

**APPENDIX E: 401 PUBLIC NOTICE AND 404(B)(1)
EVALUATION**



Public Notice

Notice of Availability of the Draft Environmental Assessment EA #543 titled "Mitigation for New Orleans to Venice Hurricane Risk Reduction Project: Incorporation of Non-Federal Levees from Oakville to St. Jude and New Orleans to Venice (NFL NOV) Federal Hurricane Protection Levee, Plaquemines Parish, Louisiana"

The U.S. Army Corps of Engineers, New Orleans District (CEMVN), has prepared a Draft Environmental Assessment EA #543 titled "Mitigation for New Orleans to Venice Hurricane Risk Reduction Project: Incorporation of Non-Federal Levees from Oakville to St. Jude and New Orleans to Venice (NFL NOV) Federal Hurricane Protection Levee, Plaquemines Parish, Louisiana" which is available for your review. This public notice is being posted per the National Environmental Policy Act (NEPA) and the Council of Environmental Quality's Regulations for Implementing NEPA, Section 1506.6, Public Involvement and the Clean Water Act (CWA) Section 404 in accordance with provisions of Title 33 CFR Parts 336.1(b)(1) and 337.1, which establish policy, practices, and procedures to be followed on Federal actions involving the disposal of dredged or fill material into waters of the United States (application of Section 404(b)(1) of the CWA guidelines). Notice is hereby given that the CEMVN has applied for a 401 Water Quality Certification to place fill material for the NFL NOV levee construction and mitigation in Plaquemines Parish, Louisiana. The applicant is applying to the Louisiana Department of Environmental Quality, Office of Environmental Services for a Water Quality Certification in accordance with statutory authority contained in the LAC 33:IX.1507.A-E and provisions of Section 401 of the Clean Water Act.

The purpose of the proposed action discussed in EA #543 is to evaluate additional project right of way (ROW) alternatives required for on-going construction of the NFL NOV as well as to evaluate mitigation plan alternatives for the impacts resulting from construction of the NFL NOV. The mitigation plan was formulated to provide compensatory mitigation for unavoidable impacts assessed in the Final Supplemental Environmental Impact Statement (SEIS), NOV Hurricane Protection Levee, Plaquemines Parish, Louisiana; Final Environmental Impact Statement (EIS), NOV, Louisiana, Hurricane Risk Reduction Project: Incorporation of NFL from Oakville to St. Jude, Plaquemines Parish, Louisiana; and Supplemental EA (SEA) #537, NOV Hurricane Risk Reduction Project: Changes to the NFL Project, Oakville to St. Jude, Plaquemines Parish, Louisiana. The Record of Decision (ROD) for both the SEIS and EIS was signed on 31 October 2011 and the Finding of No Significant Impact (FONSI) for SEA #537 was signed on 25 March 2016. The mitigation plan described in EA #543 will provide compensatory mitigation for all of wetland and bottomland hardwood (BLH) impacts. Evaluation of the proposed action includes application of the Section 404(b)(1) guidelines promulgated by the Administrator of the U.S. Environmental Protection Agency, through 40 CFR 230.

Location of Work The proposed action is located in Plaquemines Parish, LA

Description of Work The proposed action (TSP) assessed in EA #543 involves changes to the approved project for safety and stability that has necessitated the need for some additional ROW for levee reaches NOV 09 and NOV-NF-W-05a.1. The TSP for EA #543 to mitigate for wetland and BLH impacts as result of the NOV NFL construction is to purchase mitigation bank credits, in lieu fee (ILF) credits, and construct the Coleman Brackish Marsh project. In order to conform with approved mitigation banks some habitats have been combined. BLH wet, BLH dry, and scrub shrub impacts would be mitigated by purchase of BLH wet credits and swamp impacts would be mitigated by purchase of swamp credits from a mitigation bank. Freshwater marsh and wet pasture impacts would be mitigated by purchasing available ILF credits and mitigation bank credits. Intermediate, brackish, saline marsh, and open water impacts would be mitigated by constructing the Coleman Brackish marsh project. The Coleman brackish marsh project would create approximately 230 acres of brackish marsh in an area south of West Point a la Hache. Approximately 340 acres of the Mississippi River upstream of the project site near mile markers 50 and 51 would be dredged to provide borrow material for the Coleman brackish marsh project.

Public Involvement The purpose of this notice is to solicit comments from the public; Federal, State and local agencies and officials; Indian Tribes; and other interested parties. Copies of EA #543 and supporting documents are available at <http://www.nolaenvironmental.gov>, or upon request.

Comments concerning this 401 application can be filed with the Water Permits Section within 30 days of this notice by referencing WQC 110520-01/AI 101235/CER20160001 to the following address: Louisiana Department of Environmental Quality, Water Permits Division P.O. Box 4313, Baton Rouge, LA 70821-4313 Attn: Elizabeth Hill. A copy of the application is available for inspection and review at the LDEQ Public Records Center, on the first floor of the Galvez Building, Room 127 at 602 North Fifth Street Baton Rouge, LA 70802 from 8:00 am to 4:30 pm.

The 45-day public review for EA #543 and CWA Section 404(b)(1) will begin on June 27, 2017 and end on August 10, 2017. Interested parties may express their views on the proposed action. All comments postmarked on or before the expiration of the comment period for this notice will be considered. Comments may be submitted to Laura Lee Wilkinson by emailing Laura.L.Wilkinson@usace.army.mil, by fax to (504) 862-1375; U.S. Army Corps of Engineers; Regional Planning and Environmental Division South; PDN-CEP; 7400 Leake Ave, New Orleans, Louisiana 70118-3651 to request a copy.

*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, the New Orleans District is using this format for all proposed project elements requiring 404 evaluation, but involving no significant adverse impacts.

