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

TABLE OF CONTENTS

Section **Page**

APPENDIX B: TABLES

APPENDIX H: Planting Guidelines, Success Criteria, Monitoring, and Adaptive Management

APPENDIX I: Agency Coordination

APPENDIX J: Protected Species Avoidance Measures

APPENDIX K: Natural and Scenic Rivers

APPENDIX L: Abbreviations

APPENDIX M: Interagency Environmental Team

APPENDIX N: 404 (b) (1)

APPENDIX O: General Conformity Determination

APPENDIX P: Draft EA #576 Public Review Comments and CEMVN Responses

APPENDIX Q: BBA Mitigation Study Area Justification

1. INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN), has prepared this Environmental Assessment (EA) to evaluate alternatives to compensate for unavoidable impacts to significant resources associated with the construction of the West Shore Lake Pontchartrain (WSLP), Comite River Diversion (Comite), and East Baton Rouge Flood Risk Management (EBR) projects; also known collectively as the Bipartisan Budget Act of 2018 (BBA) Construction Projects.

The WSLP project is located in southeast Louisiana on the east-bank of the Mississippi River in St. Charles, St. John the Baptist, and St. James Parishes. Part of the Water Infrastructure Improvement for the Nation Act (WIIN Act, Public Law 114-322) in 2016 authorized construction of the WSLP Project. The Bipartisan Budget Act of 2018 (BBA 2018, Public Law 115-123) funded construction of the WSLP Project. The WSLP Project, as described in the 2016 Environmental Impact Statement (EIS), is approximately 18.3 miles in length and includes 17.3 miles of levee, one mile of T-wall, four pumping stations with associated drainage structures, two additional drainage structures, one gated rod crossing, two gated railroad crossings, and approximately 35 utility relocations. Shifts in the approved alignment are currently being considered as further engineering and design of the project continues. If these changes are shown to be necessary a supplemental NEPA document would be prepared to address them. Based on the possible changes to date, the WSLP Project could impact as much as 10,875 acres of swamp and 4,893 acres of wetland bottomland hardwoods (BLH-Wet) in the Louisiana (LA) Coastal Zone (CZ). This equates to a mitigation need of approximately 1,504 average annual habitat units (AAHUs) of CZ swamp and 343 AAHUs of CZ BLH-Wet. Some swamp impacts would occur within the Maurepas Swamp Wildlife Management Area operated by the LA Department of Wildlife and Fisheries (LDWF). Any impacts to LDWF lands from this project would be mitigated on or adjacent to LDWF lands to the extent practicable.

The Comite Project is located in East Baton Rouge Parish, LA in the southern portion of the Comite River Basin. The Comite Project was authorized by Section 101(11) of the Water Resources Development Act of 1992 (Public Law 102-580), as amended and reauthorized by Section 301(b)(5) of the Water Resources Development Act of 1996 (Public Law 104-303), and as amended by Section 371 of the Water Resources Development Act of 1999, Public Law 106-53, with technical corrections to Section 371 contained in Section 6 of Public Law 106-109. The primary project features discussed in the original EIS include a control structure at the Comite River; a control structure at Lilly Bayou; three control drop structures at the intersections of the diversion channel with White, Cypress and Baton Rouge Bayous; a drop control structure in the vicinity of McHugh Road; two railroad bridges; four highway bridges; and one parish road bridge. Based on the currently approved plan, approximately 891 acres and 704.6 AAHUs of BLH-Wet would be impacted by the construction of this project. Construction of some project features was previously completed and compensation for those earlier construction impacts was also previously completed. To date, 385.62 AAHUs have been mitigated, leaving 319 AAHUs of remaining mitigation.

The EBR project is located in East Baton Rouge Parish, LA and is intended to reduce flooding throughout East Baton Rouge Parish by improving approximately 66 miles of channels in 5 sub-basins including: Jones Creek and tributaries, Ward Creek and its tributaries, Bayou Fountain, Beaver Bayou, and Blackwater Bayou and its main tributary. Construction of the Amite River and Tributaries,

Louisiana, East Baton Rouge Parish Watershed flood risk management project within the parish of East Baton Rouge, Louisiana was authorized by Section 101(21) of the Water Resources Development Act of 1999, Public Law 106-53, as modified by Division D, Section 116 of the Consolidated Appropriations Resolution of 2003, Public Law 108-7, and Section 3074 of the Water Resources Development Act of 2007, Public Law 10-114. Based on the currently approved plan, the project would impact approximately 293 acres of BLH-Wet which would require approximately 383 AAHUs of BLH mitigation.

Figures depicting the locations of each of the construction projects are located in Appendix A, Figures 1, 2, and 3.

This EA provides an assessment of proposed alternative projects to compensate for the BBA Construction Projects' impacts and identifies the tentatively selected alternative (TSA) that would fully satisfy the mitigation requirements incurred by these projects. While the BBA Construction Projects are three different projects, the compensatory mitigation alternatives for those projects are evaluated together in this EA under National Environmental Policy Act (NEPA) regulations on the following grounds: 1) the mitigation projects will compensate for impacts occurring in the same geographical region within the Lake Pontchartrain Basin and Mississippi River Basin and the mitigation projects themselves also likely would occur in the Lake Pontchartrain Basin and Mississippi River Basin to the extent possible; 2) the mitigation projects for the different BBA projects may be located adjacent to one another and would involve the same construction/implementation methods; 3) the decision points and timing for mitigation should be earlier than for construction (as mitigation should occur prior to or at least not later than construction) and would be the same or similar for all the BBA 18 projects.

Impacts from construction of the respective BBA Construction Projects are described in the original Environmental Impact Statements (EISs) and associated supplemental NEPA documents (see section 1.3.2) for those projects. The CEMVN has made and continues to make a concerted effort to avoid and minimize environmental impacts to the maximum extent practicable while designing and constructing the BBA Construction Projects. However, unavoidable impacts have occurred and continue to occur to BLH-Wet, and swamp. When unavoidable impacts occur, the CEMVN is required to offset those impacts through compensatory mitigation by replacing the lost habitat's functions and services equally and in-kind. Compensatory mitigation is required by the Water Resources Development Act (WRDA) of 1986, Section 906, as amended and by the Clean Water Act Section 404(b)(1) Guidelines.

EA #576 has been prepared in accordance with the NEPA and the Council on Environmental Quality's (CEQ) NEPA implementing regulations (40 Code of Federal Regulations [CFR] Parts1500-1508), as reflected in the USACE ER 200-2-2 (33 CFR Part 230). The draft EA has been distributed for a 30-day public review and comment period. All comments received during the public comment period are considered part of the official record and can be found in Appendix P. This EA 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 EIS or a Finding of No Significant Impact (FONSI).

Unless otherwise indicated, all figures cited within this EA can be found in Appendix A and all tables in Appendix B. A list of the abbreviations is provided in Appendix P.

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to compensate for habitat losses incurred as a result of the WSLP, Comite and EBR projects to two specific types of habitat: bottomland hardwoods wet (BLH-Wet) and swamp, some of which occur within the LA CZ. The proposed mitigation would replace the lost functions and services of the impacted habitats through restoration or enhancement activities designed to create/increase/improve the habitat functions and services at specific mitigation sites.

1.2 AUTHORITY FOR THE PROPOSED ACTION

Compensatory mitigation for project impacts is a feature of each BBA Construction Project and is authorized by each respective Project's authorizing legislation, cited above. The proposed action is funded under Public Law 115-123, the Bipartisan Budget Act of 2018, signed into law February 9, 2018. Among other things, Public Law 115-123 provided $17.398 billion for disaster recovery in six appropriations accounts: Investigations; Construction; Mississippi River and Tributaries; Operation and Maintenance; Flood Control and Coastal Emergencies; and Expenses.

1.3 PRIOR REPORTS

1.3.1 INTRODUCTION

A number of studies and reports on water resources development in the proposed project area have been prepared by CEMVN, other Federal, state, and local agencies, research institutes, and individuals. The following NEPA documents are incorporated by reference into this EA.

1.3.2 NEPA DOCUMENTS

EBR: Amite River and Tributaries, Louisiana East Baton Rouge Parish Watershed Flood Control Projects, Feasibility Report and Environmental Impact Statement, 1995

Comite: Amite River and Tributaries Study, Feasibility Report on Comite River Basin, 1991

Comite: Amite River and Tributaries, Louisiana, Comite River Basin; Revision of Comite Diversion Authorized Plan, EA #222, 1995

Comite: Amite River and Tributaries, Louisiana Comite River Basin: Comite River Diversion Supplemental Mitigation Options, East Baton Rouge Parish, Louisiana, EA #426, 2012

WSLP: West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Study, Final Integrated Feasibility Report and Environmental Impact Statement, 2016

WSLP: Supplemental Environmental Assessment #570, West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Structural Alignment Surveys and Borings Investigations, St. Charles and St. John the Baptist Parishes, Louisiana, 2019

The foregoing documents are incorporated by reference herein.

2. ALTERNATIVE FORMULATION

The following sections walk the reader through the planning process for the swamp and BLH-Wet features of the BBA mitigation plan, from development of the potential mitigation projects for each habitat type to identification of the tentatively selected alternative (TSA).

2.1 MITIGATION MEASURES DEVELOPMENT AND SCREENING CRITERIA

The CEMVN is required to mitigate for BBA Construction Project impacts to BLH-Wet and swamp, some of which occur in the Louisiana Coastal Zone (Table 2-1).

Bottomland hardwoods are broadleaf deciduous forested wetlands. They are generally found along the edges of lakes and rivers and in sinkholes. Bottomland forests represent a transition between drier upland hardwood forest and swamp. While trees and plants in this ecosystem cannot tolerate long periods of flooding (as in a swamp), they are flooded periodically when water levels rise. Species common to bottomland hardwoods include oaks, hickories, American elm, cedar elm, green ash, sweetgum, sugarberry, boxelder, common persimmon, honey locust, red mulberry, eastern cottonwood, black willow, American sycamore, etc. The designation of 'wet or dry' (e.g. BLH-Wet or BLH-Dry) refers to the amount of flooding experienced by the stand in question. Dry bottomland hardwoods seldom or never experience inundation by flood waters.

Swamps are broadleaf and needleleaf deciduous forested wetlands that experience inundation either permanently or seasonally throughout the year. They are generally found along the edges of lakes and rivers. A swamp is defined as an area supporting or capable of supporting a canopy of woody vegetation that covers at least 33 percent of the area's surface, and with at least 60 percent of that canopy consisting of any combination of bald cypress, tupelo gum, red maple, buttonbush, and/or planertree.

The proposed compensatory mitigation would replace the lost functions and values of the impacted areas through restoration or enhancement activities that increase/improve the habitat functions and services within a particular mitigation site. Enhancement would involve implementing actions to improve already existing low quality habitat. Restoration would involve creating a habitat type from open water or agricultural fields where none currently exists but which historically occurred in the vicinity of the project area.

Forested wetlands provide many functions in southern Louisiana. They improve water quality by retaining or transforming excess nutrients and by trapping sediment and heavy metals, reduce shoreline erosion by buffering wave and storm action, and they provide wildlife habitat for breeding, nesting, and foraging of various species.

Table 2-1. Impacts from BBA Construction Projects

Habitat Type/BBA Project	AAHUs Impacted
BLH-Wet CZ/WSLP	343
BLH-Wet Non-CZ/EBR, Comite	702
Swamp CZ/WSLP	1,504

2.1.1 MITIGATION FORMULATION REQUIREMENTS

In accordance with the USACE Implementation Guidance for Section 2036(a) of the WRDA 2007, Mitigation for Fish and Wildlife and Wetlands Losses, and Appendix C to Engineer Regulation 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. The watersheds where the impacts are occurring for the BBA Construction Projects are the Lake Pontchartrain Basin (LPB) and the Mississippi River Basin (MSRB) (Appendix A, Figure 4). Consistent with WRDA 1986, Section 906, as amended, mitigation projects were formulated so that they could be implemented during construction of the parent project to the maximum extent practicable. The parent project deadlines as determined by USACE, currently 2021, 2023, and 2024, drove the Project Delivery Team (PDT) to only consider projects on public land (identified through real estate database and public records research) and on private lands that were submitted as part of the scoping process. For this effort, public lands are considered any lands owned by any public entity (i.e. Federal, state, parish, city, etc.). Because the mitigation need is so large and the number of available sites/projects that could meet this formulation strategy were limited, the PDT also explored opportunities within the larger watershed that encompasses the southern part of the Mississippi Alluvial Plain. Proposed mitigation sites within the LPB and MSRB would be implemented first as compensation for lost habitats within the watersheds of impact is environmentally preferred. Only once all options within the LPB and MSRB have been utilized to the extent practicable would mitigation sites outside of the basins but within the Mississippi Alluvial Plain be implemented. See Appendix Q for further detail on the process of moving outside of the LPB and MSRB.

To be considered, mitigation measures were required either to restore or to enhance the same habitat types that were impacted (e.g. “habitat type for habitat type”) from the BBA Construction Projects. This included mitigating impacts that will occur within the Louisiana (LA) Coastal Zone (CZ) with projects in the LA CZ. The phrase “mitigation measures” refers to potential actions at a given site that could provide mitigation for the BBA Construction Projects impacts. Design of the mitigation measures was completed by the PDT in coordination with the resource agencies.

Initially, the PDT reviewed the existing mitigation plans that were part of the original BBA Construction Project Feasibility Studies. Some of these plans are quite old, formulated in the 1990s. Portions of those mitigation plans are currently infeasible due to changes in existing conditions or land ownership. Because mitigation is required to occur before or concurrent with construction of the BBA Construction Projects (WRDA 1986, Section 906), the PDT conservatively assumed that no portion of the existing mitigation plans could be implemented and identified new alternatives to fulfill the mitigation requirements.

2.1.2 NEPA SCOPING

Scoping is a critical component of the overall public involvement process to solicit input from affected Federal, state, and local agencies, Indian Tribes, the public, and interested stakeholders. The NEPA scoping process is designed to provide an early and open means for determining the scope of issues (problems, needs, and opportunities) to be identified and addressed in the NEPA document. A public website page with BBA mitigation information that included a request for submission of potential mitigation projects was established in late summer of 2018 and available here:

https://www.mvn.usace.army.mil/About/Projects/BBA-2018/Mitigation/

Subsequently, CEMVN held an "Industry Day" on September 7, 2018 in an effort to obtain potential compensatory mitigation measures from the general public. Potential mitigation measures from the public were accepted until October 31, 2018. Four mitigation measures were identified as a result of Industry Day, of which two measures, Pine Island and Sunset Ridge, are included in the final array. The other two measures, Guste Island and a 5,500 acre area in St. John the Baptist Parish, did not meet the screening criterion that measures could not be preservation of an existing habitat type. As such, they were removed from further consideration.

In addition, the PDT also searched for measures beyond what was submitted during the CEMVN Industry Day. In an effort to expedite implementation of the mitigation projects and ensure mitigation occurs concurrent with construction of the BBA Construction Projects (WRDA 1986, Section 906), the other sources utilized to obtain additional measures included:

- Measures identified for Hurricane & Storm Damage Risk Reduction System (HSDRRS) Mitigation (thorough investigations in the LPB and Barataria Basins were made under this study). Includes expansion of those project areas or projects that were not implemented by that program.
- Publicly owned properties inside the Lake Pontchartrain (LPB) Basin, Mississippi River Basin (MSRB) (which included BBA Construction Project lands), and the southern Mississippi Alluvial Plain.
- Measures identified by the resource agencies.

USACE approved mitigation banks with perpetual conservation servitudes within the LPB, MSRB, and the larger watershed currently in compliance with their mitigation banking instrument (MBI) and able to service the habitat types impacted by the BBA Construction Projects are also considered as potential mitigation measures.

In total, the scoping process resulted in the identification of more than 5,000 mitigation measures.

2.1.3 INITIAL SCREENING

Screening criteria developed by the PDT sought to achieve as large as possible tracts of land for the purposes of obtaining greater ecological output within the watershed and to produce cost efficiencies that would be experienced during construction and OMRR&R phases. Proposed measures had to meet the following criteria and those that did not meet all of the criteria were eliminated from further consideration.

- Proposed measures could not convert existing wetlands to uplands or marsh to BLH-Wet
- Proposed measures will comply with applicable laws and policies
- Proposed measures will be free of known Hazardous, Toxic, or Radioactive Waste (HTRW)
- Proposed measures will provide for in-kind replacement of impact AAHUs by habitat type
- Proposed measures for swamp will be within the Louisiana Coastal Zone (because swamp impacts are within the LACZ)
- Proposed measures will be technically viable (e.g., salinity suitable for target habitat type)

- Proposed Corps-constructed measures cannot be part of the Future Without Project condition
- Proposed measures will have independent utility (not dependent on implementation of or modification to other projects)
- Proposed measures will not consist of preservation of an existing habitat type (because preservation does not replace lost habitat)
- Proposed measures mitigating CZ swamp impacts will be 40 acres in size or larger
- Proposed measures mitigating CZ BLH-Wet impacts will be 50 acres in size or larger
- Proposed measures mitigating Non-CZ BLH-Wet impacts will be 100 acres in size or larger

Initial screening reduced the number of potential mitigation measures from over 5000 to 20. For detailed information on the screening criteria, see appendix E.

2.2 MITIGATION PROJECT DEVELOPMENT BY HABITAT TYPE

Following initial screening, several of the remaining 20 mitigation measures were refined by reshaping (re-configuring) them by habitat type. Reshaping of mitigation measures occurred when multiple measures existed in a common geographical area. In such cases, these mitigation measures were reshaped into a single project by habitat type that maximized the potential returns for that site while meeting the mitigation requirement, and are coined "mitigation projects" within this document. In some cases, reshaping resulted in portions of the original measures to be eliminated from the proposed project for a specific habitat type since they were outside of the reshaped project boundary. As such, the original measure may not have been eliminated outright, but rather carried forward in an altered state.

At the time of screening, mitigation banks in LPB existed that had BLH-Wet and swamp credits and MSRB that had BLH-Wet credits available for purchase. Many of these banks also had potential credits that may be released in the future. It is not known which banks would have available credits when the decision whether to purchase bank credits is made: some banks may not have credits remaining, some may have more credits, some may be closed, and additional mitigation banks may be approved. As such, a generic mitigation bank project for each of the two habitat types, including in and out of coastal zone options for BLH, were created for the next step of the mitigation project analysis using information obtained from existing banks in the basin; no specific banks were evaluated. The Regulatory In lieu fee and Bank Information Tracking System (RIBITS) (https://ribits.usace.army.mil/) has information on all currently approved banks in the basin including their credit availability.

2.2.1 MITIGATION PROJECTS ELIMINATED FOLLOWING INITIAL SCREENING

Three of the 20 mitigation measures were eliminated following the initial screening because coordination with the land owner revealed that they were being used for research and development under other existing programs. Additionally, further investigations of the St James, Ascension, and Gravity sites caused them to be removed from further consideration as sites that could mitigate LA CZ impacts. As such these measures are considered to mitigate Non-CZ BLH-Wet impacts. This resulted in the expansion of the St. James BLH-Wet mitigation measure and the loss of the St. James swamp mitigation measure.

2.3 FINAL ARRAY OF MITIGATION PROJECTS BY HABITAT TYPE

The following are the final array of measures that remained after screening and refinement. These projects are described in detail in Appendix G. **Table 2-2 Final Array of Potential Mitigation Projects**

CLASSIFICATION : UNCLASSIFIED BLH In Coastal Zone	AAHU's	Acres	BLH Out Coastal Zone	AAHU's	Acres	Swamp In Coastal Zone	AAHU's	Acres
Banks LPB	TBD	TBD	**Banks LPB/MSRB**	TBD	TBD	**Banks LPB**	TBD	TBD
St John LPB	42	94.7	**Ascension LPB**	29	55.8	**Pine Island LPB**	775	1965
Banks OB	TBD	TBD	**St. James LPB**	676	1246	**Joyce LPB**	195	1126.1
Albania South OB	Up to 96	Up to 192.1	**Feliciana LPB**	156	267	**Banks OB**	TBD	TBD
Albania North OB	Max of 343	Max of 657	**GBRPC OB**	54	134.9	**Albania South OB**	Up to 76	Up to 192.1
			Amite LPB	236	368.6	**Albania North OB**	Up to 380	Up to 964.8
			Gravity LPB	40	75.2	**Cote Blanche OB**	Up to 182	Up to 446
			Banks OB	TBD	TBD			
			Krotz OB	73	147.2			
			TPSB OB	248	483.8			
			Rosedale OB	113	224.8			
			Sunset Ridge OB	168	324			

LPB – In Lake Pontchartrain Basin. MSRB – Mississippi River Basin. OB – Outside LPB or MSRB.

Sea Level Rise

All mitigation projects were designed using the intermediate sea level rise (SLR) scenario. Sea level rise is measured by a tide gauge with respect to the land upon which it is situated. There are three classifications of SLR: low (historic), intermediate, and high. The intermediate and high SLR scenarios are predictions of possible future sea level change. Utilizing the intermediate SLR scenario for project design may result in a larger mitigation project than required, as the intermediate SLR rate is higher than the historic. However, if an increase in elevation became necessary for forested habitats due to future SLR, future borrow placement would be extremely problematic and likely would result in an unacceptable increase in mortality of already established forest species, which could necessitate a complete rebuild of the project. Since the USACE is required to mitigate the habitat's functions and services lost due to construction of the BBA Construction Projects and since future funding for additional construction is uncertain, overbuilding of the mitigation projects (in size, not elevation) was determined to be the least-risk design alternative.

General Construction Elements for Conversion of Habitat.
Each mitigation project in the final array was evaluated to determine the general construction elements that would be required to restore/enhance the target habitat type on the site. Table 2-3 presents the general construction categories and the mitigation projects that fall under each one. Detailed mitigation project descriptions including site specific components such as access, construction duration, and staging are presented in Appendix G.

Mitigation projects converting agricultural land/low quality habitat types already at the required elevation for the target habitat type included work items such as construction of new access roads, clearing and grubbing, backfilling of existing ponds/ditches, demolition of onsite structures, leveling/harrowing soil to receive planting, and planting of canopy and mid-story plant species required to establish BLH and/or swamp habitat.

Mitigation projects converting agricultural land/low quality habitat types not at the required elevation for the target habitat type include all the same actions as those projects that have the required elevation except that a reduction of the site elevations is necessary. This would be accomplished by removing the top 6 inches to 1 foot of soil. The removed earthen material would be used to fill depressions at the site to achieve uniform target elevations throughout the site or would be hauled off by a Contractor to a Government approved disposal area.

Mitigation projects converting open water to forested wetlands would require such construction activities as construction of containment dikes, hydraulic dredging and placement of fill material, planting of canopy and mid-story plant species required to establish BLH and/or swamp habitat, and gapping or degrading of containment dikes after the fill material has settled to the target elevation.

Mitigation projects enhancing degraded forested wetlands would require such construction elements as invasive species control and planting of canopy and mid-story plant species required to establish BLH and/or swamp habitat.

Table 2-3 Summary of General Construction Elements Needed for Mitigation Projects

Habitat Type being Mitigated	Agriculture Land/Low Quality Habitat to Forest (0.5 -1.0 ft. Degrading required)	Agriculture Land/Low Quality Habitat to Forest (No Degrading)	Open Water to Forest by Fill Placement	Enhancement of Existing Forest (Planting Only)
BLH-Wet CZ	St. John (LPB)			
	Albania South (OB)			
	Albania North (OB)			
	Cote Blanche (OB)			
BLH-Wet Non-CZ	St. James (LPB)	Ascension (LPB)		
	Feliciana (LPB)	GBRPC (LPB)		Amite (LPB)
	Gravity (OB)	Krotz (OB)		
	TPSB (OB)	Sunset Ridge (OB)		
	Rosedale (OB)			
Swamp CZ	Albania South (OB)		Pine Island (LPB)	Joyce (LPB)
	Albania North (OB)			
	Cote Blanche (OB)			

LPB – In Lake Pontchartrain Basin. MSRB – Mississippi River Basin. OB – Outside of Basin. Proposed mitigation (both credit purchases and Corps-constructed mitigation sites) within the LPB and MSRB would be implemented first. Only once all options within the LPB and MSRB have been implemented to the extent practicable would mitigation features outside of the basin but within the Mississippi Alluvial Plain be implemented.

2.4 SELECTION RATIONALE FOR TENTATIVELY SELECTED MITIGATION PROJECTS (TSMPs)

The Alternatives Evaluation Process (AE) was utilized to compare projects mitigating for the same habitat type in the final array to determine the best project for that habitat type. During the AE, mitigation projects within the same habitat type were compared to one another using the following selection criteria:

- Risk and Reliability – This criterion considers issues such as a proposed projects' susceptibility and resiliency to stressors, long-term sustainability, uncertainty relative to CEMVN's ability to implement the project, and uncertainty relative to project success.
- Environmental – This criterion evaluates a proposed project's adverse and beneficial impacts to human and natural resources.
- Time - Time evaluates the duration to contract award and to initial ecological success or Notice of Construction Complete (NCC).
- Cost Effectiveness –This criterion evaluates the average annual cost per average annual habitat unit.
- Other Cost Considerations – This criterion evaluates total proposed project costs including construction, real estate, operations and maintenance, total project and average annual costs over the 50 year period of analysis.

- Watershed and Ecological Site Considerations – This criterion evaluates the proposed project site characteristics such as the role that a potential project would play in terms of creating habitat linkages or wildlife corridors, whether the project is consistent with watershed plans such as Coast 2050, and its proximity to the BBA Construction Project impacts.

The relative scoring of the individual mitigation projects under each of these criterion for the habitat type being mitigated produced an overall score for the mitigation project. A ranking was then established for the mitigation projects under the habitat type being mitigated based on each mitigation project's overall score. Mitigation projects are listed in order of ranking in Table 2-2 and would be chosen for implementation in that order. The highest ranked mitigation projects for each habitat type were selected as the Tentatively Selected Mitigation Projects (TSMPs) for that habitat type in the Tentatively Selected Alternative (TSA; multiple projects were needed to fully satisfy the mitigation need). The BLH-Wet out of LPB projects not selected as TSMPs would serve as default projects if for any reason the TSMPs identified in the TSA could not be implemented or could not completely satisfy the BBA mitigation needs.

Chapter 4 provides an impact assessment of the final array of proposed mitigation projects. Chapter 5 provides a summary of environmental impacts with implementation of all mitigation measures required to provide the required mitigation for the BBA Construction Projects. AE Plan Selection Criteria details can be found in Appendix F. Selection criteria matrices used during the AE can be found in Appendix B, Table 2-8.

A summary of the selection rationale for each habitat type is provided below.

2.4.1 BLH-WET IN COASTAL ZONE

The PDT used the criteria discussed above to evaluate and compare the BLH-Wet in Coastal Zone (CZ) mitigation projects. Projects outside of the LPB would be considered for implementation only once the mitigation projects within the LPB are exhausted. After the overall scoring was completed by the PDT, a sensitivity analysis was conducted to verify whether different conclusions among the PDT would have changed the results of the scoring. This allowed the PDT to experiment with weighting the criteria differently to see how it would affect the overall scores. The sensitivity analysis did not significantly change the raw scores or result in a change in the rankings.

The assessments for the range of mitigation projects within the LPB and outside of the LPB identified that the generic in-basin mitigation bank project performed better than all other proposed mitigation projects under the Risk and Reliability, Environmental, Time, and Project Cost Considerations criteria and was therefore the highest ranked project based on AE results. Mitigation banks have minimal uncertainty relative to achieving ecological success because the banks are already established and are monitored through CEMVN's regulatory 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. Banks have financial assurances in place to ensure that funds are available if needed for corrective actions. Further, use of bank credits does not require any real estate acquisitions. Because the mitigation banks are already constructed and operating and have credits available, they have no new negative environmental impacts compared to existing and future without project conditions. The purchase of bank credits can proceed considerably faster than the design, contract award and construction of the other potential projects. Additionally, the purchase of bank

credits does not require ongoing monitoring for ecological success or the operations or maintenance that would be required for Corps-constructed projects.

If CEMVN solicits the purchase of bank credits, mitigation banks wishing to sell credits to satisfy the BBA Construction Projects' mitigation obligations would be encouraged to submit competitive bids. However, if, based on cost and considering other factors, the CEMVN determines the purchase of mitigation bank credits is not cost effective or would not be appropriate, the next ranked project for that habitat type would become the TSMP for that habitat type in the TSA.

For the projects within the LPB only St. John remained; therefore, it was the second highest scoring project after in-basin bank credits. For the projects out of the LPB, Albania South, Albania North and Cote Blanche were ranked second, third and fourth respectively after out-of-basin bank credits. Those projects were scored pretty evenly but Albania South performed better Risk & Reliability considerations.

2.4.2 BLH-WET OUTSIDE COASTAL ZONE

The sites were evaluated using the same process as the BLH-Wet in CZ mitigation projects except the MSRB was added since banks with non-CZ BLH credits exist in this basin. Projects outside of the LPB and MSRB would be considered for implementation only once the projects within the LPB and MSRB are exhausted. The assessments for the mitigation projects within the LPB and MSRB and outside of the LPB and MSRB for this habitat type identified that the in-basin mitigation bank projects performed better than all other proposed mitigation projects under the Risk and Reliability, Time, and Project Cost Considerations criteria and was therefore the highest ranked project based on AE results. The same rationale for ranking and purchasing mitigation bank credits as discussed in BLH-Wet in CZ applies.

For the projects within the LPB and MSRB there were six projects in addition to the generic mitigation bank. Ascension ranked second with an advantage in Environmental, Time and Project Cost considerations in comparison to the over the third ranked project, Feliciana. The fourth (GBRPC), fifth (Gravity), and sixth (St. James) ranked projects were scored within 10% of each other. Amite ranked seventh due to Risk & Reliability, Time and Project Cost considerations.

For the projects out of the LPB and MSRB, there were five projects in addition to the generic mitigation bank project. The second highest scoring project was Krotz which had an advantage in Environmental, Time and project cost considerations. The remaining four projects were scored pretty evenly such that they were approximately within 10% of each other.

