

## **SECTION 404(b)(1) EVALUATION**

### **Terrebonne Parish Non-Federal Levee System Repairs, Replacements, Modifications, and Improvements Terrebonne Parish, Louisiana**

#### **EA #450**

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

PROJECT TITLE: Terrebonne Parish Non-Federal Levee System, Repairs, Replacements, Modifications, and Improvements, Terrebonne Parish, Louisiana.

PROJECT LOCATION: The proposed project is located in Terrebonne Parish, LA (Appendix, Figure 1). The levees are located off Louisiana Highway 57 (Hwy 57) between the towns of Houma and Dulac. The Susie Canal levee is in Range 17E, spanning Township 18S, Sections 7-9, and Township 19S, Section 1. The Orange Street levee is located in Range 17E, Township 19S, and spans Sections 1, 2, 19, and 85. The J-1 borrow site is located approximately six miles southeast from the Houma airport, near Montegut, LA, Range 19E, Township 18S, Section 5. Access to the project area is via Hwy 57 south from Houma, LA. The northern extent of the levees (Susie Canal Levee) is approximately 8.5 miles south of Houma. The southern extent (Orange Street Levee) is approximately one mile north of Dulac, LA. The borrow source for the proposed project will be obtained from a previously cleared site, the J-1 borrow pit, is located approximately 2.3 miles northwest of Montegut, off Aragon Road and adjacent to Bayou la Cache.

PROJECT DESCRIPTION: The U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District, proposes to raise and repair, replace, modify and improve approximately 32,500 linear feet (6.1 miles) of existing levee near Dulac, Terrebonne Parish, LA approximately 8.5 miles south of Houma, LA (Attachment, Figure 1). The existing levee was built and is maintained by the Terrebonne Parish Consolidated Government (TPCG) and has never been the subject of Federal action. The existing levee is divided into two reaches, known as the Suzie Canal reach and the Orange Street reach. The existing Suzie Canal reach starts approximately 100 feet north of the Bobtown Bridge and follows in a southerly direction until approximately 100 feet north of the Combon Bridge (Attachment, Figure 2). The existing Orange St. reach starts approximately 50 feet north of the Combon Bridge and follows in a southerly direction until it intersects with end of Orange St. (Attachment, Figure 3). The existing levee continues south past Orange Street, however the segment south of Orange Street is not in need of repair, replacement, modification or improvement and is not included in this project.

This Suzie Canal portion of this project follows the existing alignment south before reaching a pipeline canal (Attachment, Figure 2). From this pipeline canal, the project alignment follows a new route, the "Suzie Canal Cutoff", before intersecting the existing alignment. A borrow canal would also be constructed along the protected side of the "cutoff". The portion of the existing

alignment that is cutoff would be left in place, and an access method would be provided by TPCG to the property owner. The project alignment then follows the existing alignment until reaching Bayou Butler. The “Bayou Butler no-work” zone separates the two project segments (Attachment, Figures 2 and 3). The Orange Street portion of this project begins at the “Bayou Butler no-work zone” and follows the existing alignment in a southerly direction until reaching the end of Orange Street (Attachment, Figure 3). The Suzie Canal reach would be offset forward approximately 70 feet floodside from the centerline of the existing levee to the centerline of the proposed levee, requiring approximately 95 feet of additional right-of-way (ROW). The Orange Street reach would be offset forward approximately 85 feet floodside from the centerline of the existing levee to the centerline of the proposed levee, requiring approximately 111 feet of additional ROW.

Approximately 969,000 cubic yards of clay material would be required for the proposed levee project. If the material in the existing levee meets new COE criteria for levee soils, half of the borrow material would be obtained there (approx. 485,000 cubic yards). The rest would be obtained from 30 acres of the J-1 borrow area, a 100-acre, partially excavated site, owned by the Terrebonne Levee and Conservation District (TLCD). The J-1 borrow area is located off Aragon Road and adjacent to Bayou la Cache, near Montegut, LA (Attachment, Figure 1). If material in the existing levee is not suitable, all material would come from the J-1 site.

Both the Susie Canal and Orange Street levees would be raised to approximately +9.5 feet North American Vertical Datum 88 (NAVD88), with an approximately 10-foot wide crown and side slopes of 1-foot vertical on 3-feet horizontal (1V:3H). On the protected side, a stability berm would be retained under the existing levee footprint. The existing levee would be worked into the rehabilitated levee, and the existing borrow/drainage canal expanded. Where the rehabilitated levee fronts open water (Attachment, Figure 5), a “berm” would be constructed with the intent to create 74 acres of new marsh substrate as mitigation for unavoidable wetland impacts. Approximately 650,000 cubic yards of material would be hydraulically dredged from Lake Boudreaux and placed into the fill areas at an initial fill elevation expected to settle to a final target elevation of approximately +1.5 to +2.0 feet NAVD88. Containment dikes would be constructed to contain the dredged slurry within the marsh fill areas. The initial fill elevation to achieve the target post-settlement marsh elevation, as well as the geometry of the containment dikes, would be determined during engineering phase and would be specified in the project plans and specifications.

