

**FEASIBILITY REPORT  
AND  
ENVIRONMENTAL ASSESSMENT**

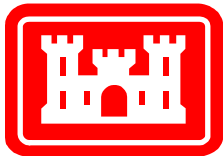
**WILMINGTON HARBOR NAVIGATION  
IMPROVEMENTS**

**Appendix G - Section 404(b) Evaluation**



**June 2014**

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**US Army Corps  
of Engineers**

**Wilmington District**

# Appendix G

## Section 404(b) Evaluation

### Contents

WILMINGTON HARBOR NAVIGATION IMPROVEMENTS	Draft Evaluation of Section
404 (b) (1) Guidelines 40 CFR 230	..... 2
Section 404 Public Notice No. CESA-W-TS-PE.....	2

## WILMINGTON HARBOR NAVIGATION IMPROVEMENTS Draft Evaluation of Section 404 (b) (1) Guidelines 40 CFR 230

This evaluation covers the disposal of fill material into waters and wetlands of the United States required for construction and maintenance of the Wilmington Harbor Navigation Improvements.

About 180,000 cubic yards of material from the Bald Head shoal channel will be placed on the nearby ocean beaches and is subject to the 404(b)(1) guidelines. The material will be pumped to the beach as slurry from a pipeline or hopper dredges and shaped on the beach by earth-moving equipment. About 50% of the sand from each disposal operation is expected to be placed in the ocean below mean high water. However after about 6 months when conditions adjust about 80% of the total sand from the disposal operations is expected to have relocated below mean high water.

The tentatively selected plan will also involve dredging an estimated 500,000 cubic yards of sediment from the Battery Island Turn with disposal in the Wilmington ODMDS. That disposal is subject to Section 103 of the Marine Protection, Research and Sanctuaries Act and not Section 404 of the Clean Water Act.

### Section 404 Public Notice No. CESA-W-TS-PE

- |  | Preliminary 1/  | Final 2/   |
|--|---|--|
| 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 (LEDPA) 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   | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> | YES <input type="checkbox"/> NO <input type="checkbox"/> |
| Remarks: The Corps planning process resulted in the conclusion that the TSP is the LEDPA.  |   |  |
| 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 (See Sections 8.2, 8.8 and Appendix I of the Draft Integrated Feasibility Report and EA) | 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 organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (See Section 8.0 of the Draft Report)  | 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 (see Section 8.0 of the Draft Report).

YES  NO

YES  NO

Proceed to Section 2

\* 1, 2/ See page 6.

		N/A	Not Significant	Significant*
2.	<u>Technical Evaluation Factors (Subparts C-F)</u>			
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.	NA		
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	

Remarks: See Section 7.0 of the Draft Integrated Feasibility Report and EA, Wilmington Harbor Navigation Improvements for more information on the above topics.

Proceed to Section 3

\*See page 6.

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). . . . .

Reference: See Section 7 and Appendices B (Engineering), C (Geotechnical) and H (Sand Management Plan) of the Integrated Feasibility Report and EA, Wilmington Harbor Navigation Improvements.

Remark: Sediments to be dredged consist of beach quality sand. Contaminants do not bind to sand; therefore, contaminant testing of sediments was not required.

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

\*, 3/, see page 6.

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) . . . . .

Reference: See Draft Integrated Feasibility Report and EA, Wilmington Harbor Navigation Improvements.

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 \*

See Section 7.2 of Draft Report for Water Resources, Section 7.4 for Marine and Estuarine Resources and Section 7.5 for Essential Fish Habitat  
 See Appendix J of the Draft Report for threatened and endangered species

Return to section 1 for final stage of compliance review.  
 See also note 3/, page 6.  
 \*See page 6.

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

Remark: More detailed information on the topics above may be found in Section 7.0, and Appendices B (Engineering), C (Geotechnical) and I (Environmental Cumulative Impacts) of the Integrated Feasibility Report and EA, Wilmington Harbor Navigation Improvements.

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. . . . .

\*See page 6.



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Steven A. Baker  
Colonel, U.S. Army  
District Engineer

Date: \_\_\_\_\_

\*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.