2.4.3 SWAMP IN COASTAL ZONE

The sites were evaluated using the same process as the BLH-Wet Non-CZ mitigation projects. Mitigation projects outside of the LPB would be considered for implementation once the mitigation projects within the LPB are exhausted. Similarly as in the other habitats assessed, the mitigation bank project performed better than all other proposed projects under the Risk and Reliability, Time, and Project Cost Considerations criteria and was therefore the highest ranked project based on AE results. The same rationale for ranking and purchasing mitigation bank credits as discussed in BLH-Wet in CZ applies.

For the mitigation projects within the LPB, Pine Island had higher scores over the Joyce project for Risk & Reliability, Environmental and Watershed/Ecological considerations.

For the projects out of the LPB, Albania South, Albania North and Cote Blanche were ranked second, third and fourth respectively which is the same ranking as BLH-Wet in Coastal Zone projects. They were scored pretty evenly but Albania South but performed better in Watershed/Ecological Cost Considerations vs. Albania North project. Cote Blanche performed lower due to project Cost Considerations.

2.5 TENTATIVELY SELECTED ALTERNATIVE

The following tentatively selected mitigation projects (TSMPs) by habitat type were combined like building blocks to form the TSA for the BBA Mitigation Plan. If the number of in-kind mitigation bank credits available for purchase at the time of implementation of the TSA is high and CEMVN is able to purchase a large number of credits, there is a possibility that the lowest ranked project in the TSA may ultimately not be needed in part or in whole. If the projects in the TSA are unable to satisfy the whole mitigation need for the BBA Construction Projects, additional projects in the final array would be utilized in order of ranking until full satisfaction of the mitigation requirement is completed.

Depending on remaining need after purchasing mitigation banks credits for BLH-Wet in CZ, the projects Albania South, Albania North and Cote Blanche may be available to use the entire site acreages to meet Swamp in CZ mitigation needs. Additionally, for BLH-Wet in CZ, the TSA includes Albania North instead of the higher ranked project Albania South. This is because the Albania North project provides substantially more AAHUs to meet the mitigation needs and would take advantage of greater ecological output and cost efficiencies.

Table 2-3: Tentatively Selected Alternative

	Projects	Habitat	AAHUs	Acres
BLH-Wet in CZ (WSLP)	Mitigation Bank (LPB)	BLH-wet	TBD	TBD
	Saint John (LPB) BLH-wet	BLH-wet	42	94.7
	Mitigation Bank (OB)	BLH-wet	TBD	TBD
	Albania South (OB)	BLH-wet	up to 96	up to 192.1
	Albania North (OB)	BLH-wet	Max of 343	Max of 657
Swamp in CZ (WSLP)	Mitigation Bank (LPB)	Swamp	TBD	TBD
	Pine Island (LPB)	Swamp	775	1,965.0
	Joyce (LPB)	Swamp	195	1,126.1
	Mitigation Bank (OB)	Swamp	TBD	TBD
	Albania South (OB)	Swamp	up to 76	up to 192.1
	Albania North (OB)	Swamp	up to 380	up to 964.8
	Cote Blanche (OB)	Swamp	up to 182	up to 446

BLH-Wet Out of CZ (Comite, EBR)	Mitigation Bank (LPB & MSRB)	BLH-wet	TBD	TBD
	Ascension (LPB)	BLH-wet	29	55.8
	Feliciana (LPB)	BLH-wet	156	267.0
	GBRPC (LPB)	BLH-wet	54	134.9
	St James (LPB)	BLH-wet	676	1246.0
	Mitigation Bank (OB)	BLH-wet	TBD	TBD

LPB – In Lake Pontchartrain Basin. MSRB – Mississippi River Basin. OB – Outside of Basin.

2.6 WVA MODEL AND SEA LEVEL RISE ANALYSES

2.6.1 WVA MODEL CERTIFICATION

The WVA Bottomland Hardwood and Swamp Community Models used for the BBA Mitigation completed model certification in accordance with EC 1105-2-412 and were approved for regional use 2018.

2.6.2 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 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 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 following WVA models (version 2.0) were used for the BBA Mitigation effort: 1) CWPPRA, WVA Methodology, Bottomland Hardwood Community Model; 2) CWPPRA, WVA Methodology, Swamp Community Model.

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 swamp WVA model consists of seven variables: 1) stand structure; 2) stand maturity; 3) water regime; 4) salinity; 5) forest sized; 6) surrounding land use; and 7) disturbance. The Bottomland Hardwood Community Model consists of seven variables: 1) tree species composition; 2) stand maturity; 3) understory/midstory; 4) hydrology; 5) forest size; 6) surrounding land uses; and 7) disturbance.

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., FWOP), and for conditions projected into the future if the proposed mitigation project is implemented (i.e., FWP), providing 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. Assumptions used for the BBA Mitigation WVAs are found in Appendix I.

The intent of compensatory mitigation is to offset unavoidable habitat losses by replacing those impacted habitats by restoring (re-establishment or rehabilitation), establishing (creation), or enhancing a naturally functioning system. Once the project meets its long term success criteria, it will experience natural successional phases common to that habitat type. Once the functions and services of the affected habitat have been replaced and the mitigation project becomes a naturally functioning, self-sustaining system whose habitat is protected in perpetuity, the compensatory mitigation obligation is satisfied.

2.6.3 Sea Level Rise Analysis

Wetland Acreage Predictions under Increased Sea Level Rise (SLR) Rates

USACE policy (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 types. Pine Island and Joyce WMA are the only two mitigation projects that may be impacted by seal level rise as they are immediately influenced by tidal ranges. Therefore, all 3 SLR scenarios were applied to only to those two projects. The rest of the mitigation projects were analyzed based on the intermediate SLR scenario to account for potential uncertainties in future SLR impacts, and therefore the risk of those proposed mitigation projects not successfully meeting the mitigation requirement due to SLR has been minimized.

Using USACE-predicted future water levels under the SLR scenarios, those water levels were converted into relative sea level rise (RSLR) rates, incorporating sea level rise effects measured at the gauges and land loss experienced in the extended project area for each project. No operations and maintenance activities were planned for any of 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.

2.7 DATA GAPS AND UNCERTAINTIES

2.7.1 IMPACT ASSESSMENT

The BBA mitigation requirement has been assessed through review of the existing NEPA documents for the three BBA Construction Projects. Project designs for those projects are undergoing final engineering refinements and may change. A final reassessment of impacts will be completed once those designs are final to ensure all impacts from construction of the BBA Construction Projects are fully mitigated. If additional impacts are identified beyond what has been assessed in this document, then a

supplemental NEPA document would be prepared analyzing options to complete the outstanding mitigation. This supplemental NEPA document would be published for public review and comment.

2.7.2 TROPICAL STORMS

Tropical storm events can directly and indirectly contribute to coastal land loss through erosion from increased wave energies, removal and/or scouring of vegetation from storm surge and saltwater intrusion into estuaries and interior wetlands. Wetland loss and degradation of large areas can occur over a short period of time as a result of storms.

There is a risk that a single storm event, or multiple storms over a short period of time, could significantly reduce or eliminate anticipated benefits of mitigation plans in areas susceptible to storm surge and shearing. The extent of potential damage to a particular mitigation project is dependent upon several unknown variables, including: the track and intensity of the storm, the development stage of the project, changes in future conditions in the study area, and variability of project performance from forecast conditions due to other factors of risk and uncertainty.

2.7.3 CLIMATE CHANGE

Extreme changes in climate (temperature, rain, evaporation, wind) could result in conditions that cannot support the types of habitat restored, reducing the effectiveness of the mitigation plan. Extreme climate change could essentially eliminate the benefits of vegetative plantings, if the change resulted in plant mortality. The monitoring plan for all USACE constructed projects would monitor the success of any vegetative plantings and includes provisions for replanting if mortalities become such that meeting the required success criteria is in jeopardy.

2.7.4 ERRORS IN ANALYSIS

Future conditions are inherently uncertain. The forecast of future conditions is limited by existing science and technology. Future conditions described in this study are based on an analysis of historic trends and the best available information. Some variation between forecast conditions and reality is certain. Mitigation features were developed in a risk-aware framework to minimize the degree to which these variations would affect planning decisions. However, errors in analysis or discrepancies between forecast and actual conditions could affect plan effectiveness.

All of the models used in this study are mathematical representations of reality. Models simulate complex systems by simplifying real processes into expressions of their most basic variables. These tools assist with finding optimal solutions to problems, testing hypothetical situations, and forecasting future conditions based on observed data. No model can account for all relevant variables in a system. The interpretation of model outputs must consider the limitations, strengths, weaknesses, and assumptions inherent in model inputs and framework. Inaccurate assumptions or input errors could change benefits predicted by models used in this study. The potential for significant changes due to errors has been reduced through technical review, sensitivity analyses, and quality assurance procedures. However, there is inherent risk in reducing complex natural systems into the results of mathematic expressions driven by the simplified interaction of key variables.

2.7.5 WVA MODEL UNCERTAINTIES

WVA models were run on the entire final array of mitigation projects using assumptions from the WBV HSDRRS mitigation projects. Once ROE is obtained, site-specific WVAs would be run and a final resizing of the projects completed. As designs proceed, final WVAs would be completed for each TSP to determine their final size.

2.7.6 IMPLEMENTATION

The timing for implementation is an uncertainty that must be considered. If the plan is not implemented in the near future, the conditions in the study area could degrade. The impact of the uncertainties associated with the future condition of the study area could increase mitigation costs, decrease mitigation benefits, or both.

If a proposed project in the TSA becomes infeasible due to difficulties in implementation or changed conditions, the CEMVN would implement the next ranked project for that habitat type to ensure full satisfaction of the mitigation requirement. If CEMVN determines that after implementing all feasible ranked projects, any mitigation requirement would remain unfulfilled, then CEMVN would identify and evaluate new potential projects to satisfy mitigation requirements. A supplemental NEPA document would be prepared to evaluate any new mitigation alternatives.

2.7.7 MITIGATION BANK AVAILABILITY

Mitigation banks capable of supplying the credits needed to meet the BLH-Wet and swamp mitigation requirements at the time of solicitation is uncertain at this time. 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 particular banks that could be used to meet the mitigation requirement cannot occur with any degree of certainty and has not been done for this SEA. Since the 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 similarly unknown. Existing bank habitat quality varies depending on the success criteria met, as specified in the bank's MBI. Typically, as mitigation success criteria are met and the quality of the habitat increases within the bank, more credits are released for purchase.

2.8 PROPOSED MITIGATION ACTION

The proposed action would be a combination of mitigation bank credit purchases and Corps constructed projects as described in Section 2.5 above. Purchase of credits would be dependent on receipt of an acceptable proposal(s) and total purchase cost. No particular bank(s) is (are) proposed for use at this time. The bank(s) from which credits would be purchased would be selected through a solicitation process, through which any mitigation bank meeting eligibility requirements and having the appropriate resource type of credits could submit a proposal to sell credits. If appropriate and cost-effective, the Corps may choose to purchase mitigation bank credits from more than one bank to fulfill the compensatory mitigation requirements for a particular habitat type.

2.9 ALTERNATIVE TO THE PROPOSED ACTION

The following section describes the alternative to the proposed mitigation action of a combination of mitigation bank credits and Corps-constructed mitigation projects. Since the combination of bank credits and Corps-constructed mitigation projects will depend on future mitigation bank credit availability, the only other considered alternative to evaluate is the No Action alternative, as required by NEPA. The No Action alternative presents the future without project (FWOP) condition in which no mitigation projects would be implemented and is compared to the future with project (FWP) condition or the proposed action (combination of Corps-constructed and mitigation bank credits).

2.9.1 NO ACTION ALTERNATIVE

NEPA requires that in analyzing alternatives to a proposed action, a Federal agency consider an alternative of "No Action." Typically the No Action alternative evaluates not implementing any of the alternatives and represents the FWOP condition by which alternatives considered in detail are compared. However, 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. As such, for this EA, although the No Action alternative represents the baseline, FWOP condition (not completing mitigation), it would not be an alternative that could actually be selected.

Under the No Action alternative, the LPB would continue a trend of land loss caused by both natural factors such as subsidence, erosion, tropical storms and sea level rise, 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 the construction of the BBA Construction Projects. The No Action alternative considers previous, current, and reasonably foreseeable future projects, which could impact the resources evaluated in the EA as part of the FWOP conditions. The locations of these projects are shown in Appendix A, Figure 26. For the purpose of this study, a future project is considered "reasonably foreseeable" if it meets one of the following criteria:

- USACE authorized ecosystem restoration , flood risk reduction, and/or navigation project with a Tentatively Selected Plan;
- CWPPRA project authorized at a Phase 2 – construction status;
- Coastal Impact Assistance Program (CIAP) ecosystem restoration or flood risk reduction project which is funded for construction;
- State of Louisiana Surplus-funded ecosystem restoration or flood risk reduction project funded for construction; or
- Louisiana Levee District permitted flood risk reduction project.

Appendix B, Table 18 list projects involving wetland or ecosystem restoration activities considered part of the no action alternative that could counter, to a degree, the current land loss trends throughout the basin and progression of wetlands to open water. In addition to these wetland or ecosystem restoration projects, a number of flood risk reduction and navigation projects that have been built or would be built within the study area that would continue to influence the hydrodynamics within the area can also be found in Appendix B, Table 18.

3. AFFECTED ENVIRONMENT

3.1 ENVIRONMENTAL SETTING STUDY AREA

The BBA Construction Projects requiring mitigation occur within the LPB and the MSRB. The proposed projects to mitigate for the BBA Construction Projects are found within LPB, MSRB and the Mississippi Alluvial Plain, south of and including the Southern Holocene Meander Belts (Appendix A, Figure 4). These areas comprise the study area, which will be the focus of the first part of this section. Discussion on why and how the Corps has decided to expand beyond the LPB and MSRB can be found in Section 2.1.

3.1.1 GEOMORPHIC AND PHYSIOGRAPHIC SETTING

Most of the present landmass of southeast LA was formed by deltaic processes of the Mississippi River. Over the past 7,000 years, the Mississippi River deposited massive volumes of sediment in five deltaic complexes. The study area lies within the Mississippi Alluvial Plain which contains natural levee ridges, man-made levees, fresh, intermediate, brackish and saline marshes, forested wetlands, lakes and bays, barrier islands, and estuaries.

3.1.2 CLIMATE

The study area is located within a subtropical latitude. 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 SIGNIFICANT RESOURCES

This section contains a list of the significant resources located in the study area and those located within the vicinity of the proposed mitigation projects by habitat type (i.e., BLH-Wet or Swamp), and describes in detail those resources that would be impacted, directly or indirectly, by construction of them.

The resources described in this section are those recognized as significant 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. Further detail on the significance of each of these resources can be found in Appendix B, Table B-1. See Appendix A, Figure 25 for the habitats found in the study area. See Appendix B, Table B-12-14 for scientific names of species identified throughout the document.

Environmental Justice (EJ) is institutionally significant because of Executive Order 12898 of 1994. An EJ analysis focuses on the potential for disproportionately high and adverse impacts to minority or low-income populations during construction or operation of the proposed action. The CEMVN EJ team analyzed the BBA mitigation projects and determined that the type of construction activities taking place at the mitigation projects would not cause high, adverse impacts to any communities that are in the vicinity of the action nor would there be permanent high, adverse impacts to communities. Therefore EJ is not considered a significant resource for the proposed mitigation action.

The portion of Lake Pontchartrain that would be affected by the Pine Island mitigation project is not used for federal or interstate commerce and therefore navigation is not considered a significant resource for this project.

Neither EJ nor navigation will be discussed further in this document.

3.2.1 STUDY AREA

3.2.1.1 Wetlands and other Surface Waters

BLH-Wet forests in the study area are dominated by water oak, nuttall oak, green ash, red maple, and pignut hickory. Swamps in the study area are dominated by bald cypress and water tupelo, which have regenerated since extensive logging of virgin forest more than 70 years ago. The Louisiana swamps generally lack a mature canopy as was present in the forests before logging occurred and have lower productivity where isolated from riverine influences (Shaffer et al., 2003). A list of plant species referenced in this document and their scientific names can be found in Appendix B, Table B-12.

Various mitigation banks within Louisiana may be capable of supplying enough credits to meet the BLH-wet and swamp mitigation requirements. Since the bank that may ultimately be selected to provide the necessary mitigation credits is unknown, the existing conditions present at the bank site are similarly unknown. Existing bank habitat quality varies depending on the success criteria met, as specified in the bank's Mitigation Banking Instrument (MBI). Typically, as mitigation success criteria are met and the quality of the habitat increases within the bank, more credits are released for purchase.

3.2.1.2 Wildlife

Louisiana's coastal wetlands support numerous neotropical and other migratory avian species, such as rails, gallinules, shorebirds, wading birds, and numerous songbirds. The rigors of long distance flight require most neotropical migratory birds to rest and refuel several times before they reach their final destination. Louisiana coastal wetlands provide neotropical migratory birds essential stopover habitat on their annual migration routes. The coastal wetlands in the LPB and the MSRB provide important and essential 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, intermediate, and brackish wetlands are typically used by many different wildlife species, including: seabirds; wading birds; shorebirds; dabbling and diving ducks; raptors; rails; coots; and gallinules; nutria; muskrat; mink, river otter, and raccoon; rabbit; white-tailed deer; and American alligator. Emergent saline marshes are typically utilized by: seabirds; wading birds; shore birds; dabbling and diving ducks; rails, coots, and gallinules; other saline marsh residents and migrants; nutria; muskrat; mink, river otter, and raccoon; rabbits; deer; and American alligator (LCWCRTF & WCRA, 1999).

Open water habitats such as Lake Pontchartrain and Lake Borgne provide wintering and multiple use functions for brown pelicans, seabirds, and other open water residents and migrants. Open water habitats in the project area 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).

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. Their coloration ranges from light gray to black with lighter coloration on the belly. Inshore (coastal) and offshore individuals vary in color and size. Inshore animals are smaller and lighter in color, while offshore animals are larger, darker in coloration and have smaller flippers. Coastal animals prey on benthic invertebrates and fish, and offshore animals feed on squid and fish.

A list of common wildlife species found in the study area and their scientific names can be found in Appendix B, Table B-13.

3.2.1.3 Threatened and Endangered Species

Within the State of Louisiana there are 30 animal and three plant species (some with critical habitat) under the jurisdiction of the United States Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS), presently classified as endangered or threatened. Of those 30, Table 3-1 identifies those that are known to occur in the parishes where mitigation projects in the final array are situated. The USFWS and the NMFS share jurisdictional responsibility for sea turtles and the Gulf sturgeon. Other species that were listed on the Endangered Species List but have since then been de-listed because population levels have improved are the bald eagle and the brown pelican. 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. Appendix B, Table B-20 contains a list of Louisiana State Listed species that could potentially occur in the study area. Adverse impacts to any listed species would be avoided and/or the risk minimized through best management practices.

Table 3-1 Threatened and Endangered Species

Species	Parish	Critical Habitat	Status	Jurisdiction	
				USFWS	NFMS
Animal					

Species	Parish	Critical Habitat	Status	Jurisdiction	
				USFWS	NFMS
West Indian Manatee (*Trichechus manatus*)	A, EBR, EF, St. C, St. Ja, St. Jo, St. T, T		T	X	
Piping Plover (*Charadrius melodus)*	St. M, St. C	X	T	X	
Red Knot *(Calidris canutus rufa)*	Wherever Found				
Red Cockaded Woodpecker (*Picoides borealis*)	L, St. C, St. T, T		E	X	
Gopher Tortoise (*Gopherus polyphemus*)	St. C, St. T, T		T	X	
Ringed Map Turtle (*Graptemys oculifera*)	St. C, St. T		T	X	
Hawksbill Sea Turtle (*Eretomchelys imbricata*)	St. C		E	X	X
Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)	St. C		E	X	X
Leatherback Sea Turtle (*Dermochelys coriacea*)	St. C		E	X	X
Green Sea Turtle (*Chelonia mydas*)	St. C		T	X	X
Loggerhead Sea Turtle (*Caretta caretta*)	St. C		T	X	X
Pallid Sturgeon (*Scaphirhynchus albus*)	A, I, EBR, EF, PC, St. C, St. Ja, St. Jo, St. M, WBR,		E	X	
Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)	A, L, St. B, St. C, St. J, St. T, O, T, St. H	X	T	X	X
Inflated Heelsplitter Mussel (*Potamilus inflatus*)	A, L, EBR, EF, St. C, St. T. St. H		T	X	
Plant					
Louisiana Quillwort (*Isoetes louisianensis*)	St. C, St. T		E	X	

A = Ascension, EBR= East Baton Rouge, EF= East Feliciana, L=Livingston, St. C= St. Charles, St. Ja = St. James, St. Jo= St. John, St. T= St. Tammany, T= Tangipahoa, St. M= St. Mary, PC= Pointe Coupee, I= Iberville, WBR= West Baton Rouge

3.2.1.4 Fisheries and Aquatic Resources

The NMFS oversees and manages our Nation's domestic fisheries through development and implementation of fishery management plans and actions. The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) is the primary law governing marine fisheries

management in United States Federal waters; its goals are to end overfishing, promote market-based management approaches, improve science, serve a larger role in decision-making, and enhance international cooperation.

Major water bodies within the study area include the Mississippi river, Lake Maurepas, Lake Pontchartrain, Lake Borgne, Breton Sound, Chandeleur Sound, Lake Salvador, Lake Cataouatche, Atchafalaya Bay, West Cote Blanche Bay, and Vermillion Bay. 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 MSFCMA by the Gulf of Mexico Fishery Management Council (e.g., mackerel, snapper, and grouper) and highly migratory species managed by NMFS (e.g., billfish and shark).

A list of fish and aquatic species referenced in this document and their scientific names can be found in Appendix B, Table B-14.

The existing emergent wetlands and shallow open water within the project area provide important habitat and Essential Fish Habitat (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 (Rounsefell, 1964; Penland et al., 2002).

3.2.1.5 Essential Fish Habitat

The public places a high value on seafood and recreational and commercial opportunities provided by EFH. Specific categories of EFH include all estuarine waters and substrates (mud, sand, shell, rock, and associated biological communities), subtidal vegetation (seagrasses and algae), and adjacent intertidal vegetation (marshes and mangroves). Table 3-2 shows the EFH for the managed species in southeastern Louisiana.

Table 3-2
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 *Farfantepenaeus aztecus*	Eggs	(Marine system) < 110, demersal
	Larvae	(Marine system) < 110 m, planktonic
	Postlarvae/ juvenile	(Estuarine system) marsh edge, submerged aquatic vegetation, tidal creeks, inner marsh
	Subadult	

	Adult	(Estuarine system) mud bottoms, marsh edge (Marine system) < 110 m, silt sand, and muddy sand
White shrimp *Litopenaeus setiferus*	Eggs	(Marine system) < 40 m, demersal
	Larvae	(Marine system) < 40 m, planktonic
	Postlarvae/ juvenile, subadult	(Estuarine system) marsh edge, submerged aquatic vegetation, marsh ponds, inner marsh, oyster reefs
	Adult	(Marine system) < 33 m, silt, soft mud
Red drum *Sciaenops ocellatus*	Eggs, larvae	(Marine system) planktonic
	Postlarvae/ juvenile	(Marine and Estuarine systems) submerged aquatic vegetation, estuarine mud bottoms, marsh/water interface
	Subadult	(Estuarine system) mud bottoms, oyster reefs
	Adult	(Marine and Estuarine systems) Gulf of Mexico & estuarine mud bottoms, oyster reefs
Red snapper *Lutijanus campechanus*	Larvae, postlarvae/juvenile	(Marine system) structure, sand/mud; 17-183 m
	Adult	(Marine system) reefs, rock outcrops, gravel; 7-146 m
Vermillion snapper *Rhomboplites aurorubens*	Juvenile	(Marine systems) reefs, hard bottom, 20-200 m
Spanish mackerel *Scomberomorus maculatus*	Larvae	(Marine system) < 50 m isobath
	Juvenile	(Marine and Estuarine systems) offshore, beach, estuarine
	Adult	(Marine system) pelagic
Bluefish *Pomatomus saltatrix*	Postlarvae/ juvenile	(Marine and Estuarine systems) beaches, estuaries, and inlets
	Adult	(Marine and Estuarine systems) Gulf, estuaries, pelagic

*Detailed information on Federally managed fisheries and their EFH is provided in the 1998 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council (GMFMC).

3.2.1.6 Cultural Resources

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 National Register of Historic Places (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 National Historic Preservation Act (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 (ACHP) 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 (THPO) and/or tribal officials, state and local officials, non-federal sponsors/applicants, and any other consulting parties in identifying historic properties, assessing effects, and resolving adverse effects, and provide for public involvement. Additionally, it is the policy of the federal government to consult with Indian Tribal Governments on a Government-to-Government basis as required in E.O. 13175 (U.S. President 2000).

3.2.1.6.1 Archaeological Site Distribution

The generalized Pre-Contact cultural chronology for Louisiana according to Rees (2010:12) is divided into five (5) primary archaeological components or periods as follows: Paleoindian (11,500-8000 B.C.); Archaic (8000-800 B.C.); Woodland (800 B.C.-1200 A.D.); Mississippian (1200-1700 A.D.); and Historic (1700 A.D.-present). Regionally, these archaeological periods have been further divided into sub-periods based on their material culture, settlement patterns, subsistence practices, and sociopolitical organization. Specific sub-periods identified within the study area include: Poverty Point; Tchefuncte; Marksville; Baytown; Troyville; Coles Creek; Plaquemine; and Mississippian. Post-Contact Period (ca. 1650 A.D.-present) cultural affiliations follow the thematic approach set forth in the Louisiana Division of Archaeology's (LDOA) State of Louisiana Site Record Form (amended August 29, 2018) and are divided into the following temporal groups: *Historic Exploration* (1541-1803 A.D.); *Antebellum Louisiana* (1803-1860 A.D.); *War and Aftermath* (1860-1890 A.D.); *Industrial and Modern* (1890-1945 A.D.); and *Post-WWII* (1945 A.D.-present).

Based on a review of the LDOA, *Louisiana Cultural Resources Map* (LDOA Website), archaeological sites previously recorded within the current study area collectively span the entire

spectrum of Pre-Contact and Post-Contact archaeological components referenced above; encompassing some 10,000 years or more. It is also important to stress that many known of the known sites in the project vicinity have occupation spans encompassing more than one (1) of these cultural/temporal periods. Moreover, many of these sites possess more than one (1) archaeological component attesting to the long-ranging cultural importance of the region. Nevertheless, as compared to other areas of the state, relatively little survey work has been conducted within the study area.

In lieu of additional survey data, Louisiana's Comprehensive Archaeological Plan (Girard, et al. 2018) provides a useful site distribution model that can be used for baseline planning purposes. To a great extent, the unique geomorphology and ecology of Louisiana has influenced site type and location. To examine how the physical landscape impacts the archaeological record, the LDOA divides the state into a series of regions that follow the ecoregions classification of the Western Ecology Division of the United States Environmental Protection Agency (https://www.epa.gov/eco-research/ecoregion-download-files-state-region-6#pane-16). There are six (6) regions at Level III, of which four (4) fall within the present study area (Mississippi Alluvial Plain, Mississippi Valley Loess Plains, Southeastern Plains, and Southern Coastal Plains). The Mississippi Alluvial plain ecoregion covers most of the eastern half of northern Louisiana and forms a central corridor through the southern part of the state. The Mississippi Valley Loess Plains ecoregion occurs primarily within the central-southern half of the present study area. The Southern Coastal Plain ecoregion comprises the northern central-half of the present study area, spanning the Louisiana/Mississippi border. The Southeastern Plains ecoregion lies in the northern part of the south eastern portion of the state, spanning the Louisiana/Mississippi border. A map displaying the locations of potential mitigation properties plotted against the EPA Level III Ecoregions is included as Figure A-5.

Girard, et al., (2018:24-31) define how the unique environmental, biological, and physiological characteristics of each region cumulatively influenced cultural development in order to provide context to the distribution of where sites are likely or unlikely to occur within each ecoregion as is summarized below:

The Mississippi Alluvial Plain:

> *The region consists of major aggrading floodplain landforms and watercourses… In the southern portion of the* [study area] *this region includes the Holocene-age deltaic lobes of the Mississippi River... Sites are found predominantly on higher, better-drained landforms. These are typically natural levees along channels, but may include point bars and other surfaces. In many areas, the distribution and age of sites on the modern surface reflects the geological history of that area, rather than its entire occupational history… The Inland Swamp sub-region represents the transition between freshwater backswamps to fresh, brackish, and saline waters of the deltaic marshes… Much of the land is low-lying and subject to seasonal flooding. Numerous bayous drain the region with their natural levees providing the only elevated ground… Sites are concentrated along natural levees. Channel migration has eroded many landforms, and sediment deposition has buried many others.*

The Mississippi Valley Loess Plains:

> *This region consists of rolling hills and bluffs immediately east of the Mississippi Alluvial Plain* [and] *is underlain by Miocene and Pliocene sand, silt, and gravel deposits in the northern half, and by Pleistocene age silts, sands, and clays in the south… The region is dominated by the thick layer of Late Pleistocene loess derived from the Mississippi River valley that is draped over the gently rolling topography… Sites are typically situated on higher ridge crests and along stream margins. Sites will occur in surface contents in higher elevations while occasional buried sites may be found in alluvial settings.*

The *Southern Coastal Plain*:

> *The uplands consist of gently rolling topography dissected by north-south trending streams and rivers…Holocene alluvial deposits are in floodplains and on low terraces along major streams…Sites in the upland areas are concentrated on higher ridge crests and overlooking streams. Most of these deposits are shaulow with overlapping occupations and no opportunity for stratified sites. Buried and stratified sites may occur in the floodplains of the larger streams.*

Southeastern Plains:

> [The region] *consists of level to gently undulating plains formed in Pliocene and Pleistocene deposits that are covered by thin layers of loess in some areas. These deposits consist of sandy loams, silt loams, and clay loams with cherty gravels present. A series of north-south trending streams and rivers drain the region and cherty gravel bars are common. Most have moderately incised valleys with limited floodplain development, although the Bogue Chitto and Pearl Rivers can have broader floodplains with abandoned channels and ponded areas… Sites are typically situated on higher ridge crests and along stream margins. Sites will occur in surface contexts in higher elevations while occasional buried sites may be found in alluvial settings… Sites in surface contexts are impacted by agricultural and timber harvesting activities. Within the larger drainages, gravel-mining operations have destroyed sites within the limits of their activities.*

3.2.1.6.2 Historic Properties

Preserving historic properties as important reflections of our American heritage became a national policy through passage of the Antiquities Act of 1906, the Historic Sites Act of 1935, and Section 106 of the NHPA, and it's implementing regulations, 36 Code of Federal Regulations [CFR] Part 800. The passage of the NHPA established the NRHP and the process for adding properties to it. National Register (NR)-listed properties typically fall into one (1) of five (5) categories: building, structure, object, site, and district. The National Park Service (NPS) uses the following definitions to differentiate NR historic resource types (NPS 1995):

- Building: A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. "Building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail or a house and barn.

