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Regional Planning and Environment
Division South
Environmental Planning Branch

**FINDING OF NO SIGNIFICANT IMPACTS
(FONSI)**

ENVIRONMENTAL ASSESSMENT # 433b

**U.S. ARMY CORPS OF ENGINEERS
RESPONSE TO HURRICANES
KATRINA & RITA IN LOUISIANA-PLAQUEMINES PARISH NON-FEDERAL LEVEE
REPAIR MITIGATION THROUGH MITIGATION BANK CREDIT PURCHASE**

Description of the Recommended Plan. The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN), has prepared this Environmental Assessment (EA) # 433b, incorporated by reference herein, to reevaluate alternatives to compensate for 12.1 AAHUs of impacts to fresh marsh due to actions of Task Force (TF) Unwatering in the aftermath of Hurricanes Katrina and Rita to repair the Braithwaite and Scarsdale reaches of the non-Federal levee in Plaquemines Parish. The tentatively selected alternative (TSA) is to purchase Coastal Zone (CZ) fresh/intermediate marsh mitigation bank credits from CEMVN approved mitigation bank(s) to offset the outstanding 12.1 AAHU mitigation requirement. Through the proposed action, no wetlands would be gained or lost, however those AAHUs impacted by TF Unwatering would be replaced. If mitigation bank credit purchase no longer meets selection criteria, the second most favorable alternative (Milton Island Expansion) would become the TSA, and necessary coordination would be initiated. In that case, compliance with all relevant laws and policies would be achieved at that time.

The watersheds where the impacts occurred are the Lake Pontchartrain Basin (LPB) within the Deltaic Plain. Consistent with the CEMVN 404 Regulatory Program, the Deltaic Plain was used as the watershed to consider options to satisfy the necessary mitigation need for the TF Unwatering impacts. Official guidance on the Water Infrastructure Improvements for the Nation Act of 2016 (PL 114-322) (WIIN Act) states that mitigation banks with service areas that include the impacted areas should be considered as reasonable alternatives. As such, using the Deltaic Plain as the watershed tidal marsh mitigation planning is consistent with law and policies pertaining to Civil Works projects.

Factors Considered in Determination. The CEMVN has assessed the impacts of the "no action" and the tentatively selected alternative on important resources in the project area. For this project, the CEMVN would purchase sufficient CZ fresh/intermediate credits from a bank within the Deltaic Plain to mitigate up to 12.1 AAHUs. The particular bank(s) to be

utilized is unknown at this time. Since permitted banks exist as reasonably foreseeable projects in the future without project conditions, no new direct, indirect, or cumulative impacts to any resources would be incurred from the purchase of these credits. Therefore, there are no significant adverse impacts.

Public Involvement. Environmental compliance for the proposed action in SEA # 433b is achieved through coordination with appropriate agencies and organizations, and release of the Draft EA to the public for its review and comment. By communication dated October 5, 2022, the U.S. Fish and Wildlife Service confirmed that coordination on the subject project associated with the Fish and Wildlife Coordination Act was complete. In accordance with Coastal Zone Management Act, Section 307, a Consistency Determination was prepared for the proposed Project and was coordinated with the Louisiana Department of Natural Resources (LDNR) in a letter dated October 17, 2022. LDNR concurred by letter dated November 21, 2022 with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program. If mitigation bank credit purchase no longer meets selection criteria, the second most favorable alternative (Milton Island Expansion) would become the TSA, and necessary coordination would be initiated. In that case, compliance with all relevant laws and policies would be achieved at that time.

The proposed action has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of Draft SEA # 433b for a 30-day public review and comment period from December 19, 2022 through January 18, 2023. During this public comment period, no comments were received.

Decision. The TSA would satisfy CEMVN requirements to mitigate for 12.1 AAHUs of fresh marsh impacts. Based on the assessment conducted in SEA # 433b which is attached hereto and made a part hereof, and the implementation of the environmental design commitments listed above, I have determined that the TSA would have no significant impact on the human environment. If mitigation bank credit purchase no longer meets selection criteria, the second most favorable alternative (Milton Island Expansion) would become the TSA.

Based on the above-described evaluation and coordination, the proposed action is the recommended action for implementation. The recommended action is justified and complies with relevant environmental statutes. All practicable means to avoid and minimize environmental harm have been incorporated. The public interest will be served by implementation of the recommended action.

Date



CULLEN A. JONES, P.E., PMP
COL, EN
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DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

U.S. ARMY CORPS OF ENGINEERS RESPONSE TO HURRICANES KATRINA & RITA IN LOUISIANA- PLAQUEMINES PARISH NON-FEDERAL LEVEE MITIGATION, LOUISIANA

PLAQUEMINES PARISH, LOUISIANA

SEA # 433b

1 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mississippi River Valley Division, New Orleans District (CEMVN), has prepared this Supplemental Environmental Assessment (SEA # 433b) to reevaluate alternatives that would mitigate for 12.1 Average Annual Habitat Units (AAHUs) of impacts to fresh marsh that occurred in the Louisiana Coastal Zone (CZ) during the Task Force (TF) Unwatering repair of breaches in the Plaquemines Parish East Bank Back Levee resulting from Hurricane Katrina. The impacts and alternatives originally proposed as mitigation were described in the U.S. Army Corps of Engineers Response to Hurricanes Katrina & Rita in Louisiana, Environmental Assessment, EA # 433.

The recommended alternative to mitigate for the fresh marsh impacts identified in EA # 433 would have used the Mississippi River as a borrow source to create approximately (~)24 acres of fresh marsh in the CZ along the west side of Big Mar near the Caernarvon Diversion (Big Mar project). Subsequently, a supplemental EA (SEA # 433a) was completed to address a design change in borrow source for the Big Mar project. The relocated borrow site was more economically efficient than the proposed location described in EA # 433. The SEA # 433a recommended using borrow material from within Big Mar instead of using the Mississippi River as a borrow source. Since finalization of SEA # 433a, a site visit was conducted, and it was observed that Submerged Aquatic Vegetation (SAV) was prevalent in the proposed borrow area. To avoid impacts to existing habitat (SAV), and due to concerns about environmental impacts to the expanding emergent wetlands in the Caernarvon outflow area, sourcing borrow material from Big Mar was no longer considered viable.

Draft SEA # 433b identifies new mitigation alternatives for the CZ fresh marsh impacts identified in EA # 433. This SEA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation (ER) 200-2-2. This SEA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, U.S. Army Corps of Engineers, CEMVN District, to make an informed decision on the appropriateness of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.1 Proposed Action

The proposed action consists of the purchase of CZ fresh/intermediate marsh mitigation bank credits from CEMVN approved mitigation bank(s) to offset the outstanding 12.1 AAHU mitigation requirement.

1.2 Authority

In accordance with 33 U.S.C. 701n, the USACE assisted the Plaquemines Parish Government with repairs to the Plaquemines Parish Non-Federal Levees in the aftermath of Hurricane Katrina. Funds were provided by Department of Defense, Emergency Supplemental Appropriations Act 2006 (Public Law 109-148) . The environmental issues associated with the levee repair are addressed in the USACE Response to Hurricanes Katrina and Rita in Louisiana Environmental Assessment EA # 433.

1.3 Purpose and Need for the Proposed Action

The purpose of the proposed project is to complete mitigation needed for fresh marsh impacts resulting from the actions of TF Unwatering during the repair of the Braithwaite and Scarsdale levee breaches as described in EA # 433, Section 1, Unwatering. Because the approved projects proposed to address the mitigation need identified in EA # 433 and SEA # 433a are not implementable, new alternatives have been evaluated. The 21.3 acres of CZ fresh/intermediate marsh impacts that still require mitigation are equivalent to 12.1 AAHUs.

1.4 Prior NEPA Documents

On July 24, 2006, the CEMVN Commander signed a FONSI on EA # 433 U.S. Army Corps of Engineers Response to Hurricanes Katrina & Rita in Louisiana which is incorporated herein by reference.

On April 13, 2011, the CEMVN Commander signed a FONSI on U.S. Army Corps of Engineer Response to Hurricanes Katrina & Rita in Louisiana, Plaquemines Parish Non-Federal Levee Mitigation at Big Mar Plaquemines Parish, Louisiana SEA # 433a.

2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Planning Goals

The intent of the proposed action is to satisfy the outstanding mitigation need of 12.1 AAHUs of CZ fresh marsh impacts due to emergency actions of TF Unwatering during Hurricanes Katrina and Rita to complete the Braithwaite and Scarsdale levee repairs. Through the proposed action, no wetlands would be gained or lost, however those CZ AAHUs impacted by TF Unwatering would be replaced within the CZ. The planning horizon, or period of analysis, for this project is 50 years. In accordance with the USACE Guidance for Section 1163 of the WRDA 2016, Mitigation for Fish and Wildlife and Wetlands Losses, and Appendix C to ER 1105-2-100, compensatory mitigation was formulated to occur within the same watershed as the impacts and to replace the functions and services of each habitat type with functions and services of the same habitat type. Consistent with the CEMVN's 404 Regulatory Program, the Deltaic Plain

was used as the watershed to consider options to satisfy the necessary mitigation need for the TF Unwatering impacts, even though the impacts occurred within the Lake Pontchartrain Basin (LPB) which falls within the Deltaic Plain (see Figure 1). To provide more mitigation opportunities, the CEMVN 404 Regulatory Program established the service area of tidal banks using a two plain system (Chenier and Deltaic). This divide is based on two generally distinct geographic regions that are distinguished by the degree of Mississippi River influence in their geomorphological development. Because coastal zone marshes are tidally connected and therefore subject to similar environmental influences, there is a large degree of similarity between the marshes of the Deltaic Plain. Official guidance on the Water Infrastructure Improvements for the Nation Act of 2016 (PL 114-322) (WIIN Act) states that mitigation banks with service areas that include the impacted areas should be considered as reasonable alternatives. As such, using the Deltaic Plain as the watershed for tidal marsh mitigation planning is consistent with law and policies pertaining to Civil Works projects.

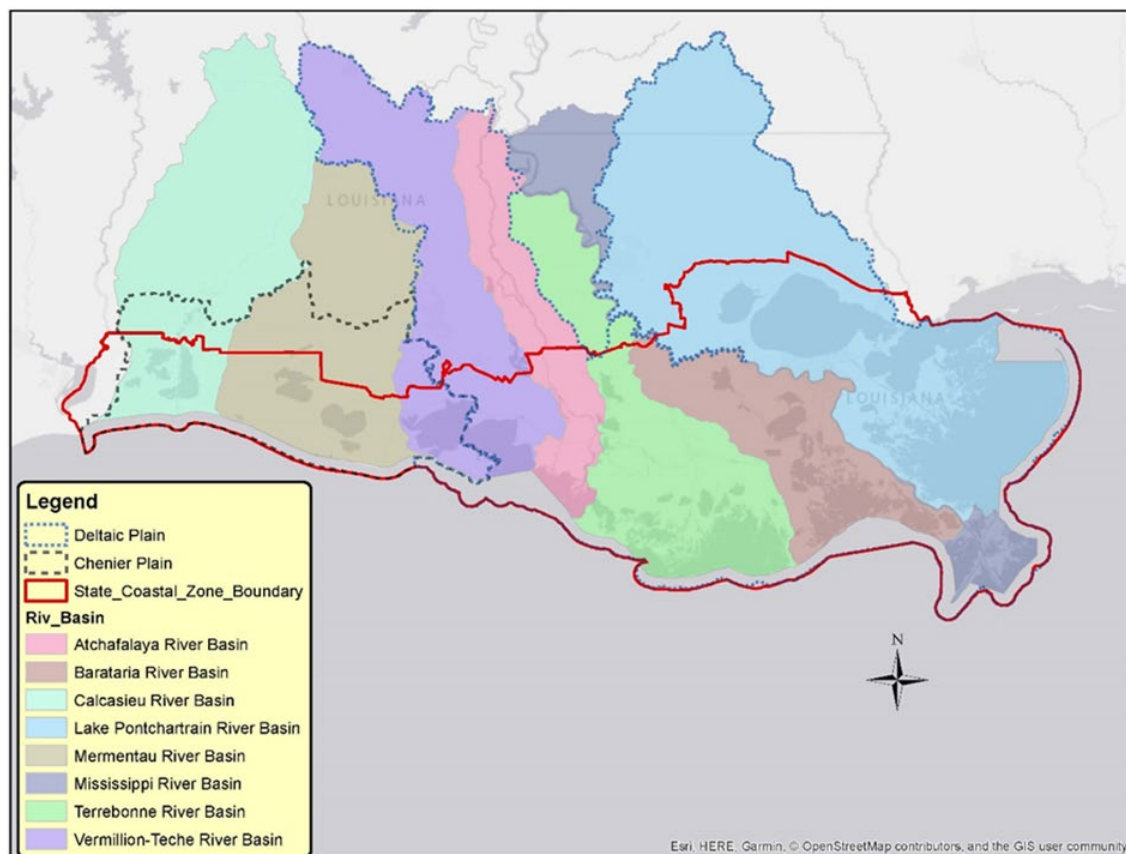


Figure 1: Major watersheds in Louisiana and the Deltaic Plain service area (study area)

2.2 Alternatives Considered and Screened

Of the five alternatives originally considered to meet the mitigation requirement, three were screened during further consideration and eliminated from the final array. These alternatives

were screened based on ability to meet project purpose and need, general cost, technical feasibility, and likelihood for implementation. The three screened alternatives are as follows:

1. Constructed Project in Plaquemines Parish

In October 2021, representatives from CEMVN and Plaquemines Parish Government met to discuss the feasibility of a marsh creation project in Plaquemines Parish northwest of the Big Mar to meet the outstanding mitigation need. The proposed project area was in the same vicinity as the marsh creation area proposed in EA # 433. After evaluating the proposed project, CEMVN determined that it was not feasible due to the same factors raised in SEA # 433a: quantity and cost of sourcing borrow material, and real estate concerns.

2. Fritchie Marsh Expansion Mitigation Project

Constructing a project adjacent to and commensurate with the proposed Fritchie Marsh project, which would restore intermediate/brackish marsh habitat from shallow open water within the Big Branch National Wildlife Refuge (NWR) in St. Tammany Parish, was considered as an alternative to satisfy the TF Unwatering marsh mitigation need. The Fritchie Marsh project was evaluated in Venice Hurricane Risk Reduction Project: Incorporation of Non-Federal Levees from Oakville to St. Jude and New Orleans to Venice Federal Hurricane Protection Levee (SEA # 543a) and consisted of approximately 350 acres of marsh restoration in Fritchie Marsh to mitigate for impacts incurred from the New Orleans to Venice Hurricane Risk Reduction Project. The project delivery team evaluated expanding the overall Fritchie Marsh project footprint to meet the TF Unwatering mitigation need (~ 30 acres), however, United States Fish and Wildlife Service (USFWS) NWR representatives did not support this alternative, so it was eliminated from further consideration.

3. Cataouatche Pond Marsh Mitigation Project

Construction of a fresh marsh creation project within Jean Lafitte National Historical Park and Preserve, Barataria Preserve was considered. The proposed project area is mostly open water northeast of Lake Cataouatche and south of the West Bank and Vicinity Hurricane Storm Damage Risk Reduction System. Upon evaluation, the project was determined to be impractical because the substrate in the project area would not support the containment dikes necessary to hold the dredged material. It was also determined that an excessive amount of material would be necessary to achieve and sustain marsh elevation. Therefore, the alternative was eliminated from consideration.

2.3 Final Array of Alternatives including the Proposed Action

Of the original five alternatives, two and the No Action Alternative were carried forward for more detailed analysis. The NEPA requires that in analyzing alternatives to a proposed action, a Federal agency consider an alternative of “No Action.” For details about the No Action Alternative, see 2.3.1.

During detailed analysis, the project delivery team evaluated average cost per AAHU of eligible bank credits that were available at the time of analysis and compared that to the cost per acre of two design alternatives for the Milton Island Intermediate Marsh Restoration Mitigation Project Expansion (Milton Island Expansion project). The team also considered the length of time it

would take to build the Milton Island Expansion project, evaluating both construction and coordination timeframes. The purchase of mitigation bank credits was found to be more cost effective and timesaving than the Milton Island Expansion project. Therefore, purchase of mitigation bank credits was chosen as the tentatively selected alternative (TSA). During implementation, bids from eligible mitigation banks would be evaluated to determine whether bank credit purchase would still be selected as TSA. If mitigation bank credit purchase no longer met selection criteria, the Milton Island Expansion project would then become the TSA, and necessary coordination would be reinitiated.

2.3.1 No Action Alternative

Typically, the No Action alternative evaluates not implementing any of the alternatives and represents the future without project (FWOP) condition to which alternatives considered in detail are compared. In this case the No Action alternative would be the previously approved plan. However, the previously approved plan was determined to be not viable as discussed in the introduction of this document. Therefore, because compensatory mitigation for unavoidable impacts is required by law (e.g., Clean Water Act, WRDAs of 1986, 2007, and 2016), the No Action alternative would not comply with these legal requirements. Under the No Action alternative, the study area would continue a trend of land loss caused by both natural factors such as subsidence, erosion, tropical storms and sea level rise (SLR), and human factors such as flood risk reduction, canal dredging, development, interruption of accretion processes and oil and gas exploration. The No Action alternative would not provide compensatory mitigation for unavoidable impacts from TF Unwatering levee repair and therefore could not be selected.

2.3.2 Proposed Action, Mitigation Bank Credits (TSA)

The purchase of released fresh/intermediate CZ (Louisiana Department of Natural Resources, (LDNR) approved) credits from USACE approved mitigation banks with perpetual conservation servitudes could address the TF Unwatering mitigation need of 12.1 fresh marsh AAHUs. The operation and use of a mitigation bank are governed by a mitigation banking instrument (33 CFR §332.2, Compensatory Mitigation for Losses of Aquatic Resources, Final Rule; Federal Register, Volume 73, No. 70, 10 April 2008). The WIIN Act of 2016 (PL 114-322) states that all potential credits from mitigation banks and the Louisiana in-lieu fee (ILF) programs with service areas that include the impacted areas should be considered as reasonable alternatives. The Louisiana ILF program is currently not acceptable until Federal requirements for USACE projects can be met.