PROJECT TITLE. New Right of Way and Mitigation for the New Orleans to Venice (NOV) Hurricane Risk Reduction Project: Incorporation of Non-Federal Levees (NFL) from Oakville to St. Jude and the NOV Federal Hurricane Protection Levee, Plaquemines Parish, Louisiana

PROJECT DESCRIPTION. This project includes the enhancement of existing sites to mitigate for new right of way (ROW) impacts for NFL-NOV construction and compensate for habitat losses incurred during construction of the NFL- NOV project. The tentatively-selected alternative (TSA) is a combination of the tentatively selected plan for the new ROW impacts (NOV09 and NOV-NF-W-05a.1), the tentatively selected mitigation bank and in-lieu fee project (TSMP), and the Coleman Brackish Marsh Project. This TSA mitigates for the 58.4 acres of additional ROW, bottomland hardwoods (BLH)-dry, BLH-wet, swamp, fresh marsh (including wet pasture), and brackish marsh (including intermediate marsh, saline marsh, and open water) impacts in the Barataria basin. The TSMP would purchase BLH-Wet mitigation bank credits for impacts to scrub shrub, BLH-Wet and BLH-Dry habitats. The TSMP would purchase swamp mitigation bank credits to mitigate for swamp impacts. The TSMP would purchase available fresh marsh credits from the state of Louisiana ILF program, then remaining fresh marsh mitigation credits from a fresh marsh mitigation bank to mitigate for fresh marsh and wet pasture impacts. The TSA would construct the Coleman FS Brackish Marsh project to mitigate for the intermediate marsh, brackish marsh, and saline marsh impacts.

COLEMAN FS BRACKISH MARSH: The proposed work at the Coleman site includes the restoration of brackish marsh in open water adjacent to the existing levees in Plaquemines Parish to mitigate for fresh, brackish, intermediate, and saline marsh flood side (FS) impacts as result of the NFL and NOV projects. Mitigation of these four habitat types in the same location is possible because salinities in this area fluctuate such that both intermediate and brackish marsh species are found in this area, because brackish marsh provides similar functions and services for many of the same species as saline marsh, and open water impacts are mitigated with the establishment of the marsh type closest to the impacted water body. The proposed Coleman mitigation feature is located in Plaquemines Parish near West Pointe a La Hache, west of highway (HWY) 23 between river mile 46 and 49. Figures 1 and 2 below provide illustrations of the proposed FS brackish marsh restoration mitigation feature. The total area is approximately 230 acres.

Marsh restoration would require approximately 2,371,000 CY of material hydraulically dredged from within a 348 acre borrow site in the Mississippi River to construct a brackish marsh platform. Access to the proposed marsh creation area and river borrow would be accomplished through unnamed navigable waterways and the Mississippi River. The dredge pipeline/access corridor would use the existing culverts under HWY 23 that were used for other state dredging projects. Work would consist of the construction of approximately 15,754 LF of retention dikes to contain the dredge slurry. The retention dikes would be constructed to elevation 3.5 ft NAVD88. The approximate water bottom elevation for the Coleman marsh creation site is approximately -2.0 ft NAVD88. The retention dike would be constructed with a 5 ft crown with side slopes of 1:3. Approximately 58,400 CY of borrow for the retention dikes would be obtained from within the marsh creation site. Once the construction of the retention dikes is complete, borrow material from the Point Celeste borrow area river miles 50 to 51 within the Mississippi River would be pumped via pipeline to the marsh creation site. The 348 acre borrow site in the river would be dredged to a minimum depth of -90.0 ft NAVD88. Once dredge material is pumped to the site, the dredge slurry would be placed within the retention dikes to a maximum elevation of 3.0 ft NAVD88 and to the required fill elevation of 2.0 ft NAVD88. After one year, it is estimated that the 2.0 ft NAVD88 fill elevation would settle 1 ft to elevation 1.0 ft NAVD88. The target marsh elevation for brackish marsh habitat would be elevation 1.5 ft NAVD88. The construction duration would be approximately 6 months.

During the operations, maintenance, repair, replacement and rehabilitation (OMRR&R) phase of the project, prior to transfer of monitoring responsibilities to the non-Federal sponsor (NFS), the site would be monitored and surveyed to ensure the marsh creation area has met the initial success criteria. At a minimum, these would include periodic eradication of invasive/nuisance plants in the mitigation feature and mitigation monitoring and reporting as prescribed in Appendix J. Approximately one year after the construction of the marsh platform is complete, to allow for dewatering and settlement of the marsh platform, the retention dikes will be degraded to the target marsh elevation. Degraded dike material will be placed adjacent to, and along, the retention dikes by marsh buggies to a maximum elevation of 1.0 ft NAVD88. In conjunction with degrading the retention dikes, trenasses may be constructed within the marsh creation area if additional hydraulic conveyance is necessary. The acceptable trenasse width, if constructed by marsh buggy, would be the width of a marsh buggy. If the resulting depression is not adequate for minimal water flow, the marsh equipment could excavate material along the proposed trenasse alignment, not to exceed a 5-foot bottom width by 1-foot depth. The marsh feature is not expected to require planting, since it was assumed that native brackish marsh plants would colonize the marsh naturally. If required, the appropriate brackish marsh plant species would be planted if the brackish marsh plants do not colonize on their own. The construction duration for degrading the dikes would be approximately 2 months. Additional duration would be required if trenasses and brackish marsh plantings are required. Additional activities may need to be performed to ensure compliance with applicable mitigation success criteria.

NOV 05A: NOV 05 levee reach consists of 3.2 miles of back levee that ranges from the towns of St. Jude to City Price (figure 3) and is bounded on the east by Highway 23 and on the west by saline marsh and open water ditches and lakes. The total ROW required for the ramp, access roads, and the expanded footprint of the levee includes a total of approximately 24.41 acres of saline marsh and 2.64 acres of scrub shrub. Since the ROW is constrained by the presence of Highway 23 and a newly constructed Entergy power line on the east side, the additional levee footprint would likely expand to the west into marsh and open water areas along the entire length of the levee bordering the marshlands.

