APPENDIX B: COORDINATION LETTERS



DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, NEW ORLEANS DISTRICT 7400 LEAKE AVENUE NEW ORLEANS, LOUISIANA 70118

Programs and Project Management Division Projects and Restoration Branch

5 July 17

Mr. Gordon E. Dove Parish President Terrebonne Parish Government Tower 8026 Main Street, 7th Floor Houma, Louisiana 70360

Dear Mr. Dove:

As you are aware, Congress authorized the repair, replacement, modification, and improvement of non-federal levees and associated protection measures in Terrebonne Parish at full federal expense as part of Public Law 109-234 (4th Supplemental) enacted in 2006. In accordance with this law, federal expenditures for this work were capped at \$30,024,000. To date, the U.S. Army Corps of Engineers (USACE) raised an approximately six mile reach of Terrebonne Parish levees (Susie Canal and Orange Street levees) to +8.0' North American Vertical Datum of 1988. Mitigation required for this work is ongoing and the primary purpose of this letter is to provide you with an update on the status of that effort.

The Suzie Canal and Orange Street Levee Marsh Mitigation project was built in 2010 to mitigate for the Brackish Marsh impacts from the Suzie Canal and Orange Street Levee Construction. The Marsh Mitigation construction created approximately 71 acres of marsh habitat in the open water areas adjacent to the levee.

You are hereby informed that the Suzie Canal and Orange Street Levee Marsh Mitigation Construction is complete. As-built drawings of the Marsh Mitigation Construction Project are enclosed for your reference.

The levee construction generated a requirement for 17.21 Average Annual Habitat Units (AAHUs) of Brackish Marsh mitigation. In 2014 the Interagency Mitigation Team (IMT) consisting of the USACE, New Orleans District (MVN), U.S. Fisheries Wildlife and Service and National Marine Fisheries Service conducted a Wetland Value Assessment (WVA) of the Marsh Mitigation Construction and determined that the project would satisfy 10.48 AAHUs of Brackish Marsh Mitigation, leaving remainder of 6.73 AAHUs to be acquired for completion of the mitigation requirements. It is our intent to purchase credits from a suitable mitigation source to compensate for this shortfall and to work with the Parish to utilize any remaining funds to purchase mitigation credits for other Parish non-Federal levee projects. We have been coordinating our efforts with your Parish Manager, Mr. Al Levron. In December 2015, the IMT requested that gaps in the containment dikes be constructed in 9 locations in order to allow tidal connection into the mitigation areas. The gaps were constructed by USACE hired labor crews and completed in August 2016.

In accordance with the Cooperation Agreement among the Department of the Army, the Terrebonne Parish Consolidated Government (TPCG) and the Terrebonne Parish Levee and Conservation District (TLCD) dated December 15th, 2008, TPCG and TLCD shall undertake the Operation and Maintenance of this Marsh Mitigation Construction.

As part of the operations and maintenance, the Environmental Assessment (EA) states that TPCG and TLCD shall conduct monitoring in years 1, 3, 5, 10 and 20 after construction is complete. In 2013 Terrebonne Parish contracted with CB&I to conduct the monitoring activities required for the marsh mitigation project. This monitoring event occurred at year 3 following completion of the mitigation project. Results from this monitoring event indicated that some of the marsh creation cells were not within the functional marsh elevation range, which resulted in the required acquisition of the 6.73 AAHUs discussed above. It should be noted that the year 1 monitoring event did not occur as required, which would have allowed for necessary adjustments to have been made to correct for elevations outside of the target range.

Due to the amount of time that has passed since the EA was written and to better address the current conditions, Mitigation Area Monitoring Guidelines are provided below.

Monitoring Guidelines:

Restrict Public Access: The IMT has raised concerns about the use of All Terrain Vehicles (ATVs) in the mitigation areas. The non-Federal Sponsor (NFS) must restrict public access to the mitigation area. Further use of ATVs or public access in general will jeopardize the success of the mitigation. Because of observed tracks from ATVs during the IMT field investigation, an analysis is being conducted to determine an additional AAHU requirement for that damage and that requirement will be added to the existing 6.73 AAHUs being purchased. In the future, if additional damages are observed in the mitigation cells, the Parish will be required to be create or purchase additional mitigation credits.

