FINAL ENVIRONMENTAL ASSESSMENT

AMITE RIVER AND TRIBUTARIES, LOUISIANA
COMITE RIVER BASIN

COMITE RIVER DIVERSION
SUPPLEMENTAL MITIGATION OPTIONS

EAST BATON ROUGE PARISH, LOUISIANA

U.S. Army Corps of Engineers
Mississippi Valley Division
Regional Planning and Environmental Division, South
New Orleans District

TABLE OF CONTENTS

1. INTRODUCTION. 4
1.1. Proposed Action 4
1.2. Purpose and Need for the Proposed Action. 6
1.3. Authority. 7
1.4. Prior Reports 7
1.5. NEPA Scoping 9
2. ALTERNATIVES TO THE EXISTING PLAN 9
2.1. General. 9
2.2. No-action, Future without Action Condition. 11
2.3. Alternative 1 - Expansion of Current Mitigation Area. 13
2.4. Alternative 2 – Acquisition and Management of Profit Island. 16
2.5. Alternative 3 – Acquisition and Management of the McHugh Swamp. 18
2.6. Alternative 4 – Acquisition of Credits in Mitigation Banks. 20
3. AFFECTED ENVIRONMENT 23
3.1. General Description. 23
3.2. Relevant Resources 25
3.2.2. WETLANDS 28
3.2.3. AQUATIC RESOURCES 28
3.2.4. FORESTED LANDS 29
3.2.5. PRIME AND UNIQUE FARMLANDS 30
3.2.6. THREATENED AND ENDANGERED SPECIES 31
3.2.7. CULTURAL RESOURCES 31
3.2.8. RECREATIONAL RESOURCES 32
3.2.9. AESTHETICS (VISUAL RESOURCES) 33
3.2.10. SOCIO-ECONOMIC RESOURCES 35
3.2.11. ENVIRONMENTAL JUSTICE 35
3.2.12. AIR QUALITY 36
4. ENVIRONMENTAL CONSEQUENCES 37
4.1 Wetlands 37
4.2. Aquatic Resources. 38
4.3. Forested Lands. 38

4.4. Prime and Unique Farmlands 40
4.5. Threatened and Endangered Species. 41
4.6. Cultural Resources. 42
4.7. Recreational Resources. 43
4.8. Aesthetics (Visual Resources) 44
4.9. Socioeconomic Resources. 45
4.10. Environmental Justice. 48
4.11. Air Quality. 49
4.12. Hazardous, Toxic, and Radioactive Waste. 50
4.13. Cumulative Effects 51
5. COMPLIANCE WITH THE FEDERAL AVIATION ADMINISTRATION POLICY ON HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS 52
6. COORDINATION 52
7. MITIGATION ASSESSMENT 57
8. ADAPTIVE MANAGEMENT AND MONITORING 59
9. COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS 60
10. CONCLUSION 61
11. PREPARERS 61
12. REFERENCES 61
13. APPENDIXES 62

ENVIRONMENTAL ASSESSMENT

AMITE RIVER AND TRIBUATARIES, COMITE RIVER BASIN
COMITE RIVER DIVERSION, SUPPLEMENTAL MITIGATION OPTIONS

EAST BATON ROUGE PARISH, LOUISIANA

1. INTRODUCTION.

1.0. The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, Regional Planning and Environmental Division South, has prepared this Environmental Assessment (EA) for the New Orleans District to evaluate the potential impacts of revising the mitigation plan for the Comite River Basin project (Comite project). The authorized project consists of a diversion channel and structures to divert flood flows from the Comite River to the Mississippi River. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2. This EA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, U.S. Army Corps of Engineers, New Orleans District, to make an informed decision on the appropriateness of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.1. Proposed Action

1.1.1. The proposed action consists of supplementing the mitigation plan for the Comite project to provide potential options for completion of compensatory mitigation obligations. The proposed action includes consideration of all four of the alternatives to the current mitigation plan. The intent of this EA is to analyze the effects of adding potential mitigation options to the current mitigation plan to increase the likelihood that sufficient mitigation can be achieved to compensate for the unavoidable adverse environmental impacts of the Comite project. The four alternatives are discussed separately in this EA for ease of presentation. As discussed in other sections of this EA, the implementation of mitigation for this project is dependent upon compliance with Louisiana state law which requires that mitigation is obtained from willing sellers, making all of the mitigation options, except for the use of mitigation banks, problematic.

1.1.2. No cost estimates have been prepared to compare the relative cost of implementing the mitigation options that are presented in this EA; estimates will be developed by the Comite Project Delivery Team (PDT) at a later date. The main purpose of this EA is to determine if any of the mitigation alternatives under consideration would cause significant adverse environmental impacts, which would require preparation of a supplemental EIS.

1.1.2. A mitigation plan was developed during the feasibility study and final EIS for the Comite project. Those documents, completed in 1990, provided the basis for project construction authorization in 1992. Two EAs (EA #222 and a supplement to EA #222) were prepared to address project modifications during detailed design and also addressed changes to the mitigation plan that were necessary as a result of those project design changes. The current mitigation plan

addressed in this document is the plan as described in the Final EIS, with the changes included in the FONSIs for EA #222 and a supplemental EA referred to hereafter as EA #222-A.

1.1.3. The original fish and wildlife mitigation plan described in the final EIS consisted of several components.

- Acquisition of approximately 300 acres of frequently-flooded bottomland hardwoods and wooded swamp near the Amite River and construction of a water control structure to regulate water levels within the 300-acre area. This feature would mitigate for the loss of winter waterfowl habitat.
- Acquisition and reforestation of 422 acres of non-forested land, mostly enclosed by the containment levees that tie into the Comite River Stage Control Structure. (Note: The containment levees and the Comite River Stage Control Structure were later determined to not be necessary and were removed as project components.)
- Acquisition and management of 213 acres of bottomland hardwood forest to increase habitat value. This land would be in the general area of the containment levees that tie into the Comite River Diversion Structure.
- Reforestation of approximately 110 acres of the dredged material disposal area adjacent to the diversion channel to replace upland habitat losses.

1.1.4. An environmental assessment (#222) entitled, "Amite River and Tributaries, Louisiana, Comite River Basin, Revision of Comite Diversion Authorized Plan" addresses changes to the authorized project including the mitigation plan. Changes to the fish and wildlife mitigation plan were as follows:

- Elimination of the diversion structure and containment levees in the Comite River and modification of the inflow channel at its intersection with the Comite River. These project changes eliminated the need for acquiring large areas of land for project construction and operation purposes. The EA included plans for the acquisition and management of these lands solely for mitigation of other project impacts.
- Elimination of the 300-acre mitigation area for the lower Amite River. A reanalysis showed that stage reductions with the project would be smaller for the more frequent events than the reductions used for analysis in the final EIS, making this mitigation feature unnecessary.
- Addition of a mitigation plan for project changes that include tripling of the diversion canal corridor width from the Comite River to Louisiana Highway 19; repositioning the corridor to avoid pipelines and utilities; and dredging of the Comite River over a distance of four miles downstream of the diversion.

1.1.5. EA #222-A changed the mitigation plan to address changes in the design of the Lilly Bayou control structure (formerly referred to as the diversion channel stage control structure) and resulting environmental effects. The area directly affected by construction of the control structure, including the disposal area, was increased by 186 acres. The overall project mitigation plan was increased accordingly by adding acreage to the amount of land to be acquired along the Comite River, as documented in the FONSI. No specific area was identified to provide for this additional mitigation.

1.2. Purpose and Need for the Proposed Action.

1.2.1. The purpose of the proposed action is to provide implementable mitigation for the Comite project. As documented in the EIS and two previous EAs, a total of 1,703 contiguous acres of a mixture of both forested and non-forested land along the Comite River is required to provide mitigation for the project as currently designed, in addition to the mitigation that is to occur on lands needed for project construction. Seventy-five acres of mitigation land have been acquired as part of a larger tract of land needed for project construction, so there is a remaining need for 1,628 acres of land for project mitigation, if the land were to be acquired along the Comite River in the same proportions of forested and open land as detailed in the previous environmental compliance documentation. The current mitigation plan includes the purchase of contiguous tracts of both forested and non-forested lands in the floodplain of the Comite River, and reforestation and management of those lands.

1.2.2. The environmental impact and mitigation analyses conducted for the EIS was conducted using the U.S. Fish and Wildlife Service's Habitat Evaluation Procedures or HEP and the USACE, Mississippi Valley Division's Habitat Evaluation System or HES. The results of the analyses were very similar in terms of average annual habitat units (AAHUs) of impact or loss and AAHUs required for mitigation. AAHUs are a measurement of the quality and quantity of a habitat type, averaged over a period of analysis, in this case 50 years. The existing quality of a habitat, such as bottomland hardwood forest (BLH), is first determined using a habitat assessment methodology, like HEP or HES. Field measurements are input to the model which calculates the existing habitat quality on a scale of 0.0 to 1.0. An area with no existing habitat quality for BLH, such as an agricultural field would score a 0.0, whereas an optimal quality BLH forest would score a 1.0. Habitat units are generated by multiplying the habitat quality index (0.0 to 1.0) by the number of acres in the habitat. Once existing habitat quality is determined, predictions are made by the evaluation team about the future conditions of the habitat for both the future conditions if no Federal project is undertaken and the future conditions if an action, such as mitigation, was undertaken. The predictions are input to the model for target years during the period of analysis and the model generates the AAHUs, which represents the difference between taking an action and taking no Federal action. Similar analyses were conducted for mitigation areas to determine the amount of acreage required to mitigate for unavoidable project impacts.

1.2.3. Even though AAHUs were calculated to determine project impacts and required mitigation, the EIS and subsequent EAs presented most of the project's impacts and mitigation needs in terms of acreage. The use of acreage to discuss impacts and mitigation can make it easier for the public to understand, but it can make discussion of impacts difficult since habitat values vary among parcels of land. This EA focuses discussion of impacts and mitigation credits on AAHUs rather than acres.

1.2.4. A major assumption made early in the development of this EA was that the AAHUs calculated for the EIS and EA #222 using HEP and HES are comparable to the AAHUs that would be calculated using the most common assessment methodology in use today for USACE civil works projects in the New Orleans District – the Wetland Value Assessment methodology or WVA. The USFWS has run side-by-side comparisons of the model outputs assessing BLH

during previous studies and determined that the results are similar enough to warrant concluding that the outputs, in terms of AAHUs are comparable. Therefore, the AAHUS presented in this document for the project impacts are taken from the earlier analyses, whereas the AAHUS presented for project mitigation are the result of new analyses conducted using the WVA.

1.2.5. Act 734 of the Louisiana Legislature, Regular Session, 2010 provides that the non-Federal sponsor for the construction of the Comite project (the Louisiana Department of Transportation and Development) cannot use funds or provide funds to the USACE for expropriation of property for purpose of compensatory mitigation of wetlands or other natural habitat for the Comite River Diversion Project. (Note that this statutory funding prohibition expressly excludes lands offered voluntarily for compensatory mitigation purposes, including, but not limited to mitigation banks.) Effectively, Act 734 requires that the land required for mitigation of the Comite project must be obtained from willing sellers. The non-Federal sponsor, the entity legally responsible for providing the lands, easements and rights-of-way necessary for project construction, has held public meetings and mailed letters to help identify willing sellers, but has met with very limited success. The successful acquisition of mitigation lands is dependent on the ability of the non-Federal sponsor to negotiate price with a willing owner of lands that are unencumbered and free of title defect.

1.2.6. As stated in paragraph 1.2.1., a total of 1,703 acres of land was previously determined necessary to mitigate for unavoidable project impacts (not including mitigation on project lands), and 75 acres of land has been acquired for mitigation. The 1,703 acres has been determined to equal 704.6 AAHUs and the 75 acres has been determined to equal 33.15 AAHUs. Therefore the remaining mitigation need for the project is 671.45 AAHUs. Given the Louisiana state law that requires mitigation land must be acquired only from willing sellers, and the fact that very few landowners in the currently-designated mitigation area have expressed a willingness to discuss selling their properties, additional mitigation options are required. This EA discloses various mitigation options and the potential effects associated with them.

1.3. Authority.

The proposed action is 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.

1.4. Prior Reports

1.4.1. A feasibility study and associated final EIS entitled, “Amite River and Tributaries, Louisiana, Comite River Basin” was completed in September 1990. The record of decision for the final EIS was signed on July 8, 1992. The record of decision generally supported the recommended plan contained in the final EIS, but eliminated a 5-acre recreational development on one of the project’s disposal areas because it was the type of facility that is normally provided by non-Federal interests. The following project components are specified in the record of decision.

- Construction of an 8-mile long grass-lined diversion channel extending from the Comite River above its confluence with the Amite River to the head of the Lilly Bayou watershed.
- Construction of an 8-mile-long earthen levee along the south bank of the diversion channel.
- Construction of a stage control structure in the Comite River, a containment levee with emergency spillway, a diversion structure, and a diversion channel stage control structure. (Note: The diversion channel stage control structure is now commonly referred to as the Lilly Bayou control structure.)
- Construction of erosion protection structures where the diversion channel intercepts Bayou Baton Rouge, White Bayou, and Cypress Bayou.
- Construction of a 3.5-mile-long trail with associated recreation features along the northern bank of the diversion canal.
- Acquisition of 2,505 acres of land for project construction, and relocation of 12 road and railroad bridges, 10 pipelines, and 12 telephone and power lines.
- Reforestation of 532 acres of project lands and disposal areas; acquisition and management of 213 acres of existing woodlands; and acquisition and management of a 300-acre backwater area near Clay Cut Bayou and construction of a weir to mitigate for winter waterfowl habitat losses. (Note: The 532 acres includes 422 acres of non-wooded land associated with containment levees along the Comite River and 110 acres of disposal areas along the diversion channel.)
- A plan to conduct further analysis of the need for augmenting the natural flows of Bayou Baton Rouge, White Bayou, and Cypress Bayou, three tributary streams intersected by the diversion channel.

1.4.2. An environmental assessment (#222) entitled, "Amite River and Tributaries, Louisiana, Comite River Basin, Revision of Comite Diversion Authorized Plan" was prepared in November 1995. A FONSI was signed on December 18, 1995. The following project components are specified in the FONSI.

- Elimination of the plan for a diversion structure and containment levees in the Comite River and modified the inflow channel at its intersection with the Comite River.
- Reduction of the size of the pumps needed to augment flows in Bayou Baton Rouge, Cypress Bayou, and White Bayou from five cubic feet per second (cfs) to one cfs.
- Increase of the construction right of way downstream of the Lilly Bayou control structure due to design changes that would result in greater erosion.
- Elimination of the plan for a berm alongside of the diversion channel; addition of channel erosion protection; adjustment of the channel alignment to avoid utilities, hazardous waste sites and cultural resources; addition of a disposal area along the eastern third of the channel; addition of a small levee along the north side where overland flow could erode the top of bank; increase of the maximum height of disposal alongside the channel from 8 feet to 14 feet; and inclusion of a drainage ditch to collect rainfall runoff and deliver it to a drop structure.
- Changes in the design of drop structures from use of gabions (rock baskets) to concrete, and addition of a drop structure near McHugh Road.

- Included the area formerly needed for containment levees along the Comite River as part of the mitigation plan.
- Elimination of the plan for the 300-acre mitigation area for the lower Amite River. A reanalysis showed that stage reductions with the project would be smaller for the more frequent events than the reductions used for analysis in the final EIS
- Addition of maintenance dredging of the Comite River up to four miles downstream of the diversion about once every ten years due to expected sedimentation.
- Addition of a plan for clearing and snagging within the banks of Bayou Baton Rouge, Cypress Bayou, and White Bayou above the diversion canal once every seven years.
- Analysis of the Bayou Duplantier area as a possible mitigation area; this area was eliminated from further consideration.

1.4.3. EA #222-A was prepared in October 2002 to address changes in the design of the Lilly Bayou control structure and resulting environmental effects. The FONSI was signed December 20, 2002. The area directly affected by construction of the control structure, including the disposal area, was increased by 186 acres. The overall project mitigation plan was increased accordingly by adding acreage to the amount of land to be acquired. However, the location of a potential mitigation area was not identified.

1.5. NEPA Scoping

1.5.1. The USACE, New Orleans District sponsored an initial meeting on April 16, 2009 at the Zachary Public Library in Zachary, Louisiana, public library to discuss the Comite project mitigation plan with area landowners and other interested parties. Comments from the landowners and others were mixed with some concerned that their land would be taken from them and others interested in selling their properties. In mid-April 2011, the Amite River Basin Commission distributed press releases to local media and sent letters to landowners and interested parties to announce two public meetings. On April 28, 2011 the first meeting sponsored by the Amite River Basin Commission was held at the Zachary Public Library, and on May 4, 2011 the second meeting was held at the DEMCO Training Facility in Central, Louisiana. In between the dates of those two meetings, an informational community meeting was hosted by four state legislators at The Rock Church in Zachary, Louisiana, on May 5, 2011. All of these meetings served to inform interested landowners and other residents of the Comite project and mitigation plan. Written and oral comments expressed at these meetings varied widely, but a large number of residents were concerned about the lands acquired for mitigation providing unlimited access to the general public.

2. ALTERNATIVES TO THE EXISTING PLAN

2.1. General.

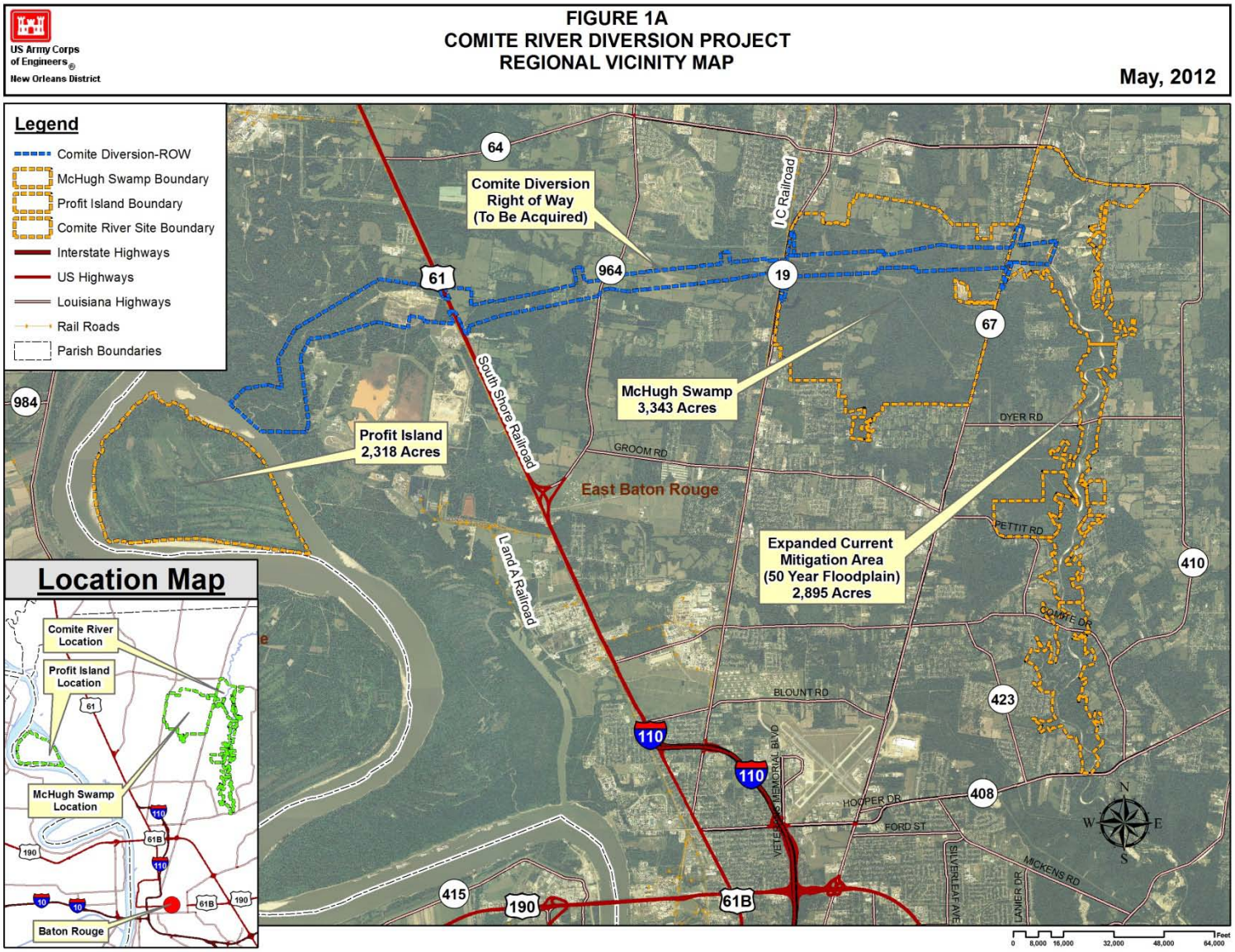
This EA evaluates the environmental effects of supplementing the current mitigation plan for the Comite project with additional alternatives that may allow for the fulfillment of the project's mitigation obligation. Four additional alternatives are evaluated in this EA. These alternatives include the expansion of the current mitigation plan area as addressed in EA #222 to encompass more acreage; acquisition and management of Profit Island; acquisition of lands within the area

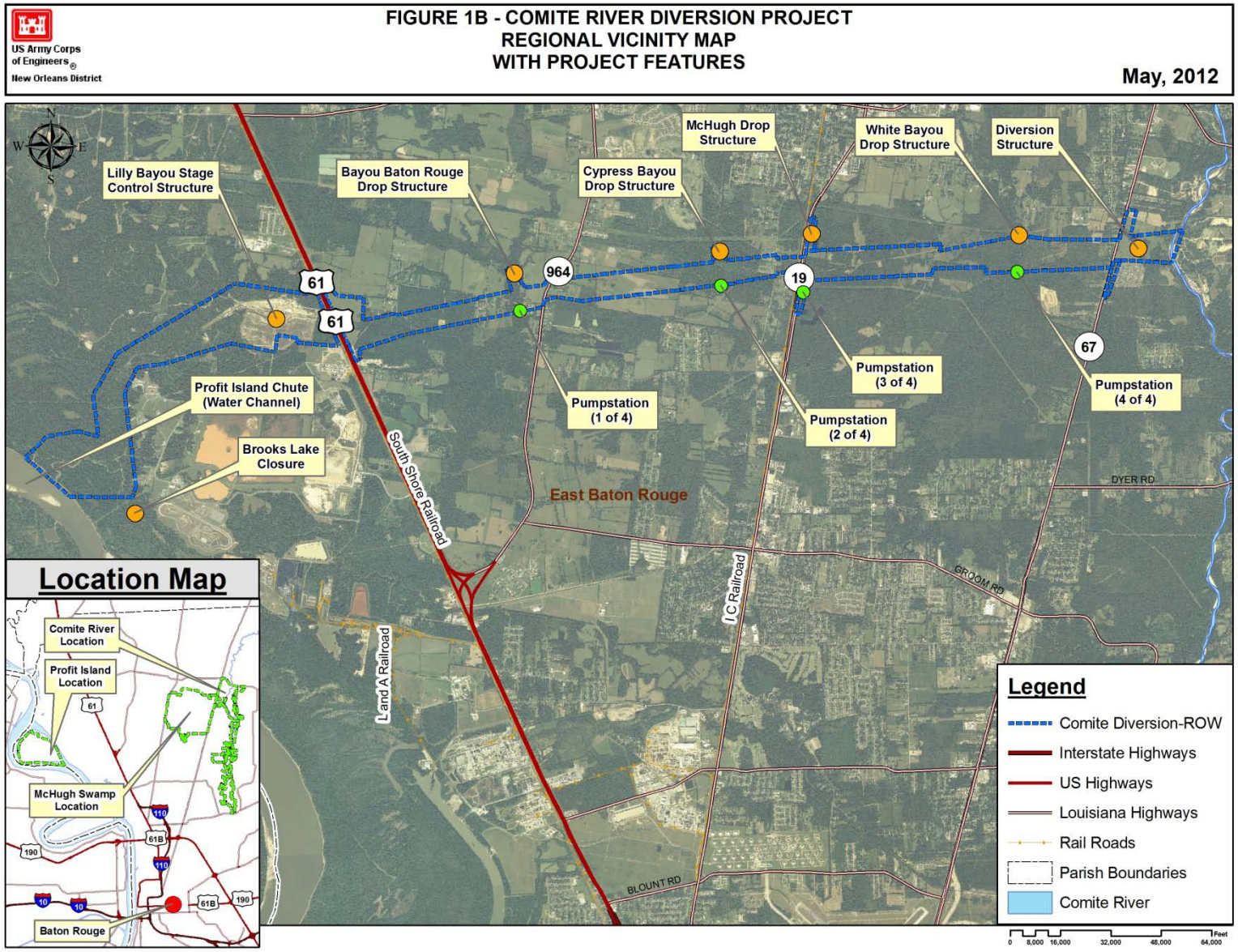
known as the McHugh Swamp; and acquisition of credits from one or more mitigation banks. A vicinity map showing the relative locations of the expanded current mitigation area, Profit Island, and McHugh Swamp is provided as Figure 1A. Figure 1B shows the locations of the project features mentioned in the following sections of this EA. Table 1 shows the mitigation potential of the alternative sites.

Table 1: Mitigation Potential of Alternative Sites.

Alternative Site	Action	Description	Available Acres	AAHUs
Expansion of Current Mitigation Area	Restoration	Tallow removal, planting BLH species	53.0	15.7
	Restoration	Planting BLH species in pasture	456.9	277.0
	Restoration	Planting BLH species in sand/gravel mine	173.4	34.1
	Preservation	Mature BLH forest	2211.9	380.5
Profit Island	Restoration	Zone 1: low-quality cottonwood/BLH forest	373.5	66.4
	Restoration	Zone 2: planting of BLH in agricultural field	134.9	81.9
	Restoration	Zone 2: low-quality cottonwood/BLH forest	483.6	115.2
	Enhancement	Zone 1: enhancement of low-quality BLH habitat	115.6	0.0
	Preservation	Zone 1: mature BLH forest	10.0	2.8
	Preservation	Zone 3: low-quality cottonwood forest	787.1	153.5
	Preservation	Zone 3: agricultural field	12.5	6.4
	Preservation	Zone 3: open water/unvegetated	400.8	0.0
McHugh Swamp	Restoration	Tallow removal, planting BLH species	558.1	118.4
	Restoration	Planting BLH species in pasture	484.8	294.0
	Restoration	Pine plantation harvest, planting BLH species	160.4	45.0
	Preservation	Mature BLH forest	2139.3	341.8

Additional areas that may be able to provide mitigation credits have been identified by the Amite River Basin Commission, but to date have not been investigated. These or other areas may be addressed in a subsequent EA if the alternatives addressed in this EA cannot provide sufficient, cost-effective credits to completely meet the mitigation obligations for the project. The omission of other possible mitigation alternatives from this EA does not preclude consideration of those in the future if one or more of the selected options is not implementable.


US Army Corps of Engineers
New Orleans District
FIGURE 1A
COMITE RIVER DIVERSION PROJECT
REGIONAL VICINITY MAP
May, 2012
Legend
Comite Diversion-ROW
McHugh Swamp Boundary
Profit Island Boundary
Comite River Site Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
Comite Diversion Right of Way (To Be Acquired)
McHugh Swamp 3,343 Acres
Profit Island 2,318 Acres
Expanded Current Mitigation Area (50 Year Floodplain) 2,895 Acres
East Baton Rouge
South Shore Railroad
Land A Railroad
I C Railroad
GROOM RD
DYER RD
PETTIT RD
COMITE DR
BLOUNT RD
HOOPER DR
FORD ST
MICKENS RD
VETERANS MEMORIAL BLVD
SILVERLEAF AVE
LANIER DR
64
61
964
19
67
984
410
423
408
415
190
61B
110
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
N
S
E
W
Feet
0 8,000 16,000 32,000 48,000 64,000


US Army Corps of Engineers
New Orleans District
FIGURE 1B - COMITE RIVER DIVERSION PROJECT
REGIONAL VICINITY MAP
WITH PROJECT FEATURES
May, 2012
Lilly Bayou Stage Control Structure
Bayou Baton Rouge Drop Structure
Cypress Bayou Drop Structure
McHugh Drop Structure
White Bayou Drop Structure
Diversion Structure
Profit Island Chute (Water Channel)
Brooks Lake Closure
Pumpstation (1 of 4)
Pumpstation (2 of 4)
Pumpstation (3 of 4)
Pumpstation (4 of 4)
South Shore Railroad
East Baton Rouge
I C Railroad
L and A Railroad
DYER RD
GROOM RD
BLOUNT RD
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
Legend
Comite Diversion-ROW
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
Comite River

2.2. No-action, Future without Action Condition.

The authorized project mitigation plan, as modified by EA #222 and EA #222-A, is considered the future without-project condition, also referred to as the no-action plan. If no new action is taken to change the mitigation plan, the USACE and its non-Federal project sponsors would continue to implement the authorized mitigation plan as much as possible as allowed by Act 734 of the Louisiana Legislature, which requires purchase of land only from willing sellers. Because of the limitations set forth in Act 734 it is unlikely that implementation of the authorized mitigation plan would be achievable. The authorized mitigation plan, aside from the mitigation that would occur on lands required for project construction, consists of acquisition and management of a combination of 1,703 acres forested and cleared lands with a habitat value of 704.6 AAHUs within the approximate 25-year floodplain of the Comite River. So far, 75 acres of mitigation lands, representing 33.15 AAHUs, have been acquired and two larger tracts and several smaller, adjacent tracts of land totaling about 835 acres are under investigation for purchase. Thus, the remaining mitigation obligation for the Comite project is 671.45 AAHUs.

It is possible that the owners of additional tracts of land identified in the authorized mitigation plan may come forward to offer their properties for sale. The USACE and the non-Federal sponsor would investigate and determine the suitability of any additional lands that are offered, and may incorporate any such suitable lands into the project mitigation.

2.3. Alternative 1 - Expansion of Current Mitigation Area.

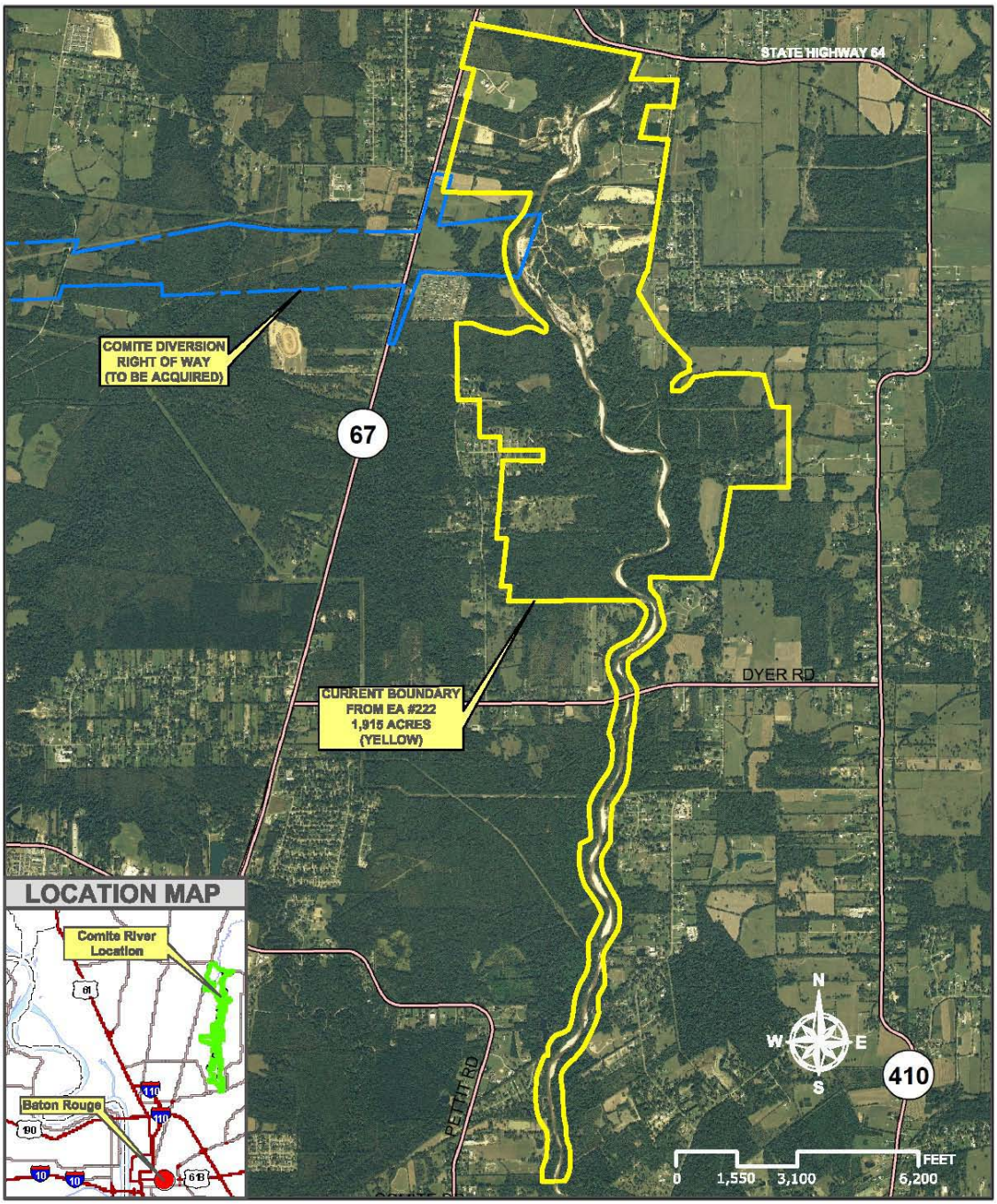
2.3.1. A mitigation area in the Comite River floodplain was identified in the Comite project EIS. A reconfigured area, which roughly fell within the Comite River's 25-year floodplain, was identified as the selected action in EA #222 (Figure 2). Subsequent to EA #222, additional project design changes identified in EA #222-A required additional mitigation for project impacts, but did not identify a potential mitigation area. Since the signing of the FONSI for EA #222-A additional areas in the Comite River floodplain downstream from and contiguous with the original mitigation area have been investigated as potential mitigation areas. Updated hydrologic modeling indicates that the 25-year floodplain contains less acreage than previous estimates. In order to accommodate for the amount of land necessary for required mitigation, the area of potential mitigation was revised; it is this expanded area that was investigation and is discussed in this EA. The mitigation area was expanded 2.5 miles south along the river, and outward from the 25-year floodplain to include the 50-year floodplain. The expanded plan along the river runs a total of 7.5 miles from Louisiana Highway 64 to Hooper Road (Louisiana Highway 408), and includes the 50-year floodplain. Figure 3 shows the expanded area of potential mitigation land acquisition.

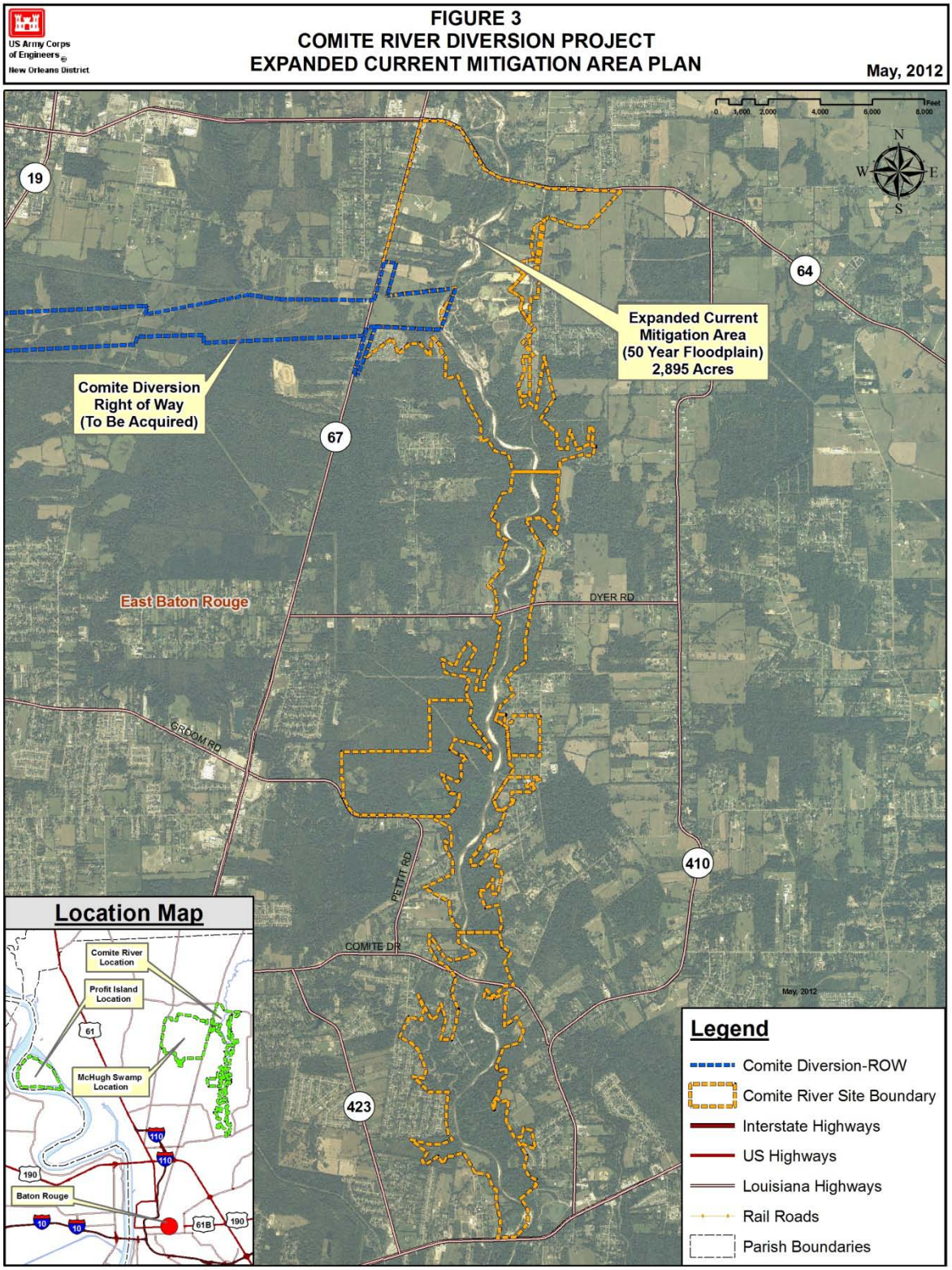
2.3.2. Mitigation within the expanded area would be accomplished utilizing the same methods as described in the project EIS and subsequent EAs. Desirable hardwood species would be planted as one year-old bare root seedlings on 8- to 10-foot centers, or about 430 to 675 trees per acre. In some areas seeds such as acorns, pecans, and hickory nuts may be planted, as well as container-grown plants. Often, large plantings are reliant upon the availability of seedlings, seeds, and nursery stock during the annual planting season. Forested lands would be managed

US Army Corps of Engineers, New Orleans District

FIGURE 2
COMITE RIVER DIVERSION PROJECT
EA #222 PLAN

May, 2012




US Army Corps of Engineers
New Orleans District
FIGURE 3
COMITE RIVER DIVERSION PROJECT
EXPANDED CURRENT MITIGATION AREA PLAN
May, 2012
Expanded Current Mitigation Area (50 Year Floodplain) 2,895 Acres
Comite Diversion Right of Way (To Be Acquired)
East Baton Rouge
DYER RD
GROOM RD
PETTIT RD
COMITE DR
19
64
67
410
423
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
Legend
Comite Diversion-ROW
Comite River Site Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries

through the elimination of undesirable species such as Chinese tallow, a non-native invasive species. Replanting would be accomplished as needed to achieve ecological success.

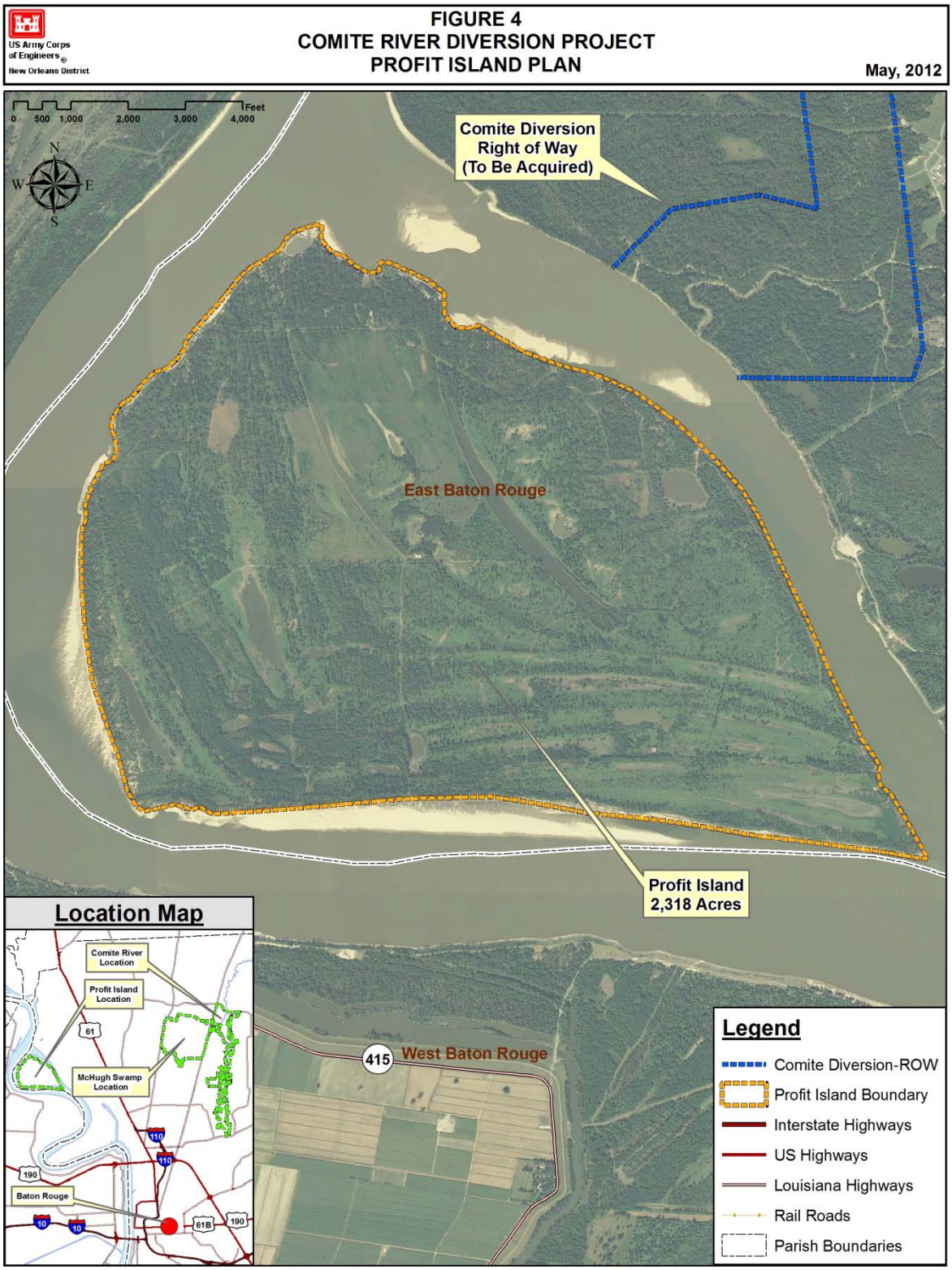
2.3.3. So far, approximately 835 acres of land in two areas along the Comite River have been investigated for restoration and preservation activities. Sand pit restoration activities would occur within an approximately 200-acre area along the left descending bank of the Comite River. Such activities would include importing topsoil and reforesting areas that have been heavily impacted by mining with bottomland hardwood species. Herbicide application and hand planting of desirable bottomland hardwood species would occur over the remaining acreage. Approximately 100 acres of fallow pasture that have grown up as a Chinese tallow thicket would be mechanically cleared and herbicide would be applied to the regenerated shoots and seedlings. Approximately 500 acres of moderate-high quality bottomland hardwood forest would be preserved and would provide mitigation credits from preservation. The remaining +/- 35 acres consist of open water and pipeline and utility rights-of-way. The description of management, enhancement, and preservation in this paragraph is typical of the type of mitigation activities that would be performed in any other areas along the Comite River that offer cost-effective mitigation and become available from willing sellers.

2.4. Alternative 2 – Acquisition and Management of Profit Island.

2.4.1. Profit Island is a 2,318-acre island in the Mississippi River that was formed when a straight channel, now known as Profit Island Chute, cut across a bend of the river. The island is shown on Figure 4. The island contains mostly wooded land, with some smaller areas of fields and ponds. The ponds are the remains of old channel meanders. The island is subject to inundation during high river stages. The flooding regime of the island is illustrated by three "zones" of hydrology and elevation; Appendix A and Appendix C include a discussion of the island's hydrology. Profit Island has potential for providing compensatory mitigation in the form of restoration, enhancement, and preservation activities.

2.4.2. Mitigation actions on Profit Island may include the reforestation of approximately 135 acres of existing fields with desirable bottomland hardwood species, including overcup oak, swamp chestnut oak, Nuttall oak, and water oak. Reforestation is usually accomplished by hand planting one year-old bare root seedlings on approximately 8- to 10-foot centers, or about 430 to 675 trees per acre. Due to the frequent flooding regime of the island during high water periods, some mortality of planted trees is expected. Replanting would be accomplished as needed to achieve ecological success. Selective girdling or herbicide application of other colonizing species, including cottonwood, privet, and willow may be necessary to establish the desirable hardwood habitat.

2.4.3. Approximately 800 acres of Profit Island are too low in elevation to perform meaningful restoration activities and would be counted as preservation, not including 400 acres of ponds and other unvegetated areas of water. This large part of Profit Island is currently forested with species that are highly tolerant of riverine flooding, mainly cottonwood, black willow, box elder, and privet. Any attempts to reforest this area with species that are considered more valuable for wildlife, such as oaks, persimmons, pecans, and maples, would likely be futile. Preservation would be justified since the willows and cottonwoods have timber value as pulpwood and,


US Army Corps of Engineers
New Orleans District
FIGURE 4
COMITE RIVER DIVERSION PROJECT
PROFIT ISLAND PLAN
May, 2012
0 500 1,000 2,000 3,000 4,000 Feet
N
W
E
S
Comite Diversion Right of Way (To Be Acquired)
East Baton Rouge
Profit Island 2,318 Acres
West Baton Rouge
415
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
61
110
190
10
61B
Legend
Comite Diversion-ROW
Profit Island Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries

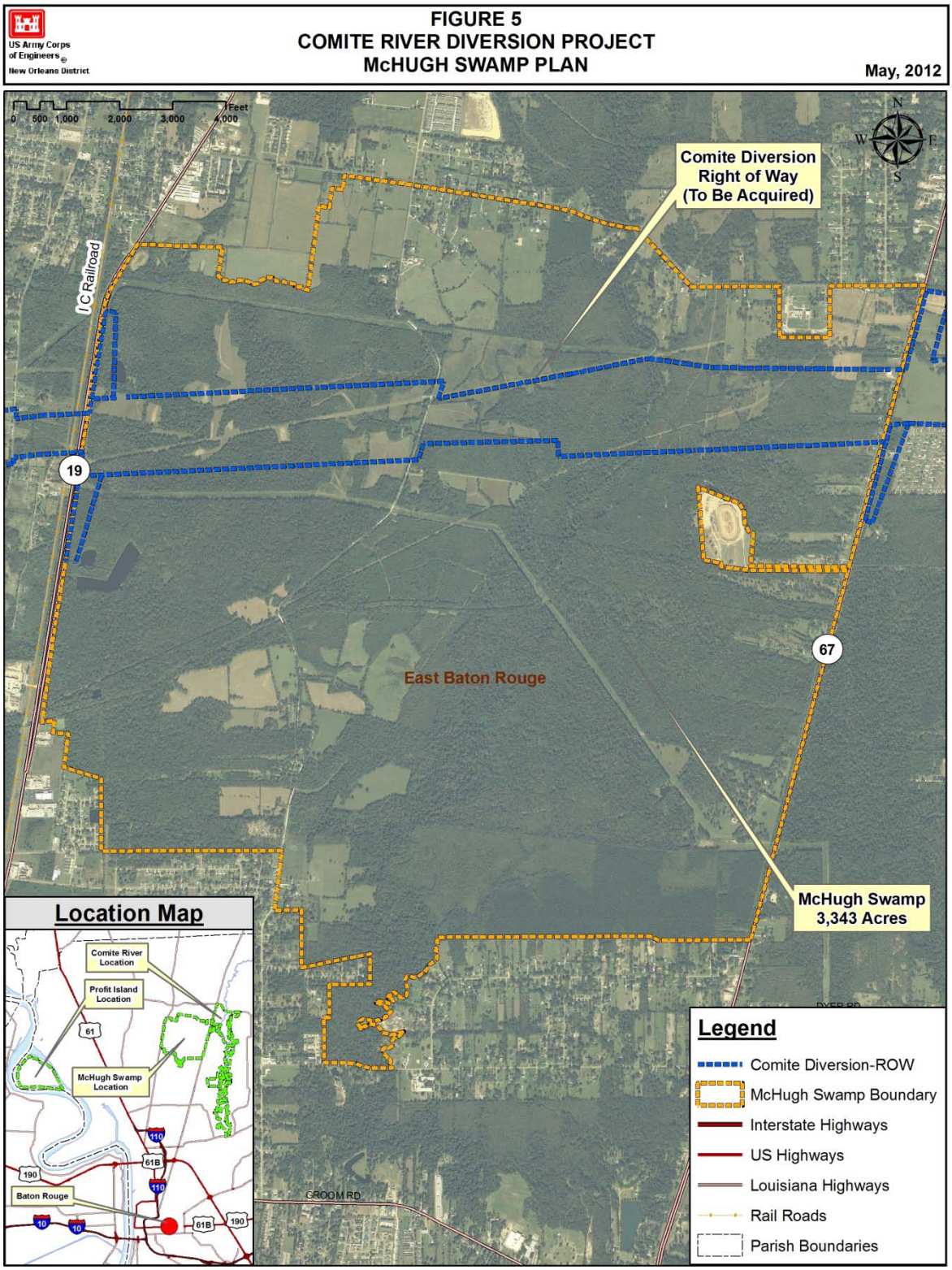
considering past practices, would likely be logged if the property remains in private ownership. If acquired for mitigation, no restoration or management activities would occur on these sites, which generally lie in the southern portion of the island. About 860 acres of the island that are somewhat higher in elevation, but also contain almost pure stands of cottonwood and willow, have potential for establishment of other species. Herbicide application to kill existing trees, including box elder, willows, cottonwoods and sycamores, and inter-plantings of hard and soft mast-producing bottomland hardwood species would occur wherever this type of habitat occurs on the island. About 120 acres of the island has low quality BLH habitat where enhancement activities, such as opening small clearings and planting hard and soft mast-producing seedlings, would occur.

2.4.4. Profit Island contains an area of lower elevation that is currently a shallow pond that may be suitable for reforestation around its fringes with cypress or other species that are tolerant of periodic flooding if water control features are installed to decrease the frequency of flooding by the Mississippi River. Crushed limestone material would be used to improve a 1.5-mile long existing limestone road along the southern boundary of the island that runs parallel to the pond. Prior to this improvement, 3 to 4 forty-eight inch diameter flap-gated culverts would be installed at intervals under the road to allow for quicker recession and drainage of floodwaters off of the island and back to the Mississippi River after high water events. The flap-gated culverts would have metal flaps on the outside end of the culvert so that water can flow out of the pond, but floodwaters cannot enter. Minor earth work along the road and around the perimeter of the pond would be necessary to build low embankments to secure the perimeter of the pond.

2.5. Alternative 3 – Acquisition and Management of the McHugh Swamp.

2.5.1. The McHugh Swamp is an area of mostly undeveloped land that straddles the Comite River diversion channel corridor. Since the McHugh Swamp straddles the diversion alignment, some of it will need to be acquired for project construction. The area is mostly forested and undeveloped because it is an area relatively low in elevation and is prone to having standing water. An area of 3,342 acres as shown on Figure 5, consisting of both forested lands and fields, is included within the area of investigation. The forested lands within the delineated area support mixed hardwood forest and areas dominated by invasive Chinese tallow trees. In the lower elevations, hardwood forests are composed mainly of sweet gum, black gum, American elm, swamp chestnut oak, Drummond red maple, box elder, and water oak. The tree composition of the hardwood forest in the higher elevations includes water oak, ironwood, persimmon, swamp chestnut oak, Drummond red maple, sweet gum, and black gum. Although not identified during field investigations, a few scattered southern red oak, magnolia, sugarberry, and pecan are likely to occur in this area as well. Even in some of the older hardwood forests, some large Chinese tallow trees occur. Invasive, non-native Chinese tallow trees dominate disturbed areas, especially fence rows, forest edges, fallow pastures, and utility rights-of-way.

2.5.2. The mitigation options in this area includes reforestation of the fields with desirable hardwood species. Species selection for planting would depend on the relative elevation of specific sites, which determines the amount of soil moisture normally available, and hence the tree species that are most suitable. Native, desirable species that are found in adjacent, nearby naturally-forested areas would be the most likely species used for reforestation. Approximately


US Army Corps of Engineers
New Orleans District
FIGURE 5
COMITE RIVER DIVERSION PROJECT
McHUGH SWAMP PLAN
May, 2012
0 500 1,000 2,000 3,000 4,000 Feet
N
W
E
S
Comite Diversion Right of Way (To Be Acquired)
IC Railroad
19
67
East Baton Rouge
McHugh Swamp 3,343 Acres
GROOM RD
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
61
110
61B
190
Baton Rouge
10
Legend
Comite Diversion-ROW
McHugh Swamp Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries

480 acres of existing pastureland would be maintained as fields via mowing (bush-hogging) until plantings of bottomland hardwood species can be arranged during the non-growing season. About 370 acres of fallow pastureland currently vegetated with by Chinese tallow thickets would be mechanically cleared to prepare sites for reforestation. Trees would be pushed into likes for natural decomposition. Once the seeds in the soil sprout, approved herbicide would be applied to kill young tallow trees. Additional applications of herbicide may be necessary to reduce the numbers of sprouting tallow. Once individual sites have been prepared, bottomland hardwood species will be planted. Planting is normally accomplished using one year-old bare root seedlings, planted on approximately 8- to 10-foot centers, or about 430 to 675 trees per acre. In some areas, seeds such as acorns, pecans, and hickory nuts may be planted, as well as container-grown plants. Often, large plantings are reliant upon the availability of seedlings, seeds, and nursery stock during the annual planting season. In areas dominated by Chinese tallow, mechanical clearing with bulldozers, or other heavy equipment may be necessary prior to planting. Selective girdling and/or application of approved herbicides to Chinese tallow or other undesirable species may also be necessary to meet mitigation needs. Replanting would be accomplished as needed to achieve ecological success.

2.5.2. Approximately 2,140 acres within the McHugh Swamp consists of moderate to high quality bottomland hardwood forest. If acquired for project mitigation, the preservation of this habitat would provide mitigation credits. Approximately 200 acres within McHugh Swamp are dominated by mature Chinese tallow trees. Limited mitigation credit could be obtained from this habitat by selectively girdling and killing Chinese tallow to allow species that are more valuable to wildlife to become more prevalent in the canopy of the forest. Finally, there is an approximately 160-acre area of planted pine forest that currently provides minimal wildlife habitat quality. If the landowner would choose to sell this property, the timber could be harvested and desirable hard and soft mast bottomland hardwood species could be planted. This would provide mitigation credits in the form of restoration.

2.6. Alternative 4 – Acquisition of Credits in Mitigation Banks.

2.6.1. Section 2036(c)(1) of the Water Resources Development Act (WRDA) of 2007, Public Law 110-114, specifically directs the USACE to consider the use of commercial mitigation banks to fulfill the mitigation responsibilities of Civil Works projects. It states:

> *In carrying out a water resources project that involves wetlands mitigation and that has impacts that occur within the service area of a mitigation bank, the Secretary, where appropriate, shall first consider the use of the mitigation bank if the bank contains sufficient available credits to offset the impact and the bank is approved in accordance with the Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (60 Fed. Reg. 58605) or other applicable Federal law (including regulations).*

2.6.2. A mitigation bank is defined as *a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by [Department of the Army] permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank*

sponsor. *The operation and use of a mitigation bank are governed by a mitigation banking instrument* (33 CFR §332.2, Compensatory Mitigation for Losses of Aquatic Resources, Final Rule; Federal Register, Volume 73, No. 70, April 10, 2008).

2.6.3. WRDA 2007 section 2036(a)(3) directs the USACE to be consistent with the USACE Regulatory Program administered under Section 404 of the Clean Water Act. Section 2036(a)(3) states:

> *To mitigate losses to flood damage reduction capabilities and fish and wildlife resulting from a water resources project, the Secretary shall ensure that the mitigation plan for each water resources project complies with the mitigation standards and policies established pursuant to the regulatory programs administered by the Secretary.*

2.6.4. Rule 33 CFR §332 establishes… *standards and criteria for the use of all types of compensatory mitigation, including on-site and off-site permittee-responsible mitigation, mitigation banks, and in-lieu fee mitigation to offset unavoidable impacts to waters of the United States authorized through the issuance of Department of the Army permits pursuant to section 404 of the Clean Water Act (33 U.S.C. 1344) and/or sections 9 or 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401, 403).* As established in 33 CFR *§*332, compensatory mitigation should be *located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services, taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources (including the availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses*. Watersheds are delineated by the U.S. Geological Survey using a nationwide system based on surface hydrologic features. A service area is *the geographic area within which impacts can be mitigated at a specific mitigation bank or an in-lieu fee program, as designated in its instrument* (33 CFR *§*332.2). Watersheds are designated with hydrologic unit codes or HUCs.

2.6.5. USACE guidance "Implementation Guidance for Section 2036(a) of the Water Resources Development Act of 2007 (WRDA 07) – Mitigation for Fish and Wildlife and Wetland Losses" dated August 31, 2009 further highlights the need for Civil Works mitigation plans to be consistent with the regulations and policies governing the USACE Regulatory Program.

2.6.6. To comply with these multiple laws and directives and to be consistent with the USACE Regulatory Program, the CEMVN investigated the use of mitigation banks within appropriate, applicable service areas. The Comite project straddles HUC 08070201 (Bayou Sara - Thompson Creek Watershed) which is within the Mississippi River Basin and HUC 08070202 (Amite River Watershed) which is within the Lake Pontchartrain Basin. Thus, HUC 08070201 and HUC 08070202 are the primary service areas for the project. Other HUCs within the Mississippi River Basin and Lake Pontchartrain Basin are the secondary service areas, and are listed in Table 2.

Table 2. Applicable Service Areas for the Comite Diversion Project.

Mississippi River Basin	
HUC 08070100	Lower Mississippi - Baton Rouge Watershed
HUC 08070201	*Bayou Sara – Thompson Creek Watershed*
HUC 0890100	Lower Mississippi River – New Orleans Watershed
Lake Pontchartrain Basin	
HUC 08070202	*Amite River Watershed*
HUC 08070203	Tickfaw River Watershed
HUC 08070204	Lake Maurepas Watershed
HUC 08070205	Tangipahoa River Watershed
HUC 08090201	Liberty Bayou – Tchefuncte River Watershed
HUC 08090202	Lake Pontchartrain Watershed
HUC 08090203	Eastern Louisiana Coastal Watershed

Primary service areas italicized

2.6.7. Mitigation banks within applicable service areas that currently have available bottomland hardwood credits are being considered. In addition, any new banks that are approved and have applicable credits available, if and when a decision is made to acquire mitigation credits from a bank, would be considered. Table 3 lists the currently available banks and the amount of available bottomland hardwood (BLH) credits in each. As new applicable banks are approved they may be considered for potential use.