This area previously evaluated in 404(b)(1) evaluation for Supplemental Environmental Impact Statement, New Orleans to Venice, Federal Hurricane Protection Levee, Plaquemines Parish, Louisiana, June 2011.

NOV 09: NOV 09 consists of 2.5 miles of river levee along the West Bank Mississippi River Levees (MRL) from St. Jude Church to City Price Church (figure 3). The total ROW required for levee construction, staging areas, and access roads would impact maintained pasture and existing uplands which are part of the existing MRL levee. It would also impact approximately 23.5 acres of BLH-wet.

This area previously evaluated in 404(b)(1) evaluation for Supplemental Environmental Impact Statement, New Orleans to Venice, Federal Hurricane Protection Levee, Plaquemines Parish, Louisiana, June 2011.

NOV-NF-W-05a.1: The additional ROW in NOV-NF-W-05a.1 would impact cattle pasture and topographical depressions that are often wet and classified as wet pasture which is a jurisdictional wetland (figure 4). The entire levee reach of NFL Section 2 with additional ROW for NOV-NF-W-05a.1 would impact approximately 34.9 acres of wet pasture. Dominant herbaceous species include Bermuda grass (*Cynodon* sp.) and scattered smartweed (*Polygonum* sp.), and wet pasture species include arrowhead or bull tongue (*Sagittaria* sp.), cordgrass (*Spartina* sp.), and rushes (*Juncus* sp.). Woody vegetation can be present if the area is not regularly maintained and can grow into scrub shrub layer of eastern baccharis (*Baccharis halimifolia*) and rattlebox (*Sesbania drummondii*), but this area is for the most part maintained. The low plant species diversity of these wet pasture areas limits their value to wildlife.

As required by Section 404(b)(1) of the Clean Water Act (CWA), an evaluation to the short- and long-term impacts associated with the discharge of dredged and fill materials into waters of the United States resulting from this project has been completed. Section 404(b)(1) public notice was posted in the Advocate, Times Picayune, and Plaquemines Gazette on June 25, 2017. Comments on the Section 404(b)(1) public notice received will be included in this appendix E when EA #543 is finalized.

