
  
- b. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions:
  
- c. The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) guidelines for the following reasons(s):
  - (1) There is a less damaging practicable alternative.
  
  - (2) The proposed discharge will result in significant degradation of the aquatic ecosystem
  
  - (3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem.

8.

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Benjamin A. Bennett  
Colonel, U.S. Army  
District Engineer

Date \_\_\_\_\_

Date \_\_\_\_\_

\*A negative, significant, or unknown response indicates that the permit application may not be in compliance with the Section 404(b)(1) Guidelines.