Table 3. Mitigation Banks within Applicable Service Areas.

Bank Name	HUC	Available Credits*
Bayou Conway	08070204	119.3
Bayou Manchac – Oakley	08070202	211.8
Comite Properties – Tract A	08070202	53.4
Comite Properties – Tract B	08070202	56.7
Cypress Plantation Mitigation Bank	08070201	13.7
Gum Swamp	08070203	314.0
Laurel Oak – Enhancement	08070203	27.2
Ponder Land Company	08070203	49.6
Spanish Lake – Restoration Unit I	08070202	470.535
Zachary Mitigation Bank – Comite Flats I Site	08070202	27.3
Zachary Mitigation Bank – Comite Flats II Site	08070202	22.2
Zachary Mitigation Bank – Copper Mill Bayou Site	08070202	13.5

**BLH Credits available as of April 27, 2012*

2.6.8. USACE guidance "Implementation Guidance for the Water Resources Development Act of 2007 – Section 2036(c) Wetlands Mitigation" dated August 6, 2008, *credits from a mitigation bank are a service which is acquired to meet the compensatory mitigation requirements of a Civil Works projects.* As such, this EA does not address the environmental effects of purchasing credits in one or more mitigation banks as compensation for the Comite project. Environmental

effects of establishing, operating, and maintaining mitigation banks were considered by the USACE Regulatory Program during the establishment of the banks.

3. AFFECTED ENVIRONMENT

3.1. General Description.

3.1.1. ENVIRONMENTAL SETTING.

The Comite project, the expansion of the current mitigation area, Profit Island, and McHugh Swamp are located in East Baton Rouge Parish, Louisiana. The parish is composed of about 455 square miles of land and 15 square miles of water, and is a mixture of developed and undeveloped land. Forested areas, wetlands, and other native habitat have been converted for agricultural use, urban/residential expansion, and industrial development, most rapidly over the past 40 years. According to U.S. Census data, the parish had a population of 440,171 in 2010, making it the most populous parish in Louisiana. The population density was 966 people per square mile in 2010. The state capital of Baton Rouge, located in the western portion of the parish on the Mississippi River, is the second-largest city in Louisiana. It is the main residential center of the parish, and various industries and businesses are located in the area. The Port of Baton Rouge is the 13th largest in the United States, as ranked by total tons (USACE-IWR, 2009). Farms and smaller businesses are mostly located in the northern and eastern portions of the parish.

3.1.2. DESCRIPTION OF THE WATERSHED

A watershed is an area of land drained by a particular set of streams and rivers. There are 12 major watersheds within Louisiana (Figure 6). The Comite project lies mostly within the 4,700 square-mile Lake Pontchartrain Basin watershed, which encompasses 16 parishes within the southeastern portion of the state. A small portion of the project on its western end and Profit Island lie within the Mississippi River Basin. The Lake Pontchartrain Basin consists of a number of rivers that drain to Lake Pontchartrain, Lake Maurepas, Lake Borgne, and Breton Sound. These water bodies form a shallow brackish receiving basin for fresh water from the Amite, Tickfaw, Blind, Tangipahoa, Tchefuncte and Pearl Rivers, as well as Bayous Lacombe and Bonfouca. Fresh water is also introduced through regional drainage canals, while salt water enters the watershed from the Gulf of Mexico via Mississippi Sound, and Chef and Rigolets Passes (Penland et al., 2002). The Mississippi Basin in the vicinity of the Comite Project is very narrow, consisting entirely of the lands and waters between the river levees or higher elevation land near the river. Lilly Bayou which will be used to convey the floodwaters diverted from the Comite River to the Mississippi River is one of the lowermost streams flowing into the Mississippi River. Just south of Lilly Bayou, White Bayou, and Cypress Bayou are intercepted by the Baker Canal, which carries part of their flows along with the flow from Bayou Baton Rouge into the Mississippi River.

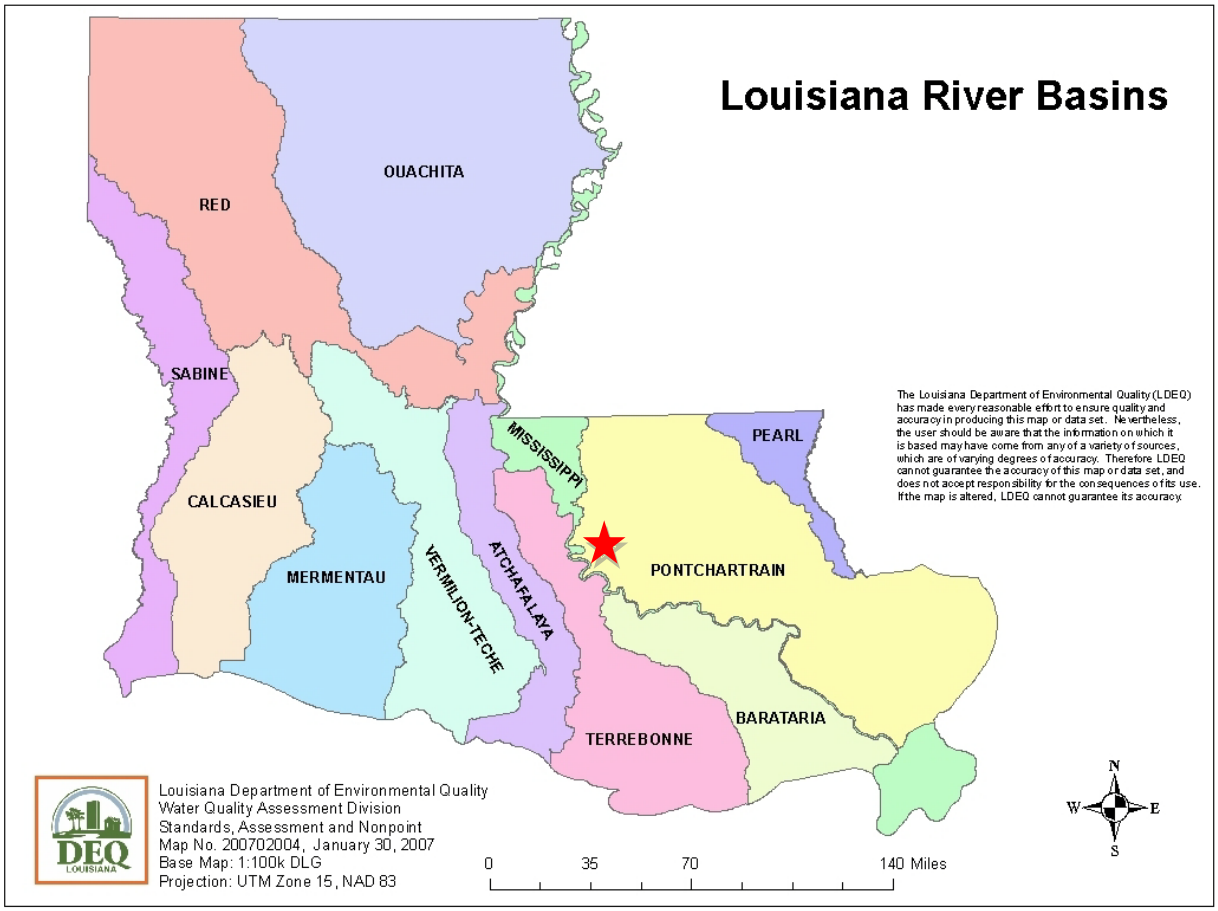


Figure 6: Louisiana River Basins (LDEQ, 2007). The Lake Pontchartrain Basin Watershed is shown in yellow. The location of the Comite Diversion project is represented by a red star.

Urbanization is evident throughout the Lake Pontchartrain Basin watershed and has led to drastic changes in land use patterns and major impacts on important natural resources. In the western region of the basin, East Baton Rouge Parish has grown rapidly during the past 30 years. Extending eastward, rolling woodlands, bottomland hardwood forest, wetlands and small farms have been converted to a suburban setting of houses, shopping centers and small businesses. Petrochemical plants, bulk cargo facilities, grain elevators and refineries have turned the banks of the Mississippi River into an industrial corridor from Baton Rouge to New Orleans. Flanking the plants are subdivisions and commercial developments covering areas that were once utilized for agriculture (Penland et al., 2002).

3.1.3. CLIMATE. East Baton Rouge Parish is considered to have a sub-tropic climate with winter temperatures occasionally dropping below freezing. The average annual rainfall is 55.6 inches making the area a fairly wet and humid environment. The average annual temperature is 67.5^{o}F, with January as the coldest month with an average temperature of 51.2^{o}F, and August as the hottest month with an average temperature of 80.5^{o}F.

3.1.4. GEOLOGY.

The first stage in formation of the Lake Pontchartrain Basin began when sea level rise ended 3,000-4,000 years ago at the end of the Holocene Transgression. This was followed by the development of the Pine Island barrier shoreline trend, which resulted in the formation of Lake Maurepas and Lake Pontchartrain. The next stage in the formation of the Basin began when the St. Bernard delta complex of the Mississippi River Deltaic Plain built out of the alluvial valley onto the continental shelf. The St. Bernard delta complex buried the Pine Island barrier island trend under a sequence of deltaic sediments. About 2,000 years ago, the Mississippi River abandoned the St. Bernard delta complex and diverted out of the Basin to a new location of the Lafourche delta complex. This stage in the development of the Basin saw the natural transgression of the St. Bernard delta complex, as coastal land loss began to occur and the Chandeleur Islands started to form approximately 2,000 years ago. The Mississippi River moved back into the Basin about 1,000 years ago by diverting from the Lafourche delta complex to the Modern delta complex in the southern region of the Basin (Penland et al., 2002).

Soils within East Baton Rouge Parish predominately consist of loess-like soils with high silt content that were likely deposited by wind action. Areas along the Mississippi River consist of soils that developed from sands, silts, and clays deposited by the river (USDA, 1968).

3.2. Relevant Resources

3.2.1. This section contains a description of relevant resources that could be impacted by the project. The important resources described in this section are those recognized by laws, executive orders, regulations, and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. Table 4 provides summary information of the institutional, technical, and public importance of these resources.

3.2.2. The following resources have been considered and found to not be affected by any of the alternatives under consideration: National and state wildlife management areas and refuges; National parks and monuments; state coastal resources programs; and estuarine or marine fisheries resources, including essential fish habitat.

3.2.3. The Comite River is a state-designated scenic river. The Comite project would involve alterations to the Comite River that are typically not allowed under the Louisiana Scenic Rivers Act (Louisiana Revised Statutes 56:1840-1856). An exemption for the construction of the Comite project is provided in Revised Statute 56:1855(F). None of the alternatives under consideration in this EA would be expected to affect the Comite River. As such, the Comite River and its status as a scenic river is not included as a relevant resource in this EA.

Table 4: Relevant Resources.

Resource	Institutionally Important	Technically Important	Publicly Important
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of wetlands.
Aquatic Resources	Fish and Wildlife Coordination Act of 1958, as amended.	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Forested Lands	Section 906 of the Water Resources Development Act of 1986 and the Fish and Wildlife Coordination Act of 1958, as amended.	Provides necessary habitat for a variety of plant, fish, and wildlife species; it often provides a variety of wetland functions and values; it is an important source of lumber and other commercial forest products; and it provides various consumptive and non-consumptive recreational opportunities.	The high priority that the public places on its esthetic, recreational, and commercial value.
Prime and Unique Farmlands	The Farmland Protection Policy Act and Council on Environmental Quality memo of August 11, 1990.	These farmlands provide high production of plant and animal food products to sustain life as we know it. The economic health of the Nation is dependent upon high agricultural production.	Farmers and farm workers depend upon high quality farmland for their livelihoods. Nearly all people in the U.S. depend upon farm products for food.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended	Federal and state agencies cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect sites. Their association or linkage to past events, to historically important persons, and to design and construction values; and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.

Table 4: Relevant Resources.

Resource	Institutionally Important	Technically Important	Publicly Important
Recreation Resources	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value of to local, state, and national economies.	Public makes high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.
Aesthetics (Visual Resources)	USACE ER 1105-2-100, and National Environmental Policy Act of 1969, Louisiana's National and Scenic Rivers Act of 1988, and the National and Local Scenic Byway Program.	Visual accessibility to unique combinations of geological, botanical, and cultural features that may be an asset to a study area. State and Federal agencies recognize the value of beaches and shore dunes.	Environmental organizations and the public support the preservation of natural pleasing vistas.
Socio-Economic Resources	River and Harbor Flood Control Act of 1970 (P.L. 91-611).	N/A	Social concerns and items affecting area economy are of significant interest to community.
Environmental Justice	Executive Order 12898 and the Department of Defense's Strategy on Environmental Justice of 1995.	The social and economic welfare of minority and low-income populations may be positively or disproportionately impacted.	Public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of Federal actions.
Air Quality	Clean Air Act of 1963, Louisiana Environmental Quality Act of 1983.	State and Federal agencies recognize the status of ambient air quality in relation to the NAAQS.	Virtually all citizens express a desire for clean air.

3.2.2. WETLANDS

3.2.2.1. General Existing Conditions. Wetlands are defined as *those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas* (33 CFR §328.3(b), Definition of Waters of the United States; Federal Register, Volume 51, No. 41220, November 13, 1986). Wetland habitats located in East Baton Rouge Parish and the larger Lake Pontchartrain Basin watershed serve a variety of functions including enhancement of water quality, surface water retention/detention, nutrient transformation, recreational opportunities, and habitat for terrestrial and aquatic species. Wetlands occur in the Mississippi River Basin between the western end of the Comite project at Lilly Bayou and the Mississippi River and across the Profit Island Chute on Profit Island. Wetland loss in the Lake Pontchartrain Basin watershed occurs due to a variety of causes, much of it attributable to human activities such as development for residential, industrial, and agricultural uses (Penland et al., 2002).

3.2.2.2. Expansion of Current Mitigation Area. Approximately 950 acres of the expanded mitigation area is classified as wetlands. Approximately 75 percent of the expanded area is composed of bottomland hardwood forest and 25 percent is used for agricultural, residential, and/or recreational purposes. Both the forested and agricultural areas contain wetlands, but the forested areas contain a higher percentage of wetlands as agricultural areas, including pastures and hay fields, are typically developed on relatively higher ground.

3.2.2.3. Profit Island. Profit Island contains an estimated 2,020 acres of wetlands comprising about 90 percent of the island. Approximately 1,100 acres of the wetlands are forested primarily with cottonwood, sycamores, green ash, and willow. Approximately 400 acres are maintained as wildlife food plots and planted with annual herbaceous vegetation. Approximately 520 acres are a mixture of seasonal herbaceous swales and low lying areas that experience sufficient levels of annual flooding that prohibit the establishment of woody vegetation.

3.2.2.4. McHugh Swamp. Approximately 2,700 acres, or 80 percent, of the proposed mitigation area of McHugh swamp is classified as wetlands. Approximately 200 acres of wetlands occur along the lower lying fringes of existing pasture land in the area. Approximately 100 acres of wetlands are maintained as right of ways for powerlines and pipelines. The remaining wetlands are forested either with bottomland hardwoods, Chinese tallow or a combination of both.

3.2.3. AQUATIC RESOURCES

3.2.3.1. General Existing Conditions. The Mississippi River and the Comite River are the two main waterbodies in the general area. Their aquatic resources differ somewhat since the Mississippi is a highly turbid alluvial river and the Comite is a generally clear river running though the Pleistocene Terrace. The species assemblage of the Mississippi includes abundant blue catfish, channel catfish, flathead catfish, paddlefish, three species of buffalo fish, white bass, striped bass, largemouth bass, bluegill and other sunfishes, and many other less-common species. The Comite River has some of the same species, including largemouth bass and bluegill and other sunfishes, but other species including various species of shiners and darters.

White Bayou, Cypress Bayou and Bayou Baton Rouge occur between the Comite River and the Mississippi River. These bayous typically contain minnows, sunfish, turtles, frogs and mussels.

3.2.3.2. Expansion of Current Mitigation Area. This area was expanded approximately 2.5 miles southward along the Comite River to Hooper Road. Aside from the Comite River, the area contains four sizable ponds which total about 4 acres of water surface. Common species to be expected in these ponds are largemouth bass, bluegill, various minnows and aquatic turtles and frogs.

3.2.3.3. Profit Island. There are about 60 acres of permanent lakes on Profit Island plus about 325 acres that are low-lying, seasonally flooded, intermittent troughs, swales, and depressions. These areas are usually flooded either by river water or rainwater, but may dry up during droughts and become partially covered with herbaceous vegetation. Profit Island is flooded by the Mississippi River to some degree on an annual basis. Major floods, such as those of 2008 and 2011, cover the entire island. During floods, and to a lesser degree during normal high water stages, most of the fish species that normally occur within the banks of the river intentionally seek out flooded lands such as Profit Island to forage. These fish consume countless insects, insect larvae, larvae, snails, slugs, crustaceans and other invertebrates that have multiplied on the island during low water conditions. This annual event is important to the aquatic ecology of the river.

3.2.3.4. McHugh Swamp. Three borrow pit lakes covering approximately 25 acres occur in the area. Aquatic habitat is also provided by Whites Bayou and some man-made drainage ditches, including an unnamed ditch that connects Whites Bayou to the Comite River and Southern Canal that connects Whites Bayou to Cypress Bayou and eventually the Mississippi River. Those aquatic areas typically contain largemouth bass, bluegill sunfish, minnows, aquatic frogs and turtles.

3.2.4. FORESTED LANDS

3.2.4.1. General Existing Conditions. Forested lands located in East Baton Rouge Parish and the larger Lake Pontchartrain Basin watershed include bottomland and upland hardwood forests and planted pine plantations. Many of the same hardwood trees are found in both bottomland and upland habitats, though species composition varies due to differing soil moisture and soil type. Bottomland hardwood forest habitat is considered mesic (moist) to hydric (wet). The typically productive forests are found in low-lying areas, and are usually dominated by shade-tolerant, deciduous trees with an understory of woody shrubs and herbaceous groundcover plants.

Upland hardwood forest habitats are located at higher elevations on sloped or rolling terrain, which is considered xeric (dry) to mesic. Upland hardwood forests are also usually dominated by shade-tolerant, deciduous trees with an understory of woody shrubs and herbaceous groundcover plants. Bottomland and upland hardwood forest habitats are threatened mainly by urban development and conversion to agriculture (Penland et al., 2002). Pine plantations are composed almost exclusively of loblolly pine which is planted for pulp wood and timber production.

3.2.4.2. Expansion of Current Mitigation Area. The forested lands within this area are of two main types, older mixed bottomland hardwoods and younger invasive Chinese tallow woodlands. The hardwood forests are typical of floodplain forests with water oak, sycamore, and willow as the dominant species and American elm, slippery elm, winged elm, live oak, and tulip poplar also common. Vines and bushes include wild grape, peppervine, Virginia creeper, dewberry, privet, and green briar species. Common herbaceous species include lizard's tail, alligator weed, and saw palmetto. Since Chinese tallow became established in this general area, any areas that are clear-cut for timber harvesting or fields that are left fallow become dominated almost exclusively by Chinese tallow. This species grows so quickly and densely that it outcompetes and shades out nearly all other species.

3.2.4.3. Profit Island. The dominant vegetation species on Profit Island are cottonwood, willow, and sycamore, with tallow, swamp dogwood, box elder, hackberry, green hawthorn, sweetgum, green ash, pecan, and catclaw also common. Vines and bushes include wild grape, trumpet vine, lady's ear drop, peppervine, poison ivy, dewberry, and devil's walking stick. Herbaceous vegetation includes lizard's tail, spider lilies, frog fruit, Bermuda grass, coffee weed, and alligator weed.

3.2.4.4. McHugh Swamp. Common tree species are overcup oak, willow, ironwood, water oak, green ash, persimmon, pecan, catclaw, live oak, and deciduous holly. Common vines are honeysuckle, blackberry, dewberry, and green briar species. Herbaceous plants include planted bahiagrass in pastures, and pennywort, lizard's tail, and saw palmetto. One sizable area of 160 acres of planted pine plantation is located in this potential mitigation area.

3.2.5. PRIME AND UNIQUE FARMLANDS

3.2.5.1. General Existing Conditions. East Baton Rouge Parish was primarily rural until the period after World War II, when the pace of industrial development and residential development accelerated. Although there is still significant agricultural activity in the parish, the relative importance of agriculture continues to decline. Most of the land in East Baton Rouge Parish is fairly level with slope from 0 to 3 percent, and largely of alluvial origin. The most important agricultural uses are as pasture for cattle and for the cultivation of soybeans and corn. Some undeveloped land is unsuitable for agriculture due to poor drainage or soil chemistry.

3.2.5.2. Expansion of Current Mitigation Area. The expanded mitigation area proposed along the Comite River contains a total of 2,895 acres of which 931 acres, primarily within the northern part of the area, are classified as prime farmland by the Natural Resources Conservation Service. Within the two areas currently under consideration from willing owners, totaling 835 acres, approximately 280 acres are prime farmland. The soil classifications that support prime farmland in this area are Calhoun silt loam, Gilbert silt loam, Oprairie silt, Satsuma silt, and Scotlandville silt.

3.2.5.3. Profit Island. Due to frequent flooding and the lack of soil classifications that would support prime farmland, there are no lands on Profit Island that are classified as prime or unique farmland.

3.2.5.4. McHugh Swamp. This contains a total of 3,342 acres, of which 1,667 acres are classified as prime farmland by the Natural Resources Conservation Service. The soil classifications that support prime farmland in this area are Calhoun silt loam, Frost silt loam, Olivier silt, Oprairie silt, and Scotlandville silt.

3.2.6. THREATENED AND ENDANGERED SPECIES

3.2.6.1. General Existing Conditions. The endangered pallid sturgeon (*Scaphirhynchus albus*) occurs in the Missouri and Mississippi Rivers. In the Mississippi River, the species is known to occur from at least the confluence with the Missouri River downstream to the vicinity of New Orleans. The threatened interior least tern (*Sterna antillarum*) nests on unvegetated sand bars along the Mississippi River. The threatened Louisiana black bear (*Ursus americanus luteolus*) occurs in and around the Atchafalaya Basin located to the west of the Comite project area. The threatened Alabama heelsplitter mussel (*Potamilus inflatus*), also known as the inflated heelsplitter, occurs in the Amite River, but not its main tributary, the Comite River.

3.2.6.2. Expansion of Current Mitigation Area. No threatened or endangered species are known to occur in this area.

3.2.6.3. Profit Island. Pallid sturgeon are known to occur in the Mississippi River and likely forage on Profit Island when floodwater cover the island.

3.2.6.4. McHugh Swamp. No threatened or endangered species are known to occur in this area.

3.2.7. CULTURAL RESOURCES

3.2.7.1. General Existing Conditions. There have been three cultural resource studies within and near the project area (Rivet, 1976; Ryan et al., 1994; Markell, 1997). All but one of these studies is associated with the Comite River Diversion Project. The Rivet study was for a proposed bridge on Louisiana Highway 64 on the northern edge of the study area. No cultural resources were identified by Rivet.

3.2.7.2. Expansion of Current Mitigation Area. In June 2009 consultation under Section 106 of the National Historic Preservation Act was completed with the State Historic Preservation Officer for tree planting along a seven mile stretch adjacent to the Comite River from Zachary, Louisiana south to Louisiana Highway 408 (USACE, 2009). Consultation resulted in a determination that no known historic properties would be affected by this undertaking.

3.2.7.3. Profit Island. Profit Island is associated with two marine disasters. In October 1837 the steamboat Monmouth, which was transporting over 700 Creek Indians to new western reservations collided with the Tremont in the Mississippi River adjacent to what is now Profit Island, and sunk with the loss of at least 300 people.

In 1863 the USS Mississippi was a victim of Admiral D.G. Farragut's failed attempt to run past the Confederate forces at Port Hudson. Taking heavy fire, the Mississippi ran aground north of Profit Island. It eventually made its way downriver sinking somewhere around Profit Island.

During the siege of Port Hudson the main Union supply depot was located at Springfield Landing on the east shore of the Mississippi River across from what is now Profit Island. A small detachment of Union troops were stationed on the southeastern tip of the island.

3.2.7.4. McHugh Swamp. A total of six archaeological sites have been identified within the potential McHugh Swamp mitigation area, with all but one dating to the historic period. These sites are described as follows. Site 16EBR102 was recorded by Coastal Environments, Inc. (CEI) during a survey for the Comite Diversion Project (Ryan et al., 1994). It is described as a historic artifact scatter and was recommended as not eligible to the National Register of Historic Places. Site 16EBR103 is another historic artifact scatter recorded by CEI (Ryan, 1994). The site was recommended as not eligible to the National Register of Historic Places. Site 16EBR104 is a small buried prehistoric site which lacked surface or subsurface features, it was unevaluated for National Register eligibility (Ryan 1994). Site 16EBR105 is a historic period site with surface remains and the remains of the J.A. McHugh house. During the survey for the Comite River Diversion, Ryan (1994) recommended it for testing to determine National Register eligibility. Phase II testing by R.C. Goodwin and Associates (Markell, 1997) determined that the site was not eligible for the National Register of Historic Places. Site 16EBR106 is the remains of the J.B. McHugh house and associated artifact scatter. It was recommended as eligible to the National Register by CEI (Ryan, 1994). Site 16EBR107 is a historic artifact scatter which was recommended as not eligible to the National Register of Historic Places.

3.2.8. RECREATIONAL RESOURCES

3.2.8.1. General Existing Conditions. Of the many heavily pursued recreational activities within the larger parish area, the most significant are hunting and fishing. Recreational fishing is by far the most popular and heavily pursued activity in the vicinity of the proposed Comite River Diversion. Most of the fishing that occurs is by boat. Hunting for small game is a prevalent activity and a wide range of species and habitat types are available. Big game hunting for whitetail deer is relegated to the more productive habitat such as bottomland hardwood areas. Within the area of East Baton Rouge Parish, there are 16,505 boats registered and 30,487 resident fishing licenses and 18,500 resident hunting licenses issued.

3.2.8.2. Expansion of Current Mitigation Area. The expanded mitigation area along the Comite River offers wooded and open lands that provide areas for pursuit of various game species, particularly deer as noted by numerous deer hunting stands. Hunting is the predominate activity taking place in the wooded areas. Little recreational use takes place in areas used for sand mining. Plank Road Park, a 77-acre park operated by the Recreation and Park Commission of East Baton Rouge Parish (BREC), offers a playground, recreation center, adult leisure programs, indoor basketball and a lighted baseball field and is located off of Louisiana Highway 67 just north of the corridor where the Comite diversion channel will be built.

3.2.8.3. Profit Island. The whitetail deer population on Profit Island is said to be outstanding. The island is currently leased by a 12-member hunting club that manages the deer herd for the harvesting of 4-41/2 year old trophy bucks with an antler spread of 15 inches or better. With its two lakes, potholes and flooded troughs, waterfowl hunting on Profit Island is usually excellent. The island's location in the middle of the Mississippi River flyway attracts numerous ducks and some geese. In addition, the island has an abundant population of native wood ducks. Turkey hunting also takes place on the island. A hunting camp of approximately 5,000 square feet is located near the center of the island. About one-half of the metal building has been built out as a two-story hunting lodge. Profit Island Chute located just east of the island and about 5.7 miles from Baker, Louisiana is a popular fishing spot. Fishermen will find a variety of fish here including, white bass, sunfish, and catfish.

3.2.8.4. McHugh Swamp. Baton Rouge Raceway, a dirt tract located 8 miles north of Airline Highway in Baker, Louisiana, holds stock car and other type car races every other week, depending on the weather. Other recreational activities taking place in the swamp include canoeing, fishing and hunting.

3.2.9. AESTHETICS (VISUAL RESOURCES)

3.2.9.1. Expansion of Current Mitigation Area.

The northern and central portions of the study area are dominated by forest and open fields, and little structural development. The southern portion is much more urban with diverse and intimate groupings of homes and streets; commercial buildings along thoroughfares, and a few industrial structures. Water resources include a few ponds, lakes, streams and tributaries to the Comite River. The Comite River is the only state designated scenic river in the region. There are no other known, state or federally designated scenic rivers or streams in the region.

Public visual access in the north includes Louisiana Highways 64 and 67, Tucker Road, and neighborhood and local streets. The drive along Louisiana Highway 64 and Tucker Road is scenic. Public visual access to the central portion of the study area includes Dyer Road, Pettit Road, Brown Road, and neighborhood and local streets. The drive throughout the central region of study area is scenic. This region is much more rural with very remote, relatively undisturbed lands on the west bank of the Comite River. The eastern bank of the river offers some minimal development that contains neighborhood and local streets offering closer visual access to the river. Public visual access to the southern portion of the study area includes Louisiana Highways 423, 408, and 410, Comite Drive, Blackwater Road, and local and neighborhood streets. The urban setting in the south offers a somewhat less inviting drive, with deep forests giving way to street trees and manicured lawns the closer to Baton Rouge the viewer gets. The dominant eco-region in this region is Baton Rouge Terrace (Daigle et al., 2006). Land use in the region is primarily low density residential, agricultural and vacant, public / semi-public and some minimal parks and open space (Center for Planning Excellence, 2005). The lands of the study area feature dense forestation, small food plots and fields, cleared utility access corridors through the forest, and sand bar / river beaches. The terrain does have some variation, with some small ridges and hills closer in to the river channel. The habitat exhibits conditions suitable for moderately high plant species diversity, and moderately high animal diversity. These elements

add to the scenic quality of the area. There are no known specifically identified protected trees or other plant materials in the immediate area. User activity throughout the region is low, even with the number of developments adjacent to the study area. Much of the user activity is likely relegated to commuter traffic, recreational and agricultural uses. Access to the river is limited and much of the areas adjacent to the river are remote. Average Daily Traffic Counts (LADOTD, 2011) show an average daily traffic count ranging from 3,000 to 10,000 cars per day along Louisiana Highway 410, 2,000 to 3,200 cars per day along Blackwater Road, 10,000 to 14,000 cars per day near the intersection of Louisiana Highway 67 (Plank Road) and Dyer Road, and 8,000 to 13,000 cars per day along Louisiana Highway 64 (Zachary-Deerfield Road). There are no known Federally or state-designated scenic or historic byways in any of the study areas.

3.2.9.3. Profit Island.

There are no significant structures on the island. Major water resources include the Mississippi River, and ponds, lakes and other small channels on the island itself. Public visual access to Profit Island is by watercraft only. There are no major thoroughfares or local streets in proximity to the island. The dominant eco-region in the Profit Island region is Southern Holocene Meander Belts (Daigle et al., 2006). Land use in the Profit Island area appears to be primarily agricultural and vacant, and is used for hunting, fishing and other forms of outdoor recreation. The habitat of the island is composed of small food plots, open fields, densely forested lands, swamp, bog, and small water bodies. The terrain and topography appear to be relatively flat with the occasional mound or small ridge. The entire island is lush and verdant with a variety of trees and vegetation making it a suitable habitat for a variety of wildlife. The habitat at Profit Island exhibits conditions suitable for moderate plant species diversity, and moderately high animal diversity. These elements add to the scenic quality of the area. User activity is low, and is primarily relegated to the local traffic of land owners in the area. Activities typically include hunting, fishing and other recreational opportunities. There are no known protected trees or other plant materials on the Island. There is no federally protected vegetation or landscapes on the island. East Baton Rouge Parish has a tree protection ordinance in place that covers the entire parish. A permit will be required from the Director of Landscape and Urban Forestry and/ or the local planning commission, in order to take any specifically protected trees or vegetation down. This holds true for all mitigation sites discussed in this section.

3.2.9.4. McHugh Swamp.

The majority of structures in the area are limited to the perimeter of the swamp. Comite River is approximately one mile from the swamp. Water resources in the swamp include a variety of ponds, lakes and streams. Public visual access to McHugh Swamp can be taken from Louisiana Highways 19 and 67, McHugh Road, Baker Blvd, Bentley Drive, Lower Zachary Road, and local and neighborhood streets. The drive along Louisiana Highways 19 and 67, and McHugh Road are rural and scenic. The dominant eco-region is Baton Rouge Terrace (Daigle et al., 2006). Land use in McHugh Swamp is primarily agricultural and vacant. Developments on the outskirts of McHugh Swamp include low and medium density residential to the north and south. Louisiana Highways 19 and 67 feature highway commercial and light industrial to the east and west. McHugh Swamp has similar landscape features to Profit Island. The developed nature of the periphery of the swamp is the primary difference. The dense forests and water prone areas

have been filled and graded to accommodate agriculture and human activity in the periphery area. Small ridges are much less noticeable here. The habitat at McHugh Swamp exhibits conditions suitable for moderate plant species diversity, and moderately high animal diversity. These elements add to the scenic quality of the area. There are no known specifically identified protected trees or other plant materials in the immediate area. User activity at the periphery of the swamp is high due to the adjacent residential and commercial uses. User activity inside the swamp is relatively low due to limited access. Average Daily Traffic Counts (LADOTD, 2011) show an average daily traffic count ranging as high as 25,000 cars per day along Highway 67 and up to 20,000 cars per day along Louisiana Highway 19.

3.2.10. SOCIO-ECONOMIC RESOURCES

3.2.10.1. General Existing Conditions. The proposed mitigation sites are located in East Baton Rouge Parish, Louisiana. According to U.S. Census data, the parish had a population of 440,171 and 187,353 housing units in 2010.

3.2.10.2. Expansion of Current Mitigation Area. The proposed plan includes extending this area south from roughly Comite Drive to Louisiana Highway 408. The areas along the entire stretch of the Comite River under consideration are largely undeveloped forest land.

3.2.10.3. Profit Island. Profit Island is an undeveloped area located to the west of Louisiana Highway 3057/US 61 Business and to the east of Louisiana Highway 415. The area is bounded by the Mississippi River and the Profit Island Chute stream. It is currently being used for hunting purposes and there is one hunting camp located in the area. To the east of Profit Island is a counter-terrorism training facility.

3.2.10.4. McHugh Swamp. McHugh Swamp is bounded to the west by Louisiana Highway 19, to the east by Louisiana Highway 67, to the north by Lower Zachary Rd, and to the south by a residential area north of Bentley Drive. This area is located in Block Group 1, Census Tract 42.04 and has 1,043 residents and 388 housing units, according to 2010 U.S. Census data. There is also a residential area on the northern boundary of the mitigation site which is located in Block Group 3, Census Tract 46.02. This area had a population of 2,371 with 955 housing units, according to 2010 U.S. Census data. The Baton Rouge Raceway, an oval race track, is within the general outline of the McHugh Swamp mitigation area

3.2.11. ENVIRONMENTAL JUSTICE

3.2.11.1. General Existing Conditions. Federal agencies are directed to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, and Pacific Islander. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations as of 2010 are those whose income are $22,050 for a family of four and are identified using the Census Bureau's statistical poverty threshold. The Census Bureau defines a "poverty area" as an area with 20 percent or more of its residents below the poverty threshold

and an “extreme poverty area” as one with 40 percent or more below the poverty level. A potential disproportionate impact may occur when the percent minority in the study area exceeds 50 percent and/or percent low-income exceeds 20 percent of the population. The methodology, consistent with Executive Order 12898, to accomplish this environmental justice analysis includes identifying low-income and minority populations within the project area using up-to-date economic statistics, aerial photographs, 2010 U.S. Census Bureau decennial records, and U.S. Census Bureau 2005-2009 American Community Survey (ACS) estimates. The U.S. Census Bureau is now only providing population and housing characteristics in the decennial censuses. Other social characteristics (e.g. low-income) will now be provided in the U.S. Census Bureau's American Community Survey (ACS). The ACS provides estimates of social characteristics based on data collected over five years. The 2005-2009 estimates represent the average characteristics over the 5-year period of time. The newly released ACS estimates provide the latest socioeconomic community characteristic data released by the U.S. Census Bureau and are based on data collected between January 2005 and December 2009.

3.2.11.2. Expansion of Current Mitigation Area. This area is largely unpopulated.

3.2.11.3. Profit Island. This area is entirely unpopulated.

3.2.11.4. McHugh Swamp. The study area encompasses the area most likely to be affected by the proposed action. The area is largely unpopulated, forested land with the exception of the residential areas to the north and south. According to the 2010 decennial census, the minority population in the northern area (Block Group 3, Census Tract 46.02) was 55.8 percent of the total population. The 2005-2009 ACS data indicate that this area had a low-income population of 18.0 percent during that period. Data from the 2010 decennial Census indicate that the southern portion (Block Group 1, Census Tract 42.04) had a minority population of 72.0 percent, and according to the 2005-2009 ACS, the low-income population in the area was 12.1 percent. These areas, therefore, exceed the 50 percent minority threshold, but do not exceed the 20 percent low-income threshold.

3.2.12. AIR QUALITY

General Existing Conditions for All of East Baton Rouge Parish. East Baton Rouge Parish is one of five Baton Rouge area parishes that were designated by the Environmental Protection Agency as ozone non-attainment areas under the 8-hour standard effective June 15, 2004. Currently none of the five parishes are in attainment of National Ambient Air Quality Standards (NAAQS). The five-parish area has been classified as marginal, which is the least severe classification. This classification is the result of area-wide air quality modeling studies, and the information is readily available from Louisiana Department of Environmental Quality, Office of Environmental Assessment and Environmental Services.

As part of the Baton Rouge ozone non-attainment area, Federal activities proposed in East Baton Rouge Parish may be subject to the State’s general conformity regulations as promulgated under LAC 33:III.14.A, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. A general conformity applicability determination is made by estimating the total of direct and indirect volatile organic compound (VOC) and nitrogen oxide (NO_X)

emissions caused by the construction of the project. Prescribed *de minimus* levels of 100 tons per year per pollutant are applicable in East Baton Rouge Parish. Projects that would result in discharges below the *de minimus* level are exempt from further consultation and development of mitigation plans for reducing emissions.

4. ENVIRONMENTAL CONSEQUENCES

4.1 Wetlands

4.1.1. NO ACTION – CONTINUATION OF CURRENT PLAN. Wetlands in the current mitigation area would be acquired for mitigation of the Comite project as they become available from willing sellers. Currently the owners of two large tracts and several smaller tracts that contain approximately 835 acres of wetlands have expressed an interest in selling their properties, so those wetlands may become part of the project mitigation. Wetlands with bottomland hardwood forest would be preserved and wetlands that are currently pasture would be planted with bottomland hardwood seedlings and managed as a forest. Wetlands currently dominated by invasive Chinese tallow would be mechanically cleared of vegetation with bulldozers and/or excavators, sprayed with herbicide to kill sprouting tallow, and planted with bottomland hardwood seedlings and/or seeds. No wetlands would be converted to non-wetland habitats. The intent of the mitigation is to increase and preserve the ecosystem values of existing wetlands.

4.1.2. EXPANSION OF CURRENT MITIGATION AREA. This mitigation option would make an additional 1,000 acres of land available for mitigation from willing sellers. The additional lands are essentially the same types of lands that occur within the area encompassed by the current mitigation plan. As in the current plan, acquisition and management of lands would result in no loss or gain in acres of wetlands but would enhance the ecosystem quality of the existing wetlands by converting pastures and tallow-dominated areas to native bottomland hardwood forest.

4.1.3. PROFIT ISLAND. The mitigation plan includes reforesting approximately 135 acres of wetlands that are currently fields and managing the woody vegetation on 975 acres by increasing woody species diversity on tracts containing almost exclusively cottonwoods and willows. Additionally, water management would be implemented in a swale area on the south end of the island to remove excess water after floods that would enhance the quality of existing woodlands and may allow the reestablishment of desirable woody and herbaceous vegetation, including cypress. All mitigation efforts on this island would be designed to increase the ecosystem values of existing wetlands and to increase extent of wetlands in the swale area on the south end of the island.

4.1.4. McHUGH SWAMP. Wetlands with bottomland hardwood forest and cypress swamp would be preserved, and wetlands that are currently pasture would be planted with bottomland hardwood seedlings and managed as a forest. Wetlands currently dominated by invasive Chinese tallow would be mechanically cleared of vegetation with bulldozers and/or excavators and planted with bottomland hardwood seedlings and/or seeds. No wetlands would be converted to

non-wetland habitats. The intent of the mitigation is to increase and preserve the ecosystem values of existing wetlands.

4.2. Aquatic Resources.

4.2.1. NO ACTION – CONTINUATION OF CURRENT PLAN. The current plan contains a component to mitigate for dredging of the Comite River below the diversion structure, which is expected to be necessary about ten years after the project becomes operational and then once every ten years afterward. The mitigation component includes acquisition and management of lands along the Comite River.

4.2.2. EXPANSION OF CURRENT MITIGATION AREA. This alternative includes the same type of mitigation as the current plan, so the mitigation for impacts to the aquatic resources of the Comite River from maintenance dredging would be mitigated similarly. In effect, there would be no substantive change from the current plan.

4.2.3. PROFIT ISLAND. This alternative would not provide mitigation within the Comite River floodplain for the impacts of periodic dredging of the Comite River. It could provide out-of-basin, mitigation for the riverine impacts along the Comite River. The mitigation, since it is within the active floodplain of the Mississippi River is of a riverine nature, just not within the Comite basin.

4.2.4. McHUGH SWAMP. This alternative is within the Comite Basin, but is not located along the Comite River. Therefore, the mitigation that it would provide would not be in-kind mitigation for the impacts of periodic maintenance dredging. But, since it is located within the Comite River floodplain, it offers an option for riverine impacts of the project if sufficient mitigation is not obtainable in the current or expanded mitigation area along the Comite River.

4.3. Forested Lands.

4.3.1. NO ACTION – CONTINUATION OF CURRENT PLAN. The loss of forested lands through construction of the Comite project is the main driver for the project's mitigation plan. If the project sponsor had the ability to expropriate lands for project mitigation, this current plan would provide most of the mitigation required for the project. But, with acquisition only allowable from willing sellers, it is proving impossible to acquire the required amount of mitigation. Approximately 75 acres of land has been acquired for mitigation, and the landowners of an additional 307 acres of land within this area have expressed an interest in selling their properties. Those areas are currently being investigated for acquisition.

The potential mitigation benefits of the 307-acre area under investigation are 92.8 AAHUs, which would provide about 14 percent of remaining mitigation needs of the project. Mitigation on acquired lands would involve managing and preserving existing bottomland hardwood forests through species management, including the reduction in undesirable, invasive species, and the reforestation of active and fallow fields. The effect will be an increase in forest acreage at the expense of open land. Avian species dependent upon grassy open fields and pastures for foraging, such as meadowlarks, cowbirds, grackles, doves, and starlings would have less

available habitat and those that inhabit the forests, such as thrushes, cardinals, woodpeckers, and warblers would have more available habitat. Most species of mammals, like whitetail deer, turkeys, raccoons, opossums, are adaptable to a variety of habitats. Their populations are not expected to be significantly changed.

4.3.2. EXPANSION OF CURRENT MITIGATION AREA. The main purpose of expanding the current mitigation area is to provide a substantially larger area within which additional lands may be available from willing sellers. The effects of the mitigation on forested areas would not be substantially different from the current plan; the difference would be the mitigation would be spread over a larger area. In the project EIS and subsequent EAs, the project mitigation was conceived to be in contiguous tracts along the Comite River. This plan would not provide for contiguous tracts comprising one, large mitigation area. This plan would result in the mitigation spread out along the river, making the management of the lands more difficult. In order to implement this plan, only large tracts, comprising about 100 acres or more would be considered for acquisition and management, unless the smaller tracts are adjacent to larger tracts that are also acquired for mitigation. This restriction eliminates from consideration small, isolated tracts of land that would be difficult to manage and that would not provide favorable ecosystem benefits. At this time, one large tract of +/- 328 acres and six nearby and adjacent smaller tracts totaling about 200 acres are under investigation for mitigation. This is in addition to the 307 acres under investigation within the current mitigation area.

Effects on avian and mammalian species would be similar to the current plan, but since the mitigation would be spread out over noncontiguous tracts, there would be less effect on the avian species that depend upon open fields and pastures for foraging.

The mitigation potential was calculated for both the entire expanded mitigation area and for the 835 acres that are being investigated for acquisition from willing sellers. The mitigation potential of all lands within the expanded mitigation area of 2,895 acres was calculated to be 707.4 AAHUs. However, as stated previously only the owners of 835 acres within this area have expressed any interest in selling their property. The mitigation potential of the 835 acres was calculated to be 188.6 AAHUs, which is about 28 percent of the remaining mitigation required for Comite project (671.5 AAHUs), not including the mitigation that would occur on project lands. Details of how the mitigation credits were calculated are provided in the Mitigation Assessment Appendix.

4.3.3. PROFIT ISLAND. The primary effect of this plan would be the conversion of about 150 acres of fields into bottomland hardwood forest. The fields are not naturally occurring. They exist as food plots for animals that are hunted on the island, including doves, deer, and turkeys. Left unattended, the existing fields on the island would quickly become naturally reforested with pioneer species including willows, cottonwoods and green ash. The mitigation plan includes reforestation with species that are generally considered more desirable as wildlife habitat, such as oaks, hickories, and pecan. Some species such as mourning doves, meadowlarks, cowbirds, grackles, doves, and starlings require open areas for foraging. But most species that are native to the Mississippi River floodplain have evolved to thrive in the bottomland hardwood forests that would be reestablished on Profit Island. That is the main reason why mitigation credits are assigned to reforestation.

Mitigation credits would also accrue from actions undertaken to reestablish desirable species within areas dominated by willows, cottonwoods and green ash. These spot plantings would increase plant species diversity, providing additional foraging resources, and dependent wildlife species would be benefitted accordingly.

The mitigation potential of Profit Island was calculated to be 426.2 AAHUs, which is about 63.5 percent of the remaining mitigation required for Comite project, not including the mitigation that would occur on project lands. Details of how the mitigation credits were calculated are provided in the Mitigation Assessment Appendix.

4.3.4. McHUGH SWAMP. As the name implies, this area is comprised of lower elevation lands that are partially swampy. Hence, much of the land in this potential mitigation area is wooded. Only the somewhat higher elevations around the periphery have been cleared and converted to pastures and fields. Some areas of former fields and pastures have been left fallow and quickly converted to Chinese tallow-dominated woodlands and thickets. Mitigation credits have been calculated for preserving the existing woodlands from harvesting for pulpwood and/or timber and prevention of conversion to pastures and fields. But, by far the most mitigation credit from this area is derived from the conversion of fields and pastures and Chinese tallow woodlands and thickets back to bottomland hardwood forest. As in the case of the current mitigation plan, those species dependent upon open areas such as fields and pastures for foraging would lose habitat, but the species that are adapted to life in the forests would experience a substantial gain in habitat quantity and quality. The net result would be a decrease in populations and usage by open land-adapted species and an increase in usage and populations of forest-dwelling species.

The mitigation potential of McHugh Swamp was calculated to be 799.2 AAHUs, which exceeds the remaining mitigation required for Comite project, not including the mitigation that would occur on project lands, by approximately 20 percent. However, as noted in other sections of this EA, according to state law, all mitigation land acquisition must be from willing sellers, so it is unlikely that all of the area within this investigated area would be available for project mitigation. Details of how the mitigation credits were calculated are provided in the Mitigation Assessment Appendix.

4.4. Prime and Unique Farmlands.

4.4.1. NO ACTION – CONTINUATION OF CURRENT PLAN. A specific analysis of the amount of prime farmland within this area was not conducted, but maps and information provided by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) for the proposed expanded mitigation area indicate that nearly all of the prime farmland in the expanded area occurs within the current mitigation area. An estimated 850 acres of prime farmland occurs in this area. That amount of farmland would be taken out of potential farm and timber production if this alternative would be fully implemented. Although a USDA Form AD-1006 was not completed specifically for this area, calculations conducted for the expansion of the current mitigation area, which includes this area, indicates that the relative value of this farmland is lower than the threshold level that would require additional consideration for its protection.

4.4.2. EXPANSION OF CURRENT MITIGATION AREA. Within the 2,895-acre expanded area, 931 acres are classified as prime farmlands subject to regulations promulgated by the NRCS under the Farmland Protection Policy Act (7 CFR 658). The two areas within this general expanded area totaling 835 acres that are currently under consideration from willing owners, contain approximately 280 acres are prime farmland. The current usage of the prime farmland is pasture, primary for cattle. Hay fields, forests, and possibly smaller acreages of corn and soybeans comprise the remainder of the lands classified as prime farmland. The USACE calculated the value of this prime farmland based on the instructions for completing the Farmland Conversion Impact Rating Form (AD-1006). The assessment calculated a value score of 121 points. According to NRCS regulations, sites receiving a score of less than 160 points need not be given further consideration for protection, and no additional sites need to be evaluated. Therefore, no further action on this resource was undertaken.

4.4.3. PROFIT ISLAND. Profit Island does not have prime or unique farmland soils and therefore is exempt from the rules and regulations of the Farmland Protection Policy Act.

4.4.4. McHUGH SWAMP. According to the Farmland Conversion Impact Rating Form as filled-out by the Natural Resources Conservation Service, 1,667 acres of this 3,342-acre area are classified as prime farmlands and subject to the provisions of the Farm Protection Policy Act. The USACE completed the Farmland Conversion Impact Rating Form according to the NRCS instructions and calculated a score of 115 points for the prime farmland in this area. According to NRCS regulations, sites receiving a score of less than 160 points need not be given further consideration for protection, and no additional sites need to be evaluated. Therefore, no further action on this resource was undertaken.

4.5. Threatened and Endangered Species.

4.5.1. NO ACTION – CONTINUATION OF CURRENT PLAN. No endangered species are known to occur in the currently authorized mitigation area. No change in the status of species in proximity to the mitigation area would be expected.

4.5.2. EXPANSION OF CURRENT MITIGATION AREA. No endangered species are known to occur in the proposed area. No change in the status of species in proximity to the proposed area would be expected. The USFWS agreed with the USACE assessment that the proposed action is not likely to adversely affect threatened or endangered species in a response dated May 7, 2012.

4.5.3. PROFIT ISLAND. Pallid sturgeon would likely forage on Profit Island when it is flooded during high water events on the Mississippi River, and especially during major floods. Research by the USACE Engineer Research and Development Center indicates that during floods pallid sturgeon move into the floodplain to forage like many other riverine species are known to do. The species has been collected in flood waters over a variety of flooded habitats, including rocks, grassy areas, willows, and other woodlands, and seems to show little preference for one habitat type over another. This information supports a conclusion that habitat modification on Profit Island through forest species management and reforestation of fields would not likely adversely affect pallid sturgeon. Interior least tern nesting surveys are conducted along the Mississippi

River downstream to Baton Rouge annually by the USACE. No least tern nesting has been documented in the vicinity of Profit Island, so no effect on this species would be expected. The USFWS agreed with the USACE assessment that the proposed action is not likely to adversely affect threatened or endangered species in a response dated May 7, 2012.

4.5.4. McHUGH SWAMP. No endangered species are known to occur in the proposed area. No change in the status of species in proximity to the proposed area would be expected. The USFWS agreed with the USACE assessment that the proposed action is not likely to adversely affect threatened or endangered species in a response dated May 7, 2012.

4.6. Cultural Resources.

4.6.1. NO ACTION – CONTINUATION OF CURRENT PLAN. Lands associated with the authorized mitigation plan were investigated for cultural resources in 2009. Based on the results of this investigation, the CEMVN determined that the authorized mitigation plan would have no impact on significant cultural resources. The Louisiana State Historic Preservation Officer and Indian tribes were consulted regarding the USACE's "no historic properties affected" finding. The State Historic Preservation Officer agreed with the USACE determination by letter dated July 1, 2009, concluding the Section 106 consultation process.

4.6.2. EXPANSION OF CURRENT MITIGATION AREA. Based on a review of state records, previous cultural resources studies, the results of a Phase 1 cultural resources investigation conducted in 2009, and recent aerial reconnaissance helicopter survey observations, it was determined that two areas exhibiting a high potential for cultural resources would be impacted by implementing this alternative. These two locations will be subjected to ground disturbance associated with the mechanical removal of Chinese tallow during proposed mitigation activities. Therefore, a Phase 1 cultural investigation will be conducted in these two areas and the results coordinated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. Section 106 consultation will be concluded prior to a final agency decision.

4.6.3. PROFIT ISLAND. A review of state records and recent aerial reconnaissance helicopter survey observations indicate there is a very low probability for cultural resources in the Profit Island project area. The area is low-lying and frequently flooded and over the years has been subjected to episodes of deposition and erosion. Cultural resources that may be present would likely be deeply buried and would not be impacted by proposed mitigation activities. Therefore, CEMVN does not recommend further cultural resources evaluations for the Profit Island project area. Consultation regarding our "no historic properties affected" finding will be conducted in accordance Section 106 of the National Historic Preservation Act of 1966, as amended and will be concluded prior to a final agency decision.

4.6.4. McHUGH SWAMP. Based on a review of state records, geomorphological data, previous cultural resources studies, including the results of a 2009 cultural resources investigation, and aerial reconnaissance helicopter survey observations, it was determined that thirteen locations in the McHugh Swamp project area exhibit a high potential for cultural resources. These locations total approximately 430 acres in size and will be subjected to ground disturbance associated with the mechanical removal of Chinese tallow during proposed mitigation activities. These activities

have the potential to impact cultural resources. Therefore, CEMVN is currently conducting a Phase 1 cultural resources investigation in these areas and the results will be coordinated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and will be concluded prior to a final agency decision. Six cultural resource sites previously recorded in the McHugh Swamp area and discussed in the existing conditions section of this environmental assessment are not located in these proposed Chinese tallow removal areas and will not be impacted by proposed mitigation activities.

4.7. Recreational Resources.

4.7.1. NO ACTION – CONTINUATION OF CURRENT PLAN. With implementation of the no-action alternative, recreational resources should improve as the authorized mitigation plan is implemented. As lands are acquired and mitigation plans are implemented, habitat value and recreational opportunities, both consumptive and non-consumptive, will likely increase. Consumptive recreation includes activities such as fishing and hunting. Non-consumptive activities include birding and wildlife viewing, picnicking and hiking. It is unlikely that full project mitigation would be achievable because Louisiana law requires purchase only from willing sellers; therefore, recreational opportunities may not be as great as if the full plan was implemented.

4.7.2. EXPANSION OF CURRENT MITIGATION AREA. Reforestation, restoration, enhancement and preservation activities in areas along the Comite River would improve habitat value and both consumptive and non-consumptive recreation opportunities. Expansion of the current mitigation area would likely increase recreational usage more than usage under the no action alternative. The restoration of areas within the mitigation site, which is along the Comite River, would add value to the recreational experience of canoeing along the river. Access to the larger mitigation area is also provided by Petite Road. Minor impacts to recreational resources that would occur during planting periods will be of short duration, and the project site should stabilize quickly.

4.7.3. PROFIT ISLAND. Mitigation options on Profit Island include reforestation of approximately 150 acres of existing fields with bottomland hardwood species. Additionally, 1,200 acres of Profit Island would be counted as preservation as the elevation of these lands is too low for restoration. The island also contains a shallow pond that may be suitable for reforestation with cypress trees tolerant of periodic flooding. Profit Island mitigation plan provides substantial opportunities for improving recreational activities. However, because of the island's remoteness, recreational usage may in fact be minimal although opportunities could be great. Minor impacts to recreational resources that would occur during planting periods will be of short duration, and the project site should stabilize quickly.

4.7.4. McHUGH SWAMP. McHugh Swamp provides a large potential mitigation area and includes approximately 3,340 acres. Up to 500 acres of existing pastureland would be planted with bottomland hardwood species during the non-growing season; in addition, up to 500 acres currently vegetated with Chinese tallow thickets would be cleared for reforestation. The reforestation of up to 1,000 acres with bottomland hardwoods would create positive effects on recreational opportunities by providing valuable habitat for consumptive and non-consumptive

activities. The Baton Rouge Raceway motor track is not included in the lands potentially available for mitigation activities. McHugh swamp is accessible via Louisiana Highways 19 and 67. Minor impacts to recreational resources that would occur during planting periods will be of short duration, and the project site should stabilize quickly.

4.8. Aesthetics (Visual Resources)

4.8.1. NO ACTION – CONTINUATION OF CURRENT PLAN. Visual resources could improve as the authorized mitigation plan is implemented. However, it is important to note that many of these lands are remote with limited access. In terms of institutional significance, none of the proposed mitigation lands are associated with any known Federal or state designated protected lands. The segment of Comite River, within the project area, is a state designated scenic river. Impacts to the river will most likely be positive; providing improved form, line, repetition of elements, color and texture in areas that may be lacking in those intrinsic qualities. The river currently has a small traffic load of water recreation traffic that will benefit from these visual improvements as well. As lands are acquired and mitigation plans are implemented, habitat value, recreational opportunities, and intrinsic visual quality will most likely increase.

4.8.2. EXPANSION OF CURRENT MITIGATION AREA. Reforestation, restoration, enhancement and preservation activities along the Comite River would improve habitat value, recreation opportunities and intrinsic visual quality along the Comite River. As with the no action alternative, this alternative is along the Comite River which is used by many for water recreation. The expanded mitigation area would add aesthetic value to this recreational experience. With access from several major roadways and adjacent residential uses, the expanded mitigation site along Comite River is not as removed from land based travel as the no action alternative. This could potentially bring more impacts to the area through public use and significance. Minor impacts to visual resources that would occur during planting periods will be of short duration, and the project site should stabilize quickly.

4.8.3. PROFIT ISLAND. Mitigation options on Profit Island include reforestation of approximately 150 acres of existing fields with bottomland hardwood species. Additionally, 1,500 acres of Profit Island would be counted as preservation as these lands are too low for restoration. The island also contains a shallow pond that may be suitable for reforestation with cypress trees tolerant of periodic flooding. However, because of the island's remotenessand lack of institutional and public significance, impacts to visual resources will negligible.

4.8.4. McHUGH SWAMP. McHugh Swamp provides for the largest potential mitigation area of the three alternatives under study and includes approximately 3,340 acres. Up to 500 acres of existing pastureland would be planted with bottomland hardwood species during the non-growing season; in addition, up to 370 acres currently vegetated with Chinese tallow thickets would be cleared for reforestation. All of the proposed activities including reforestation of up to 870 acres with bottomland hardwoods would create the greatest effects on visual attributes by providing increased valuable habitat for recreational activities and improvements in form, line, color and texture. These elements relate directly to technical significance. Additionally, McHugh Swamp is accessible via McHugh Road, Louisiana Highways 19 and 67, bringing much more public access and significance to the area. However, in terms of institutional significance,

the site does not contain, nor is it associated with, any Federal or state designated protected lands. Minor impacts to visual resources that would occur during planting periods will be of short duration and the project site should stabilize quickly.

4.9. Socioeconomic Resources.

4.9.1. NO ACTION – CONTINUATION OF CURRENT PLAN. Socioeconomic impacts under the authorized mitigation plan include limited public access to the area for limited purposes, provided that these purposes do not hinder achieving the required compensatory mitigation for the Comite project. Types of activities that are expected to threaten preservations goals would be identified in a long-term management agreement between the local sponsor and possibly a qualified natural resources management entity and would be prohibited in the area. Such activities include camping, all terrain vehicles (ATVs), mountain biking, logging, and excavation.

The authorized mitigation plan calls for property boundary signs to be posted and maintained at access points within the mitigation area. Fencing would occur only at designated access points to prevent ATV access. Adjacent landowners would, however, be permitted to fence their private property. Additionally, under the authorized mitigation plan, development of the area will be heavily restricted. Types of development that are not expected to jeopardize USACE preservation goals would be identified in the long-term management and may include signs, trash bins, designated foot trails, elevated board walks, wildlife viewing platforms, and gravel parking in designated access points.