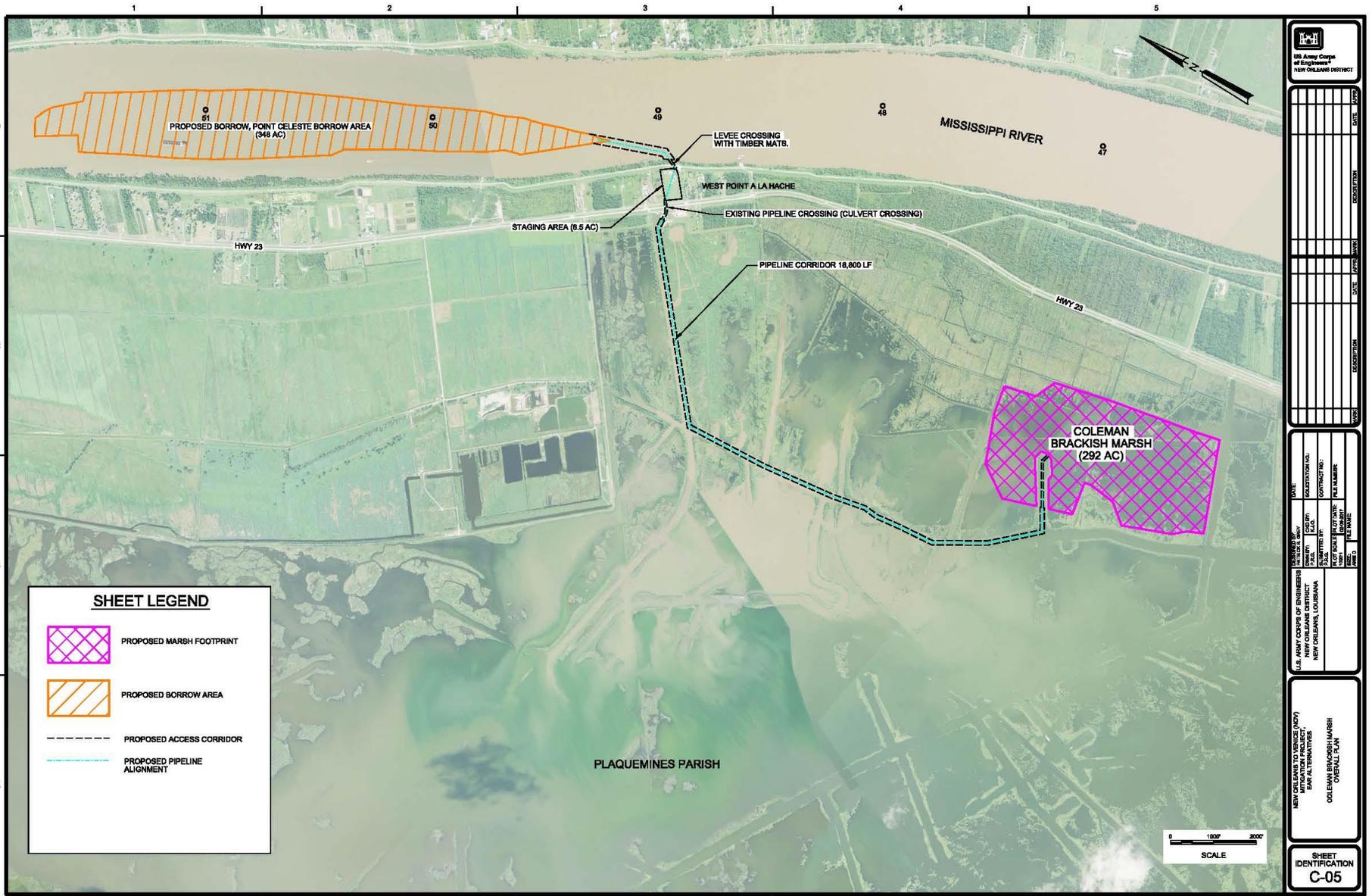


Figure 1. Coleman Brackish Marsh Creation Project

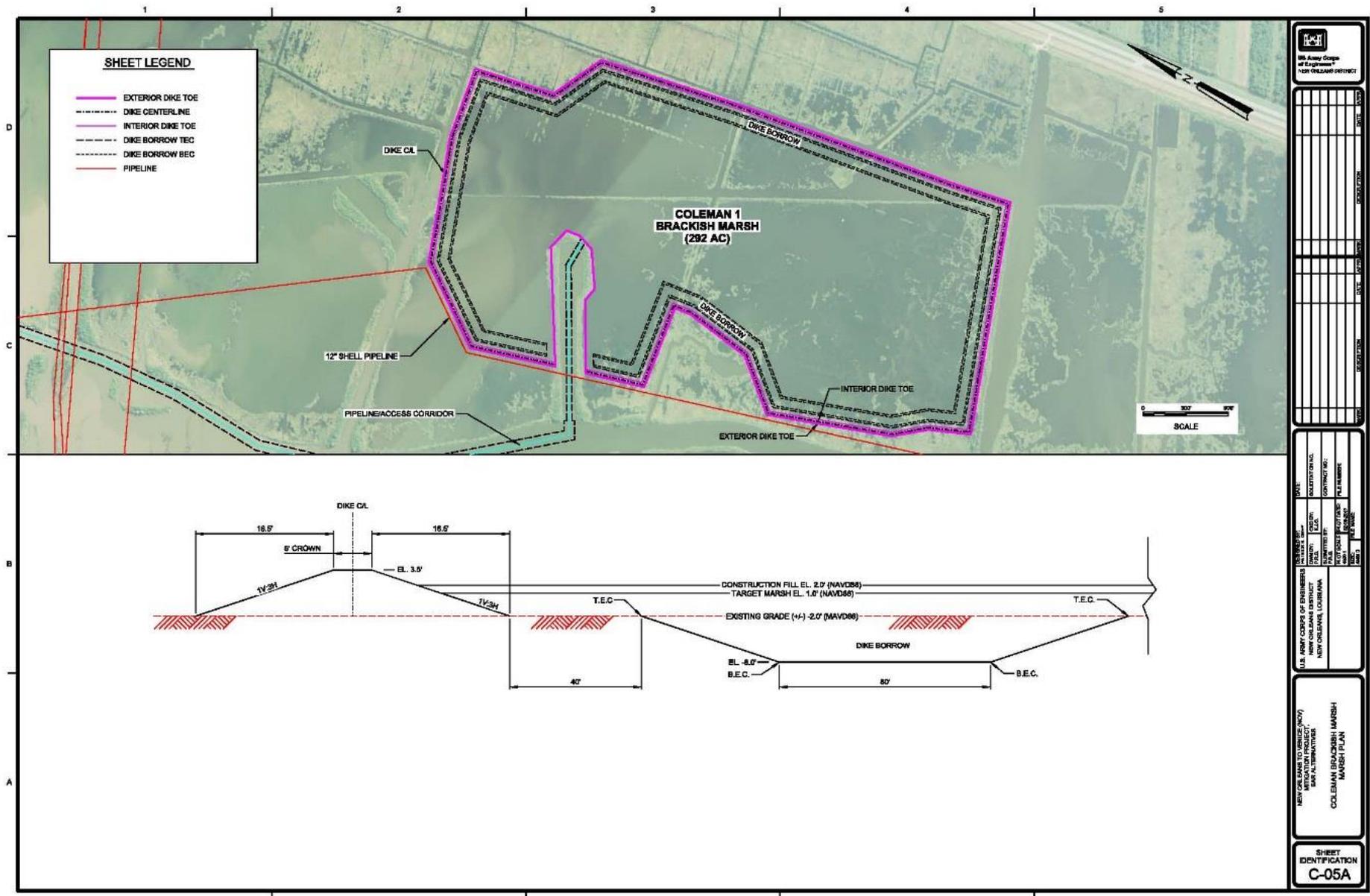


Figure 2. Plan designs for Coleman Brackish Marsh Creation Project

NOV-05a and NOV-09 Area Outside Original Project Limits

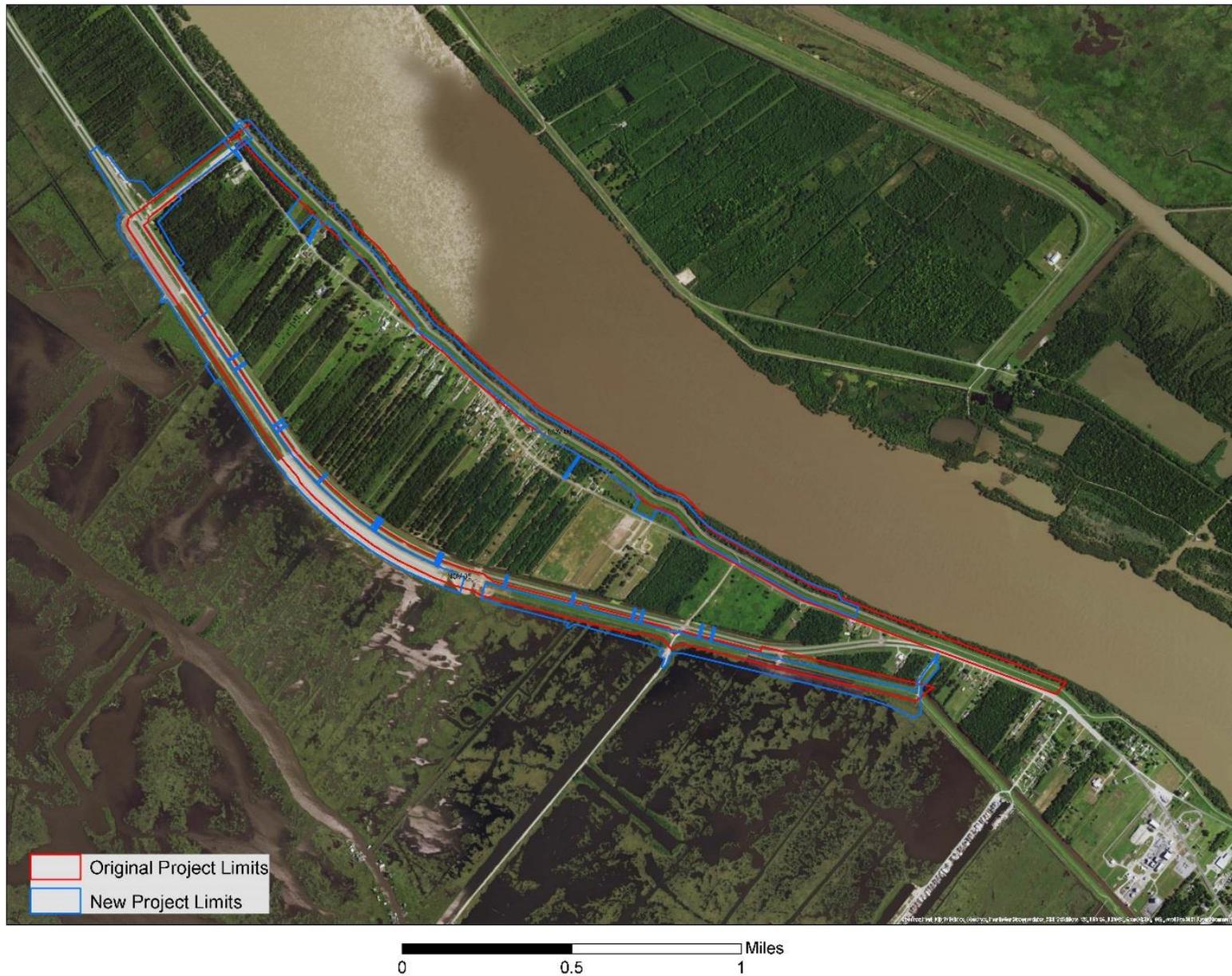


Figure 3. NOV-09 Additional Right of Way

NF-05a.1 Area Outside Original Project Limits

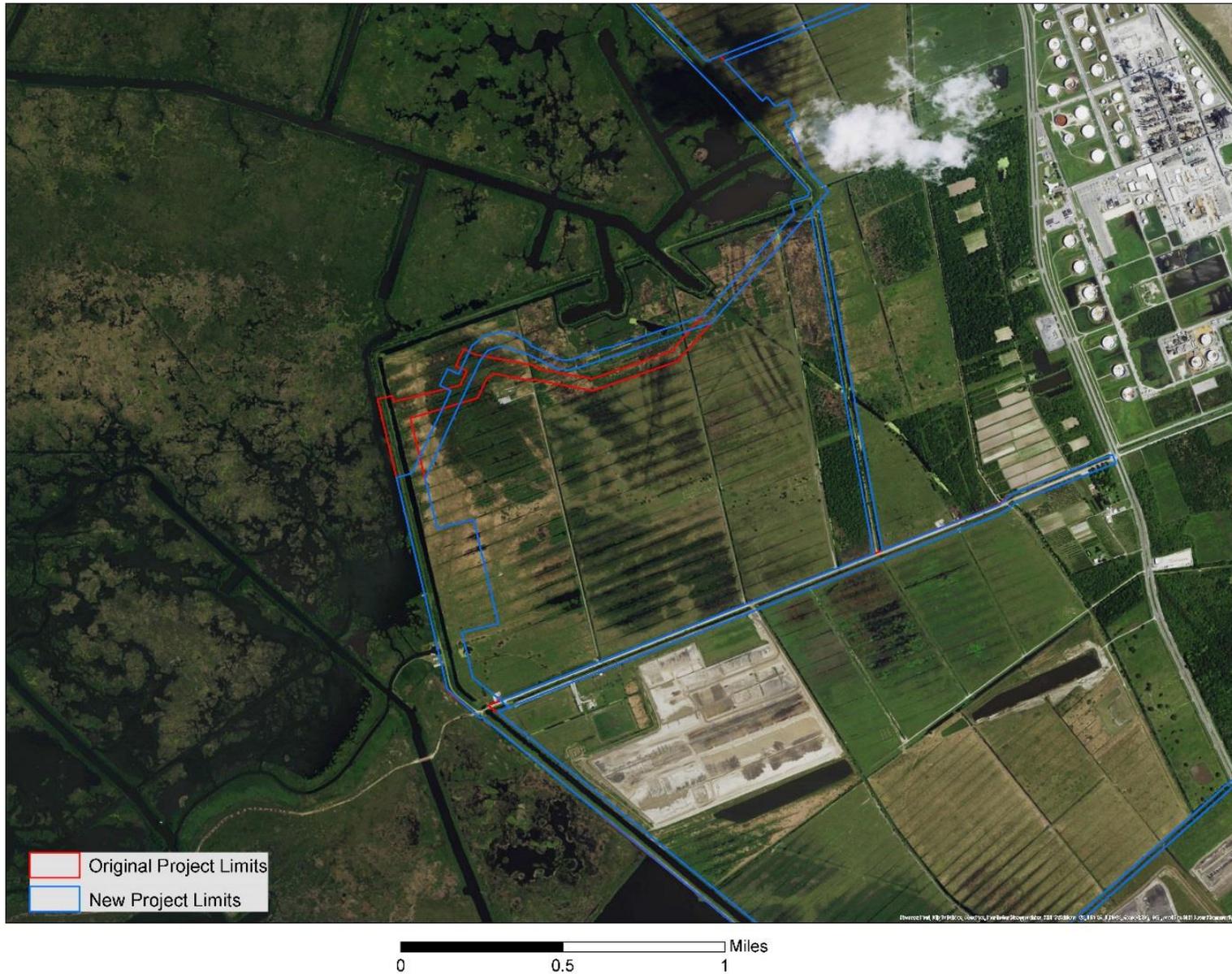


Figure 4. NOV-NF-W_05a.1 Additional Right of Way

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

Preliminary¹

Final²

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);

FOR (1) ONLY			
YES	NO*	YES	NO

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.
- (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) 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).³

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	<u> X </u>
(3) Results from previous testing of the material or similar material in the vicinity of the project	<u> X </u>
(4) Known, significant sources of persistent pesticides from land runoff or percolation	<u> </u>
(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	<u> X </u>
(8) Other sources (specify)	<u> </u>

Appropriate references: See memorandum (Encl 2)

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	<u> X </u>
(2) Current velocity, direction, and variability at disposal site	<u> X </u>
(3) Degree of turbulence	<u> X </u>
(4) Water column stratification	<u> X </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: See memorandum (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*

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*

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

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

¹Negative 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.