- Structure: The term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter."

- Object: The term "object" is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or a relatively small in scale and simply constructed. CEMVN's background research indicates that there are no NRHP-listed Objects within the study area.

- Site: A site is the location of a significant event, a prehistoric/historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure.

- District: A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

In addition to the five (5) common types of NR properties mentioned above, the study area also has the potential to contain National Historic Landmarks (NHLs) and archaeological sites not presently listed on the NR:

- National Historic Landmark: The NPS has developed criteria for the recognition of nationally significant properties, which are designated NHLs and prehistoric and historic units of the NPS. NHLs are those districts, sites, buildings, structures, and objects designated by the Secretary of the Interior (SOI) as possessing national significance in American history, architecture, archeology, engineering, and culture. NHLs are afforded a special level of protection and Section 110(f) of the NHPA, requires that before approval of any federal Undertaking which may directly and adversely affect any NHL, the head of the responsible federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the Undertaking.

- Archaeological Sites Not Presently Listed on the National Register: Not every archaeological site is eligible for the NR because not all archaeological sites possess both significance and sufficient integrity to be considered eligible for listing. Most eligibility determinations made pursuant to the Section 106 process are called "consensus determinations" because agreement between the federal agency and the SHPO/THPO is all that is normally required for federal undertakings; no formal nomination to or listing on the NR is necessary. The LA SHPO maintains databases of all previously recorded sites within Louisiana. Individual alternative actions will be screened against the databases to determine if sites that have been identified as eligible for NR-listing, but not yet enrolled, exist within proposed work areas.

CEMVN has completed an initial review of existing information regarding historic properties within the potential mitigation areas selected for the TSA. Historic Properties within the proposed Area of Potential Effect (APE) for each mitigation property were identified based on

CEMVN's review of the NRHP database, the *Louisiana Cultural Resources Map* provided by SHPO, historic map research, and a review of the EPA Level III Ecoregions. CEMVN's preliminary review of the array of properties evaluated is summarized in Table 3-3 (below):

Table 3-3. Historic Properties within the APE

Mitigation Site	Previously recorded Archaeological Sites within Parcel	Previous Survey within Parcel[1]	Previous Survey Coverage	Other Notes:
Pine Island	16ST45 (partial); 16ST98 (partial)	22-0824 - A+R	Partial	Project area situated in dense cluster of sites. Primarily prehistoric. Little survey coverage of proposed mitigation area
Saint James	16SJ20; 16SJ21; 16SJ34; 16SJ30	22-0665 - A+R; 22-3017 Ph. I; 22-3693 - Ph. II; 22-3693 - Ph. II; 22-3713 - Ph. III; 22-4669 A+R; 22-3017 - Ph. II; 22-3823 - Ph. III; 22-4043 - Ph. III; 22-0728 - Ph. I; 22-0727 - A+R; 22-3812 - Ph. III	Partial	Multiple previously recorded plantation sites within project area: Wilton Plantation, Helvetia Plantation, St. Rose Plantation, and Columb Plantation (including cemetery within parcel)
Saint John	None	22-2572 - A+R; 22-3779 - Ph. I (negative)	Complete	Good potential for mitigation area
Gravity	None	None	None	Unassessed
Ascension SB	None	None	None	Requires additional assessment
GBRPC	16EBR72 (partial); 16EBR74	22-1468 - Ph. I	Sparse	Requires additional assessment
Feliciana	16EF42; 16EF43; 16EF47; 16EF44 (partial); 16EF45 (partial); 16EF48 (partial); 16EF12; 16EF46	22-0774 - A+R	Sparse	Requires additional assessment
Sunset Ridge	None	None	None	Unassessed
TPSB	None	None	None	Unassessed
Rosedale	None	22-2261 - A+R	Only A+R	Requires additional assessment
Krotz	None	None	None	Unassessed
Albania North	None	None	None	Unassessed
Albania South	None	None	None	Unassessed
Cote Blanche	None	None	None	Unassessed

[1] A+R = Assessment + Reconnaissance; Ph. I = Phase I (Identification); Ph. II = Phase II (Evaluation); Phase III (Mitigation).

Mitigation Site	Previously recorded Archaeological Sites within Parcel	Previous Survey within Parcel[1]	Previous Survey Coverage	Other Notes:
Amite MIT	16SH4	22-0801 (partial)	Only partial A+R	Project area largely unassessed. Heavily impacted by gravel mining though still contains some site potential
Joyce	None	None	None	Unassessed

3.2.1.7 Recreational Resources

Recreation areas were examined in and around the LPB, MSRB, and Mississippi Alluvial Plain. These projects are in proximity to 7 National Wildlife Refuges (NWRs), more than 15 LA Wildlife Management Areas, 7 LA State Parks, and 1 National Park, as well as other significant recreation areas. These areas are visited annually for recreational purposes and include miles of trails for hiking and biking, 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. Appendix B, Table B-16 lists the state and Federal recreational facilities that are located in the LPB and Mississippi Alluvial Plain and provides information about size and recreational features.

The fishing industry alone is the second largest industry in Louisiana. The study area encompasses over 50% of the State's resident fishing licenses and boat registrations according to the Louisiana Department of Wildlife and Fisheries (LDWF). Appendix B, Table B-15 shows the number of fishing licenses, hunting licenses and boat registrations as well as the percent of state licenses and boat registrations in the LPB and Mississippi Alluvial Plain.

Although fishing and boating marinas are periodically damaged in hurricanes, and some are completely obliterated, because of the high demand of this recreational activity, marinas typically rebuild almost immediately. This industry has proven to be strong, and it is important to maintain the land area surrounding these facilities including the boat launches. People enjoy pleasure boating and fishing in and around these recreational boat launches.

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 LPB and Mississippi Alluvial Plain, SCORP Regions 1 through 3 include the LPB and Mississippi Alluvial Plain. The state- and Federally-managed areas described previously represent just a portion of the recreational facilities inventoried for SCORP Regions 1 through 3. Federal, state, parish, and municipal public recreational facilities inventoried within Regions 1 through 3 provide approximately 341 parks for hunting, boat ramps, picnic areas, beaches, and camping with tent sites and trailer sites. The SCORP-prioritized needs in this region include improving access to enable fishing and boating, funding to support consumptive and non-consumptive activities on all public recreation areas, use of more sustainable building practices, more wilderness or primitive camping areas,

identifying and acquiring large tracts of waterfront lands for large scale parks, and addressing the dwindling state of marine resources.

Other recreational features are provided by parishes and historic communities that attract visitors to a variety of heritage and cultural festivals, historical sites, parks offering opportunities for passive and active recreation that include tennis courts, soccer and softball fields, swimming pools, and golf courses.

Funds from the Land and Water Conservation Fund (LWCF) have supported more than 150 different recreational projects in the area encompassing the LPB and Mississippi Alluvial Plain since 1964. LWCF projects in the LPB and Deltaic Plain have provided numerous boat ramps, other facilities or lands that enhance opportunities for recreation. Actual LWCF expenditures not adjusted for inflation are in the millions in the LPB and Mississippi Alluvial Plain. Appendix B, Table B-17 summarizes the number and cost of projects implemented in parishes in the LPB and Mississippi Alluvial Plain.

3.2.1.8 Aesthetic Resources

Visually, the LPB, MSRB, and Mississippi Alluvial Plain is a complex series of landscapes that vary throughout the full spectrum of eco-regions, ecosystems, habitat types, and topography. From Baton Rouge, east to the Mississippi Sound; and from U.S. Interstate 12, south to the Mississippi River, this large basin has many different visually, culturally and historically significant areas that all add to the flavor and life of southeastern Louisiana.

Public and Institutional Visual significance is derived from the many State Parks and Historic sites, NWRs, LA Wildlife Management Areas, Scenic Byways, and Scenic Streams that dot the landscape. These elements give cultural, recreational, historic, aesthetic, and archeological intrinsic value to the public (locally, statewide, and nationwide). For details on the visual resources found in the LPB, MSRB, and Mississippi Alluvial Plain, please see Appendix A, Figure 4.

Technically Significant Visual interests include those elements of design (be it natural or man-made) that make a place memorable and are of high visual quality. Typically these areas are defined by form, line, texture, color, repetition, or other basic design elements that break down a scenic vista into its constituent parts. By doing this, the scenic vista can be better explained and quantified for basin. This is the “how” and “why” a resource is visually significant. Man-made elements with superior visual interest may include artistic, architectural and/or engineering marvels; while natural elements may include swamps and marsh where texture and color are in overabundance, open water framed by stands of cypress, or active habitat areas where flora and fauna create focal points and action for the viewer.

One other important factor to consider for visual resources is access. If no one can access it, then it does not bring any aesthetic or visual value to the public.

3.2.1.9 Air Quality

National Ambient Air Quality Standard Attainment Status

Areas that meet the NAAQS for all criteria pollutants are designated as being "in attainment;" areas where a criteria pollutant level exceeds the NAAQS are designated as being "in nonattainment." Effective December 15, 2016, the Baton Rouge Five-Parish non-attainment area was designated by the Environmental Protection Agency as a maintenance area for ozone under the 8-hour standard. For the purposes of this study, three sites are in the Baton Rouge "maintenance" area (Gravity and Ascension in Ascension Parish and GBRPC in East Baton Rouge Parish) and the remaining six sites are in parishes that are in attainment status for NAAQS.

Table 3-4. National Ambient Air Quality Standards (NAAQS)

Pollutant [links to historical tables of NAAQS reviews]		**Primary/ Secondary**	**Averaging Time**	**Level**	**Form**
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 µg/m^3	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m^3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years

Pollutant [links to historical tables of NAAQS reviews]	Primary/ Secondary	Averaging Time	Level	Form
Sulfur Dioxide (SO_2)	primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO2 standards or is not meeting the requirements of a SIP call under the previous SO2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

3.2.1.10 Water Quality

Section 305(b) of the Clean Water Act requires each state to monitor and report on surface and groundwater quality, which the Environmental Protection Agency (EPA) synthesizes into a report to Congress. The Louisiana Department of Environmental Quality (LDEQ) produces a Section 305(b) Water Quality Report that provides monitoring data and water quality summaries for hydrologic units (subsegments) throughout the state.

Water quality criteria are elements of state water quality standards that represent the quality of water that will 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, Secondary Contact Recreation, Fish and Wildlife Propagation, Drinking Water Supply, Oyster Propagation, Agriculture, and Outstanding Natural Resource Waters. The water bodies in the study area support a variety of the designated uses.

3.2.1.11 Noise

The Noise Control Act of 1972 regulates and promotes an environment for all Americans free from noise that jeopardizes their health or welfare and the Occupational Safety and Health Administration Standards (29 CFR Part 1910) set standards regarding protection against the effects of noise exposure. Noise levels exceeding sound pressure levels are technically significant because noise can negatively affect the physiological or psychological well-being of an individual (Kryter, 1994). These effects can range from annoyance to adverse physiological responses, including permanent or temporary loss of hearing, and other types of disturbance to humans and animals, including disruption of colonial nesting birds. Noise is publicly significant because of the public's concern for the potential annoyance and adverse effects of noise on humans and wildlife.

Noise is generally described as unwanted sound, which can be based either on objective effects (hearing loss, damage to structures, etc.) or subjective judgments (such as community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by EPA and has been adopted by most Federal agencies (USEPA 1974). A DNL of 65 weighted decibels (dBA) is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction. The A-weighted sound level, used extensively in this country for the measurement of community and transportation noise, represents the approximate frequency response characteristic of the average young human ear). Areas exposed to a DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by EPA as a level below which there is no adverse impact (USEPA 1974).

Most parishes in the study area have noise ordinances addressing loud machinery. Noise is typically associated with human activities and habitations, such as operation of commercial and recreational boats, water vessels, air boats, and other recreational vehicles; operation of machinery and motors; and human residential-related noise (air conditioner, lawn mower, etc.). The Corps constructed project areas are remote and uninhabited. The noise from distant urban areas surrounding the uninhabited portions of the project area contributes little, if any, to the natural noise levels of the area.

3.2.1.12 Hazardous, Toxic, and Radioactive Waste (HTRW)

In accordance with ER 1165-2-100 identification and evaluation of all HTRW contamination within the vicinity of the proposed project is required. USACE policy is to avoid the use of project funds for HTRW removal and remediation activities. Costs for necessary special handling or remediation of wastes (e.g., those regulated by the Resource Conservation and Recovery Act), pollutants and other contaminants, which are not regulated under the Comprehensive Environmental Response, Compensation, and Liability Act, would be treated as project costs if the requirement is the result of a validly promulgated Federal, state, or local regulation.

3.2.1.13 Socioeconomics/Land Use, and Commercial Fisheries

Socioeconomics/Land Use
The study area encompasses eleven parishes, the names of the individual parishes are given in the Table 3-5.

Population
Table 3-5 shows the population trend in the eleven-parish area from 1990 to 2010 and projections through 2040. Population is anticipated to grow state wide even though some parishes like St. Helena, East Feliciana, and Iberville Parish are expecting a decrease in their populations.

Table 3-5: Population in the study area

Total Population, (Ths.) *U.S. Census Bureau (BOC); Moody's Analytics (ECCA) Forecast*						
	1990	**2000**	**2010**	**2020**	**2030**	**2040**
East Feliciana Parish	19.19	21.30	20.17	18.84	17.49	16.39
West Baton Rouge Parish	19.42	21.58	23.95	26.69	28.65	30.13
Iberville Parish	31.04	33.32	33.36	32.15	30.14	28.27
St. Tammany Parish	145.07	192.13	234.57	256.26	267.54	274.51
St. James Parish	20.84	21.20	22.01	22.10	23.07	23.67
Ascension Parish	58.41	77.33	107.85	128.73	144.11	156.46
East Baton Rouge Parish	381.20	412.96	440.73	445.44	435.40	422.16
Pointe Coupee Parish	22.48	22.76	22.76	21.63	20.53	19.35
St. Charles Parish	42.47	48.12	52.84	54.12	56.50	57.97
St. John the Baptist Parish	40.06	43.25	45.62	44.70	46.67	47.89
St. Mary Parish	57.99	53.38	54.54	52.63	51.57	50.84
Tangipahoa Parish	85.75	100.72	121.49	130.40	133.06	134.68

Economic Indicators
In the coming figures, key economic indicators will be analyzed to forecast the economic condition of these parishes from past to the present. The data given will be recorded data from 1990 to 2010 and then forecasted to 2040.

Income: Per Capita, ($)
Table 3-6 shows the data collected for income that was generated per individual in these parishes from 1990 to 2010. This data is then used to forecast the future income per capita in the years 2020 to 2040. The forecasts indicate that the income per capita is increasing at almost doubling rate. One distinction that is evident from this data is that the Parishes with the growing population have a higher growing income per capita than the Parishes that have stagnant or decreasing population across the forecasted date.

Table 3-6

Income: Per Capita, ($) *U.S. Census Bureau (BOC); Moody's Analytics (ECCA) Forecast*						
	1990	2000	2010	2020	2030	2040
East Feliciana Parish	12,740.00	20,049.00	33,122.00	44,884.44	63,699.32	90,851.22
West Baton Rouge Parish	14,691.00	22,906.00	37,492.00	52,158.86	72,766.48	104,976.16
Iberville Parish	13,220.00	18,681.00	32,342.00	43,346.98	58,905.83	81,283.46
St. Tammany Parish	18,197.00	29,945.00	46,995.00	72,842.79	128,442.96	233,155.59
St. James Parish	13,920.00	18,722.00	38,421.00	50,757.62	73,417.74	111,556.95
Ascension Parish	14,977.00	24,052.00	39,416.00	52,587.15	70,172.07	98,014.32
East Baton Rouge Parish	18,006.00	27,228.00	39,651.00	52,787.57	68,921.74	91,604.86
Pointe Coupee Parish	12,629.00	21,701.00	34,894.00	48,958.51	67,351.50	95,361.31
St. Charles Parish	16,908.00	24,634.00	39,557.00	53,116.58	77,117.48	117,900.30
St. John the Baptist Parish	14,470.00	20,002.00	33,894.00	47,054.34	70,793.27	110,131.39
St. Mary Parish	12,716.00	21,602.00	35,400.00	43,991.35	59,886.50	82,423.36
Tangipahoa Parish	11,975.00	19,557.00	32,725.00	42,411.89	59,380.72	84,496.62

Unemployment Rate (%)

Although the unemployment rate has seen a statewide increase from 1990 to 2010 however, the future trend is that the unemployment rate will be decreasing statewide in 2030 and 2040. The correlation we can expect with this indicator is that as income per capita increases, individuals will have more potential income that could create employment opportunities in the future.

Table 3-7

Unemployment Rate, (%) *Bureau of Labor Statistics (BLS); Moody's Analytics (ECCA) Forecast*						
	1990	2000	2010	2020	2030	2040
East Feliciana Parish	6.00	5.74	8.35	6.76	7.11	6.87
West Baton Rouge Parish	6.12	5.29	7.87	6.49	6.83	6.59
Iberville Parish	7.85	7.07	10.04	8.09	8.51	8.22
St. Tammany Parish	5.91	4.33	6.30	6.34	6.47	6.06
St. James Parish	7.87	8.59	11.66	9.45	9.64	9.02
Ascension Parish	6.45	5.29	7.45	5.90	6.20	5.99
East Baton Rouge Parish	4.84	4.62	7.60	6.15	6.47	6.25
Pointe Coupee Parish	9.41	6.31	8.67	7.68	8.08	7.80
St. Charles Parish	6.07	5.58	7.41	6.69	6.83	6.39
St. John the Baptist Parish	7.95	6.79	10.60	8.61	8.78	8.22
St. Mary Parish	6.28	7.39	9.41	9.05	8.90	8.49
Tangipahoa Parish	9.29	6.47	9.71	7.39	7.60	7.13

Income: Earnings from Proprietors

In the Tables 3-8 through 3-10, the data on income proprietors is shown across the eleven Parishes studied. This data supports the increasing income per capita in the earlier table by showing that total proprietors income will increase in the forecasted future. The trend spotted in these tables are that both farm and non-farm proprietor's income will be increasing at a similar rate into the future.

Table 3-8

Income: Earnings - Farm Proprietors Profits, (Mil. $)
U.S. Bureau of Economic Analysis (BEA); Moody's Analytics (ECCA) Forecast

	1990	2000	2010	2020	2030	2040
East Feliciana Parish	0.30	2.64	0.29	2.23	3.34	4.38
West Baton Rouge Parish	2.25	11.09	2.66	-0.80	-2.12	-3.39
Iberville Parish	1.04	0.87	6.04	7.25	8.97	11.70
St. Tammany Parish	-1.99	-0.38	-1.13	-0.15	0.58	1.69
St. James Parish	-0.50	0.30	2.94	3.21	3.96	5.08
Ascension Parish	-2.18	-1.33	2.02	3.88	5.99	9.45
East Baton Rouge Parish	-0.67	0.01	-1.67	-0.45	-0.10	0.17
Pointe Coupee Parish	7.74	12.49	9.05	24.85	31.93	39.34
St. Charles Parish	0.14	0.21	-0.53	-0.49	-0.61	-0.75
St. John the Baptist Parish	-0.73	1.10	1.45	2.28	3.28	4.70
St. Mary Parish	-2.40	-0.51	0.14	-1.91	-3.07	-3.81
Tangipahoa Parish	12.98	15.18	-2.26	0.76	1.86	2.71

Table 3-9

Income: Earnings - Nonfarm Proprietors Profits, (Mil. $)
U.S. Bureau of Economic Analysis (BEA); Moody's Analytics (ECCA) Forecast

	1990	2000	2010	2020	2030	2040
East Feliciana Parish	18.69	38.47	30.70	36.88	49.45	64.30
West Baton Rouge Parish	23.10	48.03	78.56	120.89	204.20	330.52
Iberville Parish	25.23	42.99	53.65	63.83	84.49	110.33
St. Tammany Parish	178.59	454.41	1,111.77	2,418.89	5,147.02	10,285.85
St. James Parish	9.74	17.47	102.80	93.03	118.28	152.13
Ascension Parish	74.47	139.53	197.49	326.99	538.42	849.55
East Baton Rouge Parish	435.85	641.50	1,427.62	2,117.47	2,781.80	3,519.58
Pointe Coupee Parish	15.15	28.54	56.47	61.59	77.04	95.11
St. Charles Parish	29.67	57.13	146.23	181.29	237.80	302.28
St. John the Baptist Parish	25.00	45.38	105.21	199.00	302.57	433.89
St. Mary Parish	44.20	72.32	163.80	169.08	214.52	265.34
Tangipahoa Parish	63.97	128.49	407.80	462.34	635.60	876.11

Table 3-10

Income: Earnings - Total Proprietors Profits, (Mil. $) *U.S. Bureau of Economic Analysis (BEA); Moody's Analytics (ECCA) Forecast*						
	1990	**2000**	**2010**	**2020**	**2030**	**2040**
East Feliciana Parish	18.99	41.11	30.99	39.11	52.80	68.68
West Baton Rouge Parish	25.35	59.11	81.22	120.09	202.08	327.13
Iberville Parish	26.28	43.85	59.69	71.08	93.46	122.03
St. Tammany Parish	176.60	454.03	1,110.65	2,418.74	5,147.60	10,287.55
St. James Parish	9.24	17.77	105.74	96.24	122.24	157.21
Ascension Parish	72.29	138.20	199.51	330.88	544.41	859.00
East Baton Rouge Parish	435.18	641.50	1,425.95	2,117.01	2,781.69	3,519.75
Pointe Coupee Parish	22.88	41.03	65.52	86.43	108.97	134.45
St. Charles Parish	29.81	57.35	145.70	180.80	237.19	301.53
St. John the Baptist Parish	24.27	46.48	106.66	201.28	305.85	438.60
St. Mary Parish	41.80	71.81	163.94	167.17	211.45	261.54
Tangipahoa Parish	76.96	143.67	405.54	463.10	637.46	878.82

Farms and usable land (acres)

Table 3-11 indicates the transformation of usable farm land between 2007 and 2017. The trend shows that over the years land acreage was increased to have the highest capacity to increase the utility of the farm land used.

Table 3-11

Farms and Farm Land *U.S. Department of Agriculture (USDA); Census of Agriculture*						
	2007		2012		2017	
	Farms (No.)	**Land (Acres)**	Farms (No.)	**Land (Acres)**	Farms (No.)	**Land (Acres)**
East Feliciana Parish	439.00	128,167.00	399.00	112,529.00	412.00	130,971.00
West Baton Rouge Parish	128.00	25,820.00	106.00	30,300.00	111.00	34,085.00
Iberville Parish	175.00	85,729.00	165.00	163,340.00	151.00	181,624.00
St. Tammany Parish	602.00	45,506.00	604.00	34,113.00	994.00	43,048.00
St. James Parish	64.00	43,251.00	63.00	39,942.00	56.00	50,580.00
Ascension Parish	277.00	45,455.00	250.00	50,456.00	221.00	38,381.00
East Baton Rouge Parish	511.00	72,165.00	432.00	57,542.00	449.00	58,280.00
Pointe Coupee Parish	441.00	190,550.00	393.00	182,214.00	482.00	187,674.00
St. Charles Parish	58.00	D	70.00	16,216.00	67.00	14,337.00
St. John the Baptist Parish	23.00	10,758.00	31.00	13,699.00	22.00	19,885.00
St. Mary Parish	142.00	72,728.00	128.00	76,085.00	98.00	80,168.00
Tangipahoa Parish	1,188.00	123,861.00	1,070.00	106,710.00	967.00	98,090.00

Commercial Fisheries

Economically important fisheries associated with the study area include fisheries of oysters, crawfish, blue crab, blue catfish, shrimp, and channel catfish.

3.2.1.14 Prime and Unique Farmlands

In 1980, the CEQ directed federal agencies to assess the effects of their actions on farmland soils classified as prime or unique by the U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. Appendix B Table 3-11 provides the amount of farmlands in the study area for 2007, 2012, and 2017.

3.2.1.15 Natural and Scenic Rivers

The Louisiana Natural Scenic Rivers Act prohibits certain activities on designated Natural and Scenic Rivers because of their detrimental ecological impacts on streams. These include channelization, clearing and snagging, channel realignment, reservoir construction, and the commercial cutting of trees within 100 feet of the ordinary low water mark. The study area includes many designated natural and scenic rivers. See Appendix K for a complete list of Natural and Scenic Rivers in Louisiana.

3.2.2 MITIGATION FOR BLH-WET (*CZ PROJECTS)

3.2.2.1 Wetlands and other Surface Waters

3.2.2.1.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's

All of these proposed projects are in existing agricultural lands and therefore no wetlands are present.

3.2.2.1.2 Amite - 368.6 Acres, 236 AAHU's
The Amite project area is located along the eastern and western sides of the Amite River. The sites are located in and adjacent to abandoned and active gravel mining pits. Most of these areas were likely impacted by mining operations. The sites are currently cleared areas within forested habitat.

3.2.2.1.3 Krotz - 147.2 Acres, 73 AAHU's

The Krotz project area is currently being managed as low quality scrub shrub habitat to support a migratory waterfowl populations for recreational hunting. Scrub shrub wetlands include such species as willow, button bush, dogwood, and young trees such as red maple.

3.2.2.2 Wildlife

3.2.2.2.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's

Wildlife species that have the potential to be found within all of these project areas when crops are present are skunk, rabbit, deer, various species of birds including eagles and other raptors, the red-winged blackbird, and various species of swallows. When crops are not present the wildlife species would shift to a less diverse and abundant list including mice, raptors, cattle egret, and ibis. There are currently no documented bald eagle nests in any of the project areas. Prior to construction, a nest survey would be conducted to verify no eagle nests are found in the vicinity of the project area. If a nest is found the National Bald Eagle Management Guidelines (Appendix J) would be followed.

3.2.2.2.2 Amite - 368.6 Acres, 236 AAHU's
Wildlife species that have the potential to be found within the Amite project area include skunk; rabbit; deer; squirrel; bobcat; fox; various species of song birds, raptors, reptiles, and amphibians.

3.2.2.2.3 Krotz - 147.2 Acres, 73 AAHU's
The Krotz project site likely includes all of the animal species discussed in section 3.3.3.2.1 but would also include game birds such as woodcock and dove for which it is being managed.

3.2.2.3 Threatened and Endangered Species

3.2.2.3.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's

There are 15 listed threatened and endangered species in these project areas. Based on a parish search conducted on the USFWS endangered species website in March 2019, and verbal communication with USFWS on July 23, 2019, none of the species under USFWS and/or NMFS

jurisdiction are expected to be found in any of these BLH-Wet project sites (https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=22057).
3.2.2.3.2 Amite - 368.6 Acres, 236 AAHU's

Only one T&E species is known to occur in the project area.

Inflated Heelsplitter
The only listed species known to occur in the project area is the inflated heelsplitter. The inflated heelsplitter is a mussel that has an oval, compressed to moderately inflated, thin shell. The shell is brown to black and may have green rays in young individuals. The preferred habitat of this species is soft, stable substrates in slow to moderate currents (Stern 1976) such as is present in the Amite River. Although the species is present in the Amite River it is not expected to be in the proposed project sites as the sites are not located within the river nor connected to the river.

3.2.2.4 Fisheries and Aquatic Resources

3.2.2.4.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's

All of these proposed projects occur on existing agricultural lands and therefore no fisheries or aquatic resources would be present.

3.2.2.4.2 Amite - 368.6 Acres, 236 AAHU's

The Amite project is located adjacent to the Amite River. However, all proposed work would take place on land or within existing shell mining pits. Since the shell mining pits are intermittently connected to the river, there is potential that the same fish species utilizing the Amite River could be in the pits. These species include bass, various species of sunfish and minnows, and gar.

3.2.2.5 Essential Fish Habitat

3.2.2.5.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's, **Amite –** 368.6 Acres, 236 AAHU's

All of these proposed projects occur on existing agricultural lands. Therefore, no essential fish habitat is located in any of these project areas.

3.2.2.6 Cultural Resources

3.2.2.6.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's, **Amite –** 368.6 Acres, 236 AAHU's

See Appendix B, Table 3-4.

3.2.2.7 Recreational Resources

3.2.2.7.1 Ascension - 55.8 Acres, 29 AAHU's

Recreational use of the project area is minimal as no opportunities exist on-site. The occasional opportunity for bird watching and sightseeing exists from nearby roads into the site. 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.

3.2.2.7.2 Saint John* - 94.7 Acres, 42 AAHU's

Conditions are similar to those discussed for the Ascension project except opportunities exist to a greater extent due to the site's proximity to the Mississippi River levee and the Great River Road. This National Scenic Byway serves as a source of non-consumptive recreation for travelers along the corridor.

3.2.2.7.3 Gravity - 75.2 Acres, 40 AAHU's

Conditions are similar to those discussed for the Ascension project.

3.2.2.7.4 Feliciana - 267 Acres, 156 AAHU's

Recreational use of the project area is moderate as opportunities currently exist on-site with consideration to the Bob R. Jones-Idlewild Research Institute and Idlewild Lake. This Louisiana Agricultural Experiment Station provides science-based solutions to wildlife issues for wildlife enthusiasts, private landowners, corporate landowners and general stakeholders across Louisiana in the area of wildlife and habitat management. The station hosts multiple field days throughout the year to wildlife enthusiasts.