Direct, temporary effects on transportation including increased vehicular congestion along roads, highways, and streets leading to and from the authorized area are anticipated under the authorized mitigation plan as material and equipment are hauled to the site. Indirect impacts to the vehicular transportation infrastructure may occur under this plan. For example, moderate to severe degradation may occur as a result of wear and tear from transporting materials and equipment to the area. Cumulatively, this may result in the need to rehabilitate the transportation infrastructure in the study area sooner than would normally be expected.

Under the authorized mitigation plan, however, it is unlikely that full project mitigation would be achievable. As such, the required compensatory mitigation for the Comite project would not be complete. The USACE would be required to plan, design, and implement a different mitigation project to compensate for the Comite project.

Under the authorized mitigation plan, there would be no direct, indirect, or cumulative impacts to socioeconomic resources in the three areas proposed in this EA, however, impacts to socioeconomic resources could occur in other locations if alternate areas are chosen for mitigation by the USACE.

4.9.2. EXPANSION OF CURRENT MITIGATION AREA. The areas under consideration for the expansion are largely undeveloped forest land; therefore impacts to socioeconomic resources are expected to be minimal. Mitigation within the expanded area would be accomplished in the same manner as described in the project EIS and subsequent EAs. Mitigation activities such as

sand pit restoration, herbicide application, hand planting, and mechanical clearing would be performed using standard equipment and techniques. Herbicide application would be performed using tractors with boom-sprayers to facilitate localized application of approved chemicals using acceptable chemical treatment methods.

This alternative would result in limited public access to the area for limited purposes, provided that these purposes do not hinder achieving the required compensatory mitigation for the Comite project. Types of activities that are expected to threaten preservations goals would be identified in a long-term management agreement between the local sponsor and possibly a qualified natural resources management entity and would be prohibited in the area. Such activities include camping, ATVs, mountain biking, logging, and excavation.

Property boundary signs will be posted and maintained at access points within the mitigation area. Fencing would occur only at designated access points to prevent ATV access. Adjacent landowners would, however, be permitted to fence their private property.

In order to achieve the environmental credits required for the Comite project, development of the area will be heavily restricted. Types of development that are not expected to jeopardize the USACE's preservation goals would be identified in the long-term management and may include signs, trash bins, designated foot trails, elevated board walks, wildlife viewing platforms, and gravel parking in designated access points.

Direct, temporary effects on transportation including increased vehicular congestion along roads, highways, and streets leading to and from the proposed expansion area are anticipated under this alternative as material and equipment are hauled to the site. Indirect impacts to the vehicular transportation infrastructure may occur under this plan. For example, moderate to severe degradation may occur as a result of wear and tear from transporting materials and equipment to the area. Cumulatively, this may result in the need to rehabilitate the transportation infrastructure in the study area sooner than would normally be expected.

4.9.3. PROFIT ISLAND. Profit Island is an undeveloped area; therefore impacts to socioeconomic resources are expected to be minimal. Mitigation within this area would include activities such as preservation and management of existing woodlands, water management to allow reforestation of some areas, herbicide application, and hand planting, all of which would be performed using standard equipment and techniques. Herbicide application would be performed using tractors with boom-sprayers to facilitate localized application of approved chemicals using acceptable chemical treatment methods.

This alternative would result in limited public access to the area for limited purposes, provided that these purposes do not hinder achieving the required compensatory mitigation for the Comite project. Types of activities that are expected to threaten preservation goals would be identified in a long-term management agreement between the local sponsor and possibly a qualified natural resources management entity and would be prohibited in the area. Such activities include camping, ATVs, mountain biking, logging, and excavation.

In order to achieve the environmental credits required for the Comite project, development of the area will be heavily restricted. Types of development that are not expected to jeopardize USACE preservation goals would be identified in the long-term management and may include signs, trash bins, designated foot trails, elevated board walks, wildlife viewing platforms, and gravel parking in designated access points.

Direct, temporary effects on transportation including increased vehicular congestion along roads, highways, and streets leading to and from the proposed area are anticipated under this alternative as material and equipment are hauled to the site. Indirect impacts to the vehicular transportation infrastructure may occur under this plan. For example, moderate to severe degradation may occur as a result of wear and tear from transporting materials and equipment to the area. Cumulatively, this may result in the need to rehabilitate the transportation infrastructure in the study area sooner than would normally be expected.

4.9.4. McHUGH SWAMP. The McHugh Swamp is an area of mostly undeveloped land and therefore impacts to socioeconomic resources are expected to be minimal. Mitigation activities within this area would include herbicide application, hand planting, and mechanical clearing, all of which would be performed using standard equipment and techniques. Herbicide application would be performed using tractors with boom-sprayers to facilitate localized application of approved chemicals using acceptable chemical treatment methods.

This alternative would result in limited public access to the area for limited purposes, provided that these purposes do not hinder achieving the required compensatory mitigation for the Comite project. Types of activities that are expected to threaten preservation goals would be identified in a long-term management agreement between the local sponsor and possibly a qualified natural resources management entity and would be prohibited in the area. Such activities include camping, ATV, mountain biking, logging, and excavation.

Property boundary signs will be posted and maintained at access points within the mitigation area. Fencing would occur only at designated access points to prevent ATV access. Adjacent landowners would, however, be permitted to fence their private property.

In order to achieve the environmental credits required for the Comite project, development of the area will be heavily restricted. Types of development that are not expected to jeopardize the USACE's preservation goals would be identified in the long-term management and may include signs, trash bins, designated foot trails, elevated board walks, wildlife viewing platforms, and gravel parking in designated access points.

Direct, temporary effects on transportation including increased vehicular congestion along roads, highways, and streets leading to and from the proposed expansion area are anticipated under this alternative as material and equipment are hauled to the site. Indirect impacts to the vehicular transportation infrastructure may occur under this plan. For example, moderate to severe degradation may occur as a result of wear and tear from transporting materials and equipment to the area. Cumulatively, this may result in the need to rehabilitate the transportation infrastructure in the study area sooner than would normally be expected.

4.10. Environmental Justice.

4.10.1. NO ACTION – CONTINUATION OF CURRENT PLAN. Impacts under the authorized mitigation plan include limited public access to the area for limited purposes, provided that these purposes do not hinder achieving the required compensatory mitigation for the Comite project. Types of activities that are expected to threaten preservation goals would be identified in a long-term management agreement between the local sponsor and possibly a qualified natural resources management entity and would be strictly prohibited in the area. Such activities include camping, ATVs, mountain biking, logging, and excavation.

The authorized mitigation plan calls for property boundary signs to be posted and maintained at access points within the mitigation area. Fencing would occur only at designated access points to prevent ATV access. Adjacent landowners would, however, be permitted to fence their private property. Additionally, under the authorized mitigation plan, development of the area will be heavily restricted. Types of development that are not expected to jeopardize the USACE's preservation goals would be identified in the long-term management and may include signs, trash bins, designated foot trails, elevated board walks, wildlife viewing platforms, and gravel parking in designated access points.

Direct, temporary effects on transportation including increased vehicular congestion along roads, highways, and streets leading to and from the area are anticipated under the authorized plan as material and equipment are hauled to the site. Indirect impacts to the vehicular transportation infrastructure may occur under this plan. For example, moderate to severe degradation may occur as a result of wear and tear from transporting materials and equipment to the area. Cumulatively, this may result in the need to rehabilitate the transportation infrastructure in the study area sooner than would normally be expected.

All residents, irrespective of race or ethnicity, would be subject to these impacts. As such, activities under the authorized mitigation plan are not expected to result in a disproportionately high adverse impact on minority and/or low-income populations.

Under the authorized mitigation plan, however, it is unlikely that full project mitigation would be achievable. As such, the required compensatory mitigation for the Comite project would not be complete. The USACE would be required to plan, design, and implement a different mitigation project to compensate for the Comite project. Under this alternative, there would be no direct, indirect, or cumulative impacts to minority and/or low-income populations in the three areas proposed in this EA; however impacts to minority and/or low-income populations could occur in other locations if alternate areas are chosen for mitigation by the USACE.

4.10.2. EXPANSION OF CURRENT MITIGATION AREA. This is a largely unpopulated area; and therefore, no direct, indirect, or cumulative adverse impacts to minority and/or low-income populations are expected to occur under this alternative.

4.10.3. PROFIT ISLAND. This is an unpopulated area; and therefore, no direct, indirect, or cumulative adverse impacts to minority and/or low-income populations are expected to occur under this alternative.

4.10.4. McHUGH SWAMP. As stated previously, the areas adjacent to the north and south boundaries of the McHugh Swamp exceed 50 percent minority population (55.8 percent and 72.0 percent, respectively), and therefore the McHugh Swamp area is considered to be an environmental justice study area. However, the proposed actions are expected to have minimal socioeconomic impacts in this area, and mitigation activities will affect all residents equally, irrespective of race or ethnicity. Mitigation activities would include herbicide application, hand planting, and mechanical clearing, all of which would be performed using standard equipment and techniques. Herbicide application would be performed using tractors with boom-sprayers to facilitate localized application of approved chemicals using acceptable chemical treatment methods.

All residents, irrespective of race or ethnicity, would be subject to the limited public access restrictions identified in the long-term management agreement between the local sponsor and possibly a qualified natural resources management entity. Types of activities that are expected to threaten preservation goals would be strictly prohibited in the area. Such activities include camping, ATVs, mountain biking, logging, and excavation. Again, however, all residents would be subject to these restrictions.

Direct, temporary effects on transportation including increased vehicular congestion along roads, highways, and streets leading to and from the proposed expansion area are anticipated under this alternative as material and equipment are hauled to the site. Indirect impacts to the vehicular transportation infrastructure may occur under this plan. For example, moderate to severe degradation may occur as a result of wear and tear from transporting materials and equipment to the area. Cumulatively, this may result in the need to rehabilitate the transportation infrastructure in the study area sooner than would normally be expected.

Again, all residents, irrespective of race or ethnicity, would be subject to these impacts. As such, mitigation activities are not expected to result in a disproportionately high adverse impact on minority populations in this area.

4.11. Air Quality.

4.11.1. NO ACTION – CONTINUATION OF CURRENT PLAN. Mechanical land clearing of Chinese tallow and bush-hogging by diesel-powered equipment would be the primary sources of emissions expected from implementation of this alternative. It is expected that tractors would be used for bush-hogging, and bulldozers would be used for uprooting tallow trees and piling them into piles for natural decomposition. Emissions were estimated only for implementation of mitigation on the 307 acres of land currently under consideration for acquisition and management. The total expected emissions would be 0.35 tons of VOC and 0.63 tons of NOx. The *de minimus* levels of each pollutant in the 5-parish Baton Rouge metropolitan area are 100 tons per year. Emissions that fall below that level are exempt from further coordination and mitigation. Since the expected emissions from implementing this mitigation alternative are well below the *de minimus* levels, not further action is warranted.

4.11.2. EXPANSION OF CURRENT MITIGATION AREA. Mechanical land clearing of Chinese tallow and bush-hogging by diesel-powered equipment would be the primary sources of emissions expected from implementation of this alternative. It is expected that tractors would be used for bush-hogging, and bulldozers would be used for uprooting tallow trees and piling them into piles for natural decomposition. Assuming the worst-case scenario for emissions, wherein all work is accomplished in one year, the total expected emissions would be 0.07 tons of VOC and 1.26 tons of NOx. The *de minimus* levels of each pollutant in the 5-parish Baton Rouge metropolitan area are 100 tons per year. Emissions that fall below that level are exempt from further coordination and mitigation. Since the expected emissions from implementing this mitigation alternative are well below the *de minimus* levels, not further action is warranted.

4.11.3. PROFIT ISLAND. Equipment used to implement this mitigation plan would be diesels tractors, backhoes, road grader, dump trucks, and a towboat. This equipment would be used to transport limestone and culverts to the island for installation. This work is expected to take only about one week to complete, therefore equipment hours and emissions would be low. In addition tractors would be used to bush-hog fields prior to planting with hardwood seedlings. Assuming the worst-case scenario for emissions, wherein all work is accomplished in one year, the total expected emissions would be 0.02 tons of VOC and 0.27 tons of NOx. The *de minimus* levels of each pollutant in the 5-parish Baton Rouge metropolitan area are 100 tons per year. Emissions that fall below that level are exempt from further coordination and mitigation. Since the expected emissions from implementing this mitigation alternative are well below the *de minimus* levels, not further action is warranted.

4.11.4. McHUGH SWAMP. Mechanical land clearing of Chinese tallow and bush-hogging by diesel-powered equipment would be the primary sources of emissions expected from implementation of this alternative. It is expected that tractors would be used for bush-hogging, and bulldozers would be used for uprooting tallow trees and piling them into piles for natural decomposition. Assuming the worst-case scenario for emissions, wherein all work is accomplished in one year, the total expected emissions would be 0.14 tons of VOC and 2.51 tons of NOx. The *de minimus* levels of each pollutant in the 5-parish Baton Rouge metropolitan area are 100 tons per year. Emissions that fall below that level are exempt from further coordination and mitigation. Since the expected emissions from implementing this mitigation alternative are well below the *de minimus* levels, not further action is warranted.

4.12. Hazardous, Toxic, and Radioactive Waste.

The proposed additional mitigation areas are located in or near the towns of Baker and Zachary and the city of Baton Rouge. Database searches were conducted for the three ZIP code areas that include these municipalities, and aerial photographs and topographic maps from various periods were consulted. The Baker area (ZIP 70714) contained very few listings in environmental databases: there were none in the Toxic Release Inventory (TRI). Within the Emergency Response Notification System (ERNS), there were two small incidents, one in 1989 and one in 2009. Both of these were *de minimis* (too small to be of concern). Two facilities were listed in the Biennial Reporting System (BRS) as facilities that generate, transfer, store, or manage hazardous waste. In the Resource Conservation and Recovery Information System database two facilities (Exide and PPI Scenic Services were listed as Large Quantity Generators). Two other

facilities were listed as "Not a Generator". None would affect the proposed mitigation area. None of the facilities or incidents in any of the available databases would be likely to affect the proposed mitigation areas in the ZIP 70714 area.

The Zachary area (ZIP 70791) had numerous small releases since 1987. There was one large release in 1987; the Georgia Pacific paper company was reported to have released more than 55 million pounds of sodium sulfate solution. Twenty-three ERNS incidents were recorded in the 70791 area. Twenty-five facilities were listed in the BRS database. Three companies were listed as handlers of hazardous waste. None of the reported releases occurred within the proposed mitigation area, and none of the facilities listed in EPA databases would be likely to adversely affect the proposed mitigation areas in the ZIP 70791 area.

The Baton Rouge area (ZIP 70807) is heavily industrialized. In the TRI database, forty-one releases from seven different corporations were listed for the year 2010 alone. Nine ERNS incidents were listed for the year 2011. Seven facilities were listed in BRS, and fifteen handlers were listed in RCRIS. However, because the proposed mitigation area is largely undeveloped and distant from the reported incidents and facilities, none of the incidents or facilities would be likely to affect the proposed mitigation areas in the ZIP 70807 area. There are three oil/gas wells on Profit Island. One is listed as "dry and plugged"; two are listed as "plugged and abandoned". None of these inactive wells would be likely to affect the proposed mitigation area.

4.13. Cumulative Effects.

The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of NEPA of 1969, as amended, define cumulative effects as, *the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.*

East Baton Rouge Parish and surrounding parishes, especially Livingston and Ascension, have undergone a considerable increase in population and development in recent years. Many of the people employed in the Baton Rouge metropolitan area reside in and near the communities and municipalities beyond the urbanized central area of Baton Rouge. The Comite project is designed mainly to provide flood risk reduction to residents and businesses in and around Denham Springs, Louisiana, which is located in Livingston Parish immediately east of East Baton Rouge Parish. To accommodate the increase in population, major highway improvement projects, especially on Interstate Highways 10 and 12 have been occurring, seemingly non-stop for many years. A new interstate highway loop around Baton Rouge is in the planning phase. Residential subdivisions in outlying communities, especially those along the Interstate 10 and 12 corridors are being developed at a rapid pace. Aside from the Comite project and the interstate highway improvements, there are no other known large Federal projects in the immediate area. A new bridge across the Mississippi River, north of Baton Rouge and south of St. Francisville, was recently completed. The new bridge will provide an additional route between the Baton Rouge area and central Louisiana and may spur development in the area around New Roads, Louisiana, on the west side of the Mississippi River. Industrial development along the

Mississippi River is expected to continue. Several new industries including a pig iron production plant have been proposed along the Mississippi River and are going through the sometimes arduous permitting processes.

In conclusion, the entire Baton Rouge metropolitan area is undergoing considerable growth in residential, commercial, and industrial development; the Comite project will provide increased flood risk reduction to support this development.

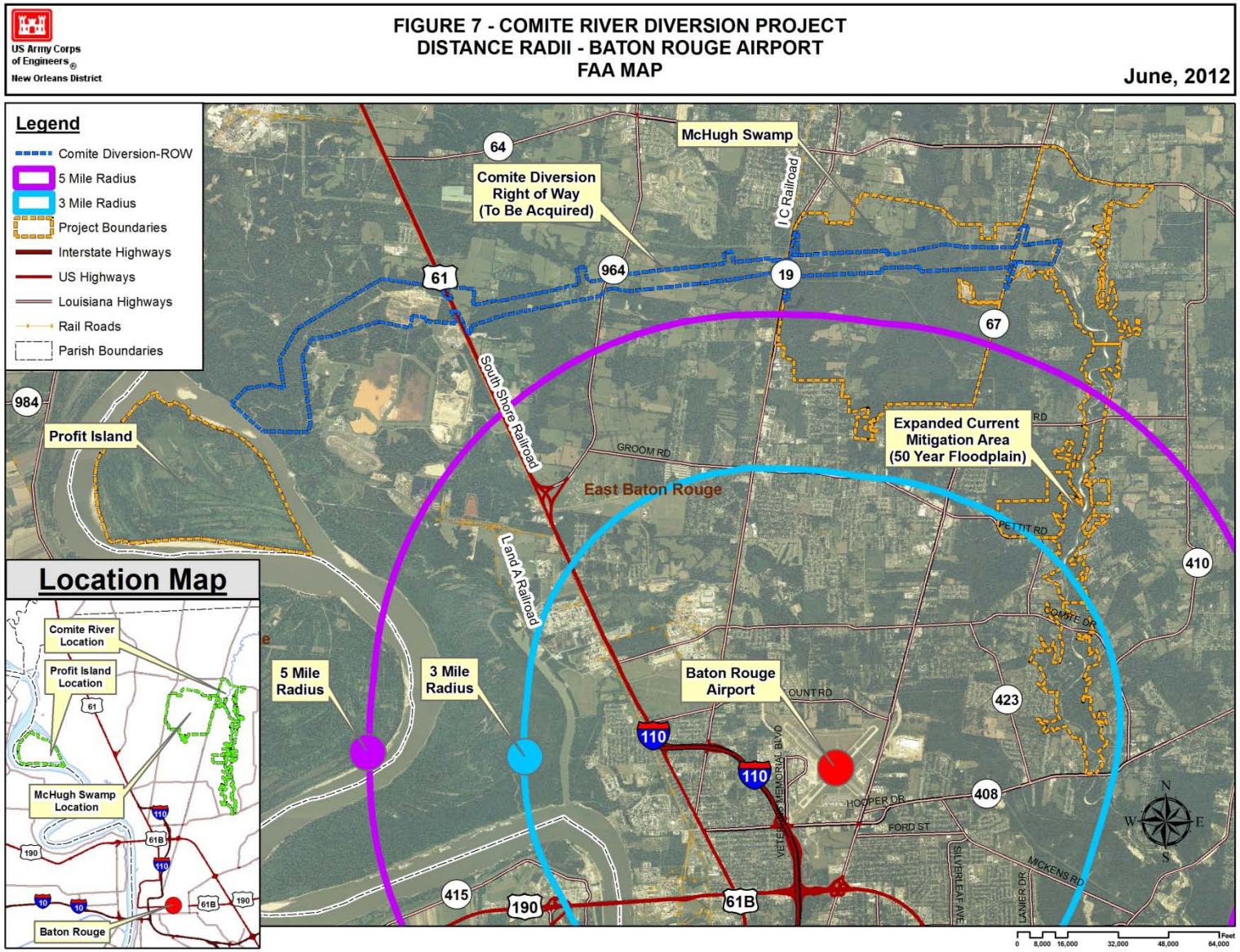
5. COMPLIANCE WITH THE FEDERAL AVIATION ADMINISTRATION POLICY ON HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS

5.1. Wildlife hazards are the second leading cause of aviation related fatalities and have cost billions of dollars of damage to aircraft worldwide. Due to this hazard, the Federal Aviation Authority (FAA) has provided guidance for certain land uses that are near airports. The guidance restricting nearby usage differs based on the type of airport and land use. For airports that serve turbine-powered aircraft or sell Jet-A fuel, the FAA has established a five-mile radius extending from the border of the airport as the area to consider any projects that may increase wildlife strike potential.

5.2. A portion of the expanded current mitigation area and a small portion of the McHugh mitigation area are located within a 5-mile radius of the Baton Rouge Metropolitan Airport (BTR). A map showing the 5-mile radius from the airport and the locations of the proposed mitigation areas is provided as Figure 7. Because of the proximity of the proposed mitigation areas to the airport, the USACE has initiated coordination with the FAA and BTR in accordance with a July 2003 Memorandum of Agreement among multiple Federal agencies addressing aircraft-wildlife strikes and FAA circular 150/5200-33B addressing Hazardous Wildlife Attractants On or Near Airports. Preliminary discussions with the BTR indicate that the proposed mitigation alternatives would not likely increase the likelihood of aircraft-wildlife strikes. The USACE will continue to coordinate with the BTR and FAA during public and agency review of this EA to ensure the proposed mitigation in this EA will not increase the wildlife hazards for arriving and departing aircraft.

6. COORDINATION

6.1. This EA and associated draft FONSI are being coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. Notices of availability of the EA and draft FONSI were widely distributed by postal mail and email to individuals who had provided their contact information at public meetings for the Comite project. Notices of availability of this EA were also published in The Advocate newspaper and the Zachary Plainsman-News. The following Federal and state agencies and nongovernmental organizations were either sent copies of the EA and draft FONSI or were sent notices of their availability.


US Army Corps of Engineers
New Orleans District
FIGURE 7 - COMITE RIVER DIVERSION PROJECT
DISTANCE RADII - BATON ROUGE AIRPORT
FAA MAP
June, 2012
Legend
Comite Diversion-ROW
5 Mile Radius
3 Mile Radius
Project Boundaries
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
McHugh Swamp
Comite Diversion Right of Way (To Be Acquired)
I C Railroad
South Shore Railroad
Land A Railroad
Profit Island
East Baton Rouge
Expanded Current Mitigation Area (50 Year Floodplain)
5 Mile Radius
3 Mile Radius
Baton Rouge Airport
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
64
61
964
19
67
984
410
423
408
415
190
61B
110
GROOM RD
PETTIT RD
COMITE DR
HOOPER DR
FORD ST
MCKENS RD
LANIER DR
SILVERLEAF AVE
VETERANS MEMORIAL BLVD
N
S
E
W
0 8,000 16,000 32,000 48,000 64,000 Feet

U.S. Department of the Interior, Fish and Wildlife Service, Lafayette, Louisiana
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Marine Fisheries Service (NMFS)
U.S. Natural Resources Conservation Service, State Conservationist
Advisory Council on Historic Preservation
Governor's Executive Assistant for Coastal Activities
Louisiana Department of Wildlife and Fisheries
Louisiana Coastal Restoration and Protection Authority
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

6.2. The U.S. Fish and Wildlife Service assisted in the evaluation of the mitigation plans and provided the following recommendations in accordance with the Fish and Wildlife Coordination Act.

Recommendation 1. The selected mitigation project(s) is consistent with all of the recommendations provided in the text of this report (particularly in regard to eradication of invasive species, establishment of native bottomland hardwoods, and property stewardship including restriction of access).

USACE response. Concur.

Recommendation 2. The selected mitigation project(s) shall fully compensate for all unavoidable losses of wetland habitat and non-wet bottomland hardwoods caused by features and activities associated with the construction and operation of the Comite River Diversion.

USACE response. Concur.

Recommendation 3.
All mitigation lands should be purchased in fee title if possible, and a perpetual conservation easement shall be acquired for any mitigation lands to preclude incompatible land uses and to ensure that the anticipated mitigation values are maintained over the project life. If that is not possible, a General Plan should be completed by the Corps, the Service, and the pertinent land managing agency (charged with managing the mitigation site) in accordance with Section 663(b) of the FWCA.

USACE response. Mitigation lands will be purchased in fee title.

Recommendation 4. Mitigation site(s) shall be selected on the basis of their ability to compensate for fish and wildlife habitat losses associated the construction and operation of the Comite River Diversion. Sites that satisfy this primary criterion shall be advanced in the evaluation process and assessed with other factors including: Proximity to the impact site and watershed, potential limitations to mitigation success, contiguity to larger forested tracts, and overall size of the mitigation site. Sites that are relatively small and/or isolated, and/or that are

subject to influences beyond management control which could severely jeopardize mitigation project success, shall not be selected for compensatory mitigation for Comite River Diversion impacts. The Corps, the Service, and other pertinent natural resource management agencies shall cooperatively assess the severity and potential success implications of such factors for respective mitigation sites, and determine whether any such sites shall be removed from further consideration as a result.

USACE response. Concur.

Recommendation 5. Costs for development, maintenance, and monitoring of mitigation lands shall be allocated as a project "first cost" in future project funding estimates and requests.

USACE response. For purposes of evaluating recommendation number 4, it is assumed that the term "first cost" has the same meaning utilized during time immediately prior to and after the enactment of the Water Resources Development Act of 1986. At that time, the term was synonymous with the current term "total project costs". That term is defined, in pertinent part, in the model Project Partnership Agreements as: "The term "*total project costs*" shall mean the sum of all costs incurred by the Non-Federal Sponsor and the Government in accordance with the terms of this Agreement directly related to construction of the *Project*. The term does not include any costs for operation, maintenance, repair, rehabilitation, or replacement of the *Project*; any costs of *betterments* under Article II.G.2. of this Agreement; any costs of dispute resolution under Article VII of this Agreement; the Government's costs for data recovery activities associated with historic preservation in accordance with Article XVII.B.2. and Article XVII.B.3. of this Agreement; or the Non-Federal Sponsor's costs of negotiating this Agreement."

The USACE concurs that costs for monitoring development and some monitoring will be included in and allocated as a part of total project costs in our future project funding estimates and requests; however, all maintenance and that portion of monitoring that occurs after the USACE determines that the mitigation success criteria have been fully achieved, are items of operation, maintenance, repair, rehabilitation and restoration. As such, the Congressional authorization for the project dictates that all maintenance costs and all costs of monitoring after the end of the period of construction shall be fully borne by the non-Federal sponsor. For this reason those efforts cannot be funded by Federal appropriations.

Recommendation 6. A detailed mitigation implementation, management, and monitoring plan shall be developed by the Corps, in coordination with the Service and other pertinent natural resource management agencies, for all restoration, enhancement, or preservation activities developed to compensate for fish and wildlife habitat losses associated with the construction and operation of the Comite River Diversion. Individual site-specific plans shall be tiered from that generalized plan, as necessary, based on a cooperative decision/effort by the Corps, the Service, and other pertinent natural resource management agencies.

USACE response. Concur.

Recommendation 7. The Corps shall not transfer management responsibilities for any mitigation project to the local non-Federal cost-share sponsor, until the near-term success of such

a project can be reasonably demonstrated (i.e., no sooner than the end of the third growing season after the initial planting of seedlings for a restoration or enhancement mitigation project). The Corps and the local non-Federal sponsor shall also be responsible (documented in the cost share agreement) for the purchase and planting of supplemental seedlings, or for other supplies and actions, necessary to attain success criteria until such time as long-term ecological success can be reasonably assured.

USACE response. The project authorization for the Comite Freshwater Diversion project stipulates that all costs of Operation, Maintenance, Repair, Rehabilitation and Restoration (OMRR&R) are the 100% responsibility of the non-Federal sponsor. In accordance with that statutory requirement, when the project or a portion of the project construction is complete, the Corps is required by law to provide the Sponsor with a notice of completion of construction and the commencement of the period of OMRR&R.

In accordance with the project's statutory authority, the proposed mitigation actions will include construction, with the non-Federal sponsor responsible for operation, maintenance, repair, restoration and rehabilitation of functional portions of work as they are completed. On a cost shared basis, USACE will monitor completed mitigation to determine whether additional construction, invasive species control and/or additional plantings are necessary to achieve mitigation success. USACE will undertake additional actions necessary to achieve mitigation success in accordance with cost sharing applicable to the project and subject to the availability of funds. Once USACE determines that the mitigation has achieved initial success criteria, monitoring will be performed by the non-Federal sponsor as part of its OMRR&R obligations. If, after meeting initial success criteria, the mitigation fails to meet its intermediate and/or long-term ecological success criteria, USACE will consult with other agencies and the non-Federal sponsor to determine whether operational changes would be sufficient to achieve ecological success criteria. If, instead, structural changes are deemed necessary to achieve ecological success, USACE will instruct the non-Federal sponsor to implement appropriate adaptive management measures in accordance with the contingency plan and subject to OMRR&R cost sharing requirements, availability of funding, and current budgetary and other guidance.

Recommendation 8. The Corps and local sponsor shall develop a written instrument that details the responsibility for each party regarding long-term operation and maintenance, with associated cost estimates, for any/all mitigation project(s). If the local project-sponsor is unable to fulfill the financial obligations associated with long-term operation and maintenance of the mitigation project(s), then the Corps shall provide the necessary funding to ensure that those obligations are met on behalf of the public interest.

USACE response. See response to recommendation number 6, above. The USACE will develop guidance for the non-Federal sponsor to direct their OMRR&R requirements for the project. That guidance will include regarding the long-term OMRR&R of the mitigation project. Congress, in authorizing this project, stipulated that all costs of OMRR&R of the project, including the mitigation features of the project, are 100% non-Federal responsibility. The USACE does not have statutory authority to utilize Federal appropriations to fund OMRR&R obligations of the non-Federal sponsor; however, subject to the availability of appropriations, the USACE is responsible to inspect completed works to determine non-Federal sponsor compliance

with the USACE OMRR&R regulations and guidance and to seek to obtain compliance from the non-Federal sponsor.

Recommendation 9. Reports documenting the implementation, maintenance, and success of the mitigation project shall be prepared at 1, 2, 5, 10, 15, and 25 years following initial project implementation, and shall be provided to the Service and other pertinent natural resource management agencies for review and comment.

USACE response. Concur. The reports to be prepared after the final notice of construction completion for the mitigation feature of the project (or functional portion of the mitigation feature of the project) has been provided to the sponsor, the mitigation reporting documents will be the responsibility of the NFS to prepare, and the USACE will include this obligation in the OMRR&R guidance provided to the non-Federal sponsor.

Recommendation 10. Any reasonably foreseeable future management activities and/or proposed changes to the proposed mitigation site locations, features, or management plans shall be coordinated in advance with the Service and other pertinent natural resource management agencies.

USACE response. Concur.

Recommendation 11. If a proposed project feature is changed significantly or is not implemented within one year of the date of our response to your "not likely to affect federally listed species" determination letter (which was provided via our May 7, 2012, "stamped" concurrence), we recommend that the Corps reinitiate Endangered Species Act coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

USACE response. Concur.

Recommendation 12. Forest clearing that is associated with certain proposed mitigation features shall be conducted during the fall or winter, when practicable, to minimize impacts to nesting migratory birds.

USACE response. Concur.

7. MITIGATION ASSESSMENT

Law, regulations, and USACE policy ensure that adverse impacts to significant resources have been avoided or minimized to the extent practicable and that remaining, unavoidable impacts have been compensated to the extent justified. Section 1508.20 of the National Environmental Policy Act defines mitigation as the following actions:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.
(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
(e) Compensating for the impact by replacing or providing substitute resources or environments

The appropriate application of mitigation is to formulate an alternative that first avoids, then minimizes, and lastly, compensates for unavoidable adverse impacts. Potential supplemental alternatives to the previously-authorized compensatory mitigation plan for the Comite project are evaluated in this EA. This document describes these supplemental mitigation plans, as required by 33 CFR 332.4(c) and 40 CFR 230.92.4(c).

Section 2036(a)(3)(A) of WRDA 2007 gives guidance on how USACE Civil Works mitigation plans shall be planned and implemented. It states:

To mitigate losses to flood damage reduction capabilities and fish and wildlife resulting from a water resources project, the Secretary shall ensure that the mitigation plan for each water resources project complies with the mitigation standards and policies established pursuant to the regulatory programs administered by the Secretary.

33 CFR 332.3 outlines the components required of a mitigation plan. These components are summarized in Table 5, and are further described in Appendix A and Appendix C. Unless otherwise noted, the descriptions are applicable for all alternatives.

Table 5: Twelve Components of a Compensatory Mitigation Plan.

Component	**Section**
1. Objectives	Section 1.2, *Purpose and Need for the Proposed Action*
2. Site Selection	Section 2.1, *Alternatives to the Existing Plan, General*
3. Site Protection Instrument	Most of the project lands are currently owned by private landowners. Once acquired, the Parish of East Baton Rouge will operate, maintain, repair, replace, and rehabilitate the entire project or the functional portion of the project, at no cost to the Government, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and state laws and specific directions prescribed by the Government in the OMRR&R Manual and any subsequent amendments. Any additional project lands will be acquired in fee by LADOTD and its agent ARBC. The non-Federal sponsor will be responsible for protecting lands contained within the mitigation site in perpetuity.
4. Baseline Information	Section 3.0, *Affected Environment*
5. Determination of Credits	Section 4.3, *Forested Lands* Section 7, *Mitigation Assessment* Appendix A, *Mitigation Planning: History, Tools, Risks, and Assumptions* Appendix B, *Draft USFWS Coordination Act Report*
6. Mitigation	Section 2.3, *Alternative 1 - Expansion of Current Mitigation Area*

Work Plan	Section 2.4, *Alternative 2 - Acquisition and Management of Profit Island* Section 2.5, *Alternative 3 - Acquisition and Management of McHugh Swamp* Section 2.6, *Alternative 4 - Acquisition of Credits in Mitigation Banks*
7. Maintenance Plan	Section 2.3, *Alternative 1 - Expansion of Current Mitigation Area* Section 2.4, *Alternative 2 - Acquisition and Management of Profit Island* Section 2.5, *Alternative 3 - Acquisition and Management of McHugh Swamp* Detailed in Appendix C, *Adaptive Management and Monitoring Plan* Also to be outlined in OMRR&R Manual.
8. Performance Standards	Detailed in Appendix C, *Adaptive Management and Monitoring Plan*
9. Monitoring Requirements	Section 8, *Adaptive Management and Monitoring* Detailed in Appendix C, *Adaptive Management and Monitoring Plan* Also to be outlined in OMRR&R Manual.
10. Long-Term Management Plan	The CEMVN is responsible for this mitigation project for the duration of the construction phase to verify mitigation success and to complete project features if necessary. The non-Federal sponsor shall be responsible for OMRR&R once the CEMVN deems the construction phase to be complete. The non-Federal sponsor shall be responsible for maintaining the mitigation site(s) in perpetuity.
11. Adaptive Management Plan	Section 8, *Adaptive Management and Monitoring* Detailed in Appendix C, *Adaptive Management and Monitoring Plan*
12. Financial Assurances	Financial assurances are required to ensure that the compensatory mitigation project would be successful. In this case, the Project Cooperation Agreement (PCA) between the Department of the Army and Louisiana Department of Transportation and Development, City of Baton Rouge and Parish of East Baton Rouge and Amite River Basin Drainage and Water Conservation District dated 1 October 2001 provides the required financial assurance for this mitigation project. In the event that the non-Federal sponsor fails to fulfill its obligations, the Assistant Secretary of the Army (Civil Works) shall terminate the Agreement or suspend future performance under the Agreement unless he determines that continuation of work on the Project is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the Project.

The CEMVN has identified a remaining balance of 671.45 AAHUs to accomplish the project-related mitigation. Three major plans, in addition to the option of utilizing mitigation banks, were identified in this assessment as worthy of pursuing acquisition and restoration activities, and cumulatively they total of 2249.2 AAHUs of benefit, far more than that required. Site selection will be based on future negotiations with willing sellers and forthcoming benefit:cost analyses. A summary of the evolution, development, and refinement of the mitigation plan is included in Appendix A, as well as WVA analyses and an array of figures that were utilized during the planning process.

8. ADAPTIVE MANAGEMENT AND MONITORING

Section 2036(a)(3)(B) of WRDA 2007 outlines the requirements of USACE mitigation plans. The WRDA specifically directs the development of adaptive management and monitoring plans for all USACE Civil Works projects. Section 2036(a)(3)(B)(i) states that mitigation plans shall include,

a plan for monitoring the implementation and ecological success of each mitigation measure, including the cost and duration of any monitoring, and, to the extent practicable, a designation of the entities that will be responsible for the monitoring.

In addition, Section 2036(a)(3)(B)(v) requires,

a contingency plan [adaptive management] *for taking corrective actions in cases in which monitoring demonstrates that mitigation measures are not achieving ecological success…*

USACE-HQ guidance "Implementation Guidance for Section 2036(a) of the Water Resources Development Act of 2007 (WRDA 07) – Mitigation for Fish and Wildlife and Wetland Losses" dated August 31, 2009 further requires adaptive management and monitoring plans be developed for Civil Works mitigation projects.

An adaptive management and monitoring plan was developed by the Adaptive Management team in coordination with the Comite project PDT. The Adaptive Management and Monitoring plan for the alternatives described in this EA is included in Appendix C. It was determined that the alternatives as described in this EA are not a good candidate for adaptive management actions because the uncertainties and risk elements had been identified and avoided during the planning process. A monitoring feedback loop has been set up to determine project success, as detailed in Appendix C; this monitoring feedback loop includes a contingency plan if mitigation criterions set forth in the monitoring plan are not achieved.

While in the construction phase, if the results of the monitoring program support the need for physical modifications to the project, the CEMVN will determine and implement the appropriate corrections in accordance with current authority and budgetary and other guidance, including the potential to consider implementing corrective measures under separate authority.

9. COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved upon: Coordination of this EA and draft FONSI with appropriate agencies, organizations, and individuals for their review and comments; USFWS confirmation that the proposed action would not be likely to adversely affect any endangered or threatened species; receipt of a Water Quality Certificate from the State of Louisiana; public review of the Section 404(b)(1) Public Notice; signature of the Section 404(b)(1) Evaluation; receipt of the State Historic Preservation Officer Determination of No Affect on cultural resources; receipt and acceptance or resolution of all USFWS Fish and Wildlife Coordination Act recommendations; receipt and acceptance or resolution of all Louisiana Department of Environmental Quality comments on the air quality impact analysis documented in the EA; and receipt of confirmation from the FAA that the proposed action would not unacceptably increase the likelihood of wildlife strikes by airplanes. The FONSI will not be signed until the proposed action achieves environmental compliance with applicable laws and regulations, as described above.

10. CONCLUSION

The proposed action consists of designating supplemental mitigation options for the Comite project. This office has assessed the environmental impacts of the action alternatives considered in this EA and compared them to the no action plan, which is continued implementation of the current Comite project mitigation plan, and determined that both individually and cumulatively the action alternatives would have only minor impacts on wetlands, aquatic resources, forested lands, prime and unique farmlands, recreational resources, visual resources, socioeconomic resources and air quality. The overall effects are environmentally positive. None of the alternatives are expected to adversely affect threatened or endangered species or their critical habitats. Implementation of the no action alternative would not adversely affect cultural resources. A final determination of whether or not the other alternatives would adversely affect cultural resources has not been made. Coordination and consultation with the State Historic Preservation officer and Indian Tribes is ongoing and will be concluded before any Federal action is taken.

11. PREPARERS

This EA and the associated draft FONSI were prepared by Richard Boe, Supervisory Environmental Resources Specialist. Steve Roberts of the USACE and David Soileau of the USFWS assessed the mitigation potential of the alternatives and provided technical input. Other contributors are: Danielle Tommaso – Coordination of preparers and several sections under Affected Environment and Environmental Consequences; Gary Demarcay - Cultural Resources; Kelly McCaffrey – Aesthetics (Visual Resources); Andrew Perez - Recreational Resources; Kayla Fontenot – Socioeconomics and Environmental Justice; Joseph Musso – Air Quality; Dr. J. Christopher Brown – Prime and Unique Farmland and HTRW; Dr. William P. Klein, Jr. and Michelle Boudreaux Meyers – adaptive management and monitoring plan. Bobby Duplantier is the Comite project manager. The address of the preparers is: U.S. Army Corps of Engineers, Regional Planning and Environmental Division South, P.O. Box 60267, New Orleans, Louisiana 70160-0267.

12. REFERENCES

Center for Planning Excellence (CPEX). 2005. State of Louisiana Land Use Map, “Louisiana Speaks.” Now is the Time, Background, Context, and Process, Existing Land use, Land Use Map: Existing Conditions, pp. 20 – 21. See also, Interactive Website, “http://cpex.org/work/louisiana-speaks” Link=”downloads section”

Daigle, J.J., G.E. Griffith, J.M. Omernik, P.L. Faulker, R.P. McCulloh, L.R. Handley, L.M. Smith, and S.S. Chapman. 2006. The State of Louisiana Eco-Region Map, "Louisiana Speaks" and “USGS Eco-Region Map”, Eco-regions of Louisiana color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey. See also, Interactive Website, “http://cpex.org/work/louisiana-speaks” Link=”downloads section”

Louisiana Department of Transportation and Development (LADOTD). 2011. LADOTD Estimated Annual Average Daily Traffic Count Site, Interactive Website," http://www.dotd.la.gov/highways/tatv/default.asp" Search=East Baton Rouge Parish

Louisiana Department of Environmental Quality (LDEQ). 2007. "Louisiana River Basins." Accessed on 1 May 2012 from http://www.deq.louisiana.gov/portal/Portals/0/watershed/Basin%20Map.jpg.

Markell, A., R. Draughon, S. B. Smith, T. Fenn, M. Williams, J. A. Green, J. Pincoske and R. Wappenstein. 1997. Cultural Resources Survey and National Register Testing of Comite River Diversion Project, East Baton Rouge Parish, Louisiana. Report No. 22-1978 on file at the Louisiana Division of Archaeology, Baton Rouge, Louisiana.

Penland, S. A. Beall, and J. Kindinger. 2002. "Environmental Atlas of the Lake Pontchartrain Basin." U.S. Geological Survey Open File Report 02-206. Accessed on 1 May 2012 from http://pubs.usgs.gov/of/2002/of02-206/index.html.

Rivet, Philip G. 1976. Cultural Resource Survey of Comite River Bridge and Approaches, Route LA 64, East Baton Rouge Parish, Louisiana. Report No. 0212 on file at the Louisiana Division of Archaeology, Baton Rouge, Louisiana.

Ryan, J., W. J. Autin, W. L. Coco, and W. D. Reeves. 1994. Cultural Resources Survey of the Proposed Comite River Diversion Alignment, East Baton Rouge Parish, Louisiana. Report No. 22-1822 on file at the Louisiana Division of Archaeology, Baton Rouge, Louisiana.

USACE. 2009. Letter to the Louisiana State Historic Preservation Officer from the US Army Corps of Engineers concerning mitigation from the construction of the Comite River Diversion.

U.S. Army Corps of Engineers – Institute for Water Resources (USACE-IWR). 2009. "Waterborne Commerce of the United States, Calendar Year 2009, Part 5 – National Summaries." Table 5-2: Selected U.S. Ports by Port Name, 2009, Ranked by Total Tons. Accessed 9 May 2012 from http://www.ndc.iwr.usace.army.mil/wcsc/pdf/wcusnatl09.pdf.

U.S. Department of Agriculture Soil Conservation Service (USDA). 1968. Soil Survey: East Baton Rouge Parish, Louisiana. Accessed on 9 May 2012 from http://soildatamart.nrcs.usda.gov/manuscripts/LA033/0/EBR.pdf.

13. APPENDIXES

Appendix A - Mitigation Planning: History, Tools, Risks, and Assumptions

Appendix B – US Fish and Wildlife Service, Coordination Act Report

Appendix C – Adaptive Management and Monitoring Plan

Appendix D – Public and Agency Comments

ENVIRONMENTAL ASSESSMENT #426

APPENDIX A

MITIGATION PLANNING: HISTORY, TOOLS, RISKS, AND ASSUMPTIONS

1. INTRODUCTION.

1.1. EA #426 presents four potential alternatives to supplement the Comite River Diversion project (Comite project) mitigation plan. This appendix serves to present background on project planning and the habitat evaluation methodologies used by the U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN) and the U.S. Fish and Wildlife Service (USFWS) during project planning.

1.2. The purpose of the proposed action is to provide implementable mitigation for the Comite project. Four alternatives are evaluated in EA #426: The expansion of the current mitigation plan area as addressed in EA #222 to encompass more acreage; acquisition and management of Profit Island; acquisition of lands within the area known as the McHugh Swamp; and acquisition of credits from one or more mitigation banks. EA #426 and this appendix do not address the environmental effects of purchasing credits in one or more mitigation banks as compensation for impacts related to the Comite project.

2. SUMMARY OF PROJECT-RELATED IMPACTS AND BENEFITS.

2.1. Use of Habitat Evaluation Methodologies in Project Planning.

2.1.1. Unavoidable impacts due to construction of the Comite project will occur over 891 acres of bottomland hardwood forest (BLH) habitat, as described in the 1990 project EIS, EA #222, and EA #222-A (Section 1.1.2. – 1.1.5. of EA #426). Habitat impacts were calculated using the Habitat Evaluation System (HES) and the Habitat Evaluation Procedure (HEP). The HES is a USACE habitat-based methodology developed in 1980 used for evaluating impacts of water resources development projects in the Lower Mississippi Valley. Outputs are quantified by a Habitat Unit Value (HUV). The HEP methodology is a USFWS species-oriented model developed in 1980 used to document the quality and quantity of available habitat for selected wildlife species. Outputs are quantified in average annual habitat units (AAHUs), which are the total number of habitat units gained or lost as a result of a proposed action, divided by the life of the action.

2.1.2. A major assumption made early in project planning was that HEP and HES outputs are comparable to outputs that would be calculated using the most common assessment methodology currently utilized for CEMVN Civil Works projects – the Wetland Value Assessment (WVA) methodology. The WVA methodology is based on HEP, but is a community model developed in 1991 to quantify changes in habitat quality and quantity that are projected to occur as a result of proposed wetland restoration projects in Louisiana. WVA outputs are quantified in AAHUs.

2.1.3. The 1990 project EIS and subsequent EAs presented most of the project's impacts and mitigation requirements in terms of acreage. The use of acreage to discuss impacts and mitigation is easy for the public to understand, but is silent on the habitat quality of different parcels of land. EA #426 expresses impacts and mitigation potential by AAHUs rather than acres. The CEMVN and USFWS have evaluated HES and HEP model outputs calculated for the Comite project, and have determined that an equivalent WVA output can appropriately be calculated.

2.2. Calculation of Impacts and Benefits.

2.2.1. Project-related impacts were quantified by the HES and HEP methodologies, and have been calculated to be equivalent to 704.6 AAHUs. The mitigation plan for project-related impacts to BLH, as developed in the EIS and subsequent EAs, includes reforesting 793 acres and preserving 910 acres of BLH habitat along the Comite River 25-year floodplain to compensate for unavoidable habitat losses (Section 1.2.6. of EA #426).

2.2.2. Benefits of the mitigation alternatives described in EA #426 were calculated using the WVA methodology, and are shown in Table 1 of the EA.

2.3. Remaining Project Mitigation Obligation.

2.3.1. To date, 75 acres along the Comite River have been acquired for mitigation, 35 acres of which contain mature BLH, which will be preserved, and 40 acres of which were planted with BLH seedlings in March 2011 (Section 1.2.6. of EA #426). Using the WVA methodology, these mitigation efforts have been calculated to provide 33.15 AAHUs.

2.3.2. The remaining mitigation obligation for the Comite project is 671.45 AAHUs.

3. ALTERNATIVE ANALYSIS.

3.1. EA #426 evaluates the environmental effects of supplementing the current mitigation plan for the Comite project with additional alternatives that may allow for the fulfillment of the project's mitigation obligation. Four alternatives are evaluated in EA #426. These alternatives include the expansion of the current mitigation plan area as addressed in EA #222 to encompass more acreage; acquisition and management of Profit Island; acquisition of lands within the area known as the McHugh Swamp; and acquisition of credits from one or more mitigation banks. Additional areas that may be able to provide mitigation credits have been identified by the Amite River Basin Commission, but to date have not been investigated.

3.2. Alternative 1 - Expansion of Current Mitigation Area.

3.2.1. A detailed summary of this alternative is included in Section 2.3. of EA #426. This area includes two sizeable areas totaling 835 acres that may be available from willing landowners. Area 1 comprises 307 acres, most of which is an operating sand and gravel mine (Figure 1). Area 2 contains 528 acres situated along Petit Road, most of which is forested (Figure 2). Based on analysis of hydric (wetland) soil maps (Figures 3 and 4), Light Detection and Ranging

(LIDAR) data (Figures 5-8), vegetation surveys, and hydrology it was determined these areas are comprised of approximately 435 acres of jurisdictional wetlands.

3.2.2. Major potential impediments to successful mitigation activities along the Comite River include human trespass with ATVs, drought, long durations of river flooding, sedimentation patterns of flood events, competition with invasive vines, and competition with fast growing/less desirable species such as Chinese tallow and willow. As discussed in EA #426, major benefits from the plan could be achieved by reforesting existing pastures, tallow eradication (Figure 9), and the preservation of mature BLH habitat.

3.2.3. Actions at Area 1 and Area 2 could provide 188.6 AAHUs (Tables 1 and 2). The entire Expansion plan could provide 707.4 AAHUs if the entire area were acquired for project mitigation (Table 3).

3.3. Alternative 2 – Acquisition and Management of Profit Island.

3.3.1. A detailed summary of this alternative is included in Section 2.4. of EA #426. Profit Island is a low-lying island in the Mississippi River that experiences significant seasonal flooding. Island topography and Mississippi River gauge data were used to delineate the island into three "Zones," as illustrated in Figure 10. Zone 1 is at or above 37.4 feet, and is the least-frequently inundated area of the island. Zone 2 is between 33.6 and 37.3 feet, and experiences relatively moderate inundation. Areas most frequently inundated are within Zone 3, which is located at or below 33.6 feet.

On average, much of the island is flooded at significant depths for more than 30 days of the growing season. Based on analysis of a hydric soil map (Figure 11), LIDAR data (Figure 12), vegetation surveys, and Mississippi River gauge data (Figure 13) it was determined that approximately 2,086 acres of the 2,318 acre island are jurisdictional wetlands.

3.3.2. Based on review of island topography, Mississippi River gauge data, and BLH species flood tolerance data, it was determined that attempts of reforestation within Zone 3 would be unsuccessful; thus, 1200-acre Zone 3 was evaluated only for its preservation potential**.**

3.3.3. Reforestation within 618-acre Zone 2 would likely have moderate success. Provided that annual river flooding is average or less than average, BLH seedlings would have a reasonable chance of surviving the first couple of growing seasons and could become established. Because of this Zone 2 was evaluated for its restoration potential.

3.3.4. Reforestation within 500-acre Zone 1 would have the highest success rate. BLH seedlings planted within this Zone would be at the lowest risk for inundation, and would likely have a higher survival rate than those planted within Zone 2. There is also opportunity for successful preservation and enhancement activities within Zone 1.

3.3.5. Major potential impediments to successful mitigation activities on Profit Island include the depth and duration of seasonal flooding, sedimentation patterns of flood events, competition with

invasive vines, and competition with fast growing/less desirable species such as cottonwood and willow.

3.3.6. Acquisition and management of Profit Island could provide 426.2 AAHUs (Table 4). Sophisticated hydraulic analysis of Profit Island did not occur during project planning; potential benefits achieved from the installation of flap-gated culverts were not included in the WVA calculation.

3.4. Alternative 3 – Acquisition and Management of McHugh Swamp.

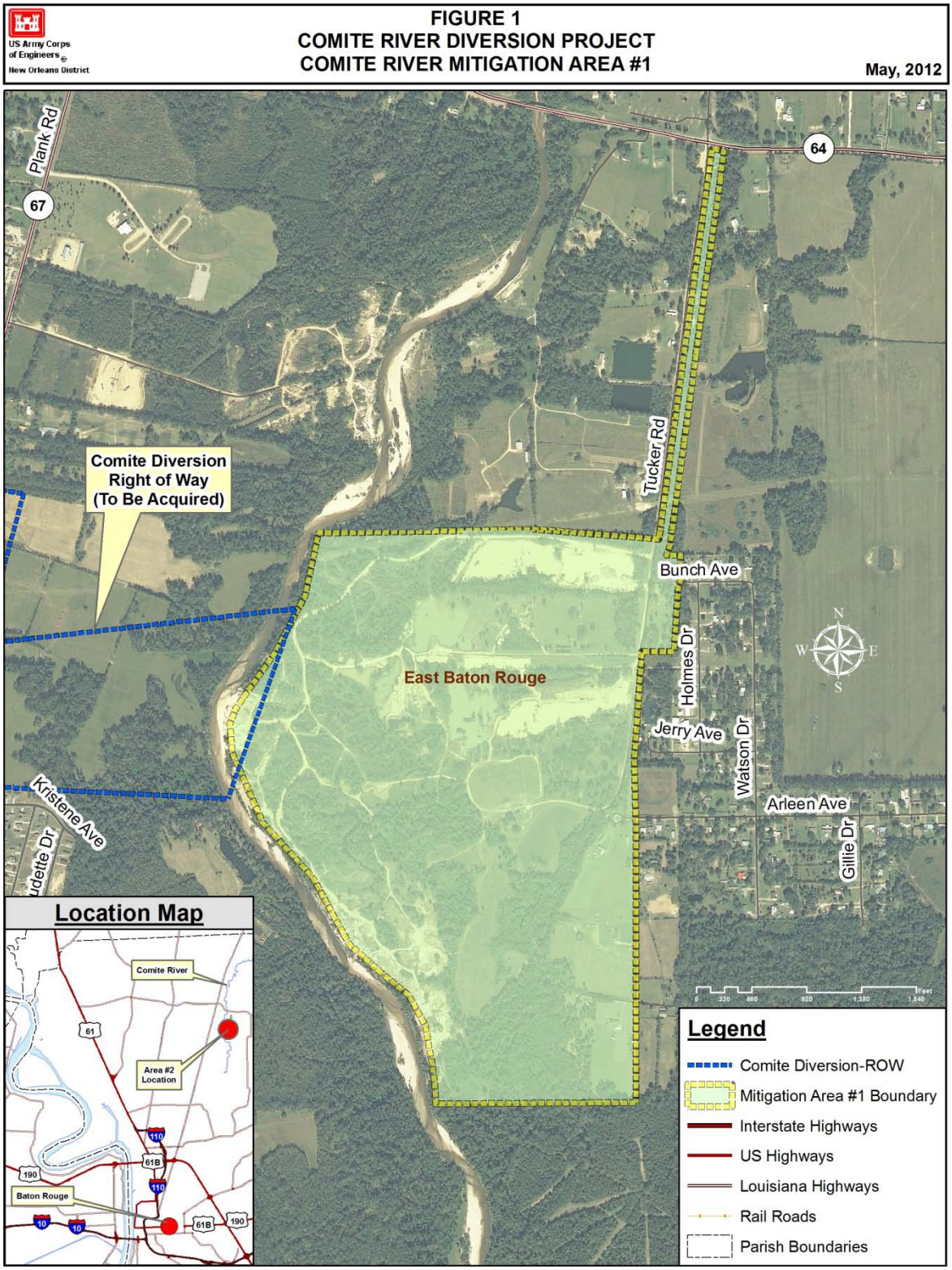
3.4.1. A detailed summary of this alternative is included in Section 2.5. of EA #426. The 4,200-acre McHugh Swamp is a circular-shaped area of relatively low elevation around Whites Bayou, a tributary to the Comite River. Because of the interception of the Southern Canal, it is also a tributary to the Mississippi River. Approximately 523 acres within the north-central portion of McHugh Swamp falls within the construction right-of-way for the Comite Diversion canal and were not included in this mitigation plan. Based on analysis of a hydric soil map (Figure 14), LIDAR data (Figure 15), vegetation surveys, and hydrology it was determined that the McHugh Swamp area is comprised of approximately 2,760 acres of jurisdictional wetlands.

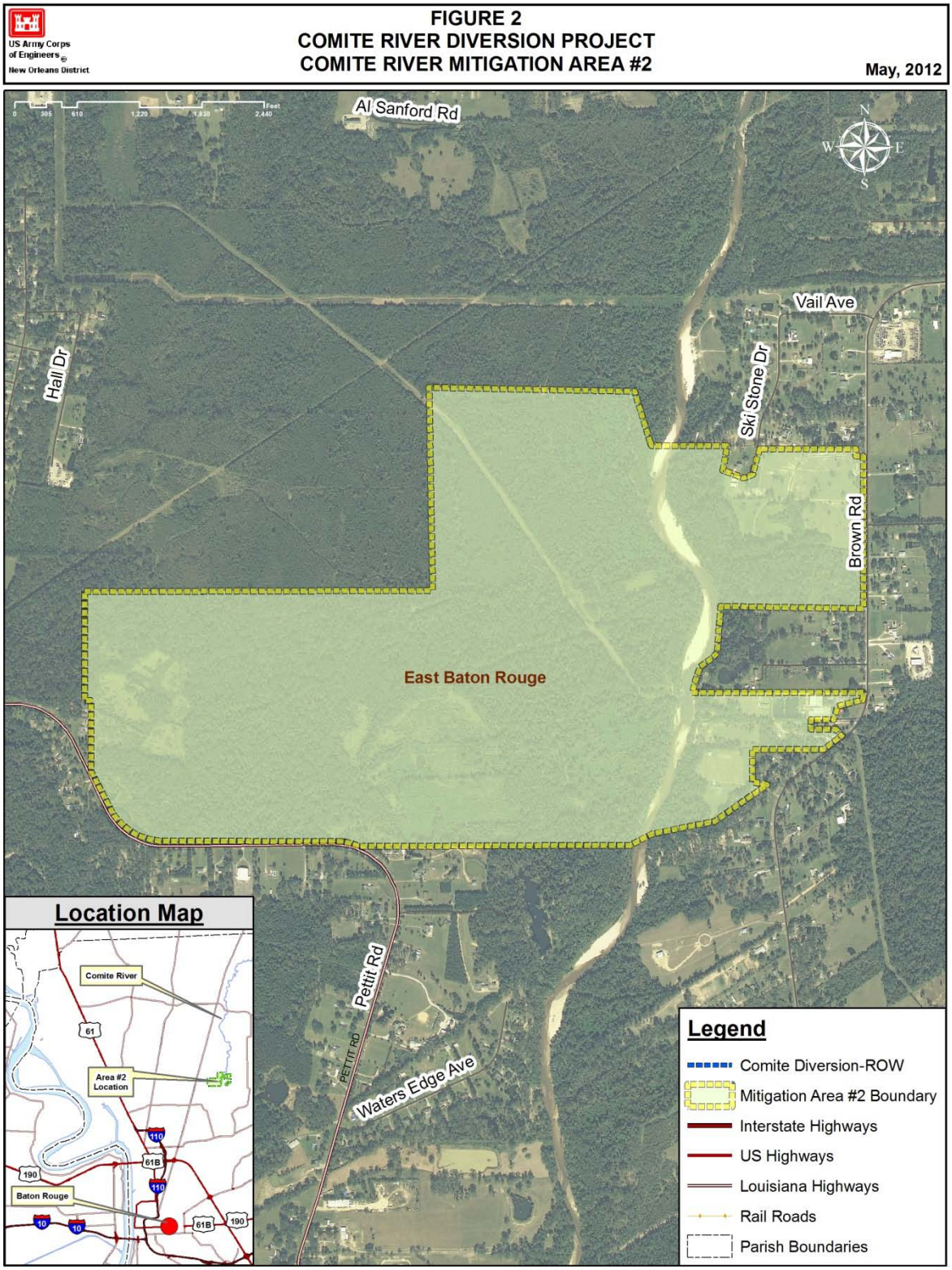
3.4.2. Major potential impediments to successful mitigation activities within McHugh Swamp include drought, competition with invasive vines, and competition with fast growing/less desirable species such as Chinese tallow and willows. As discussed in EA #426, major benefits from the plan could be achieved by reforesting existing pastures, tallow eradication (Figure 16), and the preservation of mature BLH habitat.

