

## Section 404(b)(1) Evaluation

The following short form 404(b)(1) evaluation follows the format designed by the Office of the Chief of Engineers, (OCE). As a measure to avoid unnecessary paperwork and to streamline regulation procedures while fulfilling the spirit and intent of environmental statutes, New Orleans District is using this format for all proposed project elements requiring 404 evaluation, but involving no adverse significant impacts.

**PROJECT TITLE:** LAKE PONTCHARTRAIN AND VICINITY MARSH RESTORATION, BAYOU SAUVAGE, TURTLE BAYOU AND NEW ZYDECO RIDGE RESTORATION PROJECTS

**PROJECT DESCRIPTION:** The proposed action would restore brackish marsh habitat that would partially mitigate already-completed Lake Ponchartrain and Vicinity (LPV) Hurricane Storm Damage Risk Reduction System (HSDRRS) construction impacts. The changes being proposed are to compensate for the loss of 60 acres (18.4) of mitigation that were previously approved under the Bayou Sauvage Flood Side (BSFS) Restoration and Nourishment alternative in Supplemental Individual Environmental Report 1 (SIER 1).

### **PROPOSED ACTION:**

The New Zydeco Ridge (NZR) restoration projects are located on the north shore of Lake Pontchartrain in the north east quadrant of the lake, northwest of U.S. Highway 90, and approximately 5 miles east of Slidell, Louisiana on the Big Branch National Wildlife Refuge. The project sites are bounded on the east by U.S Highway 90, on the North by U.S. Highway 190, on the west by Interstate 10, and on the south by Lake Pontchartrain. The approved projects in SIER 1 consists of creating approximately 159 acres of BLH-Wet habitat and creating 160 acres of brackish marsh habitat.

### **Potential Project Expansion Layouts**

The NZR restoration expansion options are located on the north shore of Lake Pontchartrain in the north east quadrant of the lake, northwest of U.S. Highway 90, and approximately 5 miles east of Slidell, Louisiana on the Big Branch National Wildlife Refuge. The project area is bounded on the east by U.S Highway 90, on the North by U.S. Highway 190, on the west by Interstate 10, and on the south by Lake Pontchartrain. The approved NZR projects in SIER 1 consist of creating approximately 159 acres of BLH-Wet habitat and 160 acres of intermediate/brackish marsh habitat.

The Bayou Sauvage Flood Side Brackish Marsh Project (BSFS), approved in SIER 1, originally consisted of two sites, BSFS4 and BSFS5. (Figure 1) The BSFS4 site, approximately 60 acres in size, has been removed from this project alternative since the site is no longer available for purchase. As such, only the BSFS5 site would be constructed. With the removal of the BSFS4 site, the needed borrow for this project alternative and the Turtle Bayou project alternative (to be constructed in concert with the BSFS5 site, see SIER 1) would be reduced by 41 acres (from 459 acres to 418 acres). This reduction left a deficit of 18.4 annual average habitat units (AAHUs) in the proposed mitigation for the impacts associated with the construction of the LPV HSDRRS.

Two designs were considered for satisfying the outstanding 18.4 AAHUs of brackish marsh impacts at the NZR location.

Design 1, expands the current design of the NZR Brackish Marsh restoration project by approximately 60 acres, making the total acreage for that project approximately 220 acres; and moving the approved NZR BLH-Wet footprint northward. (Figure 2) This project alternative minimized the increase linear footage of retention dike required by maintaining the original outer perimeter dike and cross dike between the two habitat types. As such, the perimeter retention dike for the brackish marsh project would only increase by 2,460 linear feet from the 10,165 linear feet of perimeter retention dike originally identified in SIER 1.

Design 2 maintains the alignment of the NZR BLH-Wet and Brackish Marsh layouts approved in SIER 1 and adds a 60 acre brackish marsh cell to the north of the BLH-Wet footprint. (Figure 3) This design option would require an additional 4,500 linear feet of brackish marsh retention dike.