3.2.2.7.5 GBRPC - 134.9 Acres, 54 AAHU's

Recreational use of the project area is moderate as opportunities currently exist on-site with consideration to the adjacent Parish of East Baton Rouge's (BREC) Farr Park Equestrian Center and Recreational Vehicle Campground. The 297-acre Center features indoor and outdoor arenas, 256 horse stalls, a cross-country event course, horse trails, RV campground with 108 sites, and picnic shelters. BREC, with the assistance of a Department of Transportation and Development Transportation Enhancement Grant completed a Bicycle Trailhead in Farr Park near the main entry to the park at River Road. The trailhead includes restroom facilities, bike racks, air compressor, and a water fountains.

This site does have proximity to the Mississippi River levee and the Great River Road. This National Scenic Byway serves as a source of non-consumptive recreation for travelers. 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.

3.2.2.7.6 Saint James - 1,246 Acres, 676 AAHU's

Conditions are similar to those discussed for the Ascension project except to a greater extent due to the site's proximity to the Mississippi River levee and the Great River Road. This National Scenic Byway serves as a source of non-consumptive recreation for travelers along the corridor.

3.2.2.7.7 Amite - 368.6 Acres, 236 AAHU's

Recreational use of the project area is abundant as opportunities currently exist on-site with consideration to the Amite River, This Louisiana Natural and Scenic River provides habitat around the project area which exhibits moderate plant species diversity and moderately high animal diversity creating ample opportunities for both consumptive and non-consumptive forms of recreation. Birding, hiking, kayaking, fishing, and hunting are the more prevalent forms of recreation in this area.

3.2.2.7.8 Krotz - 147.2 Acres, 73 AAHU's

Recreational use of the project area is abundant as opportunities currently exist on-site with consideration to the Atchafalaya National Wildlife Reserve and Sherburne Wildlife Management Area that encompasses the project area. This wildlife haven provides habitat around the project area which exhibits moderate plant species diversity and moderately high animal diversity creating ample opportunities for both consumptive and non-consumptive forms of recreation. Game birds currently frequent the management area where hunting is permitted.

3.2.2.7.9 TPSB - 483.8 Acres, 248 AAHU's

Conditions are similar to those discussed for the Ascension project except to a greater extent due to the site's proximity to the nearby Erwinville Recreation Center and Community Center. 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.

3.2.2.7.10 Rosedale - 224.8 Acres, 113 AAHU's

Conditions are similar to those discussed for the Ascension project except to a greater extent due to the site's proximity to Bayou Grosse Tete.

3.2.2.7.11 Sunset Ridge - 324 Acres, 168 AAHU's

Conditions are similar to those discussed for the Ascension project except to a greater extent due to the site's proximity to Bayou Des Allemands.

3.2.2.7.12 Albania South* - Up to 192.1 Acres, up to 96 AAHU's,

Conditions are similar to those discussed for the Ascension project except to a greater extent due to the site's proximity to the Bayou Teche Paddle Trail. This 135 mile long paddle trail serves as a source of both consumptive and non-consumptive recreation opportunities for paddlers and boaters along the waterway.

3.2.2.7.13 Albania North* - Max of 657 Acres, max of 343 AAHU's

Conditions are similar to those discussed for the Ascension project except to a greater extent due to the site's proximity to the Bayou Teche Paddle Trail. This 135 mile long paddle trail serves as a source of both consumptive and non-consumptive recreation opportunities for paddlers and boaters along the waterway.

3.2.2.7.14 Cote Blanche* - max of 176 Acres, max of 102 AAHU's

Conditions are similar to those discussed for the Ascension project.

3.2.2.8 Aesthetic Resources

3.2.2.8.1 Ascension - 55.8 Acres, 29 AAHU's

The vicinity of the project area is characteristic of the Mississippi Valley Loess Plains ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations. Small storage barns for equipment and feed with livestock holding areas dot the southern end of the site.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Small, manmade retention areas are located to the northwest of the project area.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of

deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area

- Access: Public visual access to the project site can be taken from Louisiana State Highway 941 to the south, State Highway 44 or S. Burnside Avenue to the west, and Interstate 10 to the North. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters.

3.2.2.8.2 Saint John* - 94.7 Acres, 42 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations. Overhead transmission lines border the north perimeter.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main river channel of the Mississippi River.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential, including industry fronting River Road and the Mississippi River corridor.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas and the Mississippi River Levee, which acts as the dominant landform feature in the area. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 44, River Road, and US Highway 61. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm, industry, and truck traffic, though includes a small percentage of residential commuters.

3.2.2.8.3 Gravity - 75.2 Acres, 40 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. 1 small, manmade retention area is located on the east side of the project area.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.

- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas and the Mississippi River Levee, which acts as the dominant landform feature in the area. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 22 to the south. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters.

3.2.2.8.4 Feliciana - 267 Acres, 156 AAHU's

The vicinity of the project area is characteristic of the Mississippi Valley Loess Plains ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations. Small storage barns for equipment and feed with livestock holding areas are located along Idlewild Road and include the Bob R. Jones-Idlewild Research Institute.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Idlewild Lake is located on the south side of the project area.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity.
- There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 67, Plank Road, to the west and State Highway 63 to the northeast. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters. The Bob R. Jones-Idlewild Research Institute, a Louisiana Agricultural Experiment Station, provides science-based solutions to wildlife issues for wildlife enthusiasts, private landowners, corporate landowners and general stakeholders across Louisiana in the area of wildlife and habitat management. The station hosts multiple field days throughout the year to wildlife enthusiasts.

3.2.2.8.5 GBRPC - 134.9 Acres, 54 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features the existing Mississippi River Levee (MRL -East Bank) as a primary structure to the northwest. The levee is a typical earthen berm, covered in turf on both the protected and river sides. Other structures in the area include barns, shops, and trails related to the nearby BREC Farr Park Equestrian Center and RV Campground.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main river channel of the Mississippi River.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
  Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas and the Mississippi River Levee, which acts as the dominant landform feature in the area. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 327. The drive along this thoroughfare is scenic and visually interesting. The project site is also accessible via 15 foot wide multi-use greenway path on top of the levee. This non-motorized path is used by bicyclists, walkers, and joggers.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters.

3.2.2.8.6 Saint James - 1,246 Acres, 676 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations. Small storage barns for equipment and feed with livestock holding areas dot the southern end of the site.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main river channel of the Mississippi River.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas and the Mississippi River Levee, which acts as the dominant landform feature in the area. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 44, River Road, and State Highway 3125. The drive along this thoroughfare is scenic and visually interesting.

- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters.

3.2.2.8.7 Amite - 368.6 Acres, 236 AAHU's

The vicinity of the project area is characteristic of the Mississippi Valley Loess Plains ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for mining operations along the Amite River.
- Water: In 1970, the Louisiana Legislature created the Louisiana Natural and Scenic Rivers System. The System was developed for the purpose of preserving, protecting, developing, reclaiming, and enhancing the wilderness qualities, scenic beauties, and ecological regimes of certain free-flowing Louisiana streams. These rivers, streams and bayous, and segments thereof, are located throughout the state and offer a unique opportunity for individuals and communities to become involved in the protection, conservation and preservation of two of Louisiana's greatest natural resources; its wilderness and its water. The Amite River from the Louisiana-Mississippi state line to La. Hwy. 37 in East Feliciana Parish is designated a Louisiana Natural and Scenic River (RS 56:1857).
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open mining pits fronting the Amite River, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 63 through the sites and Weiss Road to the south. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic related to mining operations, though includes a small percentage of residential commuters.

3.2.2.8.8 Krotz - 147.2 Acres, 73 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main river channel of the Atchafalaya River.
- Land Use: Land use in the area is surrounded by the Atchafalaya National Wildlife Reserve and Sherburne Wildlife Management Area, where an abundance of game birds may be observed.
- Landform and Vegetation: The surrounding habitat is surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species

diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: There is limited public visual access to the project site.
- Other Factors that Affect Visual Resources: User activity is minimal in this region, and is primarily relegated camps and recreational users that frequent the area.

3.2.2.8.9 TPSB - 483.8 Acres, 248 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.
- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations. Other structures in the area include ballfields, ballcourts, and concessions related to the nearby Erwinville Recreation Center.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main river channel of the Mississippi River.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas and the Mississippi River Levee, which acts as the dominant landform feature in the area. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 620 to the south and State Highway 984 to the west. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is minimal in this region, and is primarily relegated to farm and truck traffic related to farming operations.

3.2.2.8.10 Rosedale - 224.8 Acres, 113 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.
- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main river channel of Bayou Grosse Tete.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.

- Access: Public visual access to the project site can be taken from Louisiana State Highway 77 to the northeast and State Highway 76 to the southeast. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is minimal in this region, and is primarily relegated to farm and truck traffic related to farming operations.

3.2.2.8.11 Sunset Ridge - 324 Acres, 168 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.
- Water: There are no known, State designated scenic rivers or streams save for Bayou Des Allemands to the west and south of the project area.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 632 to the west. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters.

3.2.2.8.12 Albania South* - Up to 192.1 Acres, up to 96 AAHU's

Conditions are similar to those discussed for Albania North below.

3.2.2.8.13 Albania North* - Max of 657 Acres, max of 343 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.
- Water: The Bayou Teche Paddle Trail is a 135 mile long trail through 4 parishes and 13 towns along one of the most historically and culturally significant bayous in the state. Other major water resources Lake Fausse Pointe to the northeast.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.

- Access: Public visual access to the project site can be taken from Louisiana State Highway 87 to the south. The drive along this thoroughfare is scenic and visually interesting and is designated a Louisiana Scenic Byway by the Louisiana Department of Culture, Recreation and tourism.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters.

3.2.2.8.14 Cote Blanche* - Max of 176 Acres, max of 102 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main channel of the Intracoastal Waterway to the south.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of industrial.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 83 through the site. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is limited in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of industry commuters.

3.2.2.9 Air Quality

3.2.2.9.1 Ascension - 55.8 Acres, 29 AAHU's

The project site is located in Ascension Parish which is in a maintenance area for ozone.

3.2.2.9.2 Saint John* - 94.7 Acres, 42 AAHU's

The project site is located in St. John the Baptist Parish which is currently in attainment of all NAAQS.

3.2.2.9.3 Gravity - 75.2 Acres, 40 AAHU's

The project site is located in Ascension Parish which is in a maintenance area for ozone.

3.2.2.9.4 Feliciana - 267 Acres, 156 AAHU's

The project site is located in East Feliciana Parish which is currently in attainment of all NAAQS.

3.2.2.9.5 GBRPC - 134.9 Acres, 54 AAHU's

The project site is located in East Baton Rouge Parish which is in a maintenance area for ozone.

3.2.2.9.6 Saint James – 1,246 Acres, 676 AAHU's

The project site is located in St. James Parish which is currently in attainment of all NAAQS.

3.2.2.9.7 Amite - 368.6 Acres, 236 AAHU's

The project site is located in St. Helena Parish which is currently in attainment of all NAAQS.

3.2.2.9.8 Krotz - 147.2 Acres, 73 AAHU's

The project site is located in Pointe Coupee Parish which is currently in attainment of all NAAQS.

3.2.2.9.9 TPSB - 483.8 Acres, 248 AAHU's

The project site is located in West Baton Rouge Parish which is in a maintenance area for ozone.

3.2.2.9.10 Rosedale - 224.8 Acres, 113 AAHU's

The project site is located in Iberville Parish which is in a maintenance area for ozone.

3.2.2.9.11 Sunset Ridge - 324 Acres, 168 AAHU's

The project site is located in St. Charles Parish which is currently in attainment of all NAAQS.

3.2.2.8.12 Albania South* - Up to 192.1 Acres, up to 96 AAHU's

The project site is located in St. Mary Parish which is currently in attainment of all NAAQS.

3.2.2.9.13 Albania North* - Max of 657 Acres, max of 343 AAHU's

The project site is located in St. Mary Parish which is currently in attainment of all NAAQS.

3.2.2.9.14 Cote Blanche* - Max of 176 Acres, max of 102 AAHU's

The project site is located in St. Mary Parish which is currently in attainment of all NAAQS.

3.2.2.10 Water Quality

3.2.2.10.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's

None of these projects are located in or near any state water bodies and therefore no water quality standards or designated uses apply.

3.2.2.10.2 Amite - 368.6 Acres, 236 AAHU's

The water quality of the hydrologic unit which this project is in supports several designated uses including: fish and wildlife propagation, primary and secondary contact recreation, and outstanding natural resource waters.

3.2.2.11 Noise

3.2.2.11.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's, **Amite –** 368.6 Acres, 236 AAHU's

There are commercial and residential housing units located within 1,000 feet of most of these project areas. Most of these areas are located within agricultural communities where noise is produced by consistent and sporadically heavy traffic on adjacent and nearby roadways as well as agricultural operations.

3.2.2.11.2 Saint James – 1,246 Acres, 676 AAHU's **and Cote Blanche* -** Max of 176 Acres, Max of 102 AAHU's

These projects are surrounded by agricultural land and industry where noise is produced by consistent and sporadically heavy traffic on adjacent and nearby roadways as well as industrial plant and agricultural operations.

3.2.2.12 Hazardous, Toxic, and Radioactive Waste

The proposed mitigation sites were surveyed via aerial photographs, topographic maps, and database searches in the four Zone Improvement Plan (ZIP) code areas where they would be located. Although there were numerous small incidents recorded in the database searches, none of the recorded incidents, either individually or cumulatively, would have any adverse effects within the proposed mitigation areas. The proposed sites are all on property that has not been

developed within historic times. The probability of encountering HTRW on any of the sites is very small. Prior to use of any site a Phase 1 Environmental Site Assessment would be completed for the project area.

3.2.2.12.3 Gravity - 75.2 Acres, 40 AAHU's

This mitigation project area is located on agricultural land with one petroleum product pipeline crossing the site. No oil/gas wells are present on site, no data base issues were noted within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW on the site.

3.2.2.12.4 Feliciana - 267 Acres, 156 AAHU's

This project is located on agricultural land with no petroleum product pipelines on site, no oil/gas wells on site, no database issues within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW on the site.

3.2.2.12.5 GBRPC - 134.9 Acres, 54 AAHU's
This mitigation project is located on agricultural land with no petroleum product pipelines, no oil/gas wells on site. Some database issues were noted within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW.

3.2.2.12.6 Saint James - 1,246 Acres, 676 AAHU's

This project is located on agricultural land with several petroleum product pipelines and several plugged and abandoned oil/gas wells on site. Several data base issues were noted within one mile of the proposed site but no RECs were identified on site. There is a low probability of encountering HTRW on the site.

3.2.2.12.7 Amite - 368.6 Acres, 236 AAHU's

This proposed site is in a rural area and contains several gravel pits. There are no petroleum product pipelines, no oil/gas wells on site, no data base issues within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW on the site.

3.2.2.12.8 Krotz - 147.2 Acres, 73 AAHU's

This project is located on the Sherburne Wildlife Management Area in the Atchafalaya National Wildlife Refuge with no petroleum product pipelines, no oil/gas wells on site, no data base issues within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW on the site.

3.2.2.12.9 TPSB - 483.8 Acres, 248 AAHU's

This project is located on agricultural land with two petroleum product pipelines crossing the site. No oil/gas wells are present on site, some data base issues were noted within one mile of

the site, but no RECs were identified. There is a low probability of encountering HTRW on this site.

3.2.2.12.10 Rosedale - 224.8 Acres, 113 AAHU's

This project is located on agricultural land with no petroleum product pipelines, no oil/gas wells on site, no data base issues within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW on the site.

3.2.2.12.11 Sunset Ridge - 324 Acres, 168 AAHU's

This project is located on agricultural land with no petroleum product pipelines. Two plugged and abandoned oil/gas wells are on site, but no data base issues were noted within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW on the site.

3.2.2.12.12 Albania South* - Up to 192.1 Acres, up to 96 AAHU's

This project is located on agricultural land with one petroleum product pipeline and no oil/gas wells on site. Some data base issues were noted within one mile of the proposed site, but no RECs were identified. There is a low probability of encountering HTRW.

3.2.2.12.13 Albania North* - Max of 657 Acres, max of 343 AAHU's

This project is located on agricultural land with three petroleum product pipelines and four plugged and abandoned oil/gas wells on site. Some data base issues were noted within one mile of the proposed site but no RECs were identified on site. There is a low probability of encountering HTRW on the site.

3.2.2.12.14 Cote Blanche* - Max of 176 Acres, max of 102 AAHU's

This project is located on agricultural land with two petroleum product pipelines on site. No oil/gas wells are present on site, some data base issues were noted within one mile of the site, but no RECs were identified. There is a low probability of encountering HTRW on the site.

3.2.2.13 Socioeconomics/Land Use and Transportation

3.2.2.13.1 Ascension - 55.8 Acres, 29 AAHU's

This project is located in Ascension Parish. Ascension Parish has had a steady increase in its population. According to the 1990 and 2000 census, this increase was recorded at 32%. As the population increases, the margin of percentage increase is lower for the forecasted future. With this forecasted increase in population, income per capita also increases but not as much as other parishes with similar population increase rates. Another distinction that can be made for Ascension Parish is that farming activities are growing at a faster rate than other parishes even though the contribution of the farming practices are minimal to the total proprietor profits.

Farming income increases even with a decreasing amount of farm land acreage. With this in mind, analysts are able to assume that farms are being more efficient and productive with their farm land. The potential haul road for this area would be via LA-941.

3.2.2.13.2 Saint John* - 94.7 Acres, 42 AAHU's

This project is located in St. John Parish. St. John had a population of 40,000 in 1990 and this number increased by 14% by 2010. For the future, St. John is expecting a close to 2.3% increase in population from 2010 to the year 2030. Income per capita is expected to have a steady increase from 2010 to 2030. Income increased from 1990 to 2010 134% and income is predicted to continue to increase 94% from 2010 to 2030. This income increase is mainly focused on non-farm proprietor profits. The potential haul roads for this area would be US 61 and/or LA 44. Annual Average Daily Traffic (AADT) for these roadways in 2017 was 37,552 and 7,787 respectively.

3.2.2.13.3 Gravity - 75.2 Acres, 40 AAHU's

This project is located in Ascension Parish. See Ascension above. The potential haul road for this area would be LA 22. Annual Average Daily Traffic (AADT) for this roadway in 2016 was 2,257.

3.2.2.13.4 Feliciana - 267 Acres, 156 AAHU's

This project is located in East Feliciana Parish. East Feliciana Parish is predicted to see migration out of its borders in the near future. In the 2010 Census, the Parish had 20,000 citizens inhabiting Parish, however this number is forecasted to decrease to 16,000 thousand by the year 2040. The income per capita for this Parish is 33,122 in the 2010 census and this number is projected to increases to 90,851 by 2040. Even though the Parish is forecasted to see a decrease in population, East Feliciana Parish is still having steady healthy growth in its economy. East Feliciana Parish will see an increase in its agriculture activities to help earnings in the forecasted future. The Parish is expected to earn 6.45% of its total income from farm activities in 2040 compared to earning less than 1% in 2010. The potential haul road for this area would be Par Rd. 5-118. Annual Average Daily Traffic (AADT) for this roadway in 2018 was 8,878.

3.2.2.13.5 GBRPC - 134.9 Acres, 54 AAHU's

This project is located in East Baton Rouge Parish. East Baton Rouge Parish is unique in that this parish is expected to have fluctuations in its population in the future. It is forecasted to have a slight population increase from 2010 to 2020 and then a more stagnant/decreasing trend for the future. The income per capita in this parish increased by 120% from 1990 to 2010 and is forecast to increase 74% from 2010 to the year 2030. The total Proprietor profits increased by 228% from 1990 to 2010 for Baton Rouge and are expected to increase by 90% from 2010 to 2030. This is a generous increase for a Parish considering it will not have a drastic increase in its population. The potential haul road for this area would be LA 325. Annual Average Daily Traffic (AADT) for this roadway in 2017 was 25,280.

3.2.2.13.6 Saint James - 1,246 Acres, 676 AAHU's

This project is located in the St. James Parish. St. James Parish has a stagnant population with a little increase expected in the near future. The per capita income is expected to increase at $12,000-$20,000 per 10 years and is expected to be at around $111,556 in the year 2040. The income increase may also be explained by the expected steady increase in the total proprietor profits which consist mostly of non-farm profits. The unemployment in this parish is around 9% which is around 4-5% higher than the national average. The potential haul roads for this area would be LA3125 and/or LA 44. Annual Average Daily Traffic (AADT) for these roadways in 2018 was 5,252 and 1,527 respectively.

3.2.2.13.7 Amite - 368.6 Acres, 236 AAHU's

This project is located in East Feliciana Parish. See Feliciana above. The potential haul roads for this area would vary among sites but would include LA-960, Boeneke Road, LA-37, and LA-448.

3.2.2.13.8 Krotz - 147.2 Acres, 73 AAHU's

This project is located in the Pointe Coupee Parish. Pointe Coupee parish is not expected to experience much change in its population in the future. The population increased by 1% from 1990 to 2010 and is expected to decrease from 2010 to the year 2030 by a little less than 1%. The income per capita saw a drastic increase of 176% from 1990 to 2010 and is expected increase by 93% from 2010 to 2030. This increase could be spotted on the total proprietor profit earnings and from the increasing profits from farming. Pointe Coupee Parish has seen a 17% increase in farming profits from 1990 to 2010. This Parish is another example of a Parish that is increasing the efficiency and utilization of the existing farms. The potential haul roads for this area would be LA 1 and/or LA 418. Annual Average Daily Traffic (AADT) for these roadways in 2017 was 3,448 and 482 respectively.

3.2.2.13.9 TPSB - 483.8 Acres, 248 AAHU's

This project is located in West Baton Rouge Parish. West Baton Rouge Parish is expected to see a steady increase in population. Recorded for the census in 1990, 19,190 people lived in this Parish. In the 2010 Census, this number increased to 23,950 people and is expected to rise to around 30,130 by the year 2040. According to the 1990 and the 2000 census, this parish increased its income per capita by 56% in 10 years. With the given data, the income per capita is expected to increase to $104,876 per person in 2040. West Baton Rouge Parish has a small percentage of farm earnings that contributes to the total income. Farming activity was less than 4% of the total income in the 2010 census and this number is expected to decrease. The potential haul road for this area would be LA 984. Annual Average Daily Traffic (AADT) for this roadway in 2016 was 2,725.

3.2.2.13.10 Rosedale - 224.8 Acres, 113 AAHU's

This project is located in the Iberville Parish. In terms of population, Iberville Parish has more of a stagnant/declining trend according to the 1990, 2000 and 2010 census. The 2010 census states that there are 33,360 citizens residing in Iberville and this number is forecasted to be 28,270 in the year 2040. Analyzing the 1990 and 2000 census shows that Iberville Parish had a 67% increase in total proprietors profits up to the year 2000, which is expected to grow at a similar rate until 2040. In 2007, Iberville had 85,729 acres of farm land and 181,624 acres of usable farm land. This is indicator shows the impact that farmland will have on income earned in the future. The potential haul roads for this area would be LA 77 and/or LA 76. Annual Average Daily Traffic (AADT) for these roadways in 2015 and 2018 was 2,072 and 566 respectively.

3.2.2.13.11 Sunset Ridge - 324 Acres, 168 AAHU's

This project is located in the St. Charles Parish. The population of the St. Charles community increased from 42,470 in 1990 to 52840 in 2010 and is expected to increase at a similar rate through 2030 and 2040. The income per capita in St. Charles Parish was at around $16,908 in 1990 and increased by 134% in 2010. This income per capita is also expected to increase by 94% from 2010 to 2030. This increase is nominal; we would have to factor in the rate of inflation and adjust accordingly to show a real increase in income per capita. Almost all of the income of this Parish is earned through non-farm proprietor profits and this is projected remain unchanged in the future. The potential haul road for this area would be Bayou Gulch Road. Annual Average Daily Traffic (AADT) for this roadway in 2016 was 2,970.

3.2.2.13.12 Albania South* -Up to 192.1, up to 96 AAHU's

This project is located in St. Mary Parish. See Bayou Vista above. The potential haul roads for this area would be US 90 and LA 182. Annual Average Daily Traffic (AADT) for these roadways in 2014 was 22,496 and 4,229, respectively.

3.2.2.13.13 Albania North* - Max of 657 Acres, max of 96 AAHU's

This project is located in the St. Mary Parish. St. Mary Parish recorded the highest percentage increase in their income per capita even despite a decreasing population. In 1990, St. Mary had 58,000 citizens which decreased 6% in 2010 and is expected to decrease 5% by2030. The potential haul road for this area would be LA 84. Annual Average Daily Traffic (AADT) for this roadway in 2017 was 484.

3.2.2.13.14 Cote Blanche* - Max of 176 Acres, max of 102 AAHU's

This project is located in the St. Mary Parish. See Albania North above. The potential haul road for this area would be LA 83. Annual Average Daily Traffic (AADT) for this roadway in 2017 was 540.

3.2.2.14 Prime and Unique Farmlands

3.2.2.14.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres,

54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's

All of these projects are located on agricultural fields and contain prime or unique farmlands.

3.2.2.14.1 Amite - 368.6 Acres, 236 AAHU's

The Amite project is located in existing BLH forest and does not contain any prime or unique farmlands.

3.2.2.15 Natural and Scenic Rivers

3.2.2.15.1 Ascension - 55.8 Acres, 29 AAHU's**, Saint John* –** 94.7 Acres, 42 AAHU's**, Gravity –** 75.2 Acres, 40 AAHU's, **Feliciana** 267 Acres, 156 AAHU's, **GBRPC –** 134.9 Acres, 54 AAHU's, **Saint James –** 1246 Acres, 676 AAHU's**, TPSB –** 483.8 Acres, 248 AAHU's, **Rosedale –** 224.8 Acres, 113 AAHU's, **Sunset Ridge –** 324 Acres, 168 AAHU's, **Albania South* -** Up to 192.1 Acres, up to 96 AAHU's, **Albania North* –** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche*-** max of 176 Acres, max of 102 AAHU's, **Krotz –** 147.2 Acres, 73 AAHU's

These projects contain no Natural and Scenic Rivers.

3.2.2.15.2 Amite - 368.6 Acres, 236 AAHU's

The Amite project is located adjacent to the Amite River which is listed as a natural and scenic river from the Louisiana-Mississippi state line to La. Hwy. 37.

3.2.3 MITIGATION FOR SWAMP

3.2.3.1 Wetlands and other Surface Waters

3.2.3.1.1 Pine Island - 1,965 Acres, 775 AAHU's
The Pine Island project area is located along the northern shoreline of Lake Pontchartrain. The project area, consisting of the borrow site and the swamp restoration 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 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 bottomland hardwood forest, scrub/shrub wetlands and fresh to intermediate marshes.

3.2.3.1.2 Joyce - 1,126.1 Acres, 195 AAHU's
The Joyce project area is located within the Joyce Wildlife Management Area which is adjacent to the northwestern shore of Lake Pontchartrain. Historically the area was healthy cypress/tupelo gum swamp. In the early 20th century much of this historic swamp habitat was logged. A number of factors including subsidence, saltwater intrusion and herbivory by nutria has affected regeneration of the area. Currently the area is comprised of degraded swamp habitat with second-growth swamp species.

3.2.3.1.3 Albania South – up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs
See section 3.2.2.1.1. No wetlands are present.

3.2.3.2 Wildlife

3.2.3.2.1 Pine Island - 1,965 Acres, 775 AAHU's

The coastal wetlands in the LPB and MSRB provide important and 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 and gallinules; nutria; muskrat; mink; river otter; and raccoon; rabbit; white-tailed deer; and American alligator (LCWCRTF & WCRA, 1999). All of these species are likely to be found in or near the project area.

The Louisiana Department of Wildlife and Fisheries has records of a wading bird nesting colony within one mile of the project site. The birds occasionally move their nesting sites so it is possible that a nesting site could be located in the vicinity of 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.

3.2.3.2.2 Joyce - 1,126.1 Acres, 195 AAHU's

Degraded swamp habitats still provide some multiple use functions for many terrestrial and semi-aquatic species such as nutria, muskrat, mink, river otter, and raccoon, and reptiles including the American alligator, western cottonmouth, water snakes, speckled king snake, rat snake, and eastern mud turtle. There is potential for bald eagle nests and wading bird nesting colonies within the project area.

3.2.3.2.3 Albania South – up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

See section 3.2.2.2.1

3.2.3.3 Threatened and Endangered Species

3.2.3.3.1 Pine Island - 1,965 Acres, 775 AAHU's

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.

West Indian Manatee

The West Indian manatee is Federally and state-listed as endangered and also is protected under the Marine Mammal Protection Act of 1972, under which it is considered depleted (USFWS 2001). Critical habitat for the manatee has been designated in Florida, but not in Louisiana (USFWS 1977). The manatee is a large gray or brown aquatic mammal that may reach a length of 13 ft. and a weight of over 2,200 pounds. It occurs in both freshwater and saltwater habitats within tropical and subtropical regions. The primary human-related threats to the manatee include watercraft-related strikes (impacts and/or propeller strikes), crushing and/or entrapment in water control structures (flood gates, navigation locks), and entanglement in fishing gear, such as discarded fishing line or crab traps (USFWS 2007).

The manatee can occur throughout the coastal regions of the southeastern United States and may travel greater distances during warmer months; it has been sighted as far north as Massachusetts and as far west as Texas. However, the manatee is a subtropical species with little tolerance for cold, and it returns to and remains in the vicinity of warm-water sites in peninsular Florida during the winter (USFWS 2001, USFWS 2007). Thus, the manatee is not a year-round resident in Louisiana, but it may migrate there during warmer months. Manatees prefer access to natural springs or manmade warm water and waters with dense beds of submerged aquatic or floating vegetation. Manatees prefer to forage in shallow grass beds that are adjacent to deeper channels. They seek out quiet areas in canals, creeks, lagoons, or rivers and use deeper channels as migratory routes (USFWS 1999).