The mitigation banks capable of supplying the credits needed to meet the mitigation requirements at the time of solicitation is uncertain. Banks currently able to meet the mitigation requirements may not be able to do so at the time of solicitation. In addition, new banks able to meet the mitigation requirement may become approved by the time the solicitation is issued. Accordingly, specific mitigation banks that may be used to meet the mitigation requirement cannot be identified with any degree of certainty. The number of available in-kind mitigation bank credits cannot be determined until such time as implementation of this project is attempted. However, there are currently available credits for fresh/intermediate marsh habitat and potential for more credits to be released in the future. All mitigation banks with service areas that encompass the impacted area (Deltaic Plain, see section 2.1), that have available fresh/intermediate marsh CZ (LDNR approved) credits, at the time of solicitation would be considered.

Since the mitigation bank(s) that may ultimately be selected to provide the necessary mitigation credits is unknown, the existing conditions present at the bank site(s) are also unknown. However, because the banks are established and monitored through CEMVN's 404 Regulatory Program, mitigation banks have minimal uncertainty relative to achieving ecological success. Through the CEMVN 404 program, mitigation banks are required to monitor ecological success, to adaptively manage their sites to ensure ecological success, and to maintain financial assurances to ensure project success. Because mitigation banks have already been evaluated and approved for construction under the CEMVN 404 Program, the purchase of released credits would not result in additional construction or additional environmental impacts compared to existing and future without project conditions. Because released mitigation bank credits are available for immediate purchase, purchase of released bank credits can proceed faster than the design, contract award and construction of the other potential alternatives. In general, a mitigation bank sells mitigation bank credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. As such, once the purchase of in-kind mitigation bank credits is complete, no additional action by the USACE or the Non-Federal Sponsor (NFS) would be required to meet the TF Unwatering mitigation need.

If CEMVN were to pursue the purchase of bank credits, mitigation banks wishing to sell credits to satisfy CEMVN's mitigation obligations for fresh/intermediate marsh would be encouraged to submit competitive bids. However, if, based on cost and considering other factors, CEMVN determines the purchase of mitigation bank credits is not cost effective, the next ranked project (Milton Island Intermediate Marsh Restoration Mitigation Project Expansion, see 2.3.3) would be considered for implementation.

2.3.3 Milton Island Intermediate Marsh Restoration Mitigation Project Expansion

Construction of the Milton Island Expansion project would serve as compensatory mitigation for the outstanding 12.1 AAHUS of fresh marsh impacts incurred by the TF Unwatering levee repair. The Milton Island Expansion project was developed using the constructed Milton Island Intermediate Marsh Restoration Project (Programmatic Individual Environmental Report 36 Tier, PIER 36, TIER 1) and the approved Pine Island Project (Bipartisan Budget Act (BBA) Construction Projects; West Shore Lake Pontchartrain (WSLP), Comite River Diversion, and East Baton Rouge (EBR) Flood Risk Management, BBA Construction Mitigation EA # 576). The Milton Island Expansion project would be situated adjacent to the Milton Island Intermediate Marsh Restoration Project (Milton Island project) and within the larger Pine Island Project footprint. As such, the designs and impact analyses of those previously evaluated projects were used to develop and evaluate the Milton Island Expansion project. The Milton Island Expansion project would be located near Madisonville, Louisiana on the north shore of Lake Pontchartrain, ~ 8 miles west of the Causeway Bridge (Figure 2).

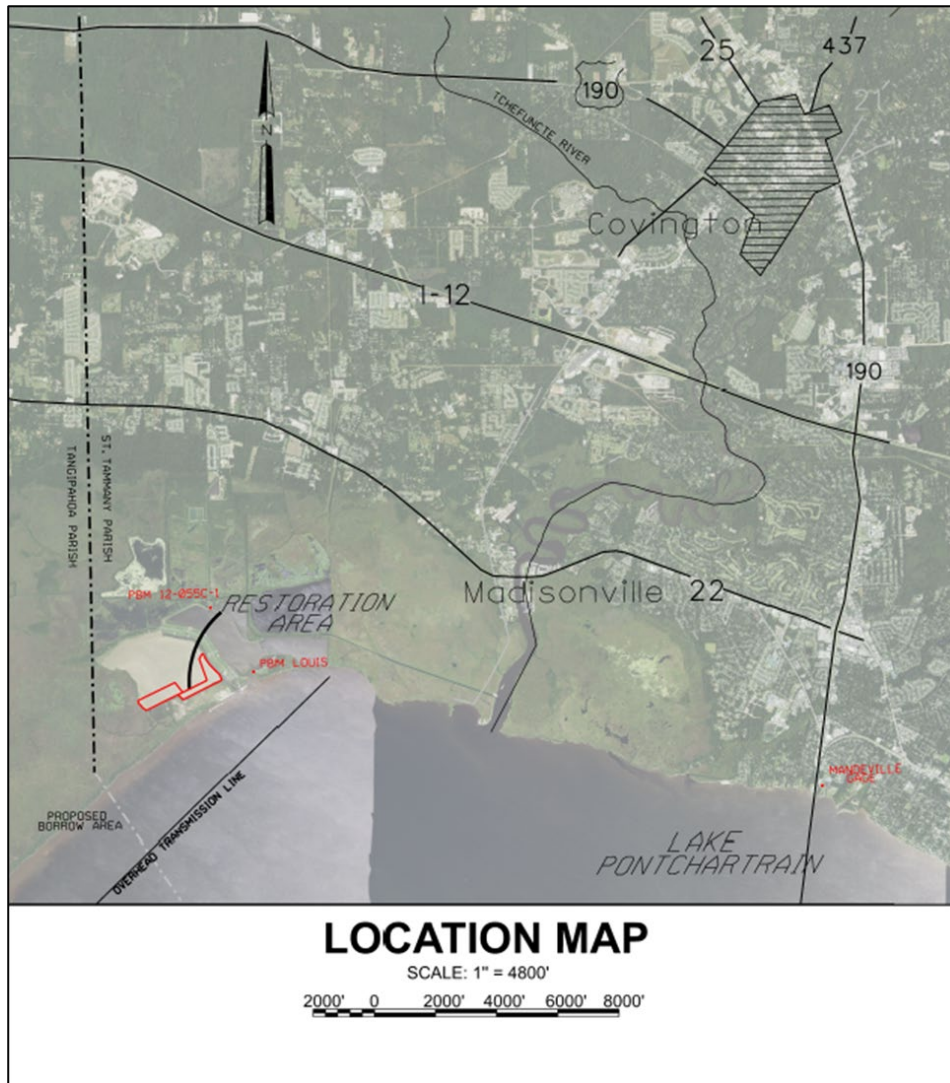


Figure 2: Location of proposed Milton Island Expansion Project on the Northshore of Lake Pontchartrain

This project would involve construction of containment dikes, hydraulic dredging of borrow material from Lake Pontchartrain, placement of borrow material as fill within the marsh creation area and gapping or degrading of containment dikes after the fill material has settled to the target marsh elevation (Figure 3). See Appendix C for full project description.

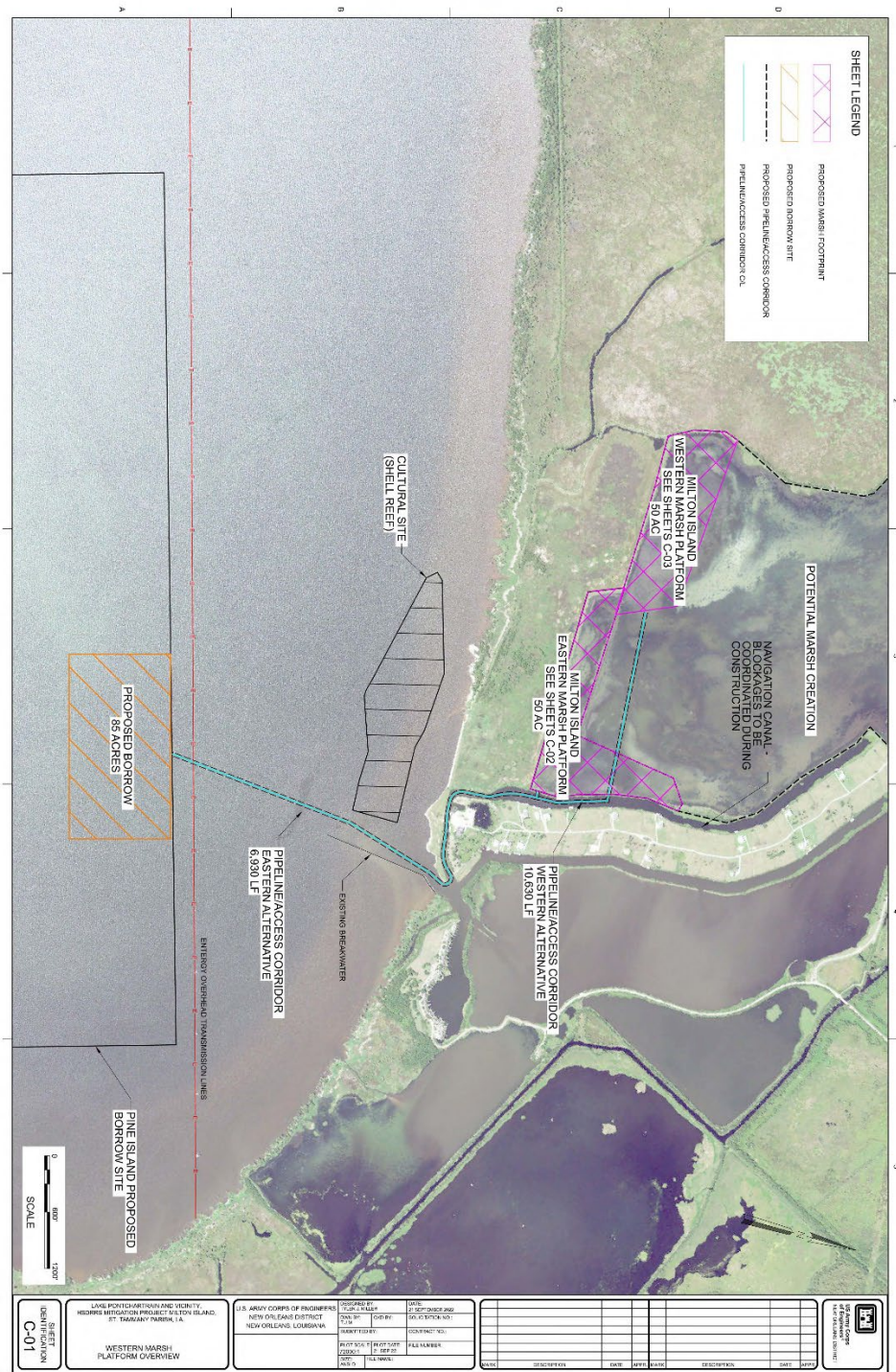


Figure 3: Proposed Milton Island Mitigation Expansion Project potential design options, pipeline corridor, and borrow area. Two design options (Eastern and Western) are presented but are not intended to represent the precise location of project features, which could be constructed anywhere within the potential marsh creation area.

There are two design options for the Milton Island Expansion project (Eastern and Western) however, the marsh creation project would not necessarily adhere to the boundaries of either of the two designs. The proposed marsh creation site would be ~ 55 acres within a ~ 524-acre portion of the previously identified and approved Pine Island swamp restoration area (~1,965 acres) as described in SEA # 576. The borrow area would be the same as the borrow area identified for Pine Island, however, substantially less borrow material would be required therefore only ~ 3 – 6.5 million cubic yards from within that previously identified area would be dredged. Access for pipeline and other construction related equipment would be similar to that described in SEA # 576. Approximately ~6,000-11,000 linear feet of slurry pipeline would extend from the borrow area to the southeastern tip of Milton Island. The pipe would extend up through an existing drainage canal and then turn into the marsh creation area(s). The pipeline access corridor placement avoids a cultural site offshore from the project area (see Figure 3).

The project area is located near a distinctive landform known as the Milton Island beach trend, which consists of a series of well-defined, relic beach features derived from sands emanating from the Pearl River located to the east of the project area. Like the Pine Island beach trend located along the southern side of Lake Pontchartrain in the vicinity of New Orleans, the Milton Island beach trend formed during a period of sea level stasis about 3,000 B.P. and was a well-drained landform attractive to human settlement that is considered to have a high probability of containing archaeological deposits (Pearson et al. 2014). A 2012 survey was expanded into a Phase 1 cultural survey which identified an extensive shell reef rich with intact shell midden remains and artifacts located 200 meters offshore and expanded a previously identified historic site boundary to include the reef area. The survey concluded that the shell reef was associated with the Miltons Island beach ridge and recommended this portion of the site undetermined for inclusion in the National Register of Historic Places (NRHP) pending further evaluation (Pearson et al. 2014). The proposed borrow area avoids this cultural area.

The marsh creation area is likely relatively shallow (-2 to -3 ft) open water, although it is assumed to be deeper near the land in the western design option, as that area was historically dredged to create embankments for neighboring canals and to construct the Milton Island project.

The Wetland Value Assessment (WVA) performed for the original Milton Island project estimated a mitigation potential of 0.33 average annual habitat units/acres (AAHUs/acre) (Appendix D) for that project (see section 1.4.2 for more information on the WVA). Based on this mitigation potential and an ~25% contingency, ~55 acres for construction would be needed to mitigate 12.1 AAHU. Contingency was added to account for potential impacts resulting from construction of this project such as, but not limited to, potential impacts to existing marsh or SAV within the construction area, potential impacts associated with containment dike construction, and access.

2.4 WVA Model and Sea Level Rise Analysis

2.4.1 WVA Model Certification

The WVA models were run to determine the AHHUs needed for mitigation for the fresh/intermediate impacts resulting from the Braithwaite levee repair; this was discussed in US Fish and Wildlife Service 2006 Planning-aid Report, 2009 and 2010 Coordination Act Reports and is herein incorporated by reference (EA # 433, SEA # 433a). In 2014, the USFWS used the

WVA model certified at that time to calculate benefits for the Hurricane Storm Damage Risk Reduction System (HSDRRS) Milton Island Intermediate Marsh Restoration Project Mitigation Project (see Appendix D).

2.4.2 WVAs

The WVA methodology operates under the assumption that optimal conditions for general 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 level to provide an index of habitat quality. Habitat quality is estimated or expressed using a mathematical model developed specifically for each wetland type. Each model consists of the following components: 1) a list of variables that are considered important in characterizing fish and wildlife habitat; 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 Index for each variable into a single value for wetland habitat quality. That single value is referred to as the Habitat Suitability Index, or HSI.

The WVA models assess the suitability of each habitat type for providing resting, foraging, breeding, and nursery habitat to a diverse assemblage of fish and wildlife species. This standardized, multi-species, habitat-based methodology facilitates the assessment of project-induced impacts on fish and wildlife resources. The Marsh WVA model consists of six variables: 1) percent of wetland area covered by emergent vegetation; 2) percent of open water area covered by aquatic vegetation; 3) marsh edge and interspersed; 4) percent of open water area ≤ 1.5 feet deep in relation to marsh surface; 5) salinity; and 6) aquatic organism access.

Values for variables used in the models are derived for existing conditions and are estimated for conditions projected into the future if no mitigation efforts are applied (i.e., future without project, or FWOP), and for conditions projected into the future if the proposed mitigation project is implemented (i.e., future with project, or FWP). These values provide an index of habitat quality, or habitat suitability, for the period of analysis. The HSI is combined with the acres of habitat to generate a number that is referred to as "habitat units." Expected project impacts/benefits are estimated as the difference in habitat units between the FWP scenario and the FWOP scenario. To allow comparison of WVA benefits to costs for overall project evaluation, total benefits are averaged over a 50-year period, with the result reported as AAHUs.

2.4.3 Sea Level Rise Analysis

The USACE ER 1100-2-8162, states that potential sea level change must be considered in every USACE coastal activity as far inland as the extent of estimated tidal influence. Potential increases in SLR could affect the performance and therefore ability of a mitigation project to achieve replacement of the services and functions of the impacted habitat type.

Using USACE-predicted future water levels under the SLR scenarios, those water levels were converted into relative sea level rise (RSLR) rates, incorporating SLR effects measured at the gauges and land loss experienced in the extended project areas. No operations and maintenance activities were planned for the projects in relation to future elevation changes. The WVA then utilized the RSLR rates and project design to predict FWP acres left at the end of the 50-year period of analysis. Long-term sustainability (percent land left at the end of the period of analysis) was used to analyze the impact the different SLR scenarios had on the project areas.

Because the mitigation projects were designed/evaluated using the intermediate SLR scenario to account for potential uncertainties in future SLR impacts, the risk of the projects not successfully meeting the mitigation requirement due to SLR has been minimized.

3 AFFECTED ENVIRONMENT

3.1 Description of the Study Area

The study area is the portion of the Deltaic Plain that falls within the Coastal Zone (CZ Deltaic Plain). The Deltaic Plain service area was defined by CEMVN in coordination with LDNR, as one of two distinct geographic regions in Louisiana that would be appropriate to consider for mitigating tidal marsh impacts (see section 2.1.). The CZ Deltaic Plain spans from the Vermilion/Iberia Parish line in the west to the easternmost limits in St. Tammany Parish near the Pearl River.

The Deltaic Plain Service Area begins at the eastern boundaries of Hydrologic Unit Codes (HUCs) 0808010306 and 0808010305 and extends eastward to the easternmost limits of the New Orleans District in St. Tammany Parish near the Pearl River. The Deltaic Plain Service Area is comprised of that area which was formed by riverine sediment sands, silts, and clays deposited by the Mississippi River over an approximately 5,000-6,000-year period. Several major basins (delta lobes) within the plain were formed by the Mississippi River changing its course. Currently, the Mississippi River's course is controlled by the engineered diversion into Atchafalaya River, one of the former channels of the Mississippi River.