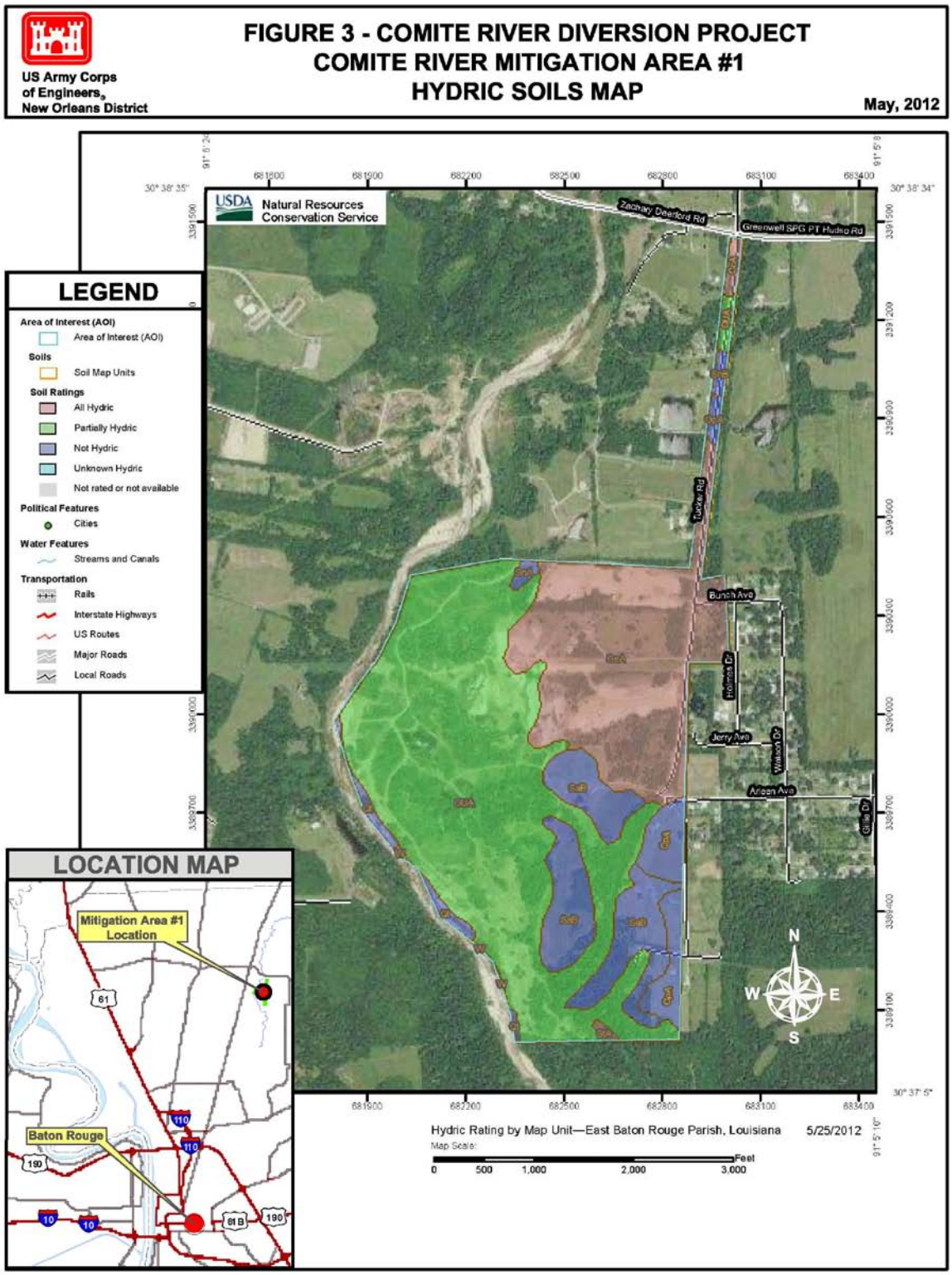
3.4.3. Actions at McHugh Swamp can provide 799.2 AAHUs (Table 5).

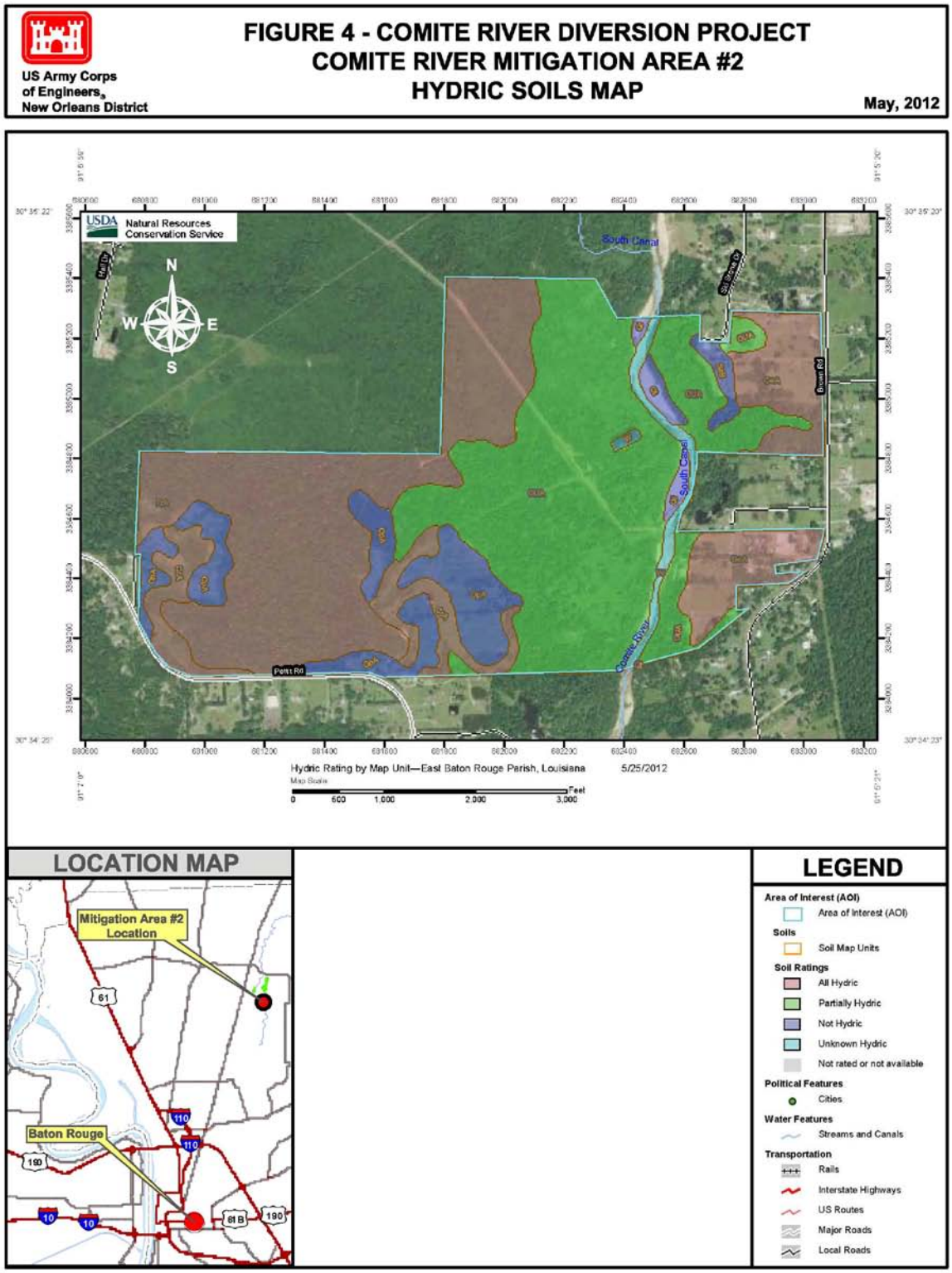
4. CONCLUSION.

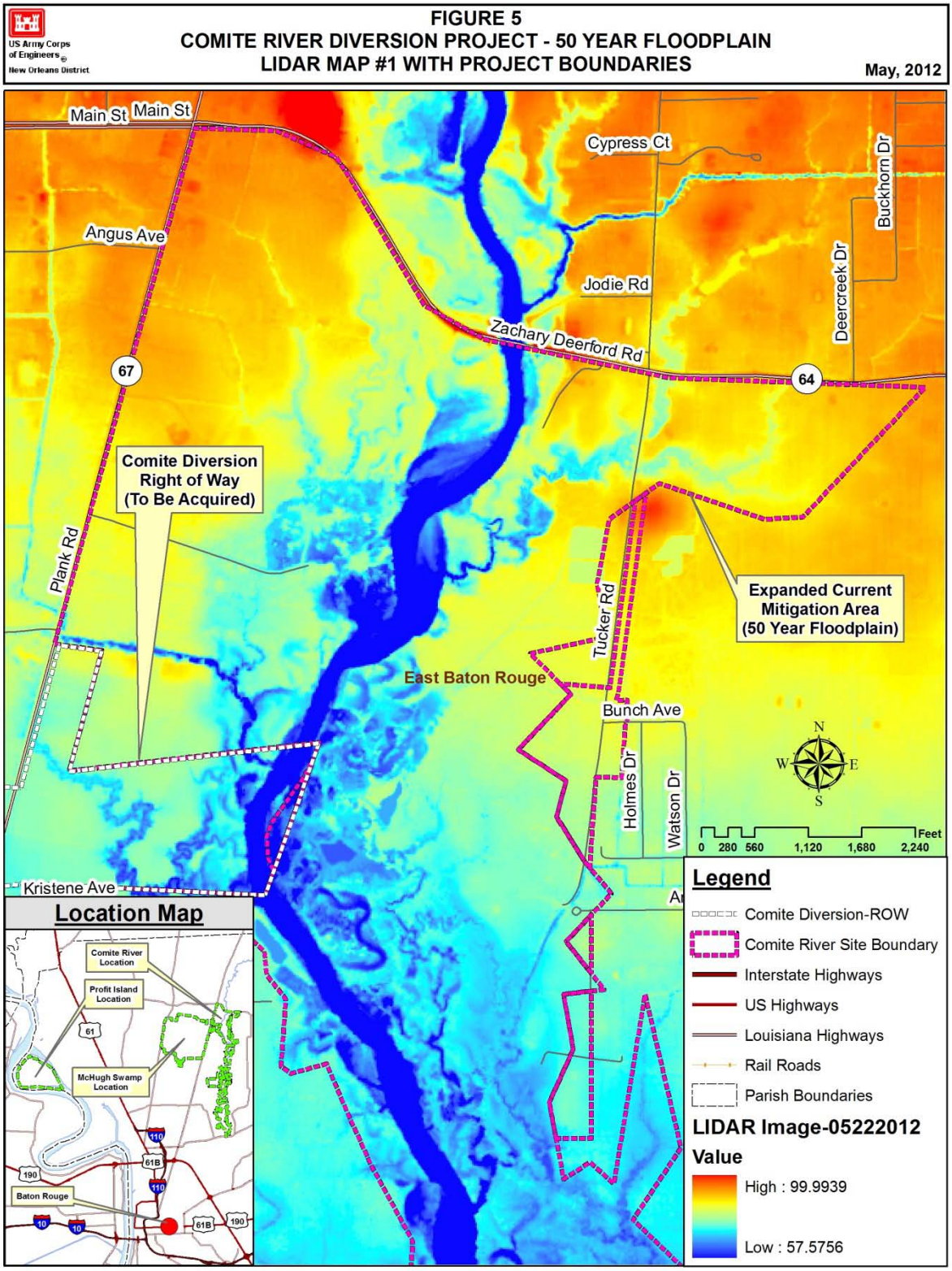
The CEMVN has identified a remaining balance of 671.45 AAHUs to accomplish project-related mitigation. Three plans identified in EA #426 could potentially provide a cumulative total of 2249.2 AAHUs. Site selection will be based on future negotiations with willing sellers and forthcoming benefit:cost analyses. If one or more of the selected options is not implementable other possible mitigation alternatives may be considered and analyzed at a future date.

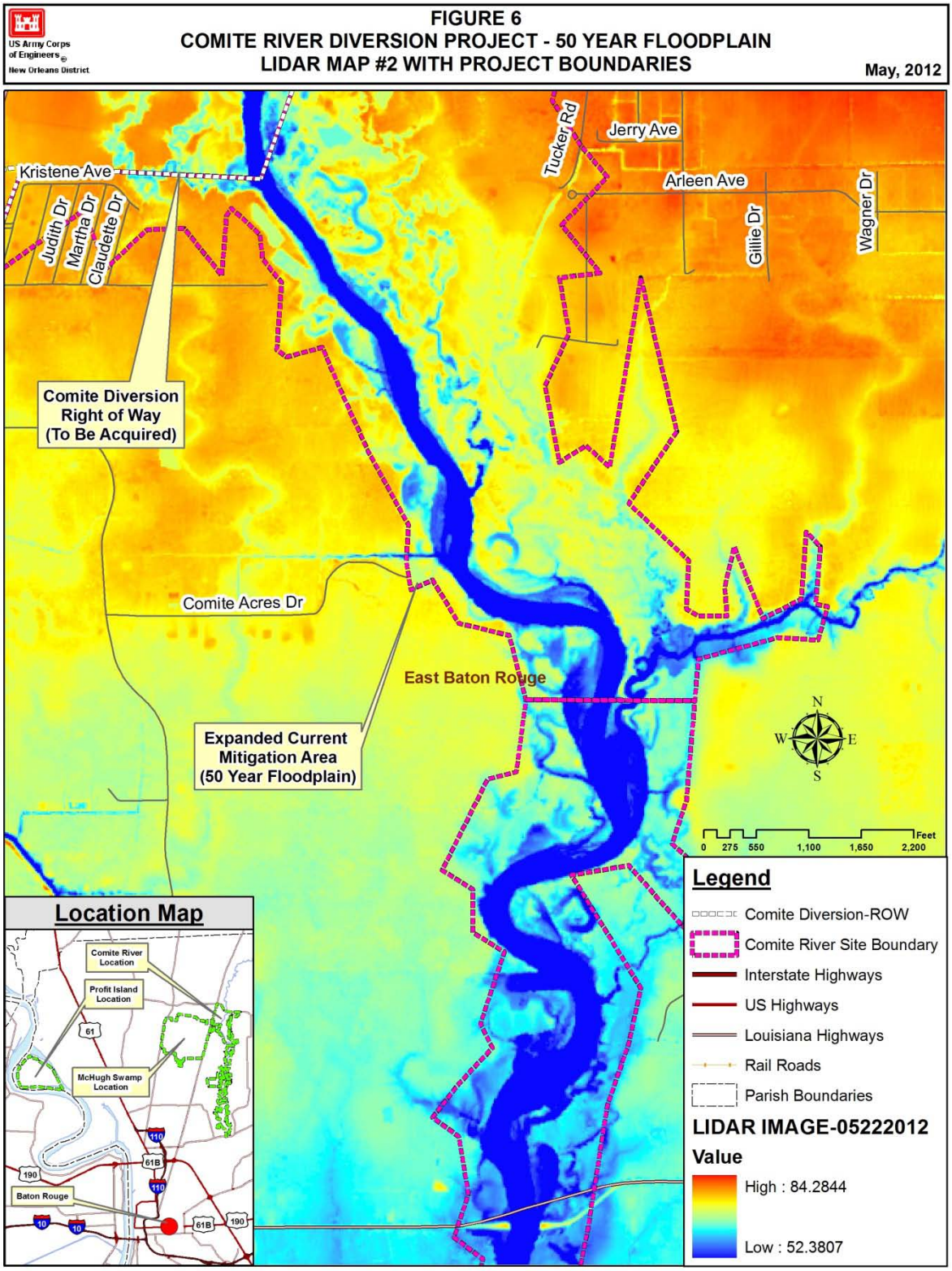

US Army Corps of Engineers
New Orleans District
FIGURE 1
COMITE RIVER DIVERSION PROJECT
COMITE RIVER MITIGATION AREA #1
May, 2012
Plank Rd
67
64
Comite Diversion Right of Way (To Be Acquired)
Tucker Rd
Bunch Ave
East Baton Rouge
Holmes Dr
Jerry Ave
Watson Dr
Arleen Ave
Gillie Dr
Kristene Ave
N
W
E
S
Location Map
Comite River
61
Area #2 Location
110
61B
190
Baton Rouge
10
Legend
Comite Diversion-ROW
Mitigation Area #1 Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries

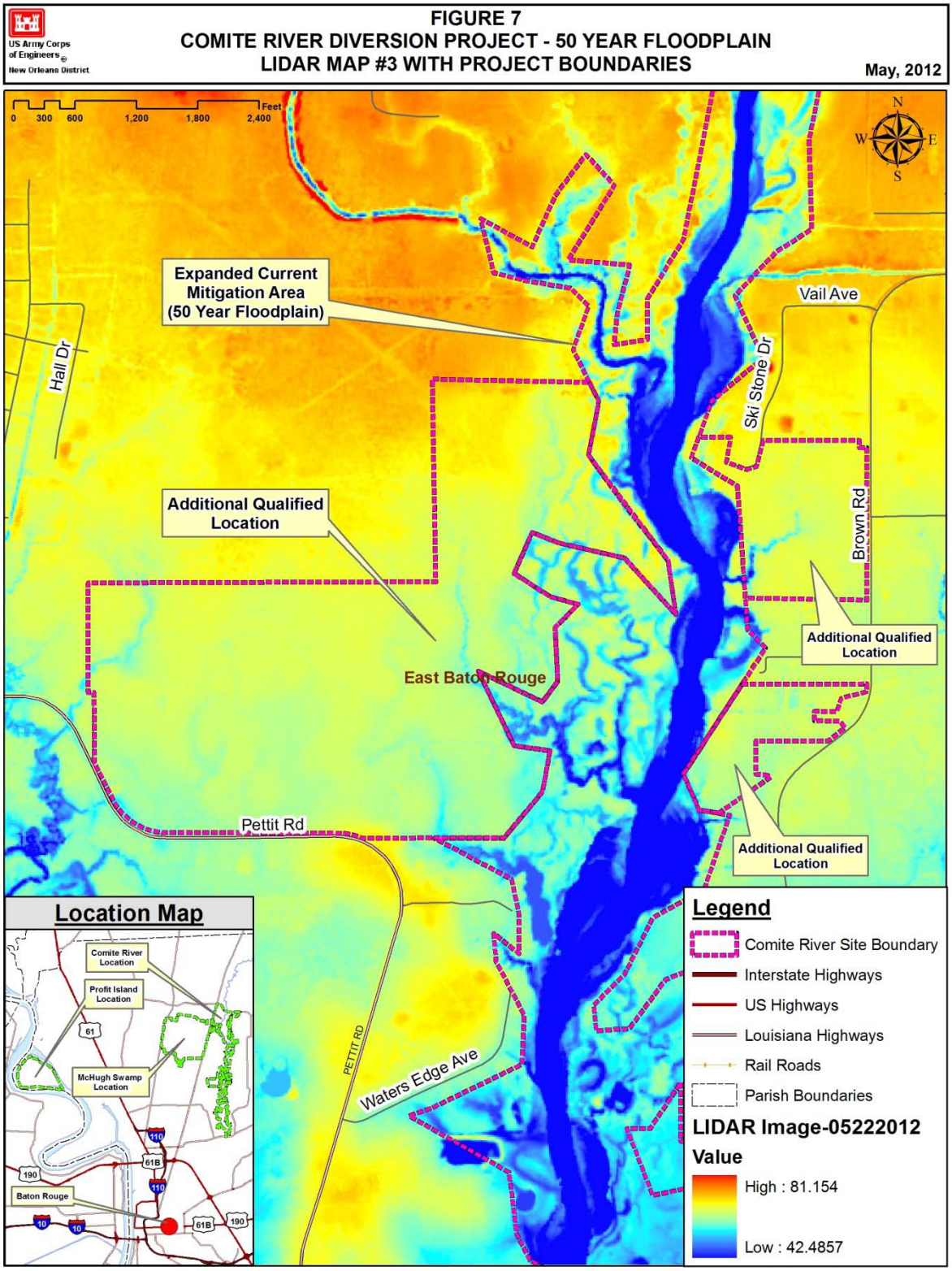

US Army Corps of Engineers
New Orleans District
FIGURE 2
COMITE RIVER DIVERSION PROJECT
COMITE RIVER MITIGATION AREA #2
May, 2012
Al Sanford Rd
Vail Ave
Hall Dr
Ski Stone Dr
Brown Rd
East Baton Rouge
Pettit Rd
Waters Edge Ave
Location Map
Comite River
Area #2 Location
Baton Rouge
Legend
Comite Diversion-ROW
Mitigation Area #2 Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries

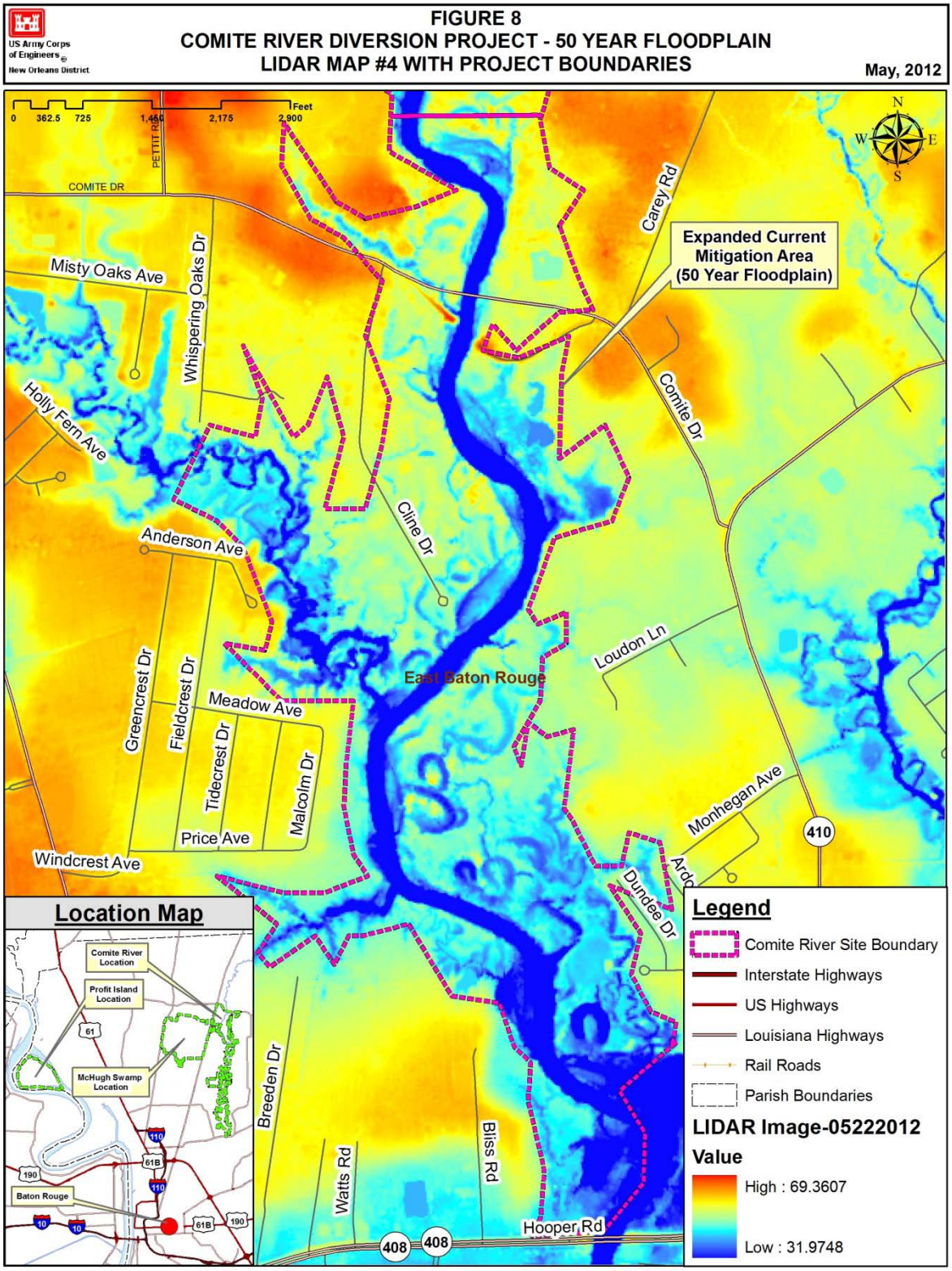

US Army Corps of Engineers, New Orleans District
FIGURE 3 - COMITE RIVER DIVERSION PROJECT
COMITE RIVER MITIGATION AREA #1
HYDRIC SOILS MAP
May, 2012
USDA Natural Resources Conservation Service
LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Map Units
Soil Ratings
All Hydric
Partially Hydric
Not Hydric
Unknown Hydric
Not rated or not available
Political Features
Cities
Water Features
Streams and Canals
Transportation
Rails
Interstate Highways
US Routes
Major Roads
Local Roads
LOCATION MAP
Mitigation Area #1 Location
Baton Rouge
Zachary Deerford Rd
Greenwell SPG PT Hudson Rd
Tuckey Rd
Bunch Ave
Jerry Ave
Ariegan Ave
Hydric Rating by Map Unit—East Baton Rouge Parish, Louisiana
5/25/2012
Map Scale:
Feet
0 500 1,000 2,000 3,000

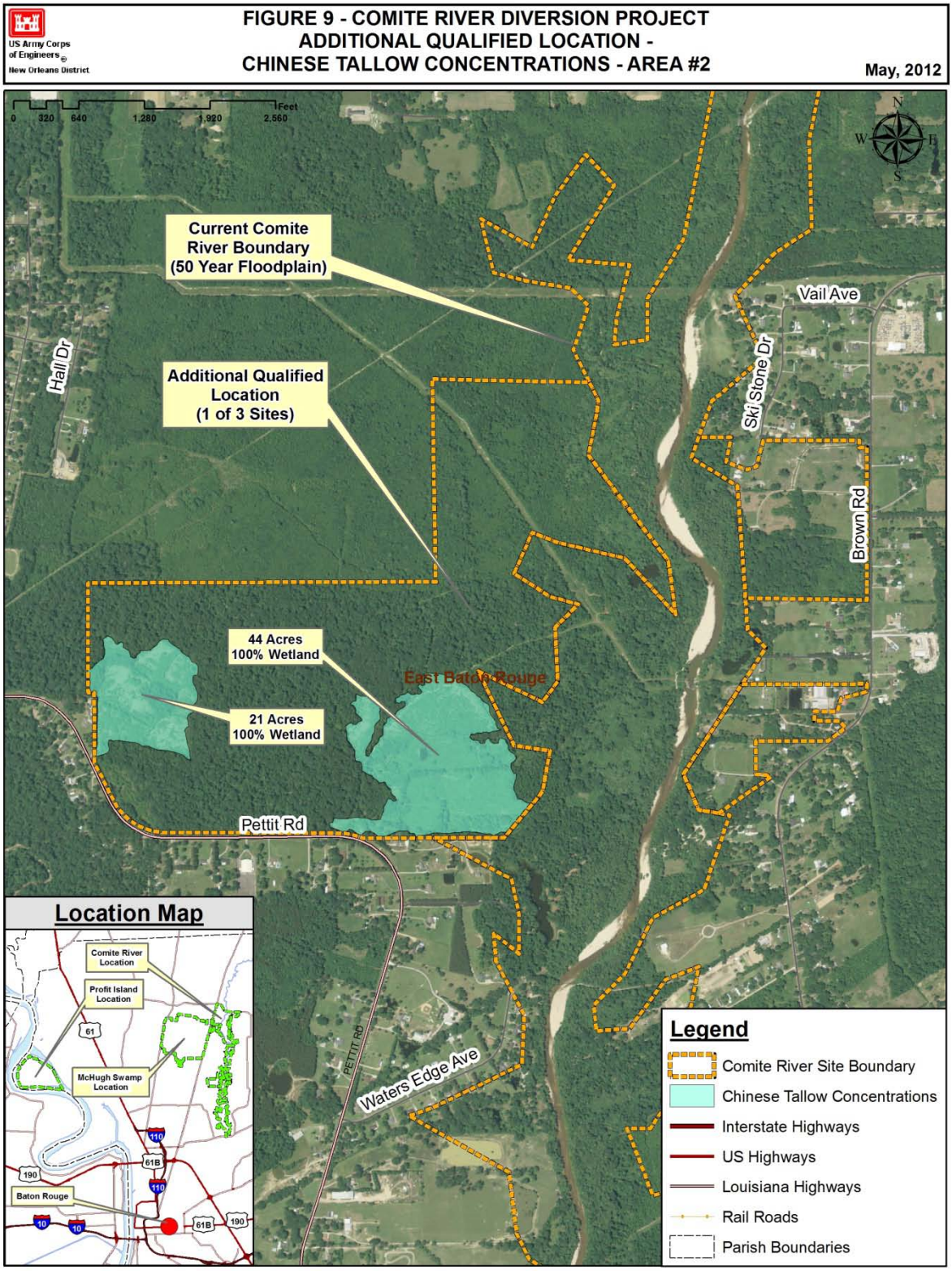

US Army Corps of Engineers, New Orleans District
FIGURE 4 - COMITE RIVER DIVERSION PROJECT
COMITE RIVER MITIGATION AREA #2
HYDRIC SOILS MAP
May, 2012
USDA Natural Resources Conservation Service
N
W
E
S
South Canal
Comite River
Petit Rd
Hydric Rating by Map Unit—East Baton Rouge Parish, Louisiana
5/25/2012
Map Scale:
Feet
0
500
1,000
2,000
3,000
LOCATION MAP
Mitigation Area #2 Location
Baton Rouge
61
110
190
10
61 B
LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Map Units
Soil Ratings
All Hydric
Partially Hydric
Not Hydric
Unknown Hydric
Not rated or not available
Political Features
Cities
Water Features
Streams and Canals
Transportation
Rails
Interstate Highways
US Routes
Major Roads
Local Roads

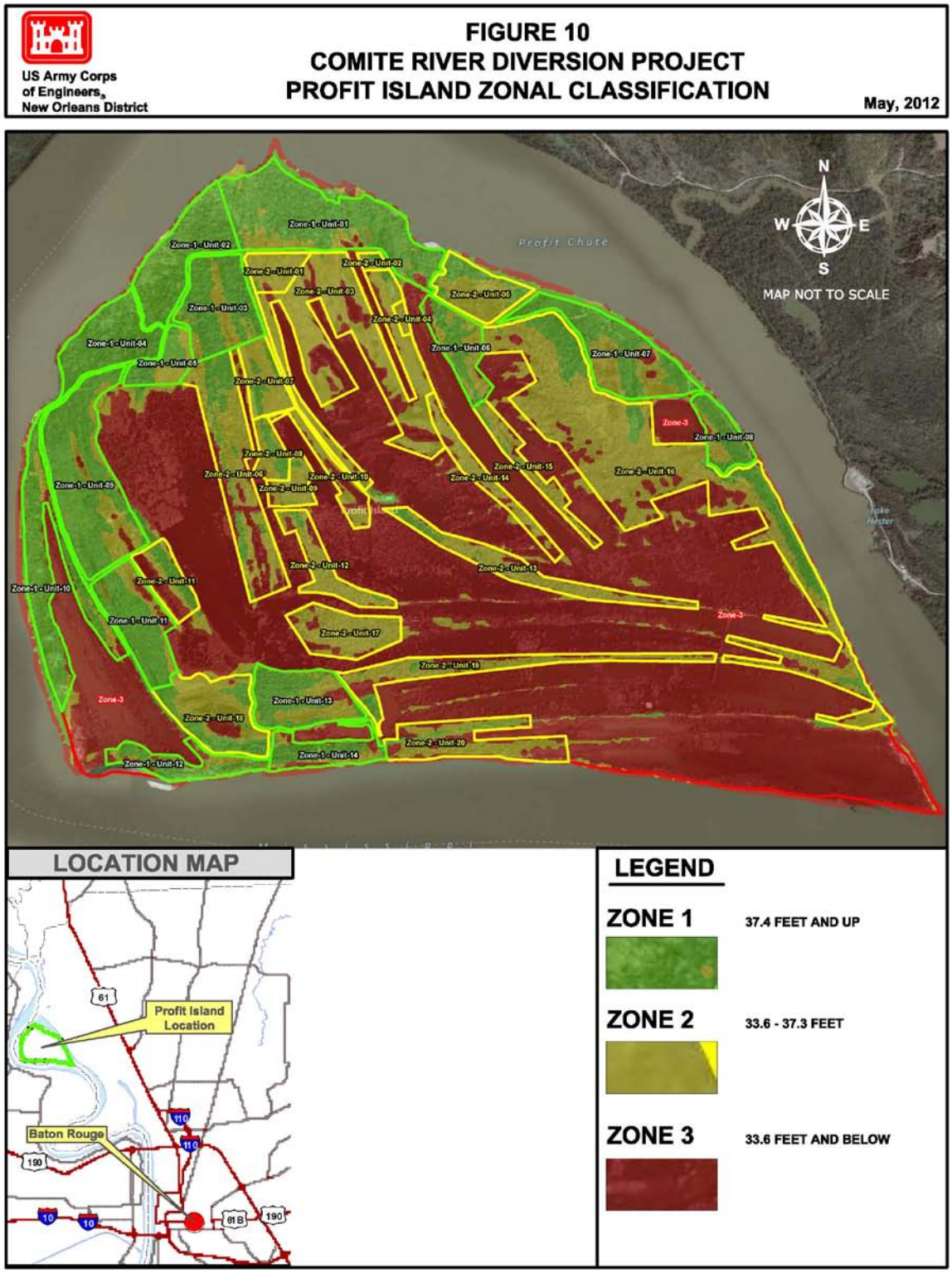

US Army Corps of Engineers
New Orleans District
FIGURE 5
COMITE RIVER DIVERSION PROJECT - 50 YEAR FLOODPLAIN
LIDAR MAP #1 WITH PROJECT BOUNDARIES
May, 2012
Main St
Main St
Cypress Ct
Buckhorn Dr
Angus Ave
Jodie Rd
Deercreek Dr
Zachary Deerford Rd
67
64
Comite Diversion Right of Way (To Be Acquired)
Plank Rd
Tucker Rd
Expanded Current Mitigation Area (50 Year Floodplain)
East Baton Rouge
Bunch Ave
Holmes Dr
Watson Dr
N
W
E
S
0 280 560 1,120 1,680 2,240 Feet
Kristene Ave
Location Map
Comite River Location
Profit Island Location
61
McHugh Swamp Location
110
61B
190
Baton Rouge
10
Legend
Comite Diversion-ROW
Comite River Site Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
LIDAR Image-05222012
Value
High : 99.9939
Low : 57.5756

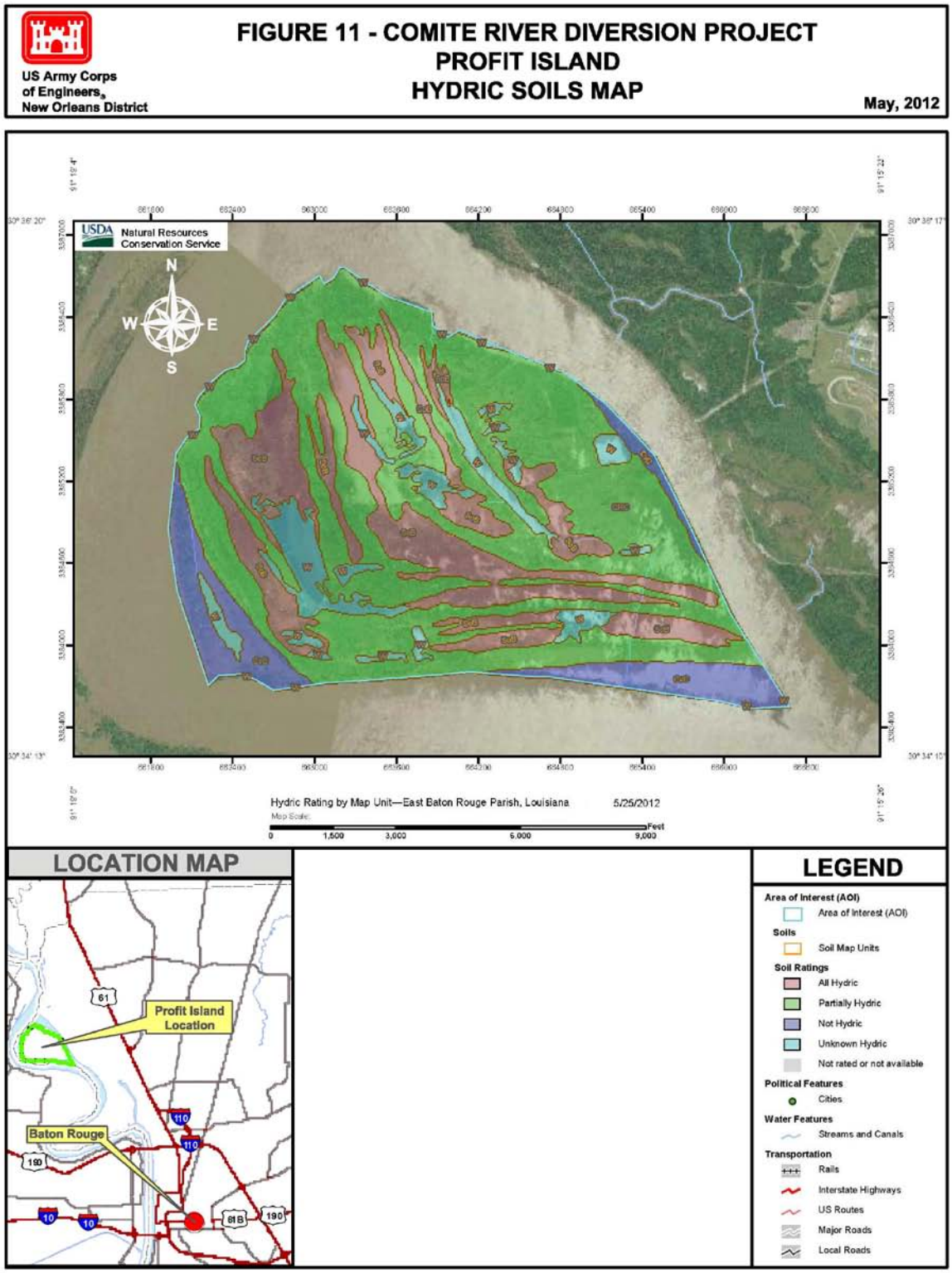

US Army Corps of Engineers
New Orleans District
FIGURE 6
COMITE RIVER DIVERSION PROJECT - 50 YEAR FLOODPLAIN
LIDAR MAP #2 WITH PROJECT BOUNDARIES
May, 2012
Kristene Ave
Judith Dr
Martha Dr
Claudette Dr
Tucker Rd
Jerry Ave
Arleen Ave
Gillie Dr
Wagner Dr
Comite Diversion Right of Way (To Be Acquired)
Comite Acres Dr
East Baton Rouge
Expanded Current Mitigation Area (50 Year Floodplain)
N
W
E
S
0 275 550 1,100 1,650 2,200 Feet
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
Legend
Comite Diversion-ROW
Comite River Site Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
LIDAR IMAGE-05222012
Value
High : 84.2844
Low : 52.3807

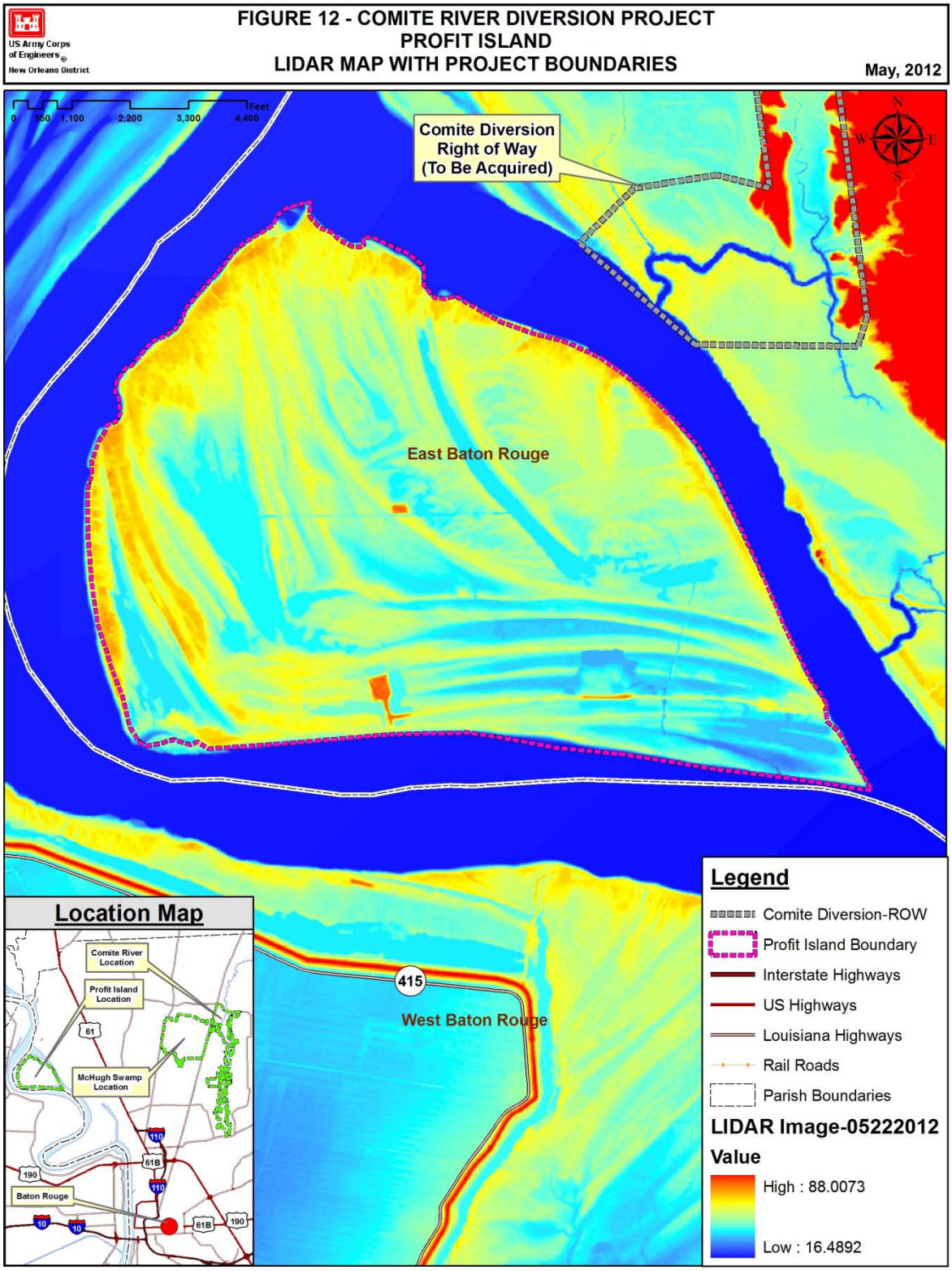

US Army Corps of Engineers
New Orleans District
FIGURE 7
COMITE RIVER DIVERSION PROJECT - 50 YEAR FLOODPLAIN
LIDAR MAP #3 WITH PROJECT BOUNDARIES
May, 2012
0 300 600 1,200 1,800 2,400 Feet
N
W
E
S
Expanded Current Mitigation Area (50 Year Floodplain)
Hall Dr
Vail Ave
Ski Stone Dr
Brown Rd
Additional Qualified Location
Additional Qualified Location
Additional Qualified Location
East Baton Rouge
Pettit Rd
PETTIT RD
Waters Edge Ave
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
61
110
61B
190
10
Legend
Comite River Site Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
LIDAR Image-05222012
Value
High : 81.154
Low : 42.4857


US Army Corps of Engineers
New Orleans District
FIGURE 8
COMITE RIVER DIVERSION PROJECT - 50 YEAR FLOODPLAIN
LIDAR MAP #4 WITH PROJECT BOUNDARIES
May, 2012
0 362.5 725 1,450 2,175 2,900 Feet
N
S
E
W
COMITE DR
PETITE RD
Misty Oaks Ave
Whispering Oaks Dr
Holly Fern Ave
Anderson Ave
Greencrest Dr
Fieldcrest Dr
Meadow Ave
Tidecrest Dr
Malcolm Dr
Price Ave
Windcrest Ave
Cline Dr
Carey Rd
Comite Dr
Expanded Current Mitigation Area (50 Year Floodplain)
Loudon Ln
East Baton Rouge
Monhegan Ave
410
Dundee Dr
Breeden Dr
Watts Rd
Bliss Rd
Hooper Rd
408
408
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
61
110
61B
190
Baton Rouge
10
Legend
Comite River Site Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
LIDAR Image-05222012
Value
High : 69.3607
Low : 31.9748


US Army Corps of Engineers
New Orleans District
FIGURE 9 - COMITE RIVER DIVERSION PROJECT
ADDITIONAL QUALIFIED LOCATION -
CHINESE TALLOW CONCENTRATIONS - AREA #2
May, 2012
0 320 640 1,280 1,920 2,560 Feet
N
W
E
S
Current Comite River Boundary (50 Year Floodplain)
Additional Qualified Location (1 of 3 Sites)
Hall Dr
Vail Ave
Ski Stone Dr
Brown Rd
44 Acres 100% Wetland
21 Acres 100% Wetland
East Baton Rouge
Pettit Rd
PETTIT RD
Waters Edge Ave
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
61
110
61B
190
10
Legend
Comite River Site Boundary
Chinese Tallow Concentrations
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries


US Army Corps of Engineers, New Orleans District
FIGURE 10
COMITE RIVER DIVERSION PROJECT
PROFIT ISLAND ZONAL CLASSIFICATION
May, 2012
N
W
E
S
MAP NOT TO SCALE
Profit Chute
Zone-1 - Unit-01
Zone-1 - Unit-02
Zone-1 - Unit-03
Zone-1 - Unit-04
Zone-1 - Unit-05
Zone-1 - Unit-06
Zone-1 - Unit-07
Zone-1 - Unit-08
Zone-1 - Unit-09
Zone-1 - Unit-10
Zone-1 - Unit-11
Zone-1 - Unit-12
Zone-1 - Unit-13
Zone-1 - Unit-14
Zone-2 - Unit-01
Zone-2 - Unit-02
Zone-2 - Unit-03
Zone-2 - Unit-04
Zone-2 - Unit-05
Zone-2 - Unit-06
Zone-2 - Unit-07
Zone-2 - Unit-08
Zone-2 - Unit-09
Zone-2 - Unit-10
Zone-2 - Unit-11
Zone-2 - Unit-12
Zone-2 - Unit-13
Zone-2 - Unit-14
Zone-2 - Unit-15
Zone-2 - Unit-16
Zone-2 - Unit-17
Zone-2 - Unit-18
Zone-2 - Unit-19
Zone-2 - Unit-20
Zone-3
LOCATION MAP
Profit Island Location
Baton Rouge
61
110
190
10
61B
LEGEND
ZONE 1
37.4 FEET AND UP
ZONE 2
33.6 - 37.3 FEET
ZONE 3
33.6 FEET AND BELOW

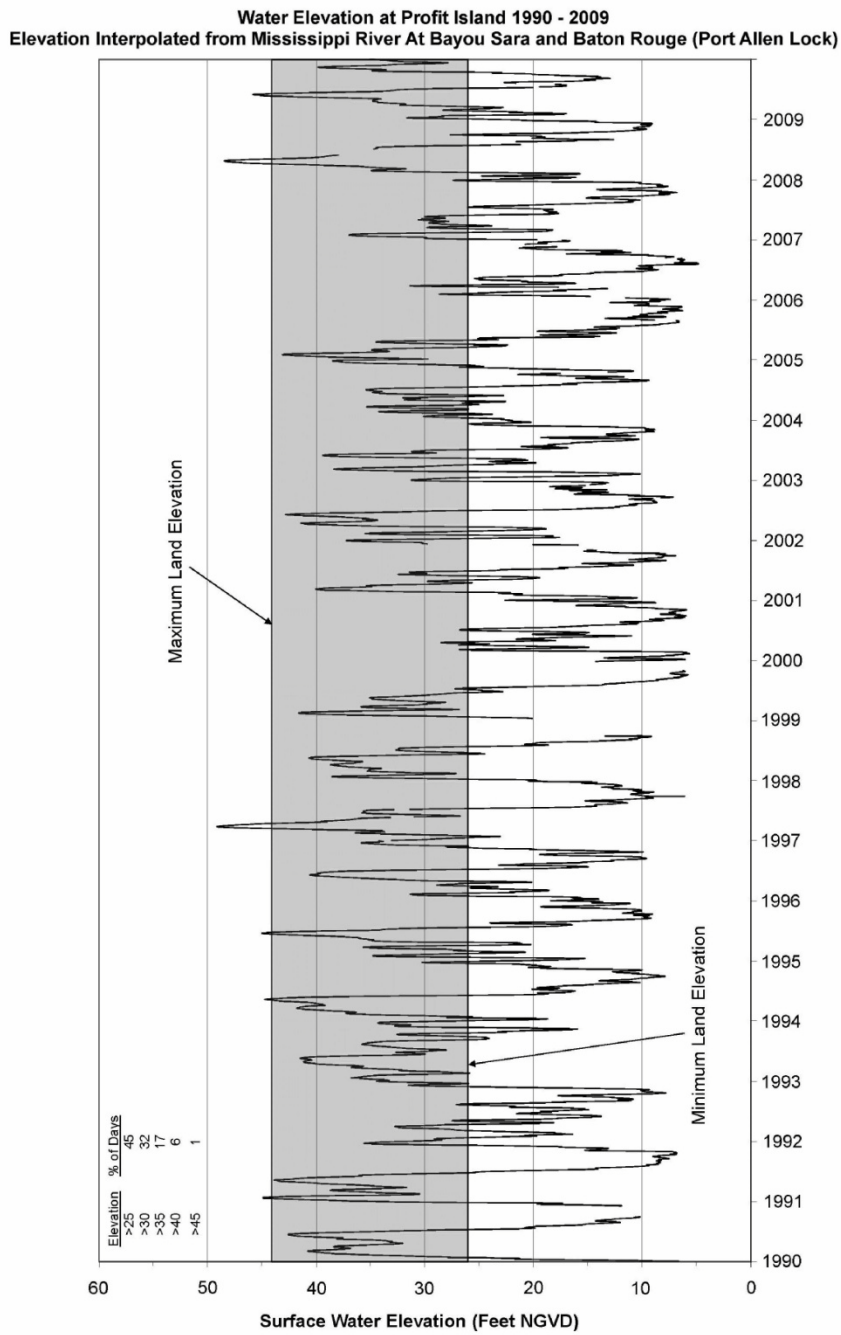

US Army Corps of Engineers, New Orleans District
FIGURE 11 - COMITE RIVER DIVERSION PROJECT
PROFIT ISLAND
HYDRIC SOILS MAP
May, 2012
USDA Natural Resources Conservation Service
N
W
E
S
Hydric Rating by Map Unit—East Baton Rouge Parish, Louisiana
5/25/2012
Map Scale:
0
1,500
3,000
6,000
9,000
Feet
LOCATION MAP
Profit Island Location
Baton Rouge
61
110
190
10
61B
LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Map Units
Soil Ratings
All Hydric
Partially Hydric
Not Hydric
Unknown Hydric
Not rated or not available
Political Features
Cities
Water Features
Streams and Canals
Transportation
Rails
Interstate Highways
US Routes
Major Roads
Local Roads


US Army Corps of Engineers
New Orleans District
FIGURE 12 - COMITE RIVER DIVERSION PROJECT
PROFIT ISLAND
LIDAR MAP WITH PROJECT BOUNDARIES
May, 2012
0 550 1,100 2,200 3,300 4,400 Feet
Comite Diversion Right of Way (To Be Acquired)
N
W
E
S
East Baton Rouge
West Baton Rouge
415
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
61
110
61B
190
10
Legend
Comite Diversion-ROW
Profit Island Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
LIDAR Image-05222012
Value
High : 88.0073
Low : 16.4892

US Army Corps of Engineers, New Orleans District

FIGURE 13
COMITE RIVER DIVERSION PROJECT
PROFIT ISLAND INUNDATION TABLE

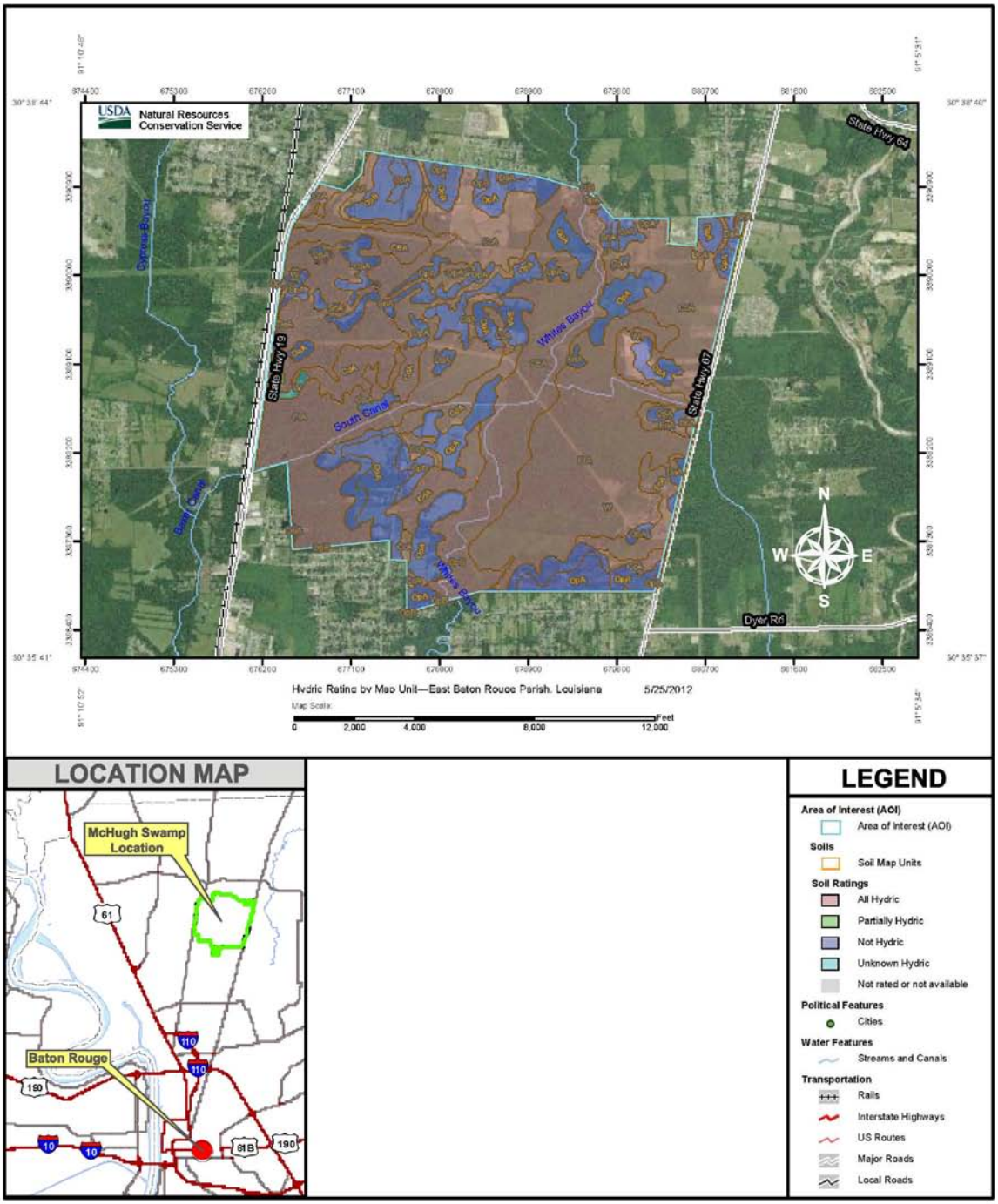
May, 2012

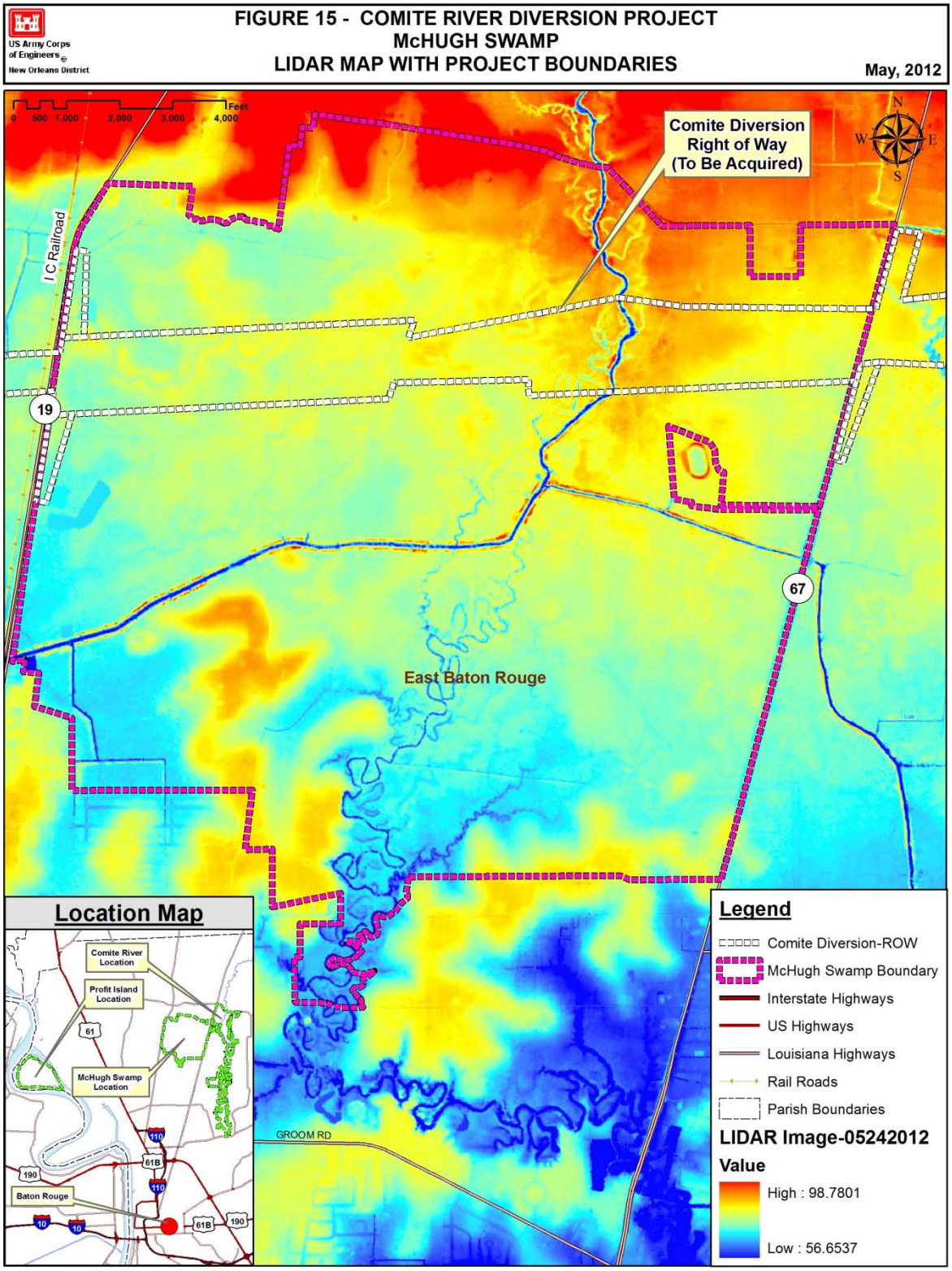


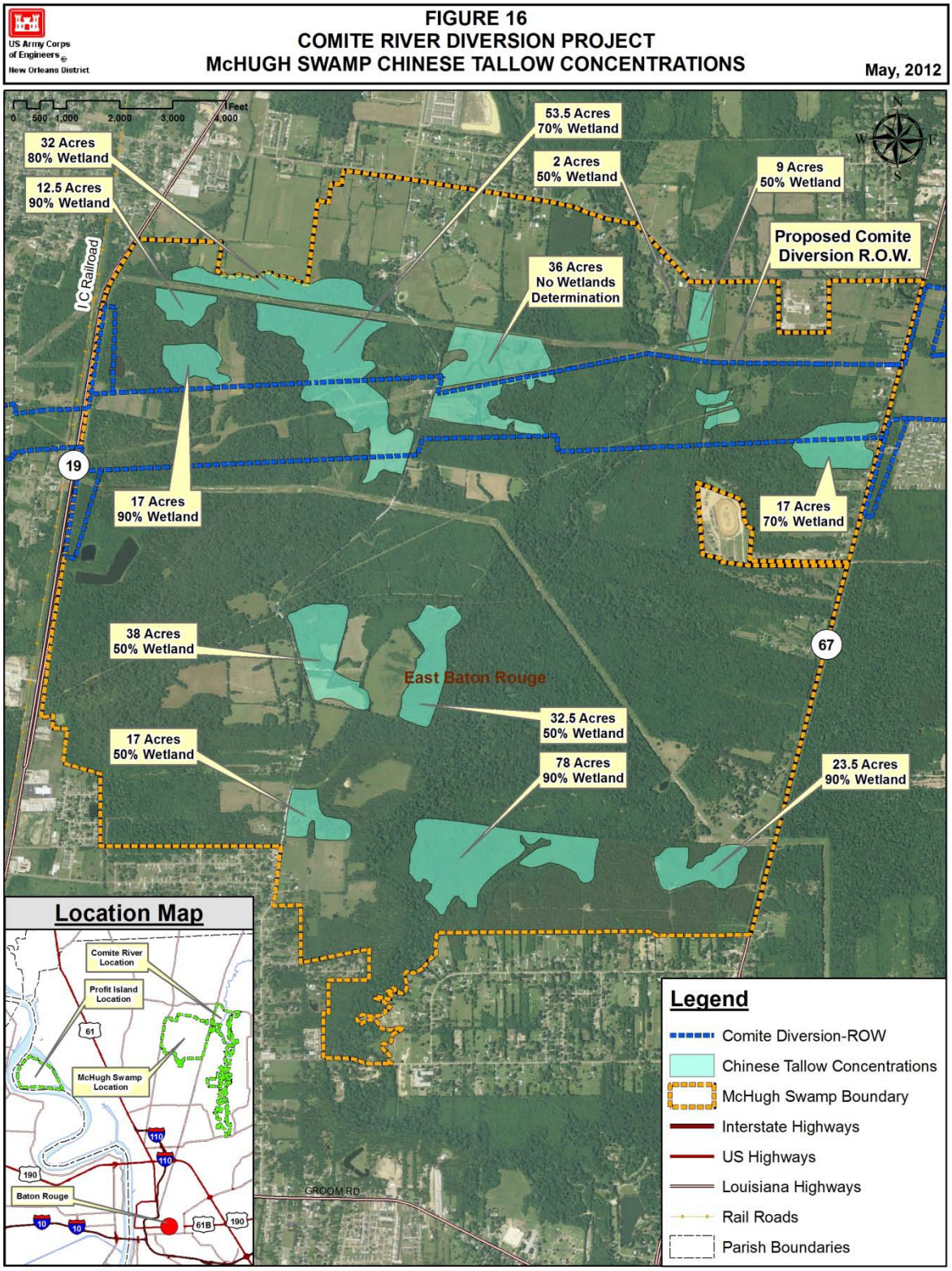
US Army Corps of Engineers, New Orleans District

