US Army Corps
of Engineers ®
Wilmington District

General Re-evaluation Report and Environmental Assessment
Surf City, Onslow and Pender Counties, North Carolina
Coastal Storm Risk Management Project

Appendix I: Section 404(b)(1) Analysis

Final

February 2025

Surf City Coastal Storm Risk Management Project

Pender and Onslow 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 construction and maintenance of the Surf City Coastal Storm Risk Management project, Pender and Onslow County, North Carolina. The Recommended Plan is the Least Environmentally Damaging Practicable Alternative and consists of a dune constructed to an elevation of 14 feet (North Atlantic Vertical Datum 1988 (NAVD 88) and a 25 ft wide dune crest, fronted by a 50 ft wide berm at an elevation of 6 feet (NAVD 88). The length of the project would be restricted to the town limits of Surf City, approximately 33,300 ft or 6 miles. The project would also include a 1000-foot transition berm in northern end of the project from the town limits of Surf City into the town limits of North Topsail Beach. Hopper dredges most likely will be used because of their higher efficiency as compared to pipeline dredges. Sand for the construction and renourishment intervals would be taken from identified borrow sites off the coast of Topsail Island. During initial construction, dredging and beach placement may occur any time of year and could be ongoing, without interruption, for up to 13 months, resulting in only one disturbance event. Increased turbidity would occur during this time; however, sediments would be comprised of ≥90% sand and therefore would not likely to produce significant turbidity or other water quality impacts. Discharges associated with dredging in the offshore borrow areas are considered incidental to the dredging operation, and therefore, are not being considered as being a discharge addressed under the Section 404(b)(1) Guidelines Analysis. Nourishment events would occur within the beach placement window of November 16 to April 30. Each nourishment would be accomplished within a single dredging and placement event and nourishments would occur every six years.

The potential water quality impacts of dredging and placement have been addressed in the documents incorporated by reference in Section 1.6 of the General Reevaluation Report and

Environmental Assessment (GRR/EA); however, previous NEPA documents prepared by the Wilmington District have not addressed water quality impacts related to hopper dredging in the spring and summer months. Overall, the dredging and placement of beach quality sand from the proposed project would not have any significant impacts on water quality as discussed in detail below.

Pursuant to Section 401 of the Clean Water Act of 1977 (P.L. 95- 217), as amended, a Water Quality Certification (WQC) is required for this proposed project and will be obtained before any work is started. All conditions of the water quality certification would be implemented to minimize adverse impacts to water quality. As part of the NCDCM consistency conditions of the 2010 EIS, the USACE, in conjunction with ERDC, would conduct monitoring of sedimentation effects from dredging activities within the 122-m (400-foot) hardbottom buffer.

The area where beach placement would occur at Surf City is considered the beach community and encompasses a total of 445 acres, a decrease of approximately 36% as compared to the Authorized Plan that included Surf City and North Topsail Beach. The total combined acreage for borrow areas A, B, C, D, E, F, G, H, J, L, N, O, and P within state waters (inside 3 miles) is 9,663 acres; however only portions of these borrow areas will be used over the life of the project. Further delineation of dredge cut boxes is ongoing with additional geotechnical investigations underway. Disturbance acreages are based on the full footprint of the borrow area, excluding hardbottom and low relief hardbottom buffers, and would likely be reduced significantly with the delineation of dredge cut boxes.

Section 404 Public Notice No. CESAW-ECP-PE

1. Review of Compliance (230.10(a)-(d)) **Preliminary 1/** **Final 2/**

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 ☒ NO☐ YES ☒ NO☐

b. The activity does not:
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☒ NO☐* YES☒ NO☐

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 organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2); YES☒ NO☐ YES☒ NO☐

d Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5). YES☒ NO☐* YES☒ NO☐

Proceed to Section 2

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.		X	
(2) Suspended particulates/turbidity impacts		X	
(3) Water column impacts.		X	
(4) Alteration of current patterns and water circulation.		X	
(5) Alteration of normal water fluctuations/hydroperiod.	X		
(6) Alteration of salinity gradients.	X		
b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)			
(1) Effect on threatened/endangered species and their habitat.		X	
(2) Effect on the aquatic food web.		X	
(3) Effect on other wildlife (mammals birds, reptiles, and amphibians).		X	
c. Special Aquatic Sites (Subpart E)			
(1) Sanctuaries and refuges.	NA		
(2) Wetlands.	NA		
(3) Mud flats.	NA		
(4) Vegetated shallows.	NA		
(5) Coral reefs.	NA		
(6) Riffle and pool complexes.	NA		
d. Human Use Characteristics (Subpart F)			
(1) Effects on municipal and private water supplies.	NA		
(2) Recreational and commercial fisheries impacts		X	
(3) Effects on water-related recreation.		X	
(4) Aesthetic impacts.		X	
(5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.		X	

Proceed to Section 3

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 ☒

(2) Hydrography in relation to known or anticipated sources of contaminants ☐

(3) Results from previous testing of the material or similar material in the vicinity of the project ☒

(4) Known, significant sources of persistent pesticides from land runoff or percolation ☐

(5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances ☐

(6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources ☒

(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 ☐

(8) Other sources (specify). ☐

List appropriate references.

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. ☒

(2) Current velocity, direction, and variability at disposal site ☒

(3) Degree of turbulence. ☒

(4) Water column stratification ☒

(5) Discharge vessel speed and direction ☒

(6) Rate of discharge ☒

(7) Dredged material characteristics (constituents, amount and type of material, settling velocities). ☒

(8) Number of discharges per unit of time. ☒

(9) Other factors affecting rates and patterns of mixing (specify)

List appropriate references.

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 ☐*

Return to section 1 for final stage of compliance review.

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 (review sections 2a, 3, 4, and 5). YES ☒ NO ☐*

b. Water circulation, fluctuation, and salinity (review sections 2a, 3, 4, and 5). YES ☒ NO ☐*

c. Suspended particulates/turbidity (review sections 2a, 3, 4, and 5). YES ☒ NO ☐*

d Contaminant availability (review sections 2a, 3, and 4). YES ☒ NO ☐*

e. Aquatic ecosystem structure and function (review sections 2b and c, 3, and 5). YES ☒ NO ☐*

f. Disposal site (review sections 2, 4, and 5). YES ☒ NO ☐*

g. Cumulative impact on the aquatic ecosystem. YES ☒ NO ☐*

h. Secondary impacts on the aquatic ecosystem. YES ☒ NO ☐*

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. . . . . ☐

_____ Date: _____

Brad A. Morgan
Colonel, U.S. Army
District Engineer

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

1/ Negative responses to three or more of the compliance criteria at this stage indicate that the proposed projects may not be evaluated using this "short form procedure." Care should be used in assessing pertinent portions of the technical information of items 2 a-d, before completing the final review of compliance.

2/ Negative response to one of the compliance criteria at this stage indicates that the proposed project does not comply with the guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision-making process, the "short form evaluation process is inappropriate."

3/ If the dredged or fill material cannot be excluded from individual testing, the "short-form" evaluation process is inappropriate.