The Deltaic Plain is comprised of a series of estuaries, with areas of historically strong river influence transitioning towards areas of increased tidal influence spanning toward the Gulf of Mexico. Distinct features within the Deltaic Plain include natural ridges, fresh, intermediate, brackish, and saline marshes, swamps, bayous, lakes, bays, and barrier islands at its most gulfward extent. The Deltaic Plain also contains areas of highly organic soils, floating marshes, and peat deposits. Areas of the Deltaic Plain have been highly modified, with man-made levees and canals for floodwater management and oil and gas exploration ubiquitous upon the landscape.

3.1.1 Climate

The climate is influenced by the many water surfaces of the nearby wetlands, rivers, lakes, streams, and the Gulf of Mexico. Throughout the year, these water areas modify relative humidity and temperature conditions, decreasing the range between the extremes. Summers are long and hot, with an average daily temperature of 82° Fahrenheit (°F), average daily maximum of 91°F, and high average humidity. Winters are influenced by cold, dry polar air masses moving southward from Canada, with an average daily temperature of 54°F and an average daily minimum of 44°F. Annual precipitation averages 54 inches.

3.2 Relevant Resources

The relevant resources described are those recognized by laws, executive orders, regulations, and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. Appendix B provides summary information of the institutional, technical, and public importance of these resources.

Below are discussions of relevant resources that are found in the CZ Deltaic Plain and the Milton Island Expansion project area.

3.2.1 Wetlands

CZ Deltaic Plain

Fresh, Intermediate, brackish, and saline marsh are present in the CZ Deltaic Plain. Submerged aquatic vegetation (SAV) and open water habitat are also prevalent. Fresh marsh species include cattail (*Typha latifolia*), water lily, (*Nymphaea odorata*), iris (*Iris* sp.), duckweed (*Lemna* sp.), cutgrass (*Zizaniopsis miliaceae*), wild rice (*Zizania aquatic*), and bulltongue (*Sagittaria lancifolia*). Intermediate marsh can have fresh and brackish marsh species present. Brackish marsh species include sedges (*Carex* sp.), rushes (*Juncus* sp.), reeds (*Phragmites* sp.), and are mostly dominated by salt meadow cordgrass (*Spartina patens*). Saline marshes are dominated by smooth cordgrass (*Spartina alterniflora*) and black needle rush (*Juncus roemerianus*); however, brackish species can also be present.

Milton Island Expansion

The Milton Island Expansion project area, consisting of the borrow site and the marsh creation site, is located along the northern shoreline of Lake Pontchartrain in water depths of approximately nine feet and two feet respectively. Historically, the shorelines of the lake were bordered by cypress/tupelo gum swamps, fresh to intermediate marshes, and bands of bottomland hardwood (BLH) forests bordering natural drainages and the lake rim in some areas. Historic agricultural use of the project area, including diking and pumping, contributed to the conversion of the site to open water.

The lake shoreline near the project area is a mixture of low-density residential development and undeveloped wetlands, including second-growth swamp and BLH forest, scrub/shrub wetlands and fresh to intermediate marshes. The proposed project area consists of mostly shallow open water (~ -3.0--2.0 feet) with some SAV likely present, and likely deeper areas in the western portion of the project area.

3.2.2 Aquatic Resources/Fisheries

CZ Deltaic Plain

Major water bodies within the CZ Deltaic Plain include the Mississippi River, Lake Maurepas, Lake Pontchartrain, Lake Borgne, Breton Sound, Chandeleur Sound, Lake Salvador, Lake Cataouatche, Atchafalaya Bay, and West Cote Blanche Bay. National Marine Fisheries Service (NMFS) has indicated that these water bodies and adjacent wetlands provide nursery and foraging habitats which support varieties of economically important marine fishery species, including striped mullet, Atlantic croaker, Gulf menhaden, spotted and sand sea trout, southern flounder, black drum, and blue crab. Some of these species also serve as prey for other fish species managed under the Magnuson-Stevens Fishery Conservation and Management Act by the Gulf of Mexico Fishery Management Council (FMC) (e.g., mackerel, snapper, and grouper) and highly migratory species managed by NMFS (e.g., billfish and shark).

Milton Island Expansion

The assemblage of species in the proposed project area is largely dictated by salinity levels and season. During low-salinity periods, species such as Gulf menhaden (*Brevoortia patronus*), blue crab (*Callinectes sapidus*), white shrimp (*Litopenaeus setiferus*), blue catfish (*Ictalurus furcatus*), largemouth bass (*Micropterus salmoides*) and striped mullet (*Mugil cephalus*) are present in the project area. During high-salinity periods, more salt-tolerant species such as sand seatrout (*Cynoscion arenarius*), spotted seatrout (*Cynoscion nebulosus*), black drum (*Pogonias cromis*), red drum (*Sciaenops ocellatus*), Atlantic croaker (*Micropogonias undulatus*), sheepshead (*Archosargus probatocephalus*), southern flounder (*Paralichthys lethostigma*), Spanish mackerel (*Scomberomorus maculatus*), brown shrimp (*Crangon crangon*), and bull sharks (*Carcharhinus leucas*) may move into the project area, especially the borrow area in Lake Pontchartrain. Wetlands throughout the project area also support small resident fishes and shellfish such as least killifish (*Heterandria formosa*), sheepshead minnow (*Cyprinodon variegatus variegatus*), sailfin molly (*Poecilia latipinna*), grass shrimp (*Palaemonetes paludosus*) and others. Those species are typically found along marsh edges or among submerged aquatic vegetation and provide forage for a variety of fish and wildlife.

3.2.3 Essential Fish Habitat

CZ Deltaic Plain

Essential Fish Habitat (EFH) is described as waters and substrates necessary for Federally managed species to spawn, breed, feed, and grow to maturity. In the northern Gulf of Mexico, EFH has generally been defined as areas where individual life-stages of specific Federally managed species are common, abundant or highly abundant. In estuarine areas, EFH is defined as all estuarine waters and substrates (mud, sand, shell, rock and associated biological communities, including the sub-tidal vegetation (seagrasses and algae) and adjacent inter-tidal vegetation (marshes and mangroves). Table 1 shows the EFH for the managed species in southeastern Louisiana.

The existing emergent wetlands and shallow open water within the study area provide important habitat and EFH, including transitional habitat between estuarine and marine environments used by migratory and resident fish, as well as other aquatic organisms for nursery, foraging, spawning, and other life requirements. Historically and currently, the area provides valuable recreational and commercial fishing habitat, oyster culture, and nursery areas for a wide variety of finfish and shellfish.

Table 1: Summary of the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297) Designation of Essential Fish Habitat for Coastal Louisiana

Species	Life Stage	EFH
Brown shrimp	Eggs	(Marine system) < 110, demersal
	Larvae	(Marine system) < 110 m, planktonic
	Post larvae/ juvenile	(Estuarine system) marsh edge, submerged aquatic vegetation, tidal creeks, inner marsh
	Subadult	(Estuarine system) mud bottoms, marsh edge
	Adult	(Marine system) < 110 m, silt sand, and muddy sand
White shrimp	Eggs	(Marine system) < 40 m, demersal
	Larvae	(Marine system) < 40 m, planktonic

Species	Life Stage	EFH
	Post larvae/juvenile, subadult Adult	(Estuarine system) marsh edge, submerged aquatic vegetation, marsh ponds, inner marsh, oyster reefs (Marine system) < 33 m, silt, soft mud
Red drum	Eggs, larvae Post larvae, early juvenile, late juvenile, Subadult Adult	(Marine system) planktonic (Marine and Estuarine systems) submerged aquatic vegetation, emergent marsh, estuarine mud bottoms, marsh/water interface (Estuarine system) oyster reefs, sand/shell/mud/soft bottom (Marine and Estuarine systems) Gulf of Mexico & estuarine mud bottoms, oyster reefs
Red snapper	Larvae, post larvae/juvenile Adult	(Marine system) structure, sand/mud; 17-183 m (Marine system) reefs, rock outcrops, gravel; 7-146 m
Vermillion snapper	Juvenile	(Marine systems) reefs, hard bottom, 20-200 m
Spanish mackerel	Larvae Juvenile Adult	(Marine system) < 50 m isobath (Marine and Estuarine systems) offshore, beach, estuarine (Marine system) pelagic
Bluefish	Post larvae/ juvenile Adult	(Marine and Estuarine systems) beaches, estuaries, and inlets (Marine and Estuarine systems) Gulf, estuaries, pelagic
Bull Shark	Neonate, juvenile	Estuarine waters

Milton Island Expansion

This project is located within an area identified as EFH for post larval/juvenile brown shrimp; post-larval/juvenile white shrimp; and post larval/juvenile and adult red drum. The 2005 generic amendment of the Fishery Management Plan for the Gulf of Mexico, prepared by the Gulf of Mexico FMC, identifies EFH in the project area to be estuarine intertidal wetlands, submerged aquatic vegetation, estuarine water column, and mud substrates.

3.2.4 Wildlife

CZ Deltaic Plain

Louisiana's coastal wetlands support numerous Neotropical and other migratory avian species, such as rails, gallinules, shorebirds, wading birds, and numerous songbirds. Louisiana coastal wetlands provide Neotropical migratory birds with essential stopover habitat on their annual migration routes. Passerine birds common to the project areas include sparrows, vireos, warblers, northern mockingbirds (*Mimus polyglottos*), common grackles (*Quiscalus quiscula*), red-winged blackbirds (*Agelaius phoeniceus*), marsh wrens (*Cistothorus palustris*), blue jays (*Cyanocitta cristata*), northern cardinals (*Cardinalis cardinalis*), and American crows (*Corvus brachyrhynchos*). The coastal wetlands in the CZ Deltaic Plain provide important fish and wildlife habitats, especially transitional habitat between estuarine and marine environments, used for shelter, nesting, feeding, roosting, cover, nursery, and other life requirements.

Emergent vegetation, SAV, and fresh, intermediate, brackish, and saline marsh wetlands are typically used by many different wildlife species, including: nutria (*Myocaster coypus*), muskrat

(*Ondatra zibethicus*), mink (*Mustela vison*), river otter (*Lutra canadensis*), white-tailed deer (*Odocoileus virginianus*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), swamp rabbit (*Sylvilagus aquaticus*), eastern cottontail (*Sylvilagus floridanus*), gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger*), nine-banded armadillo (*Dasypus novemcinctus*), coyote (*Canis latrans*), and a variety of smaller mammals. The CZ Deltaic Plain also provide habitat for the American alligator (*Alligator mississippiensis*), various species of salamanders, frogs, toads, turtles, as well as several species of venomous and non-venomous snakes.

Open water habitats within the CZ Deltaic Plain provide wintering and multiple use functions for American white pelican (*Pelecanus erythrorhynchos*) and brown pelicans (*P. occidentalis*), seabirds, and other open water residents and migrants. Open water habitats provide wintering and multiple use functions for brown pelicans, seabirds, dabbling and diving ducks, coots, and gallinules as well as other open water residents and migrants (LCWCRTF & WCRA, 1999). Various raptors such as the great horned owl (*Bubo virginianus*), barred owl (*Strix varia*), red-shouldered hawk (*Buteo lineatus*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), and bald eagle (*Haliaeetus leucocephalus*) may be present.

Milton Island Expansion

The coastal wetlands in the Milton project area provide important fish and wildlife habitats, especially transitional habitat between estuarine and marine environments, used for shelter, nesting, feeding, roosting, cover, nursery, and other life requirements. Emergent fresh and intermediate wetlands are typically used by many different wildlife species, including: seabirds; wading birds; shorebirds; dabbling and diving ducks; raptors; rails; coots (*Fulica americana*) and gallinules (*Gallinula galeata*); nutria (*Myocaster coypus*), muskrat (*Ondatra zibethicus*), mink (*Mustela vison*), river otter (*Lutra canadensis*), and raccoon (*Procyon lotor*); rabbit (*Sylvilagus aquaticus*); white-tailed deer (*Odocoileus virginianus*); and American alligator (*Alligator mississippiensis*) (LCWCRTF & WCRA, 1999). All these species are likely to be found in or near the project area.

Open water habitats such as Lake Pontchartrain provide wintering and multiple use functions for brown pelicans, various seabirds, and other open water residents such as laughing gulls and least terns, and migrants such as lesser scaup and double crested cormorants. (LCWCRTF & WCRA, 1999). Open water areas within the project area provide suitable habitat for many of these species, especially dabbling ducks, coots, and gallinules, which feed primarily on submerged aquatic vegetation.

3.2.5 Threatened, Endangered and Other Protected Species

CZ Deltaic Plain

Within the state of Louisiana, there are 30 animal and three plant species (some with critical habitat) under the jurisdiction of the USFWS and/or the NMFS, presently classified as endangered or threatened. Of those 33 species, Table 2 identifies 17 species that are known to occur in CZ Deltaic Plain.

Table 2: Threatened and Endangered Species in the CZ Deltaic Plain

Species	Parish	Critical Habitat	Status	Jurisdiction	
				USFWS	NFMS
*West Indian Manatee (<i>Trichechus manatus</i>)	Asc, I, J, La, Li, O, Pl, St. B, St. C, St. J, St. M, St. T, Ta, Te		T	X	
Alabama Heelsplitter Mussel (<i>Potamilus inflatus</i>)	Asc, Li, St. T		T	X	
Atlantic Sturgeon (<i>Acipenser oxyrinchus oxyrinchus</i>)	J, I, Li, O, St. B, St. C, St. J, St. M, St. T, Ta, Te	X	T	X	
Gulf sturgeon (<i>Acipenser oxyrinchus desotoi</i>)	Asc, J, Pl, St. C, St. T	X	T	X	X
*Pallid sturgeon (<i>Scaphirhynchus albus</i>)	Asc, I, J, O, Pl, St. B, St. C, St. J, St. M, St. T		E	X	
Dusky Gopher Frog (<i>Lithobates sevosus</i>)	St. T	X	E	X	
Gopher Tortoise (<i>Gopherus polyphemus</i>)	St. T, Ta		T	X	
Piping plover (<i>Charadrius melodus</i>)	J, La, Pl, St. B, St. M, Te	X	T	X	
Red-cockaded Woodpecker (<i>Leuconotopicus borealis</i>)	Li, St. T, Ta		E	X	
Red knot (<i>Calidris canutus</i>)	J, La, Pl, I, St. B, St. M, Te		T	X	
Green Sea Turtle (<i>Chelonia mydas</i>)	J, La, Pl, I, St. B, St. M, St. T, Te		T	X	X
Hawksbill Sea Turtle (<i>Eretomchelys imbricata</i>)	J, La, Pl, I, St. B, St. M, Te		E	X	X
Kemp's Ridley Sea Turtle (<i>Lepidochelys kempii</i>)	J, La, Pl, I, St. B, St. M, St. T, Te		E	X	X
Leatherback Sea Turtle (<i>Dermochelys coriacea</i>)	J, La, Pl, I, St. B, St. M, Te		E	X	X
Loggerhead Sea Turtle (<i>Caretta caretta</i>)	J, La, Pl, I, St. B, St. M, St. T, Te		T	X	X
Louisiana Quillwort (<i>Isoetes louisianensis</i>)	St. T		E	X	
Ringed Map Turtle (<i>Graptemys oculifera</i>)	St. T		T	X	

Parish acronym bolded: Ascension, Assumption, Iberia, Jefferson, Lafourche, Livingston, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. Tammany, St. Mary, Tangipahoa, and Terrebonne.

Other species that were listed on the Endangered Species List but have since been delisted because population levels have improved are the bald eagle and the brown pelican. The bald eagle is protected under the Bald and Golden Eagle Protection Act (BGEPA), and the Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). In southeastern Louisiana parishes, eagles typically nest in mature trees (e.g., bald cypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water.

Currently, American alligators and shovelnose sturgeon are listed as threatened under the Similarity of Appearance clause in the Endangered Species Act (ESA) of 1973, as amended, but are not subject to ESA Section 7 consultation.

Colonial nesting wading/water birds and shorebirds are protected under the MBTA 40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). Colonial nesting wading/water birds are generally considered all species of herons, egrets, night herons, ibis, roseate spoonbill, pelicans, anhinga, and cormorants. These birds typically nest and forage in wetlands and open water areas so they could be present in the project area. Shorebirds are considered all species of gulls, terns, and skimmers. These species typically forage and nest on sandy shorelines and mudflats so have the potential to be in the project area however, their presence is unlikely.

Bottlenose dolphins are protected under the Marine Mammal Protection Act of 1972 and are found in temperate and tropical waters around the world including Lake Pontchartrain and Lake Borgne. There are coastal populations that migrate into bays, estuaries and river mouths as well as offshore populations that inhabit waters along the continental shelf.

The Louisiana Natural Heritage Program of Louisiana Department of Wildlife and Fisheries (LDWF) has developed its own lists and monitors the status of rare, threatened and endangered species, and natural communities for each parish of the state. This information includes the state and global rank and state and Federal status for species, and the state and global rank for rare habitats. The species and habitats listed by the State of Louisiana may be found at <http://www.wlf.louisiana.gov/wildlife/species-parish-list>.

Milton Island Expansion

Of the listed animal and plant species occurring in St. Tammany Parish, the West Indian manatee; Gulf sturgeon; and Kemp's ridley, loggerhead, and green sea turtles have the potential to be found in the proposed borrow area in Lake Pontchartrain. It would be highly unlikely that any of the listed species would be found in the proposed project area due to its shallow depths (around 2 ft.) and extremely limited access. All of these species are typically found in deeper water where they are able to maneuver and forage effectively.

3.2.6 Water Quality

CZ Deltaic Plain

The Louisiana Department of Environmental Quality (LDEQ) surface water monitoring program is designed to measure progress towards achieving water quality goals at state and national levels, to gather baseline data used in establishing and reviewing the state water quality standards, and to provide a data base for use in determining the assimilative capacity of the waters of the state. Information is also used to establish permit limits for wastewater

discharges. The program provides baseline data on water bodies to monitor long-term trends in water quality.