²Negative 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.

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

7. Evaluation Responsibility.

a. This evaluation was prepared by:

Name: Whitney Hickerson
Position: Hydraulic Engineer
Organization: U.S. Army Corps of Engineers, New Orleans District
Date: 05/03/2017

Name: Daniel Meden
Position: Biologist
Organization: U.S. Army Corps of Engineers, New Orleans District
Date: 05/03/2017

b. This evaluation was reviewed by:

Name: Eric Glisch
Position: Environmental Engineer
Organization: U.S. Army Corps of Engineers, New Orleans District
Date: 05/03/2017

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: _____

Chief, Environmental Planning and Compliance
Branch



**US Army Corps of Engineers,
New Orleans District**

To: File

From: Whitney Hickerson, CEMVN-ED-H

CC:

Date: 03 May 2017

Re: New Orleans to Venice (NOV), Louisiana, Hurricane Risk Reduction Project: Incorporation of Non-Federal Levees (NFL) From Oakville to St. Jude and New Orleans to Venice Federal Hurricane Protection Levee, Plaquemines Parish, Louisiana Project

A short form 404 (b)(1) evaluation of the Federal actions for the subject project was performed by ED-H for water quality impacts. Existing data were used to make factual determinations for the subject actions. The following summarizes the review process and comments noted:

I. Subpart B – Review of Compliance

- a. *230.10 (b) (1)*: After consideration of disposal site dilution and dispersion, there are no expected violations of State water quality standards from the proposed Federal actions.

II. Subpart C – Physical and Chemical Characteristics of the Aquatic Ecosystem

- a. *230.20 - Substrate Impacts*: The Point Celeste Borrow Area of the Mississippi River material consists of silty and fine sands underlain by clay material. Due to the close vicinity of the disposal site, it is expected that the substrate of the Coleman Marsh and nearby shallow waters also consist of silty and fine sands. Disposal of the top layer of the Point Celeste borrow area of the Mississippi River material into the Coleman Marsh is therefore not expected to change the physical characteristics of the project site substrate.

Disposal of the Point Celeste Borrow Area of the Mississippi River material into the Coleman Marsh is expected to smother sessile benthic organisms at the project site. Following consolidation of material at the site and establishment of any vegetation, these organisms would be replaced by organisms adapted to aquatic habitat that recolonize the project site.

Please see content addressing 230.61 (a) for the Point Celeste Borrow Area of the

Mississippi River sediment evaluation results. Based on findings of the sediment evaluations, channel material is not expected to adversely affect any benthic aquatic organisms that recolonize the project site.

Substrate impacts of the proposed project are expected to be a byproduct of what is considered to be beneficial habitat modification. Due to high local subsidence rates, global sea-level rise, wind-induced wave energy, tropical activity that occasions the area, and other factors, the proposed project is expected to eventually disappear, as it would be subject to these forces of nature and eventually erode and submerge.

- b. *230.21 – Suspended Particulates/Turbidity Impacts:* The proposed project includes unconfined disposal of hydraulically dredged channel material comprised of silty and fine sands. The project is therefore expected to generate minor, localized increases in turbidity in the vicinity of the project site during construction activities.
- c. *230.22 – Water Column Impacts:* The proposed project is expected to generate localized water column impacts in the vicinity of the project site during construction activities.

Please see content addressing 230.61 (a) for the Point Celeste Borrow Area of the Mississippi River sediment evaluation results. Based on findings of the sediment evaluations, water column impacts of the proposed project not expected to be significant.

- d. *230.23 – Alteration of Current Patterns and Water Circulation:* The proposed project would locally alter current patterns and water circulation, by creating a hydraulic barrier in an area that is currently open water. However, there are no expected adverse impacts to the alteration of current patterns and water circulation in the project area.
- e. *230.24 – Alteration of Normal Water Fluctuations/Hydroperiod:* The proposed project would have a negligible impact on the hydrology of surrounding surface waters.
- f. *230.25 – Alteration of Salinity Gradients:* Project area salinity gradients are largely determined by the interaction of waters from the Mississippi, the Gulf of Mexico, and rainfall-runoff within the Barataria Basin. Due to the small footprint of the proposed project, as well as its location (e.g., it is not obstructing any large channels connected to the Gulf of Mexico), the project is not anticipated to alter salinity gradients.

III. Subpart F – Human Use Characteristics

- a. *230.50 – Effects on Municipal and Private Water Supplies:* The nearest municipal or private water supply is located in the Mississippi River at West Pointe a la Hache, which is hydraulically separated from the project site by earthen levees.

IV. Subpart G – Evaluation of Dredged or Fill Material

- a. *230.61 (a) – Considerations in Evaluating the Biological Availability of Possible Contaminants in Dredged or Fill Material:* The most recent sediment evaluation that includes sediment samples collected in the vicinity (15 to 30 miles downstream) of the Point Celeste borrow area was completed in May 2007 (Providence Engineering and Environmental Group LLC, 2014). For the evaluation, composite samples were collected at each potential borrow source area and restoration area for laboratory analyses. The number of collection points (subsample collection locations) for each composite depended on the size of the area; however, at least three subsamples were collected at each potential borrow source and restoration area to make up composite samples. Water quality samples were collected within the water column. Sediment samples were collected from the surficial bed material (upper 15 centimeters or six inches) settled on the bottom of the water body (*i.e.* Mississippi River or Gulf of Mexico) using a Petit Ponar™ bottom sampler. Additional sediment composite samples were collected for sediment elutriate analysis. The elutriate samples were prepared for analysis in the laboratory in accordance with the USACE standard procedures.