FIGURE 14
COMITE RIVER DIVERSION PROJECT
McHUGH SWAMP HYDRIC SOILS MAP

May, 2012




US Army Corps of Engineers
New Orleans District
FIGURE 15 - COMITE RIVER DIVERSION PROJECT
McHUGH SWAMP
LIDAR MAP WITH PROJECT BOUNDARIES
May, 2012
0 500 1,000 2,000 3,000 4,000 Feet
Comite Diversion Right of Way (To Be Acquired)
N
W
E
S
I C Railroad
19
67
East Baton Rouge
GROOM RD
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
61
110
61B
190
10
Baton Rouge
Legend
Comite Diversion-ROW
McHugh Swamp Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries
LIDAR Image-05242012
Value
High : 98.7801
Low : 56.6537


US Army Corps of Engineers
New Orleans District
FIGURE 16
COMITE RIVER DIVERSION PROJECT
McHUGH SWAMP CHINESE TALLOW CONCENTRATIONS
May, 2012
0 500 1,000 2,000 3,000 4,000 Feet
32 Acres 80% Wetland
12.5 Acres 90% Wetland
53.5 Acres 70% Wetland
2 Acres 50% Wetland
9 Acres 50% Wetland
Proposed Comite Diversion R.O.W.
36 Acres No Wetlands Determination
IC Railroad
19
17 Acres 90% Wetland
17 Acres 70% Wetland
38 Acres 50% Wetland
East Baton Rouge
67
32.5 Acres 50% Wetland
17 Acres 50% Wetland
78 Acres 90% Wetland
23.5 Acres 90% Wetland
GROOM RD
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
Legend
Comite Diversion-ROW
Chinese Tallow Concentrations
McHugh Swamp Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries

US Army Corps of Engineers, New Orleans District

TABLE 1 - COMITE RIVER DIVERSION PROJECT
WVA OUTPUT FOR AREA 1 OF EXPANSION OF CURRENT MITIGATION AREA

May, 2012

RUSH SITE - Mitigation Benefit Assessment

TOTAL ACRES WITHIN BOUNDARY		307.9	
TOTAL ACRES AVAILABLE FOR MITIGATION		**304.0**	
	Restoration Acres		195.4
	Enhancement Acres		0.0
	Preservation Acres		108.6
TOTAL AAHUs OF MITIGATION		**92.8**	
	Restoration AAHUs		72.8
	Enhancement AAHUs		0.0
	Preservation AAHUs		20.0
OVERALL MANAGEMENT POTENTIAL		**0.30**	

Habitat	*Elevation*	*WVA Data Site*	*Mitigation Type*	*Acres*	*AAHUs*	Management Potential (AAHUs/acre)
Forest	Middle	McHugh-CRA-COE-4	Preservation	67.5	17.6	0.26
Forest	Higher	McHugh-CRA-COE-5	Preservation	12.8	2.4	0.19
Pasture/Exposed Sand (no vegetation)	N/A	N/A	Restoration	84.0	50.9	0.61
Sand/Gravel Mine Complex	N/A	N/A	Restoration	111.4	21.9	0.20
Deep Open Water	N/A	N/A	Preservation	28.3	0.0	0.00
Development	N/A	N/A	N/A	3.8	0.0	N/A
TOTAL				**307.9**	**92.8**	**0.30**

Restoration	*Acres*	AAHU's	Management Potential (AAHUs/acre)
Pasture/Exposed Sand (no vegetation)	84.0	50.9	0.61
Sand/gravel mine	111.4	21.9	0.20
Preservation			
Mature bottomland hardwoods	80.3	20.0	0.25
Deep Open Water	28.3	0.0	0
TOTAL	**307.9**	**92.8**	**0.30**

US Army Corps of Engineers, New Orleans District

TABLE 2 - COMITE RIVER DIVERSION PROJECT
WVA OUTPUT FOR AREA 2 OF
EXPANSION OF CURRENT MITIGATION AREA

May, 2012

PETTIT AND BROWN ROAD SITES - Mitigation Benefit Assessment

TOTAL ACRES WITHIN BOUNDARY		527.8	
TOTAL ACRES AVAILABLE FOR MITIGATION		**496.5**	
	Restoration Acres		88.4
	Enhancement Acres		0.0
	Preservation Acres		408.1
TOTAL AAHUs OF MITIGATION		**95.8**	
	Restoration AAHUs		37.2
	Enhancement AAHUs		0.0
	Preservation AAHUs		58.5
OVERALL MANAGEMENT POTENTIAL		**0.18**	

Habitat	*Elevation*	*WVA Data Site*	*Mitigation Type*	*Acres*	*AAHUs*	Management Potential (AAHUs/acre)
Forest	Lower	McHugh-CRA-COE-1	Preservation	406.7	58.5	0.14
Tallow thickets	N/A	McHugh-FWS-01E	Restoration	52.9	15.7	0.30
Pasture	N/A	N/A	Restoration	35.5	21.5	0.61
Open Water - Pond	N/A	N/A	N/A	1.4	0.0	N/A
Open Water - Comite River	N/A	N/A	N/A	14.6	0.0	N/A
Pipeline Right-of-Way	N/A	N/A	N/A	5.6	0.0	N/A
Development	N/A	N/A	N/A	11.2	0.0	N/A
TOTAL				**527.8**	**95.8**	**0.18**

Restoration	*Acres*	AAHU's	Management Potential (AAHUs/acre)
Tallow thickets	52.9	15.7	0.30
Pasture	35.5	21.5	0.61
Preservation			
Mature bottomland hardwoods	406.7	58.5	0.14
Open Water - Pond	1.4	0.0	0
TOTAL	**496.5**	**95.8**	**0.19**

US Army Corps of Engineers, New Orleans District

TABLE 3 - COMITE RIVER DIVERSION PROJECT
WVA OUTPUT FOR
EXPANSION OF CURRENT MITIGATION AREA

May, 2012

RIVER PLAN - Mitigation Benefit Assessment

TOTAL ACRES WITHIN BOUNDARY		2954.0	
TOTAL ACRES AVAILABLE FOR MITIGATION		**2895.2**	
	Restoration Acres		683.3
	Enhancement Acres		0.0
	Preservation Acres		2211.9
TOTAL AAHUs OF MITIGATION		**707.4**	
	Restoration AAHUs		326.8
	Enhancement AAHUs		0.0
	Preservation AAHUs		380.5
OVERALL MANAGEMENT POTENTIAL		**0.24**	

Habitat	***Elevation***	***WVA Data Site***	***Mitigation Type***	***Acres***	***AAHUs***	**Management Potential** (AAHUs/acre)
Forest	Lower	McHugh-CRA-COE-1	Preservation	1,506.4	216.8	0.14
Forest	Middle	McHugh-CRA-COE-4	Preservation	422.1	110.1	0.26
Forest	Higher	McHugh-CRA-COE-5	Preservation	283.3	53.7	0.19
Tallow thickets	N/A	McHugh-FWS-01E	Restoration	53.0	15.7	0.30
Pasture	N/A	N/A	Restoration	456.9	277.0	0.61
Sand/gravel mine	N/A	N/A	Restoration	173.4	34.1	0.20
TOTAL				**2,895.2**	**707.4**	**0.24**

Restoration	***Acres***	**AAHU's**	**Management Potential** (AAHUs/acre)
Young tallow tree thickets	53.0	15.7	0.30
Pasture	456.9	277.0	0.61
Sand/gravel mine	173.4	34.1	0.20
Preservation			
Mature bottomland hardwoods	2,211.9	380.5	0.17
TOTAL	**2,895.2**	**707.4**	**0.24**

US Army Corps of Engineers, New Orleans District

TABLE 4
COMITE RIVER DIVERSION PROJECT
WVA OUTPUT FOR PROFIT ISLAND

May, 2012

Profit Island - Mitigation Benefit Assessment

TOTAL ACRES WITHIN BOUNDARY	2318.0
TOTAL ACRES AVAILABLE FOR MITIGATION	2318.0
Restoration Acres	992.0
Enhancement Acres	115.6
Preservation Acres	1210.4
TOTAL AAHUs OF MITIGATION	426.2
Restoration AAHUs	263.5
Enhancement AAHUs	0.0
Preservation AAHUs	162.7
OVERALL MANAGEMENT POTENTIAL	0.18

Habitat	WVA Data Site	Mitigation Type	Acres	AAHU's	Management Potential (AAHU's/acre)
Low-Quality Cottonwood/BLH Forest - Higher Elevations (Zone 1)	FWS-02, FWS-03, FWS-05, DP02, DP03, DP04, DP05, DP06, DP07, DP11, DP14, DP17, DP18, DP21	Restoration	373.5	66.4	0.18
Low-Quality Cottonwood/BLH Forest - Lower Elevations (Zone 2)	FWS-02, FWS-03, FWS-05, DP02, DP03, DP04, DP05, DP06, DP07, DP11, DP14, DP17, DP18, DP21	Restoration	483.6	115.2	0.24
Low-Quality Cottonwood/BLH Forest - Higher Elevations (Zone 1)	FWS-01, FWS-04	Enhancement	115.6	0.0	0.00
High-Quality Mature Hardwoods - Higher Elevations (Zone 1)	DP01	Preservation	10.0	2.8	0.28
Low-Lying Black Willow-Cottonwood-Box Elder Stands (Zone 3)	DP08, DP09, DP10, DP12, DP13, DP15, DP16, DP19, DP20	Preservation	787.1	153.5	0.20
Agricultural Field - Lower Elevations (Zone 2)	N/A	Restoration	134.9	81.9	0.61
Agricultural Field - High Flood Risk Elevations (Zone 3)	N/A	Preservation	12.5	6.4	0.51
Open Water (Zone 3)	N/A	Preservation	400.8	0.0	0.00
TOTAL			**2,318.0**	**426.2**	**0.18**

	Acres	AAHUs	Management Potential (AAHU's/acre)
Restoration:			
Zone 1 Restoration (low-quality cottonwood forest)	373.5	66.4	0.18
Zone 2 Restoration (agricultural field)	134.9	81.9	0.61
Zone 2 Restoration (low-quality cottonwood forest)	483.6	115.2	0.24
Enhancement:			
Zone 1 Enhancement (low-quality BLH forest)	115.6	0.0	0.00
Preservation:			
Zone 1 Preservation (high-quality mature BLH forest)	10.0	2.8	0.28
Zone 3 Preservation (low-quality cottonwood forest)	787.1	153.5	0.20
Zone 3 Preservation (agricultural field)	12.5	6.4	0.51
Zone 3 Preservation (open water/unvegetated)	400.8	0.0	0.00
TOTAL	**2318.0**	**426.2**	**0.18**

US Army Corps of Engineers, New Orleans District

TABLE 5
COMITE RIVER DIVERSION PROJECT
WVA OUTPUT FOR McHUGH SWAMP

May, 2012

McHugh Swamp - Mitigation Benefit Assessment

TOTAL ACRES WITHIN BOUNDARY		4200.0
TOTAL ACRES AVAILABLE FOR MITIGATION		**3342.6**
	Restoration Acres	1203.4
	Enhancement Acres	0.0
	Preservation Acres	2139.3
TOTAL AAHUs OF MITIGATION		**799.2**
	Restoration AAHUs	457.4
	Enhancement AAHUs	0.0
	Preservation AAHUs	341.8
OVERALL MANAGEMENT POTENTIAL		**0.24**

Habitat	***WVA Data Site***	***Mitigation Type***	***Acres***	**AAHU's**	**Management Potential** (AAHUs/acre)
Tallow thickets	McHugh-FWS-01E	Restoration	366.2	104.0	0.28
Pasture	N/A	Restoration	484.8	294.0	0.61
Forest	McHugh-FWS-03W	Preservation	214.9	0.0	0.00
Forest	McHugh-CRA-COE-2	Preservation	597.3	115.0	0.19
Forest	McHugh-CRA-COE-1	Preservation	193.6	27.2	0.14
Forest	McHugh-FWS-03E	Preservation	226.4	24.6	0.11
Forest	McHugh-CRA-COE-3	Preservation	282.5	52.0	0.18
Forest	McHugh-CRA-COE-4	Preservation	293.5	72.5	0.25
Forest	McHugh-CRA-COE-5	Preservation	331.2	50.6	0.15
Forest	McHugh-FWS-02E	Restoration	191.9	14.4	0.07
Pine Plantation	N/A	Restoration	160.4	45.0	0.28
TOTAL			**3,342.6**	**799.2**	**0.24**

Restoration	***Acres***	**AAHU's**	**Management Potential** (AAHUs/acre)
Young tallow tree thickets	366.2	104.0	0.28
Mature tallow tree forests	191.9	14.4	0.07
Pasture	484.8	294.0	0.61
Pine Plantation	160.4	45.0	0.28
Preservation			
Mature bottomland hardwoods	2,139.3	341.8	0.16
TOTAL	**3,342.6**	**799.2**	**0.24**

APPENDIX B

USFWS COORDINATION ACT REPORT

United States Department of the Interior

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

June 6, 2012

Colonel Edward R. Fleming
District Commander
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Fleming:

Enclosed is the draft Fish and Wildlife Coordination Act Report for the proposed supplemental mitigation plan for the Comite River Diversion Project, in East Baton Rouge Parish, Louisiana. This draft report is transmitted under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 United States Code (U.S.C.) 661 et seq.). It is concurrently being coordinated with the Louisiana Department of Wildlife and Fisheries and National Marine Fisheries Service, whose comments will be incorporated into the final report.

Should your staff have any questions regarding the enclosed report, please have them contact Mr. David Soileau, Jr. of this office at 337/291-3109.

Sincerely,

Jeffrey D. Weller
Supervisor
Louisiana Ecological Services Office

Enclosures

cc: EPA, Dallas, TX
NMFS, Baton Rouge, LA
LDWF, Baton Rouge, LA

Draft
Fish and Wildlife Coordination Act Report

Amite River and Tributaries, Louisiana
Comite River Basin

Comite River Diversion
Supplemental Mitigation Options
East Baton Rouge Parish, Louisiana

PROVIDED TO
NEW ORLEANS DISTRICT
U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

PREPARED BY
DAVID SOILEAU, JR.
FISH AND WILDLIFE BIOLOGIST

U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
LAFAYETTE, LOUISIANA

JUNE 2012

U.S. FISH AND WILDLIFE SERVICE – SOUTHEAST REGION

TABLE OF CONTENTS

Page

INTRODUCTION 1

DESCRIPTION OF THE STUDY AREA 2

FISH AND WILDLIFE RESOURCES 2
- Description of Habitats 2
- Forested Habitats 4
- Scrub-Shrub Habitats 4
- Pasture 4
- Open-Water Habitats 5
- Developed Areas 5
- Wildlife Resources 5
- Endangered and Threatened Species 5
- Protected Species 6
- Future Fish and Wildlife Resources 7

ALTERNATIVES UNDER CONSIDERATION 7
- Proposed Actions 7
- Invasive Species Control 8
- Hardwood Seedling Establishment 8
- Stewardship/Access Restriction 9
- Existing Mitigation Banks 9
- McHugh Swamp 10
- Profit Island 12
- Comite River Floodplain 13

EVALUATION METHOD 14

PROJECT BENEFITS 15

FISH AND WILDLIFE CONSERVATION AND MITIGATION MEASURES 16

SERVICE POSITION AND RECOMMENDATIONS 16

APPENDIX (Mitigation Guidance and Recommendations) 19

FIGURES

Figure 1. Comite River Diversion and Mitigation Study Area, East Baton Rouge Parish, Louisiana 3
Figure 2. Example Graphic of Development Rate / Land Loss Analysis Results 6
Figure 3. McHugh Swamp Mitigation Site 11
Figure 4. Profit Island Mitigation Site 12
Figure 5. Comite River Floodplain Mitigation Site 14

TABLES

Table 1. Wetland Mitigation Banks Currently Under Consideration for Comite River Diversion Mitigation 10
Table 2. Estimated Benefits of Mitigation Alternatives 15

Executive Summary

The Fish and Wildlife Service (Service) has prepared this draft Fish and Wildlife Coordination Act (FWCA) Report for the proposed supplemental mitigation plan for the Comite River Diversion Project, in East Baton Rouge Parish, Louisiana. The proposed Comite River Diversion and its associated mitigation is 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.

This draft report contains a description of the existing fish and wildlife resources within the project area, discusses future with- and without-project habitat conditions, identifies fish and wildlife-related impacts (including anticipated benefits), and provides recommendations to reduce potential adverse impacts and achieve intended benefits from the proposed project. This report supplements the Service's FWCA Reports that addressed impacts and mitigation features associated with the construction and operation of the Comite River Diversion (submitted in 1990, 1995, and 2002). This draft document does not constitute the report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). This draft report has been provided to the Louisiana Department of Wildlife and Fisheries (LDWF) and the National Oceanic and Atmospheric Administration's, National Marine Fisheries Service (NMFS), and their comments will be incorporated in the final report.

All project features associated with the Comite River Diversion, including all areas currently under consideration as potential compensatory mitigation sites to offset impacts from construction and operation of that Diversion, are located in East Baton Rouge Parish, Louisiana. The study area consists of three proposed sites within which compensatory mitigation required from the construction and operation of the Comite River Diversion would be performed. Those sites are located within an area bounded by the Mississippi River to the west and the Comite River floodplain to the east; these are also the two main waterbodies in the general vicinity. The proposed mitigation sites are also bounded by Louisiana Highway 64 to the north, and Thomas Road and Comite Drive to the south.

All of the proposed mitigation alternatives would re-establish, enhance, maintain, and protect bottomland hardwood habitat in a species diverse, sustainable state by restoring and maintaining unique functions, values, and services. The mitigation objectives would be to establish and maintain a high diversity of native hard and soft mast-producing trees and shrubs, maximize herbaceous and shrub-layer canopy cover while maintaining a semi-mature to mature bottomland hardwood timber stand. Because of the substantial quantity of mitigation that will be performed, a phased implementation plan may be more effectively implemented than a single, large-scale mitigation action.

Based on previous habitat analysis, the Service has determined that 704.6 average annual habitat units (AAHUs) of mitigation would be required to offset all impacts from the construction and operation of the Comite River Diversion. To date, approximately 75 acres of land have been

acquired for the purposes of performing compensatory mitigation, of which 40 acres have been planted with site-appropriate, native, bottomland hardwood seedlings. It is estimated that those actions achieved 33.15 AAHUs of mitigation, leaving a total remaining mitigation requirement of 671.45 AAHUs. A summary of the Service's benefit analysis for each of the proposed mitigation sites is shown in Table 2.

The Service does not object to modifications to the previously approved 1,500-acre floodplain acquisition mitigation plan to include the evaluation of additional sites and existing wetland mitigation banks. In order to reduce potential adverse impacts and achieve intended benefits from the proposed project, the Service recommends that the following fish and wildlife conservation measures be incorporated into future project planning and implementation:

1) The selected mitigation project(s) is consistent with all of the recommendations provided in the text of this report (particularly in regard to eradication of invasive species, establishment of native bottomland hardwoods, and property stewardship including restriction of access).

2) The selected mitigation project(s) shall fully compensate for all unavoidable losses of wetland habitat and non-wet bottomland hardwoods caused by features and activities associated with the construction and operation of the Comite River Diversion.

3) All mitigation lands should be purchased in fee title if possible, and a perpetual conservation easement shall be acquired for any mitigation lands to preclude incompatible land uses and to ensure that the anticipated mitigation values are maintained over the project life. If that is not possible, a General Plan should be completed by the Corps, the Service, and the pertinent land managing agency (charged with managing the mitigation site) in accordance with Section 663(b) of the FWCA.

4) Mitigation site(s) shall be selected on the basis of their ability to compensate for fish and wildlife habitat losses associated the construction and operation of the Comite River Diversion. Sites that satisfy this primary criterion shall be advanced in the evaluation process and assessed with other factors including: proximity to the impact site and watershed, potential limitations to mitigation success, contiguity to larger forested tracts, and overall size of the mitigation site. Sites that are relatively small and/or isolated, and/or that are subject to influences beyond management control which could severely jeopardize mitigation project success, shall not be selected for compensatory mitigation for Comite River Diversion impacts. The Corps, the Service, and other pertinent natural resource management agencies shall cooperatively assess the severity and potential success implications of such factors for respective mitigation sites, and determine whether any such sites shall be removed from further consideration as a result.

5) Costs for development, maintenance, and monitoring of mitigation lands shall be allocated as a project "first cost" in future project funding estimates and requests.

6) A detailed mitigation implementation, management, and monitoring plan shall be developed by the Corps, in coordination with the Service and other pertinent natural resource management agencies, for all restoration, enhancement, or preservation activities developed to compensate for fish and wildlife habitat losses associated with the construction and operation of the Comite River Diversion. Individual site-specific plans shall be tiered from that generalized plan, as necessary, based on a cooperative decision/effort by the Corps, the Service, and other pertinent natural resource management agencies.

7) The Corps shall not transfer management responsibilities for any mitigation project to the local non-Federal cost-share sponsor, until the near-term success of such a project can be reasonably demonstrated (i.e., no sooner than the end of the fifth growing season after the initial planting of seedlings for a restoration or enhancement mitigation project). The Corps and the local non-Federal sponsor shall also be responsible (documented in the cost share agreement) for the purchase and planting of supplemental seedlings, or for other supplies and actions, necessary to attain success criteria until such time as long-term ecological success can be reasonably assured.

8) The Corps and local sponsor shall develop a written instrument that details the responsibility for each party regarding long-term operation and maintenance, with associated cost estimates, for any/all mitigation project(s). If the local project-sponsor is unable to fulfill the financial obligations associated with long-term operation and maintenance of the mitigation project(s), then the Corps shall provide the necessary funding to ensure that those obligations are met on behalf of the public interest.

9) Reports documenting the implementation, maintenance, and success of the mitigation project shall be prepared at 1, 2, 5, 10, 15, and 25 years following initial project implementation, and shall be provided to the Service and other pertinent natural resource management agencies for review and comment.

10) Any reasonably foreseeable future management activities and/or proposed changes to the proposed mitigation site locations, features, or management plans shall be coordinated in advance with the Service and other pertinent natural resource management agencies.

11) If a proposed project feature is changed significantly or is not implemented within one year of the date of the Service's response to your "not likely to affect federally listed species" determination letter (which was provided via the Service's May 7, 2012, "stamped" concurrence), we recommend that the Corps reinitiate Endangered Species Act coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

12) Forest clearing that is associated with certain proposed mitigation features shall be conducted during the fall or winter, when practicable, to minimize impacts to nesting migratory birds.

INTRODUCTION

The Fish and Wildlife Service (Service) has prepared this draft Fish and Wildlife Coordination Act Report (FWCAR) for the proposed supplemental mitigation plan for the Comite River Diversion Project, in East Baton Rouge Parish, Louisiana. The proposed Comite River Diversion and its associated mitigation is 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 original Amite River and Tributaries Flood Control Project was authorized by Congress in 1955 and completed in 1964. That project provided for enlargement of the Comite River from Cypress Bayou to its mouth, clearing and snagging the Amite River from the Comite River to Bayou Manchac, additional clearing and snagging in other portions of the Amite River Basin, and a diversion channel from the Amite River to Lake Maurepas via Blind River. Following major flood events within the Amite River Basin during 1973, 1977, 1979, and 1983, the Corps prepared the Amite River and Tributaries Initial Evaluation Report on Flood Control in 1984. A diversion channel from the Comite River to the Mississippi River was one of several alternatives that was determined to be economically justified. The original feasibility study and final Environmental Impact Statement (EIS) was completed for that project in 1990.

Subsequent changes to the project have led to the preparation of additional National Environmental Policy Act (NEPA) documents. In December 1995, the Corps prepared Environmental Assessment (EA) #222 (with its associated Finding of No Significant Impact [FONSI]) to document proposed project changes including relatively minor modifications in the diversion channel alignment, elimination of containment levees and the diversion structure in the Comite River, addition of a drop structure in the diversion channel, and periodic maintenance dredging in the Comite River. EA#222 also evaluated modifications to the proposed mitigation plan which was revised to include the acquisition of almost 1,500 acres of land along the Comite River. A supplemental EA (#222-A) was prepared in December 2002, to assess the additional impacts and accompanying mitigation requirements associated with the construction of the Lilly Bayou Control Structure. The current evaluations, and associated NEPA (EA#426) and FWCA documents, are required to address recent changes to the previously approved 1,500-acre floodplain acquisition plan. A recent law passed by the State of Louisiana, specifically targeting this project, prevents the Corps of Engineers from expropriating property for the purpose of implementing the floodplain acquisition plan. The current plan involves the evaluation of three sites (including an expansion of the previously approved site within the Comite River floodplain) within which suitable properties could be acquired from willing sellers to accomplish the required compensatory mitigation.

This report contains a description of the existing fish and wildlife resources of the project area, discusses future with- and without-project habitat conditions, identifies fish and wildlife-related impacts (including anticipated benefits), and provides recommendations for the proposed project. This report supplements the Service's Fish and Wildlife Coordination Act (FWCA) Reports that

addressed impacts and mitigation features associated with the construction and operation of the Comite River Diversion (submitted in 1990, 1995, and 2002). This draft document does not constitute the report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). This draft report has been provided to the Louisiana Department of Wildlife and Fisheries (LDWF) and the National Oceanic and Atmospheric Administration's, National Marine Fisheries Service (NMFS), and their comments will be incorporated in the final report.

DESCRIPTION OF THE STUDY AREA

All project features associated with the Comite River Diversion, including all areas currently under consideration as potential compensatory mitigation sites to offset impacts from construction and operation of that Diversion, are located in East Baton Rouge Parish, Louisiana. The parish is composed of about 455 square miles of land and 15 square miles of water, and is a mixture of developed and undeveloped land. Most development within the study area is associated with urban expansion from the two geographically largest and most densely populated towns in the vicinity, which are Zachary and Baker located along the northern and southern limits of the study area, respectively. Undeveloped land within the study area consists of a mosaic wetland and non-wetland forests, active pasture, and abandoned pasture (much of which has become colonized with Chinese tallow-tree which an exotic, invasive plant).

The study area consists of three proposed sites within which compensatory mitigation required from the construction and operation of the Comite River Diversion would be performed (Figure 1). Those sites are located within an area bounded by the Mississippi River to the west and the Comite River floodplain to the east; these are also the two main waterbodies in the general vicinity. The proposed mitigation sites are also bounded by Louisiana Highway 64 to the north, and Thomas Road and Comite Drive to the south. Although the Comite River in the vicinity of the on-going diversion construction project is a state-designated scenic river, none of the proposed mitigation alternatives that are currently under consideration would be expected to directly or negatively affect the Comite River.

FISH AND WILDLIFE RESOURCES

Description of Habitats

Habitat types and landscape features in the study area primarily include wetland and non-wetland bottomland hardwood habitat, swamp, abandoned and active pasture, open water, and developed areas. Much of historic hydrology of the study area has been impacted to some degree from urban expansion and associated infrastructure improvements such as roads and man-made drainage features (or alterations to existing/natural drainages).

The study-area wetlands provide plant detritus to downstream coastal waters, thereby contributing to the production of commercially and recreationally important fishes and

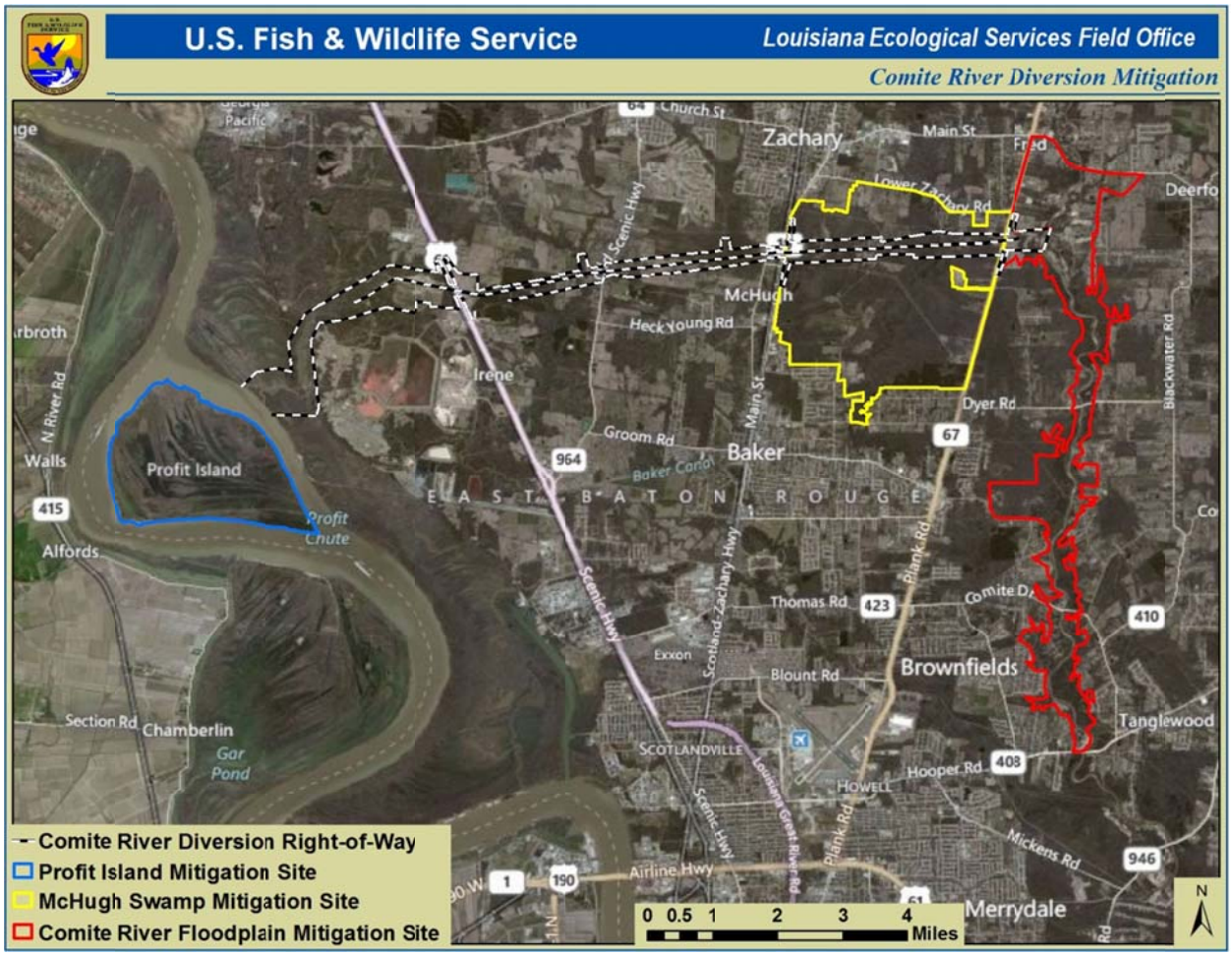


Figure 1. Comite River Diversion and Mitigation Study Area, East Baton Rouge Parish, Louisiana.

shellfishes. They also provide valuable water quality functions such as reduction of excessive dissolved nutrient levels, filtering of waterborne contaminants, and removal of suspended sediment.

Factors that may influence future fish and wildlife resource conditions in the study area include continued urban expansion with associated infrastructure and drainage improvements, silvicultural activity, and farming practices (especially abandonment or expansion of existing operations). Large-scale, future losses of bottomland hardwood wetlands within the study area are not expected to occur due to current Clean Water Act regulations which should limit adverse impacts to those habitats. Impacts to study-area, non-wetland bottomland hardwoods, however, would not be regulated or mitigated with the exception of impacts resulting from Corps projects as required by Section 906(b) of the Water Resources Development Act of 1986.

Forested Habitats

Forested habitats in the study area are divided into three major types; bottomland hardwood forests, Chinese tallow-tree stands, and cypress-tupelo swamps. Bottomland hardwood forests (both wetland and non-wetland) are found throughout the study area. The largest contiguous tracts of bottomland hardwoods remaining in this area occur on an island in the Mississippi River (Profit Island), within the floodplains of the Mississippi and Comite Rivers, and within a large depressional area southeast of the City of Zachary known as the McHugh Swamp. Dominant vegetation within those forests include American elm, sweetgum, water oak, willow oak, swamp chestnut oak, ironwood, Drummond red maple, cottonwood, box elder, black willow, and Chinese tallow-tree.

Large stands of Chinese tallow-tree, varying from less than 5 acres to nearly 100 acres in size, are also present in certain areas of the study area. These monotypic stands of invasive, exotic vegetation are highly effective in suppressing the natural regeneration of native vegetative species. It appears, from the Service's field investigation, that those sites are predominantly abandoned pastures where Chinese tallow-tree has successfully out-competed native hardwood species in colonizing these previously disturbed habitats.

Cypress-tupelo swamps were not encountered during the Service's field investigations, possibly because this habitat type is not targeted as part of the mitigation objectives. Relatively small patches of cypress-tupelo swamp likely occur, however, in low elevation, frequently flooded portions of the study area (such as the base floodplain of the Mississippi and Comite Rivers). Baldcypress and water tupelo are the dominant vegetation within this habitat type, however, Drummond red maple, green ash, and black willow also occur in these forests.

Scrub-Shrub Habitats

Scrub-shrub habitat is found in abandoned pastures and similar unmaintained areas, sites subject to severe and frequent flooding (as occurs on portions of Profit Island), and in early successional forested areas that have recently undergone a timber harvest. Most study-area scrub-shrub habitat is bordered by bottomland hardwoods or cleared/pasture areas. Typical scrub-shrub vegetation includes Chinese tallow-tree, wax myrtle, eastern baccharis, button-bush, black willow, water elm, and swamp privet.

Pasture

Pasture is found throughout the study area and exists in various stages of maintenance, from fully active and routinely maintained to complete and long-term abandonment. Maintained pastures are vegetated with a combination of agriculturally improved grasses; unmaintained pastures typically succeed to scrub-shrub habitats (described above).

Open-Water Habitats

Open-water habitat within the study area consists of ponds, canals, ditches, and rivers. Ponds are both naturally occurring (most notably occurring on Profit Island) and man-made, and vary greatly in size and depth. The Mississippi and Comite Rivers are the two main waterbodies in the study area, though several other waterways occur in this area including White Bayou, Cypress Bayou, and Bayou Baton Rouge. Most of these natural waterways appear to have been previously impacted for drainage improvement, flood control, sand/gravel mining or other purposes. It is likely that the aquatic habitat value has been somewhat reduced in the most highly impacted areas.

Developed Areas

Developed portions of the study area include residential and commercial areas, and their accompanying infrastructure (roads, drainage, etc.). Those areas do not support significant wildlife use. Most of the development is located on higher elevations outside of the study area; however, some limited development encroaching into lower-elevation forested areas (particularly in the vicinity of the McHugh Swamp) was noted during the Service's field investigations. The results of the Service's development rate analysis suggest that an insignificant, and almost immeasurable, amount of forested habitat has been lost within the study area in recent years due to development (Figure 2).

Wildlife Resources

The study-area wetland and non-wetland forests provide habitat for a variety of migratory game and non-game birds such as wood duck, little blue heron, snowy egret, great egret, prothonotary warbler, and Louisiana waterthrush. Those forests also support mammals such as mink, raccoon, opossum, fox squirrel, grey squirrel, swamp rabbit, and white-tailed deer, and amphibians such as the pig frog, bullfrog, leopard frog, cricket frog, and Gulf coast toad. Reptiles such as the American alligator, snapping turtle, eastern spiny softshell, red-eared slider, speckled kingsnake, broad-banded water snake, and western cottonmouth are also expected to occur in the study-area wetlands and waterbodies. Portions of the project area that are directly influenced by perennial waterways and that are frequently flooded during high water stages provide foraging and spawning habitat for various freshwater fishes and shellfishes (e.g., mosquito fish, spotted gar, bowfin, green sunfish, bluegill, warmouth, white and black crappie, largemouth bass, flathead and blue catfish, yellow bullhead, and red swamp crawfish).

Endangered and Threatened Species

On May 7, 2012, the Service concurred (via a signed stamp) with the Corps' determination that the proposed activities are not likely to adversely affect any of the listed or proposed threatened or endangered species (i.e., pallid sturgeon [*Scaphirhynchus albus*] and interior least tern [*Sterna antillarum*]) that were addressed in that correspondence exchange. The Service's concurrence is based on information that indicates no known threatened or endangered species or their critical habitat occur within the study area, nor would they likely be impacted by the habitat

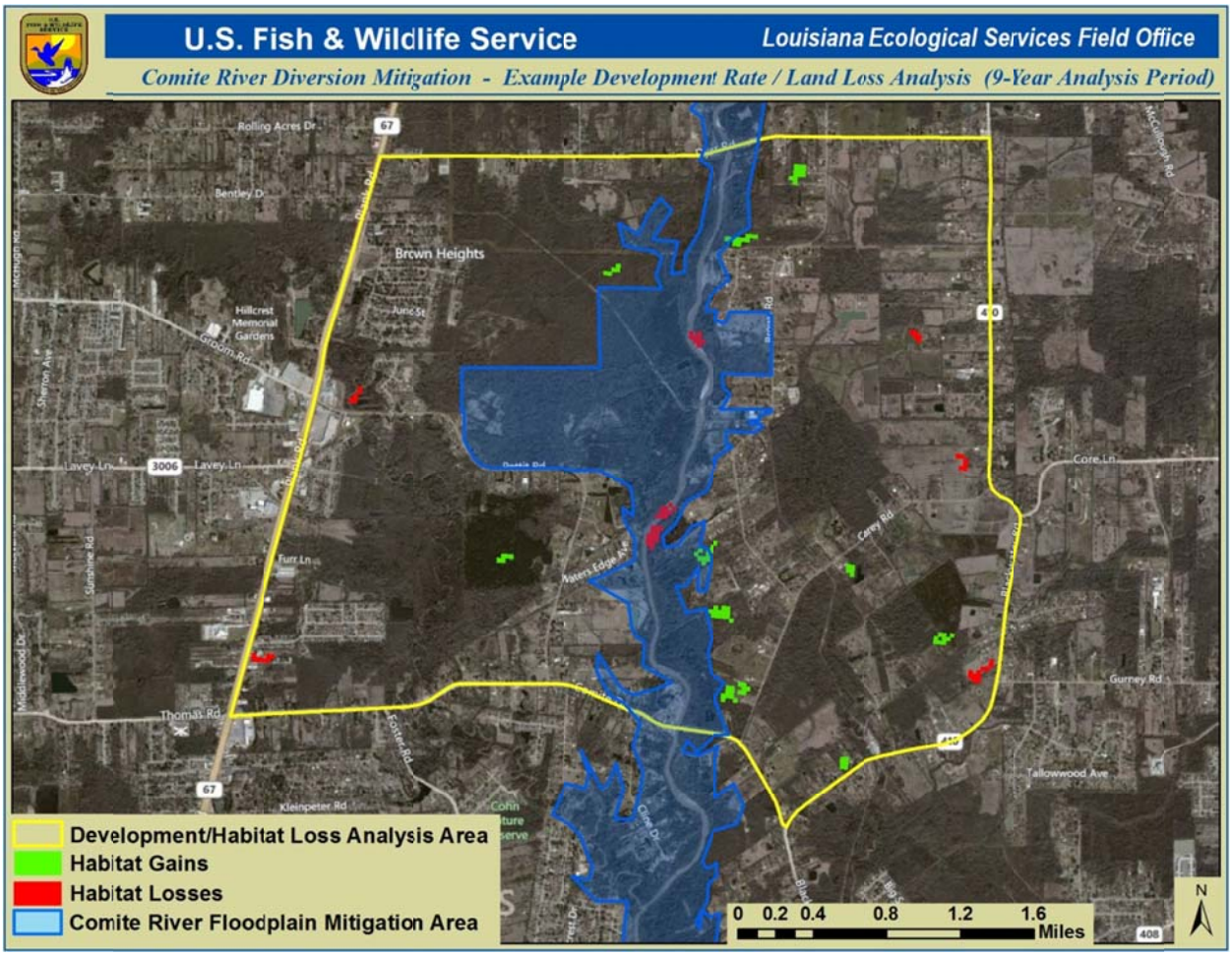


Figure 2. Example Graphic of Development Rate / Land Loss Analysis Results (this analysis zone occurs near the southern portions of the Comite River Floodplain Mitigation Area).

improvement projects that are currently being proposed as part of the subject mitigation proposal. Therefore, no further consultation will be required unless there are changes in the scope or location of the project, or construction has not been initiated within one year of the date of the Service's signed stamp concurrence. If the project has not been initiated within one year, follow-up consultation should be accomplished with this office prior to making expenditures for construction. If the scope or location of the proposed work is changed, consultation should occur as soon as such changes are made.

Protected Species

The Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.) and the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) offer protection to many bird species within the project area including colonial nesting birds and bald eagles (*Haliaeetus leucocephalus*). Based on the Service's records, project-associated impacts to bald eagles and colonial nesting waterbirds are unlikely because of the distance between existing known colonies and nest sites and the proposed project activities. Such nest

sites and colonies may be present, however, that are not currently listed in the Service's database. We, therefore, recommend that on-site contract personnel be informed of the need to identify bald eagle nest sites and waterbird nesting colonies, and to avoid affecting them during the breeding season. To minimize disturbance to colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present). If a bald eagle nest is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary and those results should be forwarded to this office.

Future Fish and Wildlife Resources

Under future without-management conditions, the proposed mitigation areas are predicted to remain in private ownership. Based on the results of the Service's development rate analysis, we expect a minimal (virtually unquantifiable), amount of forested habitat to be lost to development within the study area over the project life. It is anticipated, however, that without management, the forest quality of Profit Island (which is predominately young-aged cottonwood and box elder) would remain poor, and the future quality of previously impacted forests and abandoned pastures in McHugh Swamp and the Comite River Floodplain would be significantly reduced with the continued encroachment of invasive, exotic vegetation (i.e., Chinese tallow-tree. Persistence of those low-quality habitats reduces the potential carrying capacity of those sites for various species of migratory waterfowl and song birds, wading birds, reptiles, amphibians, furbearers, and various game mammals.

ALTERNATIVES UNDER CONSIDERATION

The goal of the mitigation plan is to provide for equal replacement of the habitat units lost due to construction and operation of the Comite River Diversion. The equal replacement compensation goal specifies that the gain of one habitat unit can be used to offset the loss of one habitat unit. There are currently four alternatives under consideration which would provide the necessary mitigation (individually, or in combination) to compensate for those impacts. A no-action alternative would not be implemented because it would fail to provide the required level of compensatory mitigation.

Proposed Actions

All of the proposed mitigation alternatives would re-establish, enhance, maintain, and protect bottomland hardwood habitat in a species diverse, sustainable state by restoring and maintaining unique functions, values, and services. The mitigation objectives would be to establish and maintain a high diversity of native hard and soft mast-producing trees and shrubs, maximize

herbaceous and shrub-layer canopy cover while maintaining a semi-mature to mature bottomland hardwood timber stand. Because of the substantial quantity of mitigation that will be performed, a phased implementation plan may be preferred to a single, large-scale mitigation action.

Invasive Species Control

Proposed mitigation sites that are heavily colonized with Chinese tallow-tree must be mechanically cleared prior to the application of any chemical. Chemically treating Chinese tallow-tree stands via broad-scale aerial application of selective chemicals, prior to mechanical clearing, may prove largely unsuccessful due to the relatively uneven canopy structure, which would result in an uneven chemical application, leaving many midstory and understory stems completely untreated. In order to increase the success of the proposed Chinese tallow-tree eradication, the Service recommends taking the following sequence of actions (they are listed in chronological order):

1) Mechanically clear the site with a hydro-axe or similar equipment. Felled woody plants may be chipped on-site and left as a thin layer, which may aid in the control of Chinese tallow-tree regeneration. Woody debris may also be burned on-site or removed from the site and disposed at an approved/licensed facility.
2) Allow a minimum of 2 months (during the growing season) for root resprouting to occur.
3) Use a tractor with boom-sprayer, or a similarly effective method, to apply chemicals to the Chinese tallow-tree resprouts. Chemical treatment must occur in the late summer or fall, when plant resources are being transported to the roots; this increases the likelihood of a complete "root-kill." The acceptable chemical treatment period is June 1 through October 15, with the optimum period occurring September 1 through October 15. To ensure effectiveness, the treatment must occur before the leaves begin to change color for the autumn season.
4) Allow adequate time for seed germination/sprouting to occur (i.e., a second growing season). Most seeds that did not germinate during the first year of site preparation, should germinate during the second growing season. Chemically treat the site as described in "3" above.
5) Plant bare-root seedlings during the following dormant season (December 15 – March 15). This would allow a minimum of 2 months between the second chemical treatment and the planting of seedlings.

Hardwood Seedling Establishment

Native species of one-year-old bare-root seedlings will be planted to establish bottomland hardwood forests on the respective mitigation sites. According to official recommendations from the Lower Mississippi Valley Joint Venture Management Board (in a December 28, 2011, memorandum), at least 435 trees per acre should be planted (10-foot spacing) to increase the likelihood of success of hardwood planting projects. In areas where significant risk factors may limit the success of hardwood forest establishment (e.g., areas of high flood risk or with substantial competition from invasive, exotic vegetation), higher planting densities should be employed (such as 8-foot spacing, or 681 trees per acre). Use of other reforestation techniques

such as direct seeding or planting of larger trees would require a modification to the recommended spacing. Hardwood seedling species for each mitigation site should be selected based on a variety of factors including site elevation, area hydrology, species flooding tolerance, and soil type. A reasonable attempt should be made to select a diverse group of species for planting (preferably no less than 7 species per mitigation site), though it is acknowledged that nursery stock and annual variations in seedling availability may dictate the planting diversity on the proposed mitigation site(s). Consistent with Natural Resources Conservation Service standards (NRCS, Code 612, "Establishment Specifications - Tree/Shrub Establishment"), one-year-old seedlings should have a 3/8"- diameter root collar, 12" – 18" stem height plus 8" – 10" root length, and 4 - 8 lateral roots.

Stewardship/Access Restriction

Mitigation development will also include activities that are not directly associated with the functional improvement of habitat, but would protect the mitigation lands and provide features necessary for adequate management. Restriction of access, for example, would facilitate the development of a successful mitigation project. Certain uses and actions would be compatible with the proposed mitigation, such as the installation/construction of trash bins, designated foot trails, informational/educational signage, elevated board walks, wildlife viewing platforms, and gravel parking in designated access points. Other types of activities that may be expected to threaten conservation goals should be identified in a long-term management plan and may include such activities as ATV riding, mountain biking, logging, land clearing, and excavation. Property boundary signs should be posted and maintained at access points, and fencing should occur only at strategic locations to prevent ATV access. Stewardship should include periodic surveillance to protect the area from vandalism and other disturbances.

EXISTING MITIGATION BANKS

General Description

Section 2036(c)(1) of the Water Resources Development Act (WRDA) of 2007, Public Law 110-114, specifically directs the USACE to consider the use of commercial mitigation banks to fulfill the mitigation responsibilities of Civil Works projects. The Corps has, therefore, investigated the use of mitigation banks within appropriate, applicable service areas. Applicability of service areas is determined by their location within a specific hydrologic unit relative the Comite River Diversion impact areas; those units were developed by the U.S. Geological Survey based on river basin areas of hydrologic influence. Virtually all of the direct impacts associated with the construction of the Comite River Diversion occur within the 8070201 (Bayou Sara - Thompson) and 8070202 (Amite) cataloging units. Mitigation banks in the vicinity of those cataloging units, that are considered to be within applicable service areas, and that currently have bottomland hardwood credits available for purchase are shown in Table 1. All banks shown in that table are currently under consideration as potential sites to perform necessary mitigation associated with Comite River Diversion impacts.

Table 1. Wetland Mitigation Banks Currently Under Consideration for Comite River Diversion Mitigation.

Mitigation Bank Name	**HUC[1]**	**Credits[2]**
Bayou Conway	08070204	119.3
Bayou Manchac – Oakley	08070202	211.8
Comite Properties – Tract A	08070202	53.4
Comite Properties – Tract B	08070202	56.7
Gum Swamp	08070203	314.0
Laurel Oak – Enhancement	08070203	27.2
Ponder Land Company	08070203	49.6
Spanish Lake – Restoration Unit I	08070202	470.5
Zachary Mitigation Bank – Comite Flats I Site	08070202	27.3
Zachary Mitigation Bank – Comite Flats II Site	08070202	22.2
Zachary Mitigation Bank – Copper Mill Bayou Site	08070202	13.5

[1]*Hydrologic unit codes as defined by the U.S. Geological Survey.*
[2]*Bottomland hardwood credits available as of April 27, 2012.*

Specific Action

Mitigation actions, approved by an interagency team of natural resource management agencies, have already taken place, or are on-going, at all of these approved mitigation banks. The only action required to use an on-going mitigation project to offset Comite River Diversion impacts is for a sufficient quantity of credits to be purchased.

McHugh Swamp

General Description

The McHugh Swamp is a predominately forested area that straddles the Comite River Diversion right-of-way (Figure 3). According to the Service's GIS-based calculations, though a portion of the McHugh Swamp would be acquired and used for the construction of the Comite River Diversion, approximately 3,343 acres of undeveloped land would remain available for mitigation. Based on the Service's field investigations of the McHugh Swamp, the area consists primarily of bottomland hardwood forests, with intermittent pastures and Chinese tallow-tree thickets. The Chinese tallow-tree is an invasive exotic, and virtually all such thickets currently occur in previously abandoned pasture.

Specific Action

Mitigation actions in the McHugh Swamp would include removal of exotic vegetation and replanting those areas with desirable, native, hardwood species, with similar reforestation of existing fields and pastures. Existing, moderate- to high-quality, mature, bottomland hardwoods would be preserved via fee title acquisition and/or conservation easement. According to the

Service's GIS-based analysis, approximately 484 acres of existing pasture, 366 acres of Chinese tallow-tree thickets, and 160 acres of pine plantation would be restored to bottomland hardwood forest as described above. Pine plantation restoration would involve mechanical clearing and replanting with appropriate hardwood species. Most of the remaining undeveloped lands in the McHugh Swamp (approximately 2,300 acres) consists of bottomland hardwood forests of varying species composition, age, and quality. Some of those areas have a significant Chinese tallow-tree component in the overstory that would require selective removal and likely replanting with appropriate hardwood species. Other areas are virtually void of Chinese tallow-tree and would only require preservation via fee title acquisition and/or conservation easement. Depending upon which sites within the McHugh Swamp, if any, are selected for mitigation, there may be a potential to perform hydrologic restoration associated with existing man-made drainages.

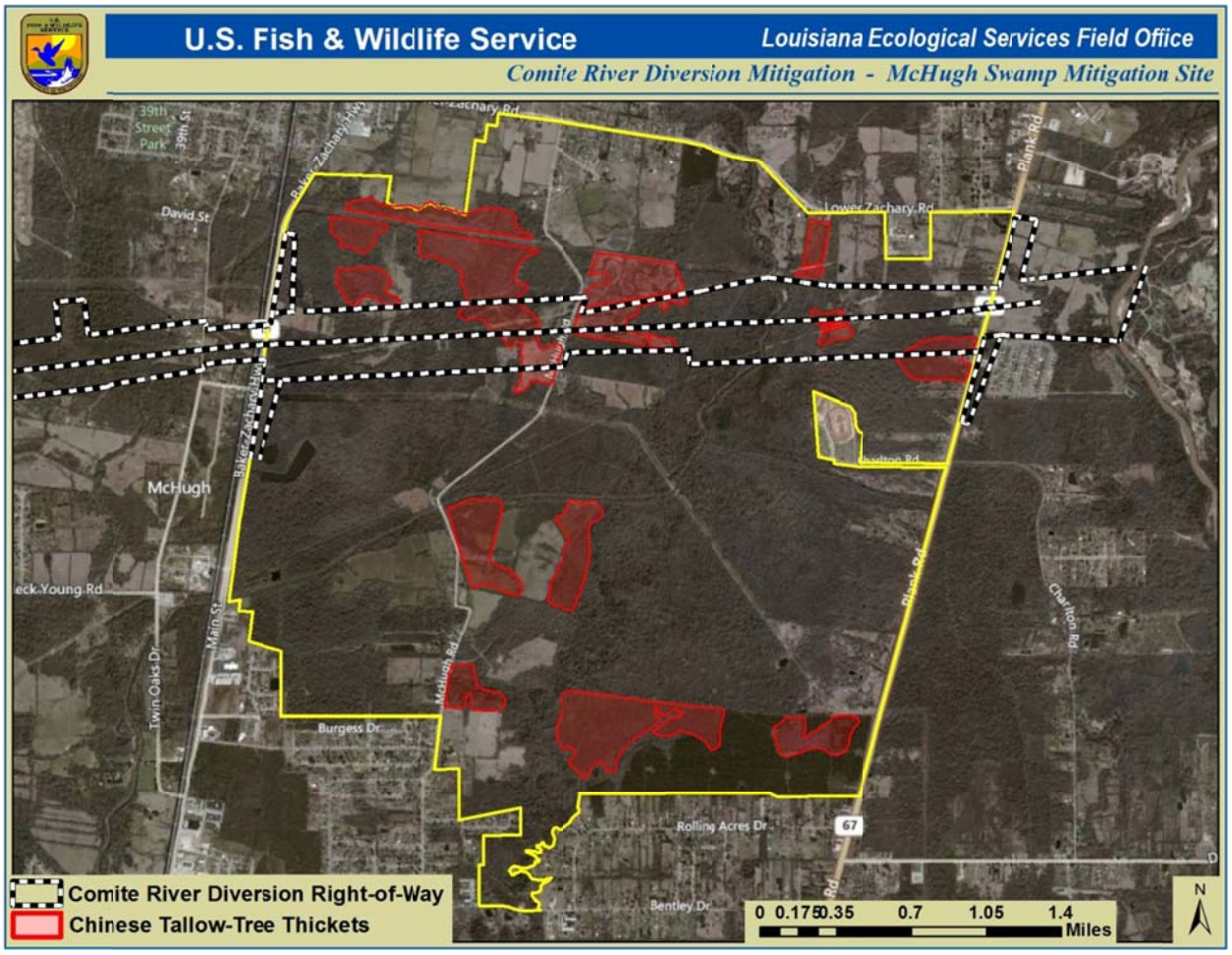


Figure 3. McHugh Swamp Mitigation Site.