Section 303(d) of the Clean Water Act requires states to identify water bodies that are not meeting water quality standards and to develop total maximum daily loads for those pollutants suspected of preventing the water bodies from meeting their standards. Total maximum daily loads are the maximum amount of a given pollutant that can be discharged into a water body from all natural and anthropogenic sources including both point and non-point source discharges. The following information was largely taken from the 2022 Louisiana Water Quality Inventory: Integrated Report (2022 IR) and refers to the entire state of Louisiana.

Water quality in Louisiana is affected by both point source and non-point source discharges. Point sources include mainly industrial, municipal, and sewer discharges. Non-point sources include storm water runoff, industrial discharges, landscape maintenance activities, forestry, agriculture, and natural sources. Water quality criteria are elements of state water quality standards that represent the quality of water that would support a particular designated use. These criteria are expressed as constituent concentrations, levels, or narrative statements. There are currently seven designated uses adopted for Louisiana's surface waters: Primary Contact Recreation (PCR), Secondary Contact Recreation (SCR), Fish and Wildlife Propagation, Drinking Water Supply, Oyster Propagation, Agriculture, and Outstanding Natural Resource Waters. The water bodies in the CZ Deltaic Plain support a variety of the designated uses.

The water quality in Louisiana over the past few years has remained the same. Secondary contact recreation (SCR or "boating") once again remained essentially the same at 95%. Support of the PCR ("swimming") use decreased to 48%. This was down from 51% of assessed water body subsegments in the 2020 IR and down from 69% in the 2018 IR. Much of the decline in PCR support was due to the implementation of a new enterococci criterion for the PCR use. Fish and Wildlife Propagation use support remained essentially unchanged with 30% of assessed subsegments fully supporting the designated use.

Subsegments are watersheds or portions of watersheds delineated as management units for water quality monitoring, assessment, permitting, inspection, and enforcement purposes. Appendix A displays the Hydrologic Units and associated codes (HUCs) and major water bodies within the CZ Deltaic Plain. Fish and Wildlife Propagation (FWP) is not supported by low Dissolved Oxygen (DO) which is the most frequently cited cause of impairment with 234 subsegments. The low DO impairments were from natural conditions that may be related to high biochemical oxygen demand loading material that reduce oxygen levels in the water. The sources involved are sewage, fertilizers, some sediments, and naturally high levels of plant material in swampy areas. Another group of subsegments impacted is due to Fecal coliform with 170 subsegments. This suspected cause of impairments is used to assess the designated uses of PCR and SCR, also the drinking water supply and oyster propagation. Enterococcus is a cause of impairment cited with 111 subsegments. The increase in enterococcus impairments was due to an increase in the number of subsegments tested for enterococcus because of a newly promulgated criterion. The final cause of impairment is turbidity with 98 subsegments. Highly turbid water, as measured by turbidity, can affect aquatic life and cause aesthetic concerns for human recreation.

Milton Island Expansion

The following information was taken from the 2022 IR. The marsh creation area is within the boundaries of subsegment LA040803 and the waterbody assessed is the Tchefuncte River. The water quality within that subsegment does not fully support two of its designated uses: Fish and Wildlife Propagation and PCR. The suspected sources of these impairments are dissolved oxygen impairment and enterococci bacteria concentration, respectively. Lake Pontchartrain, the project's borrow source is considered to fully support its designated uses except for PCR. The suspected cause is enterococci bacteria concentration.

3.2.7 Cultural and Tribal Resources

CZ Deltaic Plain

Cultural resources include historic properties, archaeological resources, and Native American resources, including sacred sites and traditional cultural properties (TCPs). Historic properties have a narrower meaning and are defined in 36 CFR 800.16(l) of the National Historic Preservation Act (NHPA); they include prehistoric or historic districts, sites (archaeological and religious/cultural), buildings, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP). Historic properties are identified by qualified agency representatives in consultation with State Historic Preservation Officers (SHPO), Tribes, and other consulting parties.

Federal regulations require CEMVN, as an agency responsible for funds appropriated by Congress, to identify if properties are historic (listed or eligible for listing in the NRHP); to assess the effects the work will have on historic properties; to seek ways to avoid, minimize, or mitigate any adverse effects to historic properties; and to evaluate the proposed action's potential for significant impacts to the human and natural environment. The consideration of impacts to historic and cultural resources is mandated under Section 101(b)(4) of the NEPA as implemented by 40 CFR, Parts 1501-1508. Additionally, Section 106 of the NHPA, as amended (54 U.S.C. § 300101 et seq.), requires Federal agencies to take into account their effects on historic properties (i.e., historic and cultural resources) and allow the Advisory Council on Historic Preservation an opportunity to comment.

Section 106 lays out four (4) basic steps that must be carried out sequentially: 1) establish the undertaking and area of potential effects (APE); 2) identify and evaluate historic properties within APE; 3) assess effects to historic properties; and 4) resolve any adverse effects (avoid, minimize, or mitigate). An agency cannot assess the effects of the undertaking on historic properties until it has identified and evaluated historic properties within the APE. The federal agency must consult with the appropriate State Historic Preservation Officer/s (SHPO), Tribal Historic Preservation Officer/s and/or tribal officials, state and local officials, NFS/applicants, and any other consulting parties in identifying historic properties, assessing effects, and resolving adverse effects, and provide for public involvement.

Tribal Resources

It is the policy of the Federal Government to consult with Federally recognized Tribal Governments on a Government-to-Government basis as required in E.O. 13175 ("Consultation and Coordination with Indian Tribal Governments," U.S. President 2000). The requirement to conduct coordination and consultation with Federally recognized tribes on and off of tribal lands

for “any activity that has the potential to significantly affect protected tribal resources, tribal rights (including treaty rights), and Indian lands” finds its basis in the constitution, Supreme Court cases, and is clarified in later planning laws. The USACE Tribal Consultation Policy, 1 Nov 2012, specifically implemented this E.O. and later Presidential guidance. The 2012 USACE Tribal Consultation Policy and Related Documents provide definitions for key terms, such as tribal resources, tribal rights, Indian lands, consultation, as well as guidance on the specific trigger for consultation (Table 3).

Table 3: 2012 USACE Consultation Policy Definitions

Category	Definition
Tribal rights	Those rights legally accruing to a Federally recognized tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaties, statutes, judicial decisions, executive orders or agreement and that give rise to legally enforceable remedies.
Tribal lands	Any lands title to which is: either held in trust by the United States for the benefit of any Federally recognized Indian tribe or individual or held by any Federally recognized Indian tribe or individual subject to restrictions by the United States against alienation.
Protected tribal resources	Those natural resources and properties of traditional or customary religious or cultural importance, either on or off tribal lands, retained by, or reserved by or for, federally recognized tribes through treaties, statutes, judicial decisions or executive orders.

According to available Government records, there are no tribal lands, nor are there specific tribal treaty rights related to access or traditional use of the natural resources in the project area. However, a total of seven Federally recognized tribes have an aboriginal/historic interest in the study area. The tribes are: 1) the Alabama Coushatta Tribe of Texas (ACTT), 2) the Choctaw Nation of Oklahoma (CNO), 3) the Coushatta Tribe of Louisiana (CT), 4) the Jena Band of Choctaw Indians (JBCI), 5) the Mississippi Band of Choctaw Indians (MBCI), 6) Muscogee (Creek) Nation (MN), and 7) the Tunica Biloxi Tribe of Louisiana (TBTL).

Historic and prehistoric sites in the Deltaic Plain are often located along the natural levees of waterways that were used as transportation routes. The Mississippi River was the main means of transportation, and its natural levees were the choice location for settlement. Prehistoric mound sites are still being discovered. The surrounding coastal lakes and areas were gradually explored for natural resources and utilized as well. As the population along the Mississippi River increased, land along its natural levees became scarce. Settlers began to move further outward following waterways such as Bayou Lafourche, Bayou Segnette, Bayou Verret, Bayou des Allemands, and other bayous and rivers in the coastal area. There are more than 200 recorded archaeological sites within the Deltaic Plain that demonstrate the continuous use of the region and its resources from the earliest prehistory to modern times.

Prehistoric sites include hunting and food processing camps, hamlets, and village sites. Native Americans relied on hunting, fishing, and gathering of plants. Discovered archeological sites represent the continuous span of human occupation in Louisiana's Mississippi River Delta region, beginning approximately with the Late Archaic period (i.e., Poverty Point culture, 1700-800 B.C.) through the Mississippi period (i.e., Plaquemine culture, A.D. 1200-1700), and carrying over through European arrival to the region and into the Historic period.

Types of historic sites include domestic buildings, plantation sites, farmsteads, military sites, commercial sites, industrial sites, boat landings, and hunting and fishing camps along the coast. In addition to terrestrial historic sites, the project area has the potential to contain historic shipwrecks. A variety of economic activities have contributed to the constructed environment of south Louisiana. In addition to the residential homes, public buildings, and commercial buildings, these industries have contributed to the south Louisiana landscape and to the heritage of the area. Historic standing structures, archaeological sites, and landscape features associated with human activities in the coastal area may be significant cultural resources.

Milton Island Expansion

The project area is located near a distinctive landform known as the Milton Island beach trend, which consists of a series of well-defined, relic beach features derived from sands emanating from the Pearl River located to the east of the project area. Similar to the Pine Island beach trend located along the southern side of Lake Pontchartrain in the vicinity of New Orleans, the Milton Island beach trend formed during a period of sea level stasis about 3,000 B.P. and was a well-drained landform attractive to human settlement that is considered to have a high probability of containing archaeological deposits (Pearson et al. 2014).

While ample archaeological research has been undertaken within the LPB over the past several decades, very few surveys for cultural resources have been carried out in the vicinity of the proposed project area. In 1982, a Level I cultural resources survey of the proposed 300-acre Port Louis Tract was conducted for a proposed residential development (Gagliano et al. 1982, with addendum by Thigpen and Pearson 1983). In the summer of 2000, a Phase I terrestrial survey of the proposed Entergy Little Gypsy to Madisonville project area was conducted (Lee et al. 2000). Portions of this survey were carried out along the Lake Pontchartrain shoreline and southern boundary of the proposed marsh creation area. In 2012, cultural resources surveys for a similar project were carried out in the vicinity of the currently proposed project, but further consideration was not given to the project in 2012, and the results of the surveys were not published at that time.

The results of the 2012 survey were incorporated into an expanded Phase I cultural survey entitled, *“Phase I Cultural Resources Survey and Evaluation, Miltons Island Marsh Restoration Project Area, St. Tammany Parish, Louisiana”* (Pearson et al. 2014). The Phase I terrestrial and marine cultural resources investigations surveyed a total of 484 acres, which includes 212 acres of remote-sensing marine survey of the Lake Pontchartrain water bottom for offshore borrow source identification. The survey did not identify any new cultural resources, but did relocate the previously recorded Guste Island I (16ST97) site. Site 16ST97 is linear in shape and borders the project area along the shoreline and includes wave-deposited remains of a shell midden that was originally located in an area now submerged in Lake Pontchartrain (Pearson et al. 2014). The survey identified an extensive shell reef rich with intact shell midden remains and artifacts located 200 meters offshore and expanded the 16ST97 site boundary to include the reef area. The survey concluded that the shell reef was associated with the Miltons Island beach ridge and recommended this portion of the site undetermined for inclusion in the National Register of Historic Places (NRHP) pending further evaluation. The shoreline portion of Site 16ST97, however, was recommended not eligible for the NRHP, as none of it was intact. In addition, the remote-sensing survey recorded the presence of buried portions of the Miltons Island beach ridge at the northeastern end of the offshore borrow area and recommended further examination of this portion of the borrow area if it cannot be avoided as a borrow location. The

borrow area proposed avoids the geologic feature as there is a high probability that the archaeological site extends into this area.

In partial fulfillment of responsibilities under NEPA, Section 106 and Executive Order 13175, CEMVN offered Tribes the opportunity to review and comment on the potential of the Milton Island Expansion project action to significantly affect protected Tribal resources, Tribal rights, or Indian lands. CEMVN underwent consultation with the Louisiana SHPO and Tribes pursuant to Section 106 and in accordance with the Programmatic Agreement, "Hurricane Storm Damage Risk Reduction System (HSDRRS) Lake Pontchartrain & Vicinity and West Bank & Vicinity Mitigation Projects," executed on June 18, 2013, with a finding of "no adverse effect with conditions." Through consultation, CEMVN agreed to develop an unanticipated discoveries plan and provide archaeological monitoring during construction activities. In their letter dated May 21, 2014, the SHPO concurred with the CEMVN finding. The Seminole Tribe of Florida (May 12, 2014), Caddo Nation of Oklahoma (May 15, 2014), Jena Band of Choctaw Indians (May 20, 2014), and Choctaw Nation of Oklahoma (June 3, 2014) also concurred with the CEMVN finding, and no objections to the effect determination were received.

3.2.8 Recreational Resources

CZ Deltaic Plain

There are many State and Federal recreation areas within the CZ Deltaic Plain that are visited annually and include miles of trails for hiking, boat ramps, fishing piers, classroom spaces, visitor centers or museums, picnic shelters, and historic sites. These recreation areas provide opportunities for hunting, hiking, biking, boating, bird watching, fishing, and crabbing, crawfishing, shrimping, education, camping, picnicking, and playing. The fishing industry alone is the second largest industry in Louisiana and the CZ Deltaic Plain encompasses much of the fishing industry opportunity.

The Louisiana Statewide Comprehensive Outdoor Recreation Plan (SCORP) provides a statewide inventory of recreation resources and identifies recreational needs. While regions defined in the SCORP do not fit perfectly within the CZ Deltaic Plain, SCORP Regions 1 through 4 include the CZ Deltaic Plain. Funds from the Land and Water Conservation Fund (L&WCF) have supported 483 different recreational projects within SCORP Regions 1 through 4 since 1964. L&WCF provides funding for numerous boat ramps, other facilities or lands that enhance opportunities for recreation.

Milton Island Expansion

Recreational use of the project area is moderate as few opportunities exist on-site. The occasional opportunity for bird watching and sightseeing exists from the single gravel road into the site or by boat from the nearby natural bayous and man-made canals. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity creating opportunities for both consumptive and non-consumptive forms of recreation.

4 ENVIRONMENTAL CONSEQUENCES

Mitigation Bank Credit Purchase

For this project, the CEMVN would purchase sufficient CZ fresh/intermediate marsh credits from a bank within the Deltaic Plain to mitigate up to 12.1 AAHUs. The particular mitigation bank to be utilized is unknown at this time. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, no new direct, indirect or cumulative impacts to any resources would be incurred from the purchase of these credits. As such, there is no further discussion in this section regarding impacts due to the purchase of mitigation bank credits.

Milton Island Expansion

Below is a summary of the impact analysis for the Milton Island Expansion project in Table 4. Only resources that would be impacted are discussed. Table 4 illustrates the full impact analysis in a summarized format. Only impacted resources are discussed in the narrative.

Table 4: Impact Summary for Milton Island Expansion Project

Resource	Direct Impacts	Indirect Impacts	Cumulative Impacts
Wetlands and Other Surface Waters	None	~55 acres of marsh replaced	would help retard the loss of wetlands.
Wildlife	Temporary adverse due to construction activities. Permanent adverse to less mobile species due to dredged material disposal.	~55 acres of marsh habitat replaced	would help retard the loss of wetlands and overall decline of wildlife species within the LPB and would be beneficial to preserving species biodiversity.
T&E (NLAA: GS, manatee, & sea turtles)	None	Avoidance of area due to dredging operations, notably noise and turbidity, and the loss of foraging habitat	minimal increase in impacts to manatees, sturgeon and sea turtles in the LPB.
Fisheries & Aquatic Resources	Benefit of ~55 acres converted to marsh increasing spawning, nursery, and forage habitat.	Temporary impacts during construction due to increase in turbidity and noise	Benefit in the form of replacing lost spawning, nursery, and forage habitat for important aquatic species in the LPB.
EFH	Estuarine water bottoms converted to estuarine intertidal herbaceous wetlands (marsh). temporary impacts to benthics in borrow site	Increased turbidity and disturbance of Lake Pontchartrain in the vicinity of the borrow area. long-term benefit to the managed species	adequately offset by the resulting increase in habitat quality
Cultural Resources	No adverse effect with conditions	None	None
Recreational Resources	Temporary adverse due to construction activities	Beneficial once established	positive cumulative effect on recreation by replacing lost habitat for species sought after by recreational fishermen.

Resource	Direct Impacts	Indirect Impacts	Cumulative Impacts
Water Quality	Temporary adverse due to construction activities.	Beneficial once established	Temporary and minimal contribution to cumulative impacts. Would serve to benefit regional WQ

4.1 Wetlands

No Action

Direct, Indirect, and Cumulative Impacts

Under the No Action Alternative, mitigation for marsh would not occur and CEMVN's legal obligation to compensate for habitat losses would not be satisfied. There would be a permanent loss of CZ marsh habitat from the Deltaic Plain.

Indirectly, there would be an overall loss of CZ marsh within the Deltaic Plain that once provided cover, resting, nesting and foraging habitat for wildlife, fisheries, and aquatic species. The loss of wetlands and the detritus and filtering function they provide would indirectly impact fisheries productivity and water quality.

The overall loss marsh within the system combined with other habitat loss incurred from implementation of projects in the FWOP conditions would result in cumulative adverse impacts to wetlands in the Deltaic Plain.

Milton Island Expansion

Direct, Indirect, and Cumulative Impacts

There would be negative direct impacts to SAV that is likely present in the marsh creation area, however those impacts have been accounted for and would be mitigated by the Milton Island Expansion project marsh creation. Impacts to existing wetlands would be minimized by running pipeline access corridor through open water.

There would be no cumulative or indirect impacts resulting from the Milton Island Expansion project, as it would replace marsh lost through the actions of TF Unwatering; however, the project would not reverse the current overall trend of wetland loss that is occurring or prevent it from accelerating in the future.