The earthen perimeter dike(s) around the marsh creation area(s) would be constructed to an elevation +4.0 feet NAVD88 with a five foot crown and 1V on 3H side slopes. (Figure 4) The retention dike around the BLH-Wet creation area would be constructed to elevation +7.0 feet NAVD88 with a 5 foot crown and 1V on 3H side slopes. This varies from the original NZR design in which the retention dikes were to be constructed with a 1V on 4H side slope. Cross dikes between the marsh creation cell(s) and the BLH creation cell would be constructed to elevation +5.5 feet NAVD88 to allow effluent from the BLH cell to spill into the marsh creation cell(s). Spill boxes or weirs would be constructed at pre-determined locations within the retention dike to allow for effluent water release from within the marsh creation area(s). Borrow for dike construction would be obtained from the interior of the marsh/BLH creation footprints. Specifics on the interior borrow ditch design can be found in SIER 1. The marsh creation area(s) will initially be filled to an elevation of approximately +3.0 feet NAVD88 to ultimately reach a target marsh elevation ranging from +1.0 feet to +1.5 feet NAVD88.

### **Borrow Site and Access Corridor**

The original borrow site for NZR measured 289 acres and was broken into 2 primary (sites #1) and 2 secondary (sites #2) borrow areas due to differential lake bottom elevations. (Figure 5) The primary and secondary borrow sites #1 are in deeper water (7 to 18 feet deep), thus a dredging depth of -20 feet NAVD88 is being used to obtain a suitable quantity of material. Primary and secondary borrow sites #2 are in shallower water (4 to 9 feet deep), therefore dredge depths vary with primary borrow site # 2 having a dredge depth of -18' NAVD88 and secondary borrow site #2 having a dredge depth of -16' NAVD88. The total anticipated amount of fill material being dredged from all 4 borrow sites was 3,600,000 cubic yards.

The proposed 60 acres expansion of the brackish marsh creation footprint would require approximately 500,000 additional cubic yards of dredged material to construct. Applying a 30% oversize factor and converting to acres, this results in a need for approximately 41 additional acres of borrow footprint. The oversize factor is to assure adequate borrow amounts in case of contract overruns, and to account for unsuitable materials, unknown utilities, unidentified anomalies, and/or unsighted cultural finds within the borrow footprint. This factor matches that used to size the originally proposed footprint. To provide this needed additional borrow material, the proposed borrow site would need to be expanded 200 feet in width along the south boundary and 300 feet along the west boundary resulting in a total increase in the borrow footprint of 3,000 feet by 4,800 feet (330 acres) or an increase of 41 acres. The borrow footprint would remain divided into primary and secondary dredging regions; maintaining the restricting depths as previously described.

A different access corridor than what was approved in SIER 1 for the NZR projects, would be allowed from the lake to the NZR projects. Fill material for the creation of the BLH-Wet and marsh creation areas would still come from the same borrow site identified in SIER 1 located in Lake Pontchartrain approximately 2,700 feet offshore from Treasure Island, LA. Dredging of borrow would still be conducted via hydraulic dredging, however a floating/submerged pipeline would be placed for approximately 6,900 feet from the borrow site to the shallow area near the shoreline north of the Rigolets channel. The submerged line would then continue east for approximately 4,600 feet within the shallow offshore waters along the lake shoreline to within close proximity of the Hwy 90 bridge structure. The access corridor width for all open water reaches is 500 feet and the Contractor would be required to maintain navigation access in this open water reach of access channel for recreational boaters. The access corridor would then turn north, following the west side of Hwy 90 for approximately 14,000 feet from Lake Pontchartrain to the project site. This reach of access corridor is confined to a 50 foot width as measured from the outer limit of the highway shoulder, except in the immediate vicinity of the Hwy 433 junction. From the junction, the access corridor diverts west for approximately 125 feet to avoid the highway intersection, where a 36 inch steel culvert would be installed to pass beneath Hwy 433 for the pipeline to pass under the road.

From the new culvert, the access corridor would transition back to within the 50 foot access corridor paralleling Hwy 90. The northern terminus of this portion of the access corridor is defined by an approximate 100 foot by 100 foot existing gravel parking area, which would be used for parking, pipeline unloading, staging of equipment, and a potential booster pump location. At this point, the pipeline access corridor turns west, widens to 100 feet, and runs over existing marsh for approximately 1,700 feet. A timber board road would be constructed along this reach of the access corridor to minimize

damage to the existing marsh. Sand fill shall be placed in the low areas of this portion of the access corridor prior to board road installation. The board road would be removed upon completion of the project. Upon board road removal, dressing and additional fill as required to ensure restoration of the area to pre-construction marsh elevations would occur. At the location where the timber board road ends at open water, the access corridor widens to 200 feet and continues for the final 1,500 feet to the marsh and BLH-Wet creation areas. The entire access corridor, from borrow pit to perimeter retention dike is approximately 29,000 feet in length. No additional access corridor is needed for the expansion. Should the northern expansion proceed as proposed, the pipeline be routed through the current project footprint.