Monitoring Reports: In accordance with the EA, monitoring shall be conducted in the following years: 2017, 2022 and 2032. Linear transects should have been established at the time of planting. One-hundredth acre plots should have been established along these transects so as to cover 2 percent of the planted area. Those

plots should have been identified with an 8-foot polyvinyl chloride pipe anchored with a metal T post at plot center and GPS coordinates should have been recorded. A current map depicting the location of the survey plots and a listing of the coordinates for each survey plot shall be prepared for each monitoring report. In years 2017, 2022 and 2032, elevations along the transect lines, species present and percent cover within the plots, presence or absence of invasive species, ground level photographs and the general narrative describing the overall condition of the mitigation area, including wildlife noted shall be provided. A monitoring report describing the results shall be provided to MVN after each monitoring survey. The report will be distributed to the IMT.

2017 Requirement: This will serve as the Year 5 Monitoring Requirement listed on pages 5 & 54 of the EA. The monitoring report will include an aerial photograph, surveys of aquatic species using cast nets or seines, elevations along the transect lines, species present and percent cover within the plots, presence or absence of invasive species, ground level photographs, and the general narrative description, including wildlife noted. A monitoring report describing the results shall be provided to MVN after the monitoring survey. The report will be distributed to the IMT.

2017 Success Criteria

a. At least 65 percent of the marsh creation sites remain within the target elevation range.

b. Demonstrated use of bank area by estuarine-dependent marine fishery species (not just forage species) as shown by sampling in 2017 using cast nets and/or seines in open water within the project area.

c. Observed use of created marsh by wildlife species typically found in natural marsh habitats of similar salinity regime.

d. At least 65 percent of the mitigation area contains emergent vegetation.

If 2017 monitoring report results indicate that less than 65 percent of the mitigation area contains emergent vegetation, the TPCG may be required by the IMT to deposit and plant additional dredged material.

It is in the best interest of the Parish to continue to monitor the mitigation areas; not only to ensure the success of the mitigation, but also to serve as a record to accurately determine the extent of damage should there be a need to seek federal funding for repairs following a storm. We are striving to utilize the full amount of funding provided by Congress for this work and provide the Parish with the maximum benefit from the 4th Supplemental funds. Closing out the Marsh Mitigation Construction is a critical step in completing this process. As part of this effort to memorialize the completion of this project, a Supplemental EA will be prepared to reference the changes to the monitoring plan approved by the IMT and document the decision to purchase mitigation credits. We look forward to working closely with the Parish to identify priorities for the remainder of the funds.

If there are any questions concerning this letter or your operations and maintenance responsibilities, please contact Mr. Durund Elzey, Acting, Deputy District Engineer for Programs and Project Management at (504) 862-2204, Durund.F.Elzey@uace.army.mil or Ms. Sarah Bradley, Senior Project Manager at (504) 862-1723, Sarah.C.Bradley@usace.army.mil.

Sincerely,

Michael N. Clancy Colonel, U.S. Army District Commander

Enclosures

cc: (w/enclosures)

Mr. Reggie Dupre Executive Director Terrebonne Levee and Conservation District 220 Clendening Road Houma, Louisiana 70363 Mr. Al Levron Parish Manager Terrebonne Parish Government Tower 8026 Main Street, 7th Floor Houma, Louisiana 70360

cc: (w/o enclosures)

Ms. Julie Vignes, Chief, Engineering Division
Mr. Stuart Waits, Chief, Construction Division
Ms. Linda LaBure, Chief, Real Estate Division
Mr. Troy Constance, Chief, Regional Planning and Environmental Division South
Mr. Stephan Roth, Chief, Office of Counsel
Mr. Michael Park, Chief, Operations Division



GORDON E. DOVE PARISH PRESIDENT

Office of the Parish President

TERREBONNE PARISH CONSOLIDATED GOVERNMENT P.O. Box 6097 HOUMA, LOUISIANA 70361-6097



(985) 873-6401 FAX: (985) 873-6409 E-MAIL: gdove@tpcg.org

October 24, 2017

Colonel Michael N. Clancy, USA, District Commander USACE/NOD 7400 Leake Avenue New Orleans, LA 70118

Dear Colonel Clancy:

This letter is to inform you that we are in receipt of your letter dated 5 July 2017 turning over the Suzie Canal and Orange Street Levee Marsh Mitigation project to the Terrebonne Parish Consolidated Government. We are aware of, and fully understand our responsibilities for monitoring, operation, and maintenance of the project as set down in your letter and in the Cooperation Agreement dated 15 December 2008, and are committed to fully undertaking those responsibilities. Further, we have all the necessary right, title, and real estate interests required to perform those responsibilities.

We recently submitted our 2017 Monitoring Report to the Interagency Mitigation Team (IMT) and we will provide future monitoring reports to the IMT as required by EA #450 to assist in their determination as to the performance of the mitigation project and whether remediation is needed.

We are also aware of the current shortfall in the Average Annual Habitat Units required to fully mitigate for the levee project and that USACE intends to purchase in Lieu Fee credits to satisfy that portion of the mitigation requirement. We support your effort to do so.