4.2 Aquatic Resources/Fisheries

No Action

Direct, Indirect, and Cumulative Impacts

The permanent loss of marsh within the watershed would reduce the habitat available to fish species for breeding, nesting, and foraging. However, because there is an abundance of marsh habitat in the watershed, this small loss of AAHUs will have a minimal impact on fisheries

populations. The permanent loss of brackish marsh and the detritus and filtering function that these wetlands provide would indirectly impact fisheries productivity and water quality.

Cumulatively, the No Action alternative would contribute to the overall loss of wetlands from the Deltaic Plain which could minimally, but permanently reduce fisheries populations and water quality.

Milton Island Expansion

Direct, Indirect, and Cumulative Impacts

Placement of fill material would directly impact less mobile aquatic species in the project area. Fill placement would bury any existing benthic resources and result in the demise of any fish species unable to escape the project area through installed spill boxes. These impacts would be localized, insignificant to the overall population of these species, and reduced through the additional habitat provided once the project reaches achieves target marsh elevations. Turbidity during borrow excavation and fill placement would result in temporary negative indirect impacts through impairment to visual predators and filter feeders, but this impact would be expected to cease and benthic species to rebound once construction is complete.

Although there would be a loss of ~55 acres of open water from construction of this project, open water is found in abundance throughout the LPB. The resulting marsh would replace lost spawning, nursery, forage, and cover habitat for important aquatic species in the LPB.

4.3 Essential Fish Habitat

No Action

Direct, Indirect, and Cumulative Impacts

The permanent loss of marsh would permanently reduce the EFH available to Federally managed species that use this habitat for breeding, nesting, and foraging. However, because there is an abundance of marsh habitat in the watershed, this small loss of AAHUs would have a minimal impact on EFH.

Cumulatively, the No Action alternative would contribute to the overall loss of CZ marsh from the Deltaic Plain which could minimally, but permanently reduce EFH.

Milton Island Expansion

Direct, Indirect, Cumulative Impacts

No permanent direct or cumulative impacts to EFH would result from implementation of Milton Island Expansion, as the existing EFH, estuarine water bottom, estuarine water column, and SAV would be converted to a different type of essential fish habitat, intermediate marsh. Temporary negative direct impacts to EFH would occur during construction in the fill placement area until marsh elevations are achieved, and to benthic resources in the vicinity of the borrow site until the borrow area stabilizes after construction and re-colonization can occur. Fisheries access to the marsh mitigation area would be extremely limited during the initial 3-5 years of the

project life until the pumped-in sediments dewater and consolidate, and the fish dips are installed.

The conversion of ~55 acres of one type of EFH (open water) to another (tidal fresh marsh) would not contribute cumulatively to the overall loss of that habitat in the LPB and would help prevent additional loss through the re-establishment of lost fresh marsh from the TF Unwatering levee repairs.

4.4 Wildlife

No Action

Direct, Indirect, and Cumulative Impacts

The permanent loss of CZ fresh marsh within the Deltaic Plain would reduce the habitat available to wildlife for breeding, nesting, and foraging. However, because there is an abundance of marsh habitat in the watershed, this small loss of AAHUs would have a minimal impact on wildlife populations.

Cumulatively, the no action alternative would contribute to the overall loss of wetlands from the CZ Deltaic Plain, which could minimally, but permanently reduce wildlife populations.

Milton Island Expansion

Direct, Indirect, and Cumulative Impacts

There would be permanent negative impacts to less mobile wildlife species that utilize the project area, which would experience demise from placement of dredged material. Mobile species would be temporarily displaced to adjacent habitats during construction. However, these impacts would not significantly affect the overall populations of these species and the restored marsh would provide additional habitat for these populations to expand again once marsh elevations are established.

There would be negative indirect impacts to certain wildlife species resulting from the conversion of ~55 acres of open water to marsh, which would reduce use and function of the area for brown pelicans, seabirds, dabbling and diving ducks, coots, and gallinules and other species that feed in the shallow open water in this location. However, these impacts would be insignificant and not affect the overall population of these species as extensive, existing, similar habitat exists within the vicinity of the project area that provides similar functions. A rise in turbidity at the borrow site could immediately reduce water quality in the area causing wildlife population to avoid the area during construction; however, those effects would be temporary, occurring only during the period of construction.

There would be no cumulative impacts, as this project would replace ~55 acres of wildlife habitat in the Deltaic Plain that was lost due to the TF Unwatering levee repairs.

4.5 Threatened and Endangered (T&E) Species and Other Protected Species

No Action

Direct, Indirect, and Cumulative Impacts

The permanent loss of CZ marsh within the watershed would reduce the habitat available to T&E species for breeding, nesting, and foraging. However, because there is an abundance of CZ marsh habitat in the watershed, this small loss of AAHUs would have no overall impact on T&E populations.

Cumulatively, the No Action alternative would contribute to the overall loss of wetlands from the Deltaic Plain which could minimally, but permanently reduce some T&E populations.

Milton Island Expansion

Direct, Indirect, and Cumulative Impacts

No listed species are expected to be directly impacted within the proposed marsh creation area since their utilization of the shallow water depths in the site (typically less than two feet) is unlikely and access is extremely limited. Within the borrow area, no direct impacts to T&E species are anticipated with the use of Gulf sturgeon and Manatee avoidance measures.

Potential indirect impacts from the proposed action would primarily consist of effects from dredging operations, notably noise and turbidity, and the loss of foraging habitat. Although the rise in turbidity could immediately reduce water quality in the project area, those effects would be temporary and would be reduced by movement of the tides. Any manatees, sturgeon and sea turtles in the area could relocate during construction since the project area encompasses only a small section of Lake Pontchartrain. The indirect impacts resulting from the loss of the borrow area as foraging habitat would be insignificant given the small size of the borrow area compared to the overall size and similar habitat within Lake Pontchartrain.

Temporary negative impacts to the threatened or endangered species from the proposed project during construction would result in a minimal temporary increase in cumulative impacts to manatees, sturgeon and sea turtles in the Deltaic Plain.

4.6 Water Quality

No Action

Direct, Indirect, and Cumulative Impacts

The permanent loss of marsh within the Deltaic Plain and the detritus and filtering function that these wetlands provide would indirectly negatively impact water quality.

Cumulatively, the No Action alternative would contribute to the overall loss of wetlands from the Deltaic Plain which could minimally, but permanently reduce water quality.

Milton Island Expansion

Direct, Indirect, and Cumulative Impacts

The Milton Island Expansion project would have temporary negative direct impacts to water quality through increased turbidity during construction. The temporary water quality impacts from turbidity during construction would not be expected to cause impairment of the water body's designated uses as defined under the standards of Louisiana Administrative Code, Title 33, Part IX, Chapter 11.

Overall, the project would have positive indirect and cumulative impacts, as the restored wetlands would filter potential pollution and contaminants from runoff prior to it entering the watershed.

4.7 Cultural Resources

No Action

Direct, Indirect, and Cumulative Impacts

No cultural resources would be impacted through the No Action alternative.

Milton Island Expansion

Direct, Indirect, and Cumulative Impacts

Based on the Phase I cultural resources survey report, CEMVN made a finding of “no adverse effect with conditions” related to the Site 16ST97 boundary located near the project area, which is currently undetermined for NRHP eligibility pending further investigation and evaluation. Per the consultation, CEMVN agreed to develop an unanticipated discoveries plan and provide archaeological monitoring during construction activities should the Milton Island expansion alternative be selected. In addition, the remote-sensing marine survey recorded the presence of submerged and buried portions of the Miltons Island beach ridge at the northeastern end of the offshore borrow area and recommended further examination of this portion of the borrow area if it cannot be avoided as a borrow location. If the current offshore borrow location area is selected, consultation would be initiated in accordance with Section 101(b)(4) of NEPA as implemented by 40 CFR, Parts 1501-1508 and section 106 of the NHPA.

4.8 Recreational Resources

No Action

Direct, Indirect and Cumulative Impacts

Under the no action plan, recreational resources provided by the marsh impacted by TF Unwatering would be permanently lost. This loss, and the effect such losses would have on wildlife and fish species, would have indirect negative impacts on the recreational opportunities in the CZ Deltaic Plain, as many recreation activities are dependent on aquatic resources and its services.

With no action, there would be an overall loss of marsh from the CZ Deltaic Plain, which would equate to a loss in recreational opportunities (fishing, hunting, wildlife viewing). The overall loss of within the system combined with other habitat loss incurred from implementation of projects in the FWOP conditions could have cumulative negative impacts to recreational resources.

Milton Island Expansion

Direct, Indirect, and Cumulative Impacts

Temporary negative direct impacts resulting from construction activities could occur due to increased turbidity and construction related disturbance in Lake Pontchartrain, which could minimally impact recreational uses such as fishing. Flora and fauna that historically populated the area, and currently populate the adjacent/nearby forested areas, would again utilize the area after construction, resulting in minimal indirect positive impacts as recreational opportunities such as wildlife viewing would be enhanced.

There would be no cumulative impacts within the CZ Deltaic Plain, as recreational resources lost through the action of TF Unwatering would be replaced.

5 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action in SEA # 433b is achieved through coordination with appropriate agencies and organizations, and release of the Draft SEA to the public for its review and comment. Coordination with USFWS in accordance with Fish and Wildlife Coordination Act (FWCA) (see 5.1) and coordination with Louisiana Department of Natural Resources in accordance with the Coastal Zone Management Act have been completed (see Appendix E).

If mitigation bank credit purchase no longer meets selection criteria, the Milton Island Expansion project would then replace the currently identified TSA for implementation. If this occurs then the following coordination and analysis would be necessary: USFWS and NMFS concurrence that the Milton Island Expansion project would not be likely to adversely affect any endangered or threatened species through completion of ESA section 7 consultation; LDNR concurrence with the determination that the Milton Island Expansion Project is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program (LCRP); receipt of a Water Quality Certificate from the State of Louisiana; public review of the Section 404(b)(1) Public Notice and signature of the Section 404(b)(1) Evaluation; receipt and acceptance or resolution of all LDEQ comments on the air quality impact analysis as documented in the EA; and receipt and acceptance or resolution of all EFH recommendations; and concurrence with a “no effect with conditions” determination from the LA SHPO, Advisory Council on Historic Preservation, Federally recognized Indian tribes and other interested parties; and an environmental site assessment to ascertain whether there is a risk of hazardous, toxic or radioactive contamination in the proposed site.

5.1 Fish and Wildlife Coordination Act of 1934

The FWCA provides authority for the USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife

resources receive equal consideration to other project features. It requires Federal agencies that construct, license or permit water resource development projects to first consult with the USFWS, NMFS and state resource agencies regarding the impacts on fish and wildlife resources and measures to mitigate these impacts. Section 2(b) requires the USFWS to produce a Coordination Act Report (CAR) that details existing fish and wildlife resources in a watershed, potential impacts due to a proposed project and recommendations for a project. By communication dated October 5, 2022, the U.S. Fish and Wildlife Service confirmed that coordination on the subject project associated with the Fish and Wildlife Coordination Act was complete. If mitigation bank credit purchase no longer meets selection criteria, the second most favorable alternative (Milton Island Expansion) would be recommended for implementation and all necessary coordination would be initiated.

5.2 Coastal Zone Management Act of 1972

The Coastal Zone Management Act ("CZMA") requires that "each Federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs." In accordance with Section 307, a Consistency Determination Modification was prepared for the proposed Project and was coordinated with the Louisiana Department of Natural Resources (LDNR) in a letter dated October 17, 2022. LDNR concurred by letter dated November 21, 2022 with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program (C20100344 Mod 1, Appendix E).

6 CONCLUSION

The proposed action has been assessed for its potential impacts to wetlands, wildlife, threatened and endangered species, fisheries, aquatic resources, water quality, essential fish habitat, cultural resources, and recreation. This assessment has not identified any potential significant environmental impacts from implementation of the proposed action. The proposed action would provide the 12.1 AAHUs of mitigation required for through the purchase of in-kind mitigation bank credits. Implementation of the proposed action to fully offset the CZ fresh marsh impacts incurred from construction of the TF Unwatering repairs is recommended.

7 PREPARED BY

EA 433b and the associated FONSI were prepared by Kristen Butcher, Biologist, U.S. Army Corps of Engineers, New Orleans District; Regional Planning and Environment Division South, CEMVN-PDN-CEP; 7400 Leake Avenue; New Orleans, Louisiana 70118.

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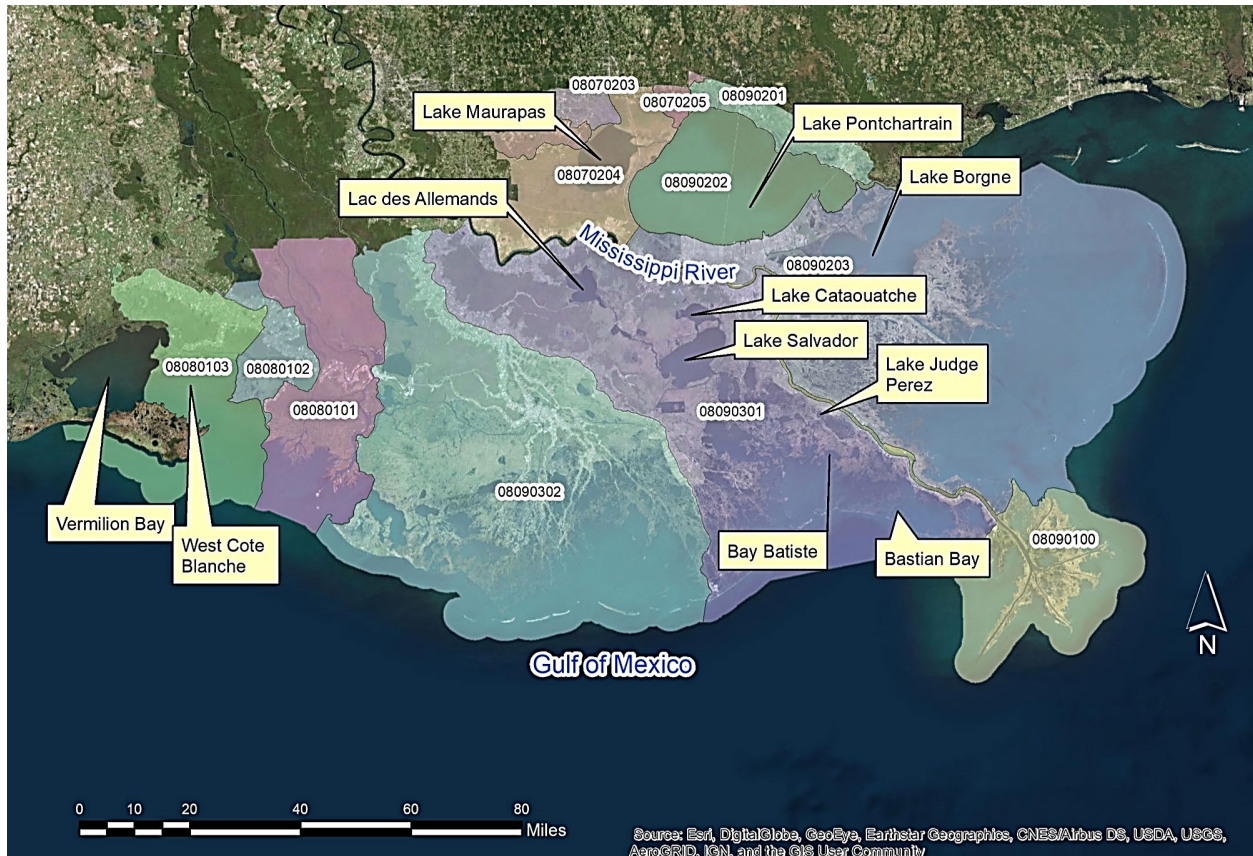
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APPENDIX A: Hydrologic Unit Codes (HUCs) within the CZ Deltaic Plain

Hydrologic Unit Codes (HUCs) within the CZ Deltaic Plain



APPENDIX B: Relevant Resources and their Institutional, Technical and Public Importance

Relevant Resources and their Institutional, Technical and Public Importance

Resource	Institutionally Important	Technically Important	Publicly Important
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes.
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended; Clean Water Act of 1977, as amended; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968.	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Essential Fish Habitat (EFH)	Magnuson-Stevens Fishery Conservation and Management Act of 1996, Public Law 104-297	Federal and state agencies recognize the value of EFH. The Act states, EFH is "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity."	Public places a high value on seafood and the recreational and commercial opportunities EFH provides.
Wildlife	Fish and Wildlife Coordination Act of 1958, as amended and the Migratory Bird Treaty Act of 1918	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940.	USACE, USFWS, NMFS, NRCS, EPA, LDWF, and LDNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect sites. Their association or linkage to past events, to historically important persons, and to design and construction values; and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.
Recreation Resources	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value of the local, state, and national economies.	Public makes high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.
Aesthetics	USACE ER 1105-2-100, and National Environmental Policy Act of 1969, the Coastal Barrier Resources Act of 1990, Louisiana's National and Scenic Rivers Act of 1988, and the National and Local Scenic Byway Program.	Visual accessibility to unique combinations of geological, botanical, and cultural features that may be an asset to a study area. State and Federal agencies recognize the value of beaches and shore dunes.	Environmental organizations and the public support the preservation of natural pleasing vistas.

Resource	Institutionally Important	Technically Important	Publicly Important
Water Quality	Clean Water Act of 1977, Fish and Wildlife Coordination Act, Coastal Zone Mgt Act of 1972, and Louisiana State & Local Coastal Resources Act of 1978.	USACE, USFWS, NMFS, NRCS, EPA, and State DNR and wildlife/fishery offices recognize value of fisheries and good water quality and the national and state standards established to assess water quality.	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.
Prime and unique Farmland	Farmland Protection Policy Act	State and Federal agencies recognize the value of farmland for the production of food, feed and forage.	Public places a high value on food and feed production.
Noise Quality	USACE ER 1105-2-100, and National Environmental Policy Act of 1969, Noise Control Act of 1972, Quiet Communities Act of 1978	Unwanted noise has an adverse effect on human beings and their environment, including land, structures, and domestic animals and can also disturb natural wildlife and ecological systems.	The EPA must promote an environment for all Americans free from noise that jeopardizes their health and welfare.
Socio-economics	USACE ER 1105-2-100, and National Environmental Policy Act of 1969	When an environmental document is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental document will discuss all of these effects on the human environment.	Government programs, policies and projects can cause potentially significant changes in many features of the socioeconomic environment.
Navigation	Rivers and Harbors Act of 1899 and River and Harbor Flood Control Act of 1970 (PL 91-611).	The Corps provides safe, reliable, efficient, and environmentally sustainable waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, and recreation.	Navigation concerns affect area economy and are of significant interest to community.