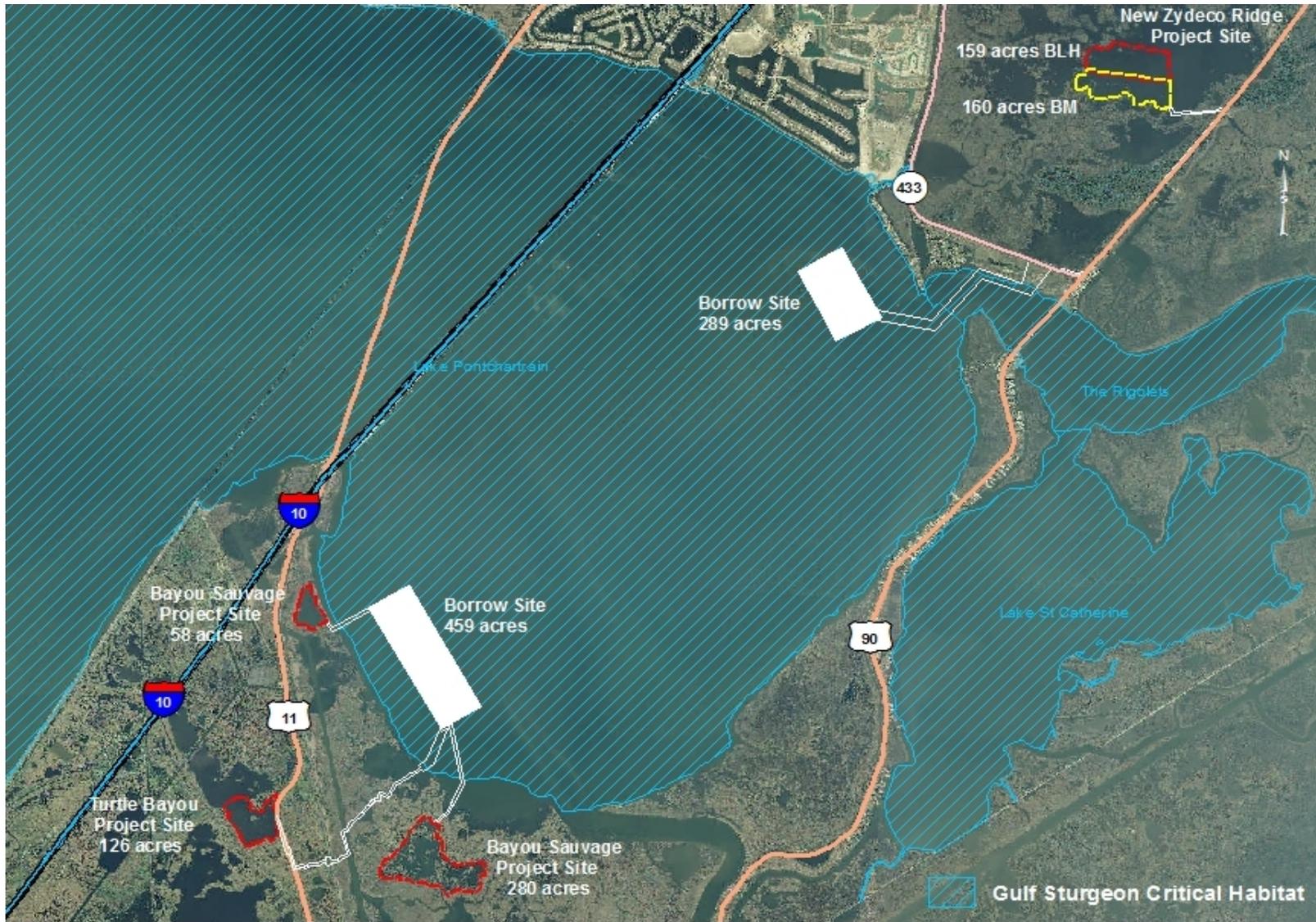


Figure 1: SIER 1 - Original Project Features and Borrow Sites Locations

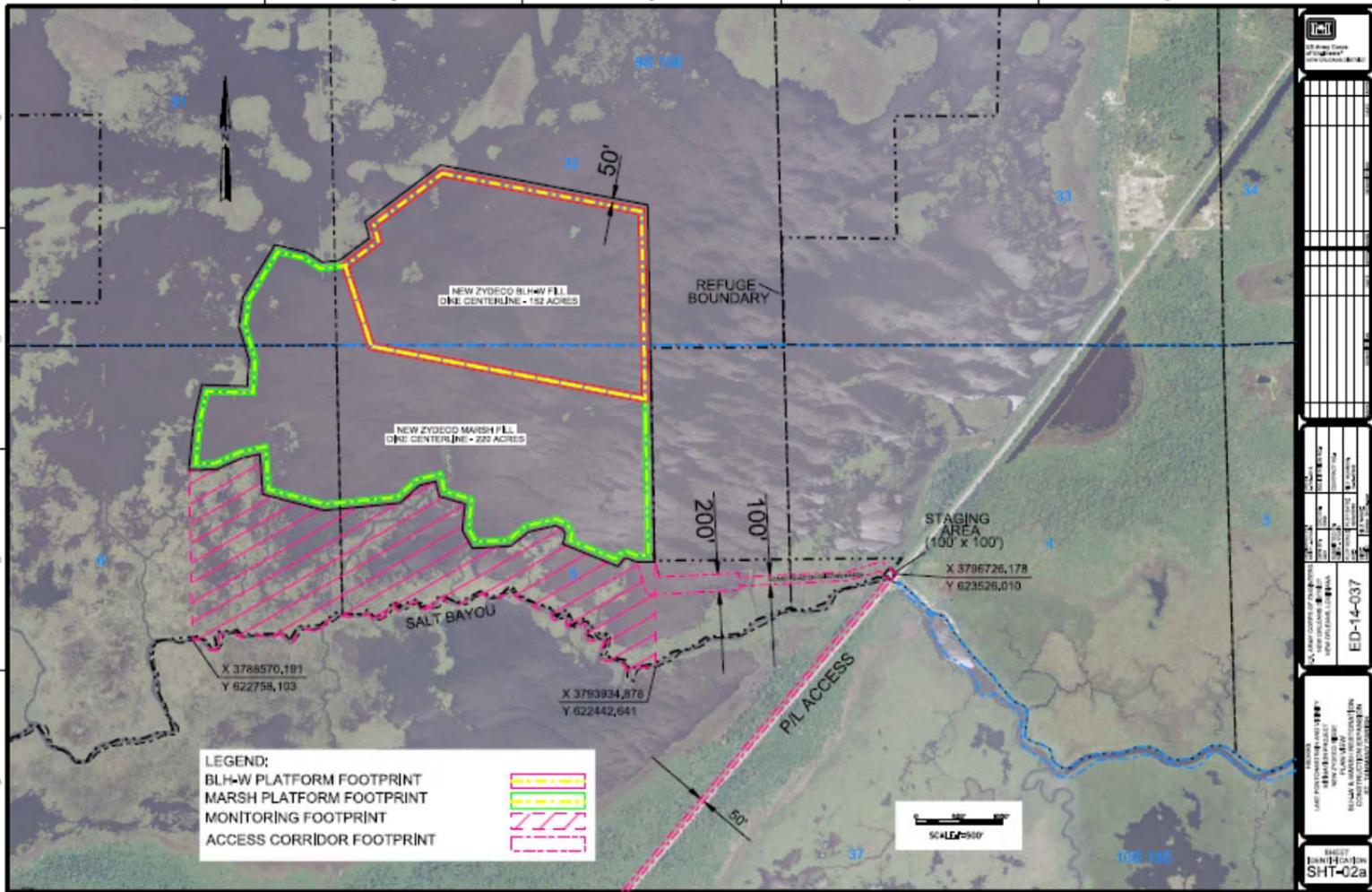


Figure 2: Design 1 Option

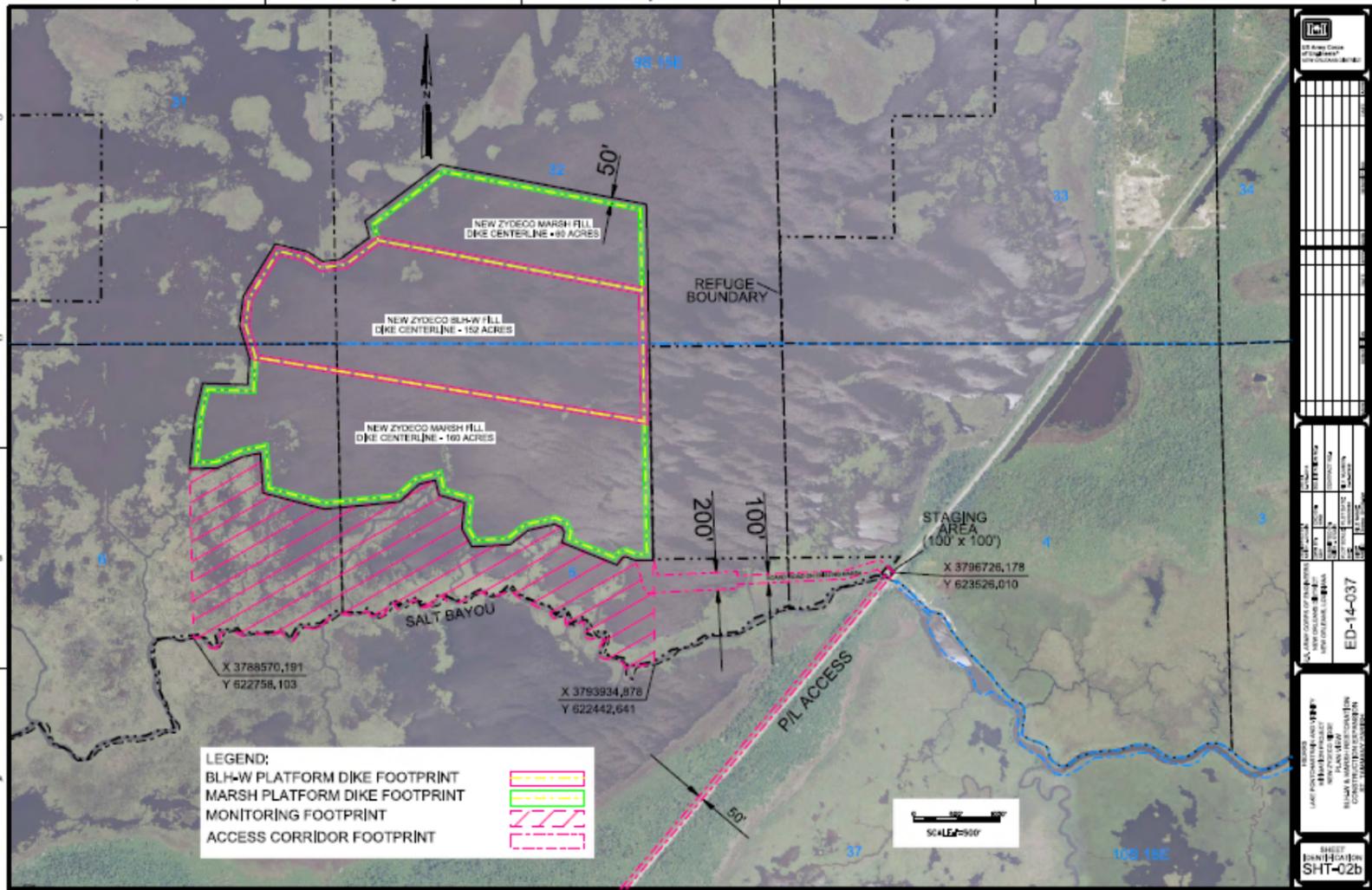


Figure 3: Design 2 Option

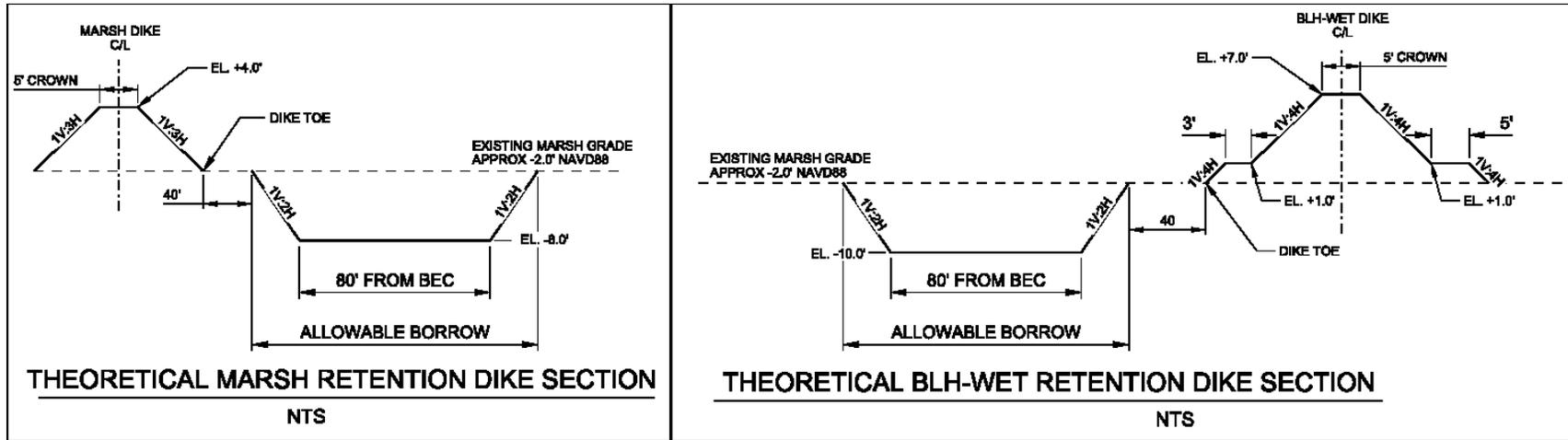


Figure 4: Retention Dike Cross Section

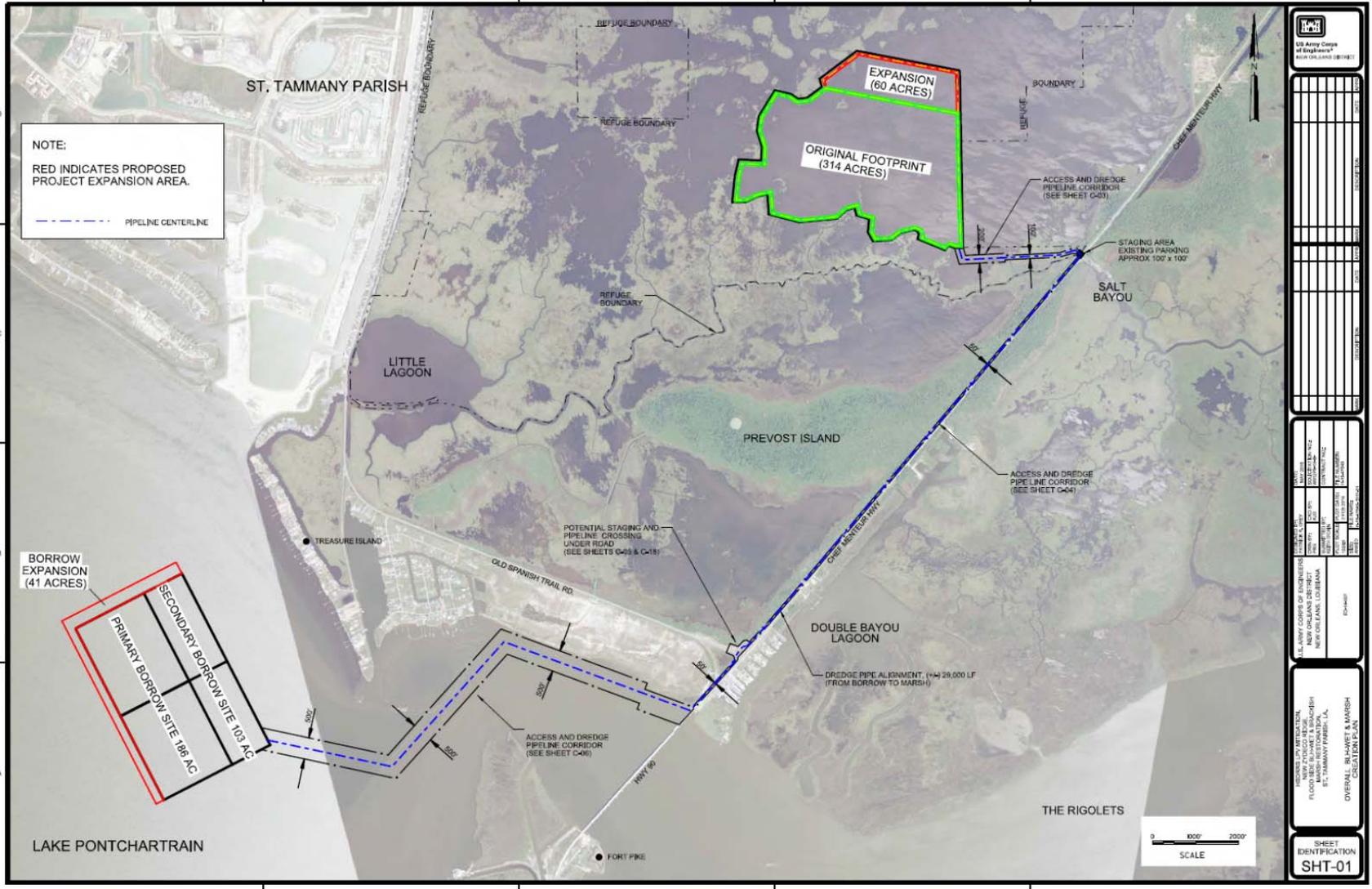


Figure 5: Proposed Borrow Expansion Location

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

Preliminary<sup>1</sup>

Final<sup>2</sup>

A review of this project 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 information gathered for environmental assessment alternative);

YES	NO*	YES	NO
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b. The activity does not appear to: (1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act; (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