The ambient water sample (MS RIV01) from the Mississippi River borrow source area exhibited a dissolved arsenic concentration of 1.1 µg/L, which is less than the freshwater numerical criteria (acute toxicity criterion of 339.8 µg/L and chronic toxicity criterion of 150 µg/L) established for arsenic in the LA WQS. The LA WQS numerical criterion for protection of human health against potential toxicity associated with consumption of drinking water and aquatic organisms is 50 µg/L for waters designated for public water supply.

Dissolved copper was reported in samples from all of the ambient water sampling locations at concentrations ranging from 0.50 µg/L to 2.2 µg/L, all of which are less than the LA WQS marine numerical criteria for protection of aquatic life established for copper (acute toxicity criterion and chronic toxicity criterion are both 3.63 µg/L).

Dissolved mercury⁴ (as inorganic mercury not methylmercury) was detected at only one ambient water sampling location, the Mississippi River borrow source area (sample number MS Riv 01), at a concentration of 0.000093 mg/L or 0.093 µg/L. The detected concentration of mercury is less than both the LA WQS freshwater and marine numerical criteria for mercury established for the protection of aquatic life against acute toxicity (freshwater acute criterion of 2.04 µg/L and marine acute criterion of 2.0 µg/L). However, the detected concentration for mercury exceeds both the LA WQS freshwater and marine numerical criteria for mercury established for the protection of aquatic life against chronic toxicity (freshwater chronic criterion of 0.012 µg/L and marine chronic criterion of 0.025 µg/L).

In June 2005, a TMDL for mercury in fish tissue for coastal bays and gulf waters of Louisiana⁶ was prepared for the LDEQ and USEPA. The report included the project area comprised of the Barataria Basin Coastal Bays (Coastal Segment

021102). The TMDL report identifies atmospheric deposition as the primary source of mercury and notes that likely avenues of input to coastal areas, besides direct deposition, include rivers, storm water runoff, and release from sediments. There are no known point-source wastewater discharges of mercury in the vicinity of the Mississippi River borrow source area.

Dissolved thallium was detected at low concentrations in the ambient water samples collected the Mississippi River borrow source area (MS Riv 01). The concentrations detected (0.31 µg/L in MS Riv 01) are only marginally higher than the MDL of 0.25 µg/L for thallium. The reported thallium concentrations are well less than the USEPA WQC marine water numerical criterion (6.3 µg/L) for protection of human health (consumption of aquatic organisms). The reported concentrations for thallium are unremarkable and do not indicate contamination.

Dissolved zinc was detected in samples from all of the ambient water sampling locations at concentrations of 4.7 µg/L (MS Riv 01). The concentration range for the marine locations (13 µg/L to 16 µg/L) is less than the LA WQS marine numerical criteria for protection of aquatic life established for zinc (acute toxicity criterion of 90 µg/L and chronic toxicity criterion of 81 µg/L). The concentration of 4.7 µg/L reported for the ambient water sample from the Mississippi River borrow source area (MS Riv 01) is less than the LA WQS freshwater (hardness dependent) numerical criteria for protection of aquatic life calculated for zinc applicable to the Mississippi River: 164.7 µg/L (acute criterion) and 150.4 µg/L (chronic criterion). The zinc concentration at the Mississippi River borrow source area is less than the LA WQS numerical criterion of 5.0 µg/L for protection of human health (consumption of drinking water and organisms).

A total beryllium concentration was reported for only one elutriate sample (MS Riv 01 from the Mississippi River potential borrow source) at 1.0 µg/L. This value is only marginally above the MDL of 0.6 µg/L for beryllium. No numerical criteria for beryllium are established by either the LA WQS or USEPA WQC. The concentrations reported for cadmium are less than the LA WQS marine numerical criteria for protection of aquatic life established for cadmium (acute toxicity criterion of 45.35 µg/L and chronic toxicity criterion of 10.0 µg/L) and less than the LA WQS freshwater (hardness dependent) numerical criteria (acute toxicity criterion of 50.7 µg/L and chronic toxicity criterion of 1.42 µg/L) calculated for cadmium as applicable to the Mississippi River. The concentrations reported for cadmium are less than the LA WQS drinking water supply numerical criteria for protection of human health (10 µg/L) as applicable to the Mississippi River. Neither the LA WQS nor the USEPA WQC establish cadmium numerical criteria for protection of human health applicable to marine waters. The reported concentrations for beryllium and cadmium in elutriate samples are unremarkable and do not indicate contamination.

Total chromium concentrations were reported for the elutriate samples from the Mississippi River potential borrow source (MS Riv 01). The concentrations

detected are 23 µg/L (MS Riv 01). All of the elutriate sample concentrations for chromium are less than the LA WQS marine numerical criteria for protection of aquatic life established for chromium (acute toxicity criterion of 515 µg/L and chronic toxicity criterion of 103 µg/L) and less than the LA WQS freshwater (hardness dependent) numerical criteria for protection of aquatic life (acute toxicity criterion of 780.3 µg/L and chronic toxicity criterion of 253.1 µg/L) calculated for chromium as applicable to the Mississippi River. The concentrations reported for chromium are less than the LA WQS drinking water supply numerical criteria for protection of human health (50 µg/L) as applicable to the Mississippi River.