PROFIT ISLAND

General Description

Profit Island is an approximately 2,318-acre island in the Mississippi River that was formed when a straight channel, now known as Profit Island Chute, severed a bend of the river (Figure 4). The island contains a mixture of forests, fields, and unvegetated sloughs and ponds. A vast majority of the forested land on Profit Island has been negatively impacted by historic silvicultural practices which involved a virtual complete removal of all hardwood timber and a replanting of cottonwood in a plantation-style manner. Current forest composition reflects those management practices as most areas are dominated by cottonwood, box elder, and American sycamore. The area is subject to frequent riverine flooding, and the Service's hydrology analysis suggests that the more flood-prone areas would not likely support a successful bottomland hardwood restoration project. For the purposes of developing a restoration plan, the island was divided into three zones based upon the Service's evaluation of 20 years of Mississippi River gage data. Island elevations (determined from Light Detection and Ranging Data [LiDAR]), the

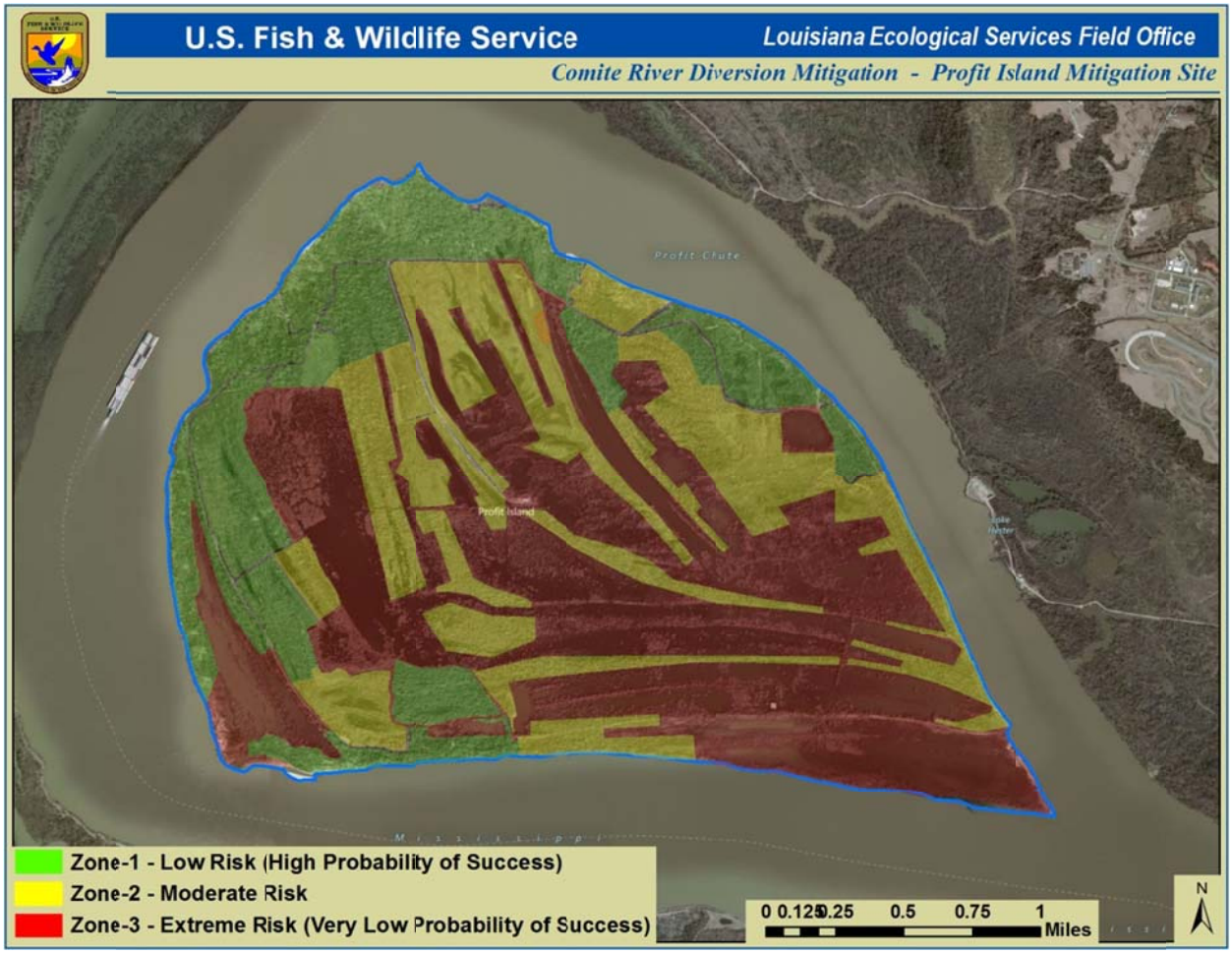


Figure 4. Profit Island Mitigation Site.

previously mentioned gage data, and bottomland hardwood flood tolerances (determined from several published and unpublished studies) were used to delineate those zones according to targeted flood frequency and duration limits. The result of the Service's analysis indicates that there is approximately 500 acres in Zone 1 (highest elevations), 620 acres in Zone 2 (middle elevations), and 1,200 acres in Zone 3 (lowest elevations) that would be suitable for mitigation. Only preservation credit would be available in Zone 3 habitats due to the high-flood-risk nature of those areas.

Specific Action

Mitigation actions on Profit Island would include removal of light-seeded overstory species and replanting of those areas with desirable, native, hardwood species (predominately hard-mast producers), with similar reforestation of existing fields. Extremely flood-prone areas (Zone 3) would be preserved via fee title acquisition and/or conservation easement. According to the Service's GIS-based analysis, approximately 135 acres of an existing field and 857 acres of cottonwood-dominated forests would be restored to bottomland hardwood forest as described above. Approximately, 116 acres of low-quality forest would be enhanced through selective tree removal and partial replanting with desirable bottomland hardwood species. The remaining 1,200 acres of forest, fields, and open water would be protected via fee title acquisition and/or conservation easement. Hydrology enhancement on the southeast portion of the island is also possible via the installation of a more efficient water-control structure in an existing elevated road/levee (repairs to existing breaches in that road/levee would also be necessary). Performing that action should reduce the flood duration on a portion of the island, though the precise benefit area has not been conclusively determined.

COMITE RIVER FLOODPLAIN

General Description

The Comite River Floodplain mitigation area is an expansion of the previously approved 1,500-acre floodplain acquisition plan (Figure 5). The current boundary contains approximately 2,895 acres of land that appears suitable for mitigation. Within that boundary, approximately 835 acres of land have been directly investigated for restoration, enhancement, and preservation opportunities. Based on the Service's field investigations and aerial photography interpretation of the Comite River Floodplain, the area consists primarily of bottomland hardwood forests, intermittent pastures, Chinese tallow-tree thickets (occurring in previously abandoned pasture), and on-going sand and gravel mining operations.

Specific Action

Mitigation actions in the Comite River Floodplain would include removal of exotic vegetation and replanting those areas with desirable, native, hardwood species, with similar reforestation of existing fields and pastures. Existing moderate- to high-quality, mature, bottomland hardwoods would be preserved via fee title acquisition and/or conservation easement. Existing sand/gravel mines would be restored by reducing extreme contours, importing topsoil, and reforesting

denuded areas with native hardwood seedlings. According to the Service's GIS-based analysis, approximately 457 acres of existing pasture, 53 acres of Chinese tallow-tree thickets, and 308 acres of sand/gravel mines would be restored to bottomland hardwood forest as described above. The remaining areas consist of moderate- to high-quality bottomland hardwood forest that would only require preservation via fee title acquisition and/or conservation easement.

Figure 5. Comite River Floodplain Mitigation Site.

EVALUATION METHOD

Benefits derived from the various mitigation alternatives were quantified by acreage and habitat quality (i.e., average annual habitat units or AAHUs) by the Service and are presented in Table 2. The Service used the newly certified Bottomland Hardwood Community Model - Wetland Value Assessment Methodology (WVA) to quantify those projected benefits. Initial assessments of impacts from the construction and operation of the Comite River Diversion, however, were performed using the Service's Habitat Evaluation Procedures (HEP). Yet, the WVA is similar to the HEP in that habitat quality and quantity (acreage) are measured for baseline conditions and

predicted for future without-project and future with-project conditions. For each habitat type, the WVA defines an assemblage of variables considered important to the suitability of an area to support a diversity of fish and wildlife species. As with HEP, the WVA provides a quantitative estimate of project-related impacts to fish and wildlife resources; there is also an overall consistency between the two models regarding many of the input variables, value scales, general formula structure, and output format. For these reasons, we have determined that the HEP-calculated impact credits are congruent to the WVA-calculated mitigation credits, deeming a recalculation of impact credits using the certified WVA unnecessary. Further explanation of how impacts/benefits are assessed with the WVA and an explanation of the assumptions affecting habitat suitability (i.e., quality) index (HSI) values for each site and each target year are available for review at the Service's Lafayette, Louisiana, Field Office, along with the details of the Service's field data collection and hydrology analyses.

PROJECT BENEFITS

Based on previous habitat analysis, it was determined that 704.6 AAHUs of mitigation would be required to offset all impacts from the construction and operation of the Comite River Diversion. To date, approximately 75 acres of land have been acquired for the purposes of performing compensatory mitigation, of which 40 acres have been planted with site-appropriate, native, bottomland hardwood seedlings. It is estimated that those actions achieved 33.15 AAHUs of mitigation, leaving a total remaining mitigation requirement of 671.45 AAHUs. A summary of the Service's benefit analysis for each of the proposed mitigation sites is shown in Table 2.

Table 2. Estimated Benefits of Mitigation Alternatives.

MITIGATION SITE	**BENEFITS BY MITIGATION TYPE**							
	Restoration		Enhancement		Preservation		**TOTALS BY SITE**	
	Acres	**AAHUs**	**Acres**	**AAHUs**	**Acres**	**AAHUs**	**Acres**	**AAHUs**
Existing Mitigation Banks	-	-	-	-	-	-	-	**1365.5**
McHugh Swamp	1203.4	457.4	0	0	2139.3	341.8	**3342.6**	**799.2**
Profit Island	992.0	263.5	115.6	0	1210.4	162.7	**2318.0**	**426.2**
Comite River Floodplain	683.3	326.8	0	0	2211.9	380.5	**2895.2**	**707.3**
TOTALS FOR NON-BANK / PROJECT-SPECIFIC MITIGATION SITES	**2878.7**	**1047.7**	**115.6**	**0**	**5561.6**	**885.0**	**8555.8**	**1932.7**

FISH AND WILDLIFE CONSERVATION AND MITIGATION MEASURES

The President's Council on Environmental Quality defined the term "mitigation" in the National Environmental Policy Act regulations to include:

(a) avoiding the impact altogether by not taking a certain action or parts of an action;
(b) minimizing impacts by limiting the degree or magnitude of the action and its implementation;
(c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
(d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
(e) compensating for the impact by replacing or providing substitute resources or environments.

The Service supports and adopts this definition of mitigation and considers its specific elements to represent the desirable sequence of steps in the mitigation planning process. The Service's Mitigation Policy (Federal Register, Volume 46, No. 15, January 23, 1981) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values involved. Considering the value of the bottomland hardwood wetlands of the proposed project area and their relative scarcity, the Service typically designates them as Resource Category 2 habitats, the mitigation for which is no net loss of in-kind habitat value. Hydrologically altered and degraded (i.e., non-wetland) bottomland hardwood forests that may be impacted, however, are designated as Resource Category 3 due to their reduced value to wildlife, fisheries, and lost/degraded wetland functions. The mitigation goal for Resource Category 3 habitats is no net loss of habitat value with in-kind mitigation preferred. The selected compensatory mitigation project(s) should fully replace the habitat values lost (which should be "in-kind" compensation for impacts to wetland forests) from the construction and operation of the Comite River Diversion.

On April 10, 2008, the U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) issued regulations governing compensatory mitigation for activities authorized by Department of the Army permits (Federal Register, Vol. 73, No. 70). Those regulations identified a 12-step process for developing a mitigation plan. That 12-step process and the Service's specific guidance and recommendations regarding mitigation planning can be found in the appendix to this document. The Corps' selection of specific mitigation sites and all aspects of mitigation planning, including an alternatives analysis for techniques, locations, design, and means to comply with the 12-step planning process, is currently being, and should continue to be, coordinated with the Service and all interested Federal and State natural resource agencies.

SERVICE POSITION AND RECOMMENDATIONS

The Service does not object to modifications to the previously approved 1,500-acre floodplain acquisition mitigation plan to include the evaluation of additional sites and existing wetland

mitigation banks. In order to reduce potential adverse impacts and achieve intended benefits from the proposed project, the Service recommends that the following fish and wildlife conservation measures be incorporated into future project planning and implementation:

1) The selected mitigation project(s) is consistent with all of the recommendations provided in the text of this report (particularly in regard to eradication of invasive species, establishment of native bottomland hardwoods, and property stewardship including restriction of access).

2) The selected mitigation project(s) shall fully compensate for all unavoidable losses of wetland habitat and non-wet bottomland hardwoods caused by features and activities associated with the construction and operation of the Comite River Diversion.

3) All mitigation lands should be purchased in fee title if possible, and a perpetual conservation easement shall be acquired for any mitigation lands to preclude incompatible land uses and to ensure that the anticipated mitigation values are maintained over the project life. If that is not possible, a General Plan should be completed by the Corps, the Service, and the pertinent land managing agency (charged with managing the mitigation site) in accordance with Section 663(b) of the FWCA.

4) Mitigation site(s) shall be selected on the basis of their ability to compensate for fish and wildlife habitat losses associated the construction and operation of the Comite River Diversion. Sites that satisfy this primary criterion shall be advanced in the evaluation process and assessed with other factors including: proximity to the impact site and watershed, potential limitations to mitigation success, contiguity to larger forested tracts, and overall size of the mitigation site. Sites that are relatively small and/or isolated, and/or that are subject to influences beyond management control which could severely jeopardize mitigation project success, shall not be selected for compensatory mitigation for Comite River Diversion impacts. The Corps, the Service, and other pertinent natural resource management agencies shall cooperatively assess the severity and potential success implications of such factors for respective mitigation sites, and determine whether any such sites shall be removed from further consideration as a result.

5) Costs for development, maintenance, and monitoring of mitigation lands shall be allocated as a project “first cost” in future project funding estimates and requests.

6) A detailed mitigation implementation, management, and monitoring plan shall be developed by the Corps, in coordination with the Service and other pertinent natural resource management agencies, for all restoration, enhancement, or preservation activities developed to compensate for fish and wildlife habitat losses associated with the construction and operation of the Comite River Diversion. Individual site-specific plans shall be tiered from that generalized plan, as necessary, based on a

cooperative decision/effort by the Corps, the Service, and other pertinent natural resource management agencies.

7) The Corps shall not transfer management responsibilities for any mitigation project to the local non-Federal cost-share sponsor, until the near-term success of such a project can be reasonably demonstrated (i.e., no sooner than the end of the fifth growing season after the initial planting of seedlings for a restoration or enhancement mitigation project). The Corps and the local non-Federal sponsor shall also be responsible (documented in the cost share agreement) for the purchase and planting of supplemental seedlings, or for other supplies and actions, necessary to attain success criteria until such time as long-term ecological success can be reasonably assured.

8) The Corps and local sponsor shall develop a written instrument that details the responsibility for each party regarding long-term operation and maintenance, with associated cost estimates, for any/all mitigation project(s). If the local project-sponsor is unable to fulfill the financial obligations associated with long-term operation and maintenance of the mitigation project(s), then the Corps shall provide the necessary funding to ensure that those obligations are met on behalf of the public interest.

9) Reports documenting the implementation, maintenance, and success of the mitigation project shall be prepared at 1, 2, 5, 10, 15, and 25 years following initial project implementation, and shall be provided to the Service and other pertinent natural resource management agencies for review and comment.

10) Any reasonably foreseeable future management activities and/or proposed changes to the proposed mitigation site locations, features, or management plans shall be coordinated in advance with the Service and other pertinent natural resource management agencies.

11) If a proposed project feature is changed significantly or is not implemented within one year of the date of the Service's response to your "not likely to affect federally listed species" determination letter (which was provided via the Service's May 7, 2012, "stamped" concurrence), we recommend that the Corps reinitiate Endangered Species Act coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

12) Forest clearing that is associated with certain proposed mitigation features shall be conducted during the fall or winter, when practicable, to minimize impacts to nesting migratory birds.

Appendix

MITIGATION GUIDANCE AND RECOMMENDATIONS

On April 10, 2008, the U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) issued regulations governing compensatory mitigation for activities authorized by Department of the Army permits (Federal Register, Vol. 73, No. 70). According to the Federal Register, those regulations establish performance standards and criteria for the use of permittee-responsible compensatory mitigation, mitigation banks, and in-lieu programs to improve the quality and success of compensatory mitigation projects. The following summary outline generally describes the process of developing a mitigation plan as outlined in those regulations (see the Federal Register for a detailed description of each step).

1. Objectives: a description of the resource type(s) and amount(s) that would be provided as mitigation, the method of compensation, and the manner in which the resource functions of the compensatory mitigation project would address the needs of the geographic area of interest.
2. Site Selection: a description of the factors considered during the site selection process.
3. Site Protection Instrument: a description of the legal arrangements and instrument that would be used to ensure long-term protection of the compensatory mitigation project site.
4. Baseline Information: a description of the ecological characteristics of the proposed compensatory mitigation project site.
5. Determination of Credits: a description of the number of credits to be provided, including a rationale for that determination.
6. Mitigation Work Plan: detailed written specifications and work descriptions for the compensatory mitigation project.
7. Maintenance Plan: a description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.
8. Performance Standards: ecologically based standards that will be used to determine whether the compensatory mitigation project is achieving its objective.
9. Monitoring Requirements: a description of parameters to be monitored in order to determine if the mitigation project is on track for achieving its performance standards and if adaptive management is needed.
10. Long-term Management Plan: a description of the manner in which the compensatory mitigation project will be managed after the performance standards have been achieved to ensure the long-term sustainability of the resource.
11. Adaptive Management Plan: a management strategy to address unforeseen changes in site conditions or other mitigation project components.
12. Financial Assurances: a description of the financial assurances that would be provided and how they are sufficient to ensure a high level of confidence that the mitigation project will be successfully completed in accordance with its performance standards.

In addition to mitigating by Resource Category, the Service encourages mitigating for impacts to wetlands within the same watershed as the impacts occurred. The goal of the mitigation plan is to provide for equal replacement of the habitat units lost due construction and operation of the

Comite River Diversion. The equal replacement compensation goal specifies that the gain of one habitat unit can be used to offset the loss of one habitat unit. Achieving this goal would re-establish, maintain, and protect bottomland hardwood habitats (wet and non-wet) as species diverse, sustainable habitats by restoring/maintaining unique functions, values, and services. For example, the objectives of the mitigation measures for bottomland hardwood forest would be to establish and maintain a high diversity of native mast- and fruit-producing trees and shrubs, maximize herbaceous and shrub-layer canopy cover, while maintaining a semi-mature to mature forest.

Mitigation development would also include activities designed to protect the mitigation lands and to provide features necessary for adequate management. Such activities would include but are not limited to controlling access, defining boundaries, protection of surface rights, and stewardship. Access to the mitigation site should be restricted to ensure that the development of the mitigation site is successful. In order to post the property and control access, surveying and establishing property boundaries would be required. This information would be used for the location and posting of perimeter boundary signs. Fencing along with gates could be employed to control access. Stewardship would include surveillance to protect the area from vandalism and other disturbances by maintaining a regularly seen, physical presence by staff in the area. All of the above tasks are considered to be a single management increment. The above measures (e.g. fence/signage repair and replacement, stewardship) would also be included as operational and maintenance measures over the project life.

AMITE RIVER AND TRIBUTARIES, LOUISIANA
COMITE RIVER DIVERSION
SUPPLEMENTAL MITIGATION OPTIONS
EAST BATON ROUGE PARISH, LOUISIANA

Adaptive Management and Monitoring Plan

June 2012

US Army Corps of Engineers®
New Orleans District

Contents

1.0 Project Background 3
1.1 Purpose and Need 3
1.2 Alternative Plan Formulation 4
2.0 Introduction to Adaptive Management and Monitoring 9
2.1 Authorization 10
2.2 Adaptive Management Framework 11
3.0 Project Adaptive Management and Monitoring Planning 13
3.1 Conceptual Ecological Model 13
3.2 Sources of Uncertainty and Associated Risks 14
3.3 Evaluation of Uncertainties and Risks for Adaptive Management 15
3.4 Uncertainty and Risk Management 15
4.0 Monitoring for Project Success 16
4.1 Mitigation Success Criteria 17
4.2 Monitoring Design, Assessment and Reporting 21
4.3 Monitoring Schedule and Responsibilities 24
5.0 Database Management 27
6.0 Stakeholder Engagement and Involvement 27

1.0 Project Background

This report details the adaptive management and monitoring (AM&M) planning process for the Amite River and Tributaries, Louisiana, Comite River Diversion, Supplemental Mitigation Options, East Baton Rouge, Louisiana project, Environmental Assessment (EA) #426. The U.S. Army Corps of Engineers (USACE), New Orleans District (CEMVN) must mitigate for impacts to the Comite River Diversion project (Comite project); mitigation has been determined to be primarily for bottomland hardwoods (BLH) habitats. The authorized Comite River Diversion project consists of a diversion channel and structures to divert flood flows from the Comite River to the Mississippi River. The original feasibility study and final Environmental Impact Statement (EIS) was completed for the project in 1990. Subsequent changes to the project have lead to additional National Environmental Policy Act (NEPA) documents including Environmental Assessment (EA) #222, a Finding of No Significant Impact (FONSI) for EA #222, a supplement to the EA referred to hereafter as EA #222-A, and a FONSI for EA #222-A. These project changes further resulted in the need for additional mitigation requirements, thereby requiring revision of the mitigation plan.

1.1 Purpose and Need

The current EA #426 evaluates the environmental effects of supplementing the original mitigation plan for the Comite project. The purpose and intent of EA #426 is to analyze various alternatives to add to the previously-approved mitigation plan to increase the likelihood that mitigation obligations can be met to compensate for all of the adverse impacts of the Comite project.

The mitigation plan previously identified in the EIS, EA #222, and EA #222-A, includes the purchase of contiguous tracts of both forested and non-forested lands in the floodplain of the Comite River, and the reforestation, preservation, and management of those lands. Lands impacted by the Comite project have a habitat value of 704.6 average annual habitat units (AAHUs).

Subsequent legislation (Act 734 of the Louisiana Legislature, Regular Session, 2010) now requires mitigation lands for the Comite project to only be acquired from willing landowners, requiring an increase in the potential mitigation areas considered to ensure adequate land can be acquired to fulfill the project mitigation obligations. To date, 75 acres (33.15 AAHUs) of mitigation land have been acquired, of which 40 acres have been planted with BLH species. Consequently, a total of 671.45 AAHUs are now required to complete the project's compensatory mitigation obligations. EA #426 will supplement the mitigation plan identified in previous NEPA documents for the Comite project to fulfill this obligation.

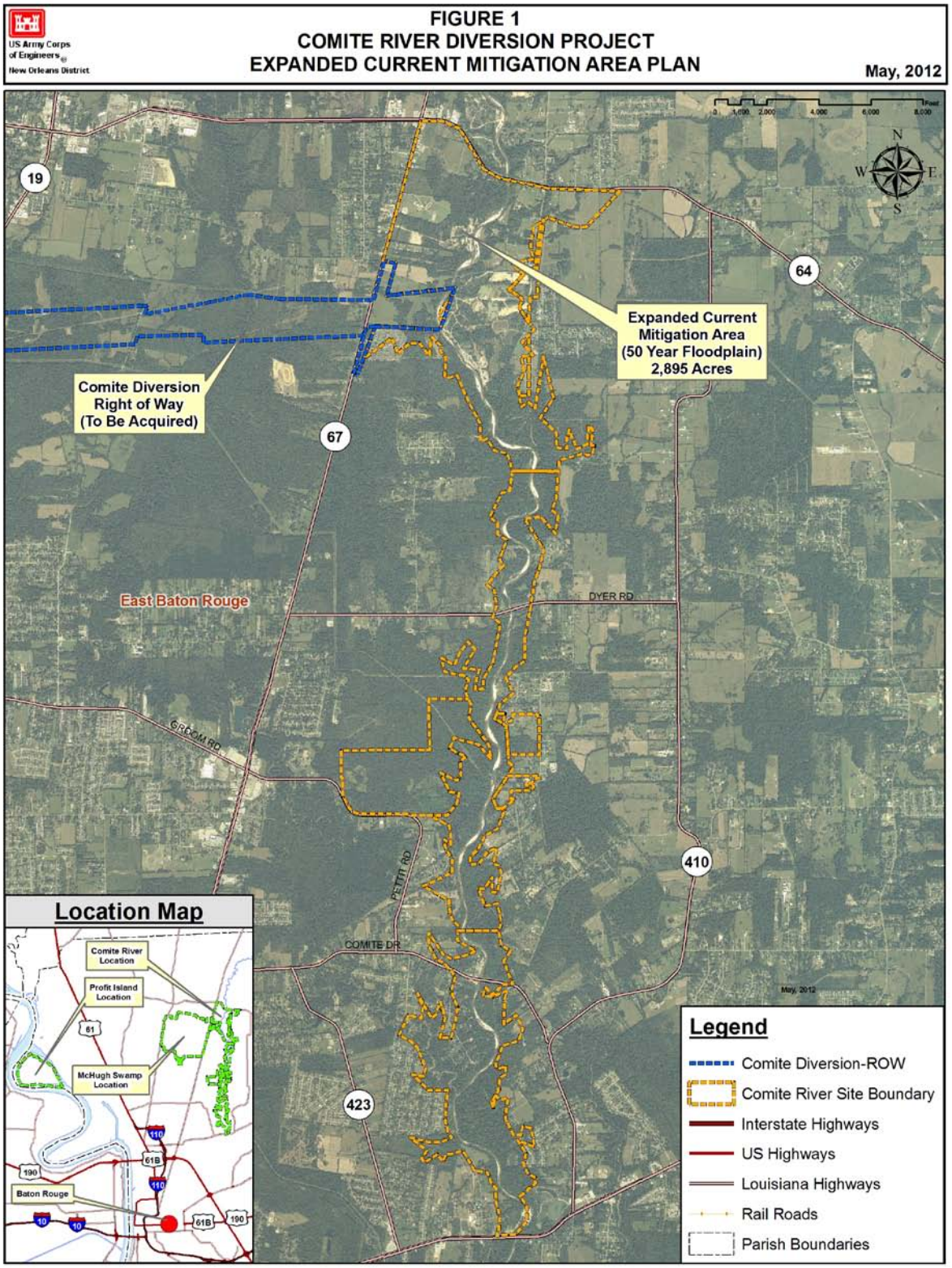
1.2 Alternative Plan Formulation

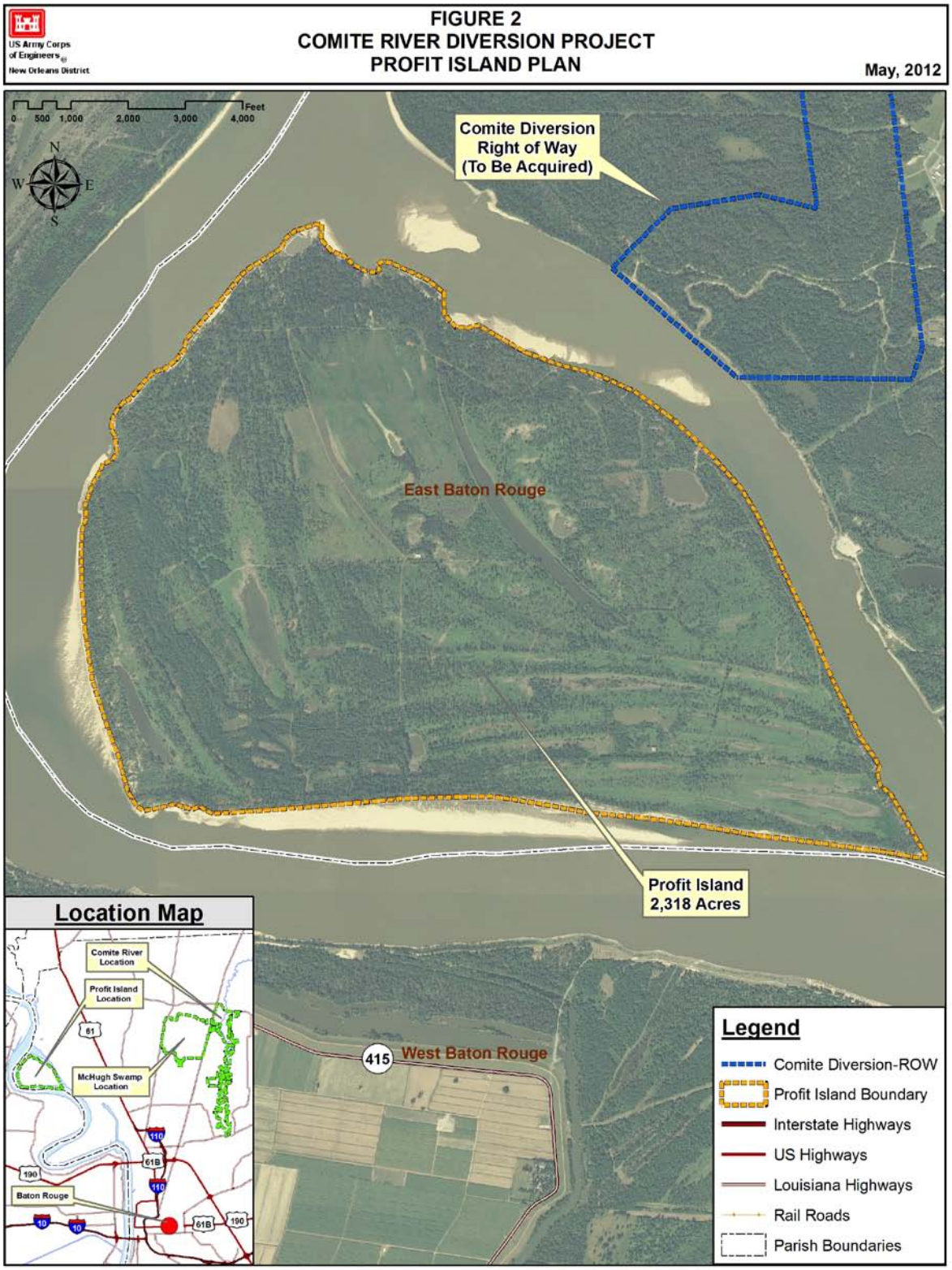
The Project Delivery Team (PDT) identified and evaluated four mitigation alternative area sites to supplement the existing mitigation plan for the Comite project:

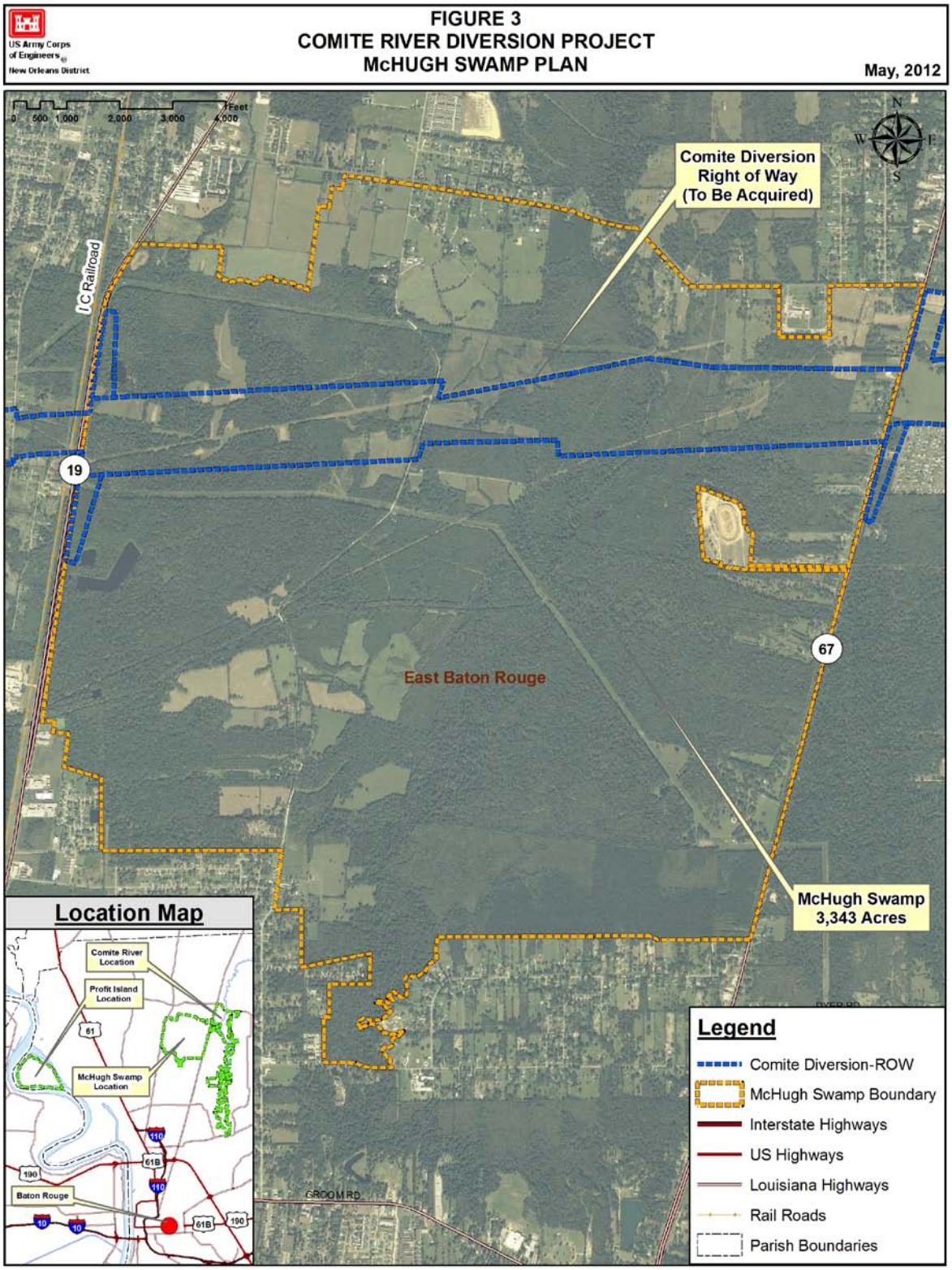
1. Expansion of Current Mitigation Area, East Baton Rouge Parish, Louisiana (Figure 1).
2. Acquisition and Management of Profit Island, East Baton Rouge Parish, Louisiana (Figure 2).
3. Acquisition and Management of the McHugh Swamp, East Baton Rouge Parish, Louisiana (Figure 3).
4. Acquisition of Mitigation Credits in Mitigation Banks

Four alternative mitigation sites were identified as options to fulfill required compensatory mitigation obligations. Eventual selection of a combination of two or more alternative mitigation areas, including the option of the current mitigation plan, will allow for complete compensatory mitigation for the adverse impacts of the Comite project. Based upon the availability of suitable land, the PDT will determine at some future date which combination of proposed alternative mitigation options will be used to fulfill mitigation obligations for the remaining unmitigated Comite project impacts.

Additional areas beyond the four alternative mitigation sites that may be able to provide mitigation options may be addressed in subsequent NEPA documents if the alternatives addressed in EA #426 cannot provide sufficient, cost-effective credits to mitigate for project impacts. Successful acquisition of mitigation lands within the areas identified is dependent on the ability of the non-Federal project sponsor to negotiate price with a willing owner of lands that are unencumbered and free of title defect. Because of this State law, it is impossible to determine whether or not the mitigation options that are currently being considered, except for the use of mitigation banks, are available. Several landowners who own some of the land being considered for mitigation have expressed a willingness, in principle, to sell their properties. However, it is unknown if the project sponsor will be able to negotiate prices that are agreeable to all concerned. Also, it is unknown whether or not the landowners possess clear title that is unencumbered and free of all title defects. If enough of the lands that are currently under investigation cannot be acquired to satisfy the project mitigation requirements, either of two options, or a combination of them exist: Acquire sufficient credits in existing mitigation banks or identify, evaluate, and pursue additional lands that may be available to complete the required project mitigation. If sufficient mitigation credits are not obtainable from the land acquisition options under consideration, a decision on how to obtain the remaining mitigation credits will be made once all attempts to implement the currently-proposed plan are exhausted.


US Army Corps of Engineers
New Orleans District
FIGURE 1
COMITE RIVER DIVERSION PROJECT
EXPANDED CURRENT MITIGATION AREA PLAN
May, 2012
Expanded Current Mitigation Area (50 Year Floodplain) 2,895 Acres
Comite Diversion Right of Way (To Be Acquired)
East Baton Rouge
DYER RD
GROOM RD
PETTIT RD
COMITE DR
19
64
67
410
423
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
Legend
Comite Diversion-ROW
Comite River Site Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries


US Army Corps of Engineers
New Orleans District
FIGURE 2
COMITE RIVER DIVERSION PROJECT
PROFIT ISLAND PLAN
May, 2012
Feet
0 500 1,000 2,000 3,000 4,000
N
W
E
S
Comite Diversion Right of Way (To Be Acquired)
East Baton Rouge
Profit Island 2,318 Acres
West Baton Rouge
415
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
Baton Rouge
61
61B
110
190
10
Legend
Comite Diversion-ROW
Profit Island Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries


US Army Corps of Engineers
New Orleans District
FIGURE 3
COMITE RIVER DIVERSION PROJECT
McHUGH SWAMP PLAN
May, 2012
0 500 1,000 2,000 3,000 4,000 Feet
N
W
E
S
Comite Diversion Right of Way (To Be Acquired)
IC Railroad
19
67
East Baton Rouge
McHugh Swamp 3,343 Acres
GROOM RD
Location Map
Comite River Location
Profit Island Location
McHugh Swamp Location
61
110
61B
190
Baton Rouge
10
Legend
Comite Diversion-ROW
McHugh Swamp Boundary
Interstate Highways
US Highways
Louisiana Highways
Rail Roads
Parish Boundaries

The total acres and AAHUs available at each alterative site for mitigation of the Comite project are presented in Table 1.

Table 1. Alternative Site Potential Mitigation Acres .

Alternative Site	Action	Description	Available Acres	AAHUs
Expansion of Current Mitigation Area	Restoration	Tallow removal, planting BLH species	53.0	15.7
	Restoration	Planting BLH species in pasture	456.9	277.0
	Restoration	Planting BLH species in sand/gravel mine	173.4	34.1
	Preservation	Mature BLH forest	2211.9	380.5
Profit Island	Restoration	Zone 1: low-quality cottonwood/BLH forest	373.5	66.4
	Restoration	Zone 2: planting of BLH in agricultural field	134.9	81.9
	Restoration	Zone 2: low-quality cottonwood/BLH forest	483.6	115.2
	Enhancement	Zone 1: enhancement of low-quality BLH habitat	115.6	0.0
	Preservation	Zone 1: mature BLH forest	10.0	2.8
	Preservation	Zone 3: low-quality cottonwood forest	787.1	153.5
	Preservation	Zone 3: agricultural field	12.5	6.4
	Preservation	Zone 3: open water/unvegetated	400.8	0.0
McHugh Swamp	Restoration	Tallow removal, planting BLH species	558.1	118.4
	Restoration	Planting BLH species in pasture	484.8	294.0
	Restoration	Pine plantation harvest, planting BLH species	160.4	45.0
	Preservation	Mature BLH forest	2139.3	341.8

Mitigation Banks	
Bank Name	**Available BLH Credits***
Bayou Conway	119.3
Bayou Manchac – Oakley	211.8
Comite Properties – Tract A	53.4
Comite Properties – Tract B	56.7
Cypress Plantation Mitigation Bank	13.7
Gum Swamp	314.0
Laurel Oak – Enhancement	27.2

Ponder Land Company	49.6
Spanish Lake – Restoration Unit I	470.535
Zachary Mitigation Bank – Comite Flats I Site	27.3
Zachary Mitigation Bank – Comite Flats II Site	22.2
Zachary Mitigation Bank – Copper Mill Bayou Site	13.5

**Credits available as of 27 April 2012*

The AM&M Team recommends the PDT rank the alternative mitigation sites based on the following criteria and use this ranking in conjunction with the other factors, such as willing landowners, to determine the TSP for implementation areas/sites required for compensatory mitigation:

1. risk, uncertainty, and reliability;
2. environmental impacts;
3. time to implement;
4. cost effectiveness and other cost considerations; and
5. watershed and ecological site considerations.

2.0 Introduction to Adaptive Management and Monitoring

The purpose of adaptive management (AM) activities in the life-cycle of the project is to address ecological and other uncertainties that could prevent successful implementation of a project. Adaptive management also establishes a framework for decision making that utilizes monitoring results and other information, as it becomes available, to update project knowledge and adjust management and mitigation actions. Hence, early implementation of AM and monitoring allows for a project that can succeed under a wide range of conditions and which can be adjusted, as necessary. Furthermore, careful monitoring of project outcomes both advances scientific understanding and helps identify operational changes as part of an iterative adaptive learning process.

Although all ecosystem restoration and mitigation projects are required to consider AM, there may be some projects for which AM is not applicable. AM is warranted when there are consequential decisions to be made, there are high uncertainties, when there is an opportunity to apply learning, when the value of reducing uncertainty is high, and when a monitoring system can be put in place to reduce uncertainty. In cases where AM is not warranted, the project will still develop an AM&M plan but the AM portion of the plan will clearly describe the rationale as to why AM actions are not warranted. A project where AM is not warranted will still contain a monitoring plan to help determine project success.

This AM&M plan for the Comite mitigation project describes the organizational structure for the AM process, identifies key project uncertainties, describes how these uncertainties and risks were minimized through the plan formulation process, evaluates the Comite mitigation project as a candidate for AM actions and describes the monitoring design developed to evaluate progress towards meeting the identified mitigation success criteria.

Many factors such as ecosystem dynamics, engineering applications, institutional requirements, and many other key uncertainties can change and/or evolve over a project's life. The AM&M

plan will be regularly updated to reflect monitoring-acquired and other new information as well as enabling continued resolution of and progress on resolving existing key uncertainties or identification of any new uncertainties that might emerge. The AM plan will be used during and after project construction to adjust the project, as necessary, to better achieve mitigation success criteria outputs/results.

2.1 Authorization

The Water Resources Development Act (WRDA) of 2007, Section 2036 (a) and implementation guidance (CECW-PC 31 August 2009 Memorandum: "*Implementation Guidance for Section 2036 (a) of the Water Resources Development Act of 2007 (WRDA 2007) – Mitigation for Fish and Wildlife and Wetland Losses*") require AM and monitoring be included in mitigation for fish and wildlife and wetland losses. A summary of the Implementation Guidance is provided below.

Mitigation plans shall include:

- a description of actions to achieve mitigation objectives;
- the type, amount, and characteristics of habitat being restored;
- ecological success criteria;
- a monitoring plan;
- an AM plan; and
- a description of land interests to be acquired.

WRDA 2007, Section 2036(a) provides the following implementation guidance regarding monitoring of mitigation results:

- A monitoring plan will be developed during plan formulation and must be described in the decision document.
- Monitoring plans must include the rationale for monitoring, including specific performance standards for determining ecological success.
- Monitoring plans must include cost, periodicity of monitoring, and duration estimates.
- Monitoring plans must include the minimum actions necessary to evaluate success.
- Monitoring plans must identify the party responsible for carrying out the monitoring plan.
- Monitoring plans will be reviewed as part of the decision document review including Agency Technical Review (ATR) and Independent External Peer Review (IEPR) as necessary.
- Most mitigation measures will only require periodic inspections as part of normal Operation and Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) which is, under the local non-Federal sponsor responsibilities and costs.
- For some mitigation measures of documented risk, uncertainty, or complexity, cost-shared monitoring may be appropriate and must be justified and requested in the decision document.
- Monitoring shall continue until it has been determined that the mitigation has met ecological success criteria as documented by the District Engineer in consultation with Federal and state resource agencies and determined by the Division Commander.

WRDA 2007, Section 2036(a) further requires an AM plan for all mitigation plans and specifies:

- the AM plan must be appropriately scoped to project scale;
- if the need for a specified adjustment is anticipated due to high uncertainty the nature and costs for actions should be explicitly described as part of the decision document;
- identified physical modifications will be cost-shared and must be agreed upon by the local non-Federal sponsor;
- changes to the AM plan approved in the decision document must be coordinated with USACE Headquarters; and
- significant changes needed to achieve ecological success that cannot be addressed through operational changes or are not included in the approved AM plan may be examined under other authorities.

WRDA 2007, Section 2036(a) also requires that each Division Commander shall establish an annual consultation process with appropriate Federal and state agencies and report the results of the consultation(s) on an annual basis to USACE Headquarters. The District Engineer shall be responsible for consulting with the Federal and state agencies concerning the success of mitigation efforts with each district and preparing a report summarizing the results of the consultation(s). The report shall:

- evaluate the ecological success of the mitigation as of the date on which the report is submitted;
- determine the likelihood that the mitigation will achieve success as defined in the mitigation plan;
- develop the projected timeline for achieving that success; and
- provide any recommendations for improving the likelihood of success.

2.2 Adaptive Management Framework

The Adaptive Management Framework includes both a Set-up Phase (Figure 4) and an Implementation Phase (Figure 5). The Set-up Phase proceeds concurrently with the planning process. While planners are evaluating and developing alternatives, the AM&M plan for the project will be developed concurrently. The implementation phase of the Adaptive Management Framework subsequently puts the developed AM&M plan into action. Projects will be designed, constructed, monitored, and assessed to understand responses of construction to the system relative to stated targets, goals, objectives and success criteria. Leadership will then decide whether to alter the project and implement OMRR&R or AM actions to improve plan performance based on assessment results.

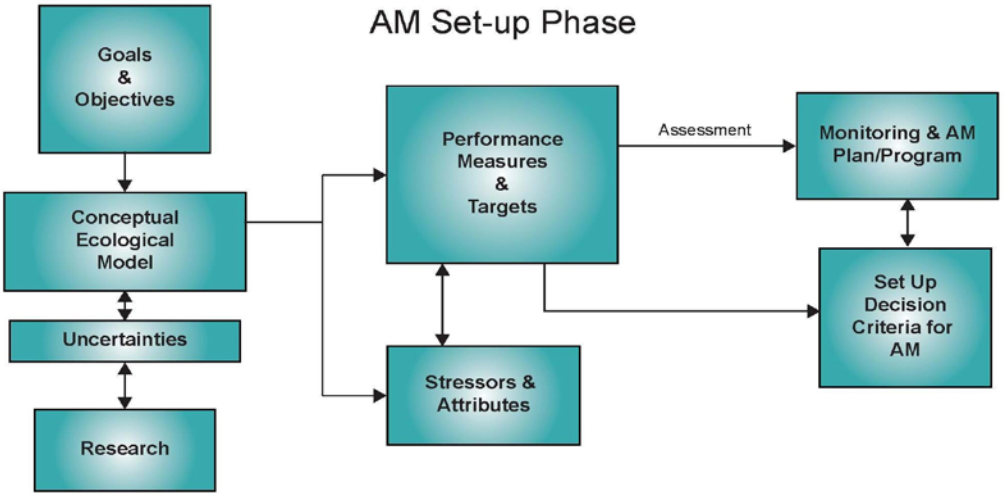


Figure 4. Set-up Phase of Adaptive Management Framework.

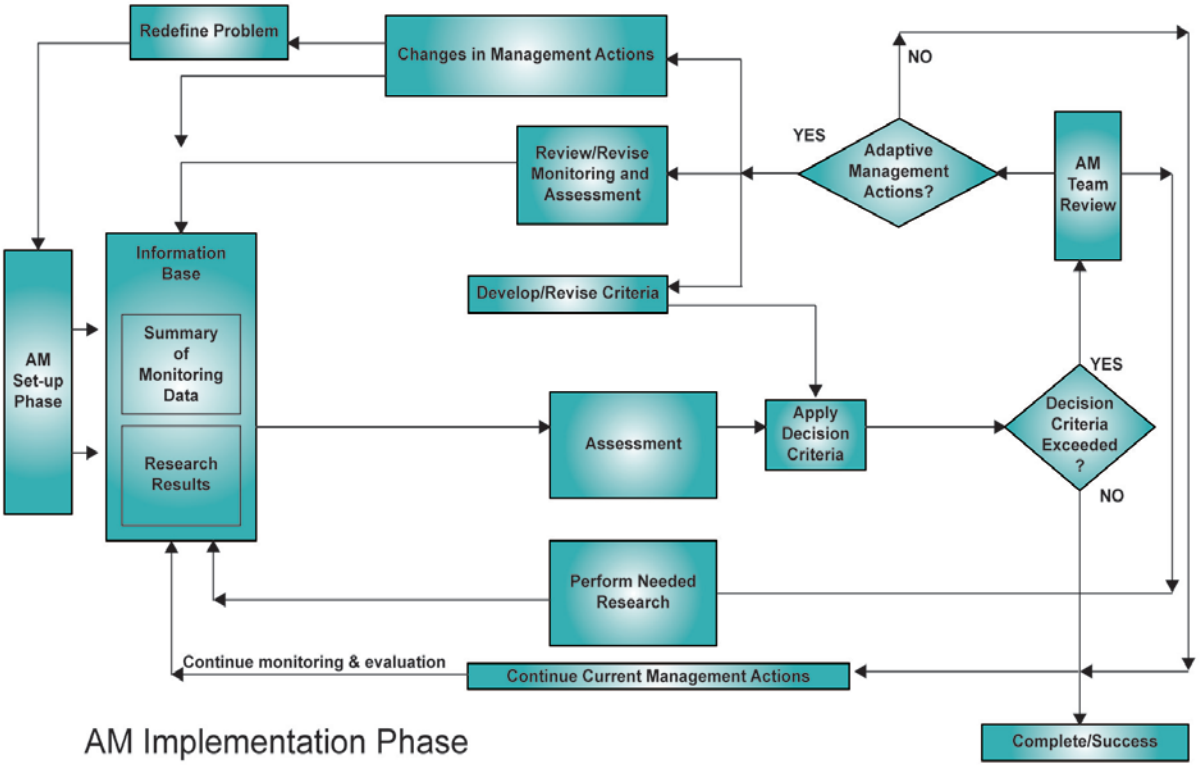


Figure 5. Implementation Phase of the Adaptive Management Framework.

The AM&M Team, in collaboration with the PDT, will lead all project and program efforts to determine AM and monitoring recommendations. If the AM&M Team determines specific AM actions are needed, the AM&M Team will coordinate a path forward with the PDT, the USACE Science Advisor, and Program Management Team.

The PDT is also responsible for integrating project-level AM activities into project management plans, planning documents, NEPA and permit documents, project operating manuals, and other project-related documentation. To accomplish these tasks, the PDT will:

- lead the identification of uncertainties;
- lead the engagement of stakeholders;
- consult with program management and the AM&M Team;
- develop and execute strategies for resolving uncertainties; and
- assist with development, review, and updating the AM&M plan, as necessary.

3.0 Project Adaptive Management and Monitoring Planning

The level of detail in this AM&M plan is based on the currently available data and information provided as part of the mitigation plan development. At the time of this AM&M plan development many uncertainties remain, such as the final selection of one or more of the potential alternative mitigation sites. As plans for the alternative mitigation areas are further developed and evaluated, the specific AM&M plans for each site may be refined to ensure mitigation success.

3.1 Conceptual Ecological Model

As part of the AM&M planning process a conceptual ecological model (CEM) was developed identifying the major stressors and drivers affecting each proposed alternative mitigation site (Table 2). The CEM does not attempt to explain all possible relationship of factors influencing the sites; rather, the CEM presents only those deemed most relevant to achieving mitigation success. Furthermore, this CEM represents the current understanding of these factors and will be updated and modified, as necessary, as new information becomes available.

Table 2. Conceptual Ecological Model (CEM).

Alternatives/ Issues, Driver	Comite River Floodplain Mitigation Site	Profit Island Mitigation Site	McHugh Swamp Mitigation Site	Mitigation Banks*
Freshwater Input	+/-	+/-	+/-	0
Subsidence	-	-	-	0
Runoff	-	-	-	0
Wave Action	-	-	0	0
Tropical Storm Frequency, Duration, and Timing	-	-	-	0
Vegetative	-	-	-	0

Alternatives/ Issues, Driver	Comite River Floodplain Mitigation Site	Profit Island Mitigation Site	McHugh Swamp Mitigation Site	Mitigation Banks*
Invasive Species				
Herbivory	-	-	-	0
Hydrology (water table; wet/dry days; soil inundation)	+/-	+/-	+/-	0
Hydrologic Manipulation	0	-	0	0
Topography (elevation)	+/-	+/-	+/-	0

*Issues and drivers assumed to be addressed by Mitigation Bank sponsors; not a concern for the PDT.
Key:
- = Negative Impact/Decrease;
+ = Positive Impact/Increase;
+/- = Duration dependent
0 = No impact

3.2 Sources of Uncertainty and Associated Risks

A fundamental tenet underlying AM planning is decision-making and achieving desired Project outcomes in the face of uncertainties. There are many uncertainties associated with restoration of the natural systems. The AM&M Team identified the following uncertainties.

- Hydrologic changes related to proposed hydrologic manipulation of an existing 2-mile long road on Profit Island to minimize damming effects and to allow floodwaters to return to the Mississippi River.
- Climate change including: drought conditions; variability of tropical storm frequency, intensity, and timing
- Subsidence rates throughout the mitigation project life
- Water levels:
    - Mississippi River water level trends throughout the mitigation project life e.g., major floods of 2008 and 2011 covered the entire Profit Island.
    - Comite River water level trends throughout the mitigation project life
- Uncertainty relative to achieving ecological success of mitigation:
    - Water, sediment, and nutrient requirements
    - Magnitude and duration of inundation from Mississippi River and Comite River
    - Growth curves
    - Tree productivity
    - Tree propagation
    - BLH plantings destroyed by wildlife

- Uncertainty relative to implementation of mitigation alternatives
- Self-sustainability of project once ecological success criteria are achieved
- Conversion of Habitat Evaluation Procedure (HEP) outputs, used for original mitigation planning (EIS and EA #222 and 222-A) to determine quality and quantity of available habitat for selected species to the Wetland Value Assessment (WVA) model.
- Socio-economic and cultural resources
    - Changes to commercial activity
    - Usage of private property (i.e., allowable activities after acquisition)
    - Effects on recreational activities

3.3 Evaluation of Uncertainties and Risks for Adaptive Management

Alternatives were evaluated, during the alternative plan formulation process, against the potential need for AM actions. Several questions were considered by the PDT and the AM&M Team to determine if AM should be applied:

1) Are the ecosystems to be restored sufficiently understood in terms of hydrology and ecology, and can project outcomes be accurately predicted given recognized natural and anthropogenic stressors?
2) Can the most effective project design and operation to achieve project goals and objectives be readily identified?
3) Are the measures of this restoration project performance well understood and agreed upon by all parties?
4) Can project management actions be adjusted in relation to monitoring results?

A 'NO' answer to questions 1-3 and a "YES" answer to question 4 qualifies the project as a candidate that could benefit from AM. For this project the answers to questions 1 through 4 were "YES." As a result the AM&M Team in coordination with the PDT determined that the project alternatives were not a good candidate for AM because the uncertainties and risk elements had been identified and avoided during the planning process. A monitoring feedback loop had been set up to determine project success including a contingency plan if mitigation criterions are not achieved.

3.4 Uncertainty and Risk Management

The items listed below have already been incorporated into the Comite mitigation project implementation plan (EA #426) to ensure the considered alternative mitigation sites achieve success, thereby eliminating the need for separate AM actions. As a result no additional contingency actions are proposed as part of this AM&M plan.

- Planting guidelines for BLH
- Invasive species control
- Phasing of BLH plantings
- Seasonal timing of BLH plantings
- Supplementary plantings as required (contingency)

- Invasive plant species (tallow) control
- Timber management
- Adjustment of hydrologic manipulations as necessary (e.g., up to 4 culverts on Profit Island)

4.0 Monitoring for Project Success

Independent of AM, an effective monitoring program is required (WRDA 2007 Section 2036; Paragraph C-3(e)(8)(a)(3) of ER 1105-2-100) to determine if the Project outcomes are consistent with performance standards. Success criteria were developed as the basis of determining ecological success (Section 4.1). A monitoring plan (Section 4.2) has been developed for the following alternatives described in EA #426: the expansion of the current mitigation area along the Comite River, Profit Island, and McHugh Swamp. Specific monitoring plan details including the transect, sampling plot and gage locations, and project costs will be developed in coordination with the non-Federal sponsor and the USACE following determination of which proposed alternative mitigation site or sites will be implemented. Cost estimates for implementation of the alternatives have not been developed by the Comite PDT at this time. Consequently, this AM&M plan does not include costs or associated details. Estimates will be developed and considered during plan selection.

Success criteria and monitoring protocols were not developed for the proposed mitigation bank alternative. The purchase of mitigation bank credits relieves the Federal government and the non-Federal sponsor from the responsibility of monitoring or demonstrating mitigation success at a bank. The USACE can only purchase credits from active mitigation banks that are in compliance with the requirements of the USACE Regulatory Program, and which include monitoring and reporting by the mitigation bank sponsor. If an active mitigation bank failed to comply with the requirements of the USACE Regulatory Program, enforcement actions would be initiated through the USACE Regulatory Program.

The project authorization for the Comite Freshwater Diversion project stipulates that all costs of Operation, Maintenance, Repair, Rehabilitation and Restoration (OMRR&R) are the 100% responsibility of the non-Federal sponsor. In accordance with that statutory requirement, when the project or a portion of the project construction is complete, the Corps is required by law to provide the Sponsor with a notice of completion of construction and the commencement of the period of OMRR&R.

In accordance with the project's statutory authority, the proposed mitigation actions will include construction, with the non-Federal sponsor responsible for operation, maintenance, repair, restoration and rehabilitation of functional portions of work as they are completed. On a cost shared basis, USACE will monitor completed mitigation to determine whether additional construction, invasive species control and/or additional plantings are necessary to achieve mitigation success. USACE will undertake additional actions necessary to achieve mitigation success in accordance with cost sharing applicable to the project and subject to the availability of funds. Once USACE determines that the mitigation has achieved initial success criteria, monitoring will be performed by the non-Federal sponsor as part of its OMRR&R obligations. If, after meeting initial success criteria, the mitigation fails to meet its intermediate and/or long-term ecological success criteria, USACE will consult with other agencies and the non-Federal

sponsor to determine whether operational changes would be sufficient to achieve ecological success criteria. If, instead, structural changes are deemed necessary to achieve ecological success, USACE will instruct the non-Federal sponsor to implement appropriate adaptive management measures in accordance with the contingency plan and subject to OMRR&R cost sharing requirements, availability of funding, and current budgetary and other guidance.

4.1 Mitigation Success Criteria

1. General Site Preparation (construction)

Criteria A. As applicable, complete all necessary initial site preparation and related activities in Mitigation Target Year (TY) 1. The necessary activities will vary with the mitigation alternative site. Examples include, but are not limited to clearing, mowing, invasive species control activities, etc.

2. Native Vegetation Plantings

Criteria A. Complete initial planting of canopy and midstory BLH species.

- Performance Measure 1: Number of living canopy and midstory BLH trees and species composition
- Monitoring Design 1: For the baseline, include inventory of the number of each species planted and the stock size used
- Performance Measure 2: Vegetation production and extent
- Monitoring Design 2: Baseline aerial photography

Criteria B. At 1 year following completion of initial plantings.

- Achieve a minimum average survival of 50 percent of planted canopy species (i.e. achieve a minimum average canopy species density of 269 seedlings/acre). The surviving plants must approximate the species composition and the species percentages specified in the initial plantings component of the mitigation work plan. These criteria will apply to the initial plantings as well as any subsequent re-plantings necessary to achieve this initial success requirement.
- Achieve a minimum average survival of 85 percent of planted midstory species (i.e. achieve a minimum average midstory species density of 93 seedlings/acre). The surviving plants must approximate the species composition percentages specified in the initial plantings component of the mitigation work plan. These criteria will apply to the initial plantings as well as any subsequent re-plantings necessary to achieve this initial success requirement.

    - Performance Measure 1: Number of living canopy and midstory BLH trees and species composition

- Monitoring Design 1: Quantitative and qualitative plant data collected from permanent monitoring plots and transects

- Performance Measure 2: Vegetation production and extent

- Monitoring Design 2: Baseline aerial photography

Criteria C. At 5 years following completion of initial plantings.

- Achieve a minimum average density of 300 living native canopy species per acre (planted trees and/or naturally recruited native canopy species).
- Achieve a minimum average density of 120 living, native, hard mast-producing species in the canopy stratum but no more than approximately 150 living hard-mast producing species in the canopy stratum (planted trees and/or naturally recruited native canopy species). The remaining trees in the canopy stratum must be comprised of soft-mass producing native species. These criteria will thereafter remain in effect for the duration of the overall monitoring period. Modifications to these criteria could be necessary for reasons such as avoidance of tree thinning if thinning is not warranted. Proposed modifications must first be approved by the USACE.
- Achieve a minimum average density of 85 living native midstory species per acre (planted midstory and/or naturally recruited native midstory species).