Please contact me if you have any questions.

Respectfully,

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Gordon E. Dove Parish President

CC: Al Levron, Parish Manager Mart Black, Coastal Restoration Director Council Reading File



State of Louisiana department of natural resources

OFFICE OF COASTAL MANAGEMENT

July 5, 2018

Daniel Meden Corps of Engineers- New Orleans District P.O. Box 60267 New Orleans, LA 70160-0267 *Via e-mail:* Daniel.C.Meden@usace.army.mil

RE: C20070273 Mod 01, Coastal Zone Consistency New Orleans District, Corps of Engineers Direct Federal Action Terrebonne Parish Non-Federal Levees mitigation project: offset of un-realized mitigation by purchase of credits either from the Chef Menteur mitigation bank or through the In Lieu Fee program, Terrebonne Parish, Louisiana

Dear Mr. Meden:

The above referenced project has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Jeff Harris of the Consistency Section at (225) 342-7949 or jeff.harris@la.gov.

Sincerely,

<u>/S/ Charles Reulet</u> Administrator Interagency Affairs/Field Services Division

CR/SK/jdh

cc: Dave Butler, LDWF Rod Pierce, OCM/FI Mart J. Black, Terrebonne Parish



United States Department of the Interior

FISH AND WILDLIFE SERVICE 646 Cajundome Blvd. Suite 400 Lafayette, Louisiana 70506 August 20, 2018



Colonel Michael N. Clancy District Commander U.S. Army Corps of Engineers Post Office Box 60267 New Orleans, Louisiana 70160-0267

Dear Colonel Clancy:

The ongoing Terrebonne Parish Non-Federal Levee System Repairs, Replacements, Modifications, and Improvements project was authorized under the Emergency Supplemental Appropriations Act for Defense and the Hurricane Recovery of 2006 (Public Law 109-234, Title II, Chapter 3, Flood Control and Coastal Emergencies). That law provided Terrebonne Parish funds for repairs, replacement, modifications and improvements of non-Federal levees and associated protection measures at full Federal expense as relating to Hurricane Katrina and other hurricanes.

Impact analyses associated with the project were conducted by an interagency environmental team (IET) which consisted of representatives from the U.S. Fish and Wildlife Service (Service), National Marine Fisheries Service (NMFS), and the U.S. Corps of Engineers (USACE). Construction of the project impacted bottomland hardwoods and fresh, intermediate, and brackish marshes. Impacts to bottomland hardwoods were mitigated via the purchase of credits from mitigation banks while impacts to brackish marsh were to be mitigated by a USACE constructed project. This report will update Service mitigation recommendations provided in our January 2009 draft report and evaluate the effectiveness of the constructed USACE mitigation, provide recommendations to ensure that all marsh impacts have been fully mitigated, and present the amount of fresh and intermediate marsh mitigation needed to be purchased from the Louisiana's Department of Natural Resources (LDNR) in-lieu fee banking program and provide recommendations regarding determination of benefits from a mitigation bank.

This draft report is being coordinated with the NMFS and the Louisiana Department of Wildlife and Fisheries (LDWF); their comments on this report will be incorporated into the final. When finalized, this report will fulfill the requirements of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and will constitute the report of the Secretary of the Interior required by Section 2(b) of that Act.

DESCRIPTION OF PROJECT AREA

The mitigation project lies on the eastern side of the Mississippi River Deltaic Plain, within the Timbalier hydrologic subbasin of Terrebonne Basin. That region is dominated by extensive wetlands (bottomland hardwoods, swamps and marshes) created by deltaic processes associated with the Mississippi River. The Timbalier Subbasin is located between Bayou du Large to the west and Bayou Lafourche on the east; it is bounded on the south by the Gulf of Mexico and on the north by the Gulf Intracoastal Waterway (GIWW). The hydrology of the area is influenced by the Atchafalaya River via Houma Navigation Channel (HNC) and other local navigation or oil and gas canals. During late winter, spring and early summer, (i.e., high river stages) fresh water flows from the GIWW southward down the HNC and into surrounding wetlands. Under low river stages, especially during late summer and fall less water enters the wetlands and more saline waters from the Gulf of Mexico enter the area from the south. The HNC and the network of canals in the area increases tidal exchange and facilitates the intrusion of salt water into interior marshes, resulting in long-term sublethal salt-stress and a reduction in vegetative growth (Waisel 1972, Chabreck 1981, and Delaune *et al.* 1983).

