

APPENDIX E: 404(B)(1) ANALYSIS (SHORT FORM)

SECTION 404(b)(1) EVALUATION

PROJECT TITLE. Morganza to the Gulf, Humble Canal Gate Site Preparation and Initial Levee

PROJECT DESCRIPTION. The proposed action consists of constructing an initial, or pre-load levee, to prepare the Humble Canal Floodgate site, location depicted in Figure 1, for the future construction of a floodgate, associated floodwalls, and earthen levees across Humble Canal. The pre-load levee would provide a good base and working surface for future construction by promoting settlement and strengthening the foundations of the future levee and floodwalls. The pre-load levee would tie-in to existing Morganza to the Gulf flood protection levees.

The pre-load levee consists of north and south alignments on each side of the Humble Canal channel. The south alignment will extend from the channel approximately 500 linear feet and tie-in to existing Reach "I-3" Levee. It will have a maximum elevation of +22 ft NAVD88. The north alignment will extend from the channel approximately 1150 linear feet and tie-in to existing Reach "J-2" Levee. It will have a maximum elevation of +24 ft NAVD88.

Approximately 150,000 cubic yards of fill and borrow material, comprised of mostly of clay and some sand and rock, will be used to construct the pre-load levee. The pre-load will be constructed over a wick drain foundation that will extend within and drain the upper 45 feet of clay foundation. The borrow material used to construct the pre-load levee will be hauled in from Terrebonne Levee and Conservation District's off-site borrow source "J-1 borrow site," adjacent to Bayou la Cache, off Aragon Road near Montegut, LA. It is about 5 miles north of the main project site. The 100-acre J-1 borrow site has been subdivided into three categories for use. Figure 2 depicts the site location and the three subdivided areas of the J-1 borrow site. Acreage and specific planned use for each subdivided site is listed below:

1. Area A (29 acres) – primary borrow source
2. Area B space between the ponds (17 acres) – additional borrow
3. Access Road between Area B and C (extra as needed)

It should be noted that the Sponsor has stated Area C is currently being used for another contract, and will not be available for use in the Humble Canal pre-load levee project.

The estimated construction duration is 430 Days (5 days/week; 10 hrs/day). The equipment that may be used for the construction includes, but is not limited to the following:

- Excavators, bulldozers, marsh excavators and buggies, barges, and pontoons will be used in clearing and grubbing, excavation, placement of levee and roadway fill, rock, and gravel.
- Dump trucks will be used to haul fill between the borrow pit and construction site and to haul other construction materials.
- Water or spray trucks will be used to process borrow material.
- Rollers will be used to compact levee and roadway fill.
- Excavator with mounted hollow mandrel will be used to install the vertical wick drains.
- A work boat will be used to install navigation aids in Humble Canal and oversee construction operations from the water when necessary.

- 1/2-ton and 1-ton work trucks will also be used on-site for hauling equipment.

The purpose of the proposed action is to provide hurricane and storm damage risk reduction for the communities located within the levee system. The overarching goal is to reduce the risk to people and property in the vicinity of Houma, Louisiana. All project benefits are related to hurricane and storm damage risk reduction. No flood damage reduction, navigation, or ecosystem restoration benefits are quantified for this project. The project is needed because of the increasing susceptibility of coastal communities to storm surge due to subsidence, climate change, and sea-level rise.