There have been 110 reported sightings of manatees in Louisiana since 1975 (LDWF 2005). Sightings in Louisiana, which have been uncommon and sporadic, have included occurrences in Lake Pontchartrain as well as the Amite, Blind, Tchefuncte, and Tickfaw Rivers. Between 1997 and 2000, there were approximately 16 sightings in the Lake Pontchartrain area and a general increase in the number of manatees per sighting (Abadie et al. 2000). Sightings of the manatee in the LPB have increased in recent years, and in late July 2005, 20 to 30 manatees were observed in the lake from the air (Powell and Taylor 2005). In order to minimize the potential

for construction activities to cause adverse impacts to manatees, the following standard manatee protection measures would be implemented when activities are proposed that would impact habitat where manatees could occur:

All contract personnel associated with the project would be informed of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel would be responsible for observing water-related activities for the presence of manatees. Temporary signs would be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., the work area), and at least one sign would be placed where it is visible to the vessel operator. Siltation barriers, if used, would be made of material in which manatees could not become entangled and would be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions would be implemented, including: moving equipment would not operate within 50 ft of a manatee; all vessels would operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, would be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area of its own accord, special operating conditions would no longer be necessary, but careful observations would be resumed. Any manatee sighting would be immediately reported to the U.S. Fish and Wildlife Service (337/291-3100) and the Louisiana Department of Wildlife and Fisheries (LDWF), Natural Heritage Program (225/765-2821).

Gulf Sturgeon

The Gulf sturgeon was listed as threatened throughout its range on 30 September 1991. The Gulf sturgeon is an anadromous fish that migrates from salt water into coastal rivers to spawn and spend the warm summer months. Subadults and adults typically spend the three to four coolest months of the year in estuaries or Gulf waters foraging before migrating into the rivers. This migration typically occurs from mid-February through April. Most adults arrive in the rivers when temperatures reach 21 degrees Celsius and would spend eight to nine months each year in the rivers before returning to estuaries or the Gulf of Mexico by the beginning of October. Thus, the Gulf sturgeon spends the majority of its life in fresh water (USFWS and Gulf States Marine Fisheries Commission [GSMFC] 1995). Spawning takes place in upper river reaches and appears to be river-specific. After spawning, most adults move downstream to summer holding or resting areas. Eggs are demersal and adhesive, tending to sink and adhere to the bottom (USFWS and GSMFC 1995). Spawning areas require clean cobble substrate or gravel to which eggs can adhere and in which developing larvae can find shelter (USFWS and NMFS 2003).

Subadult and adult Gulf sturgeon do not feed significantly in freshwater; instead, they rely almost entirely on estuarine and marine areas for feeding. Young-of-the-year and juveniles feed mostly in the riverine environment (USFWS and NMFS 2003). The diet of the Gulf sturgeon consists predominantly of invertebrates; the types and sizes consumed vary with life history stage and annual migration. Juveniles consume amphipods, isopods, annelid worms, aquatic insects, small bivalves, and small shrimp. Subadults also consume mud or ghost shrimp. Adults in estuaries and coastal waters consume mainly amphipods, isopods, gastropods, brachiopods, polychaete worms, lancelets, and shrimp (USACE 2006a).

Critical habitat identifies specific areas that have been designated as essential to the conservation of a listed species. Critical habitat units (areas) designated for the Gulf sturgeon in Louisiana include the eastern half of Lake Pontchartrain east of the causeway, Lake Catherine, Lake Borgne, out into the Mississippi Sound (USACE 2006a). Studies conducted by the LDWF have shown the presence of Gulf sturgeon in Lake Pontchartrain during the winter and during periods of migration between marine and riverine environments. Most records of Gulf sturgeon from Lake Pontchartrain have been located east of the causeway, particularly on the eastern north shore. Gulf sturgeon have also been documented west of the causeway, typically near the mouths of small rivers (USFWS and NMFS 2003).

Kemp's Ridley, Loggerhead, Green and Sea Turtles

Sea turtles are air-breathing reptiles with large flippers and streamlined bodies. They inhabit tropical and subtropical marine and estuarine waters around the world. Of the seven species in the world, six occur in waters of the U.S., and all are listed as threatened or endangered. The three species potentially occurring in Lake Pontchartrain and Lake Borgne in the vicinity of the mitigation projects have a similar appearance, though they differ in maximum size and coloration. The Kemp's ridley sea turtle is the smallest sea turtle – adults average about 100 pounds with a carapace length of 24 to 28 inches and a shell color that varies from gray in young individuals to olive green in adults. The loggerhead sea turtle is the next largest of these three species – adults average about 250 pounds with a carapace length of 36 inches and a reddish brown shell color. The green sea turtle is the largest of these three species – adults average 300 to 350 pounds with a length of more than 3 feet and a brown coloration (its name comes from its greenish colored fat). The Kemp's Ridley has a carnivorous diet that includes fish, jellyfish, and mollusks. The loggerhead has an omnivorous diet that includes fish, jellyfish, mollusks, crustaceans, and aquatic plants. The green has a herbivorous diet of aquatic plants, mainly sea grasses and algae, which is unique among sea turtles. All three species nest on sandy beaches, which are not present near Lake Pontchartrain. The life stages that may occur in Lake Pontchartrain and Lake Borgne range from older juveniles to adults.

3.2.3.3.3 Joyce - 1,126.1 Acres, 195 AAHU's**, Albania South –** up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

See section 3.2.2.3.1

3.2.3.4 Fisheries, Aquatic Resources and Water Quality

3.2.3.4.1 Pine Island - 1,965 Acres, 775 AAHU's

The NMFS has determined that Lake Pontchartrain 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 MSFCMA by the Gulf of Mexico Fishery Management Council (e.g.,

mackerel, snapper, and grouper) and highly migratory species managed by NMFS (e.g., billfish and shark).

The existing submerged aquatic vegetation and shallow open water within the project area, and adjacent wetlands, provide important estuarine fisheries habitat, 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 opportunities a wide variety of finfish and shellfish (Rounsefell, 1964; Penland et al., 2002).

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, blue crab, white shrimp, blue catfish, largemouth bass and striped mullet are present in the project area. During high-salinity periods, more salt-tolerant species such as sand seatrout, spotted seatrout, black drum, red drum, Atlantic croaker, sheepshead, southern flounder, Spanish mackerel, and brown shrimp 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, sheepshead minnow, sailfin molly, grass shrimp 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.

3.2.3.4.2 Joyce - 1,126.1 Acres, 195 AAHU's
The fisheries and aquatic resources in the Joyce project area is very similar to that discussed for Pine Island. See section 3.3.4.4.1

3.2.3.4.3 Albania South – up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

See section 3.2.2.4.1

3.2.3.5 Essential Fish Habitat

3.2.3.5.1 Pine Island - 1,965 Acres, 775 AAHU's, and **Joyce -** 1,126.1 Acres, 195 AAHU's
These projects are located within an area identified as essential fish habitat for postlarval/juvenile brown shrimp; postlarval/juvenile white shrimp; and postlarval/juvenile and adult red drum. The 2005 generic amendment of the FMP 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.

3.2.3.5.2 Albania South – up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

These project areas contain no EFH.

3.2.3.6 Cultural Resources

3.2.3.6.1 Pine Island - 1,965 Acres, 775 AAHU's, **Joyce -** 1,126.1 Acres, 195 AAHU's**, Albania South –** up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

See Table 3-4.

3.2.3.7 Recreational Resources

3.2.3.7.1 Pine Island - 1,965 Acres, 775 AAHU's

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.

3.2.3.7.2 Joyce - 1,126 Acres, 195 AAHU's

Conditions are similar to those discussed for the Pine Island project to a lesser degree due to access limited to boat traffic only to the surrounding Joyce Wildlife Management Area.

3.2.3.7.3 Albania South - up to 192.1 Acres, 76 AAHU's

This project area has the same conditions as referenced in Albania North.

3.2.3.7.4 Albania North - up to 964.8 Acres, up to 380 AAHU's

Recreational use of the project area is moderate as few opportunities currently exist on-site with consideration to the Bayou Teche Paddle Trail. This 135 mile long paddle trail serves as a source of both consumptive and non-consumptive recreation opportunities for paddlers and boaters along the waterway. Other water based recreation resources come from the nearby Lake Fausse Pointe to the northeast.

3.2.3.7.5 Cote Blanche - up to 446 Acres, up to 180 AAHU's

Conditions are similar to those discussed for the Ascension project in section 3.2.2.7, except to a greater extent due to the site's proximity the Intracoastal Waterway to the south.

3.2.3.8 Aesthetic Resources

3.2.3.8.1 Pine Island - 1,965 Acres, 775 AAHU'sThe vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion as it transitions from the Southern Coastal Plain ecoregion.

- Existing Structures: The proposed site currently features gravel access roads used primarily for access to recreation camps. Pipeline canals and former logging canals dissect the area.

- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include natural bayous and man-made canals connecting to Lake Pontchartrain which is south of the project area.
- Land Use: Land use in the area is primarily swamp, although there are small pockets of cleared land along canals and bayous where a few recreation camps exist.
- Landform and Vegetation: The surrounding habitat is composed of a transitional swamp due to salinity infiltration. Evidence of canopy tree decline is evident and coastal prairie grasses are prominent. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site is limited to a single gravel road and boat traffic.
- Other Factors that Affect Visual Resources: User activity is limited in this region, and is primarily relegated to a small number of camp owners.

3.2.3.8.2 Joyce - 1,126 Acres, 195 AAHU's

The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion as it transitions from the Southern Coastal Plain ecoregion.

- Existing Structures: The proposed site currently features pipeline canals and former logging canals dissecting the area.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include natural bayous and man-made canals connecting to Lake Pontchartrain which is south of the project area.
- Land Use: Land use in the area is primarily swamp and is surrounded by the Joyce Wildlife Management Area.
- Landform and Vegetation: The surrounding habitat is composed of a transitional swamp due to salinity infiltration. Evidence of canopy tree decline is evident and coastal prairie grasses are prominent. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site is limited to boat traffic only.
- Other Factors that Affect Visual Resources: User activity is limited in this region due to access by boat only.

3.2.3.8.3 Albania South - up to 192.1 Acres, 76 AAHU's

This project area has the same conditions as referenced in Albania North.

3.2.3.8.4 Albania North - up to 964.8 Acres, up to 380 AAHU's

- The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.
  Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.

- Water: The Bayou Teche Paddle Trail is a 135 mile long trail through 4 parishes and 13 towns along one of the most historically and culturally significant bayous in the state. Other major water resources Lake Fausse Pointe to the northeast.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of both multi-family and single-family residential.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 87 to the south. The drive along this thoroughfare is scenic and visually interesting and is designated a Louisiana Scenic Byway by the Louisiana Department of Culture, Recreation and tourism.
- Other Factors that Affect Visual Resources: User activity is moderate in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of residential commuters.

3.2.3.8.5 Cote Blanche - up to 446 Acres, up to 182 AAHU's

- The vicinity of the project area is characteristic of the Mississippi Alluvial Plain ecoregion.
  Existing Structures: The proposed site currently features gravel access roads used primarily for farm operations.
- Water: There are no known, State designated scenic rivers or streams remotely near the project area. Other major water resources include the main channel of the Intracoastal Waterway to the south.
- Land Use: Land use in the area is primarily agricultural, although there are significant pockets of industrial.
- Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas. Overall, the habitat around the project area exhibits moderate plant species diversity and moderately high animal diversity. There are no known specifically identified protected trees or other plant materials in the immediate area.
- Access: Public visual access to the project site can be taken from Louisiana State Highway 83 through the site. The drive along this thoroughfare is scenic and visually interesting.
- Other Factors that Affect Visual Resources: User activity is limited in this region, and is primarily relegated to farm and truck traffic, though includes a small percentage of industry commuters.

3.2.3.9 Air Quality

3.2.3.9.1 Pine Island - 1,965 Acres, 775 AAHU's
The project site is located in St. Tammany Parish which is currently in attainment of all NAAQS.

3.2.3.9.2 Joyce - 1,126 Acres, 195 AAHU's

The project site is located in Tangipahoa Parish which is currently in attainment of all NAAQS.

3.2.3.9.3 Albania South - up to 192.1 Acres, 76 AAHU's

The project site is located in St. Mary Parish which is currently in attainment of all NAAQS.

3.2.3.9.4 Albania North - up to 964.8 Acres, up to 380 AAHU's

The project site is located in St. Mary Parish which is currently in attainment of all NAAQS.

3.2.3.9.5 Cote Blanche - up to 446 Acres, up to 182 AAHU's

The project site is located in St. Mary Parish which is currently in attainment of all NAAQS.

3.2.3.10 Water Quality

3.2.3.10.1 Pine Island - 1,965 Acres, 775 AAHU's

The water quality of the hydrologic unit which this project is in does not fully support one of its designated uses: Fish and Wildlife Propagation. The suspected sources of these impairments include loss of wetlands, littoral/shore area modifications, atmospheric deposition of toxins, and habitat modification. Lake Pontchartrain, the project's borrow source, is considered to fully support it designated uses.

3.2.3.10.2 Joyce - 1,126 Acres, 195 AAHU's

The water quality in the Joyce project area is very similar to that discussed for Pine Island. See section 3.2.4.10.1

3.2.3.10.3 Albania South – up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

None of these projects are located in or near any state water bodies and therefore no water quality standards or designated uses apply.

3.2.3.11 Noise

3.2.3.11.1 Pine Island - 1,965 Acres, 775 AAHU's
Pine Island has residential structures within 1,000 feet of the project. The area is adjacent to Lake Pontchartrain which is regularly used by recreational boaters. Noise is produced by occasional boat traffic.

3.2.3.11.2 Joyce - 1,126 Acres, 195 AAHU's

Joyce is located in a remote area surrounded by wetlands. Noise is produced by occasional boat traffic.

3.2.3.11.3 Albania South – up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

See section 3.2.3.11.1 and 3.2.3.11.2

3.2.3.12 Hazardous, Toxic, and Radioactive Waste

3.2.3.12.1 Pine Island - 1,965 Acres, 775 AAHU's

The project area consists of open water with no petroleum product pipelines. No oil/gas wells occur on site, no data base issues have been found within one mile of the proposed site, and no RECs have been identified. There is a low probability of encountering HTRW on this site.

3.2.3.12.2 Joyce - 1,126 Acres, 195 AAHU's
Swamp land with no petroleum product pipelines, no oil/gas wells on site, no data base issues within one mile of the proposed site, and no RECs were identified. There is a low probability of encountering HTRW.

3.2.3.12.3 Albania South - up to 192.1 Acres, up to 76 AAHU's

Agricultural land with one petroleum product pipeline and no oil/gas wells on site. Some data base issues were noted within one mile of the proposed site, but no RECs were identified. There is a low probability of encountering HTRW.

3.2.3.12.4 Albania North - up to 964.8 Acres, up to 380 AAHU's

Agricultural land with three petroleum product pipelines and four plugged and abandoned oil/gas wells on site. Some data base issues were noted within one mile of the proposed site but no RECs were identified on site. There is a low probability of encountering HTRW.

3.2.3.12.5 Cote Blanche - up to 446 Acres, up to 182 AAHU's

Agricultural land with two petroleum product pipelines on site. No oil/gas wells are present on site, some data base issues were noted within one mile of the site, but no RECs were identified. There is a low probability of encountering HTRW.

3.2.3.13 Socioeconomics/Land Use, Transportation, and Commercial Fisheries

3.2.3.13.1 Pine Island - 1,965 Acres, 775 AAHU's

This project is located in St. Tammany Parish. According to the 1990 and 2010 census, St. Tammany Parish had a 62% increase in their total population. For the future forecasted, even though the population grows, the growth is at much lower rate. The per person income in this

Parish was at around $46,995 in the 2010 census and this number is expected to rise to $72,842 by 2020. With higher population and an increasing population, the income per capita increase is also at a higher percentage. The Total proprietor profits increased from 454.03 mil to 1.1 billion by the year 2010 when looked at the 1990 and 2010 census. This rate of change is expected to be similar up to the year 2040. The farm use will continue to be very minimal in the earnings of the St. Tammany Parish. With a high population and steady growth, St. Tammany Parish has a bright future in economics standpoint. Access to this area would be via Guste Island Road, Grand Rue Port Louis Road and South Chenier Drive. Economically important fisheries associated with this project area include fisheries of blue crab, crawfish, blue catfish, and channel catfish.

3.2.3.13.2 Joyce - 1,126 Acres, 195 AAHU's

This project is located in Tangipahoa Parish. In 1990 Tangipahoa Parish had approximately 86,000 citizens residing in the Parish and this number increased by 42% by 2010 to be at 121,000. This Parish is forecasted to have a 10% more growth in their population from 2010 to 2030. With the increasing population, the income per capita also drastically increased. The income per capita was at $12,716 in 1990 and increased by 178% by 2010 and is also forecasted to increase 69% more from 2010 to 2030. Although income generated from Farm profits were around $13 million in 1990, farm activities in this Parish hit an all-time low in 2010 generating a loss of $2.26 million. A 117% decrease of farm profits from 1990 to 2010 and this is why we can contribute the increase in per capita income solely on non-farm proprietor profits in this Parish. Access to this area is unknown at this time.

3.2.3.13.3 Albania South - up to 192.1 Acres, 76 AAHU's

This project is located in St. Mary Parish. See Albania North above. The potential haul roads for this area would be US 90 and LA 182. Annual Average Daily Traffic (AADT) for these roadways in 2014 was 22,496 and 4,229, respectively.

3.2.3.13.4 Albania North - up to 964.8 Acres, up to 380 AAHU's

St. Mary Parish recorded the highest percentage increase in their Income per capita even though they had a decreasing population. In 1990, St. Mary had 58,000 citizens in their Parish and this number was decreased by 6% from 1990 to 2010 and is expected to decrease 5% more from 2010 to 2030. This increase in their income is contributed to the increase in nonfarm proprietor profits. It is projected that their farming practices will turn out to be negative in the future. They will need to alter their farming practices to utilize their usable farmland in a way that generates more profit. The potential haul roads for this area would be US 90 and LA 182. Annual Average Daily Traffic (AADT) for these roadways in 2014 was 22,496 and 4,229, respectively. The potential haul road for this area would be LA 84. Annual Average Daily Traffic (AADT) for this roadway in 2017 was 484.

3.2.3.13.5 Cote Blanche - up to 446 Acres, up to 182 AAHU's

This project is located in St. Mary Parish. See Albania North above. The potential haul road for this area would be LA 83. Annual Average Daily Traffic (AADT) for this roadway in 2017 was 540.

3.2.3.14 Prime and Unique Farmlands

3.2.3.14.1 Pine Island - 1,965 Acres, 775 AAHU's, and **Joyce -** 1,126 Acres, 195 AAHU's

These projects occur in open water and existing wetlands and therefore contain no prime or unique farmlands.

3.2.3.14.2 Albania South – up to 192.1 Acres, up to 76 AAHUs**, Albania North –** up to 964.8 Acres, up to 380 AAHUs**, Cote Blanche –** up to 446 Acres, up to 182 AAHUs

All of these projects contain prime or unique farmlands.

4. ENVIRONMENTAL CONSEQUENCES OF THE FINAL ARRAY OF MITIGATION PROJECTS

4.1 INTRODUCTION

This section describes the direct, indirect and cumulative effects of mitigation projects individually. Chapters 5 and 6 describe the direct, indirect and cumulative effects of the projects, which consist of the combination of projects that fulfill the whole mitigation need incurred by the BBA Construction Projects. Table 4-1 shows those significant resources found within the study area, and notes whether they would be impacted by implementation of the projects. The period of impact analysis begins when project construction is complete and generally extends for 50 years for USACE projects.

Direct impacts are those that are caused by the action taken and occur at the same time and place (40 CFR §1508.8(a)). Indirect impacts are those that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR §1508.8(b)). Cumulative impacts are the effects on the environment that result from the incremental impact of the proposed project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions.

Pine Island, Joyce and Amite are the only projects among the alternatives that would potentially affect fisheries and aquatic resources and Pine Island is the only project that would potentially affect Navigation, commercial fisheries, and Essential Fish Habitat. Since no other projects would include potential impacts to the aforementioned resources, those resources will only be discussed for the Pine Island, Joyce and Amite projects. Amite is the only project that includes Natural and Scenic Rivers and will therefore be the only project that discusses that resource. Water quality will only be discussed for Pine Island, Joyce and Amite as they are the only projects within or adjacent to state water bodies.

The Environmental Justice team analyzed the BBA mitigation sites and determined that the type of construction activities taking place at the mitigation sites would not cause high, adverse impacts to any communities that are in the vicinity of the action nor would there be permanent high, adverse impacts to communities. For these reasons, EJ will not be further discussed.

Construction activities associated with swamp and BLH mitigation projects in rural settings, typically include the construction of new gravel access roads, degrading surface areas to a depth of .5ft to 1.5ft (+/- 0.5ft), backfilling of existing ponds (site specific), minor grading to ensure positive drainage, harrowing soil to receive planting, and planting of canopy and mid-story plant species. Impacts to surrounding communities include noise from equipment that is used to prepare sites for plant materials and the movement of trucks to deliver and remove debris. Noise from construction activities would be temporary. There would be short term impacts to traffic during construction, which are not expected to be significant.

Best Management Practices (BMP) would be implemented during construction to reduce or minimize any potential impacts. Project impacts to air quality are not expected to be high and averse, and for mitigation sites that are in a Parish that has been designated as a NAAQS

maintenance area for ozone or other emissions, a conformity determination has been completed to estimate the amount of VOC and NOx emissions that may be generated during the project. Otherwise, site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. Beneficial long-term impacts could be felt by the nearby communities and include beneficial impacts to water quality and other resources due to the creations of wetlands as agricultural lands and open water would be converted to forested wetland habitat.

4.2 MITIGATION PROJECTS BY HABITAT TYPES

The mitigation projects examined here are based on their description found in section 2.5 and Appendix G. The use of mitigation banks and constructed mitigation projects are proposed. The mitigation projects are grouped by the type of habitat being mitigated, whether they are in or out of the LPB and/or MSRB and/or in or out of the Coastal Zone.

4.2.1 BLH-WET IN COASTAL ZONE

4.2.1.1 Wetlands and other Surface Waters

4.2.1.1.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 wetlands and other surface waters would be incurred from the purchase of these credits for the BBA Construction mitigation. However, this project could result in the permanent loss of up to 99 AAHUs of BLH-Wet habitat within the LPB if some or all of the mitigation credit purchases take place outside of that basin.

4.2.1.1.2 Saint John - 94.7 Acres, 42 AAHU's

Direct Impacts
There would be a beneficial impact to wetlands as approximately 94.7 acres of agricultural land would be converted to BLH-Wet habitat.

Indirect Impacts and Cumulative Impacts
Implementation of this project would prevent an overall loss in the basin of BLH-Wet habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin would help retard the loss of wetlands.

4.2.1.1.3 Albania South – UP to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts

This project would result in the same impacts as discussed for the Saint John project except to a greater degree. However, this project would result in the permanent loss of 96 AAHUs of BLH-Wet habitat within the LPB as the mitigation would take place outside of that basin. This loss could reduce the overall wetland habitat in the LPB to a degree, but increase it within the Mississippi Alluvial Plain. Implementation of this project would prevent an overall loss in the study area of BLH-Wet habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the study area would help retard the loss of wetlands.

4.2.1.1.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.1.1.5 Cote Blanche – Max of 176 Acres, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project except to a lesser degree.

4.2.1.2 Wildlife

4.2.1.2.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 wildlife would be incurred from the purchase of these credits for the BBA Construction mitigation. However, this project could result in the permanent loss of 99 AAHUs of BLH-Wet habitat within the LPB if the mitigation takes place outside of that basin.

4.2.1.2.2 Saint John - 94.7 Acres, 42 AAHU's

Direct Impacts
Approximately 94.7 acres of agricultural field would be converted back to forested wetlands, its historic condition. Wildlife present at the time of construction would be temporarily displaced to adjacent habitats due to noise, movement and vibration. Some slower moving animals (e.g. moles and snakes) may experience demise during construction. It is anticipated that displaced animals would return once construction is complete and that the construction of high quality forested wetland habitat would provide additional area for the expansion of existing wildlife populations.

Indirect Impacts

With the restoration of approximately 94.7 acres BLH-Wet habitat, species that historically populated the area, and currently populate the adjacent/nearby forested areas, would again utilize the area. Wildlife abundance and diversity would increase in the area as a monoculture of agricultural crops would be replaced by a diversity of BLH-Wet species that would provide a variety of ecological niches for colonization. If bald eagle nests are discovered near the site, the National Bald Eagle Management Guidelines (Appendix J) would be followed during construction to avoid and minimize impacts to this species.

Cumulative Impacts
This project would prevent an overall loss in the basin of BLH-Wet habitat necessary for many wildlife species. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin, would help retard the loss of wetlands and overall decline of wildlife species within the basin and would be beneficial to preserving species bio-diversity.

4.2.1.2.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project except to a greater degree. However, the LPB, where the BBA Construction Projects impacts occurred, would suffer from the permanent loss of 96 AAHUs of wildlife habitat as the mitigation would take place outside of that basin. This loss could reduce the overall wildlife populations in the LPB to a degree, but increase them within the Mississippi Alluvial Plain.

4.2.1.2.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.1.2.5 Cote Blanche – Max of 176 Acres, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project except to a lesser degree.

4.2.1.3 Threatened and Endangered Species

4.2.1.3.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 threatened and endangered

species would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.3.2 Saint John - 94.7 Acres, 42 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.1.3.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.1.3.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.1.3.5 Cote Blanche - Max of 176 Acres, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.1.4 Cultural Resources

CEMVN has determined that the proposed action constitutes an Undertaking as defined in 36 CFR § 800.16(y) and has the potential to cause effects on historic properties. Based on the aforementioned identification and evaluation, CEMVN has determined that there are multiple historic properties as defined in 36 CFR 800.16(l) within the APE (Table 3-3). At the present time it remains undetermined if many of the previously identified archaeological deposits are eligible for inclusion in the NRHP. Furthermore, several of the individual proposed TSP mitigation areas possess a high potential to contain additional un-recorded deposits and identification and evaluation for these properties is ongoing. Therefore, CEMVN has determined that that the proposed undertaking includes ground disturbing activities that have the potential to effect historic properties in a way that would directly or indirectly affect the characteristics that make the property eligible for the NRHP. However, no determination of effect under the NHPA pursuant to 36 CFR 800.4(d) is being made at this time. Following the completion of identification and evaluation for each individual property, CEMVN would consider ways to revise the Scope of Work (SOW) to substantially conform to the standards, and/or avoid or minimize adverse effects for NR listed or eligible historic properties and/or sites of religious or cultural Tribal significance.

At the feasibility level, there is insufficient funding and time to fully conduct all required NHPA cultural resources identification and evaluation and to determine any necessary avoidance, minimization, or mitigation measures in consultation with stakeholders and the agency is mandated by law to make a final decision on this undertaking within a timeframe that cannot accommodate the "Standard" Section 106 process described in Section 3.2.1.6. As the federal agency cannot fully determine how the undertaking may affect historic properties, the location of historic properties, or their significance and character at the present time [36 CFR § 800.14(b)(1)(ii)], prior to approving the undertaking, the agency is proposing to develop a project-specific programmatic agreement (PA) pursuant to 36 CFR § 800.14(b) in consultation with stakeholders in furtherance of CEMVN's Section 106 responsibilities for this undertaking (also see Appendix I).

The goal of this Section 106 consultation is to provide a framework for addressing this undertaking and establish protocols for continuing consultation with the LA SHPO, Tribal governments, and other stakeholders. The PA would identify consulting parties, define applicability, establish review timeframes, stipulate roles and responsibilities of stakeholders, summarize Tribal consultation procedures, consider the views of the SHPO/THPO and other consulting parties, afford for public participation, develop programmatic allowances to exempt certain actions from Section 106 review, outline a standard review process for plans and specifications as they are developed, provide the measures CEMVN would implement to revise the APE in consultation with external stakeholders if necessary, determine an appropriate level of field investigation to identify and evaluate historic properties within the APE and determine the potential to affect historic properties and/or sites of religious and cultural significance, streamline the assessment and resolution of Adverse Effects through avoidance, minimization, and programmatic treatment approaches for mitigation, establish reporting frequency and schedule, provide provisions for post-review unexpected discoveries and unmarked burials, and incorporate the procedures for amendments, duration, termination, dispute resolution, and implementation. The PA will be executed prior to the conclusion of the NEPA process. The PA would then govern CEMVN's subsequent NHPA compliance efforts.

4.2.1.4.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 cultural resources would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.4.2 Saint John – 94.7 Acres, 42 AAHU's, **Albania South –** Up to 192.1 Acres, up to 96 AAHU's, **Albania North-** Max of 657 Acres, max of 343 AAHU's, **Cote Blanche -** Max of 176 Acres, max of 102 AAHU's

For all proposed mitigation projects, CEMVN would follow its Section 106 procedures, described in Section 4.2.1.4, if this proposed project is carried forward as the TSP plan. Activities associated with this project have the potential to directly impact existing and

previously undocumented cultural resources that may exist within the project area. The CEMVN is developing a Programmatic Agreement with the LA SHPO, the Advisory Council on Historic Preservation, Federally recognized Indian Tribes, and other interested parties outlining the steps needed to identify and evaluate cultural resources and complete the Section 106 process. If significant historic properties are identified within the project area, strategies will be developed to avoid those resources or to minimize or mitigate for adverse effects.

4.2.1.5 Recreational Resources

4.2.1.5.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 recreational resources would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.5.2 Saint John - 94.7 Acres, 42 AAHU's

Direct and Indirect Impacts
Flora and fauna that historically populated the area, and currently populate the adjacent/nearby forested areas, would again be established on the area once construction of this project is complete. Recreational resources such as wildlife viewing would be created as few opportunities for recreation currently exist on this site.

Cumulative Impacts
Recreational opportunities would continue to increase on the site as the habitat matures over time and would be maintained with perpetual conservation of the site. Other similar activities in the vicinity have and would continue to affect recreational quality in the region. Projects of this scope would serve to impact the region in a positive way by contributing renewed natural scenery and wildlife habitat which promote recreation opportunities.

4.2.1.5.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project except to a greater degree.

4.2.1.5.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project except to a greater degree.

4.2.1.5.5 Cote Blanche - Max of 176, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project except to a greater degree.

4.2.1.6 Aesthetic Resources

4.2.1.6.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 aesthetics would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.6.2 Saint John - 94.7 Acres, 42 AAHU's

Direct and Indirect Impacts
The visual resources of the site would be temporarily impacted by construction activities related to implementing the proposed action and by transport activities needed to move equipment and materials to and from the site. However, this temporary impact would most likely affect visual resources from the immediate roadway. Flora and fauna that historically populated the area, and currently populate the adjacent/nearby forested areas, would again be established on the area. The pastoral and agricultural viewsheds from the immediate roadway would be replaced with native forests rich with biodiversity.