    - Performance Measure 1: Number of living canopy and midstory BLH trees and species composition

    - Monitoring Design 1: Quantitative and qualitative plant data collected from permanent monitoring plots and transects

    - Performance Measure 2: Vegetation production and extent

    - Monitoring Design 2: Aerial photography

Criteria D. At 10 years following completion of initial plantings.

- Attain a minimum average cover of 80 percent by planted canopy species and/or naturally recruited native canopy species. This criterion will thereafter remain in effect for the duration of the overall monitoring period.

    - Performance Measure 1: Number of living canopy and midstory BLH trees and species composition

    - Monitoring Design 1: Quantitative and qualitative plant data collected from permanent monitoring plots and transects

- Performance Measure 2: Vegetation production and extent
- Monitoring Design 2: Aerial photography

Criteria E. At 15 years following completion of initial plantings.

- Achieve a minimum average density of 75 living native plants per acre in the midstory stratum (planted midstory and/or naturally recruited native midstory species).
    - Performance Measure 1: Number of living canopy and midstory BLH trees and species composition
    - Monitoring Design 1: Quantitative and qualitative plant data collected from permanent monitoring plots and transects
    - Performance Measure 2: Vegetation production and extent
    - Monitoring Design 2: Aerial photography

Criteria F. At 25 years following completion of initial plantings.

- Average cover by native species in the midstory stratum must be greater than 20 percent but cannot exceed 50 percent. This criterion will thereafter remain in effect for the duration of the overall monitoring period.
- Average cover by native species in the understory stratum must be greater than 30 percent but cannot exceed 60 percent. This criterion will thereafter remain in effect for the duration of the overall monitoring period.

The requirement for the above criteria would remain in effect following attainment of initial success criteria of mitigation plantings. However, these requirements may need to be subsequently modified due to various factors that could impact vegetative cover. Proposed modifications must be approved by the USACE.

- Performance Measure 1: Number of living canopy and midstory BLH trees and species composition
- Monitoring Design 1: Quantitative and qualitative plant data collected from permanent monitoring plots and transects
- Performance Measure 2: Vegetation production and extent
- Monitoring Design 2: Aerial photography

3. Invasive and Nuisance Vegetation

Criteria A. Complete the initial eradication of invasive and nuisance plant species.

Criteria B. Maintain all areas such that they are essentially free from invasive and nuisance plant species immediately following a given maintenance event and such that the total vegetative cover accounted for by invasive and nuisance species each constitute less than 5 percent of the total plant cover during periods between maintenance events. Note -These criteria must be satisfied throughout the duration of the overall monitoring period.

- Performance Measure: BLH vegetation production and extent

- Monitoring Design: Quantitative plant data collected from permanent monitoring plots and transects. Quantitative data concerning plants in the understory (ground cover) stratum and concerning invasive and nuisance plant species will be gathered from sampling quadrats.

4. Topography

Criteria A. For mitigation features requiring earthwork to attain desired grades (e.g., filling of sand pits) – Following completion of initial construction activities, demonstrate that at least 80 percent of the total graded area within each feature is within approximately 0.5 ft of the proposed target soil surface elevation (e.g. the desired soil surface elevation).

- Performance Measure: Surface elevation

- Monitoring Design: Topographic surveys of all such mitigation features in the year immediately following the "time zero" monitoring event.

5. Thinning of Vegetation (Timber Management)

Some sites may determine that thinning of the existing canopy and/or midstory strata is warranted prior to plantings or to maintain or enhance the ecological value of the site. As part of the mitigation project construction the USACE and the local non-Federal sponsor will perform the necessary thinning operations and demonstrate these operations have been successfully completed. Timber management activities will only be allowed for the purposes of ecological enhancement of the mitigation site. Additionally, it may be determined in the future that additional thinning is necessary to maintain or enhance ecological value of a BLH site. This determination will be made approximately 15 to 20 years following completion of initial plantings. If it is decided that timber management efforts are necessary, the local non-Federal sponsor will develop a timber stand improvement/timber management plan in coordination with the USACE.

- Performance Measure: Number of BLH species per acre

- Monitoring Design: Quantitative plant data collected from permanent monitoring plots and transects. Quantitative data concerning plants in the understory (ground

cover) stratum and concerning invasive and nuisance plant species will be gathered from sampling quadrats.

6. Hydrology (applicable to BLH-Wet habitats only)

Criteria A. In a year having essentially normal rainfall, demonstrate that the water table is less than or equal to 12 inches below the soil surface for a period of at least 14 consecutive days.

Criteria B. If the mitigation program includes actions intended to enhance site hydrology or hydroperiod, demonstrate that the affected site is irregularly inundated or soils are saturated to the soil surface for a period ranging from 7 percent to approximately 13 percent of the growing season during a year having essentially normal rainfall.

- Performance Measure: Depth, duration and frequency of flooding
- Monitoring Design: Rainfall data collection and water table elevation data collected from piezometers coupled with staff gages installed within the mitigation site

4.2 Monitoring Design, Assessment and Reporting

"Time Zero" or Baseline Monitoring Report

Shortly after completion of all initial mitigation activities (e.g. initial eradication of invasive and nuisance plants, first/initial planting of native species, etc.), the mitigation site will be monitored and a "time zero" or "baseline" monitoring report prepared. Information provided in the baseline monitoring report will include the following items:

- A detailed discussion of all mitigation activities completed.
- A description of the various features and habitats within the mitigation site.
- A plan view drawing of the mitigation site showing the approximate boundaries of different mitigation features (e.g., planted areas, areas only involving eradication of invasive and nuisance plant species, etc.), monitoring transect locations, sampling plot locations, photo station locations.
- A detailed inventory of all canopy and midstory species planted, including the number of each species planted and the stock size planted. In addition, provide a breakdown itemization indicating the number of each species planted in a particular portion of the mitigation site and correlate this itemization to the various areas depicted on the plan view drawing of the mitigation site.

Additional Monitoring Reports

All monitoring reports generated after the initial "time zero" baseline monitoring report will provide the following information unless otherwise noted:

- A plan view drawing of the mitigation site showing the approximate boundaries of different mitigation features (e.g., planted areas, areas only involving eradication of invasive and nuisance plant species, etc.), monitoring transect locations, sampling plot locations, and photo station locations.

- Each monitoring report subsequent to the "time zero" monitoring report will have a brief description of maintenance and/or management and/or mitigation work performed since the previous monitoring report along with a discussion of any other significant occurrences.

- Photographs documenting conditions in the mitigation site at the time of monitoring. Photos will be taken at permanent photo stations within the mitigation site. At least two photos will be taken at each station with the view of each photo always oriented in the same general direction from one monitoring event to the next. The number of photo stations required as well as the locations of these stations will vary depending on the mitigation site.

- Quantitative plant data collected from permanent monitoring plots measuring approximately 90 feet by 90 feet in size or from circular plots having a radius of approximately 53 feet. Data recorded in each plot will include: Number of living planted canopy species present and the species composition; number of living planted midstory species present and the species composition; average density of all native species in the canopy stratum, the total number of each species present, and the wetland indicator status of each species; average cover by native species in the canopy stratum; average density of all native species in the midstory stratum, the total number of each species present, and the wetland indicator status of each species; average cover by native species in the midstory stratum; average percent cover accounted for by invasive plant species (all vegetative strata combined); average percent cover accounted for by nuisance plant species (all vegetative strata combined). The permanent monitoring plots will be located within mitigation areas where initial planting of canopy and midstory species is necessary. The number of plots required as well as the locations of these plots will vary depending on the mitigation site. Typically there will be at least one monitoring plot for every 20 acres planted.

- Quantitative plant data collected from either:

  1) permanent transects sampled using the point-centered quarter method with a minimum of 20 sampling points established along the course of each transect, or
  2) permanent belt transects approximately 50 feet wide.

  The number of transects necessary, as well as the location and length of each transect, will vary depending on the mitigation site. Data recorded from sampling transects will include the following:

  1) average density of living planted canopy species present and species composition;
  2) average density of living planted midstory species present and the species composition;

3) average density of all native species in the canopy stratum along with the species composition and the wetland indicator status of each species; average percent cover by all native species in the canopy stratum;
4) average height of native species in the canopy stratum;
5) average density of native species in the midstory stratum;
6) the total number of each species present;
7) the wetland indicator status of each species;
8) average percent cover by native species in the midstory stratum;
9) average height of native species in the midstory stratum; and
10) if present, average percent cover accounted for by invasive and nuisance species present in the canopy and midstory strata (combined).

- Quantitative data concerning plants in the understory (ground cover) stratum and concerning invasive and nuisance plant species will be gathered from sampling quadrats. These sampling quadrats will be established either along the axis of the belt transects discussed above, or at sampling points established along point-centered quarter transects discussed above, depending on which sampling method is used. Each sampling quadrat will be approximately 2 meters by 2 meters in size. Data recorded from the sampling quadrats will include: Average percent cover by native subcanopy species; composition of native subcanopy species and the wetland indicator status of each species; average percent cover by invasive plant species; average percent cover by nuisance plant species.

- Various qualitative observations will be made in the mitigation site to help assess the status and success of mitigation and maintenance activities. These observations will include the following:

    1) general estimates of the average percent cover by native plant species in the canopy, midstory, and understory strata;
    2) general estimate of the average percent cover by invasive and nuisance plant species;
    3) general estimates concerning the growth of planted canopy and midstory species;
    4) general observations concerning the colonization by volunteer native plant species.

  General observations made during the course of monitoring will also address potential problem zones, general condition of native vegetation, trends in the composition of the plant communities, wildlife utilization as observed during monitoring, and other pertinent factors.

- Rectified aerial photographs of all mitigation features will be acquired. This aerial photography will be provided in monitoring reports after initial plantings and one year following initial plantings then in years 5, 10, 15, 25 following the initial plantings.

- An assessment of all data and observations along with recommendations as to actions necessary to help meet mitigation and management/maintenance goals and mitigation success criteria.

- A brief description of anticipated maintenance/management work to be conducted during the period from the current monitoring report to the next monitoring report.

Monitoring Reports Following Re-Planting Activities

Re-planting of certain areas within a mitigation site may be necessary to ensure attainment of applicable native vegetation success criteria. Any monitoring report submitted following completion of a re-planting event must include an inventory of the number of each species planted and the stock size used. The monitoring report must also include a depiction of the areas re-planted, cross-referenced to a listing of the species and number of each species planted in each area.

4.3 Monitoring Schedule and Responsibilities

Monitoring will typically take place in late summer of the year of monitoring, but may be delayed until later in the growing season due to site conditions or other unforeseen circumstances. Monitoring reports will be submitted by December 31 of each year of monitoring.

The USACE and the local non-Federal sponsor will be responsible for conducting the monitoring events and preparing the associated monitoring reports, in accordance with the cost sharing agreement, until such time that the following mitigation success criteria are achieved (criteria follow numbering system used in success criteria Section 4.1):

1. General Construction – 1.A
2. Native Vegetation – A, B, and C
3. Invasive & Nuisance Vegetation – A, plus B until such time as project is transferred to the local non-Federal sponsor.
4. Topography-A

The remaining criteria identified in Section 4.1 will be the responsibility of the local non-Federal sponsor after the project is transferred.

Monitoring events associated with the above will include the "time zero" baseline monitoring event and annual monitoring events. The years applicable to these monitoring events will vary depending on the alternative mitigation site chosen and the site conditions present at the time mitigation activities are initiated.

In accordance with current CEMVN guidance, the non-Federal sponsor will be responsible for conducting the required monitoring events and preparing the associated monitoring reports after the USACE has demonstrated success of the initial plantings and achieved the mitigation success criteria listed above.

Once final notice of construction completion for the mitigation feature of the project (or functional portion of the mitigation feature of the project) has been provided to the sponsor such that all monitoring responsibilities are borne by the non-Federal sponsor, the next monitoring event will take place within two years assuming project has met initial survival criteria. Starting

10 years after completion of initial plantings, monitoring will be conducted every 5 years throughout the life of the mitigation project meeting criteria identified in 2.D, 2.E, 2.F (based on a 50-year project life).

If the initial survival criteria for planted canopy and midstory species are not achieved (i.e. the 1-year and 5-year survival criteria specified in success criteria 2.B and 2.C), a monitoring report will be required for each consecutive year until two annual sequential reports indicate that all survival criteria have been satisfied (i.e. that corrective action additional plantings were successful). The non-Federal sponsor (East Baton Rouge Parish) will be responsible for conducting the additional monitoring and preparing the monitoring reports until the final notice of construction completion for the mitigation feature of the project (or functional portion of the mitigation feature of the project) is provided to the non-Federal sponsor. The USACE and the local non-Federal sponsor will also be responsible for the purchase and installation of supplemental plants needed to attain these success criteria according to the cost share agreement until such time as ecological success is determined by USACE.

If the native vegetation success criteria specified for 10 years following completion of initial plantings are not achieved (i.e., success criteria 2.D), a monitoring report will be required for each consecutive year until two annual sequential reports indicate that these criteria have been satisfied. The non-Federal sponsor will be responsible for conducting this additional monitoring and preparing the monitoring reports. The non-Federal sponsor will also be responsible for the purchase and installation of supplemental plants needed to attain these success criteria.

Table 3 summarizes the success criteria and may be used to depict project progress towards achieving the identified success criteria. For example, a cell in the table may be shaded green if monitoring results indicate the success criteria have been met, yellow if there is progress towards meeting the criteria or red if the criteria were not met by the specified time. It should be noted that the success criteria may need to be modified later with the final mitigation designs and project implementation or due to factors such as sea level rise, salinity or hydroperiod. Any deviations would be approved by the USACE and the non-Federal sponsor and would supersede the current criteria once approved.

In the event monitoring results and reports reveal that any success criteria have not been met, the USACE, the non-Federal sponsor will take all necessary measures to modify management practices in order to achieve these criteria in the future plan including supplementary plantings as a contingency if needed.

Table 3: Summary of Mitigation Success Criteria—Report Card.

Construction	Native Vegetation Plantings	Invasive and Nuisance Vegetation (INV)	Topography	Timber Management	Hydrology
Criteria 1A: At TY1 complete necessary earthwork and construction activities.	Criteria 2A: Complete initial plantings	Criteria 3A. Initial Eradication of INV	Criteria 4A: at TY1 at least 80 percent of total graded area must be within 0.5 ft of target elevation.	Criteria 5: TBD; at 15 to 20 years following initial plantings non-federal sponsor will determine if thinning of canopy and midstory strata is warranted.	Criteria 6A: Demonstrate that water table is ≤ 12 inches above soil surface for 14 consecutive days
Criteria 1B: At TY2 Complete construction for open water areas.	Criteria 2B: At TY 1 post planting achieve: *Survival of 50 percent canopy *Survival of 85 percent midstory canopy	Criteria 3B. *Removal of INV during maintenance events *Maintain less than 5 percent coverage of INV between maintenance events			Criteria 6B: demonstrate that the affected site soils are inundated or saturated between 7- 13 percent of growing season having normal rainfall.
	Criteria 2C: At 5 years post planting achieve: *300 living trees/acre *120-150 hard mast trees/acre *85 midstory canopy trees per acre *For BLH wet must meet hydrophytic vegetation criteria[1]				
	Criteria 2D: at 10 years post planting must achieve: *80 percent coverage of canopy species				
	Criteria 2E: at 15 years post planting must achieve: *75 midstory canopy trees/acre.				

Construction	Native Vegetation Plantings	Invasive and Nuisance Vegetation (INV)	Topography	Timber Management	Hydrology
	Criteria 2F: At 25 years post planting must achieve: *20-50 percent cover of native midstory canopy trees *30-60 percent cover of native understory vegetation				
[1]USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0); ERDC/EL TR-10-20. USACE Engineer Research and Development Center, Vicksburg, MS.					

5.0 Database Management

Database management is an important component of the monitoring plan and the overall Adaptive Management Program.

Data will be served using a map services tool, similar to that currently employed by the CRMS-Wetlands project. Data collected with similar data types and collection frequencies as those data collected under the CRMS program will be managed by the Louisiana Strategic Online Natural Resources Information System (SONRIS). Pre-existing standard operating procedures built for SONRIS cover issues such as data upload process and format, quality assurance/quality control (QA/QC), and public data release. Storage of other collected data (spatial or non-spatial) will be handled by the project specific data libraries. Where applicable, Open Geospatial Consortium (OGC) standards will be used to facilitate data sharing among interested parties.

In addition, the AM&M Team has identified the importance of developing data delivery standards. By following the data delivery standards requirements and providing data in a consistent manner, data collecting entities will be providing a high-quality data product that will be consumable within the state and Federal data management processes. This will ultimately assist restoration resource managers in making important restoration decisions.

6.0 Stakeholder Engagement and Involvement

AM&M will be an integrative process involving key stakeholders, both public and private, as well as active non-governmental organizations (NGOs) in or near the Project area. A modified Delphi process will likely be used to help ensure this Project represents local communities' needs and best serves the public's interest. In doing so, the AM plan creates a seamless connection between AM&M process, PDT planning and design, and the NEPA process.

The USACE sponsored an initial meeting at the Zachary, Louisiana, Public Library to discuss the Comite project mitigation plan with area landowners and other interested parties. Comments from the landowners and others were mixed with some concerned that their land would be taken

from them and others interested in selling their properties. In mid-April 2011, the Amite River Basin Commission, acting on behalf of the Louisiana Department of Transportation and Development, the non-Federal sponsor for the construction of the project, distributed press releases to local media and sent letters to landowners and interested parties to announce two public meetings. On April 28, 2011, the first meeting sponsored by the Amite River Basin Commission was held at the Zachary Public Library and on May 4, 2011, the second meeting was held at the DEMCO Training Facility in Central, Louisiana. In between the dates of those two meetings, an informational community meeting was hosted by four state legislators at The Rock Church in Zachary, Louisiana, on May 5, 2011. All of these meetings served to inform interested landowners and other residents of the Comite project and the mitigation plan. Written and oral comments expressed at these meetings varied widely, but a large number of residents were concerned about the lands acquired for mitigation providing unlimited access to the general public.

In subsequent project phases, the AM&M Team will work with the PDT and stakeholders to ensure these concerns are considered and incorporated into the project uncertainties, in a manner transparent to the public at large.

APPENDIX D

PUBLIC AND AGENCY COMMENTS

Correspondence included in this Appendix was received during the public review and comment period for Draft EA #426 (June 15, 2012 – July 16, 2012).

United States Department of the Interior

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

July 24, 2012

Colonel Edward R. Fleming
District Commander
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Fleming:

Enclosed is the Fish and Wildlife Coordination Act Report for the proposed supplemental mitigation plan for the Comite River Diversion Project, in East Baton Rouge Parish, Louisiana. This report is transmitted under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 United States Code (U.S.C.) 661 et seq.). We provided copies of the draft report to the National Marine Fisheries Service (NMFS) and the Louisiana Department of Wildlife and Fisheries (LDWF); their comments, if any, have been incorporated into this report.

Should your staff have any questions regarding the enclosed report, please have them contact Mr. David Soileau, Jr. of this office at 337/291-3109.

Sincerely,

Jeffrey D. Weller
Supervisor
Louisiana Ecological Services Office

Enclosures

cc: EPA, Dallas, TX
NMFS, Baton Rouge, LA
LDWF, Baton Rouge, LA

Fish and Wildlife Coordination Act Report

Amite River and Tributaries, Louisiana
Comite River Basin

Comite River Diversion
Supplemental Mitigation Options
East Baton Rouge Parish, Louisiana

PROVIDED TO
NEW ORLEANS DISTRICT
U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

PREPARED BY
DAVID SOILEAU, JR.
FISH AND WILDLIFE BIOLOGIST

U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
LAFAYETTE, LOUISIANA

JULY 2012

U.S. FISH AND WILDLIFE SERVICE – SOUTHEAST REGION

TABLE OF CONTENTS

Page

INTRODUCTION 1

DESCRIPTION OF THE STUDY AREA 2

FISH AND WILDLIFE RESOURCES 2
- Description of Habitats 2
- Forested Habitats 4
- Scrub-Shrub Habitats 4
- Pasture 4
- Open-Water Habitats 5
- Developed Areas 5
- Wildlife Resources 5
- Endangered and Threatened Species 5
- Protected Species 6
- Future Fish and Wildlife Resources 7

ALTERNATIVES UNDER CONSIDERATION 7
- Proposed Actions 8
- Invasive Species Control 8
- Hardwood Seedling Establishment 8
- Hydrologic Restoration and Enhancement 9
- Stewardship/Access Restriction 9
- Existing Mitigation Banks 10
- McHugh Swamp 11
- Profit Island 12
- Comite River Floodplain 14

EVALUATION METHOD 15

PROJECT BENEFITS 16

FISH AND WILDLIFE CONSERVATION AND MITIGATION MEASURES 16

SERVICE POSITION AND RECOMMENDATIONS 17

APPENDIX 1 (Agency Comments on Draft Fish and Wildlife Coordination Act Report) 20

APPENDIX 2 (Mitigation Guidance and Recommendations) 23

FIGURES

Figure 1. Comite River Diversion and Mitigation Study Area, East Baton Rouge Parish, Louisiana 3
Figure 2. Example Graphic of Development Rate / Land Loss Analysis Results 6
Figure 3. McHugh Swamp Mitigation Site 11
Figure 4. Profit Island Mitigation Site 13
Figure 5. Comite River Floodplain Mitigation Site 14

TABLES

Table 1. Wetland Mitigation Banks Currently Under Consideration for Comite River Diversion Mitigation 10
Table 2. Estimated Benefits of Mitigation Alternatives 16

Executive Summary

The Fish and Wildlife Service (Service) has prepared this Fish and Wildlife Coordination Act (FWCA) Report for the proposed supplemental mitigation plan for the Comite River Diversion Project, in East Baton Rouge Parish, Louisiana. The proposed Comite River Diversion and its associated mitigation is 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.

This report contains a description of the existing fish and wildlife resources within the project area, discusses future with- and without-project habitat conditions, identifies fish and wildlife-related impacts (including anticipated benefits), and provides recommendations to reduce potential adverse impacts and achieve intended benefits from the proposed project. This report supplements the Service's FWCA Reports that addressed impacts and mitigation features associated with the construction and operation of the Comite River Diversion (submitted in 1990, 1995, and 2002). This document constitutes the report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). We provided copies of the draft report to the National Marine Fisheries Service (NMFS) and the Louisiana Department of Wildlife and Fisheries (LDWF); their comments, if any, have been incorporated into this report.

All project features associated with the Comite River Diversion, including all areas currently under consideration as potential compensatory mitigation sites to offset impacts from construction and operation of that Diversion, are located in East Baton Rouge Parish, Louisiana. The study area contains three proposed sites within which compensatory mitigation required from the construction and operation of the Comite River Diversion would be performed. Those sites are located within an area bounded by the Mississippi River to the west and the Comite River floodplain to the east; these are also the two main waterbodies in the general vicinity. The proposed mitigation sites are also bounded by Louisiana Highway 64 to the north, and Thomas Road and Comite Drive to the south.

All of the proposed mitigation alternatives would re-establish, enhance, maintain, and protect bottomland hardwood habitat in a species diverse, sustainable state by restoring and maintaining unique functions, values, and services. The mitigation objectives would be to establish and maintain a high diversity of native hard and soft mast-producing trees and shrubs, maximize herbaceous and shrub-layer canopy cover while maintaining a semi-mature to mature bottomland hardwood timber stand. Because of the substantial quantity of mitigation that will be performed, a phased implementation plan may be more effectively implemented than a single, large-scale mitigation action.

Based on previous habitat analysis, the Service has determined that 704.6 average annual habitat units (AAHUs) of mitigation would be required to offset all impacts from the construction and operation of the Comite River Diversion. To date, approximately 75 acres of land have been acquired for the purposes of performing compensatory mitigation, of which 40 acres have been

planted with site-appropriate, native, bottomland hardwood seedlings. It is estimated that those actions achieved 33.15 AAHUs of mitigation, leaving a total remaining mitigation requirement of 671.45 AAHUs.

The Service does not object to modifications to the previously approved 1,500-acre floodplain acquisition mitigation plan to include the evaluation of additional sites and existing wetland mitigation banks provided that the following fish and wildlife conservation recommendations are incorporated into future project planning and implementation:

1) The selected mitigation project(s) is consistent with all of the recommendations provided in the text of this report (particularly in regard to eradication of invasive species, establishment of native bottomland hardwoods, and property stewardship including restriction of access).

2) The selected mitigation project(s) shall fully compensate for all unavoidable losses of wetland habitat and upland hardwoods caused by features and activities associated with the construction and operation of the Comite River Diversion.

3) All mitigation lands should be purchased in fee title if possible, and a perpetual conservation easement shall be acquired for any mitigation lands to preclude incompatible land uses and to ensure that the anticipated mitigation values are maintained over the project life. If that is not possible, a General Plan should be completed by the Corps, the Service, and the pertinent land managing agency (charged with managing the mitigation site) in accordance with Section 663(b) of the FWCA.

4) Mitigation site(s) shall be selected on the basis of their ability to compensate for fish and wildlife habitat losses associated the construction and operation of the Comite River Diversion. Sites that satisfy this primary criterion shall be advanced in the evaluation process and assessed with other factors including: proximity to the impact site and watershed, potential limitations to mitigation success, contiguity to larger forested tracts, and overall size of the mitigation site. Sites that are relatively small and/or isolated, and/or that are subject to influences beyond management control which could severely jeopardize mitigation project success, shall not be selected for compensatory mitigation for Comite River Diversion impacts. The Corps, the Service, and other pertinent natural resource management agencies shall cooperatively assess the severity and potential success implications of such factors for respective mitigation sites, and determine whether any such sites shall be removed from further consideration as a result.

5) Costs for development, maintenance, and monitoring of mitigation lands shall be allocated as a project “first cost” in future project funding estimates and requests.

6) A detailed mitigation implementation, management, and monitoring plan shall be developed by the Corps, in coordination with the Service and other pertinent natural resource management agencies, for all restoration, enhancement, or preservation

activities developed to compensate for fish and wildlife habitat losses associated with the construction and operation of the Comite River Diversion. Individual site-specific plans shall be tiered from that generalized plan, as necessary, based on a cooperative decision/effort by the Corps, the Service, and other pertinent natural resource management agencies.

7) The Corps shall not transfer management responsibilities for any mitigation project to the local non-Federal cost-share sponsor, until the near-term success of such a project can be reasonably demonstrated (i.e., no sooner than the end of the fifth growing season after the initial planting of seedlings for a restoration or enhancement mitigation project). The Corps and the local non-Federal sponsor shall also be responsible (documented in the cost share agreement) for the purchase and planting of supplemental seedlings, or for other supplies and actions, necessary to attain success criteria until such time as long-term ecological success can be reasonably assured.

8) The Corps and local sponsor shall develop a written instrument that details the responsibility for each party regarding long-term operation and maintenance, with associated cost estimates, for any/all mitigation project(s). If the local project-sponsor is unable to fulfill the financial obligations associated with long-term operation and maintenance of the mitigation project(s), then the Corps shall provide the necessary funding to ensure that those obligations are met on behalf of the public interest.

9) Reports documenting the implementation, maintenance, and success of the mitigation project shall be prepared at 1, 2, 5, 10, 15, and 25 years following initial project implementation, and shall be provided to the Service and other pertinent natural resource management agencies for review and comment.

10) Any reasonably foreseeable future management activities and/or proposed changes to the proposed mitigation site locations, features, or management plans shall be coordinated in advance with the Service and other pertinent natural resource management agencies.

11) If a proposed project feature is changed significantly or is not implemented within one year of the date of the Service's response to your "not likely to affect federally listed species" determination letter (which was provided via the Service's May 7, 2012, "stamped" concurrence), we recommend that the Corps reinitiate Endangered Species Act coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

12) On-site contract personnel shall be informed of the need to identify bald eagle nest sites and waterbird nesting colonies, and to avoid affecting them during the breeding season.

a. To minimize disturbance to colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present).

b. If a bald eagle nest is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary and those results should be forwarded to this office.

13) Forest clearing that is associated with certain proposed mitigation features shall be conducted during the fall or winter, when practicable, to minimize impacts to nesting migratory birds.

INTRODUCTION

The Fish and Wildlife Service (Service) has prepared this Fish and Wildlife Coordination Act (FWCA) Report for the proposed supplemental mitigation plan for the Comite River Diversion Project, in East Baton Rouge Parish, Louisiana. The proposed Comite River Diversion and its associated mitigation is 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 original Amite River and Tributaries Flood Control Project was authorized by Congress in 1955 and completed in 1964. That project provided for enlargement of the Comite River from Cypress Bayou to its mouth, clearing and snagging the Amite River from the Comite River to Bayou Manchac, additional clearing and snagging in other portions of the Amite River Basin, and a diversion channel from the Amite River to Lake Maurepas via Blind River. Following major flood events within the Amite River Basin during 1973, 1977, 1979, and 1983, the Corps prepared the Amite River and Tributaries Initial Evaluation Report on Flood Control in 1984. A diversion channel from the Comite River to the Mississippi River was one of several alternatives that was determined to be economically justified. The original feasibility study and final Environmental Impact Statement (EIS) was completed for that project in 1990.

Subsequent changes to the project have led to the preparation of additional National Environmental Policy Act (NEPA) documents. In December 1995, the Corps prepared Environmental Assessment (EA) #222 (with its associated Finding of No Significant Impact [FONSI]) to document proposed project changes including relatively minor modifications in the diversion channel alignment, elimination of containment levees and the diversion structure in the Comite River, addition of a drop structure in the diversion channel, and periodic maintenance dredging in the Comite River. EA#222 also evaluated modifications to the proposed mitigation plan which was revised to include the acquisition of almost 1,500 acres of land along the Comite River. A supplemental EA (#222-A) was prepared in December 2002, to assess the additional impacts and accompanying mitigation requirements associated with the construction of the Lilly Bayou Control Structure. The current evaluations, and associated NEPA (EA#426) and FWCA documents, are required to address recent changes to the previously approved 1,500-acre floodplain acquisition plan. A recent law passed by the State of Louisiana, specifically targeting this project, prevents the Corps of Engineers from expropriating property for the purpose of implementing the floodplain acquisition plan. The current plan involves the evaluation of three sites (including an expansion of the previously approved site within the Comite River floodplain) within which suitable properties could be acquired from willing sellers to accomplish the required compensatory mitigation.

This report contains a description of the existing fish and wildlife resources of the project area, discusses future with- and without-project habitat conditions, identifies fish and wildlife-related impacts (including anticipated benefits), and provides recommendations for the proposed project. This report supplements the Service's FWCA Reports that addressed impacts and mitigation

features associated with the construction and operation of the Comite River Diversion (submitted in 1990, 1995, and 2002). This document constitutes the report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). We provided copies of the draft report to the National Marine Fisheries Service (NMFS) and the Louisiana Department of Wildlife and Fisheries (LDWF); their comments (Appendix 1), if any, have been incorporated into this report.

DESCRIPTION OF THE STUDY AREA

All project features associated with the Comite River Diversion, including all areas currently under consideration as potential compensatory mitigation sites to offset impacts from construction and operation of that Diversion, are located in East Baton Rouge Parish, Louisiana. The parish is composed of about 455 square miles of land and 15 square miles of water, and is a mixture of developed and undeveloped land. Most development within the study area is associated with urban expansion from the two geographically largest and most densely populated towns in the vicinity, which are Zachary and Baker located along the northern and southern limits of the study area, respectively. Undeveloped land within the study area consists of a mosaic wetland and non-wetland forests, active pasture, and abandoned pasture (much of which has become colonized with Chinese tallow-tree which an exotic, invasive plant).

The study area consists of three proposed sites within which compensatory mitigation required from the construction and operation of the Comite River Diversion would be performed (Figure 1). Those sites are located within an area bounded by the Mississippi River to the west and the Comite River floodplain to the east; these are also the two main waterbodies in the general vicinity. The proposed mitigation sites are also bounded by Louisiana Highway 64 to the north, and Thomas Road and Comite Drive to the south.

All or segments of the Amite River, Comite River, Blind River, and Bayou Manchac occur within the project vicinity and are included in the Louisiana Natural and Scenic Rivers System (R.S. 56:1840, et seq.) which is administered by the LDWF. LDWF administers that system “for the purposes of preserving, protecting, developing, reclaiming, and enhancing the wilderness qualities, scenic beauties, and ecological regime of certain free-flowing streams or segments thereof.” Although they occur in the proposed project vicinity, those waterways are not expected to be negatively affected by the proposed diversion project. Alternatively, the Comite River may actually benefit from the implementation of the expanded Comite River Floodplain Mitigation option through the preservation, enhancement, and/or restoration of forested areas within its floodplain.

FISH AND WILDLIFE RESOURCES

Description of Habitats

Habitat types and landscape features in the study area primarily include wetland and non-wetland bottomland hardwood habitat, swamp, abandoned and active pasture, open water, and developed

areas. Much of historic hydrology of the study area has been impacted to some degree from urban expansion and associated infrastructure improvements such as roads and man-made drainage features (or alterations to existing/natural drainages).

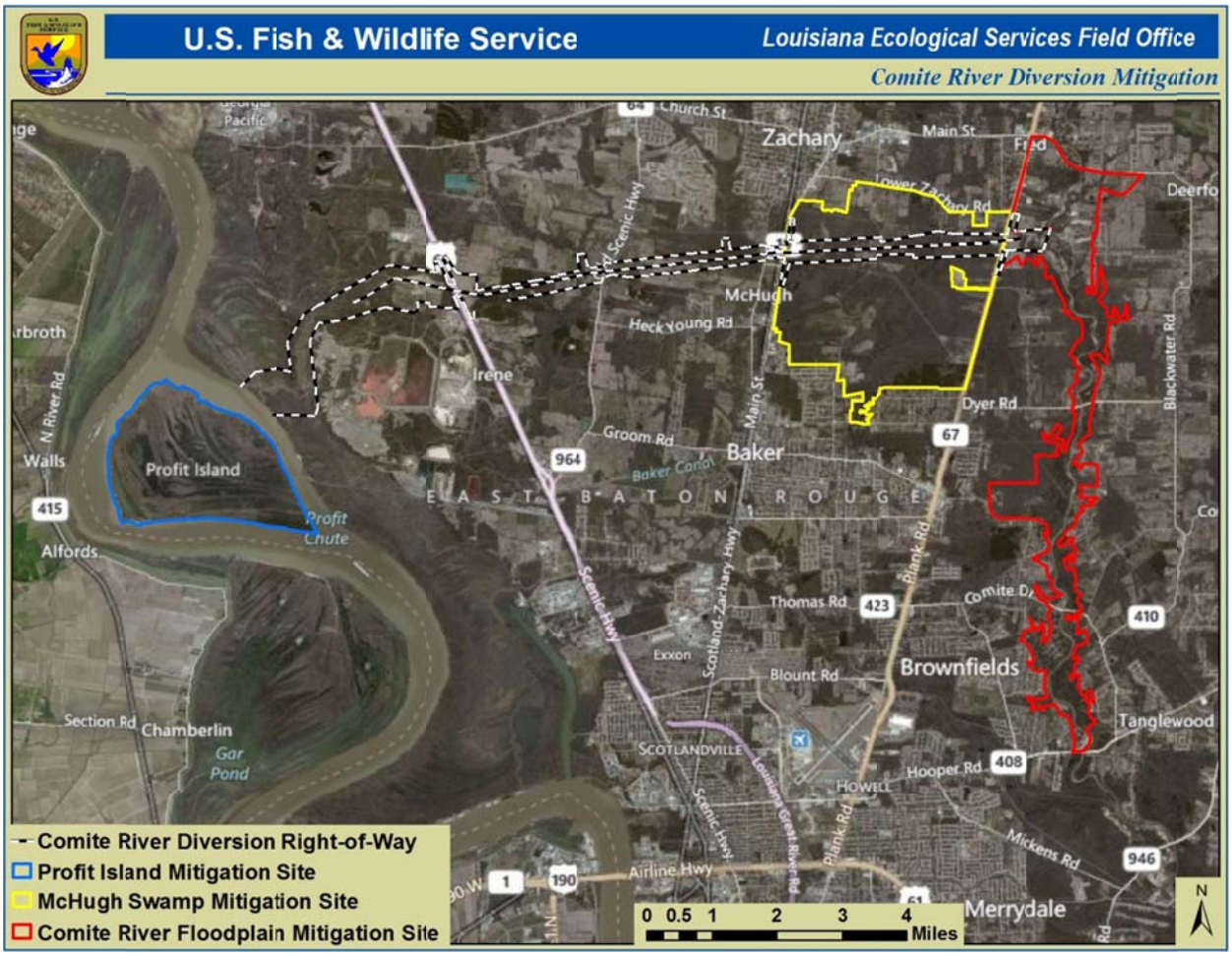


Figure 1. Comite River Diversion and Mitigation Study Area, East Baton Rouge Parish, Louisiana.

The study-area wetlands provide plant detritus to downstream coastal waters, thereby contributing to the production of commercially and recreationally important fishes and shellfishes. They also provide valuable water quality functions such as reduction of excessive dissolved nutrient levels, filtering of waterborne contaminants, and removal of suspended sediment.

Factors that may influence future fish and wildlife resource conditions in the study area include continued urban expansion with associated infrastructure and drainage improvements, silvicultural activity, and farming practices (especially abandonment or expansion of existing operations). Large-scale, future losses of bottomland hardwood wetlands within the study area

are not expected to occur due to current Clean Water Act regulations which should limit adverse impacts to those habitats. Impacts to study-area, upland hardwoods, however, would not be regulated or mitigated with the exception of impacts resulting from Corps projects as required by Section 906(b) of the Water Resources Development Act of 1986.

Forested Habitats

Forested habitats in the study area are divided into three major types; bottomland hardwood forests, Chinese tallow-tree stands, and cypress-tupelo swamps. Bottomland hardwood forests (both wetland and non-wetland) are found throughout the study area. The largest contiguous tracts of bottomland hardwoods remaining in this area occur on an island in the Mississippi River (Profit Island), within the floodplains of the Mississippi and Comite Rivers, and within a large depressional area southeast of the City of Zachary known as the McHugh Swamp. Dominant vegetation within those forests include American elm, sweetgum, water oak, willow oak, swamp chestnut oak, ironwood, Drummond red maple, cottonwood, box elder, black willow, and Chinese tallow-tree.

Large stands of Chinese tallow-tree, varying from less than 5 acres to nearly 100 acres in size, are also present in certain areas of the study area. These monotypic stands of invasive, exotic vegetation are highly effective in suppressing the natural regeneration of native vegetative species. It appears, from the Service's field investigation, that those sites are predominantly abandoned pastures where Chinese tallow-tree has successfully out-competed native hardwood species in colonizing these previously disturbed habitats.

Cypress-tupelo swamps were not encountered during the Service's field investigations, possibly because this habitat type is not targeted as part of the mitigation objectives. Relatively small patches of cypress-tupelo swamp likely occur, however, in low elevation, frequently flooded portions of the study area (such as the base floodplain of the Mississippi and Comite Rivers). Baldcypress and water tupelo are the dominant vegetation within this habitat type, however, Drummond red maple, green ash, and black willow also occur in these forests.

Scrub-Shrub Habitats

Scrub-shrub habitat is found in abandoned pastures and similar unmaintained areas, sites subject to severe and frequent flooding (as occurs on portions of Profit Island), and in early successional forested areas that have recently undergone a timber harvest. Most study-area scrub-shrub habitat is bordered by bottomland hardwoods or cleared/pasture areas. Typical scrub-shrub vegetation includes Chinese tallow-tree, wax myrtle, eastern baccharis, button-bush, black willow, water elm, and swamp privet.

Pasture

Pasture is found throughout the study area and exists in various stages of maintenance, from fully active and routinely maintained to complete and long-term abandonment. Maintained pastures are vegetated with a combination of agriculturally improved grasses; unmaintained pastures

typically succeed to scrub-shrub habitats (described above).

Open-Water Habitats

Open-water habitat within the study area consists of ponds, canals, ditches, and rivers. Ponds are both naturally occurring (most notably occurring on Profit Island) and man-made, and vary greatly in size and depth. The Mississippi and Comite Rivers are the two main waterbodies in the study area, though several other waterways occur in this area including White Bayou, Cypress Bayou, and Bayou Baton Rouge. Most of these natural waterways appear to have been previously impacted for drainage improvement, flood control, sand/gravel mining or other purposes. It is likely that the aquatic habitat value has been somewhat reduced in the most highly impacted areas.

Developed Areas

Developed portions of the study area include residential and commercial areas, and their accompanying infrastructure (roads, drainage, etc.). Those areas do not support significant wildlife use. Most of the development is located on higher elevations outside of the study area; however, some limited development encroaching into lower-elevation forested areas (particularly in the vicinity of the McHugh Swamp) was noted during the Service's field investigations. The results of the Service's development rate analysis suggest that an insignificant, and almost immeasurable, amount of forested habitat has been lost within the study area in recent years due to development (Figure 2).

Wildlife Resources

The study-area wetland and upland forests provide habitat for a variety of migratory game and non-game birds such as wood duck, little blue heron, snowy egret, great egret, prothonotary warbler, and Louisiana waterthrush. Those forests also support mammals such as mink, raccoon, opossum, fox squirrel, grey squirrel, swamp rabbit, and white-tailed deer, and amphibians such as the pig frog, bullfrog, leopard frog, cricket frog, and Gulf coast toad. Reptiles such as the American alligator, snapping turtle, eastern spiny softshell, red-eared slider, speckled kingsnake, broad-banded water snake, and western cottonmouth are also expected to occur in the study-area wetlands and waterbodies. Portions of the project area that are directly influenced by perennial waterways and that are frequently flooded during high water stages provide foraging and spawning habitat for various freshwater fishes and shellfishes (e.g., mosquito fish, spotted gar, bowfin, green sunfish, bluegill, warmouth, white and black crappie, largemouth bass, flathead and blue catfish, yellow bullhead, and red swamp crawfish).

Endangered and Threatened Species

On May 7, 2012, the Service concurred (via a signed stamp) with the Corps' determination that the proposed activities are not likely to adversely affect any of the listed or proposed threatened or endangered species (i.e., pallid sturgeon [*Scaphirhynchus albus*] and interior least tern [*Sterna antillarum*]) that were addressed in that correspondence exchange. The Service's concurrence is

based on information that indicates no known threatened or endangered species or their critical habitat occur within the study area, nor would they likely be impacted by the habitat improvement projects that are currently being proposed as part of the subject mitigation proposal. Therefore, no further consultation will be required unless there are changes in the scope or location of the project, or construction has not been initiated within one year of the date of the Service's signed stamp concurrence. If the project has not been initiated within one year, follow-up consultation should be accomplished with this office prior to making expenditures for construction. If the scope or location of the proposed work is changed, consultation should occur as soon as such changes are made.

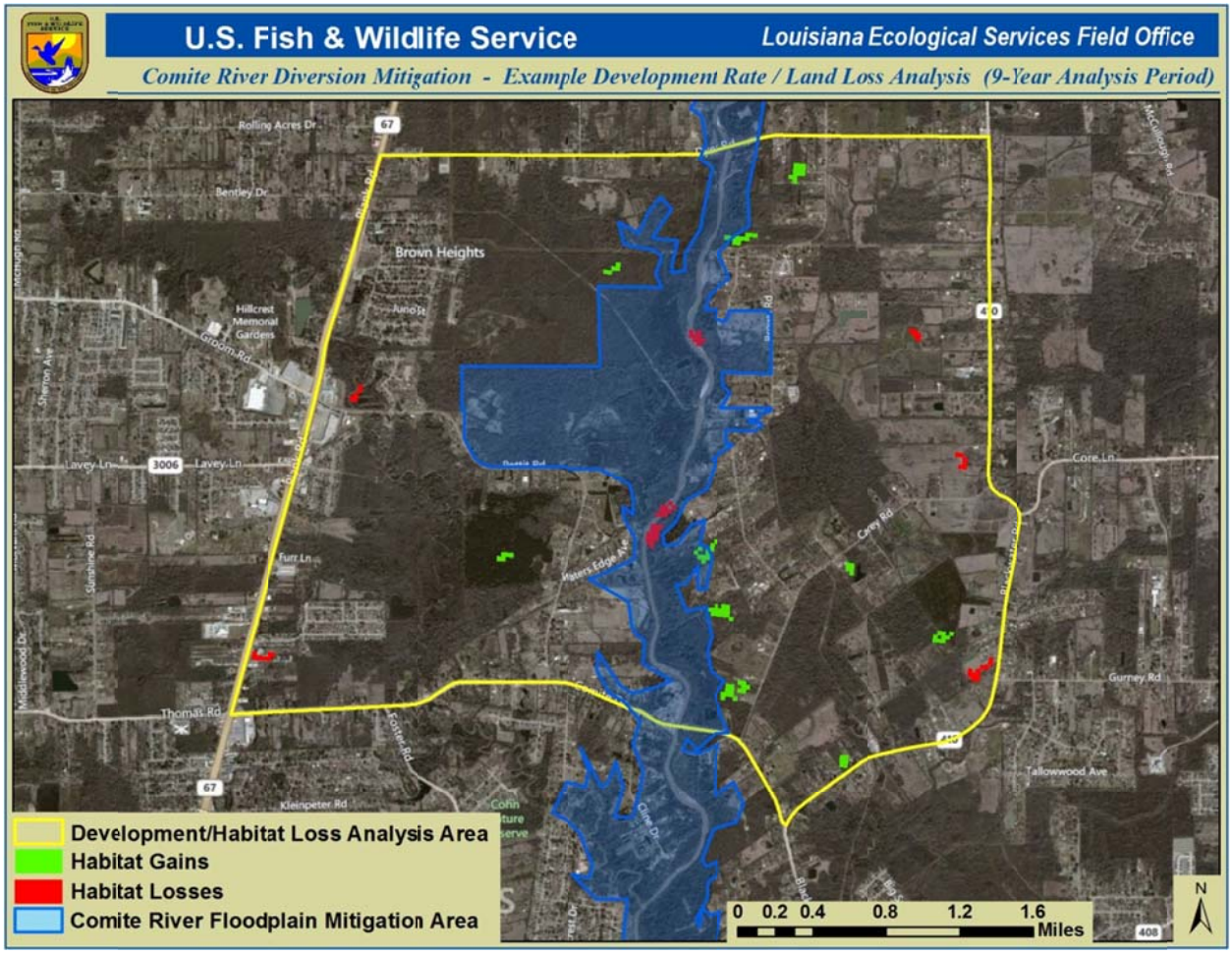


Figure 2. Example Graphic of Development Rate / Land Loss Analysis Results (this analysis zone occurs near the southern portions of the Comite River Floodplain Mitigation Area).

Protected Species

The Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.) and the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-

d) offer protection to many bird species within the project area including colonial nesting birds and bald eagles (*Haliaeetus leucocephalus*). Based on the Service's records, project-associated impacts to bald eagles and colonial nesting waterbirds are unlikely because of the distance between existing known colonies and nest sites and the proposed project activities. Such nest sites and colonies may be present, however, that are not currently listed in the Service's database. We, therefore, recommend that on-site contract personnel be informed of the need to identify bald eagle nest sites and waterbird nesting colonies, and to avoid affecting them during the breeding season. To minimize disturbance to colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present). If a bald eagle nest is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary and those results should be forwarded to this office.

Future Fish and Wildlife Resources

Under future without-management conditions, the proposed mitigation areas are predicted to remain in private ownership. Based on the results of the Service's development rate analysis, we expect a minimal (virtually unquantifiable), amount of forested habitat to be lost to development within the study area over the project life. It is anticipated, however, that without management, the forest quality of Profit Island (which is predominately young-aged cottonwood and box elder) would remain poor, and the future quality of previously impacted forests and abandoned pastures in McHugh Swamp and the Comite River Floodplain would be significantly reduced with the continued encroachment of invasive, exotic vegetation (i.e., Chinese tallow-tree. Persistence of those low-quality habitats reduces the potential carrying capacity of those sites for various species of migratory waterfowl and song birds, wading birds, reptiles, amphibians, furbearers, and various game mammals.

ALTERNATIVES UNDER CONSIDERATION

The goal of the mitigation plan is to provide for equal replacement of the habitat units lost due to construction and operation of the Comite River Diversion. The equal replacement compensation goal specifies that the gain of one habitat unit can be used to offset the loss of one habitat unit. There are currently four alternatives under consideration which would provide the necessary mitigation (individually, or in combination) to compensate for those impacts. A no-action alternative would not be implemented because it would fail to provide the required level of compensatory mitigation.

Proposed Actions

All of the proposed mitigation alternatives would re-establish, enhance, maintain, and protect bottomland hardwood habitat in a species diverse, sustainable state by restoring and maintaining unique functions, values, and services. The mitigation objectives would be to establish and maintain a high diversity of native hard and soft mast-producing trees and shrubs, maximize herbaceous and shrub-layer canopy cover while maintaining a semi-mature to mature bottomland hardwood timber stand. Because of the substantial quantity of mitigation that will be performed, a phased implementation plan may be preferred to a single, large-scale mitigation action.

Invasive Species Control

Proposed mitigation sites that are heavily colonized with Chinese tallow-tree must be mechanically cleared prior to the application of any chemical. Chemically treating Chinese tallow-tree stands via broad-scale aerial application of selective chemicals, prior to mechanical clearing, may prove largely unsuccessful due to the relatively uneven canopy structure, which would result in an uneven chemical application, leaving many midstory and understory stems completely untreated. In order to increase the success of the proposed Chinese tallow-tree eradication, the Service recommends taking the following sequence of actions (they are listed in chronological order):

1) Mechanically clear the site with a hydro-axe or similar equipment. Felled woody plants may be chipped on-site and left as a thin layer, which may aid in the control of Chinese tallow-tree regeneration. Woody debris may also be burned on-site or removed from the site and disposed at an approved/licensed facility.
2) Allow a minimum of 2 months (during the growing season) for root resprouting to occur.
3) Use a tractor with boom-sprayer, or a similarly effective method, to apply chemicals to the Chinese tallow-tree resprouts. Chemical treatment must occur in the late summer or fall, when plant resources are being transported to the roots; this increases the likelihood of a complete "root-kill." The acceptable chemical treatment period is June 1 through October 15, with the optimum period occurring September 1 through October 15. To ensure effectiveness, the treatment must occur before the leaves begin to change color for the autumn season.
4) Allow adequate time for seed germination/sprouting to occur (i.e., a second growing season). Most seeds that did not germinate during the first year of site preparation, should germinate during the second growing season. Chemically treat the site as described in "3" above.
5) Plant bare-root seedlings during the following dormant season (December 15 – March 15). This would allow a minimum of 2 months between the second chemical treatment and the planting of seedlings.

Hardwood Seedling Establishment

Native species of one-year-old bare-root seedlings will be planted to establish bottomland hardwood forests on the respective mitigation sites. According to official recommendations

from the Lower Mississippi Valley Joint Venture Management Board (in a December 28, 2011, memorandum), at least 435 trees per acre should be planted (10-foot spacing) to increase the likelihood of success of hardwood planting projects. In areas where significant risk factors may limit the success of hardwood forest establishment (e.g., areas of high flood risk or with substantial competition from invasive, exotic vegetation), higher planting densities should be employed (such as 8-foot spacing, or 681 trees per acre). Use of other reforestation techniques such as direct seeding or planting of larger trees would require a modification to the recommended spacing. Hardwood seedling species for each mitigation site should be selected based on a variety of factors including site elevation, area hydrology, species flooding tolerance, and soil type. A reasonable attempt should be made to select a diverse group of species for planting (preferably no less than 7 species per mitigation site), though it is acknowledged that nursery stock and annual variations in seedling availability may dictate the planting diversity on the proposed mitigation site(s). Consistent with Natural Resources Conservation Service standards (NRCS, Code 612, "Establishment Specifications - Tree/Shrub Establishment"), one-year-old seedlings should have a 3/8"- diameter root collar, 12" – 18" stem height plus 8" – 10" root length, and 4 - 8 lateral roots.

Hydrologic Restoration and Enhancement

Specific measures for restoring and enhancing hydrology will vary among and within the proposed mitigation sites. Hydrologic enhancement on the Profit Island Mitigation Site may include repairs to, and the installation of flap-gated culverts within an existing road/levee along the southeast part of Profit Island. Such measures would reduce the duration of flooding on that portion of the island by delaying the onset of flooding as the Mississippi River floodwaters rise and by facilitating the evacuation of excess water from the island as those floodwaters recede. Probable hydrologic restoration and enhancement measures for the McHugh Swamp and Comite River Floodplain Mitigation Sites have not been specifically identified but may include removal of small spoil banks and earthen roads/trails where they have been determined to impede natural hydrology, and plugging or filling of small artificial drainage features.

Stewardship/Access Restriction

Mitigation development will also include activities that are not directly associated with the functional improvement of habitat, but would protect the mitigation lands and provide features necessary for adequate management. Restriction of access, for example, would facilitate the development of a successful mitigation project. Certain uses and actions would be compatible with the proposed mitigation, such as the installation/construction of trash bins, designated foot trails, informational/educational signage, elevated board walks, wildlife viewing platforms, and gravel parking in designated access points. Other types of activities that may be expected to threaten conservation goals should be identified in a long-term management plan and may include such activities as ATV riding, mountain biking, logging, land clearing, and excavation. Property boundary signs should be posted and maintained especially at access points, and fencing should occur particularly at strategic locations to prevent ATV access. Stewardship should include periodic surveillance to protect the area from vandalism and other disturbances.

EXISTING MITIGATION BANKS

General Description

Section 2036(c)(1) of the Water Resources Development Act (WRDA) of 2007, Public Law 110-114, specifically directs the USACE to consider the use of commercial mitigation banks to fulfill the mitigation responsibilities of Civil Works projects. The Corps has, therefore, investigated the use of mitigation banks within appropriate, applicable service areas. Applicability of service areas is determined by their location within a specific hydrologic unit relative the Comite River Diversion impact areas; those units were developed by the U.S. Geological Survey based on river basin areas of hydrologic influence. Virtually all of the direct impacts associated with the construction of the Comite River Diversion occur within the 8070201 (Bayou Sara - Thompson) and 8070202 (Amite) cataloging units. Most of the mitigation banks in the vicinity of those cataloging units that are considered to be within applicable service areas, and that currently have bottomland hardwood credits available for purchase, are shown in Table 1. Wetland mitigation banks within cataloging unit 08070100 (Lower Mississippi-Baton Rouge), however, appear to have been removed from consideration even though the Profit Island Mitigation Site, which also occurs within that cataloging unit, has been specifically identified as potentially eligible for compensatory mitigation use. The banks shown in Table 1 are currently under consideration as potential sites to perform necessary mitigation associated with Comite River Diversion impacts. We recommend that any mitigation banks within cataloging unit 08070100, with available bottomland hardwood credits, be added to this table for equal consideration.

Table 1. Wetland Mitigation Banks Currently Under Consideration for Comite River Diversion Mitigation.

Mitigation Bank Name	**HUC[1]**	**Credits[2]**
Bayou Conway	08070204	119.3
Bayou Manchac – Oakley	08070202	211.8
Comite Properties – Tract A	08070202	53.4
Comite Properties – Tract B	08070202	56.7
Cypress Plantation Mitigation Bank	08070201	13.7
Gum Swamp	08070203	314.0
Laurel Oak – Enhancement	08070203	27.2
Ponder Land Company	08070203	49.6
Spanish Lake – Restoration Unit I	08070202	470.5
Zachary Mitigation Bank – Comite Flats I Site	08070202	27.3
Zachary Mitigation Bank – Comite Flats II Site	08070202	22.2
Zachary Mitigation Bank – Copper Mill Bayou Site	08070202	13.5

[1]*Hydrologic unit codes as defined by the U.S. Geological Survey.*
[2]*Bottomland hardwood credits available as of April 27, 2012.*

Specific Action

Mitigation actions, approved by an interagency team of natural resource management agencies, have already taken place, or are on-going, at all of these approved mitigation banks. The only action required to use an on-going mitigation project to offset Comite River Diversion impacts is for a sufficient quantity of credits to be purchased.

McHugh Swamp

General Description

The McHugh Swamp is a predominately forested area that straddles the Comite River Diversion right-of-way (Figure 3). According to the Service's GIS-based calculations, though a portion of the McHugh Swamp would be acquired and used for the construction of the Comite River Diversion, approximately 3,343 acres of undeveloped land would remain available for mitigation. Based on the Service's field investigations of the McHugh Swamp, the area consists

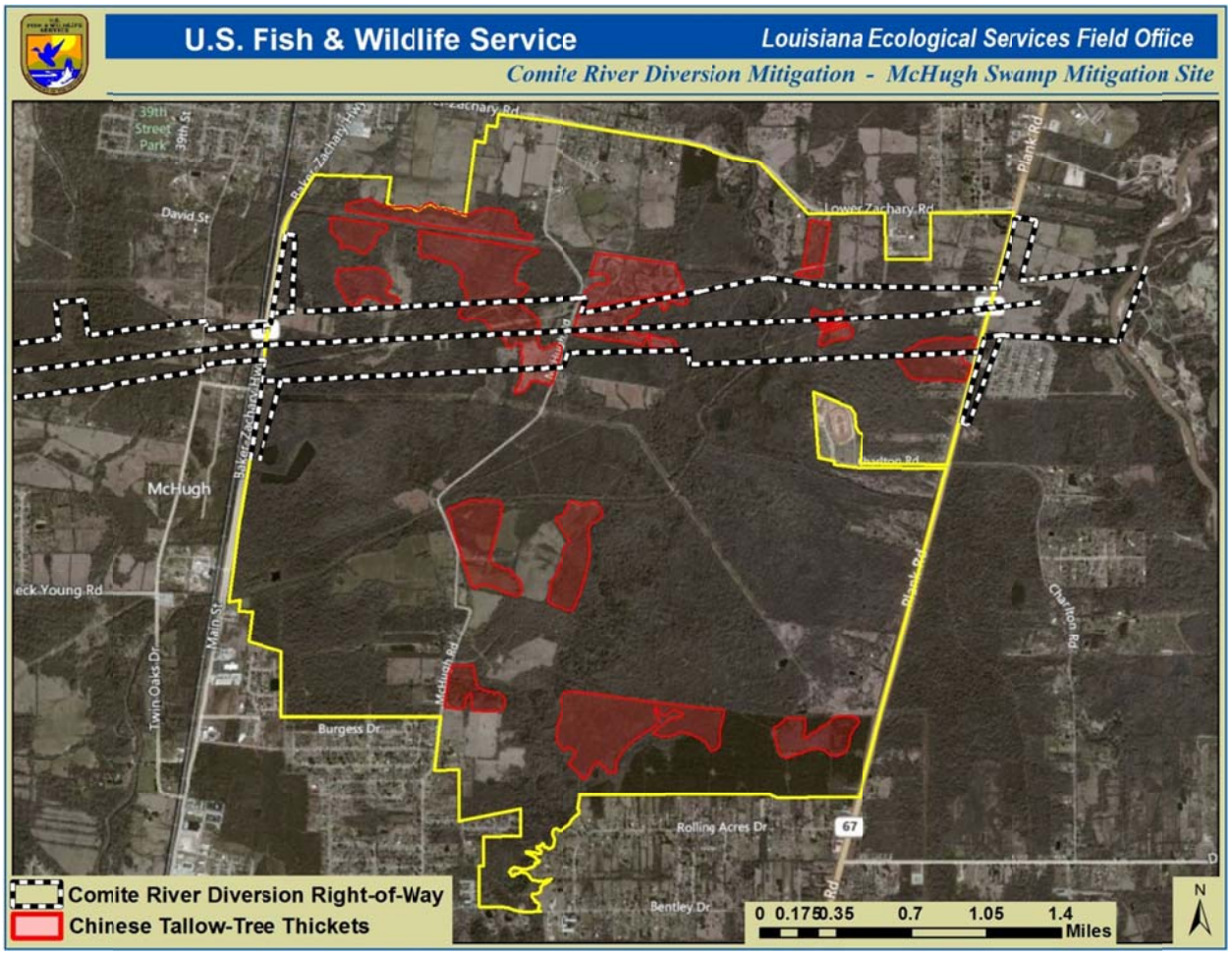


Figure 3. McHugh Swamp Mitigation Site.

primarily of bottomland hardwood forests, with intermittent pastures and Chinese tallow-tree thickets. The Chinese tallow-tree is an invasive exotic, and virtually all such thickets currently occur in previously abandoned pasture.