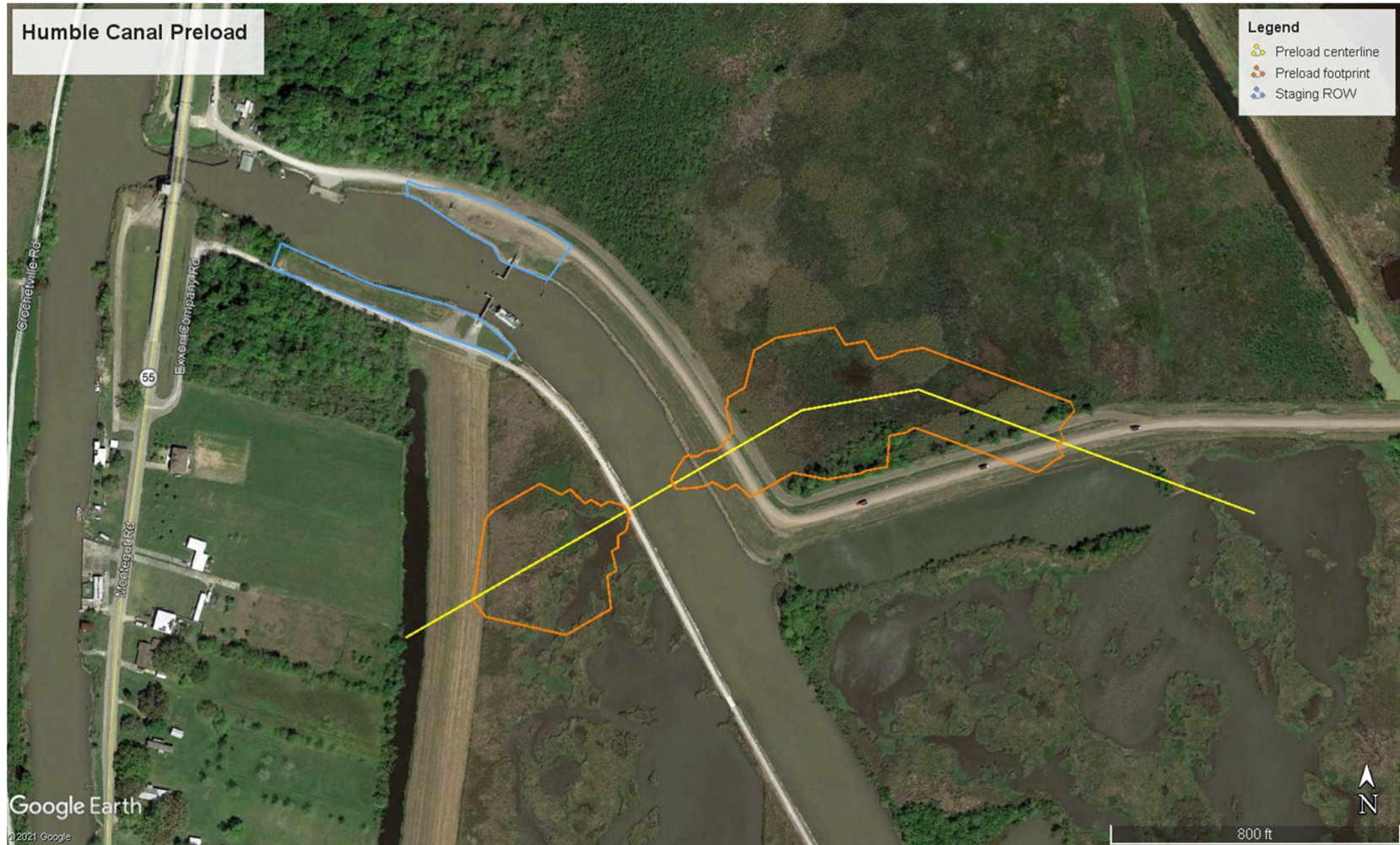


Figure 1. Humble Canal Preload footprint and staging area right-of-way (ROW)