Cumulative Impacts
Visual resources to would continue to increase on the site as the habitat matures over time and would be maintained with perpetual conservation of the site. Other similar activities in the vicinity have and would continue to affect visual quality in the region. Projects of this scope would serve to impact the region in a positive way by contributing renewed natural scenery and wildlife habitat in significant contrast to man-made land use patterns that involve stripping natural landscape features.

4.2.1.6.3 Albania South – Up to 192.2, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project except to a greater degree.

4.2.1.6.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project except to a greater degree.

4.2.1.6.5 Cote Blanche - Max of 176, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project except to a greater degree.

4.2.1.7 Air Quality

4.2.1.7.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 air quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.7.2 Saint John - 94.7 Acres, 42 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.1.7.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.1.7.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently

would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.1.7.5 Cote Blanche - Max of 176 Acres, max of 102 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.1.8 Noise

4.2.1.8.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 noise quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.8.2 Saint John - 94.7 Acres, 42 AAHU's

Direct Impacts and Indirect Impacts
Construction equipment necessary for the initial project construction phase would include dump trucks, bulldozers, tractors, graders, and similar equipment. Appendix B, Table B-19 presents the noise emission levels for construction equipment expected to be used during the proposed construction activities. This table shows the anticipated noise levels at various ranges based on data from the Federal Highway Administration (FHWA 2006). Noise levels may result in

wildlife avoiding the project area during construction; however, movement of equipment during construction would result in the same avoidance behaviors from wildlife species. Nearby residences could experience higher than ambient noise levels during construction, however these levels would be temporary during the period of construction and would be limited to daylight hours.

Cumulative Impacts
Construction of this project is not anticipated to add significantly to the cumulative effect of noise in the WBV basin as the construction activities would be temporary during the period of construction, restricted to daylight hours and avoidance of the project area by wildlife normally occurs from the movement of agricultural machinery in the area even without the additional noise.

4.2.1.8.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.1.8.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.1.8.5 Cote Blanche - max of 176 Acres, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
Noise impacts to wildlife would be the same as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree. Noise levels would not result in impacts to the human environment as the area is surrounded by agricultural land and industry.

4.2.1.9 Hazardous, Toxic, and Radioactive Waste

4.2.1.9.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 due to HTRW would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.9.2 Saint John - 94.7 Acres, 42 AAHU's

Direct, Indirect, and Cumulative Impacts
One petroleum pipeline is located within the mitigation site boundaries. No wells or well pits were identified on site. Impacts to pipelines would be avoided. Due to construction methods, there is a low probability of encountering HTRW.

4.2.1.9.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
One pipeline was identified on site. Impacts to pipelines would be avoided. Due to construction methods there is a low probability of encountering HTRW.

4.2.1.9.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
Three pipelines, four abandoned wells, and two well pits were identified on site. Impacts to pipelines would be avoided. Due to construction methods, there would be a slight probability of encountering substances of concern or petroleum products in the soil near these wells. A site investigation would be conducted prior to final design and HTRW would be avoided to the extent practicable.

4.2.1.9.5 Cote Blanche - Max of 176 Acres, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
Two pipelines were identified on site. No wells were identified on site. Impacts to pipelines would be avoided. Due to construction methods, there is a low probability of encountering HTRW.

4.2.1.10 Socioeconomics/Land Use and Transportation

4.2.1.10.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 socioeconomics would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.10.2 Saint John - 94.7 Acres, 42 AAHU's

Direct, Indirect, and Cumulative Impacts
This project consists of up to approximately 94.7 acres of BLH-Wet creation, located on existing agricultural fields. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by

less than 0.5 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic during construction is expected to be less than 0.3 percent and is not considered significant.

4.2.1.10.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
This project involves creation of up to approximately 192.1 acres of BLH-Wet Habitat on existing agricultural lands. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.24 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 2 percent and is not considered significant.

4.2.1.10.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
This project involves creation of up to approximately 657 acres of BLH-Wet Habitat on existing agricultural lands. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.45 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 21 percent.

4.2.1.10.5 Cote Blanche - Max of 176 Acres, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
This project involves creation of up to approximately 176 acres of BLH-Wet Habitat on existing agricultural lands. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.56 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 19 percent

4.2.1.11 Prime and Unique Farmlands

4.2.1.11.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 99 AAHUs. The particular 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 prime and unique farmlands would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.1.11.2 Saint John - 94.7 Acres, 42 AAHU's

Direct Impacts
Approximately 94.7 acres of prime farmland would be impacted by this project. Once the site is developed for mitigation, this area could not be used as productive farmland in the future.

Indirect Impacts
Since the majority of the project area is presently under agricultural use, current agricultural production in the parish would be affected and would be expected to decrease minimally.

Cumulative Impacts
The implementation of this project would affect approximately 94.7 acres of prime farmland. The cumulative impacts to prime farmlands would be the impacts of the proposed project combined with other losses of prime farmland soils resulting from natural processes and development in the project parishes. A negligible adverse effect on agricultural production in the parishes would occur due to the small amount of prime farmland affected.

4.2.1.11.3 Albania South – Up to 192.1 Acres, up to 96 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource, except to a greater degree except to a greater degree.

4.2.1.11.4 Albania North- Max of 657 Acres, max of 343 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource, except to a greater degree except to a greater degree.

4.2.1.11.5 Cote Blanche - Max of 176 Acres, max of 102 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource, except to a greater degree except to a greater degree.

4.2.2 BLH-WET OUT OF COASTAL ZONE

4.2.2.1 Wetlands and other Surface Waters

4.2.2.1.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 wetlands and other

surface waters would be incurred from the purchase of these credits for the BBA Construction mitigation. However, this project could result in the permanent loss of up to 702 AAHUs of BLH-Wet habitat within the LPB/MSRB if some or all of the mitigation takes place outside of those basin.

4.2.2.1.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.6 Ascension - 55.8 Acres, 29 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
There would be a beneficial impact to wetlands within the project area as approximately 147.2 acres of low quality scrub shrub habitat would be replaced with approximately 147.2 acres of

high quality forested wetlands. However, this project would result in the permanent loss of 73 AAHUs of BLH-wet habitat within the LPB/MSRB as the mitigation would take place outside of that basin. This loss could reduce the overall wetland habitat in the LPB/MSRB to a degree, but increase it within the Mississippi Alluvial Plain. Implementation of this project would prevent an overall loss in the study area of BLH-Wet habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the study area would help retard the loss of wetlands.

4.2.2.1.9 TPSB - 483.8 Acres, 248 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project for this resource in section 4.2.1, except to a greater degree.

4.2.2.1.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2 Wildlife

4.2.2.2.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 wildlife would be incurred from the purchase of these credits for the BBA Construction mitigation. However, this project could result in the permanent loss of up to 702 AAHUs of BLH-Wet habitat within the LPB/MSRB if some or all of the mitigation takes place outside of that basin.

4.2.2.2.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.6 Ascension - 55.8 Acres, 29 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree since the site is larger and being managed to maintain shrub scrub habitat for game birds and would be converted to forested wetlands. Once construction is complete, those species that also utilize forested wetlands would return to the site. Other species would be forced to permanently relocate to adjacent suitable habitat. The LPB/MSRB, where the BBA Construction Projects impacts occurred, would suffer from the permanent loss of 73 AAHUs of wildlife habitat as the mitigation would take place outside of that basin. This loss could reduce the overall wildlife populations in the LPB/MSRB to a degree, but increase them within the Mississippi Alluvial Plain.

4.2.2.2.9 TPSB - 483.8 Acres, 248 AAHU's

Direct, Indirect, and Cumulative Impacts

This project would result in the same impacts as discussed for the Albania South project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Albania South project for this resource in section 4.2.1, except to a greater degree.

4.2.2.3 Threatened and Endangered Species

4.2.2.3.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 threatened and endangered species would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.3.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.4 Amite - 368.6 Acres, 236 AAHU's

Direct Indirect Cumulative Impacts
The only listed species that may be found in the project area is the inflated heelsplitter. However, the Amite sites are located on land and no activities would take place within the river. Consequently, no effects to the inflated heelsplitter are anticipated. Best management practices

would be implemented to prevent or minimize any material due to construction activities from entering the river. Converting the open areas to forested wetlands could reduce erosion which causes sedimentation in the river. This potential reduction in sedimentation could provide an indirect benefit to the heelsplitter.

4.2.2.3.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.6 Ascension - 55.8 Acres, 29 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.9 TPSB - 483.8 Acres, 248 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.3.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts

None of the listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.2.4 Cultural Resources

4.2.2.4.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 cultural resources would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.4.2 Feliciana – 267 Acres, 156 AAHU's**, GBRPC –** 134.9 Acres, 54 AAHU's**, Amite –** 368.6 Acres, 236 AAHU's**, St. James –** 1,246 Acres, 676 AAHU's, **Ascension** – 55.8 Acres, 29 AAHUs, **Gravity –** 75.2 Acres, 40 AAHUs, **Krotz -** 147.2 Acres, 73 AAHU's**, TPSB -** 483.8 Acres, 248 AAHU's**, Rosedale-** 224.8 Acres, 113 AAHU's**, Sunset Ridge -** 324 Acres, 168 AAHU's

CEMVN would follow its Section 106 procedures, described in Section 4.2.1.4, if this proposed project is carried forward as the TSP plan. Activities associated with this project have the potential to directly impact existing and previously undocumented cultural resources that may exist within the project area. The CEMVN is developing a Programmatic Agreement with the LA SHPO, the Advisory Council on Historic Preservation, Federally recognized Indian Tribes, and other interested parties outlining the steps needed to identify and evaluate cultural resources and complete the Section 106 process. If significant historic properties are identified within the project area, strategies will be developed to avoid those resources or to minimize or mitigate for adverse effects.

4.2.2.5 Recreational Resources

4.2.2.5.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the LPB/MSRB to mitigate up to 702 AAHUs. The particular 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 recreational resources would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.5.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts

This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.5.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct and Indirect Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree. Existing recreational resources would be enhanced with consideration to the adjacent Parish of East Baton Rouge's (BREC) Farr Park Equestrian Center and Recreational Vehicle Campground.

Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.5.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.5.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.6 Ascension - 55.8 Acres, 29 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree. The site is larger and being managed to maintain shrub scrub habitat for game birds and would be converted to forested wetlands. The wildlife species that currently utilize the area would be forced to relocate to adjacent habitat.

Once construction is complete, those species that also utilize forested wetlands would return to the site. Other species would be forced to permanently relocate to adjacent suitable habitat.

4.2.2.2.9 TPSB - 483.8 Acres, 248 AAHU's

Direct and Indirect Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree. Existing recreational resources would be enhanced with consideration to the adjacent Parish of West Baton Rouge's Erwinville Community and Recreation Center.

Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.2.6 Aesthetic Resources

4.2.2.6.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 aesthetics would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.6.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.6.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct and Indirect Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree. Existing aesthetic resources would be enhanced with consideration to the adjacent Parish of East Baton Rouge's (BREC) Farr Park Equestrian Center and Recreational Vehicle Campground.

Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.6.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.6.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.6 Ascension - 55.8 Acres, 29 AAHU's

This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.7 Gravity - 75.2 Acres, 40 AAHU's

This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.9 TPSB - 483.8 Acres, 248 AAHU's

Direct and Indirect Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree. Existing aesthetic resources would be enhanced with consideration to the adjacent Parish of West Baton Rouge's Erwinville

Community and Recreation Center. The outdoor recreation amenities would be enclosed within a lush forest backdrop, tremendously adding to the visual quality of the area.

Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.7 Air Quality

4.2.2.7.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 air quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.7.2 Feliciana - 267 Acres, 156 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts

There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.7.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem.

The project is in a parish that has been designated as a NAAQS maintenance area for ozone, therefore, a conformity determination has been completed to estimate the amount of VOC and NOx emissions that may be generated during the project. The total anticipated VOC emissions are less than one ton and the total NOx emissions are approximately five to six tons, all of which are less than CAA *de minimis* emission levels.

Indirect Impacts
The indirect impacts to air quality in the parish due to the construction of the proposed action would be temporary and the air quality would likely return to pre-construction levels shortly after project completion.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.7.4 Amite - 368.6 Acres, 236 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly

after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.7.5 St. James - 1,246 Acres, 676 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.2.6 Ascension - 55.8 Acres, 29 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

The project is in a parish that has been designated as a NAAQS maintenance area for ozone, therefore, a conformity determination has been completed to estimate the amount of VOC and NOx emissions that may be generated during the project. The estimated totals of VOC and NOx emissions are each less than one ton respectively and are less than CAA *de minimis* emissions levels.

Indirect Impacts
The indirect impacts to air quality in the parish due to the construction of the proposed action would be temporary and the air quality would likely return to pre-construction levels shortly after project completion.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.2.7 Gravity - 75.2 Acres, 40 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

The project is in a parish that has been designated as a NAAQS maintenance area for ozone, therefore, a conformity determination has been completed to estimate the amount of VOC and NOx emissions that may be generated during the project. The estimated total of VOC emissions is approximately one ton and the estimated total of NOx emissions is approximately seventeen tons. Both VOC and NOx emissions would be less than CAA *de minimis* emission levels.

Indirect Impacts
The indirect impacts to air quality in the parish due to the construction of the proposed action would be temporary and the air quality would likely return to pre-construction levels shortly after project completion.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.2.8 Krotz - 147.2 Acres, 73 AAHU's

Direct Impacts

During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.2.9 TPSB - 483.8 Acres, 248 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

The project is in a parish that has been designated as a NAAQS maintenance area for ozone, therefore, a conformity determination has been completed to estimate the amount of VOC and NOx emissions that may be generated during the project. The total VOC emissions are approximately three tons and the total NOx emissions are approximately eighty two tons, less than CAA *de minimis* emissions levels.

Indirect Impacts
The indirect impacts to air quality in the parish due to the construction of the proposed action would be temporary and the air quality would likely return to pre-construction levels shortly after project completion.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.2.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

The project is in a parish that has been designated as a NAAQS maintenance area for ozone, therefore, a conformity determination has been completed to estimate the amount of VOC and NOx emissions that may be generated during the project. The total VOC emissions are approximately three tons and the total NOx emissions are approximately seventy five tons, less than CAA *de minimis* emissions levels.

Indirect Impacts
The indirect impacts to air quality in the parish due to the construction of the proposed action would be temporary and the air quality would likely return to pre-construction levels shortly after project completion.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.2.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.
Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts

Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.2.8 Water Quality

4.2.2.8.1 Mitigation Banks

As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 water quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.8.2 Amite - 368.6 Acres, 236 AAHU's

Although this project is adjacent to the Amite River which supports several designated uses, none of the work would take place within the river and therefore would not impact the water quality of state water bodies. Best management practices would be implemented to prevent or minimize any material due to construction activities from entering the river. Wetlands act as filtering systems removing sediment, nutrients and pollutants from water thereby helping sustain the water quality. The Amite project would be of benefit to water quality by restoring these functions to the area and therefore potentially enhancing water quality of the adjacent Amite River.

4.2.2.9 Noise

4.2.2.9.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 noise would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.9.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.9.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct, Indirect, and Cumulative Impacts

This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.9.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.9.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
Noise impacts to wildlife would be the same as discussed for the Saint John project in section 4.2.1. Noise levels would not result in impacts to the human environment as the project site is surrounded by agricultural land and industry.

4.2.2.9.6 Ascension - 55.8 Acres, 29 AAHU's

Direct and Indirect Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.9.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.9.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
Noise impacts to wildlife would be the same as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree. Noise levels would not result in impacts to the human environment as the closest residential area is approximately 500 feet from the project site and is buffered by existing forest.

4.2.2.9.9 TPSB - 483.8 Acres, 248 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.9.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts

This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.9.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.10 Hazardous, Toxic, and Radioactive Waste

4.2.2.10.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 due to HTRW waters would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.10.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
No RECs were identified on the site. No pipelines, wells, or well pits were identified on site. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct, Indirect, and Cumulative Impacts
No RECs were identified on the site. No pipelines, wells, or well pits were identified on the site. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
No RECs were identified on the site. No pipelines, wells, or well pits were identified on the site. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
There are several pipelines and abandoned wells within and near the proposed mitigation area. Due to construction methods, there would be a slight probability of encountering substances of concern or petroleum products in the soil near these wells. An HTRW investigation would be conducted prior to final design and any RECs would be avoided.

4.2.2.10.6 Ascension - 55.8 Acres, 29 AAHU's

Direct, Indirect, and Cumulative Impacts
Two petroleum pipelines are located within the mitigation site boundaries. No wells or well pits were identified on site. Impacts to pipelines would be avoided. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
One petroleum pipeline is located within the mitigation site boundaries. No wells or well pits were identified on site. Impacts to pipelines would be avoided. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
No RECs were identified on site. No pipelines, oil wells, or well pits were identified on site. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.9 TPSB - 483.8 Acres, 248 AAHU's

Direct, Indirect, and Cumulative Impacts
Two pipelines were identified on site. No wells or well pits were identified on site. Impacts to pipelines would be avoided. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts
No RECs were identified on site. No pipelines, oil wells, or well pits were identified on site. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.10.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts
No pipelines were identified on site. Two abandoned wells were identified on site. Due to construction methods, there is a low probability of encountering HTRW.

4.2.2.11 Socioeconomics/Land Use and Transportation

4.2.2.11.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 socioeconomics would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.11.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
This project consists of up to approximately 267.4 acres of BLH-Wet creation located on existing agricultural fields. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.2 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 2 percent and is not considered significant.

4.2.2.11.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct, Indirect, and Cumulative Impacts
This project consists of up to approximately 134.9 acres of BLH-Wet creation located on existing agricultural fields. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.2 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 0.5 percent and is not considered significant.

4.2.2.11.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
This work consists of BLH-Wet creation on approximately 368.6 acres. There will be no direct impacts to socioeconomic resources. This project is located within existing degraded BLH habitat and so no impacts to farm production would be incurred. There will be short term impacts to traffic during construction.

4.2.2.11.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
This project consists of up to approximately 1,246.6 acres of BLH-Wet creation located on existing agricultural fields. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 2.6 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 7 percent and is not considered significant.

4.2.2.11.6 Ascension - 55.8 Acres, 29 AAHU's

Direct, Indirect, and Cumulative Impacts

This work consists of planting of Bottomland Hardwood on a 63-acre agricultural field. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.2 percent and is not considered significant.

4.2.2.11.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
This project consists of up to approximately 75.1 acres of BLH-Wet creation, located on existing agricultural fields. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.2 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic during construction is expected to be less than 5 percent and is not considered significant.

4.2.2.2.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect, and Cumulative Impacts
This project involves creation of up to approximately 147.2 acres of BLH-Wet Habitat in an area currently managed for game bird hunting. There will be no impacts to socioeconomic resources.

4.2.2.2.9 TPSB - 483.8 Acres, 248 AAHU's

Direct, Indirect, and Cumulative Impacts
This project involves creation of up to approximately 483.6 acres of BLH-Wet habitat on existing agricultural lands. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 1.4 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 5 percent and is not considered significant.

4.2.2.2.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect, and Cumulative Impacts
This project involves creation of up to approximately 224.2 acres of BLH-Wet habitat on existing agricultural lands. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.13 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 18 percent.

4.2.2.2.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect, and Cumulative Impacts
This project involves creation of up to approximately 324.1 acres of BLH-Wet habitat on existing agricultural lands. There will be no direct impacts to socioeconomic resources,

however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 2.3 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 4 percent.

4.2.2.12 Prime and Unique Farmlands

4.2.2.12.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 prime and unique farmlands would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.12.2 Feliciana - 267 Acres, 156 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.12.3 GBRPC - 134.9 Acres, 54 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.12.4 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts
This project is located within existing degraded BLH habitat and so no impacts to farmland would be incurred.

4.2.2.12.5 St. James - 1,246 Acres, 676 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.6 Ascension - 55.8 Acres, 29 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.7 Gravity - 75.2 Acres, 40 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.8 Krotz - 147.2 Acres, 73 AAHU's

Direct, Indirect and Cumulative Impacts
This project is located in an area of scrub shrub habitat managed for game bird hunting and therefore there would be no impacts to farmland.

4.2.2.2.9 TPSB - 483.8 Acres, 248 AAHU's

Direct, Indirect and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.10 Rosedale - 224.8 Acres, 113 AAHU's

Direct, Indirect and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.2.11 Sunset Ridge - 324 Acres, 168 AAHU's

Direct, Indirect and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.2.13 Natural and Scenic Rivers

4.2.2.13.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
As the proposed action, the CEMVN would purchase sufficient BLH-Wet credits from a bank within the Mississippi Alluvial Plain to mitigate up to 702 AAHUs. The particular 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 Natural and Scenic Rivers would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.2.13.12 Amite - 368.6 Acres, 236 AAHU's

Direct, Indirect, and Cumulative Impacts

Although this project is adjacent to the Amite River which is designated as a natural and scenic river, none of the work would take place within the river and therefore would not require coordination under the Natural and Scenic Rivers Act. Best management practices would be implemented to prevent or minimize any material due to construction activities from entering the river.

4.2.3 SWAMP IN COASTAL ZONE

4.2.3.1 Wetlands and other Surface Waters

4.2.3.1.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 wetlands and other surface waters would be incurred from the purchase of these credits for the BBA Construction mitigation. However, this project could result in the permanent loss of 1,504 AAHUs of BLH-Wet habitat within the LPB if the mitigation takes place outside of that basin.

4.2.3.1.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
There would be a beneficial impact to wetlands as approximately 1,965 acres of open water would be converted back to swamp habitat. Implementation of this project would prevent an overall loss in the study area of swamp habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the study area would help retard the loss of wetlands.

4.2.3.1.3 Joyce - 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
There would be a beneficial impact to wetlands as approximately 1,126 acres of degraded swamp would be enhanced by planting with swamp species. Implementation of this project would prevent an overall loss in the study area of swamp habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the study area would help retard the loss of wetlands.

4.2.3.1.4 Albania South – Up to 192.1 Acres, up to 76 AAHU's

Direct Impacts
There would be a beneficial impact to wetlands as up to approximately 192.1 acres of agricultural land would be converted to swamp habitat.

Indirect Impacts and Cumulative Impacts

Implementation of this project would prevent an overall loss in the study area of swamp habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in study area and would help retard the loss of wetlands. However, this project would result in the permanent loss of 87.7 AAHUs of swamp habitat within the LPB as the mitigation would take place outside of that basin. This loss could reduce the overall wetland habitat in the LPB to a degree, but increase it within the Mississippi Alluvial Plain.

4.2.3.1.5 Albania North – Up to 964.8 Acres, up to 380 AAHU's

This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.3.1.6 Cote Blanche – Up to 446 Acres, up to 182 AAHU's

This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.3.2 Wildlife

4.2.3.2.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 wildlife would be incurred from the purchase of these credits for the BBA Construction mitigation. However, this project could result in the permanent loss of 1,504 AAHUs of BLH-Wet habitat within the LPB if the mitigation takes place outside of that basin.

4.2.3.2.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
Direct impacts to wildlife would result from the conversion of 1,965 acres of open water habitat within the project area to forested wetlands. This conversion would reduce use and function for brown pelicans, seabirds, dabbling and diving ducks, coots, and gallinules and other species that feed in the shallow open water in this location. Less mobile species would experience demise from dredged material disposal.

The establishment of swamp in the area would provide 1,965 acres of new habitat for terrestrial and semi-aquatic species such as nutria, muskrat, mink, river otter, and raccoon, all of which are commercially important furbearers. Reptiles including the American alligator, western cottonmouth, water snakes, speckled king snake, rat snake, and eastern mud turtle are likely to utilize and populate the proposed swamp area. Amphibians expected to colonize the area include the bullfrog, southern leopard frog, and Gulf coast toad.

The edges and small areas of open water that would form over time would also provide feeding habitat for common wading bird species including great blue heron, green heron, tricolored heron, great egret, snowy egret, yellow-crowned night-heron, black-crowned night-heron, and white ibis.

There is a possibility that colonial nesting wading birds may be located near the project area. The LDWF recommends that the area within a 400 meter perimeter of the project area be surveyed for the presence of nesting bird colonies if construction is to occur during the nesting season. In order to avoid disturbance to colonial nesting birds, a survey would be conducted prior to construction. If nesting birds are found and construction activities are anticipated to occur during the nesting season, avoidance procedures would be implemented (see Appendix J for details).

Indirectly, species that utilize shallow open water habitats would be displaced by the habitat conversion. More mobile species would move into and utilize adjacent shallow open water areas, which are found in abundance. Many species utilizing the current habitat type would thrive with the additional foraging, cover and resting habitat the project would create. A rise in turbidity at the borrow site could immediately reduce water quality in the area; however those effects would be temporary, during the period of construction, and would be reduced by movement of the tides.

This project would prevent an overall loss in the basin of swamp habitat necessary for many wildlife species. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin, would prevent the net loss of forested wetland function and overall decline of wildlife species within the basin. It would be beneficial in both preserving the species bio-diversity and combating the current trend of conversion of coastal wetlands to open water, which could be accelerated due to sea level rise.

4.2.3.2.3 Joyce - 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
Direct impacts to wildlife would be the temporary avoidance of the area during construction and planting activities. The enhancement of swamp in the Joyce (WMA) area would improve 1,126 acres of existing habitat for terrestrial and semi-aquatic species such as nutria, muskrat, mink, river otter, and raccoon, all of which are commercially important furbearers. Reptiles including the
American alligator, western cottonmouth, water snakes, speckled king snake, rat snake, and eastern mud turtle are likely to utilize and populate the proposed swamp habitat. Amphibians expected to colonize the area include the bullfrog, southern leopard frog, and Gulf coast toad.

There is a possibility that colonial nesting wading birds may be located near the project area. The LDWF recommends that the area within a 400 meter perimeter of the project area be surveyed for the presence of nesting bird colonies if construction is to occur during the nesting season. In order to avoid disturbance to colonial nesting birds, a survey would be conducted prior to construction. If nesting birds are found and construction activities are anticipated to occur during the nesting season, avoidance procedures would be implemented (see Appendix J for details).

This project would prevent an overall loss in the basin of swamp habitat necessary for many wildlife species. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin, would prevent the net loss of forested wetland function and overall decline of wildlife species within the basin. It would be beneficial in both preserving the species bio-diversity and combating the current trend of conversion of coastal wetlands to open water, which could be accelerated due to sea level rise.

4.2.3.2.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct Impacts
Up to approximately 192.1 acres of agricultural field would be converted back to forested wetlands. Wildlife present at the time of construction would be temporarily displaced to adjacent habitats due to noise, movement and vibration. Some slower moving animals (e.g. moles and snakes) may experience demise during construction. It is anticipated that displaced animals would return once construction is complete and that the construction of high quality forested wetland habitat would provide additional area for the expansion of existing wildlife populations.

Indirect Impacts
With the restoration of up to approximately 192.1 acres of swamp habitat, species that historically populated the area, and currently populate the adjacent/nearby forested areas, would again utilize the area. Wildlife abundance and diversity would increase in the area as a monoculture of agricultural crops would be replaced by a diversity of swamp species that would provide a variety of ecological niches for colonization. If bald eagle nests are discovered near the site, the National Bald Eagle Management Guidelines (Appendix J) would be followed during construction to avoid and minimize impacts to this species.

Cumulative Impacts
This project would prevent an overall loss in the study area of swamp habitat necessary for many wildlife species. However, the LPB, where the BBA Construction Projects impacts occurred, would suffer from the permanent loss of 76 AAHUs of wildlife habitat as the mitigation would take place outside of that basin. This loss could reduce the overall wildlife populations in the LPB to a degree, but increase them within the Mississippi Alluvial Plain. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the study area, would help retard the loss of wetlands and overall decline of wildlife species within the study area and would be beneficial to preserving species bio-diversity.

4.2.3.2.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.3.2.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.3.3 Threatened and Endangered Species

4.2.3.3.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 threatened and endangered species would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.3.2 Pine Island – 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
No listed species are expected to be directly impacted within the proposed swamp mitigation area since their utilization of the shallow water depths in the site (typically less than two feet) is unlikely and access is extremely limited. However, as a precaution, implementation of standard protection measures and construction conditions for manatees, sturgeon and sea turtles (see Appendix J) would be implemented to ensure any potential impacts are avoided.

The borrow area could potentially be utilized by manatees, sturgeon and sea turtles, however, the presence of construction- related activity, machinery, and noise is expected to cause these species to avoid the project area during the construction period. Additionally, direct impacts to Gulf sturgeon and sea turtles from construction related activities are not anticipated as hydraulic cutterhead dredges are slow moving and use of them is not known to impact these species. Manatee could potentially be affected by dredging operations, but the impacts would be avoided by implementation of standard manatee protection measures developed by the USFWS.

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 project area compared to the overall size and similar habitat within Lake Pontchartrain. Additionally, the depth of material being removed from the borrow area is not anticipated to result in exposure of a different substrate type. As such, future recolonization of the forage species used by Gulf sturgeon is anticipated in the borrow site. As such, the indirect impacts to manatees, sturgeon and sea turtles are anticipated to be minimal.

Potential cumulative impacts to the threatened or endangered species from the proposed project are anticipated to minimally increase indirect impacts to manatees, sturgeon and sea turtles in the LPB.

The Corps has determined that the proposed Pine Island project *may affect, but is not likely to adversely affect* Federally-listed species. This determination, along with supporting documentation, was transmitted to the USFWS and NMFS under informal consultation procedures for implementing Section 7 of the Endangered Species Act. Coordination is ongoing with both USFWS and NMFS.

4.2.3.3.3 Joyce - 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the listed species would be expected to occur within the Joyce project area as the preferred habitats do not exist. Therefore the Corps has made a "no effect" determination.

4.2.3.3.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the species listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.3.3.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the species listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.3.3.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct, Indirect, and Cumulative Impacts
None of the species listed species are found within the project area. Therefore the Corps has made a "no effect" determination under the ESA for threatened and endangered species.