APPENDIX C: Milton Island Intermediate Marsh Restoration Mitigation Expansion – Project Description

DRAFT Milton Island Intermediate Marsh Restoration Mitigation Project Expansion

GENERAL SCOPE:

Construction of the Milton Island Intermediate Marsh Restoration Mitigation Project Expansion (Milton Expansion) is proposed as compensatory mitigation for the outstanding 12.1AAHUs of fresh marsh impacts incurred by the TF Unwatering levee repair. The Milton expansion project was developed using the constructed Milton Island Intermediate Marsh Restoration Project (Milton Project) (PIER 36 TIER 1) and the approved Pine Island Project developed for Bipartisan Budget Act (BBA) Construction Projects; West Shore Lake Pontchartrain (WSLP), Comite River Diversion, and East Baton Rouge (EBR) Flood Risk Management, BBA Construction Mitigation EA # 576 (EA # 576). The Milton Expansion and Milton Project are within the larger Pine Island Project footprint, and therefore the designs and impact analyses of those two previously evaluated projects were used in developing and evaluating the Milton Expansion project.

The Milton Expansion project would be located near Madisonville, Louisiana on the north shore of Lake Pontchartrain, approximately 8 miles west of the Causeway Bridge (Figure 1). This project would consist of three major construction related features:

1. Marsh creation
2. Borrow
3. Access

The proposed marsh creation site would be approximately ~ 55 acres within the previously identified and approved Pine Island swamp restoration area (~ 1,965 acres) as described in SEA # 576. The borrow area would be the same as the 2,238-acre borrow area identified for Pine Island. However, substantially less borrow material would be required therefore only ~ 55 acres within that previously identified area would be dredged. Access for pipeline(s), watercraft, and other construction related equipment would be similar to that described in SEA # 576.

Project Area Size Estimation:

Information from the adjacent Milton Project, constructed in 2018, was used to size the Milton Expansion Project. Wetland value assessments (WVAs) performed for the Milton Project estimated a mitigation potential of 0.315 average annual habitat units/acres (AAHUs/acre) (Appendix D). Based on this mitigation potential and a ~25 percent contingency, ~55 acres for construction would be needed to mitigate ~12.15 AAHUs. Contingency was added to account for potential impacts resulting from construction of this project such as, but not limited to, potential impacts to existing marsh or SAV within

the construction area, potential impacts associated with fill containment dike construction, and access.

MARSH CREATION PLAN AND DESIGN ALTERNATIVES:

The proposed intermediate marsh creation would be constructed within an ~55-acre area within the Pine Island Swamp Mitigation project area (which is ~ 1,965 acres). Two design alternatives were developed within the 1,965-acre area (Figure 2).

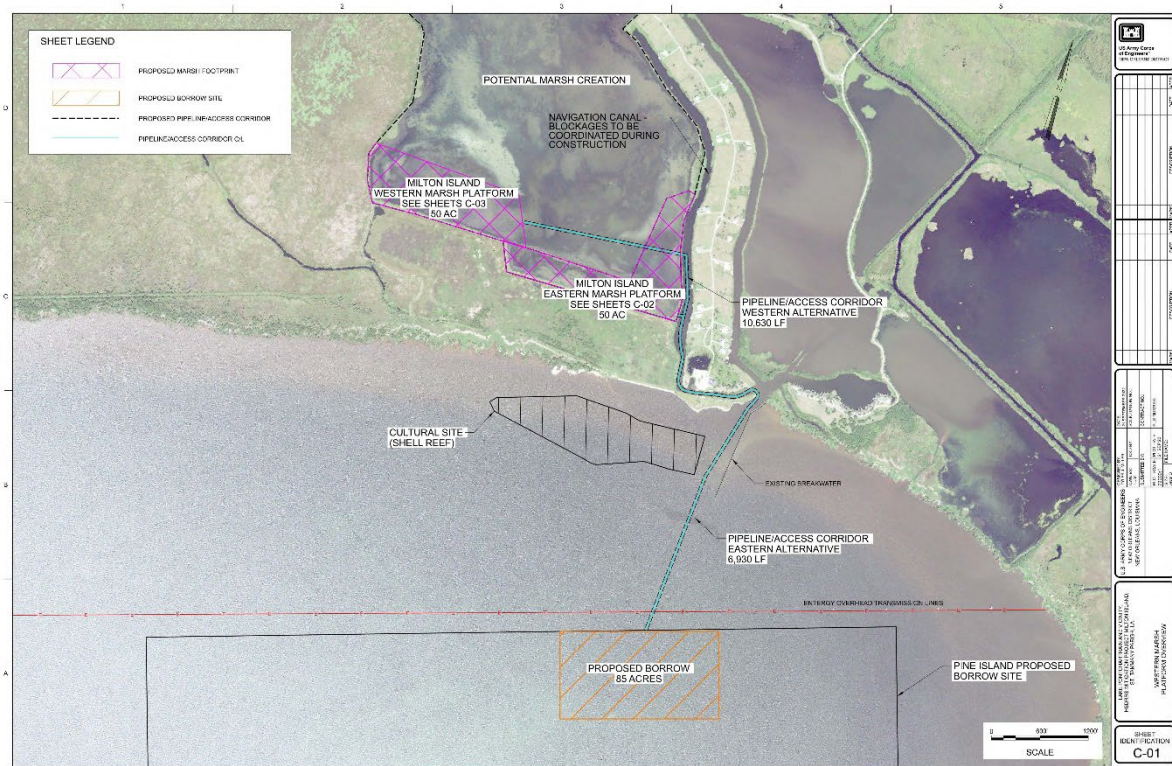


Figure 2: Potential areas show areas that would be considered for the Milton Island Mitigation Expansion Project. Two design options are presented but are not intended to represent the precise location of project features, which could be constructed anywhere within the potential marsh creation area.

The proposed marsh creation area is primarily in shallow open water, but there is some existing emergent marsh and submerged aquatic vegetation present as well. Adverse impacts would be avoided and minimized to the extent practicable.

Two design alternatives were developed that span the northwestern and northeastern portions of the previously constructed Milton Island project, respectively. The western alternative would allow for potential marsh nourishment to the original Milton Island project through effluent release, should that be determined to be beneficial. The average elevation of the project area is unknown but assumed to be relatively deep

near existing land, as it was historically dredged to create embankments for neighboring canals and the past Milton Island project.

Any project constructed within the Pine Island marsh creation area would consist of three features:

1. Marsh platform – area within containment dikes that would be constructed to an elevation expected to settle within the functional marsh elevation range of intermediate marshes within the Lake Pontchartrain Basin (~ -0.17 to +1.56 feet based on 2014 CRMS data; Jankowski et al., 2017). This would be ~ 50 acres and would be constructed to up to ~+3.5 feet NAVD88.
2. Containment dikes – raised areas constructed and designed to contain pumped material that would create the marsh platform. These would be either gapped or completely degraded after the marsh platform settles as part of final construction of the Milton Expansion project (approximately 1 year after creation of the marsh platform). Material resulting from gapping or degrading would be placed back into the areas dredged to construct the dikes. Existing high ground could be used to contain pumped material to the extent practicable. It is expected this would be ~ 16% of the project area (~ 7.8 acres) and would be constructed to ~ +4.5 feet NAVD88. However, the exact acreage would vary based on design details such as but not limited to shape (square or circle) and location (e.g., does it border any existing high ground?).
3. Containment dike borrow areas – Borrow obtained from within the marsh creation cell or open water adjacent to the dike alignment would be dredged down to an elevation of ~-7.0 feet NAVD88 to construct the containment dikes.

In addition to these three features, deeper openings within the containment dikes and vicinity may be constructed as part of final construction of the Milton Island project (“fish dips”). Fish dips would facilitate exchange with surrounding waterways and allow for aquatic organisms to have better access to the newly created marsh. Close coordination with the NMFS and USFWS regarding if and how fish dips would be constructed would occur during further design.

BORROW PLAN:

Hydraulic cutterhead dredges would be used to excavate material from an ~55-acre area within the previously identified and approved 2,238-acre Pine Island borrow area described SEA # 576. Dredging of the borrow area would be limited to -19.0 feet NAVD88 plus a 1-foot allowable over depth. There would be 8.33M cubic yards of material available from the borrow site. Approximately 3M cubic yards and 6.5 cubic yards would be needed to construct the eastern and western design options respectively. A minimum buffer of 800 feet would be required between the borrow site footprint and the transmission line alignment located in Lake Pontchartrain, north of the proposed borrow site. The hydraulically dredged material would be moved into the marsh creation area via pipeline according to the access plan.

DURATION:

Necessary dike construction and initial pumping of sediment into the marsh platform would take up to 1 year to complete. Following an approximately 1-year settlement period after pumping of sediment into the marsh platform, degrading of dike would begin and would take up to one year.

SITE ACCESS:

The pipeline and access corridor designated in SEA # 576 from the borrow source to the shoreline would be used for access for pipeline(s), watercraft, and other construction related equipment. There would be no allowances for excavation within the corridor. The dredge pipeline would be floated and or submerged within this corridor to the shoreline. From the shoreline, the dredge pipeline could cross existing marsh wetland habitats causing negative impacts. These impacts would be avoided, reduced, and/or minimized to the extent practicable. Any remaining impacts would be rectified (i.e., repaired as or after the pipeline is being removed) or mitigated. The proposed marsh creation area was sized to account for some impacts of this nature.

STAGING:

Staging of equipment for initial dike construction activities would be via barge(s) on or near the Lake Pontchartrain shoreline as indicated on the attached drawing. The proposed staging areas would first be submitted for Government approval.

MAINTENANCE/MANAGEMENT ACTIVITIES:

After completion of all dike construction, dredge pumping, and soil preparation activities, herbicides may be applied to the mitigation areas to help control invasive and nuisance plant species. Throughout this period, access/maintenance roads would be maintained as necessary as would be any fish dips (if applicable) and any new drainage features established.

The first monitoring event would occur in late summer one year after the settlement of the marsh platform. Various herbicide application events could take place during this period, if necessary. It is assumed that this monitoring event would show that all vegetation and invasive/nuisance species success criteria had been achieved. It is also assumed this monitoring event would show the success criterion established for the final soil surface elevation in the mitigation areas had been achieved. In this case, the Non-Federal Sponsor would take over the project including all management and maintenance work.

EQUIPMENT:

Equipment to be used for the respective work is assumed as follows:

Dike Construction: Excavators, marsh buggies, airboats

Dredge Pumping: Cutterhead dredge, tugs, crew boats, pipeline (steel, and rubber), derricks, barges, up to D-8 dozers, excavators, front-end loaders, marsh buggies, airboats, marsh masters

Rip-rap Construction (if needed): Excavators, scows, barges, up to D-8 dozers, front-end wheel loaders, marsh buggies

Reference

Jankowski, K. Törnqvist, T. E. & Fernandes, A. M. 2017. Vulnerability of Louisiana's coastal wetlands to present-day rates of relative sealevel rise. *Nature Communications* 8, 14792.

APPENDIX D: LPV HSDRRS Mitigation- Milton Island Marsh Creation WVA

Wetland Value Assessment Project Information Sheet

March 17, 2014

Prepared for:
U.S. Army Corps of Engineers

Prepared by
U.S. Fish and Wildlife Service

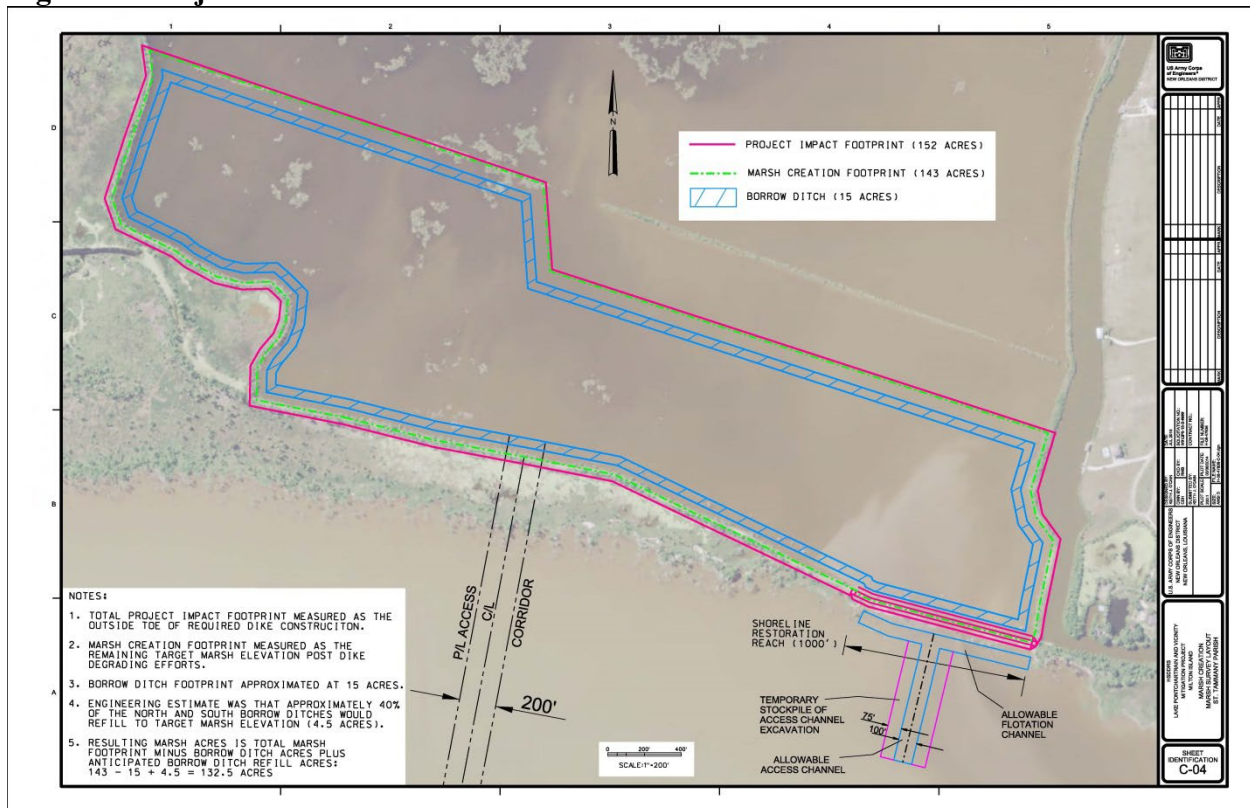
Project Name: LPV HSDRRS Mitigation- Milton Island Marsh Creation

Mitigation Potential: 95% = 0.33 AAHUs/acre; 35% = 0.41 AAHUs/ acre

Project Type(s): Intermediate marsh restoration project

Project Area: The Milton Island marsh is located along the north shore of Lake Pontchartrain, west of the Tchefuncta River, in St. Tammany Parish.

Figure 1. Project Area



Project Goal: Restore a sufficient amount of intermediate marsh habitat within the Milton Island Marsh project area to mitigate for the 45.7 AAHUs of non-refuge, fresh and intermediate marsh habitat impacted by the LPV HSDRRS. The proposed marsh site initial target elevation for dredge fill would be elevation +2.0' to +2.5' NAVD88, to ultimately hit a target marsh elevation of +1.0 within the project life.

The proposed marsh layout results in an open water area immediately north and adjacent to the marsh footprint. The entire northern retention dike will be degraded to marsh elevation in year two (2), allowing immediate access for fish and wildlife between the open water and marsh platforms. The created marsh will provide an additional expanse of shoreline buffer for other interior swamp and marsh habitats. As such, construction of trenasses will not be proposed within the marsh platform. It is anticipated that natural sloughs and/or access corridors will develop over the project life.

A final element of the project construction will be the restoration of a 1,000 foot reach of the lake shoreline which has breached, allowing lake waters to freely enter the project footprint. An earthen berm, with a 25 foot crown width, 1:4 foot (rise to run) side slope, at elevation +5.0' NAVD88 is proposed. An earthen-filled bag system, which will accommodate planting of shoreline vegetation, will be considered as a viable shoreline protection alternative, and included in the construction cost estimate. It is estimated that the footprint of the shoreline restoration would result in 2 acres (rounded up from 1.7 acres) of impacted water bottoms.

The total project area is 152 acres which includes the containment dike footprint and the shoreline berm feature. Of that area 7 acres are existing containment dikes, leaving 145 acres within the area of analysis. Within that 145-acre area, as much as 15 acres would be excavated to construct a new containment dike along the northern perimeter and strengthen and enlarge existing dikes along the other three sides. Corps Engineering Division estimated that approximately 40 percent of the northern and southern borrow ditches, or 4.5 acres, would refill to marsh elevation. This is assuming some of the material from degrading the perimeter dikes would settle to target elevation. Two (2) acres (1.7 acres rounded up) of open water will be converted to a vegetated shoreline berm and tie into the existing lakefront shoreline. These acres were subtracted from the 145-acre area of analysis for the future with project land loss analysis, yielding a 143 acre potential benefit area (132.5 acres of marsh and 10.5 acres of water). The mitigation potential was calculated using the 145-acre area of analysis.