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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);

YES	NO*	YES	NO
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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
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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	
	x	
	x	

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.

	x	
	x	

- (3) Effect on other wildlife (mammals, birds, reptiles, and amphibians).

	x	
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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.

x		
x		
x		
x		
x		
x		

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) Esthetic impacts.
- (5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

x		
	x	
	x	
	x	
	x	

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

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

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

- (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 ..See references below..... \_\_\_\_\_ ✓

Appropriate references:

- a. U.S. Army Corps of Engineers (USACE), 404 (b)(1) Evaluation (Long Form) - MRGO Restoration, July 2010
- b. USACE, White's Ditch Diversion Water Quality Assessment, September 2010
- c. US Coast Guard, National Response Center: <http://www.nrc.uscg.mil/nrchp.html>
- d. US EPA, CERCLIS Database of Hazardous Waste Sites: [www.epa.gov/superfund/sites/cursites/index.htm](http://www.epa.gov/superfund/sites/cursites/index.htm)
- e. US EPA, Cleanups in My Community: <https://www.epa.gov/cleanups/cleanups-my-community>.

- f. US EPA, Enforcement and Compliance History Online (ECHO): <https://echo.epa.gov/>.
- g. US EPA, My Environment: <https://www3.epa.gov/enviro/myenviro/>.
- h. US EPA, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, July 2004: <http://www.epa.gov/owow/wetlands/pdf/40cfrPart230.pdf>

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 the material meets the testing exclusion criteria.

YES                      NO\*

4. Disposal Site Delineation (§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) .....                                     | _____ |

Appropriate references:  
Same as 3(a)

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 the recommendations of §230.70-230.77 to ensure minimal adverse effects of the proposed discharge.

YES                      NO\*

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. Retention dikes will be utilized to minimize the escape of dredged material from the established disposal area.

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).       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\*

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

<sup>1</sup>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.

<sup>2</sup>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.

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

7. Evaluation Responsibility.

- a. Water Quality input provided by: Danny Wiegand, MSPH, PE
- b. This evaluation was reviewed by:

8. 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 reason(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: \_\_\_\_\_

\_\_\_\_\_  
 Joan M. Exnicios  
 Chief, New Orleans Environmental Branch