4.2.3.4 Fisheries, Aquatic Resources

4.2.3.4.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 fisheries, aquatic resources and water quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.4.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
Approximately 1,965 acres of open water and mud substrate would be replaced with swamp increasing spawning, nursery, forage and cover habitat for fisheries resources over the long term. During construction of this project, fish species would be forced to relocate to similar adjacent habitat. Less mobile aquatic species would experience demise. The depth restriction on the borrow pit (- 19 ft. NAVD 88) would minimize the chance that a different substrate would be exposed. Fish species could return to the borrow area and benthic species rebound once construction is complete. Aquatic species access to the mitigation area would be extremely limited until the fill material has consolidated and settled to an elevation conducive to that of a natural swamp. Once target elevations have been achieved and swamp habitat established (in approximately 3 years), this area would once again serve its historic functional role in the local ecosystem.

Aquatic resources and fisheries in the borrow area would be indirectly affected during project construction due to dredging operations. Turbidity during borrow excavation and fill placement would temporarily impair visual predators and impact filter feeders. The depth restriction on the borrow pit would minimize the chance that the area would suffer from low oxygen conditions and a different substrate would be exposed. As such, future recolonization by similar benthic species and the restoration of foraging habitat in the borrow area is anticipated once construction is complete.

Although there would be a loss of 1,965 acres of open water from construction of this project, open water is found in abundance throughout the Lake Pontchartrain Basin. The resulting swamp would provide a cumulative benefit in the form of additional spawning, nursery, forage and cover habitat for important aquatic species in the basin.

Implementation of this project would prevent an overall loss in the basin of swamp habitat in the LPB. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin would help retard the loss of wetlands and combat the current trend of conversion of wetlands to open water.

4.2.3.4.3 Joyce - 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
Approximately 1,126 acres of degraded swamp habitat would be replaced with high quality swamp species. The enhancement of the existing swamp would provide additional habitat for fisheries and aquatic species that utilize the area.

Implementation of this project would prevent an overall loss in the basin of swamp habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin would help retard the loss of wetlands and combat the current trend of conversion of wetlands to open water.

4.2.3.4.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, and Cumulative Impacts
Wetlands act as filtering systems removing sediment, nutrients and pollutants from water thereby helping sustain the water quality. Converting crop land to forested wetlands would be of benefit to fisheries and aquatic resources by restoring these functions to the study area and therefore enhancing water quality. Since the area is not adjacent to open water, fish inhabiting it is unlikely. However, amphibians would likely colonize in the area due to the introduction of water and cover.

4.2.3.4.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.3.4.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

This project would result in the same impacts as discussed for the Albania South project except to a greater degree.

4.2.3.5 Essential Fish Habitat

4.2.3.5.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 essential fish habitat would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.5.2 Pine Island – 1,965 Acres, 775 AAHU's, **Joyce -** 1,126 Acres, 195 AAHU's

Direct, Indirect, Cumulative Impacts
The existing essential fish habitat in the project area includes estuarine water bottom, estuarine water column, and submerged aquatic vegetation. These habitats would be converted to estuarine intertidal forested wetlands (swamp). Benthic resources within the borrow site for Pine Island would be lost until they can re-colonize the borrow area which should occur following project construction. The borrow area would not be excavated more than -20 feet NAVD88 plus a 1-foot allowable overdepth thereby minimizing the possibility of anoxic conditions forming. The adverse impacts to essential fish habitat that would result from the proposed action may affect, but should not adversely affect, managed species considering the small acreage involved relative to Lake Pontchartrain. Indirect impacts to managed species include increased turbidity and disturbance of Lake Pontchartrain in the vicinity of the borrow area. Some species may be temporarily displaced to similar adjacent habitats. The permanent loss of 3,091 acres of EFH would contribute cumulatively to the overall loss of habitat in the basin, but no permanent adverse impacts are anticipated because this habitat is prevalent throughout the basin.

4.2.3.6 Cultural Resources

4.2.3.6.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 cultural resources would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.6.2 Pine Island - 1,965 Acres, 775 AAHU's**, Joyce -** 1,126 Acres, 195 AAHU's, **Albania South -** up to 192.1 Acres, up to 76 AAHU's**, Albania North -** up to 964.8 Acres, up to 380 AAHU's**, Cote Blanche -** up to 446 Acres, up to 182 AAHU's

CEMVN would follow its Section 106 procedures, described in Section 4.2.1.4, if this proposed project is carried forward as the TSP plan. Activities associated with this project have the potential to directly impact existing and previously undocumented cultural resources that may exist within the project area. The CEMVN is developing a Programmatic Agreement with the LA SHPO, the Advisory Council on Historic Preservation, Federally recognized Indian Tribes, and other interested parties outlining the steps needed to identify and evaluate cultural resources and complete the Section 106 process. If significant historic properties are identified within the project area, strategies will be developed to avoid those resources or to minimize or mitigate for adverse effects.

4.2.3.7 Recreational Resources

4.2.3.7.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 recreational resources would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.7.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct and Indirect Impacts
Flora and fauna that historically populated the area, and currently populate the adjacent/nearby forested areas, would again utilize the area. Recreational opportunities such as canoeing and wildlife viewing would be enhanced directly and indirectly with construction of this project as current recreational opportunities are limited due to the shallow open water that encompasses this site.

Cumulative Impacts
Cumulative impacts to recreational resources would continue in the project areas with perpetual conservation of the site. Other similar activities that reclaim open water in the vicinity have and would continue to affect recreational quality in the region. Projects of this scope would serve to impact the region in a positive way by contributing renewed natural scenery and wildlife habitat which promote recreation opportunities.

4.2.3.7.3 Joyce - 1,126 Acres, 195 AAHU's

Direct and Indirect Impacts
Recreational resources would be enhanced as a direct and indirect impact. The site has limited access via boat and serves mainly as a consumptive recreation source for those who have camps along the canals and small meandering waterways.

Cumulative Impacts
Recreational opportunities would continue to increase on the site as the habitat matures over time and would be maintained with perpetual conservation of the site. Other similar activities that enhance habitat in the vicinity have and would continue to affect recreational quality in the region. Projects of this scope would serve to impact the region in a positive way by contributing renewed natural scenery and wildlife habitat which promote recreation opportunity.

4.2.3.7.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.3.7.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.3.7.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.3.8 Aesthetic Resources

4.2.3.8.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 aesthetics would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.8.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct and Indirect Impacts
Flora and fauna that historically populated the area, and currently populate the adjacent/nearby forested areas, would again be established on the area. Aesthetic resources would be directly and indirectly impacted enhanced as current view sheds (shallow open water) would be replaced with native forests rich with biodiversity.

Cumulative Impacts
Visual resources to would continue to increase on the site as the habitat matures over time and would be maintained with perpetual conservation of the site. Other similar activities that reclaim open water in the vicinity have and would continue to affect aesthetic quality in the region. Projects of this scope would serve to impact the region in a positive way by contributing renewed natural scenery and wildlife habitat which promote recreation opportunity.

4.2.3.8.3 Joyce - 1,126 Acres, 195 AAHU's

Direct and Indirect Impacts
Aesthetic resources would be directly and indirectly enhanced with construction of this project. The site has limited access via boat and is viewed primarily by the few who have camps along the canals and small meandering waterways.

Cumulative Impacts
Visual resources would continue to increase on the site as the habitat matures over time and would be maintained with perpetual conservation of the site. Other similar activities that enhance habitat in the vicinity have and would continue to affect aesthetic quality in the region. Projects of this scope would serve to impact the region in a positive way by contributing renewed natural scenery and wildlife habitat which promote recreation opportunity.

4.2.3.8.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.3.8.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.3.8.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.3.9 Air Quality

4.2.3.9.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 air quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.9.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is marshland and not populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.3.9.3 Joyce - 1,126 Acres, 195 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust

near the construction area is not anticipated to be a problem as the site is marshland and not populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.3.9.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

4.2.3.9.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts

Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.3.9.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct Impacts
During construction of this project, an increase in air emissions could be expected. These emissions could include 1) exhaust emissions from operations of various types of non-road construction equipment and 2) fugitive dust due to earth disturbance. Emission of fugitive dust near the construction area is not anticipated to be a problem as the site is rural and not highly populated.

Any site-specific construction effects would be temporary and dust emissions, if any, would be controlled using standard BMPs. Air quality would return to pre-construction conditions shortly after the completion of construction activities. The project area is in a parish in attainment of NAAQS, therefore, a conformity determination is not required.

Indirect Impacts
There would be no adverse indirect impacts to air quality in the parish with construction of the proposed action.

Cumulative Impacts
Cumulative impacts to air quality in the project area due to construction of this project in addition to the other construction activities within the area that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action.

4.2.3.10 Water Quality

4.2.3.10.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 water quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.10.2 Pine Island – 1,965 Acres, 775 AAHU's **and Joyce –** 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
Wetlands act as filtering systems removing sediment, nutrients and pollutants from water thereby helping sustain the water quality. The Pine Island and Joyce projects would be of benefit to water quality by restoring these functions to the area and therefore potentially enhancing water

quality of the adjacent Lake Pontchartrain. The temporary water quality impacts from turbidity during construction are not anticipated to be substantial enough 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. Water quality impacts in the fill area of Pine Island would temporarily add to the water quality impairment of this sub-segment, but these impacts would be minimized through best management practices and would diminish to background levels after construction.

4.2.3.11 Noise

4.2.3.11.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 noise quality would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.11.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.3.11.3 Joyce - 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
Noise impacts to wildlife would be the same as discussed for the Ascension project in section 4.2.1, except to a greater degree. Noise levels would not result in impacts to the human environment as the area is remote and surrounded by existing wetlands.

4.2.3.11.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.3.11.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.3.11.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct, Indirect and Cumulative Impacts

This project would result in the same impacts as discussed for the Ascension project for this resource in section 4.2.1, except to a greater degree.

4.2.3.12 Hazardous, Toxic, and Radioactive Waste

4.2.3.12.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 due to HTRW would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.12.2 Pine Island – 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
No RECs were identified on site. The area proposed for mitigation is currently open water. It would be filled with dredged material from a borrow site in Lake Pontchartrain. USACE Engineer Regulation, ER 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) for Civil Works Projects, states that dredged material and sediments beneath navigable waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the EPA or a state for a response action (either a removal or a remedial action) under CERCLA, or if they are a part of a National Priority List (NPL) site under CERCLA (NPL is also known as "Superfund"). None of the area proposed for dredging is included in the National Priority List or within the boundaries of a CERCLA site. There is a low probability of encountering HTRW.

4.2.3.12.3 Joyce – 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
No RECs were identified on site. No pipelines, oil wells, or well pits were identified on site. Due to construction methods, there is a low probability of encountering HTRW.

4.2.3.12.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, Cumulative Impacts
One pipeline was identified on site. Impacts to pipelines would be avoided. Due to construction methods, there is a low probability of encountering HTRW.

4.2.3.12.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct, Indirect, Cumulative Impacts
Three pipelines, four abandoned wells, and two well pits were identified. Pipelines would be avoided. Due to construction methods, there would be a slight probability of encountering substances of concern or petroleum products in the soil near these wells. An HTRW

investigation would be completed prior to final design and RECs would be avoided to the extent practicable.

4.2.3.12.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct, Indirect, and Cumulative Impacts
Two pipelines were identified on site. No wells were identified on site. Impact to pipelines would be avoided. Due to construction methods, there is a low probability of encountering HTRW.

4.2.3.13 Socioeconomics/Land Use, Transportation, and Commercial Fisheries

4.2.3.13.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 socioeconomics would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.13.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
This work consists of swamp creation mitigation sites within open water. There will be no direct impacts to socioeconomic resources or transportation as all work would be performed on water. It is probable that crab fishermen sometimes place crab traps within the proposed borrow area just like they do throughout Lake Pontchartrain. Shrimp fishermen may venture into the area either pulling trawls or pushing "skimmer" nets. The fishermen and their gear would be temporarily displaced during project construction.

4.2.3.13.3 Joyce - 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
This work consists of swamp creation mitigation sites. There will be no direct impacts to socioeconomic resources or commercial fisheries.

4.2.3.13.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, and Cumulative Impacts
This work consists of creating up to approximately 192.1 acres of swamp habitat in an existing agricultural site. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.24 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 2 percent and is not considered significant.

4.2.3.13.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct, Indirect, and Cumulative Impacts
This work consists of creating up to approximately 964.8 acres of swamp habitat in an existing agricultural site. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.45 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 21 percent.

4.2.3.13.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct, Indirect, and Cumulative Impacts
This work consists of creating up to approximately 446 acres of swamp habitat in an existing agricultural site. There will be no direct impacts to socioeconomic resources, however, the land use will change. The percent change in agricultural acres in the parish will be decreased by less than 0.56 percent and is not considered significant. There will be short term impacts to traffic during construction. The increase in average daily traffic is expected to be less than 19 percent.

4.2.3.14 Prime and Unique Farmlands

4.2.3.14.1 Mitigation Banks

Direct, Indirect, and Cumulative Impacts
For this project, the CEMVN would purchase sufficient swamp credits from a bank within the Mississippi Alluvial Plain to mitigate up to 1,504 AAHUs. The particular 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 prime and unique farmlands would be incurred from the purchase of these credits for the BBA Construction mitigation.

4.2.3.14.2 Pine Island - 1,965 Acres, 775 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would have no impacts to prime and unique farmlands as it takes place in open water.

4.2.3.14.3 Joyce - 1,126 Acres, 195 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would have no impacts to prime and unique farmlands as it takes place in existing swamp habitat.

4.2.3.14.4 Albania South - Up to 192.1 Acres, up to 76 AAHU's

Direct, Indirect, and Cumulative Impacts

This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.3.14.5 Albania North - Up to 964.8 Acres, up to 380 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

4.2.3.14.6 Cote Blanche - Up to 446 Acres, up to 182 AAHU's

Direct, Indirect, and Cumulative Impacts
This project would result in the same impacts as discussed for the Saint John project for this resource in section 4.2.1, except to a greater degree.

5. ENVIRONMENTAL CONSEQUENCES OF MITIGATION ALTERNATIVES

5.1 INTRODUCTION

This section describes the direct and indirect effects of the mitigation alternatives. For more details on the transition to the mitigation alternative see section 2.

5.2 ALTERNATIVES

5.2.1 NO ACTION ALTERNATIVE

Direct Impacts
Under the No Action alternative, wetlands and other surface waters, wildlife, threatened and endangered species, fisheries, aquatic resources, water quality, EFH, cultural resources, recreational resources, aesthetic resources, air quality, noise, HTRW, socioeconomics/land use, environmental justice, transportation, commercial fisheries, and prime and unique farmlands would not be directly impacted from construction of the mitigation plan. Without construction of a mitigation plan, there would be an overall loss of BLH-Wet and swamp habitat within the system. CEMVN's legal obligation to compensate for habitat losses caused by construction of the Comite, WSLP and EBR projects would not be satisfied. This alternative does not include any CEMVN undertaking; therefore CEMVN has no further responsibilities under Section 106 of the NHPA.

Indirect Impacts
There would be an overall loss of BLH-Wet and swamp within the system that once provided cover, resting, nesting and foraging habitat for wildlife, fisheries, and aquatic species, which would indirectly impact these resources. The loss of these habitats, and the affect such losses would have on wildlife and aquatic species, could cause recreational opportunities in the basin to also suffer loss. The loss of wetlands and the detritus and filtering function they provide would indirectly impact fisheries productivity and water quality.

5.2.2 TENTATIVELY SELECTED ALTERNATIVE (TSA)

The TSA (Table 5-1) is a combination of the TSPs discussed in Sections 2 and 4. Any combination of the TSPs could be used to satisfy the mitigation needs. Although movement outside of the LPB and or MSRB to complete some of the required mitigation would result in a reduction of BLH and swamp habitat in those basins, replacement of the same habitat would occur in the Mississippi Alluvial Plain. With the replacement of this habitat, wildlife populations would have opportunity to expand and increase in the Mississippi Alluvial Plain thereby only resulting in a shift in where these populations reside. Movement from the LPB and/or the MSRB into the Mississippi Alluvial Plain was chosen because similar habitat exists in the Mississippi Alluvial Plain to the impacted habitat in the LPB and MSRB, whereas habitat north of the LPB and MSRB quickly transitions into piney woods (appendix Q, figure 2).

Table 5-1: Tentatively Selected Alternative				
	Projects	**Habitat**	**AAHUs**	**Acres**
BLH-Wet in CZ (WSLP)	Mitigation Bank (LPB)	BLH-wet	TBD	TBD
	Saint John (LPB) BLH-wet	BLH-wet	42	
	Mitigation Bank (OB)	BLH-wet	TBD	TBD
	Albania South (OB)	BLH-wet	up to 96	up to 192.1
	Albania North (OB)	BLH-wet	Max of 343	Max of 657
Swamp in CZ (WSLP)	Mitigation Bank (LPB)	Swamp	TBD	TBD
	Pine Island (LPB)	Swamp	775	1,965.0
	Joyce (LPB)	Swamp	195	1,126.1
	Mitigation Bank (OB)	Swamp	TBD	TBD
	Albania South (OB)	Swamp	up to 76	up to 192.1
	Albania North (OB)	Swamp	up to 380	up to 964.8
	Cote Blanche (OB)	Swamp	up to 182	up to 446
BLH-Wet Out of CZ (Comite, EBR)	Mitigation Bank (LPB, MSRB)	BLH-wet	TBD	TBD
	Ascension (LPB)	BLH-wet	29	55.8
	Feliciana (LPB)	BLH-wet	156	267.0
	GBRPC (LPB)	BLH-wet	54	134.9
	St James (LPB)	BLH-wet	676	1246.0
	Mitigation Bank (OB)	BLH-wet	TBD	TBD

LPB – In Lake Pontchartrain Basin. MSRB – Mississippi River Basin. OB – Outside of Basin.

5.2.2.1 Wetlands and other Surface Waters

Direct and Indirect Impacts
There would be a beneficial impact to wetlands as over 3,000 of acres of agricultural land, 1,126 acres of degraded swamp and 1,965 acres of open water would be converted to forested wetland habitat.

5.2.2.2 Wildlife

Direct and Indirect Impacts
There would be a beneficial impact to wildlife as thousands of over 3,000 acres of agricultural land, 1,126 acres of degraded swamp and 1,965 acres of open water would be converted to forested wetland habitat. Wildlife present at the time of construction would be temporarily displaced to adjacent habitats due to noise, movement, turbidity and vibration. During

construction, the aquatic organisms located in the disposal sites of Pine Island would experience demise as well as some slower moving animals (e.g., moles and snakes) in the agricultural lands. It is anticipated that displaced animals would return once construction is complete and that the construction of high quality forested wetland habitat would provide additional area for the expansion of existing habitat populations. If bald eagle nests are discovered near the project area, the National Bald Eagle Management Guidelines (Appendix J) would be followed during construction to avoid and minimize impacts to this species.

5.2.2.3 Threatened and Endangered Species

Direct and Indirect Impacts
The only project within the TSA with listed species present is Pine Island.

The species that could potentially be affected by the Pine Island project are West Indian manatee; Gulf sturgeon; and Kemp's ridley, loggerhead, and green sea turtles. No listed species are expected to be directly impacted within the proposed swamp mitigation area since they would not be expected there due to shallow water depths (typically less than two feet) and extremely limited access. Still, precautions will be taken during construction to avoid impacts to listed species, particularly Gulf sturgeon and sea turtles. Gulf sturgeon protection measures will be implemented (Appendix J). In order to minimize the potential for construction activities to cause adverse impacts to manatees and sea turtles the standard manatee protection measures, developed by the USFWS, Lafayette, Louisiana Field Office, and the standard sea turtle construction conditions developed by the National Marine Fisheries Service would be implemented (Appendix J).

The borrow area could potentially be utilized by manatees, sturgeon and sea turtles. Direct impacts to listed species in the proposed borrow area are unlikely as the site is located outside of designated critical habitat and the construction activities would be of a nature that are not known to directly injury the species. The indirect impacts resulting from the temporary loss of the area as foraging habitat would be insignificant given the small size of the borrow area compared to the overall area of Lake Pontchartrain. The presence of construction- related activity, machinery, and noise would be expected to cause these species to avoid the project area during the construction period. Dredging for borrow material would occur via hydraulic cutterhead dredge. Entrainment of sea turtles is not expected since hydraulic dredges are slow moving and use of them is not known to impact these species. Manatee could potentially be affected by dredging operations, but the impacts would be mitigated by implementation of standard manatee protection measures developed by the USFWS as a method to minimize the likelihood that CEMVN dredging contracts in coastal Louisiana would adversely affect manatees. Those measures are provided in Appendix J.

Potential indirect impacts from the proposed action would primarily consist of effects from dredging operations, notably turbidity. However, 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 sea turtles in the area would be free to relocate during construction since the project area encompasses only a small section of Lake Pontchartrain. As such, no impacts to sea turtles are anticipated from temporary minor impacts to water quality.

Potential cumulative impacts to the threatened or endangered species that could occur in the vicinity of the project area from construction of the other mitigation projects are minimal.

The Corps has determined that the proposed Pine Island project *may affect, but is not likely to adversely affect Federally-listed species.* This determination, along with supporting documentation, was transmitted to the USFWS and NMFS under informal consultation procedures for implementing Section 7 of the Endangered Species Act. Coordination is ongoing with both USFWS and NMFS.

5.2.2.4 Fisheries and Aquatic Resources

Direct and Indirect Impacts
The only projects within the TSA that could potentially impact fisheries and aquatic resources are Pine Island and Joyce. With the Pine Island project approximately 1,965 acres of open water would be converted back to forested wetlands. 1,965 acres of open water and mud substrate would be replaced with swamp increasing spawning, nursery, forage and cover habitat for fisheries resources over the long term. Turbidity during borrow excavation and fill placement would temporarily impair visual predators and impact filter feeders, but this impact is expected to cease and benthic species rebound once construction is complete.

Aquatic species access to this area would be extremely limited until the material consolidated and settled to an elevation conducive to that of a natural swamp. It is expected this "lag" time would be approximately 3 years. Once the success criteria have been achieved, this area would once again serve its traditional functional role in the local ecosystem.

For Pine Island, the depth restriction on the borrow pit, (- 19 ft NAVD 88) plus a 1-foot allowable overdepth, would minimize the chance that the area would suffer from low oxygen conditions. The borrow pit should revert to productive habitat within a few months of project construction.

Although there would be a loss of 1,965 acres of open water from construction of Pine Island, open water is found in abundance throughout the Lake Pontchartrain Basin.

The Joyce project would result in the enhancement of approximately 1,126 acres of degraded swamp habitat by planting with high quality swamp species. The enhancement of the existing swamp would increase spawning, nursery, forage and cover habitat for fisheries and aquatic species that currently utilize the surrounding area.

5.2.2.5 Essential Fish Habitat

Direct and Indirect Impacts
The only projects within the TSA that contain EFH are Pine Island and Joyce. The existing essential fish habitat at these sites include estuarine water bottom, estuarine water column, and submerged aquatic vegetation. These habitats would be converted to estuarine intertidal forested wetlands (swamp). Benthic resources within the borrow site for Pine Island would be lost until they can re-colonize the borrow area which should take no more than a year or so following

project construction. The borrow area would not be excavated more than -20 feet NAVD88 plus a 1-foot allowable overdepth thereby minimizing the possibility of anoxic conditions forming. The adverse impacts to essential fish habitat that would result from the proposed action may affect, but should not adversely affect, managed species considering the small acreage involved relative to Lake Pontchartrain. Indirect impacts to managed species include increased turbidity and disturbance of Lake Pontchartrain in the vicinity of the borrow area. Some species may be temporarily displaced.

5.2.2.6 Cultural Resources

Direct and Indirect Impacts
CEMVN would follow its Section 106 procedures, described in Section 4.2.1.4, if any of the proposed projects are carried forward as the TSA. Activities associated with the several of the projects in the TSA have the potential to directly impact existing and previously undocumented cultural resources that may exist within the project areas. The CEMVN is developing a Programmatic Agreement with the LA SHPO, the Advisory Council on Historic Preservation, Federally recognized Indian Tribes, and other interested parties outlining the steps needed to identify and evaluate cultural resources and complete the Section 106 process. If significant historic properties are identified within the project area, strategies will be developed to avoid those resources or to minimize or mitigate for adverse effects.

5.2.2.7 Recreational Resources

Direct and Indirect Impacts
Flora and fauna that historically populated these mitigation areas, and currently populate the adjacent/nearby forested areas, would again utilize these areas. Recreational resources such as wildlife viewing would be created and enhanced as a direct and indirect impact as limited opportunities for this resource currently exist on these sites prior to mitigation.

5.2.2.8 Aesthetic Resources

Direct and Indirect Impacts
The visual resources of these mitigation sites would be temporarily impacted by construction activities related to implementing the proposed action and by transport activities needed to move equipment and materials to and from the sites. However, this temporary impact would most likely affect visual resources from the immediate roadways. Flora and fauna that historically populated these mitigation sites, and currently populate the adjacent/nearby forested areas, would again utilize the areas. The pastoral and agricultural viewsheds from the immediate roadways would be replaced with native forests rich with biodiversity.

5.2.2.9 Air Quality

Direct and Indirect Impacts
There are 12 sites in the TSA. Six of the sites are located in parishes that are currently in attainment status for all NAAQS. Three of the sites, however, are located in Ascension and East Baton Rouge parishes which are currently in a maintenance status for ozone

During construction of the six attainment area sites, an increase in emissions could be expected. The emissions could include exhaust emissions from the operation of construction equipment such as dozers, graders, excavators, dump trucks, etc. and fugitive dust emissions. Any direct and/or indirect impacts to air quality at the attainment area sites could be considered short-term and minor.

During construction of the three maintenance area sites, an increase in emissions could also be expected. Of the three sites, two are located in Ascension Parish and one is located in East Baton Rouge Parish. The emissions sources would be similar to those in the attainment areas. The construction activities at the two Ascension Parish sites would be expected to produce less than one ton per year of VOC and less than 18 tons per year of NOx. The construction activities at the East Baton Rouge Parish site would be expected to produce less than one ton per year of VOC and less than 6 tons per year of NOx. The total emissions of all three maintenance area mitigation sites would be below *de minimis* levels, therefore, the proposed project would be in compliance with the State's general conformity regulations as promulgated under LAC 33:III.14.A. Appendix O provides additional information on the conformity determination and compliance with the General Conformity Rule (40 CFR Part 93).

Due to the limited duration of the proposed projects, any increases or impacts to ambient air quality are expected to be short-term and minor and are not expected to cause or contribute to a violation of Federal or State ambient air quality standards. Once all construction activities associated with the selected alternative cease, air quality within the vicinity is expected to return to pre-construction conditions.

No long-term direct or indirect impacts are expected.

5.2.2.10 Water Quality

Direct and Indirect Impacts
The only projects within the TSA that would potentially impact water quality are Pine Island, Joyce and Amite. Wetlands act as filtering systems removing sediment, nutrients and pollutants from water thereby helping sustain the water quality. The Pine Island, Joyce and Amite projects would be of benefit to water quality by restoring these functions to the area and therefore potentially enhancing water quality of the adjacent Lake Pontchartrain and Amite River.

Temporary water quality impacts from turbidity during construction of Pine Island and Joyce are not anticipated to be substantial enough 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. Water quality impacts in the fill area of Pine Island would temporarily add to the water quality impairment of this sub-segment, but these impacts would be minimized through best management practices and would diminish to background levels after construction. Although the Amite project is adjacent to the Amite River which supports several designated uses, none of the work would take place within the river and therefore would not directly impact water quality. Best management practices would be implemented to prevent or minimize any material due to construction activities from entering the river.

5.2.2.11 Noise

Direct and Indirect Impacts
Construction equipment necessary for the initial project construction phase would include dump trucks, bulldozers, tractors, graders, air boats, hydraulic dredge and pump. Appendix B, Table B-19 describes noise emission levels for construction equipment expected to be used during the proposed construction activities. This table shows the anticipated noise levels at various ranges based on data from the Federal Highway Administration (FHWA 2006). Noise levels may result in wildlife avoiding the project area during construction; however, movement of equipment during construction would result in the same avoidance behaviors from wildlife species. Residences could experience higher than ambient noise levels during construction, however these levels would be temporary during the period of construction and would be limited to daylight hours.

5.2.2.12 Hazardous, Toxic, and Radioactive Waste

Direct and Indirect Impacts
None of the sites in the TSA have a high probability of encountering HTRW during the course of constructing the mitigation project. The areas proposed for mitigation are mostly agricultural in nature, either farmland or pastureland. One area is open water and one area is associated with several former gravel pits. The mitigation for the agricultural land and the former gravel pit areas will consist mainly of grading, degrading, and planting of various species of trees and understory plants.

The mitigation for the open water area consists of filling the area with material dredged from Lake Pontchartrain to enhance the swamp habitat. USACE Engineer Regulation, ER 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) for Civil Works Projects, states that dredged material and sediments beneath navigable waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the EPA or a state for a response action (either a removal or a remedial action) under CERCLA, or if they are a part of a National Priority List (NPL) site under CERCLA. (NPL is also known as "Superfund.") None of the reaches proposed for dredging is included in the National Priority List or within the boundaries of a CERCLA site.

No direct or indirect impacts from HTRW are anticipated during construction of the mitigation features.

5.2.2.13 Socioeconomics/Land Use, Transportation, and Commercial Fisheries

Direct and Indirect Impacts
There will be no direct impacts to socioeconomic resources, however, the land use will change when agricultural land is converted. There will be some impact to transportation in the short term during construction. See Chapter 4 for impacts to each project area. It is probable that crab fishermen sometimes place crab traps within the proposed borrow area just like they do throughout Lake Pontchartrain. Shrimp fishermen may venture into the area either pulling trawls

or pushing "skimmer" nets. The fishermen and their gear would be temporarily displaced during project construction, and the borrow area may be less productive for a few months after project construction due to loss of benthic animals from the dredging operation.

5.2.2.14 Prime and Unique Farmlands

Direct and Indirect Impacts
All projects within the TSA, with the exception of Pine Island, Joyce and Amite would convert agricultural lands to forested wetlands. This would result in a total of over 3,000 acres of farmland being impacted by the TSA. Once the sites are developed for mitigation, these areas could no longer be used as productive farmland.