The complex interplay of natural processes (e.g., storms, subsidence) and human activities (e.g., navigation, flood control projects, commercial and residential development, and coastal restoration) has influenced existing project-area fish and wildlife resources. Overall, however, the study-area still supports a rich diversity of nationally significant fish (recreational and commercial) and wildlife resources.

DESCRIPTION OF THE ACTION

To mitigate impacts to brackish marsh, a 71-acre marsh was constructed adjacent to the non-Federal levees in 2010. Monitoring surveys revealed that portions of the marsh creation site elevations were below the success criteria; a fall 2013 IET site inspection confirmed the survey results. During the 2013 inspection, the IET also discovered damage to the mitigation project from all-terrain vehicles (ATVs) traversing the site. Those impacts will also reduce the amount of mitigation produced as detailed later in this report. During the mitigation projects' post construction review it became apparent that the site was not purchased in fee-title nor was a conservation easement placed on the property even though such a recommendation was included in our 2009 draft report, purchase of a conservation easement was included as an environmental commitment in the Finding of No Significant Impact and such land use restrictions are required by the Clean Water Act Sec. 404(b)(1) April 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources, Section 332.7 (Management). For construction of the project a permanent levee servitude was acquired by Terrebonne Levee & Conservation District using the authority granted under state law and was transferred to the parish for construction, maintenance, and those matters incidental thereto (in this case mitigation is understood as being one of the other incidental matters). To fully accept the use of that servitude as the land protection instrument the Service believes the local agency holding that servitude should provide a letter acknowledging that the servitude will be used to retain and protect the lands natural (i.e., marsh) values in perpetuity for the mitigation site. Any future loss of such values due to improvements or development of the site would require additional mitigation.

Remaining unmitigated impacts to fresh and intermediate marshes are proposed to be mitigated by purchasing credits from the LDNR) In-Lieu Fee mitigation program or from a mitigation bank. The amount of mitigation needed is presented in this report.

FISH AND WILDLIFE CONCERNS

The Terrebonne Basin has experienced the greatest land loss of all other coastal basins in Louisiana between 1956 and 1990 (Louisiana Coastal Wetlands Conservation and Restoration Task Force 1993). Continuing wetland losses constitute a serious threat to nationally significant fish and wildlife resources, including recreationally and commercially important fish and shell fish. Commercial shrimp harvests have been positively correlated with the area of tidal emergent wetlands (Turner 1977 and 1982). Future commercial harvests of shrimp and other fishes and shellfishes would likely be adversely impacted by losses in marsh habitat (Turner 1982). Failure to adequately mitigate impacted coastal habitats (marshes, forested wetlands, and swamps) would contribute to the ongoing loss of those habitats.

Species of concern (species that are extremely or very rare and are vulnerable to extirpation in Louisiana) which use the study area include Wilson's plover, gull-billed tern, reddish egret, black skimmer, and peregrine falcon. Species of concern that would use study area's fresh, intermediate, brackish and saline marsh habitat and adjacent open waters include the glossy ibis, seaside sparrow, black rail, and mottled duck. Continued population declines could result in these species becoming candidates for listing under the Endangered Species Act. Some of these species may also be referred to as at-risk species; the Service has defined at-risk species as those species that have either been proposed for listing, are candidates for listing, or have been petitioned for listing. Loss of habitat may adversely impact any conservation actions needed to maintain these species populations.

EVALUATION METHODOLOGY

Project-related benefits of the USACE and ILF marsh creation on fish and wildlife resources were evaluated using the Wetland Value Assessment (WVA) methodology. The WVA model utilizes an assemblage of variables considered important to the suitability of that habitat type for an array of fish and wildlife species. The community based WVA provides a quantitative estimate of project-related changes to fish and wildlife resources. Although the WVA may not include every environmental or behavioral variable that could affect fish and wildlife populations, it is widely acknowledged to provide a cost-effective means of assessing restoration measures in Louisiana's coastal wetland communities.

The WVA models operate under the assumption that optimal conditions for fish and wildlife habitat within a given coastal wetland type can be characterized, and that existing or predicted conditions can be compared to that optimum to provide an index of habitat quality. Habitat quality is estimated and expressed through the use of a mathematical model developed specifically for each wetland type. Each model consists of: 1) a list of variables that are considered important in characterizing community-level fish and wildlife habitat values; 2) a Suitability Index graph for each variable, which defines the assumed relationship between habitat quality (Suitability Index) and different variable values; and, 3) a mathematical formula that combines the Suitability Indices for each variable into a single value for wetland habitat quality, termed the Habitat Suitability Index (HSI).