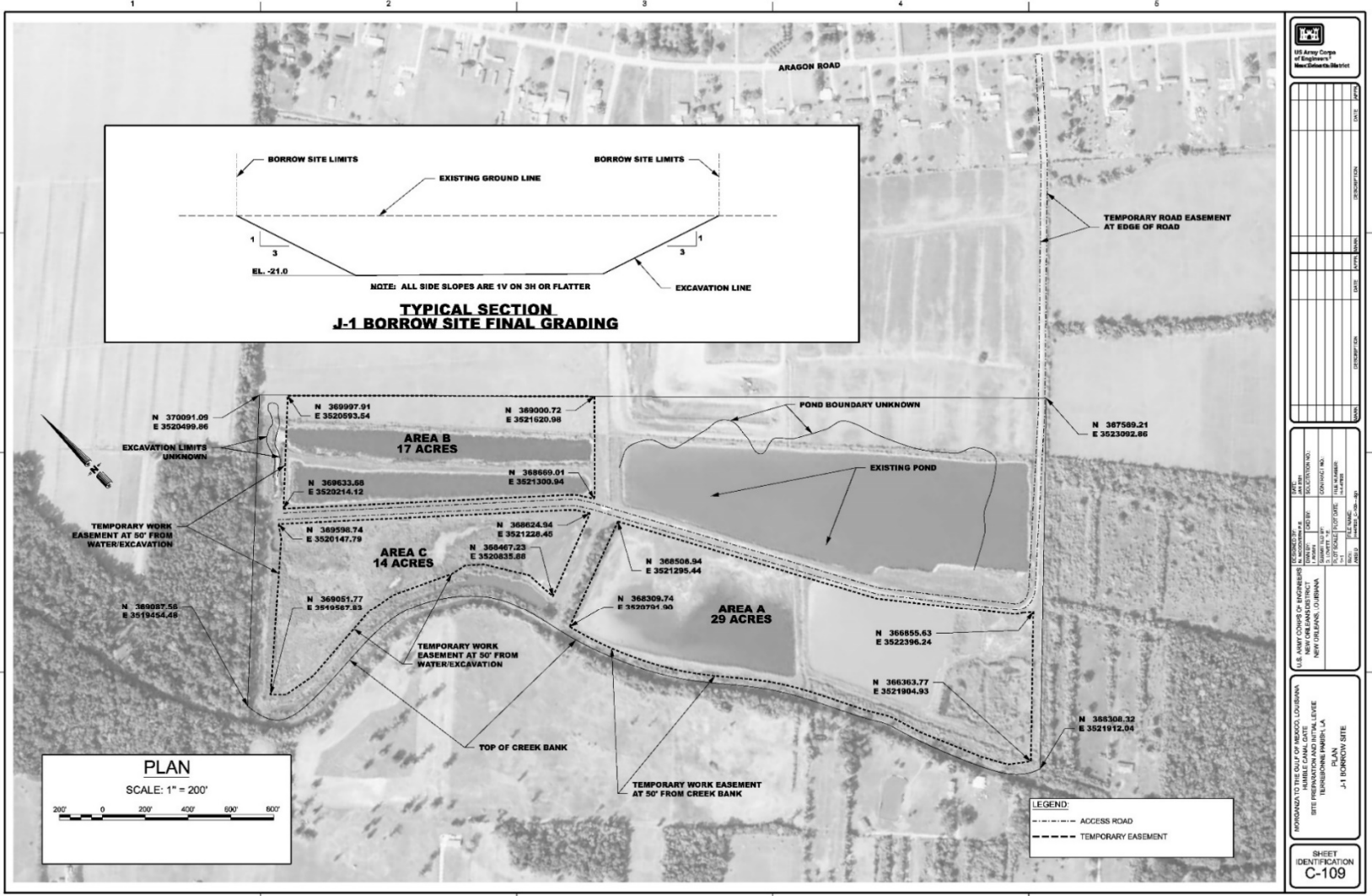


Figure 2. Borrow site plan sheet for Humble Canal earthen fill material

1. Review of Compliance (§230.10 (a)-(d))

A review of this project indicates that:

	Preliminary ¹		Final ²	
	Yes	No	Yes	No
a. The discharge represents the least environ-mentally 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 information gathered for environmental assessment alternative)	x			
b. The activity does not appear to: i. violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act; ii. jeopardize the existence of Federally listed endangered or threatened species or their habitat; and iii. violate requirements of any Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies)	x ⁴			
c. The activity will not cause or contribute to significant degradation of waters of the United States including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, esthetic, and economic values (if no, see section 2)	x			
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)	x			

2. Technical Evaluation Factors (Subparts C-F)

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

- i. Substrate impacts
- ii. Suspended particulates/turbidity impacts.
- iii. Water column impacts
- iv. Alteration of current patterns and water circulation
- v. Alteration of normal water fluctuations/hydroperiod
- vi. Alteration of salinity gradients

N/A	Not Significant	Significant ^{3,5}
	X	
	X	
	X	
	X	
	X	
	X	

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

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

	X	
	X	
	X	

c. Special Aquatic Sites (Subpart E)

- i. Sanctuaries and refuges
- ii. Wetlands
- iii. Mud flats
- iv. Vegetated shallows
- v. Coral reefs
- vi. Riffle and pool complexes

	X	
	X	
X		
X		
X		
X		

d. Human Use Characteristics (Subpart F)

- i. Effects on municipal and private water supplies
- ii. Recreational and commercial fisheries impacts
- iii. Effects on water-related recreation.
- iv. Esthetic impacts
- v. Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves

X		
	X	
	X	
X		
	X	

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

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material.