5.2.2.15 Natural and Scenic Rivers

Direct and Indirect Impacts
Amite is the only project with potential to impact this resource. Although the Amite project is adjacent to the Amite River which is designated as a natural and scenic river, none of the work would take place within the river and therefore would not require coordination under the Natural and Scenic Rivers Act. Best management practices would be implemented to prevent or minimize any material due to construction activities from entering the river.

6.0 CUMULATIVE IMPACTS

NEPA requires a Federal agency to consider not only the direct and indirect impacts of a proposed action, but also the cumulative impacts of the action. Cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7)." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts were addressed for each project and resource in the preceding sections and include both beneficial and adverse impacts depending on the resource. This section provides an overview of other actions, projects, and occurrences that may contribute to the cumulative impacts previously discussed.

Appendix B, Table B-18 shows the impact of the other past, present and reasonably foreseeable projects in the project area on the significant resources documented in this EA. The ecosystem restoration type projects in the area, made up of diversions; hydrologic restoration projects; habitat enhancement/preservation/restoration projects; and marsh creation, work to enhance and restore historic ecosystem processes within the basin. Although these projects may result in temporal impacts and tradeoffs among the species within the significant resources, their overall effects on the system from a human and natural environmental perspective would be wholly positive. The structural projects, to a large degree, produce socioeconomic benefits (primarily in the form of navigation or flood control) that are the impetus for their construction. Though impacts to the natural environment from construction of these projects have been avoided to the maximum extent practicable, remaining unavoidable impacts would require mitigation.

6.1 NO ACTION

The overall loss of BLH-Wet, and swamp within the system combined with other habitat loss incurred from implementation of projects in the FWOP conditions could have cumulative adverse impacts to wetlands, wildlife, fisheries and aquatic resources, threatened and endangered species, water quality, EFH, aesthetics and recreational resources. This alternative does not include any CEMVN undertaking; therefore CEMVN has no further responsibilities under Section 106 of the NHPA.

6.2 TSA

6.2.1 WETLANDS AND OTHER SURFACE WATERS

The TSA would prevent an overall loss in the project area of BLH-Wet and swamp habitat. This project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin would help retard the loss of wetlands and combat the current trend of conversion of marsh to open water. Although movement outside of the LPB and/or MSRB to complete some of the required mitigation would result in a reduction of BLH habitat in LPV and/or MSRB and the reduction of swamp habitat in the LPB, replacement of the same habitat would occur in the Mississippi Alluvial Plain.

6.2.2 WILDLIFE

The TSA would prevent an overall loss in the project area of wetland habitat necessary for many wildlife species. This project, in conjunction with other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the project area would help retard the overall decline of wildlife species within the area and would be beneficial in preserving species bio-diversity. Although movement outside of the LPB/MSRB to complete some of the required mitigation would result in a reduction of BLH habitat in LPB and or MSRB and swamp habitat in the LPB, replacement of the same habitat would occur in the Mississippi Alluvial Plain. With the replacement of this habitat, wildlife populations would have opportunity to expand and increase in the Plain thereby only resulting in a shift in where these populations reside.

6.2.3 THREATENED AND ENDANGERED SPECIES

Potential cumulative impacts to the threatened or endangered species (manatee, Gulf sturgeon, and sea turtles) that could occur in the vicinity of the project area from construction of the TSA would involve the combined adverse effects on each species from the other projects within the project area. Due to the size of Lake Ponchartrain - 403,200 acres, the size of the designated Gulf sturgeon critical habitat in Lake Pontchartrain (approximately half of the lake), the relatively small size of the borrow areas (2,238 acres in Lake Pontchartrain), the temporary nature of the borrow activities, the sediments in the borrow area, the depth of excavation, the use of cutterhead dredges for borrow procurement, the duration of dredging, the ability of benthic species to quickly re-colonize the borrow areas, the ability of T&E species to avoid the project area during the construction period, and the use of protection measures the TSA would add very little and only temporary impacts to any other impacts resulting from past, present and reasonably foreseeable projects in the project area and would not contribute significantly to cumulative impacts to threatened and endangered species or their habitat in the basin.

6.2.4 FISHERIES, AQUATIC RESOURCES

Although there would be a loss of open water from construction of the TSA, these habitats are found in abundance throughout the project area. The resulting swamp would be cumulatively neutral in the form of additional spawning, nursery, forage and cover habitat for important fish species in the project area.

6.2.5 ESSENTIAL FISH HABITAT

There would be an overall loss of EFH in the project area as shallow open water would be converted to swamp. Impacts to foraging for EFH species are not anticipated to cause significant increases in cumulative impacts to EFH species experienced from the implementation of FWOP condition projects as the borrow area is small in size compared to the available EFH habitat in the project area providing similar habitat.

6.2.6 CULTURAL RESOURCES

Cumulative impacts to cultural resources would be the additive combination of impacts by this and other Federal, state, local, and private restoration efforts. CEMVN would follow its Section 106 procedures,

described in Section 4.2.1.4, if this proposed project is carried forward as the TSA. Activities associated with this project have the potential to directly impact several existing and previously undocumented cultural resources that may exist within the project area. The CEMVN is developing a Programmatic Agreement with the LA SHPO, the Advisory Council on Historic Preservation, Federally recognized Indian Tribes, and other interested parties outlining the steps needed to identify and evaluate cultural resources and complete the Section 106 process. If significant historic properties are identified within the project area, strategies will be developed to avoid those resources or to minimize or mitigate for adverse effects.

6.2.7 RECREATIONAL RESOURCES

Restoration/enhancement of fish and wildlife habitat would increase use of the project sites by desirable species which would consequently provide a better recreational experience. Recreational impacts could be considered cumulatively beneficial when added to the recreational opportunities provided at adjacent refuges and other existing recreational areas in the basin. However, since this is mitigation, which replaces impacted habitats, recreational resources dependent on these habitats would merely shift from the area of impact to the area of mitigation, preventing the loss of recreational resources in the basin. The impacts associated with utilization of the borrow sites for construction of the mitigation projects would be short term and not result in a significant increase in cumulative impacts to recreational resources in the basin.

6.2.8 AESTHETIC RESOURCES

Cumulative impacts to the visual character could continue in the project area with implementation of the proposed action. Other similar activities in the vicinity have and will continue to affect visual quality in the region. Projects of this scope will serve to impact the region in a positive way by contributing renewed natural scenery and wildlife habitat in significant contrast to man-made land use patterns that involve striping natural landscape features.

6.2.9 AIR QUALITY

Cumulative impacts to air quality in the project areas due to construction of the BBA Mitigation features, in addition to other construction activities within the area that may be occurring concurrently, would be temporary and minimal. Fugitive dust emissions would be kept to a minimum by the use of best management practices and emissions from construction equipment would be short-term and minor. Although three of the mitigation project areas are in a maintenance area for ozone, the impacts to the ambient air quality would be minimal and the status as a maintenance area would not be altered. The attainment status for air quality in the remaining parishes would also not be altered.

After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action in the maintenance area and the areas that are currently in attainment for NAAQS.

6.2.10 WATER QUALITY

The temporary impacts to water quality from construction of this project when added to similar impacts produced by other projects found in the FWOP conditions could result in temporary decreases in water quality throughout the project area. However, those projects in the FWOP conditions which include wetlands restoration as well as the proposed action could have the long-term beneficial impact of increased dissolved oxygen and increased filtration which helps control local turbidity.

6.2.11 NOISE

Construction of the TSA is not anticipated to add significantly to the cumulative effect of noise in the project area as the construction activities would be temporary and restricted to daylight hours. Avoidance of the project areas by wildlife during construction is anticipated despite construction noise due to the movement of machinery in the area.

6.2.12 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

No cumulative impacts are anticipated.

6.2.13 SOCIOECONOMICS/LAND USE, TRANSPORTATION, AND COMMERCIAL FISHERIES

No cumulative impacts are anticipated.

6.2.14 PRIME AND UNIQUE FARMLANDS

The TSA would result in over 3,000 acres of farmland being removed from current and future potential agricultural development. This number rises when added to other past, present, and reasonably foreseeable projects that convert farmlands.

7. COORDINATION AND CONSULTATION

7.1 PUBLIC INVOLVEMENT

The following public meeting was held to obtain public input on the planning process for BBA mitigation, to obtain suggestions on any potential projects to mitigate impacts, and to update the public on the project status:

Industry Day September 7, 2018

Public notices for the meeting ran in local newspapers. The public was able to provide verbal and written comments during the meetings, written comments after each meeting in person, by mail, and via https://www.mvn.usace.army.mil/Environmental/NEPA/. Additional, public comments are accepted anytime during the EA process via https://www.mvn.usace.army.mil/Environmental/NEPA/.

The Draft EA was released for 30 day public review from January 31, 2020 to March 2, 2020.

7.2 AGENCY COORDINATION

This EA has been coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. The following agencies, as well as other interested parties, have received copies of the draft EA:

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Department of the Interior, National Park Service
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Oceanic and Atmospheric Administration, NMFS
U.S. Natural Resources Conservation Service
Louisiana Advisory Council on Historic Preservation
Governor's Executive Assistant for Coastal Activities
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources, Coastal Management Division
Louisiana Department of Natural Resources, Coastal Restoration Division
Louisiana Department of Environmental Quality
Louisiana State Historic Preservation Officer
Coastal Protection and Restoration Authority Board

Preliminary draft recommendations under the Fish and Wildlife Coordination Act for the EA were provided by the USFWS on December 30, 2019. A Draft CAR was received on February 3, 2020 and a Final CAR was received March 31, 2020 (see appendix I). The USFWS project-specific recommendations for the EA proposed action are listed below:

1. The Service recommends that USACE utilize Section 7(a)(1) of the ESA in concert with mitigation planning to develop mitigation that would aid in the recovery of the threatened inflated heelsplitter.

Response: Acknowledged. If the Amite mitigation project is constructed, CEMVN would endeavor to aid in the recovery of the inflated heelsplitter through design of the mitigation projects and would coordinate design efforts with the USFWS.

2. The Service recommends that future development, evaluation and refinement of any mitigation alternative be fully coordinated with the Service and other natural resource agencies, especially those projects where earthwork/degrading would be required.

Response: Concur. The USACE will fully coordinate with the Service and other natural resource agencies during refinement of mitigation alternatives.

3. The Service recommends that stream mitigation be provided to offset in-water impacts. The Comite River Diversion project includes multiple in-water structures and the East Baton Rouge Flood Risk Management project would improve 66 miles of channels through in-water activities. Those impacts should be mitigated for.

Response: Some of the proposed mitigation sites in the TSA, are located on the banks of open water bodies or rivers. As such, some benefits to lotic habitat may occur with implementation of the mitigation projects, depending on what projects ultimately get implemented. CEMVN is not aware of a in-water impacts to significant ecological resources requiring mitigation. Through coordination with USFWS, impacts from these two BBA 18 Construction projects were assessed to bottomland hardwoods only.

4. The Service recommends that compensation should be provided for any unavoidable losses of stream habitat, wetland habitat, and non-wetland forest caused (directly or indirectly) by project features. All mitigation should be developed/coordinated with the Service and other natural resource agencies. Only after all forest restoration opportunities along the Amite River (abandoned sand and gravel mines) have been implemented to the maximum extent practicable should other mitigation opportunities be pursued.

Response: Through coordination with USFWS, impacts from the BBA 18 Construction projects were assessed to bottomland hardwoods, both upland and wetland, and to swamp. With respect to in-water impacts, CEMVN is not aware of in-water impacts to significant ecological resources. Additionally, ER 1105-2-100, Appendix C requires that the least-cost plan be identified and that an incremental cost analysis be applied to all alternatives to compare their relative cost-effectiveness. The Amite mitigation project, along with multiple other mitigation projects, was considered during the alternative evaluation plan selection process for BBA18 mitigation. The Amite project was not considered cost-effective relative to other alternatives under consideration and did not make it into the bottomland hardwoods (BLH) portion of the TSA. However, it is one of the highest ranking fall-back projects in the final array and could be utilized in the event that projects within the TSA cannot satisfy the BLH mitigation need.

5. Regardless of ownership the Service recommends the following hierarchy be used to located mitigation lands for the BBA 18 planning efforts:
   - Adjacent to the Amite River.
   - Adjacent to the Comite River
   - Within the Amite River floodplains
   - Within the Comite River floodplain
   - Within the Lake Pontchartrain Basin

Response: Consistent with section 906 of WRDA 1986, as amended, mitigation was formulated using a watershed approach and a detailed explanation for undertaking the mitigation outside of the watershed was provided in Appendix Q of the EA. Mitigation opportunities along the Amite are being considered as a potential option to satisfying the mitigation need for the BBA 18 Construction projects.

6. All WVAs prepared by the Service for BBA 18 mitigation alternatives should be considered preliminary drafts and this should be indicated in all text referencing those WVAs. Those WVAs should be refined in future planning documents.

Response: Concur. All reference to the preliminary draft WVAs will read as such and USACE will work closely with the Service to refine the WVAs prior to finalizing the mitigation plan.

7. Of the alternatives proposed the Service does not oppose the use of Feliciana and/or GBRPC for the projects located in the Comite and Amite River Basins.

Response: Acknowledged. Thank you for your support.

8. The Service would not oppose the use of Pine Island, St James, St. John and Joyce to mitigate impacts from the Westshore of Lake Pontchartrain project.

Response: Acknowledged. Thank you for your support.

9. The use of any public lands, e.g., Louisiana Department of Wildlife and Fisheries, should be coordinated with the agency owning those lands. This coordination should continue through all planning, construction and operation stages.

Response: Concur. The USACE will coordinate with Louisiana Department of Wildlife and Fisheries on any use of public lands owned or managed by that agency and if public lands owned or managed by another agency are used, USACE will coordinate with the owner/manager agency of those lands.

10. Boundaries of the mitigation area should be designed such that uneconomic remnants are minimized and management of the area is taken into consideration.

Response: Concur. During design phase, avoidance of uneconomic remnants and accommodations for efficient management will be considered.

11. Impacts to LDWF wildlife management areas should be mitigated on the impacted area or on adjacent lands selected by LDWF that are purchased by USACE and incorporated into the managed area.

Response: Concur. Final mitigation designs will be coordinated with LDWF to ensure impacts to LDWF land would be mitigated on or adjacent to LDWF lands to the extent practicable.

12. The Service does not support the creation of wetlands where it would entail the removal of soil to lower an area down to wetland elevation unless said technique is being utilized to reclaim abandoned sand and gravel mines on impacted basin streams or as part of stream/riparian habitat restoration.

Response: Acknowledged. Agricultural lands identified as mitigation projects would require very minimal removal of soil and would reconnect the areas to the coastal zone. Past projects have proven successful using this method.

13. The Environmental Protection Agency and USACE recently finalized the Navigable Waters Protection Rule to define "waters of the United States". That rule will become effective 60 days after publication in the Federal Register. The USACE should ensure that all of the proposed "wetland" mitigation projects, especially those that would require grading, would be constructed in a location and manner that satisfies the jurisdictional definitions presented in that rule.

Response: Non-concur. Although a particular mitigation site might not qualify as a Clean Water Act Section 404 jurisdictional wetland under the Navigable Waters Protection Rule, all of the proposed mitigation sites would function as wetlands and would ultimately satisfy the three wetland criteria of wetland hydrology, hydrophytic vegetation, and hydric soils. The sites would not need the protection of Clean Water Act Section 404 jurisdiction as all mitigation sites will be purchased in fee and the non-Federal sponsor will be responsible for the protection, operation, maintenance, repair, rehabilitation, and replacement of the mitigation project/site in accordance with its Project Partnership Agreement with CEMVN. Thus, even a mitigation wetland site that does not classify as Section 404 jurisdictional wetland will be protected from future development.

8. COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

There are many Federal and state laws pertaining to the enhancement, management and protection of the environment. Federal projects must comply with a variety of environmental laws, regulations, policies, rules and guidance. Compliance with applicable laws will be accomplished before or concurrent with 30-day public and agency review of this EA #576 and prior to execution of the associated proposed Finding of No Significant Impact.

8.1 ARCHAEOLOGICAL RESOURCES PROTECTION ACT OF 1979

A Federal permit under the Archaeological Resources Protection Act (ARPA) (16 U.S.C 470aa-470mm; 32 CFR Part 229; 43 CFR Part 7; 36 CFR Part 296) will be obtained from the appropriate Federal land manager for any excavation, removal, alteration or destruction of archaeological resources occurring within Federal and Indian lands, including disposition of archaeological resources from such sites.

8.2 CLEAN AIR ACT OF 1972

The Clean Air Act ("CAA") sets goals and standards for the quality and purity of air. It requires the Environmental Protection Agency to set National Ambient Air Quality Standards ("NAAQS") for pollutants considered harmful to public health and the environment. Most of the parishes containing the proposed mitigation sites are in attainment of the NAAQS and no general conformity evaluation for those proposed mitigation measures/sites is necessary. However, Ascension and East Baton Rouge Parishes are in a maintenance area for ozone. CEMVN has completed a general conformity evaluation for the three proposed mitigation measures/sites in those parishes and has determined that emissions in these parishes associated with the proposed construction would not exceed *de minimis* levels. See Section 5.2.2.9 and Appendix O.

8.3 CLEAN WATER ACT OF 1972 – SECTION 401 AND SECTION 404

The Clean Water Act ("CWA") sets and maintains goals and standards for water quality and purity. Section 401 requires a Water Quality Certification from the Louisiana Department of Environmental Quality (LDEQ) that a proposed project does not violate established effluent limitations and water quality standards. State Water Quality Certification CER2019003 was received on September 9, 2019.

As required by Section 404(b)(1) of the Clean Water Act (CWA), an evaluation to assess the short- and long-term impacts associated with the discharge of dredged and fill materials into waters of the United States resulting from this Project has been completed. Section 404(b)(1) public notice was mailed out for public review comment period beginning *January 31, 2020* and ending *March 2, 2020*. The signed Section 404(b)(1) evaluation can be found in Appendix N.

8.4 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 was prepared for the proposed Project and was coordinated with the Louisiana Department of Natural Resources (LADNR) in a letter dated December 11, 2019. Consistency (C20190208) was received from LADNR on March 4, 2020. (Appendix I)

8.5 ENDANGERED SPECIES ACT OF 1973

The Endangered Species Act ("ESA") is designed to protect and recover threatened and endangered ("T&E") species of fish, wildlife and plants. The USFWS identified in their coordination letter, two T&E species under its jurisdiction, the Gulf sturgeon and West Indian manatee, that are known to occur or believed to occur within the vicinity of the Project area. No plants were identified as being threatened or endangered in the Project Area. CEMVN initiated coordination with the USFWS on Aug 19, 2019. In its letter dated January 28, 2020, the USFWS concurred that "the project, as proposed, is not likely to adversely affect" Federally-listed threatened or endangered species, or their critical habitat, under the jurisdiction of USFWS. CEMVN determined that there would be no effects to the inflated heelsplitter. Several listed species under the jurisdiction of NMFS are known to occur or believed to occur within the vicinity of the project area including the Kemp's Ridley, leatherback and green sea turtles and the Gulf sturgeon. CEMVN initiated coordination with the NMFS on November 15, 2019. NMFS concurred with CEMVN's *may affect not likely to adversely affect* determination by letter dated November 21, 2019. This fulfills the requirements under Section 7(a)(2) of the Endangered Species Act. (Appendix I).

8.6 FARMLAND PROTECTION POLICY ACT (FPPA)

The Farmland Protection Policy Act was passed by Congress as part of the Agriculture and Food Act of 1981 (Public law 97-98). The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. A Farmland Conversion Impact Rating was prepared by CEMVN and submitted to NRCS (see Appendix I). NRCS responded with a letter dated September 24, 2019 stating there would be no expected impacts to NRCS work in the vicinity.

8.7 FISH AND WILDLIFE COORDINATION ACT OF 1934

The Fish and Wildlife Coordination Act ("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 ("FWCAR") that details existing fish and wildlife resources in a project area, potential impacts due to a proposed project and recommendations for a project. The USFWS reviewed the proposed mitigation features described in EA #576 and provided project specific recommendations on December 30, 2019, a Draft CAR on January 31, 2020 and a Final CAR on March 21, 2020.

8.8 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

Pursuant to USACE policy, potential Hazardous, Toxic and Radioactive Waste concerns are to be identified early and construction in HTRW-contaminated areas is to be avoided to the extent practicable. After an initial HTRW assessment, in the absence of a known HTRW concern, the proposed mitigation site would not require an HTRW investigation.

Engineer Regulation (ER) 1165-2-132 provides that in the Planning, Engineering and Design (PED) Phase that, for proposed project in which the potential for HTRW problems has not been considered, an HTRW initial assessment, as appropriate for a reconnaissance study, should be conducted as a first priority. If the initial assessment indicates the potential for HTRW, testing, as warranted, and analysis similar to a feasibility study should be conducted prior to proceeding with the project design.

The proposed mitigation sites were surveyed via aerial photographs, topographic maps, and database searches in the four Zone Improvement Plan (ZIP) code areas where they would be located. Several small incidents were recorded in the database searches; however, none of the recorded incidents, individually or cumulatively, would have any adverse effects within the proposed mitigation areas. The probability of encountering HTRW for the proposed action is low based on the preliminary site assessments. Prior to use of any site a Phase 1 Environmental Site Assessment would be completed for the project area. If a recognized environmental condition is identified in relation to the Project Area, the U.S. Army Corps of Engineers, New Orleans District would take the necessary measures to avoid the recognized environmental condition so that the probability of encountering or disturbing HTRW would continue to be low.

8.9 MAGNUSON-STEVENS FISHERIES CONSERVATION AND MANAGEMENT ACT

The Magnuson-Stevens Fishery Conservation and Management Act, as amended, Public Law 104-208, addresses the authorized responsibilities for the protection of Essential Fish Habitat (EFH) by NMFS in association with regional fishery management councils. The NMFS has a "findings" with the CEMVN on the fulfillment of coordination requirements under provisions of the Magnuson-Stevens Fishery Conservation and Management Act. In those findings, the CEMVN and NMFS have agreed to complete EFH coordination requirements for federal civil works projects through the review and comment on National Environmental Policy Act documents prepared for those projects. EA #576 was provided to the NMFS for review and comment on *January 31, 2020*. CEMVN received no comments from NMFS regarding EFH. EFH coordination is complete.

8.10 MIGRATORY BIRD TREATY ACT

The bald eagle was removed from the List of Endangered and Threatened Species in August 2007 but continues to be protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act of 1918, as amended (MBTA). During nesting season, construction must take place outside of USFWS/LDWF buffer zones. A Corps Biologist and USFWS Biologist will survey for nesting birds prior to the start of construction.

8.11 NATIONAL HISTORIC PRESERVATION ACT OF 1966

The consideration of impacts to historic and cultural resources is mandated under Section 101(b)(4) of NEPA. CEMVN has chosen to address potential impacts to historic properties through and the National Historic Preservation Act (NHPA) Section 106 process (36 CFR Part 800) through development of a Programmatic Agreement (PA). On July 03, 2019, and July 23, 2019, CEMVN submitted Section 106 consultation letters to the State Historic Preservation Officer (SHPO), Affected Tribes (the Alabama-Coushatta Tribe of Texas (ACTT), the Caddo Nation of Oklahoma (CN), the Choctaw Nation of Oklahoma (CNO), the Coushatta Tribe of Louisiana (CT), the Chitimacha Tribe of Louisiana (CTL), the Jena Band of Choctaw Indians (JBCI), the Mississippi Band of Choctaw Indians (MBCI), the Muscogee (Creek) Nation (MCN), the Seminole Nation of Oklahoma (SNO), the Seminole Tribe of Florida (STF), and the Tunica-Biloxi Tribe of Louisiana (TBTL)), the Non-Federal Sponsors for the Comite, EBR and WSLP projects (LA DOTD (Comite), ARBC (Comite), CBR/EBR (Comite & EBR), CPRA (WSLP), and PLD (WSLP)), and the Advisory Council on Historic Preservation (ACHP). The letters provided information regarding CEVMN's proposal to develop a project-specific PA pursuant to 36 CFR § 800.14(b) to fulfill its responsibilities under Section 106 of the NHPA and invited stakeholders to provide input regarding the proposed undertaking and its potential to significantly affect historic properties and/or

sites of religious and cultural significance. On August 08, 2019, CEMVN received a response from the CNO stating "The [CNO] thanks the USACE, New Orleans District, for the correspondence regarding the above referenced project. This project lies in our area of historic interest. The [CNO] Historic Preservation Department requests to be a consulting party on the PA. After reviewing the potential mitigation areas in our GIS database, it doesn't appear that any known Choctaw sites lie nearby. However, there is always the possibility of encountering unknown sites. Therefore, identification through survey is requested." On July 31, 2019, SHPO responded "Thank you for the invitation to participate in the development of this Programmatic Agreement. The Louisiana State Historic Preservation Office will participate in the consultation and development of this PA. We are available on Wednesday, 28 August and look forward to working with your office then." No additional responses were received from any of the other stakeholders consulted (SHPO/Tribal/NFS). Subsequent PA development meetings were held with the aforementioned stakeholders on August 28, 2019, January 08, 2020, and January 29, 2020.

On July 02, 2019, CEMVN posted a NHPA/NEPA Public Notice to its website for a 15-day comment period requesting the public's input concerning the proposed undertaking and its potential to significantly affect historic properties, assistance in identifying any relevant parties who may have an interest in participating in this consultation, and CEMVN's proposal to develop a project-specific PA pursuant to 36 CFR § 800.14(b). No comments were received.

On September 17, 2019, CEMVN provided the ACHP with the documentation specified in § 800.11(e). On September 30, 2019, the ACHP responded that "We have concluded that Appendix A, Criteria for Council Involvement in Reviewing Individual Section 106 Cases, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this Undertaking."

In fulfillment of CEMVN's Section 106 responsibilities, on March, 04, 2020, CEMVN and the Louisiana State Historic Preservation Officer executed the Programmatic Agreement Among the U.S. Army Corps of Engineers, New Orleans District; Amite River Basin Commission; East Baton Rouge Parish; Louisiana Coastal Protection and Restoration Authority; Louisiana Department of Transportation and Development; Pontchartrain Levee District; Louisiana State Historic Preservation Officer of The Department of Culture, Recreation & Tourism; and Choctaw Nation Of Oklahoma; Regarding the Bipartisan Budget Act of 2018 Compensatory Habitat Mitigation Program for the Comite River Diversion, East Baton Rouge Parish Watershed Flood Risk Management, and West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Projects In Louisiana. The Programmatic Agreement (PA) was developed in consultation with the SHPO, Federally-recognized Indian Tribes, and NFS and it outlines the steps that will be followed to identify and evaluate cultural resources and complete the Section 106 process. If significant historic properties are identified within the project area, strategies will be developed to avoid those resources or to minimize or mitigate for adverse effects. Execution and implementation of this PA evidences that CEMVN has afforded SHPO a reasonable opportunity to comment on the Undertaking; that CEMVN has taken into account the effects of the Undertaking on historic properties; and that CEMVN has satisfied its responsibilities under Section 106 of the NHPA and its implementing regulations. To remain in compliance with Section 106, the NHPA stipulations and conditions detailed within the PA and set forth in the FONSI must be carried out.

8.12 NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT OF 1990

CEMVN will ensure that Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), will be followed if Native American human remains and/or funerary items are discovered on federally owned lands, including reservation lands.

Additionally, on February 19, 2020, CEMVN provided Tribes with a NEPA Notice regarding EA #576 - BBA 18 Construction Mitigation EA and on March 20, 2020, the Choctaw Nation of Oklahoma requested that Tribes should be contacted immediately in the event that Native American artifacts or human remains are encountered; this condition is memorialized in the Environmental Design Commitments (see FONSI).

9. CONCLUSION

9.1 RECOMMENDED DECISION

Recommend approval of the BBA Mitigation TSA: the purchase of in-kind mitigation bank credits and the construction of the Corps constructed projects found in table 2.3 until full satisfaction of the BLH-Wet and swamp mitigation requirements is complete.

9.2 PREPARED BY

The point of contact for this EA is Tammy Gilmore, USACE New Orleans District CEMVN-PDN-CEP. Table 9-1 lists the preparers of relevant sections of this report. Ms. Gilmore can be reached at the U.S. Army Corps of Engineers, New Orleans District; Coastal Environmental Planning Section, 7400 Leake Avenue; New Orleans, LA 70118.

Table 9-1
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10. REFERENCES

Louisiana's Comprehensive Archaeological Plan. 2018. State of Louisiana Department of Culture, Recreation and Tourism, Office of Cultural Development, Division of Archaeology, Baton Rouge.

Louisiana Department of Wildlife and Fisheries. Species by Parish List. Retrieved July 23, 2019 from http://www.wlf.louisiana.gov/wildlife/species-parish-list

National Park Service. How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. 1995. U.S. Dept. of the Interior, National Park Service, Cultural Resources, Washington, D.C. Electronic resource: https://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf.

Rees, Mark A. Archaeology of Louisiana. 2010. Louisiana State University, Baton Rouge.

U.S Fish and Wildlife Service. Endangered Species List. Retrieved July 23, 2019 from https://www.fws.gov/endangered/

U.S Fish and Wildlife Service. Information for Planning and Consulting. Retrieved July 23, 2019 from https://ecos.fws.gov/ipac/

U.S. Army Corps of Engineers (USACE). 1995. Amite River and Tributaries, Louisiana East Baton Rouge Parish Watershed Flood Control Projects. USACE, Mississippi Valley Division, New Orleans District.

---. 1991. Amite River and Tributaries Study, Feasibility Report on Comite River Basin. USACE, Mississippi Valley Division, New Orleans District.

---. 1995. Amite River and Tributaries, Louisiana, Comite River Basin; Revision of Comite Diversion Authorized Plan, EA #222. USACE, Mississippi Valley Division, New Orleans District.

---. 2012. Amite River and Tributaries, Louisiana Comite River Basin: Comite River Diversion Supplemental Mitigation Options, East Baton Rouge Parish, Louisiana. USACE, Mississippi Valley Division, New Orleans District.

---. 2016. West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Study. USACE, Mississippi Valley Division, New Orleans District.

---. 2019. West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Structural Alignment Surveys and Borings Investigations, St Charles and St John the Baptist Parishes, Louisiana. Supplemental Environmental Assessment #570. USACE, Mississippi Valley Division, New Orleans District.