The calculation for the area that would be filled to target elevation is:
143 acres of benefit – 15 acres borrow excavated + 4.5 acres of borrow at target elevation = 132.5 acres of marsh (10.5 acres of water)

Project Construction Schedule:

TY0 – Dec 2015-Mar 2016: Physical Construction: Dredge, Dikework, etc. (120 days)
TY1 – 2016 (Mar 2016-Mar 2017: Settlement (1-yr))
TY2 – 2017 (Mar-Apr 2017: Initial Planting (60 days) & gapping)
May-Aug 2017: NCC Project after Initial Planting complete (per MVD guidance);
process takes 4 months per LPV/WBV project teams experience with NFS

Habitat Assessment Method

The WVA operates under the assumption that optimal conditions for general 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 or 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 fish and wildlife habitat, 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 Suitability Index for each variable into a single value for wetland habitat quality; that single value is referred to as the Habitat Suitability Index, or HSI.

The WVA models assess the suitability of each habitat type for providing resting, foraging, breeding, and nursery habitat to a diverse assemblage of fish and wildlife species. This standardized, multi-species, habitat-based methodology facilitates the assessment of project-induced impacts on fish and wildlife resources. The coastal marsh WVA model consists of six variables: 1) percent of wetland area covered by emergent vegetation; 2) percent of open water area covered by aquatic vegetation; 3) marsh edge and interspersion; 4) percent of open water area ≤ 1.5 feet deep in relation to marsh surface; 5) salinity; and 6) aquatic organism access.

Values for those variables are derived for existing conditions and are estimated for conditions projected into the future if no restoration efforts are applied (i.e., future-without-project), and for conditions projected into the future if the proposed restoration project is implemented (i.e., future-with-project), providing an index of quality or habitat suitability of the habitat for the given time period. The habitat suitability index (HSI) is combined with the acres of habitat to get a number that is referred to as “habitat units”. Expected project benefits are estimated as the difference in habitat units between the future-with-project (FWP) and future-without project (FWOP). To allow comparison of WVA benefits to costs for overall project evaluation, total benefits are averaged over a 50-year period, with the result reported as Average Annual Habitat Units (AAHUs).

V1 - Emergent Vegetation

Existing – The project area is classified as open water as determined by FWS analysis of 2012 and 2013 aerial photography. Chabreck and Linscombe (1997) identified fresh marsh as occurring within the project area, while Sasser et al. (2007) classified the area as intermediate marsh.

The two major soil types in the project area are classified by Trahan (1987) as Allemands muck and Maurepas muck. Both soil types are very poorly drained, occurring within former freshwater marshes and swamps.

Land Loss Data

To calculate loss rates USGS evaluated a 9,848 acre extended boundary (Figure 2). USGS determined the 1985-2010 rate from a linear regression that is depicted in Figure 3. The loss rate (-0.28%/yr) was calculated from percent land values (acres) from that 1984-2010 timeframe. USGS excluded some data points from the regression analysis due to low and high water events.

USGS's percent is percent of the total area (marsh + water). The FWS percent loss rate was determined as a percent of the 1985 land area and also included all data points provided. Typically, in WVAs and other such evaluations, we have used the FWS method as there might in some cases be non-wetlands within the polygon and then use of the total polygon area would result in obvious errors. Therefore, the FWS method has been the standard method used in the past. Based on the data provided by USGS, the FWS determined a loss rate of -0.28% per year. For FWP it is assumed that the loss rate would be reduced by 50% until a point when post-construction accretion exceeds 10 inches above the created marsh platform; and therefore, a loss rate of -0.19 acres per year ($0.28\%/2 \times 132.5$) was applied under the FWP scenario.

Figure: 2. USGS Extended Boundary for Milton Island Marsh - polygon 05

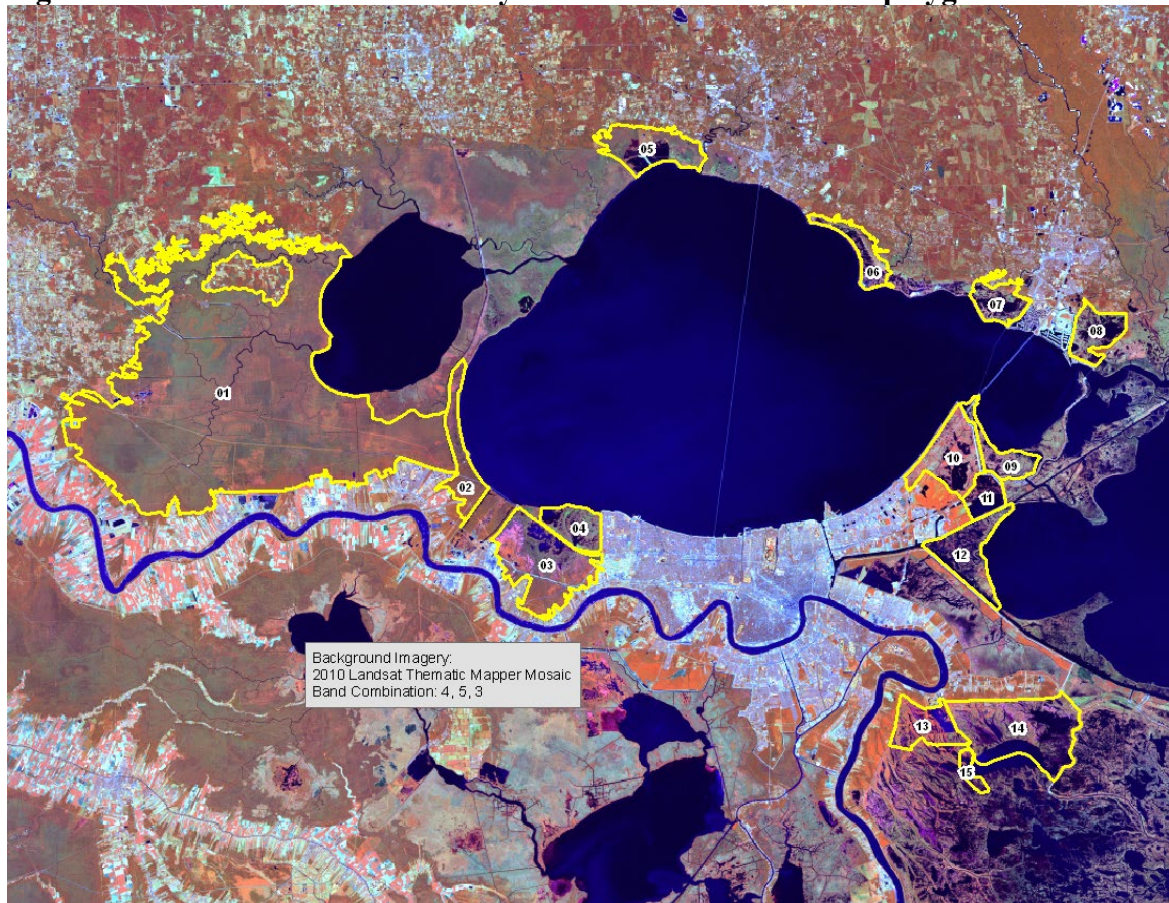
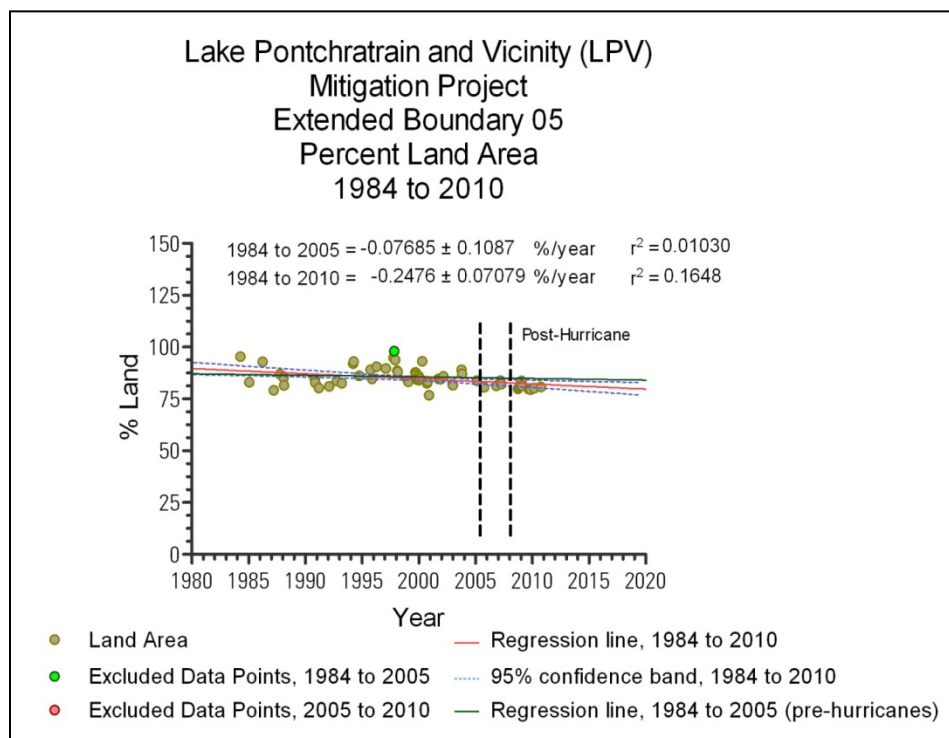


Figure 3. Land loss rate determined by USGS



FWOP

Loss Rate: -0.28% /year (FWS LLR, 0 acres/yr due to no land being in the PA polygon)

TY0-50	Marsh	0 acres (0%)	TY0 = 2015
	Water	145 acres (100%)	

FWP

For use in the WVA models, projected Relative Sea Level Rise (RSLR) estimates were developed according to EC 1165-2-211, using a nearby reference gage (Mandeville gage) in the Lake Pontchartrain and Vicinity mitigation watershed. The reference gage was used to develop low, intermediate and high RSLR estimates. Based on MVD planning guidance, the Intermediate RSLR scenario was used for the purpose of WVA modeling for alternative comparison. Analysis of USGS land loss data indicates that land change is still occurring under the low SLR scenario. Therefore, the FWS applied the intermediate RSLR scenario starting from the last year of USGS land loss data.

Created marsh platform has limited marsh function until settlement, breaching of retention dikes, and vegetation occurs. Land loss is applied at the time of marsh creation. The rate is 50% of the background loss rate until TY40 when at least 10 inches of water is assumed to cover the marsh and, therefore, 10 inches of post-construction accretion is assumed to occur. At that time background loss rate is resumed. A settlement period of 5 years was also applied based on the Corps settlement analysis that indicates 75% of settlement occurs in the first 5 years. This assumption will delay when the loss rate changes back to 100% (YR, Settlement curves). Percent loss rate is of the entire project area acreage.

Research by Nyman et al. (1993) suggests that coastal marshes may undergo rapid degradation and conversion to open water beyond a critical rate of submergence/inundation. Louisiana Coastal Protection and Restoration Authority (CPRA) personnel working to model marsh loss for the 2012 Louisiana Coastal Master Plan have used statewide Coastal Reference Monitoring System data to develop plant productivity vs inundation (i.e., accretion deficit) relationships. From those relationships, they identified inundation ranges at the primary production low-end points to predicting onset of abrupt marsh collapse (Coastal Protection and Restoration Authority of Louisiana 2012). In this study, the median value for intermediate marsh (34.4 cm) was considered to predict onset of abrupt marsh collapse; however, marsh collapse does not occur under the intermediate RSLR scenario.

Loss Rate: -0.19 acres/year (FWS LLR)

TY0	Marsh	0 acres (0%)
	Water	145 acres (100%)
TY1	Marsh	0 acres (assume 0% credit of the remaining 132.5-ac marsh platform)
	Water	12.7 acres (7.5%)
TY2	Marsh	13.2 acres (9%) (assume 10% credit of the remaining marsh platform for gapping/planting)
	Water	12.9 acres (9%, borrow & marsh loss)
TY3	Marsh	33.0 acres (23%) (assume 25% credit of remaining marsh platform)
	Water	13.1 acres (9%)
TY5	Marsh	131.5 acres (91% - assume full credit of remaining marsh platform)
	Water	13.5 acres (9%)
TY6	Marsh	131.2 acres (92%)
	Water	13.8 acres (9.5%)
TY40	Marsh	117.7 acres (82%)
	Water	27.3 acres (19%)
TY50	Marsh	110.1 acres (76%)
	Water	34.9 acres (24%)

V2 – Submerged Aquatic Vegetation (SAV)

The project area is primarily open water with depths ranging from approximately 0.5 to 3 feet (see Milton Island Marsh Raw WVA Data.xlsx). During a May 17, 2011, HSDRRS WVA field trip it was estimated that approximately 55% of the open water had SAV cover. It is assumed that this value will decrease over the 50 year project life as open water areas continue to deepen over time. Also the shoreline has breached opening the area to the lake. Increased turbidity is expected under the FWOP. The Corps RSLR data was applied to FWOP conditions.

FWOP

TY0	55%	
TY1	55%	
TY3	55%	
TY5	55%	
TY6	55%	
TY40	35%	Assume decrease due to subsidence and continued deepening of open Water. Water level increases 0.34 ft by TY 40.
TY50	15%	Assume 70% decrease due to subsidence and continued deepening of open Water. Water level increases 0.44 ft by TY 50.

FWP

For the HSDRRS Mitigation alternatives analysis the interagency team developed the following assumptions for a 50 year project life:

TY0	55%
TY1	0%
TY3	0%
TY5	55% (baseline)
TY6	63% (increase baseline X 15%)
TY40	50% (assume decrease as open water areas deepen)
TY50	28% (decrease baseline X 50%)

V3 – Interspersion

The marsh creation cell is 100% open water. For the HSDRRS Mitigation alternatives analysis it is assumed that marsh creation would occur within the entire cell and, therefore, no marsh nourishment would be credited. Therefore, the site will be classified as Class 5 for FWOP.

FWOP

TY0-50	100% Class 5
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FWP

The created marsh will be considered a “carpet marsh” at TY3 (i.e., 100% Class 3) transitioning to a Class 1 by TY6.

TY0 100% Class 5
 TY1 100% Class 5
 TY2 100% Class 3
 TY3 100% Class 3 (“carpet marsh”)
 TY5 90% Class 3/10% Class 1 (accounting for north dike degradation & portions of the borrow canal)
 TY6 90% Class 3/10% Class 1
 TY40 100% Class 1 TY 40 = 81% marsh/19% water (boarder line class 1*)
 TY50 100% Class 2 Assume would drop to a class 2 with 76% marsh/24% water

* USGS Interspersion tool assumes marsh areas >82% marsh = Class 1

V4 – Shallow Open Water Habitat

Water depths were taken throughout the project site during a May 17, 2011 field investigation. Refer to Milton Island Marsh Raw WVA Data.xlsx for existing water depth and adjusted water depth information.

CRMS6209-H01 Average Water Elevation (ft NAVD88) - 1/2010-1/2011 = 0.74

Lake Pontchartrain at Mandeville (85575) 13:00 hours 4/14/2011 0.9 NAVD88

0.16 ft above average, therefore, subtract 0.16 to measured water depths to bring to average water depths

19% of the project area is currently ≤ 1.5 ft depth.

FWOP

Table: FWOP Increases in Water Levels Under Intermediate SLR Scenario.

Med RSLR WL increase (ft)	TY	Year	FWOP Percent OW ≤ 1.5 ft
0.03	0	2015	18.8
0.03	1	2016	18.8
0.04	2	2017	18.8
0.05	3	2018	18.8
0.05	4	2019	18.8
0.06	5	2020	18.8
0.07	6	2021	18.8
0.34	40	2055	14.5
0.44	50	2065	14.0

FWP

TY0	19%	
TY1	100%	including borrow area
TY2	100%	
TY3	100%	
TY5	100%	assume the 1% marsh lost would become shallow open water
TY6	100%	
TY40	90%	assume that marsh lost would convert to shallow open water and that shallow open water (i.e., ≤ 1.5 feet) would deepen over time (i.e., to > 1.5 feet)
TY50	83%	assume 1/6 of shallow open water (marsh loss) becomes deep based on 0.44 feet of water level rise

V5 – Salinity

Average salinity during the growing season information was obtained from the Guste Island Mitigation Bank (located east of Milton Island Marsh) project. It is not expected that the project will affect salinity because of the tidal exchange with adjacent Lake Pontchartrain.

FWOP & FWP

TY0-50 3.0 ppt

V6 – Fish Access

All of the study area is accessible and the access points are open and unobstructed.