- i. Physical characteristics x
- ii. Hydrography in relation to known or anticipated sources of contaminants x
- iii. Known, significant sources of persistent pesticides from land runoff or percolation
- iv. Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances x
- v. Other public records of significant introduction of contaminants from industries, municipalities, or other sources x
- vi. Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities
- vii. Other sources (specify)

Appropriate references: See Encl 2

b. An evaluation of the appropriate information in 3.a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or the material meets the testing exclusion criteria.⁶

Yes	No ³
x	

4. Disposal Site Delineation (§230.11(f))

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

- i. Depth of water at disposal site x
- ii. Current velocity, direction, and variability at disposal site x
- iii. Degree of turbulence x
- iv. Water column stratification x
- v. Discharge vessel speed and direction x
- vi. Rate of discharge x
- vii. Dredged or fill material characteristics (constituents, amount, and type of material, settling velocities) x
- viii. Number of discharges per unit of time
- ix. Other factors affecting rates and patterns of mixing (specify)

Appropriate references: See Encl 2

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 ³
x	

5. Actions to Minimize Adverse Effects (Subpart H)

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

Yes	No ³
x	

Actions taken: Compensatory mitigation bank credits will be used to fully mitigate for fresh and brackish marsh and bottomland hardwoods impacted from the proposed action. Staging areas are located on non-wetlands above the preload footprint. In consideration of biological characteristics, construction contracts will have best management practices for colonial nesting birds as well as manatees as coordinated with US Fish and Wildlife, National Marine Fisheries Service, and Louisiana Department of Wildlife and Fisheries.

6. Factual Determination (§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 above)
- b. Water circulation, fluctuation and salinity (review sections 2a, 3, 4, and 5)
- c. Suspended particulates/turbidity (review sections 2a, 3, 4, and 5)
- d. Contaminant availability (review sections 2a, 3, and 4)
- e. Aquatic ecosystem structure and function (review sections 2b and c, 3, and 5)
- f. Disposal site (review sections 2, 4, and 5)
- g. Cumulative impact on the aquatic ecosystem
- h. Secondary impacts on the aquatic ecosystem

Yes	No ³
x	
x	
x	
x	
x	
x	
x	
x	

¹ Negative responses to three or more of the compliance criteria at this stage indicates 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 2a-d, before completing the final review of compliance.

² Negative responses 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 A negative, significant, or unknown response indicates that the project may not be in compliance with the Section 404(b)(1) Guidelines.

⁴ For 1.b., review is for i. only (i.e., The activity does not appear to violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act)

⁵ Where a check is placed under the significant category, the preparer has attached explanation.

⁶ If the dredged or fill material cannot be excluded from individual testing, the "short form" evaluation process is inappropriate.

7. Evaluation Responsibility

a. Prepared by:

Shannon Kelly
Hydraulic Engineer
U.S. Army Corps of Engineers, New Orleans District
May 25, 2021

Daniel Meden
Biologist
U.S. Army Corps of Engineers, New Orleans District
July 15, 2021

b. Reviewed by:

Eric Glisch
Environmental Engineer
U.S. Army Corps of Engineers, New Orleans District
June 8, 2021

8. Findings

- | | |
|---|------------|
| a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines | x
_____ |
| 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 reason(s): | _____ |
| i. There is a less damaging practicable alternative | _____ |
| ii. The proposed discharge will result in significant degradation of the aquatic ecosystem | _____ |
| iii. The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem | _____ |

Date: 7/15/2021

Chief, Environmental Planning and
Compliance Branch