NO-WORK ZONES: Four pipelines intersect the alignment, two essentially adjacent to each other. A drainage siphon, crossing under Bayou Butler connects the existing borrow canals that parallel the levees. A TPCG pump station, known as the D-08 pump station, is located on the Orange Street reach (Attachment, Figure 3). To avoid impacting these structures, five no-work zones, including “Bayou Butler no-work zone” and “D-08 no-work zone”, have been designated around these sites (Attachment, Figures 2 and 3). The no-work zones range from 200 feet to 600 feet wide. The United States will bear no responsibility in these no-work zones.

ACCESS ROADS: Access to the project vicinity would be from Hwy 57. Access to the Suzie Canal reach would be via a private driveway and Georgi Girl Lane. Access to the Orange Street reach would be via Panda Lane and Orange Street. All four access roads are less than a half of a mile long and all four provide a method of crossing the existing borrow canal. Where the crossings are deemed inadequate, the contractor would have the option of installing a temporary crossing, such as culverts and earthen fill. The contractor would also be given the option of installing a

temporary crossing across Bayou Butler. All temporary crossings would be removed upon project completion.

ACCESS ROUTE: Material would be trucked to the site in either 14-20 cubic yard dump trucks or 24-30 cubic yard trailer bed trucks. The recommended haul is approximately 20 miles, and starts with the loaded haul truck at the J-1 borrow site. Upon leaving the borrow site, the route follows Aragon Road south to LA Hwy 58, then follows LA Hwy 58 west to LA Hwy 56. From there, the route follows LA Hwy 56 north to Woodlawn Ranch Road, and then follows Woodlawn Ranch Road west to LA Hwy 57, then south along LA Hwy 57 to the project site.

STAGING AREAS: There are two on site staging areas, the Bobtown Bridge staging area and the Orange Street staging area (Attachment, Figure 4). The Bob Town Bridge staging area is located in the southwest quadrant of the intersection of the Bobtown Bridge and Hwy 57. The site is currently cleared but undeveloped. The Orange Street staging area is located on either side of Orange Street before it intersects with the Orange Street levee drainage canal. The Orange Street staging area is also cleared and is occasionally used by TPCG as a staging area for levee repairs.

LEVEE EMBANKMENT: A silt fence would be placed along the proposed levee toe on both the protected and flood sides of the levee to contain runoff material during construction activities. Silt fences would also be utilized to prevent sediments from entering Bayou Butler. Earthen material from the proposed borrow area would be placed onto the levee in multiple lifts and then compacted. Upon completion of the levee rehabilitation, all levee embankments and areas disturbed by the construction activities would be seeded with Bermuda grass, fertilized, and mulched. The “marsh berm” would be planted with marsh species. Silt fences and other temporary features would also be removed.

BORROW AREAS: The 100-acre J-1 borrow site assessed in EA #406 was partially excavated in support of construction of a 2.7 mile reach of levee commonly referred to as Reach J-1. This levee could become a part of the larger Morganza to the Gulf federal project. The proposed project would utilize at maximum approximately 60 acres of the previously unexcavated portion of the site. If sufficient suitable materials are available in the existing Terrebonne NFL at the project site, then it is anticipated that approximately 30 acres of the previously unexcavated portion of the J-1 borrow site would be used for the subject project.

The area would be cleared and grubbed prior to excavation, and then excavated to a pit depth of approximately 20 feet with side slopes of 1V:3H. Bulldozers would be utilized to clear the proposed borrow area of trees, scrub brush, other vegetation, and earthen material deemed not suitable for the levee enlargement project. The vegetation and unsuitable earthen material removed would all be temporarily stockpiled on-site. Groundwater seeping into the pit would be pumped out into adjacent areas. Backhoes would remove the earthen material deemed suitable for the levee project, which would be processed within the borrow pits to reduce the moisture content within the soil. Moisture content processing would be performed by mechanical methods such as utilizing bulldozers to stockpile materials and disks to further reduce the moisture content of the soil.

Once the moisture content has been reduced to acceptable levels, haul trucks would be utilized to transport material to the levee. The borrow pit will be excavated in a systematic manner, achieving the -20 foot depth before moving to an adjacent area. A truck wash down station would

be utilized at the borrow site to prevent excessive tracking on the roads. In addition, the trucks would be slightly light-loaded and fitted with a covering tarp to prevent loss of material onto the roads. After all suitable earthen material is removed from the pits, the stockpiled unsuitable material and the vegetation removed during clearing and grubbing would be placed into the pit to provide potential cover habitat for wildlife and fisheries. All construction activities for the proposed project would be contained within the predetermined construction right-of-way.