FWOP

TY0-50 1.0 open system

FWP

TY0	1.0	open system
TY1	0.0001	solid plug
TY2	0.8	open system resulting from gapping and degrading dikes, but applied some reduced suitability due to settlement curves projecting fill elevations being +2.0, trenasses are not proposed
TY3	0.8	open system, limited access due to elevations
TY5	0.9	open system, 75 % settlement has occurred at TY 5
TY6	1.0	open system
TY40	1.0	open system
TY50	1.0	open system

Literature Cited

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WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Fresh/Intermediate Marsh

Project: **Milton Island IM Med SLR**

Project Area:	145
% Fresh	
% Intermediate	100

Condition: Future Without Project

Variable		TY 0		TY 1		TY 6	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	55	0.60	55	0.60	55	0.60
V3	Interspersion	%		%		%	
	Class 1	0	0.10	0	0.10	0	0.10
	Class 2	0		0		0	
	Class 3	0		0		0	
	Class 4	0		0		0	
	Class 5	100		100		100	
V4	%OW <= 1.5ft	19	0.31	19	0.31	19	0.31
V5	Salinity (ppt)						
	fresh	0	0.90	0	0.90	0	0.90
	intermediate	3		3		3	
V6	Access Value						
	fresh	0.0000	1.00	0.0000	1.00	0.0000	1.00
	intermediate	1.0000		1.0000		1.0000	
Emergent Marsh HSI =		0.23		EM HSI =	0.23	EM HSI =	0.23
Open Water HSI =		0.62		OW HSI =	0.62	OW HSI =	0.62

Project: **Milton Island IM Med SLR**

FWOP

Variable		TY 50		TY		TY	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	0	0.10				
V2	% Aquatic	15	0.24				
V3	Interspersion	%		%		%	
	Class 1	0	0.10				
	Class 2	0					
	Class 3	0					
	Class 4	0					
	Class 5	100					
V4	%OW <= 1.5ft	14	0.26				
V5	Salinity (ppt)						
	fresh	0	0.90				
	intermediate	3					
V6	Access Value						
	fresh	0.0000	1.00				
	intermediate	1.0000					
EM HSI =		0.23		EM HSI =		EM HSI =	

DRAFT SEA # 433b Response to Hurricanes Katrina & Rita in Louisiana-Plaquemines Parish Non-Federal Levee Repair Mitigation through Mitigation Bank Credit Purchase

U.S. Army Corps of Engineers Regional Planning and Environmental Division South

December 2022

OW HSI =	0.36	OW HSI =		OW HSI =	
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FWOP

Variable		TY		TY		TY	
		Value	SI	Value	SI	Value	SI
V1	% Emergent						
V2	% Aquatic						
V3	Interspersion	%		%		%	
	Class 1						
	Class 2						
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft						
V5	Salinity (ppt)						
	fresh						
	intermediate						
V6	Access Value						
	fresh						
	intermediate						
EM HSI =				EM HSI =		EM HSI =	
OW HSI =				OW HSI =		OW HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Fresh/Intermediate Marsh

Project: Milton Island IM Med
 SLR Condition: Future With
 Project

Project Area:	145
% Fresh	
% Intermediate	100

Variable		TY 0		TY 1		TY 2	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	0	0.10	0	0.10	9	0.18
V2	% Aquatic	55	0.60	0	0.10	0	0.10
V3	Interspersion	%		%		%	
	Class 1	0	0.10	0	0.10	0	0.40
	Class 2	0		0		0	
	Class 3	0		0		100	
	Class 4	0		0		0	
	Class 5	100		100		0	
V4	%OW <= 1.5ft	19	0.31	100	0.60	100	0.60
V5	Salinity (ppt)						
	fresh	0	0.90	0	0.90	0	0.90
	intermediate	3		3		3	
V6	Access Value						
	fresh	0.0000	1.00	0.0000	0.20	0.0000	0.84
	intermediate	1.0000		0.0001		0.8000	
Emergent Marsh HSI =		0.23		EM HSI =	0.20	EM HSI =	0.33
Open Water HSI =		0.62		OW HSI =	0.21	OW HSI =	0.27

FWP

Variable		TY	3	TY	5	TY	6
		Value	SI	Value	SI	Value	SI
V1	% Emergent	23	0.31	91	0.92	91	0.92
V2	% Aquatic	0	0.10	55	0.60	63	0.67
V3	Interspersion	%		%		%	
	Class 1	0	0.40	10	0.46	10	0.46
	Class 2	0		0		0	
	Class 3	100		90		90	
	Class 4	0		0		0	
	Class 5	0		0		0	
V4	%OW <= 1.5ft	100	0.60	100	0.60	100	0.60
V5	Salinity (ppt)						
	fresh	0	0.90	0	0.90	0	0.90
	intermediate	3		3		3	
V6	Access Value						
	fresh	0.0000	0.84	0.0000	0.92	0.0000	1.00
	intermediate	0.8000		0.9000		1.0000	
EM HSI =		0.43		EM HSI =	0.87	EM HSI =	0.88
OW HSI =		0.27		OW HSI =	0.66	OW HSI =	0.72

Project: Milton Island IM Med SLR

FWP

Variable		TY	40	TY	50	TY	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	81	0.83	76	0.78		
V2	% Aquatic	63	0.67	28	0.35		
V3	Interspersion	%		%		%	
	Class 1	100	1.00	0	0.60		
	Class 2	0		100			
	Class 3	0		0			
	Class 4	0		0			
	Class 5	0		0			
V4	%OW <= 1.5ft	90	1.00	83	1.00		
V5	Salinity (ppt)						
	fresh	0	0.90	0	0.90		
	intermediate	3		3			
V6	Access Value						
	fresh	0.0000	1.00	0.0000	1.00		
	intermediate	1.0000		1.0000			
EM HSI =		0.88		EM HSI =	0.80	EM HSI =	
OW HSI =		0.79		OW HSI =	0.54	OW HSI =	

AAHU CALCULATION - EMERGENT MARSH

Project: Milton Island IM Med SLR

Future Without Project			Total HUs	Cummulative HUs
TY	Marsh Acres	x HSI		
0	0.0001	0.23	0.00	
1	0.0001	0.23	0.00	0.00
6	0.0001	0.23	0.00	0.00
50	0.0001	0.23	0.00	0.00
Max= 50			AAHUs = 0.00	

Future With Project			Total HUs	Cummulative HUs
TY	Marsh Acres	x HSI		
0	0.0001	0.23	0.00	
1	0.0001	0.20	0.00	0.00
2	13.2	0.33	4.31	1.87
3	33	0.43	14.09	8.86
5	131.5	0.87	113.88	113.55
6	131.2	0.88	114.93	114.41
40	117.7	0.88	103.15	3707.42
50	110.1	0.80	88.27	956.12
Max= 50			AAHUs 98.04	

NET CHANGE IN AAHUs DUE TO PROJECT			
A. Future With Project Emergent Marsh AAHUs	=		98.04
B. Future Without Project Emergent Marsh AAHUs	=		0.00
Net Change (FWP - FWOP) =			98.04

AAHU CALCULATION - OPEN WATER

Project: Milton Island IM Med SLR

Future Without Project			Total HUs	Cummulative HUs
TY	Water Acres	x HSI		
0	145	0.62	90.51	
1	145	0.62	90.51	90.51
6	145	0.62	90.51	452.57
50	145	0.36	51.57	3125.87
Max= 50			AAHUs =	73.38

Future With Project			Total HUs	Cummulative HUs
TY	Water Acres	x HSI		
0	145	0.62	90.51	
1	12.7	0.21	2.68	37.49
2	12.9	0.27	3.52	3.10
3	13.1	0.27	3.58	3.55
5	13.5	0.66	8.93	12.45
6	13.8	0.72	9.93	9.42
40	27.3	0.79	21.54	529.52
50	34.9	0.54	18.87	205.16
50			AAHUs	16.01

NET CHANGE IN AAHUs DUE TO PROJECT				
A. Future With Project Open Water AAHUs =				16.01
B. Future Without Project Open Water AAHUs =				73.38
Net Change (FWP - FWOP) =				-57.37

TOTAL BENEFITS IN AAHUs DUE TO PROJECT				
A. Emergent Marsh Habitat Net AAHUs =				98.04
B. Open Water Habitat Net AAHUs =				-57.37
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1				47.91

APPENDIX E: Coastal Zone Management

**Coastal Zone Consistency Determination Modification
Louisiana Coastal Use Guidelines**

**U.S. ARMY CORPS OF ENGINEERS
RESPONSE TO HURRICANES
KATRINA & RITA IN LOUISIANA-PLAQUEMINES PARISH NON-FEDERAL LEVEE
REPAIR MITIGATION THROUGH MITIGATION BANK CREDIT PURCHASE
SEA #433b**

The purchase of released fresh/intermediate CZ (LDNR approved) credits from USACE approved mitigation banks with perpetual conservation servitudes is proposed to address the TF Unwatering mitigation need of 12.1 fresh marsh AAHUs. The operation and use of a mitigation bank are governed by a mitigation banking instrument (33 CFR §332.2, Compensatory Mitigation for Losses of Aquatic Resources, Final Rule; Federal Register, Volume 73, No. 70, 10 April 2008).

The mitigation banks capable of supplying the credits needed to meet the mitigation requirements at the time of solicitation is uncertain. Banks currently able to meet the mitigation requirements may not be able to do so at the time of solicitation. In addition, new banks able to meet the mitigation requirement may become approved by the time the solicitation is released. Accordingly, identification of banks that could be used to meet the mitigation requirement cannot occur with any degree of certainty. The number of available in-kind mitigation bank credits cannot be determined until such time as implementation of this project is attempted. However, there are currently available credits for fresh/intermediate marsh habitat and the potential for more credit releases in the future. All mitigation banks with service areas that encompass the impacted area (Deltaic Plain), which currently have available fresh or intermediate marsh CZ (LDNR approved) credits, at the time of solicitation would be considered.

If CEMVN were to pursue the purchase of bank credits, mitigation banks wishing to sell credits to satisfy CEMVN's mitigation obligations for fresh/intermediate marsh would be encouraged to submit competitive bids. However, if, based on cost and considering other factors, MVN determines the purchase of mitigation bank credits is not cost effective, the next ranked project (Milton Island Intermediate Marsh Restoration Mitigation Project Expansion) would be considered for implementation. If this occurs then the following coordination and analysis would be necessary: USFWS and NMFS concurrence that the Milton Island Expansion Project would not be likely to adversely affect any endangered or threatened species through completion of ESA section 7 consultation; LDNR concurrence with the determination that the Milton Island Expansion Project is consistent, to the maximum extent practicable, with the LCRP; receipt of a Water Quality Certificate from the State of Louisiana; public review of the Section 404(b)(1) Public Notice and signature of the Section 404(b)(1) Evaluation; receipt and acceptance or resolution of all LDEQ comments on the air quality impact analysis as documented in the EA; and receipt and acceptance or resolution of all EFH recommendations; and concurrence with a no affect determination from the LA SHPO, Advisory Council on Historic Preservation, Federally recognized Indian tribes and other interested parties.

Louisiana Administrative Code
Title 43
NATURAL RESOURCES
Part I. Office of the Secretary
Chapter 7. Coastal Management
Subchapter B. Coastal Use Guidelines

Coastal use guidelines as approved by the House Natural Resources Committee on July 9, 1980, the Senate Natural Resources Committee on July 11, 1980, and the governor on July 24, 1980.

§701. Guidelines Applicable to All Uses

Guideline 1.1 The guidelines must be read in their entirety. Any proposed use may be subject to the requirements of more than one guideline or section of guidelines and all applicable guidelines must be complied with.

Guideline 1.2 Conformance with applicable water and air quality laws, standards and regulations, and with those other laws, standards and regulations which have been incorporated into the coastal resources program shall be deemed in conformance with the program except to the extent that these guidelines would impose additional requirements.

Guideline 1.3 The guidelines include both general provisions applicable to all uses and specific provisions applicable only to certain types of uses. The general guidelines apply in all situations. The specific guidelines apply only to the situations they address. Specific and general guidelines should be interpreted to be consistent with each other. In the event there is an inconsistency, the specific should prevail.

Guideline 1.4 These guidelines are not intended to nor shall they be interpreted so as to result in an involuntary acquisition or taking of property.

Guideline 1.5 No use or activity shall be carried out or conducted in such a manner as to constitute a violation of the terms of a grant or donation of any lands or water-bottoms to the State or any subdivision thereof. Revocations of such grants and donations shall be avoided.

Guideline 1.6 Information regarding the following general factors shall be utilized by the permitting authority in evaluating whether the proposed use is in compliance with the guidelines.

- type, nature and location of use.
- elevation, soil and water conditions and flood and storm hazard characteristics of site.
- techniques and materials used in construction, operation and maintenance of use.

d) existing drainage patterns and water regimes of surrounding area including

flow, circulation, quality, quantity and salinity; and impacts on them.

e) availability of feasible alternative sites or methods – for implementing the use.

f) designation of the area for certain uses as part of a local program.

g) economic need for use and extent of impacts of use on economy of locality.

h) extent of resulting public and private benefits.

i) extent of coastal water dependency of the use.

j) existence of necessary infrastructure to support the use and public costs resulting from use.

k) extent of impacts on existing and traditional uses of the area and on future uses for which the area is suited.

1) proximity to, and extent of impacts on important natural features such as beaches, barrier islands, tidal passes, wildlife and aquatic habitats, and forest lands.

m) the extent to which regional, state and national interests are served including the national interest in resources and the siting of facilities in the coastal zones as identified in the coastal resources program.

n) proximity to, and extent of impacts on, special areas, particular areas, or other areas of particular concern of the state program or local programs.

o) fostering of detrimental secondary impacts in undisturbed or biologically highly productive wetland areas.

p) adverse alteration or destruction of unique or valuable habitats, critical habitat for endangered species, important wildlife or fishery breeding or nursery areas, designated wildlife management or sanctuary areas, or forestlands.

q) adverse alteration or destruction of public parks, shoreline access points, public works, designated recreation areas, scenic rivers, or other areas of public use and concern.

r) adverse disruptions of coastal wildlife and fishery migratory patterns.

s) land loss, erosion and subsidence.

t) increases in the potential for flood, hurricane or other storm damage, or increases in the likelihood that damage will occur from such hazards.

u) reductions in the long-term biological productivity of the coastal ecosystem.

Guideline 1.8 In those guidelines in which the modifier "maximum extent practicable" is used, the proposed use is in compliance with the guideline if the standard modified by the term is complied with. If the modified standard is not complied with, the use will be in compliance with the guideline if the permitting authority finds, after a systematic consideration of all pertinent information regarding the use, the site and the impacts of the use as set forth in guideline 1.6, and a balancing of their relative significance, that the benefits resulting from the proposed use would clearly outweigh the adverse impacts resulting from non-compliance with the modified standard and there are no feasible and practical alternative locations, methods and practices for the use that are in compliance with the modified standard and:

a) significant public benefits will result from the use, or;

- b) the use would serve important regional, state or national interests, including the national interest in resources and the siting of facilities in the coastal zone identified in the coastal resources program, or;
- c) the use is coastal water dependent.

The systematic consideration process shall also result in a determination of those conditions necessary for the use to be in compliance with the guideline. Those conditions shall assure that the use is carried out utilizing those locations, methods and practices which maximize conformance to the modified standard; are technically, economically, environmentally, socially and legally feasible and practical and minimize or offset those adverse impacts listed in guideline 1.7 and in the guideline at issue.

Guideline 1.9 Uses shall to the maximum extent practicable be designed and carried out to permit multiple concurrent uses which are appropriate for the location and to avoid unnecessary conflicts with other uses of the vicinity.

Guideline 1.10 These guidelines are not intended to be, nor shall they be, interpreted to allow expansion of governmental authority beyond that established by La. R.S. 49:213.1 through 213.21, as amended; nor shall these guidelines be interpreted so as to require permits for specific uses legally commenced or established prior to the effective date of the coastal use permit program nor to normal maintenance or repair of such uses.

Response:

These guidelines are acknowledged. As the proposed action, CEMVN would purchase CZ mitigation bank credits in the Deltaic Plain to compensate for impacts to approximately 12.1 AAHUs of fresh marsh, thereby fully satisfying the fresh marsh impacts associated with the TF Unwatering Plaquemines Parish repair to levee breaches after Hurricane Katrina (SEA #433b).

The remaining guidelines (703 – 719) are not applicable to the proposed action.

OTHER STATE POLICIES INCORPORATED INTO THE PROGRAM

Section 213.8A of Act 361 directs the Secretary of DOTD, in developing the LCRP, to include all applicable legal and management provisions that affect the coastal zone or are necessary to achieve the purposes of Act 361 or to implement the guidelines effectively. It states:

“The Secretary shall develop the overall state coastal management program consisting of all applicable constitutional provisions, laws and regulations of this state which affect the coastal zone in accordance with the provisions of this Part and shall include within the program such other applicable constitutional or statutory provisions, or

other regulatory or management programs or activities as may be necessary to achieve the purposes of this Part or necessary to implement the guidelines hereinafter set forth.”

The constitutional provisions and other statutory provisions, regulations, and management and regulatory programs incorporated into the LCRP are identified and described in Appendix 1. A description of how these other authorities are integrated into the LCRP and coordinated during program implementation is presented in Chapter IV. Since all of these policies are incorporated into the LCRP, federal agencies must ensure that their proposed actions are consistent with these policies as well as the coastal use guidelines. (CZMA, Section 307).

CONSISTENCY DETERMINATION

The proposed action would not result in impacts to coastal wetlands, as the proposed action is the purchase of mitigation bank fresh/intermediate marsh credits in the Deltaic Plain. Since the impacts from implementing both the approved mitigation banks have been assessed through NEPA compliance achieved during the Regulatory permitting process, no new direct, indirect or cumulative impacts to significant resources in the coastal zone would be incurred from the purchase of these credits. Since the CEMVN District Engineer, as per 33 CFR Part 332.3(b), has the flexibility to determine appropriate compensatory mitigation for impacts incurred from actions allowed in Department of the Army Section 10 permits, no impacts to the ability of the public to meet their mitigation responsibility(ies) for permitted actions is anticipated.

Based on this evaluation, the U. S. Army Corps of Engineers, New Orleans District, has determined that the action is consistent, to the maximum extent practicable, with the State of Louisiana's Coastal Resources Program.

JOHN BEL EDWARDS
GOVERNOR



THOMAS F. HARRIS
SECRETARY

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

November 21, 2022

Kristen Butcher
Corps of Engineers-New Orleans District
7400 Leake Avenue
New Orleans, LA 70118
Via e-mail: Kristen.Butcher@usace.army.mil

RE: C20100344 Mod 1, Coastal Zone Consistency
COE-NOD
Direct Federal Action
Modification to Mitigation Plan at Big Mar-Mitigation Bank Credit Purchase

Dear Ms. Butcher:

The above referenced project has been received by this office and has been found to be consistent with the Louisiana Coastal Resources Program as required by Section 307(c) (3) (B) of the Coastal Zone Management Act of 1972 as amended.

Be advised, it is preferred that the purchase of in-kind mitigation credits be done at a mitigation bank/area located in the same hydrologic basin as the permitted impacts. If there is no mitigation bank/area with the appropriate habitat credits located in that hydrologic basin, then the mitigation bank/area with the appropriate habitat credits located nearest the permitted impacts is preferred.

If you have any questions concerning this determination, please contact Ray Reich of the Consistency Section at (225) 342-7949 or ray.reich@la.gov
Sincerely,

/s/ Charles Reulet
Administrator
Interagency Affairs/Field Services Division

CR/MH/tr

cc: Dave Butler, LDWF
Sydney Dobson, CPRA
Kelley Templet, LA-DNR

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