The product of an HSI value and the acreage of available habitat for a given target year is the Habitat Unit (HU), which is the basic unit for measuring project effects on fish and wildlife habitat. HUs are annualized over the project life to determine the Average Annual Habitat Units (AAHUs) available for each habitat type. The change (i.e., increase or decrease) in AAHUs for future with-project scenario, compared to future without-project conditions, provides a measure of anticipated impacts. A net gain in AAHUs indicates that the project is beneficial to the fish and wildlife community within that habitat type; a net loss of AAHUs indicates that the project would adversely impact fish and wildlife resources.

The WVA models for fresh/intermediate, and brackish marsh consist of six variables: 1) percent of wetland covered by emergent vegetation; 2) percent open water dominated by SAV; 3) degree of marsh edge and interspersion; 4) percent of open water less than or equal to 1.5 feet deep; 5) salinity; and, 6) aquatic organism access. By incorporating variables for SAV and shallow, open water into each of the marsh models, impacts to those habitat components are combined with impacts to emergent marshes.

For the USACE constructed mitigation site, field data was used to compute baseline HSI values and to predict HSIs for each target year (TY). Target years were established when future significant changes in habitat quality or quantity were expected under future with-project and future without-project conditions. Monitoring data from that site has been used to update the benefits produced. For the in-lieu fee program, the Service developed basin wide WVAs for each marsh type. Records of WVA analysis are on file in the Service's Louisiana, Field Office.

In coordination with the IET, the acreage of USACE created marsh within an acceptable elevation range was re-evaluated using the WVA. That re-evaluation (i.e., removal of acreage below the acceptable elevation range from the WVA's total project area) determined that the mitigation site failed to mitigate all impacts; leaving approximately 6.73 Average Annual Habitat Units (AHHUs) of brackish marsh unmitigated. The WVA calculations for the IFL program determined the mitigation potential for brackish and intermediate marshes would be 0.31. Based upon that potential USACE would need to purchase from the LDNR In-Lieu Fee program 6.73 credits to mitigate impacts to brackish marshes.

To determine ATV impacts, the acreage of areas that had persistent loss of vegetation were determined and that acreage was removed from the total mitigation project area in the WVA. That re-evaluation determined that ATV impacts resulted in the loss of 2.48 AAHUs from the projects benefits, therefore an additional 2.48 AAHUs of brackish marsh should be purchased form the LDNR In-Lieu Fee program or a mitigation bank.

CONSERVATION MEASURES

To ensure long-term protection of the USACE constructed mitigation site the local agency holding the servitude should provide a letter acknowledging that the servitude will be used to retain and protect the lands natural (i.e., marsh) values in perpetuity for the mitigation site; such letter should be provided to the USACE and the natural resource agencies.

If credits are purchased from a mitigation bank, that bank would need to have the USACE's approved WVA model used to a determine mitigation potential over a 50-year project life.

Assumptions regarding bank benefits would need to be consistent with those typically used for determining USACE's constructed mitigation projects. The IET would, at minimum, be involved with the review of WVA assumptions.

SERVICE POSITION

The Service does not oppose the project, however, under the authority of the FWCA the Service believes that the USACE should incorporate the following measures into project plans to ensure compliance with the equal consideration clause of that act:

- 1. To complete mitigation of brackish marsh that was not mitigated by the USACE constructed project, 9.21AAHU's should be purchased from the LDNR in-lieu fee mitigation program or a mitigation bank. Once purchased, documentation should be provided to the natural resource agencies (Service, NMFS, LDWF, and Environmental Protection Agency) demonstrating such purchase.
- 2. Any analysis of mitigation potentials should be determined using USACE's approved WVA model over a 50-year period of analysis. Assumptions regarding benefits should be consistent with those typically used for determining USACE's constructed mitigation projects. The IET should, at minimum, be involved with the review of WVA assumptions.
- 3. To fully accept the use of the existing mitigation site servitude as the land protection instrument the Service recommends the local agency holding the servitude provide a letter acknowledging that the servitude will be used to retain and protect the lands natural (i.e., marsh) values in perpetuity for the mitigation site.
- 4. Any changes to the proposed mitigation plans should be coordinated with the Service and other interested natural resource agencies.

We appreciate the opportunity to assist in the development of mitigation plans and look forward to your response to our conservation measures and to future coordination to further protect fish and wildlife resources. If you need further assistance or have questions regarding this letter, please contact David Walther (337/291-3122) of this office.

Sincerely,

Joseph A. Ranson Field Supervisor Louisiana Ecological Services Office

cc: USACE, NOD, New Orleans, LA EPA, Dallas, TX NMFS, Baton Rouge, LA LDWF, Baton Rouge, LA LDNR, CMD, Baton Rouge, LA CPRA, Baton Rouge, LA

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