MITIGATION: After the levee work is completed, the second phase of the project is to create a marsh berm adjacent to portions of the levee as mitigation for the unavoidable loss of marsh caused by the project action. Mitigation for bottomland hardwoods would be achieved by the MVN purchase of the appropriate number of mitigation bank credits or by planting young bottomland hardwood species on enough acreage to fully mitigate the impacts. As a means to mitigate for impacts to fresh, intermediate and brackish marsh and scrub-shrub, approximately 74 acres of marsh would be created in the open water areas adjacent to the newly constructed levee (Attachment, Figure 5). Scrub-shrub in this area has a significant marsh understory, so is counted as marsh for mitigation purposes.

Approximately 8,675 feet of earthen containment dikes would be constructed with dragline excavators using *in situ* material. The earthen containment dikes would be built to an approximate +4.0 feet NAVD88 elevation, and would tie into the new levee construction to create enclosed fill areas approximately 325 feet to 680 feet out from the toe of the levee. After the containment dikes are constructed, marsh buggy excavators or similar equipment would be used to transport and place the dredge pipelines into the containment areas. The dredge pipelines would be transported through open water areas to avoid impacts to marsh habitat, and be appropriately lighted and marked for navigation safety. Once the containment dikes are constructed and the pipelines are in place, a hydraulic dredge would be used to pump approximately 650,000 cubic yards of material from Lake Boudreaux into the fill areas at heights conducive for the creation of marsh. The final settlement height would be between +1.5 and +2.0 feet NAVD88).

The dredged slurry would be allowed to settle within the containment areas naturally, or may be artificially dewatered utilizing spill boxes or similar structures placed in the containment dikes. If the dredged slurry is allowed to settle naturally, it is estimated to require 12 to 24 months for the process to occur. When the material is sufficiently settled, it would be planted with marsh species such as wiregrass (*Spartina patens*) and oyster grass (*Spartina alterniflora*). Then if necessary, the earthen containment dikes would be degraded to +1 foot NAVD88 at three sites along the eastern side of each marsh berm cell. Each of the nine cuts would be 50 feet wide to allow tidal connection. The local sponsors, TLCD and TPCG would monitor and maintain the marsh berm. The TPCG would purchase a Conservation Easement over the marsh berm to prevent any potential future development.

1. Review of Compliance (e230.10 (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).

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

	N/A	Not Significant	Significant*
		X	
		X	
		X	
		X	
		X	
X			

N/A Not Significant Significant

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

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. Aesthetic 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, 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 .....  | <u>X</u> |
| 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 .....  | <u>X</u> |
| 6. Other public records of significant introduction of contaminants from industries, municipalities, or other sources .....  | <u>X</u> |
| 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) .....   | _____    |

Appropriate references:

1. Environmental Regulatory Code, Part IX. Water Quality Regulation, Louisiana Department of Environmental Quality, 1994, 3<sup>rd</sup> Edition.
2. State of Louisiana Water Quality Management Plan, Vol. 5, Part B - Water Quality Inventory, Louisiana Department of Environmental Quality, Office of Water Resources, 1994.

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 (e230.11(f))

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

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

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\*

Actions taken: A silt fence would be placed along the levee toe on both the protected and flood sides of the levee to contain runoff material during construction activities.

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 (adverse) environmental effects of the proposed discharge as related to:

- |   |   |     |     |
|---|---|-----|-----|
| a) Physical substrate at the disposal site (review sections 2a, 3, 4, and 5 above). | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |
| b) Water circulation, fluctuation and salinity (review sections 2a, 3, 4, and 5).   | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |
| c) Suspended particulates/turbidity (review sections 2a, 3, 4, and 5).              | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |
| d) Contaminant availability (review sections 2a, 3, and 4).                         | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |
| e) Aquatic ecosystem structure and function (review sections 2b, 2c, 3, and 5).     | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |
| f) Disposal site (review sections 2, 4, and 5).                                     | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |
| g) Cumulative impact on the aquatic ecosystem.                                      | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |
| h) Secondary impacts on the aquatic ecosystem.                                      | <table border="1"><tr><td>YES</td></tr></table> | YES | NO* |
| YES   |   |     |     |

\*A negative, significant, or unknown response indicates that the proposed 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 project 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.

Evaluation prepared by: \_\_\_\_\_  
Alan Bennett

Position: Biologist, PM-RP

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

Evaluation reviewed by: \_\_\_\_\_  
Gib Owen

Position: Chief, PM-RS Section

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

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

January 14, 2009  
Date

  
\_\_\_\_\_  
For ELIZABETH WIGGINS  
Chief, Environmental Planning  
and Compliance Branch