Total copper concentrations were reported for the elutriate samples from all sampling locations at levels ranging from 0.94 µg/L to 19 µg/L. The copper concentrations in the elutriate samples from all of the marine locations are less than the LA WQS marine numerical criteria numerical criteria for protection of aquatic life established for copper (acute toxicity criterion and chronic toxicity criterion are both 3.63 µg/L). The elutriate concentration of 19 µg/L reported for the sample from the Mississippi River potential borrow source area is less than the LA WQS freshwater (hardness dependent) acute toxicity numerical criteria for protection of aquatic life of 27.6 µg/L calculated for the Mississippi River, but exceeds the LA WQS freshwater (hardness dependent) chronic toxicity numerical criterion for protection of aquatic life of 17.7 µg/L calculated for the Mississippi River. It is noted that the comparison of the elutriate results reported as total copper concentrations with the LA WQS numerical criteria for copper, which are expressed as dissolved concentrations, is conservative. Neither the LA WQS nor the USEPA WQC establish copper numerical criteria for protection of human health applicable to marine waters. The LA WQS numerical criterion for protection of human health in freshwaters designated for public water supply is 1.0 milligram per liter (mg/L) or 1,000 µg/L.

Total lead concentrations were reported for the elutriate samples ranged from 0.51 µg/L to 19 µg/L. The elutriate concentration of 19 µg/L reported for the sample from the Mississippi River potential borrow source area is less than the LA WQS freshwater (hardness dependent) acute toxicity numerical criteria for protection of aquatic life of 102.8 µg/L calculated for the Mississippi River, but exceeds the LA WQS freshwater (hardness dependent) chronic toxicity numerical criterion for protection of aquatic life of 4.00 µg/L calculated for the Mississippi River. Again, it is noted that the comparison of the elutriate results reported as total lead concentrations with the LA WQS numerical criteria for lead, which are expressed as dissolved concentrations, is conservative. The LA WQS do not establish a numerical criterion for lead for the protection of human health (consumption of aquatic organisms only) applicable to marine waters; however, the LA WQS numerical criterion for protection of human health (consumption of drinking water and aquatic organisms) for freshwaters designated for public water supply is 50.0 µg/L.

Total nickel concentrations were reported for the elutriate samples and a concentration of 22 µg/L was reported for the Mississippi River potential borrow source area. The nickel concentration of 22 µg/L for the Mississippi River potential borrow source elutriate sample is less than the LA WQS freshwater (hardness dependent) numerical criteria for protection of aquatic life (acute toxicity criterion of 2,036 µg/L and chronic toxicity criterion of 226.1 µg/L) calculated for nickel as applicable to the Mississippi River. No nickel numerical criteria for protection of human health are established by the LA WQS. The USEPA WQC marine (saltwater) numerical criterion for protection of human health established for nickel is 4,600 µg/L, and the freshwater numerical criterion for protection of human health (consumption of drinking water and aquatic organisms) is 610 µg/L for water bodies designated as a public water supply (e.g., the Mississippi River).

Total zinc concentrations were reported in elutriate samples with the concentration of 72 µg/L reported for the elutriate sample from the Mississippi River borrow source area is less than the LA WQS freshwater (hardness dependent) numerical criteria for protection of aquatic life calculated for zinc applicable to the Mississippi River: 164.7 µg/L (acute criterion) and 150.4 µg/L (chronic criterion).

The overall assessment of the sediment sample results for samples collected from the proposed restoration project area, the potential borrow source area, and the outside of right of way areas is that no significant anthropogenic contamination is indicated that would have potential for long-term, adverse impacts to water quality or the aquatic environment in the vicinity of the project and potential borrow areas. As discussed in the comparison of elutriate results versus ambient water results, there is a potential for mobilization of metals from the sediments to the water column during the construction phase of these projects, but the temporary increases in metals concentrations that are likely do not represent adverse impacts to water quality and the aquatic environment when evaluated in the context of the potential for significant exceedances of the applicable numerical criteria of the LA WQS and/or USEPA WQC.

Elutriate and sediment toxicity test results did not indicate that short-term water-column effects or long-term changes in substrate from dredged material placement would adversely affect water column or benthic organisms.

Appropriate references: See references

- b. An evaluation of the appropriate information in VI(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: Yes

II. Disposal Site Delineation

- a. 230.11 (f) – *Considerations in Evaluating the Disposal Site*: The proposed project is located in Plaquemines parish near the city of West Pointe a La Hache, west of HWY 23 between river miles 46 and 49.
- b. An evaluation of the appropriate factors in V(a) above indicates that the disposal site and/or size of mixing zone are acceptable: Yes.

III. Subpart H - Actions to Minimize Adverse Effects

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: NA

IV. Factual Determinations

A review of appropriate information as identified in items I - VI above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge:

- a. Physical substrate at the disposal site (review sections II, IV, V, and VI above): Yes
- b. Water circulation, fluctuation and salinity (review sections II, IV, V, and VI): Yes
- c. Suspended particulates (review sections II, IV, V, and VI): Yes
- d. Contaminant availability (review sections II, IV, and V): Yes

VIII. References

- a. Louisiana Department of Environmental Quality (LDEQ). 2016. *LAC Title 33, Part IX*. <http://www.deq.louisiana.gov/portal/DIVISIONS/LegalAffairs/RulesandRegulations/Title33.aspx>. Last accessed April 7, 2017.
- b. National Oceanic and Atmospheric Administration (NOAA). *SQuiRT Cards*. <http://response.restoration.noaa.gov/environmental-restoration/environmental-assessment-tools/squirt-cards.html>. Last accessed April 7, 2017.
- c. Providence Engineering and Environmental Group LLC, Parker, Phillip. 2007. *Caminada Headlands and Shell Island Restoration Projects: Water Quality Assessment Report*. Baton Rouge, LA: U.S.
- d. U.S. Coast Guard (USCG). 2016. National Response Center. <http://nrc.uscg.mil/>. Last accessed March 30, 2017.
- e. U.S. Environmental Protection Agency (USEPA). 2016. *National Recommended Water Quality Criteria – Aquatic Life Criteria*

Table. <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>. Last accessed April 7, 2017.