Specific Action

Mitigation actions in the McHugh Swamp would include removal of exotic vegetation and replanting those areas with desirable, native, hardwood species, with similar reforestation of existing fields and pastures. Existing, moderate- to high-quality, mature, bottomland hardwoods would be preserved via fee title acquisition and/or conservation easement. According to the Service's GIS-based analysis, approximately 484 acres of existing pasture, 366 acres of Chinese tallow-tree thickets, and 160 acres of pine plantation would be restored to bottomland hardwood forest as described above. Pine plantation restoration would involve mechanical clearing and replanting with appropriate hardwood species. Most of the remaining undeveloped lands in the McHugh Swamp (approximately 2,300 acres) consists of bottomland hardwood forests of varying species composition, age, and quality. Some of those areas have a significant Chinese tallow-tree component in the overstory that would require selective removal and likely replanting with appropriate hardwood species. Other areas are virtually void of Chinese tallow-tree and would only require preservation via fee title acquisition and/or conservation easement. Depending upon which sites within the McHugh Swamp, if any, are selected for mitigation, there may be a potential to perform hydrologic restoration associated with existing man-made drainages.

PROFIT ISLAND

General Description

Profit Island is an approximately 2,318-acre island in the Mississippi River that was formed when a straight channel, now known as Profit Island Chute, severed a bend of the river (Figure 4). The island contains a mixture of forests, fields, and unvegetated sloughs and ponds. A vast majority of the forested land on Profit Island has been negatively impacted by historic silvicultural practices which involved a virtual complete removal of all hardwood timber and a replanting of cottonwood in a plantation-style manner. Current forest composition reflects those management practices as most areas are dominated by cottonwood, box elder, and American sycamore. The area is subject to frequent riverine flooding, and the Service's hydrology analysis suggests that the more flood-prone areas would not likely support a successful bottomland hardwood restoration project. For the purposes of developing a restoration plan, the island was divided into three zones based upon the Service's evaluation of 20 years of Mississippi River gage data. Island elevations (determined from Light Detection and Ranging Data [LiDAR]), the previously mentioned gage data, and bottomland hardwood flood tolerances (determined from several published and unpublished studies) were used to delineate those zones according to targeted flood frequency and duration limits. The result of the Service's analysis indicates that there is approximately 500 acres in Zone 1 (highest elevations), 620 acres in Zone 2 (middle

elevations), and 1,200 acres in Zone 3 (lowest elevations) that would be suitable for mitigation. Only preservation credit would be available in Zone 3 habitats due to the high-flood-risk nature of those areas.

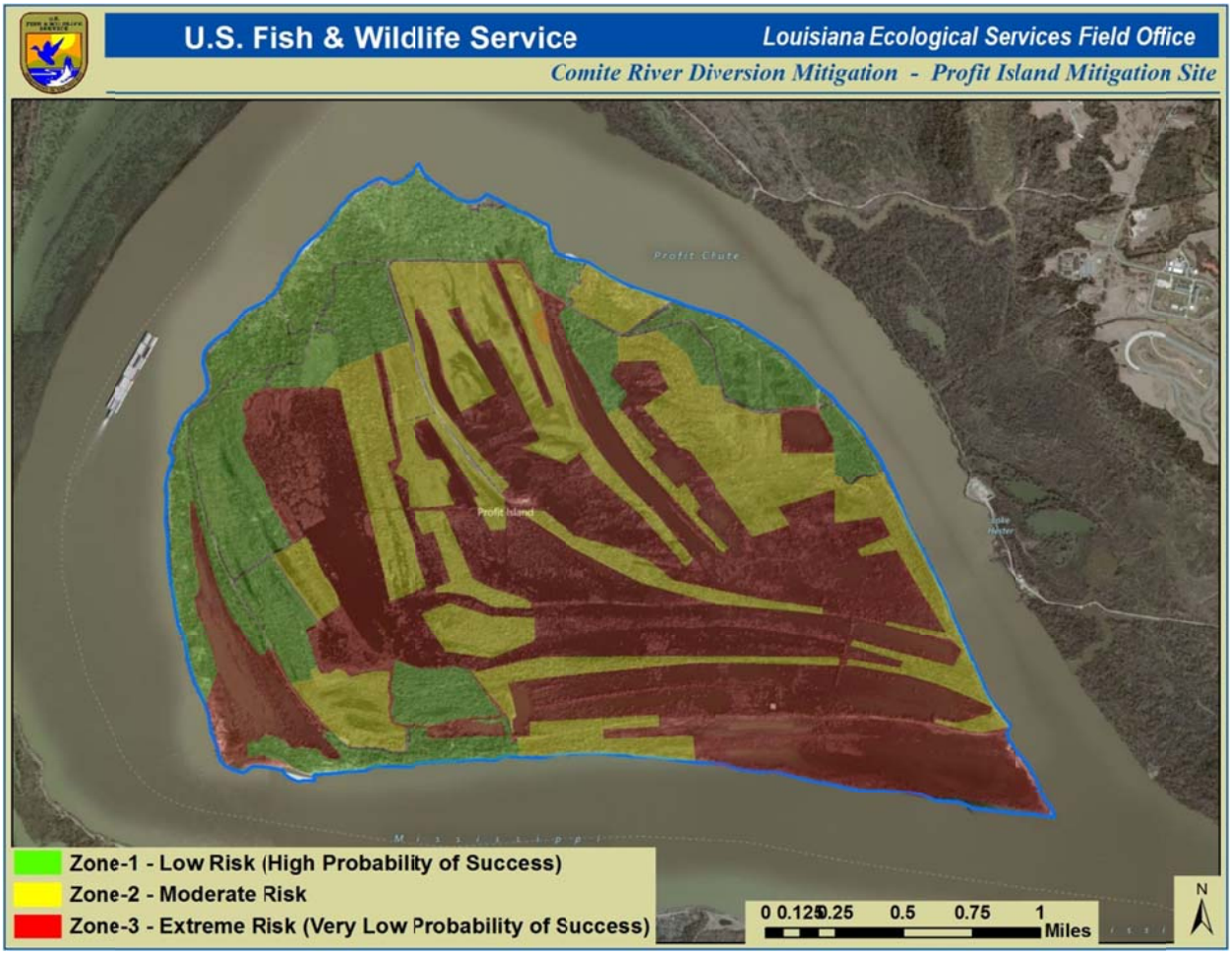


Figure 4. Profit Island Mitigation Site.

Specific Action

Mitigation actions on Profit Island would include removal of light-seeded overstory species and replanting of those areas with desirable, native, hardwood species (predominately hard-mast producers), with similar reforestation of existing fields. Extremely flood-prone areas (Zone 3) would be preserved via fee title acquisition and/or conservation easement. According to the Service's GIS-based analysis, approximately 135 acres of an existing field and 857 acres of cottonwood-dominated forests would be restored to bottomland hardwood forest as described above. Approximately, 116 acres of low-quality forest would be enhanced through selective tree removal and partial replanting with desirable bottomland hardwood species. The remaining 1,200 acres of forest, fields, and open water would be protected via fee title acquisition and/or

conservation easement. Hydrology enhancement on the southeast portion of the island is also possible via the installation of a more efficient water-control structure in an existing elevated road/levee (repairs to existing breaches in that road/levee would also be necessary). Performing that action should reduce the flood duration on a portion of the island, though the precise benefit area has not been conclusively determined.

COMITE RIVER FLOODPLAIN

General Description

The Comite River Floodplain mitigation area is an expansion of the previously approved 1,500-acre floodplain acquisition plan (Figure 5). The current boundary contains approximately 2,895 acres of land that appears suitable for mitigation. Within that boundary, approximately 835 acres of land have been directly investigated for restoration, enhancement, and preservation opportunities. Based on the Service's field investigations and aerial photography interpretation

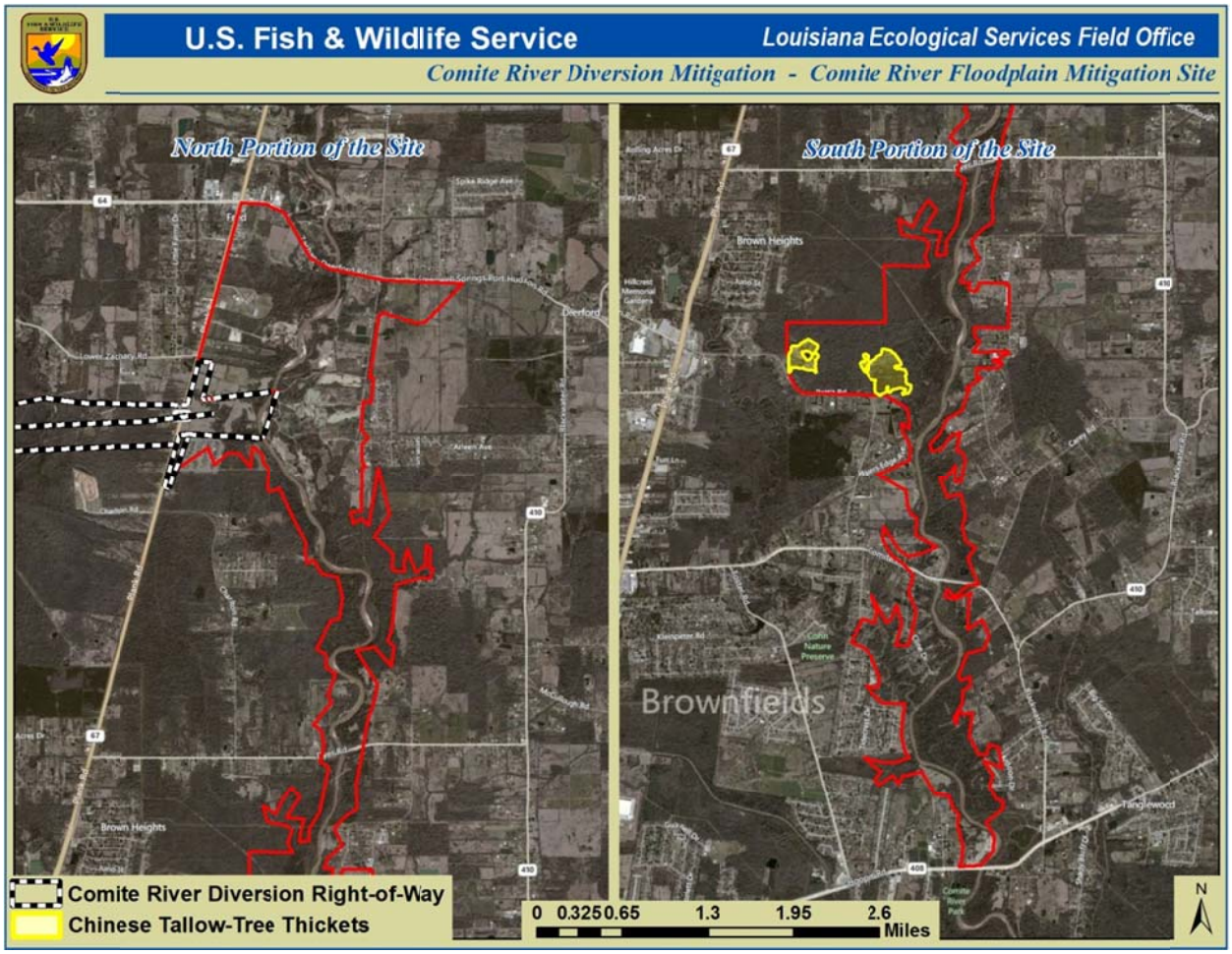


Figure 5. Comite River Floodplain Mitigation Site.

of the Comite River Floodplain, the area consists primarily of bottomland hardwood forests, intermittent pastures, Chinese tallow-tree thickets (occurring in previously abandoned pasture), and on-going sand and gravel mining operations.

Specific Action

Mitigation actions in the Comite River Floodplain would include removal of exotic vegetation and replanting those areas with desirable, native, hardwood species, with similar reforestation of existing fields and pastures. Existing moderate- to high-quality, mature, bottomland hardwoods would be preserved via fee title acquisition and/or conservation easement. Existing sand/gravel mines would be restored by reducing extreme contours, importing topsoil, and reforesting denuded areas with native hardwood seedlings. According to the Service's GIS-based analysis, approximately 457 acres of existing pasture, 53 acres of Chinese tallow-tree thickets, and 308 acres of sand/gravel mines would be restored to bottomland hardwood forest as described above. The remaining areas consist of moderate- to high-quality bottomland hardwood forest that would only require preservation via fee title acquisition and/or conservation easement.

EVALUATION METHOD

Benefits derived from the various mitigation alternatives were quantified by acreage and habitat quality (i.e., average annual habitat units or AAHUs) by the Service and are presented in Table 2. The Service used the newly certified Bottomland Hardwood Community Model - Wetland Value Assessment Methodology (WVA) to quantify those projected benefits. Initial assessments of impacts from the construction and operation of the Comite River Diversion, however, were performed using the Service's Habitat Evaluation Procedures (HEP). Yet, the WVA is similar to the HEP in that habitat quality and quantity (acreage) are measured for baseline conditions and predicted for future without-project and future with-project conditions. For each habitat type, the WVA defines an assemblage of variables considered important to the suitability of an area to support a diversity of fish and wildlife species. As with HEP, the WVA provides a quantitative estimate of project-related impacts to fish and wildlife resources; there is also an overall consistency between the two models regarding many of the input variables, value scales, general formula structure, and output format. For these reasons, we have determined that the HEP-calculated impact credits are congruent to the WVA-calculated mitigation credits, deeming a recalculation of impact credits using the certified WVA unnecessary. Further explanation of how impacts/benefits are assessed with the WVA and an explanation of the assumptions affecting habitat suitability (i.e., quality) index (HSI) values for each site and each target year are available for review at the Service's Lafayette, Louisiana, Field Office, along with the details of the Service's field data collection and hydrology analyses.

PROJECT BENEFITS

Based on previous habitat analysis, it was determined that 704.6 AAHUs of mitigation would be required to offset all impacts from the construction and operation of the Comite River Diversion. To date, approximately 75 acres of land have been acquired for the purposes of performing compensatory mitigation, of which 40 acres have been planted with site-appropriate, native, bottomland hardwood seedlings. It is estimated that those actions achieved 33.15 AAHUs of mitigation, leaving a total remaining mitigation requirement of 671.45 AAHUs. A summary of the Service's benefit analysis for each of the proposed mitigation sites is shown in Table 2.

MITIGATION SITE	BENEFITS BY MITIGATION TYPE							
	Restoration		Enhancement		Preservation		TOTALS BY SITE	
	Acres	**AAHUs**	**Acres**	**AAHUs**	**Acres**	**AAHUs**	**Acres**	**AAHUs**
Existing Mitigation Banks	-	-	-	-	-	-	-	**1365.5**
McHugh Swamp	1203.4	457.4	0	0	2139.3	341.8	**3342.6**	**799.2**
Profit Island	992.0	263.5	115.6	0	1210.4	162.7	**2318.0**	**426.2**
Comite River Floodplain	683.3	326.8	0	0	2211.9	380.5	**2895.2**	**707.3**
TOTALS FOR NON-BANK / PROJECT-SPECIFIC MITIGATION SITES	**2878.7**	**1047.7**	**115.6**	**0**	**5561.6**	**885.0**	**8555.8**	**1932.7**

Table 2. Estimated Benefits of Mitigation Alternatives.

FISH AND WILDLIFE CONSERVATION AND MITIGATION MEASURES

The President's Council on Environmental Quality defined the term "mitigation" in the National Environmental Policy Act regulations to include:

(a) avoiding the impact altogether by not taking a certain action or parts of an action;
(b) minimizing impacts by limiting the degree or magnitude of the action and its implementation;
(c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
(d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
(e) compensating for the impact by replacing or providing substitute resources or environments.

The Service supports and adopts this definition of mitigation and considers its specific elements to represent the desirable sequence of steps in the mitigation planning process. The Service's Mitigation Policy (Federal Register, Volume 46, No. 15, January 23, 1981) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values involved. Considering the value of the bottomland hardwood wetlands of the proposed project area and their relative scarcity, the Service typically designates them as Resource Category 2 habitats, the mitigation for which is no net loss of in-kind habitat value. Hydrologically altered and degraded (i.e., non-wetland) bottomland hardwood forests that may be impacted, however, are designated as Resource Category 3 due to their reduced value to wildlife, fisheries, and lost/degraded wetland functions. The mitigation goal for Resource Category 3 habitats is no net loss of habitat value with in-kind mitigation preferred. The selected compensatory mitigation project(s) should fully replace the habitat values lost (which should be "in-kind" compensation for impacts to wetland and upland forests) from the construction and operation of the Comite River Diversion.

On April 10, 2008, the U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) issued regulations governing compensatory mitigation for activities authorized by Department of the Army permits (Federal Register, Vol. 73, No. 70). Those regulations identified a 12-step process for developing a mitigation plan. That 12-step process and the Service's specific guidance and recommendations regarding mitigation planning can be found in the appendix to this document. The Corps' selection of specific mitigation sites and all aspects of mitigation planning, including an alternatives analysis for techniques, locations, design, and means to comply with the 12-step planning process, is currently being, and should continue to be, coordinated with the Service and all interested Federal and State natural resource agencies.

SERVICE POSITION AND RECOMMENDATIONS

The Service does not object to modifications to the previously approved 1,500-acre floodplain acquisition mitigation plan to include the evaluation of additional sites and existing wetland mitigation banks provided that the following fish and wildlife conservation recommendations are incorporated into future project planning and implementation:

1) The selected mitigation project(s) is consistent with all of the recommendations provided in the text of this report (particularly in regard to eradication of invasive species, establishment of native bottomland hardwoods, and property stewardship including restriction of access).

2) The selected mitigation project(s) shall fully compensate for all unavoidable losses of wetland habitat and upland hardwoods caused by features and activities associated with the construction and operation of the Comite River Diversion.

3) All mitigation lands should be purchased in fee title if possible, and a perpetual conservation easement shall be acquired for any mitigation lands to preclude

incompatible land uses and to ensure that the anticipated mitigation values are maintained over the project life. If that is not possible, a General Plan should be completed by the Corps, the Service, and the pertinent land managing agency (charged with managing the mitigation site) in accordance with Section 663(b) of the FWCA.

4) Mitigation site(s) shall be selected on the basis of their ability to compensate for fish and wildlife habitat losses associated the construction and operation of the Comite River Diversion. Sites that satisfy this primary criterion shall be advanced in the evaluation process and assessed with other factors including: proximity to the impact site and watershed, potential limitations to mitigation success, contiguity to larger forested tracts, and overall size of the mitigation site. Sites that are relatively small and/or isolated, and/or that are subject to influences beyond management control which could severely jeopardize mitigation project success, shall not be selected for compensatory mitigation for Comite River Diversion impacts. The Corps, the Service, and other pertinent natural resource management agencies shall cooperatively assess the severity and potential success implications of such factors for respective mitigation sites, and determine whether any such sites shall be removed from further consideration as a result.

5) Costs for development, maintenance, and monitoring of mitigation lands shall be allocated as a project "first cost" in future project funding estimates and requests.

6) A detailed mitigation implementation, management, and monitoring plan shall be developed by the Corps, in coordination with the Service and other pertinent natural resource management agencies, for all restoration, enhancement, or preservation activities developed to compensate for fish and wildlife habitat losses associated with the construction and operation of the Comite River Diversion. Individual site-specific plans shall be tiered from that generalized plan, as necessary, based on a cooperative decision/effort by the Corps, the Service, and other pertinent natural resource management agencies.

7) The Corps shall not transfer management responsibilities for any mitigation project to the local non-Federal cost-share sponsor, until the near-term success of such a project can be reasonably demonstrated (i.e., no sooner than the end of the fifth growing season after the initial planting of seedlings for a restoration or enhancement mitigation project). The Corps and the local non-Federal sponsor shall also be responsible (documented in the cost share agreement) for the purchase and planting of supplemental seedlings, or for other supplies and actions, necessary to attain success criteria until such time as long-term ecological success can be reasonably assured.

8) The Corps and local sponsor shall develop a written instrument that details the responsibility for each party regarding long-term operation and maintenance, with associated cost estimates, for any/all mitigation project(s).

If the local project-sponsor is unable to fulfill the financial obligations associated with long-term operation and maintenance of the mitigation project(s), then the Corps shall provide the necessary funding to ensure that those obligations are met on behalf of the public interest.

9) Reports documenting the implementation, maintenance, and success of the mitigation project shall be prepared at 1, 2, 5, 10, 15, and 25 years following initial project implementation, and shall be provided to the Service and other pertinent natural resource management agencies for review and comment.

10) Any reasonably foreseeable future management activities and/or proposed changes to the proposed mitigation site locations, features, or management plans shall be coordinated in advance with the Service and other pertinent natural resource management agencies.

11) If a proposed project feature is changed significantly or is not implemented within one year of the date of the Service's response to your "not likely to affect federally listed species" determination letter (which was provided via the Service's May 7, 2012, "stamped" concurrence), we recommend that the Corps reinitiate Endangered Species Act coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

12) On-site contract personnel shall be informed of the need to identify bald eagle nest sites and waterbird nesting colonies, and to avoid affecting them during the breeding season.

    a. To minimize disturbance to colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present).

    b. If a bald eagle nest is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary and those results should be forwarded to this office.

13) Forest clearing that is associated with certain proposed mitigation features shall be conducted during the fall or winter, when practicable, to minimize impacts to nesting migratory birds.

Appendix 1

AGENCY COMMENTS ON DRAFT FISH AND WILDLIFE COORDINATION ACT REPORT

RECEIVED
JUN 18 2012
FISH & WLDL. SERV
LAFAYETTE, LA.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue, South
St. Petersburg, Florida 33701

June 15, 2012 F/SER46/RH:jk
225/389-0508

Mr. Jeffrey D. Weller, Supervisor
Louisiana Field Office
U.S. Fish and Wildlife Service
646 Cajundome Blvd, Suite 400
Lafayette, Louisiana 70506

Dear Mr. Weller:

NOAA's National Marine Fisheries Service (NMFS) has received the draft Fish and Wildlife Coordination Act Report (Report) for the proposed supplemental mitigation plan for the Comite River Diversion Project in East Baton Rouge Parish, Louisiana. The Report evaluates the use of existing mitigation banks and three separate projects to provide mitigation sufficient to offset 704 average annual habitat units (AAHUs) of impact caused by construction and operation of the Comite River Diversion.

The Report describes fish and wildlife resources in the project area and quantifies AAHUs that would be available from a variety of mitigation alternatives. Given the project impacts are to habitats that are not tidally influenced and do not support marine fishery resources, NMFS has no comments to provide on the resources or fish and wildlife conservation measures described in the Report.

We appreciate the opportunity to review and comment on this Report.

Sincerely,

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

c:
F/SER46, Swafford
Files

BOBBY JINDAL
GOVERNOR

State of Louisiana

RECEIVED
JUL 06 2012
FISH & WLDL. SERV.
LAFAYETTE, LA.

ROBERT J. BARHAM
SECRETARY

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

JIMMY L. ANTHONY
ASSISTANT SECRETARY

June 29, 2012

Mr. Jeffrey D. Weller, Supervisor
U.S. Fish and Wildlife Service
646 Cajundome Blvd.
Suite 400
Lafayette, LA 70506

RE: Draft Fish and Wildlife Coordination Act Report
Comite River Diversion - Supplemental Mitigation Options

Dear Mr. Weller:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the U.S. Fish and Wildlife Service's (USFWS) draft Fish and Wildlife Coordination Act Report (FWCAR) for the Comite River Diversion, Supplemental Mitigation Options. Based upon this review, the following has been determined:

Like USFWS, LDWF does not object to modifications to the previously approved 1,500-acre floodplain acquisition mitigation plan.

LDWF requests that USFWS consider incorporating the following information in the Introduction (p 1-2) of the FWCAR:

> *All or segments of the Amite River, Comite River, Blind River and Bayou Manchac, streams identified within this FWCAR, are included in the Louisiana Natural and Scenic Rivers System (R.S. 56:1840, et seq.) and administered by the Louisiana Department of Wildlife and Fisheries (LDWF). LDWF administers the system "for the purposes of preserving, protecting, developing, reclaiming, and enhancing the wilderness qualities, scenic beauties, and ecological regime of certain free-flowing streams or segments thereof."*

P2, ¶3, S4: LDWF agrees that none of the proposed mitigation alternatives would *negatively affect* the Comite River, a state-designated scenic river. However, the Comite River Floodplain mitigation option will *directly affect* (i.e., directly benefit) the Comite River by preserving, restoring and/or enhancing forested areas immediately adjacent to, or within the floodplain of, the Comite River. This should be acknowledged.

The Proposed Actions section (p 7-9) describes three actions for accomplishing mitigation objectives: (1) Invasive Species Control, (2) Hardwood Seedling Establishment, and (3) Stewardship/Access Restriction. This section does not address hydrologic restoration, an action

that may be employed, even if on a small scale, to provide adequate and appropriate mitigation. LDWF recommends that basic hydrologic restoration actions, such as eliminating man-made impediments to surface water flow (e.g., spoil banks, ditches, roads), be briefly discussed.

The FWCAR considers only those existing mitigation banks (p 9-10) that are *located within* the U.S. Geological Survey (USGS) hydrologic units where direct project impacts occur (i.e., USGS hydrologic unit code 08070201 and 08070202). However, the FWCAR considers mitigating project impacts at Profit Island which is *located outside* the hydrologic units where direct project impacts occur. If New Orleans District is going to consider "out-of-basin" mitigation options, such as Profit Island, then mitigation banks under consideration should not be limited to those only located "in-basin." One solution may be to expand the existing pool of mitigation banks to include all those located within the subregion (i.e., USGS hydrologic unit code 0807), which also includes Profit Island. Otherwise, it seems unfair to limit the pool of mitigation banks in the manner proposed.

LDWF agrees with the Service Position and Recommendations presented on pages 16-18.

The Mitigation Guidance and Recommendations found in the Appendix (p 19) state that "the Service encourages mitigating for impacts to wetlands within the same watershed as the impacts occurred." How does USFWS define the watershed boundary for Comite River Diversion project impacts and associated wetland mitigation? This is not clear in the FWCAR.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this draft FWCAR. Please do not hesitate to contact Kyle Balkum at 225-765-2819 should you need further assistance.

Sincerely,

Jimmy L. Anthony
Assistant Secretary

kfb

Appendix 2

MITIGATION GUIDANCE AND RECOMMENDATIONS

On April 10, 2008, the U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) issued regulations governing compensatory mitigation for activities authorized by Department of the Army permits (Federal Register, Vol. 73, No. 70). According to the Federal Register, those regulations establish performance standards and criteria for the use of permittee-responsible compensatory mitigation, mitigation banks, and in-lieu programs to improve the quality and success of compensatory mitigation projects. The following summary outline generally describes the process of developing a mitigation plan as outlined in those regulations (see the Federal Register for a detailed description of each step).

1. Objectives: a description of the resource type(s) and amount(s) that would be provided as mitigation, the method of compensation, and the manner in which the resource functions of the compensatory mitigation project would address the needs of the geographic area of interest.
2. Site Selection: a description of the factors considered during the site selection process.
3. Site Protection Instrument: a description of the legal arrangements and instrument that would be used to ensure long-term protection of the compensatory mitigation project site.
4. Baseline Information: a description of the ecological characteristics of the proposed compensatory mitigation project site.
5. Determination of Credits: a description of the number of credits to be provided, including a rationale for that determination.
6. Mitigation Work Plan: detailed written specifications and work descriptions for the compensatory mitigation project.
7. Maintenance Plan: a description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.
8. Performance Standards: ecologically based standards that will be used to determine whether the compensatory mitigation project is achieving its objective.
9. Monitoring Requirements: a description of parameters to be monitored in order to determine if the mitigation project is on track for achieving its performance standards and if adaptive management is needed.
10. Long-term Management Plan: a description of the manner in which the compensatory mitigation project will be managed after the performance standards have been achieved to ensure the long-term sustainability of the resource.
11. Adaptive Management Plan: a management strategy to address unforeseen changes in site conditions or other mitigation project components.
12. Financial Assurances: a description of the financial assurances that would be provided and how they are sufficient to ensure a high level of confidence that the mitigation project will be successfully completed in accordance with its performance standards.

In addition to mitigating by Resource Category, the Service encourages mitigating for impacts to wetlands within the same watershed as the impacts occurred (i.e., the Amite River Basin). The

goal of the mitigation plan is to provide for equal replacement of the habitat units lost due construction and operation of the Comite River Diversion. The equal replacement compensation goal specifies that the gain of one habitat unit can be used to offset the loss of one habitat unit. Achieving this goal would re-establish, maintain, and protect bottomland hardwood habitats (wet and non-wet) as species diverse, sustainable habitats by restoring/maintaining unique functions, values, and services. For example, the objectives of the mitigation measures for bottomland hardwood forest would be to establish and maintain a high diversity of native mast- and fruit-producing trees and shrubs, maximize herbaceous and shrub-layer canopy cover, while maintaining a semi-mature to mature forest.

Mitigation development would also include activities designed to protect the mitigation lands and to provide features necessary for adequate management. Such activities would include but are not limited to controlling access, defining boundaries, protection of surface rights, and stewardship. Access to the mitigation site should be restricted to ensure that the development of the mitigation site is successful. In order to post the property and control access, surveying and establishing property boundaries would be required. This information would be used for the location and posting of perimeter boundary signs. Fencing along with gates could be employed to control access. Stewardship would include surveillance to protect the area from vandalism and other disturbances by maintaining a regularly seen, physical presence by staff in the area. All of the above tasks are considered to be a single management increment. The above measures (e.g. fence/signage repair and replacement, stewardship) would also be included as operational and maintenance measures over the project life.

BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

JUN 15 2012

U.S. Army Corps of Engineers- New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

Attention: Danielle Tammaso

RE: Water Quality Certification (WQC 120529-02/AI 182232/CER 20120001)
Comite River Diversion Supplemental Mitigation Options
East Baton Rouge Parish

Dear Ms. Tammaso:

The Louisiana Department of Environmental Quality (the Department) has reviewed your application to expand three mitigation areas, at Profit Island, McHugh Swamp, & in Central, Louisiana.

Based on the information provided in the application, the Department made a determination that the requirements for a Water Quality Certification have been met and concludes that the placement of the fill material will not violate water quality standards of Louisiana as provided for in LAC 33:IX.Chapter 11. Therefore, the Department hereby issues a Water Quality Certification to U.S. Army Corps of Engineers- New Orleans District.

If you have any questions, please call Jamie Phillippe at 225-219-3225.

Sincerely,

Melvin C. Mitchell, Sr.
Administrator
Water Permits Division

MCM/jjp

Post Office Box 4313 • Baton Rouge, Louisiana 70821-4313 • Phone 225-219-3181 • Fax 225-219-3309
www.deq.louisiana.gov

Roberts, Steve W MVN

From: Jim Ferguson [JFERGUSON@brgov.com]
Sent: Tuesday, June 19, 2012 10:41 AM
To: Roberts, Steve W MVN
Cc: Harmon, Bryan; Tom Stephens
Subject: Draft EA #426, titled Amite River and Tribs, LA, Comite Rv Diversion, Supl. Mitigation Options
Attachments: Untitled.PDF - Adobe Acrobat Pro.pdf

Mr. Roberts,

We are in receipt of the draft EA for the above referenced, and offer no objections or comments.

Thank you,

Jim Ferguson, PE, CFM

City of Baton Rouge

Department of Public Works

Floodplain Administration

United States Department of the Interior

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

July 3, 2012

Colonel Edward R. Fleming
District Commander
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Fleming:

Please reference your June 15, 2012, letter and attached documentation requesting our review of the Draft Environmental Assessment Number 426 (DEA #426) for the proposed "Amite River and Tributaries, Louisiana – Comite River Basin – Comite River Diversion – Supplemental Mitigation Options – East Baton Rouge Parish, Louisiana." Previous EAs (e.g., EA#222 and EA#222a) and associated analysis determined that compensatory mitigation for impacts associated with the construction and operation of the Comite River Diversion would be accomplished through the acquisition of approximately 1,500 acres of land within the Comite River floodplain. A law passed by the State of Louisiana (Act 734, Louisiana Legislature, 2010 Regular Session) specifically identifying this project, prevented the local non-Federal sponsor from expropriating property, or providing funds to the Corps of Engineers (Corps) for that purpose. The current evaluations and associated documents (e.g., DEA#426) are required to address proposed changes to the previously approved land acquisition plan to comply with that law. The current plan involves the evaluation of three sites (including an expansion of the previously approved site within the Comite River floodplain) within which suitable properties could be acquired from willing sellers to accomplish the required compensatory mitigation. The Fish and Wildlife Service (Service) has reviewed the information provided, and offers the following comments in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.), the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d), and the Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.).

General Comments on the EA

The DEA provides a good description of the project purpose and need, the impacts associated with the construction and operation of the Comite River Diversion, and the benefits associated with each of the proposed compensatory mitigation plans. According to that document, the proposed mitigation plans would involve eradication of invasive and exotic species, reclamation of sand/gravel mines, topography/contour restoration, reestablishment and enhancement of bottomland hardwood forests, and/or hydrologic restoration and enhancement depending upon which mitigation area, or combination of areas, would be selected and implemented. That document also contains a

thorough assessment of the mitigation history, planning, and assumptions, as well as a detailed adaptive management and monitoring plan.

We appreciate the Corps' written concurrence (Pages 54-57, Section 6.2, Coordination) with most of the specific recommendations provided in our June 6, 2012, draft Fish and Wildlife Coordination Act (FWCA) Report.

Specific comments on the EA

Page 31, Section 3.2.6, Threatened and Endangered Species and Pages 41and 42, Section 4.5, Threatened and Endangered Species – Consistent with our May 7, 2012, correspondence, the Service maintains our concurrence with the Corps' determination that the activities proposed in this DEA are not likely to adversely affect any listed or proposed threatened or endangered species (i.e., pallid sturgeon [*Scaphirhynchus albus*] and interior least tern [*Sterna antillarum*]). We continue to recommend that potential impacts to colonial nesting waterbirds and nesting bald eagles be avoided by adhering to the guidance provided on pages 6 and 7 of our draft FWCA Report, and that appropriate language regarding that guidance be included in the final EA.

Pages 55 and 56, Section 6.2, Recommendations 5 and 7, USACE response, and Attachment - Adaptive Management and Monitoring Plan, Page 16, Section 4.0, Monitoring for Project Success – These sections state that ". . . the Congressional authorization for the project dictates that all maintenance costs and all costs of monitoring after the end of the period of construction shall be fully borne by the non-Federal sponsor" and that " . . . all costs of Operation, Maintenance, Repair, Rehabilitation, and Restoration (OMRR&R) are the 100% responsibility of the non-Federal sponsor." While we understand that the Corps typically transfers responsibility of construction projects to the local non-Federal sponsor soon after construction is complete, we do not believe that the construction of flood control and navigation projects is analogous to implementation of mitigation projects (particularly those involving vegetation establishment). Qualified personnel, at the completion of construction, can determine whether the construction of levees or other similar structures was successful and if they will achieve their intended purpose over the project life. Such determinations cannot be made immediately following planting because there are a variety of natural and anthropogenic factors that may negatively affect long-term success (e.g., competition from invasive species such as the Chinese tallow-tree, severe flooding, or droughts). We believe that until qualified personnel determine that a reasonable level of long-term success is likely to occur from a mitigation activity, then the mitigation project remains "under construction" and responsibility should not be transferred to the local sponsor. We request that a reasonable, near-term level of success be sufficiently demonstrated which would form the basis for any assumptions or predictions about the likelihood of long-term project success. To that end, we believe that the Corps should retain responsibility for any/all mitigation project(s) until success has been demonstrated for five growing seasons after the initial planting (because mitigation "construction" would be on-going, and near-term success could not be effectively determined prior to that time).

If the Corps is unable to maintain responsibility of the mitigation project for at least five growing seasons after the initial planting, then we recommend that the Corps develop a reasonable estimate of likely expenditures (for actions such as recurring Chinese tallow-tree control, maintenance of fencing and posting, and replanting of seedlings) that would be necessary to ensure the long-term

success of the mitigation project, and deposit those funds into an escrow account or into an account with a third-party non-profit conservation foundation. Without guaranteed funds dedicated to the success of the proposed mitigation projects, the Corps and the local sponsor may be precluded from performing necessary remedial actions. The New Orleans Corps District Mitigation Banking Interagency Review Team currently requires mitigation banking instruments to outline the establishment and management of escrow accounts for use in funding remediation of failed mitigation measures, if necessary; such language may be pertinent in establishing and administering an escrow account for the currently proposed mitigation projects.

Attachment - Adaptive Management and Monitoring Plan, Pages 13 and 14, Section 3.1, Conceptual Ecological Model, Table 2 – The footnote for this table states "Issues and drivers assumed to be addressed by Mitigation Bank sponsors; not a concern for the PDT." The Service cautions that issues and drivers listed in this table that would be defined as "acts of nature", may not be adequately addressed by bank sponsors for the purposes of mitigation associated with Corps' civil works projects. According to a recent mitigation bank instrument regarding mitigation bank damage from natural disasters, ". . . if the IRT determines that the Property is not performing as intended, credit sales will be suspended until the Sponsor has performed remedial work necessary to produce additional credits. . ." and ". . . if identified remedial actions are not taken within one year following the event, the IRT will close the Bank." It is possible that the Corps could purchase credits from a mitigation bank where the mitigation features could be destroyed by a natural event and go unrepaired through the end of the project life. This potential limitation of mitigation banks should be noted in the final EA and fully considered prior to the purchase of credits.

Attachment - Adaptive Management and Monitoring Plan, Page 18, Section 4.1, Mitigation Success Criteria, Part 2, Native Vegetation Plantings, Criteria C – Due to the extent of light-seeded, non-mast, and invasive species present on, and/or surrounding many of the proposed mitigation sites, it will be necessary to plant a very high proportion of hard-mast-producing species to ensure that they become a significant component of the canopy and provide the anticipated increase in the habitat value of the forest. Light-seeded and soft-mast-producing species are currently present in such high numbers on many of the proposed mitigation sites that they are expected to colonize many of the proposed sites in sufficient numbers via natural regeneration alone (though minimal planting of soft-mast-producing species may be required on certain sites). Accordingly, we recommend that no upper limit on the number of hard-mast-producing species be specifically identified, particularly during the early stages of vegetation establishment (i.e., prior to year 15).

Attachment - Adaptive Management and Monitoring Plan, Page 21, Section 4.1, Mitigation Success Criteria, Part 6, Hydrology (applicable to BLH-Wet habitats only), Criteria B – We concur that piezometer installation and monitoring could be an acceptable method for evaluating site hydrology and the success of hydrologic restoration measures. That technique is relatively labor intensive, expensive, and time consuming however, and may be unnecessary for determining whether a site exhibits wetland hydrology. Accordingly, the Service would be supportive of other more efficient techniques for evaluating site hydrology (such as using primary and secondary indicators described on the official data form for routine wetland determinations provided in the 1987 Corps Wetlands Delineation Manual).

Attachment - Adaptive Management and Monitoring Plan, Page 25, Section 4.3, Monitoring Schedule and Responsibilities, Paragraph 2 – This paragraph identifies East Baton Rouge Parish as the non-Federal sponsor, but it is our understanding that the Louisiana Department of Transportation and Development would fulfill that role. We recommend that the Corps make all necessary corrections and/or clarifications regarding identification of the non-Federal sponsor in the final EA.

We appreciate the opportunity to comment on the subject DEA. If you have any questions or need further information, please contact David Soileau, Jr. (337/291-3109) of this office.

Sincerely,

Jeffrey D. Weller
Supervisor
Louisiana Ecological Services Office

cc: EPA, Dallas, TX
ARBC, Baton Rouge, LA
LDWF, Baton Rouge, LA
NOAA, NMFS, Baton Rouge, LA

BOBBY JINDAL
GOVERNOR

State of Louisiana

ROBERT J. BARHAM
SECRETARY

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

JIMMY L. ANTHONY
ASSISTANT SECRETARY

July 10, 2012

Mr. Steve Roberts
U.S. Army Corps of Engineers
CEMVN-PDC-CEC
P. O. Box 60267
New Orleans, LA 70160-0267

RE: Draft Environmental Assessment (EA) #426
Amite River and Tributaries, LA, Comite River Diversion, Supplemental Mitigation Options

Dear Mr. Roberts:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the U.S. Army Corps of Engineers' (USACE) draft EA #426 for the Comite River Diversion, Supplemental Mitigation Options. Based upon this review, the following has been determined:

2.3. Alternative 1 – Expansion of Current Mitigation Area
LDWF supports the proposed expansion of the current mitigation area in the Comite River floodplain, identified in EA #222 of 1995 as falling roughly within the river's 25-year floodplain. The expanded plan would include the 50-year floodplain along 7.5 miles of the Comite River.

2.4. Alternative 2 – Acquisition and Management of Profit Island
The restoration of the shallow pond area of Profit Island (described in section 2.4.4) would require water control features (i.e., 3-4 flap-gated culverts and elevation of roadway). When restoration requires installation of water control features, less mitigation credit shall be derived from such actions as compared to completely self-sustaining restoration (i.e., no hydrologic structures).

2.6. Alternative 4 – Acquisition of Credits in Mitigation Banks
The draft EA considers those existing mitigation banks that have available bottomland hardwood (BLH) credits and are located within the U.S. Geological Survey (USGS) 6-digit hydrologic unit code (HUC) of 080702. The direct project impacts occur within this HUC, as well as all other mitigation alternatives with the exception of Alternative 2 – Profit Island. Profit Island is located in HUC 08070100. If New Orleans District is going to consider "out-of-basin" mitigation options, such as Profit Island, then mitigation banks under consideration should not be limited to those located in HUC 080702. One solution may be to expand the existing pool of mitigation banks to include all those located within the subregion (i.e., HUC 0807), which also includes Profit Island. At a minimum this would add two mitigation banks (i.e., Bayou Choctaw and Supples Wetlands) with available BLH credits to those already listed in Table 3 (p 22). To not

expand the list of potential mitigation banks, while still considering Profit Island, would seem unfair to the mitigation banking community.

3.2. Relevant Resources
LDWF agrees that none of the alternatives under consideration in the EA would *negatively affect* the Comite River, a State designated scenic river (see section 3.2.3). However, utilizing mitigation Alternative 1 - Expansion of Current Mitigation Area, will *directly affect* (i.e., directly benefit) the Comite River by preserving, restoring and/or enhancing forested areas immediately adjacent to, or within the floodplain of, the Comite River. Such benefits to natural resources should be acknowledged and the Comite River should be included as a relevant resource in the EA.

Sections 4.1.2. / 4.2.2. / 4.2.3. Expansion of Current Mitigation Area
It should be acknowledged that the expansion of the current mitigation area alternative will preserve, restore and/or enhance wetlands, aquatic resources and forested lands immediately adjacent to, or within the floodplain of, the Comite River. This will directly benefit the Comite River, a State designated Natural and Scenic River.

9. Compliance with Environmental Laws and Regulations
It bears mentioning that the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) requires any public or private agency under Federal permit or license to consult with the U.S. Fish and Wildlife Service (USFWS) "and with the head of the agency exercising administration over the wildlife resources of the particular State..." That State agency is LDWF. Furthermore, LDWF administers the Louisiana Natural and Scenic Rivers System (R.S. 56:1840, et seq.) of which the Comite River is included. LDWF administers the system "for the purposes of preserving, protecting, developing, reclaiming, and enhancing the wilderness qualities, scenic beauties, and ecological regime of certain free-flowing streams or segments thereof."

10. Conclusion
LDWF agrees with the conclusion presented on page 61. Furthermore, as mentioned above, it should be acknowledged that the expansion of the current mitigation area alternative will directly benefit the Comite River and its floodplain, whereas the other mitigation alternatives will not. LDWF is committed to continuing to work with USACE and USFWS to evaluate supplemental mitigation options for the Comite River Diversion project.

The Louisiana Department of Wildlife and Fisheries submits these recommendations to the U.S. Army Corps of Engineers in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). Please do not hesitate to contact Kyle Balkum at 225-765-2819 should you need further assistance.

Sincerely,

Jimmy L. Anthony
Assistant Secretary

kfb

c: David Soileau, Jr., USFWS

Roberts, Steve W MVN

Subject: RE: Coordination for Comite Diversion Mitigation (UNCLASSIFIED)

-----Original Message-----
From: Tim.Tandy@faa.gov [mailto:Tim.Tandy@faa.gov]
Sent: Wednesday, July 11, 2012 7:48 AM
To: Duplantier, Bobby MVN; Kay, Matthew S MVN-Contractor; Boe, Richard E MVN
Cc: Justin.Barker@faa.gov; Bill.Mitchell@faa.gov
Subject: Re: Coordination for Comite Diversion Mitigation (UNCLASSIFIED)

As FAA program manager Justin stated below, we have forwarded the information to Bill Mitchell, our lead safety and certification inspector. The proposed mitigation actions within 5 miles of Baton Rouge Metropolitan Airport potentially could create a wildlife attractant incompatible with aviation, an issue of high priority within our agency. We have coordinated with the Corps on similar actions in the past, and resolution required substantial effort and time from all parties. Please accept this as our INITIAL comment/response within the 30-day review period ending July 16. Bill will contact you with more detail. Thanks.

Tim

From: Justin Barker/ASW/FAA
ASW-640, Louisiana/New Mexico Arpts Dev Off
To: "Boe, Richard E MVN" <Richard.E.Boe@usace.army.mil>
Cc: "Duplantier, Bobby MVN" <Bobby.Duplantier@usace.army.mil>, "Kay, Matthew S MVN-Contractor" <Matthew.S.Kay@usace.army.mil>, Tim Tandy/ASW/FAA@FAA
Date: 07/10/2012 03:16 PM
Subject: Re: Coordination for Comite Diversion Mitigation (UNCLASSIFIED)

Richard,

I have been informed by our environmental specialist, Tim Tandy, that the mitigation plan has been forwarded to our safety and standards regional office for further review and actions.

Someone from that office will be contacting you soon...

POC: Bill Mitchell (817)222 - 5620

Justin Barker
Program Manager, Louisiana/New Mexico
Airports Development Office
2601 Meacham Blvd
Forth Worth, Texas 76137
Ph: (817) 222-5628
Fax: (817) 222-5988

From: "Boe, Richard E MVN" <Richard.E.Boe@usace.army.mil>
ASW-640, Louisiana/New Mexico Arpts Dev Off
To: Justin Barker/ASW/FAA@FAA,
Cc: "Duplantier, Bobby MVN" <Bobby.Duplantier@usace.army.mil>, "Kay, Matthew S MVN-Contractor" <Matthew.S.Kay@usace.army.mil>
Date: 07/09/2012 02:35 PM
Subject: Coordination for Comite Diversion Mitigation (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Dear Mr. Barker: The Corps of Engineers, New Orleans District recently sent a letter dated June 7, 2012 and an environmental assessment with cover letter dated June 15, 2012 to Ms. Ilia Quinones. We were informed today by one of your coworkers that Ms. Quinones has recently retired. Myself and my coworkers who I copied on this email are anxious to receive the FAA's comments on our mitigation plan. We would appreciate if you could contact us at your earliest convenience. You may either call me at (504) 862-1505 or Mr. Bobby Duplantier, Senior Project Manager, at (504) 862-1037. Or we could call you back at your convenience. Please let us know.

Sincerely,
Richard Boe

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

JAY DARDENNE
LIEUTENANT GOVERNOR

State of Louisiana

OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT

CHARLES R. DAVIS
DEPUTY SECRETARY

PAM BREAUX
ASSISTANT SECRETARY

11 July 2012

Joan Exnicios
Chief, NO Environmental Branch
New Orleans District
Corps of Engineers
PO Box 60267
New Orleans, La 70160-0267

Re: Management Summary
La Division of Archaeology Report No. 22-4055
Management Summary: Phase I Cultural Resources Survey of Mitigation Areas for the Comite River Diversion Project, East Baton Rouge Parish, Louisiana

Dear Ms. Exnicios:

We acknowledge receipt of your letter dated 22 June 2012 and two copies of the above-referenced report. We have completed our review of this report and have no comments to offer.

We concur that sites 16EBR206 and 16EBR207 are not eligible for nomination to the National Register of Historic Places, and that structures HSS-1501 and HSS-15-02 are also not eligible for nomination to the National Register. We concur that no historic properties will be impacted by this project and our office has no further concerns for ground disturbance at the project.

We look forward to receiving two bound copies of the complete draft report. If you have any questions, please contact Chip McGimsey in the Division of Archaeology by email at cmcgimsey@crt.la.gov or by phone at 225-219-4598.

Sincerely,

Pam Breaux

Pam Breaux
State Historic Preservation Officer

PB:crm

U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Airports Division, Southwest Region Safety and
Standards Branch

2601 Meacham Boulevard
Fort Worth, Texas 76137

July 16, 2012

Ms. Joan M. Exnicios
Chief, Environmental Planning Branch
Department of the Army
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Ms. Exnicios:

We have completed our review of the environmental assessment currently in progress by the USACE New Orleans District that includes potential mitigation areas within five miles of the Baton Rouge Metropolitan Airport.

In coordination with our national biologist, we have determined that, based on the proposed activities of reforesting existing wetlands and agricultural land, combined with distance from the airport and the occurrence of forested wetlands already in the area, it doesn't appear that the proposed project will result in an increase in the potential for wildlife hazards to the airport.

Please accept this letter as official notice that we do not object to the two proposed mitigation areas involving restoration, enhancement and preservation activities in the Comite River mitigation area and the reforestation of fields with desirable hardwood species in the McHugh Swamp mitigation area.

This environmental assessment and related activities has been assigned our file No. 2012-005LA. Please refer to this number in any future correspondence regarding this site. Thank you for coordinating it with us. If you have any questions, please feel free to call me.

If there are any questions, please feel free to contact us

Sincerely,

Original Signed By

William Mitchell
Lead Airport Certification Safety Inspector

cc: ASW-640

ASW-621:BMITCHELL:jd:5621:07/16/12:LA 2012-005 EA BTR.doc

EARL "WAYNE" ALBRITTON
P.O. Box 606
Baker, LA 70704 USA
Phone : 225-654-2114
ewalbritton@Bellsouth.Net

June 19, 2012

Joan Exnicios, Chief Environmental Planning
Department of Army – New Orleans District
Corps of Engineers P.O. Box 0267, NO, La 760-0267

In reading Draft Environmental Assessment (EA) #426, I see that you are having problems finding high land to plant hardwoods for animal feedings. I have thirty acres just South of the Canal on McHugh Road that I might be willing to talk with you on. In addition there are sixty five acres north of me, twenty five acres south of me and an unspecified amount east of me that might be interested also. There are also the two McHugh tracks of approximately two thousand acres each in this vicinity.

Looking forward to speaking to someone from your office.

E. Wayne Albritton, PE

CC: Dietmar Rietschier, Executive Director Amite River Basin Commission

Jena Band of Choctaw Indians

P. O. Box 14 • Jena, Louisiana 71342-0014 • Phone: 318-992-2717 • Fax: 318-992-8244

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENG.
P.O. BOX 60267
NEW ORLEANS, LA 70160-0267

JULY 11, 2012

RE: REQUEST TO CONTINUE CONSULTATION UNDER SECTION 106
AMITE RIVER AND TRIBUTARIES, LOUISIANA, COMITE RIVER BASIN
COMITE RIVER DIVERSION SUPPLEMENTAL MITIGATION OPTIONS
EAST BATON ROUGE PARISH, LOUISIANA

Dear Ms. Exnicios,

Upon review of the above referenced project, we have determined that the project activities will have "No Affect" on Historic Properties. We are also unaware of any known sacred and/ or ceremonial sites located within the immediate area. Therefore, we concur with the proposed project activities.

However, should any artifacts or archaeological features be encountered during the scope of said projects activities, work shall cease and our office shall be consulted immediately.

We appreciate your efforts on this project. Should you have any questions, please contact Dana Masters, THPO officer, or Candess Chapman, THPO Secretary, at 318-992-1205 or by E-mail: danammasters@aol.com or chapman.candess@aol.com.

Sincerely,

Candess Chapman
for Dana Masters
THPO

P.O. Box 14
Jena, LA 71342

Ph: 318-992-1205
FAX: 318-992-8244

Resource Environmental Solutions

July 13, 2012

Via U.S. Mail (Express Mail Delivery) & E-Mail Delivery

Ms. Joan M. Exnicios
Chief, Environmental Planning Branch
U. S. Army Corps of Engineers, New Orleans District
Department of the Army
Regional Planning and Environmental Division, South
Environmental Planning and Compliance Branch
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Comments on Public Notice of June 15, 2012, Comite River Diversion, Supplemental Mitigation Options, East Baton Rouge Parish, Louisiana, EA #426

Dear Ms. Exnicios:

On behalf of Resource Environmental Solutions, LLC, the parent company of several mitigation banks within applicable service areas for mitigation of unavoidable impacts from the Comite River Diversion Project (Project), we write to submit comments regarding the Draft Environmental Assessment #426 (EA#426) published by the U.S. Army Corps of Engineers (USACE), New Orleans District concerning supplemental mitigation options in connection with the Project in East Baton Rouge Parish, Louisiana.

Comment: Mitigation Banks as a Suitable Alternative to providing compensatory mitigation for the Project:

We are delighted to note the emphasis placed by the Corps and FWS with regard to use of mitigation bank credits as a valid mitigation alternative within the EA and associated documentation.

As you are keenly aware, the easiest to achieve and most timely method of sourcing mitigation in the required volume of 671.45 AAHUs is to purchase compensatory mitigation credits from an approved, appropriate mitigation bank. This is a valid option as result of recent Louisiana legislative action to include compensatory mitigation banks as a valid Willing Seller option.

412 N. Fourth St., Suite 300
Baton Rouge, LA 70802
P 225.372.6161
F 225.372.6162

5020 Montrose Blvd., Suite 201
Houston, TX 77006
P 713.520.5400
F 713.520.5401

643 Magazine St., Suite 402
New Orleans, LA 70130
P 504.493.6148

1738 E. Third St., Suite 175
Williamsport, PA 17701
P 717.829.0017

This approach allows the project to continue apace, and, as correctly summarized in EA #426, section 2.6, p. 20-23:

1) complies with Act 734 of the Louisiana Legislature, and

2) complies with Section 2036(c)(1) of the Water Resources Development Act of 2007 and direct application of WRDA Section 2036(a)(3) which direct the USACE to consider the use of commercial mitigation banks to fulfill the mitigation responsibilities of Civil Works projects, and

3) complies with the Final Rule on Compensatory Mitigation, 33 CFR 332, and

4) obviates the need for an adaptive management plan as approved mitigation banks already have compliance in this area, as highlighted by the USACE in p. 13, section 3.1 of the EA#426 Adaptive Management and Monitoring Plan, describing the Conceptual Ecological Model and its Issues and Drivers.

The purchase from approved compensatory mitigation banks eliminates mitigation risk and is the ONLY cost-certain option.

Mitigation risk is eliminated because inherently all liability for mitigation is assumed by the mitigation bank sponsor rather than the Project permittee.

The option is cost-certain because the price of implementing all 12 components of the mitigation plan, as identified in EA #426 "Draft Fish and Wildlife Coordination Act Report, Amite River and Tributaries, Louisiana, Comite River Diversion, Supplemental Mitigation Options", p. 19 and 20, is a known, single, fixed value rather than an unknown, floating, variable suite of values dependent on how a non-bank mitigation alternative happens to be implemented by a Willing Seller that is likely to require monitoring and adjustment over a long time period.

We thank you for the opportunity to submit these comments to the Public Notice. If you have any questions or wish to discuss any items in this letter, please do not hesitate to contact us.

Sincerely yours,

Peter Couhig
President and Chief Operating Officer

cc: Steve Roberts via email

ecosystem renewal

July 13, 2012

Via U.S. Mail (Express Mail Delivery) & E-Mail Delivery

Ms. Joan M. Exnicios
Chief, Environmental Planning Branch
U.S. Army Corps of Engineers, New Orleans District
Department of the Army
Regional Planning and Environmental Division, South
Environmental Planning and Compliance Branch
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Comments Addressing Draft Environmental Assessment (EA #426) Concerning Supplemental Mitigation Options, Comite River Diversion Canal Project, East Baton Rouge Parish, Louisiana

Dear Ms. Exnicios:

On behalf of Zachary Mitigation Area, LLC ("**ZMA**"), we write to submit comments regarding the draft Environmental Assessment ("**EA**") (EA #426) published by the U.S. Army Corps of Engineers ("**ACOE**"), New Orleans District ("**CEMVN**") dated June 15, 2012 concerning Supplemental Mitigation Options in connection with the Comite River Diversion Canal Project in East Baton Rouge Parish, Louisiana (the "**Canal Project**"). ZMA owns and serves as the sponsor of the Zachary Mitigation Area Umbrella Bank (the "**Zachary Mitigation Bank**"). The Canal Project is located within the Amite River Watershed and within the Mitigation Service Area for the Zachary Mitigation Bank.

First, we strongly support CEMVN's efforts to advance the Canal Project and to provide enhanced flood protection through construction of the Comite River diversion channel. We appreciate CEMVN's work in furthering the Project, working cooperatively with stakeholders, preparing the draft EA, and evaluating mitigation alternatives in the EA.

We write to emphasize the important role which mitigation bank credits can play in providing mitigation solutions for the Canal Project. Utilizing mitigation bank credits from applicable service areas can assist CEMVN and its state and federal agency partners in quickly and effectively completing the project.

9447 Brookline Ave • Baton Rouge, LA 70808
Phone: 225.928.5678 Fax: 225.341.3881
ecosystemrenewal.com
{24493326;3}

At the same time, we recognize that a substantial amount of mitigation is needed and that there may not currently be enough available mitigation bank credits to provide all of the necessary mitigation. As discussed in the EA, approximately 1,700 acres of appropriate mitigation land is required to provide mitigation for the Canal Project. Because 75 acres of mitigation land have been acquired, significant portion of the required mitigation must still be obtained. In light of the large quantity of mitigation required, we suggest that CEMVN consider a competitive process, such as through a Request for Proposals, so that mitigation providers may submit proposals to provide turn-key mitigation. This could be done in conjunction with the mitigation options proposed in the EA — aligning and mixing mitigation sources and approaches in order to provide the necessary mitigation.

Preference to Utilize Mitigation Bank Credits in Providing Compensatory Mitigation

Under ACOE's compensatory mitigation regulations and the ACOE's preference hierarchy, CEMVN "should give preference to the use of mitigation bank credits when [the pertinent] considerations" apply. 33 C.F.R. § 332.3(b)(2).[1] ACOE's preference hierarchy reflects that mitigation options should be considered in the following preference order: (i) first mitigation banks, (ii) then in-lieu fee programs, and (iii) permittee-responsible mitigation. Preference for mitigation bank credits is a key part of the regulatory framework, as reflected in ACOE's regulations and federal legislation that led to the development of ACOE's new compensatory mitigation criteria.[2]

This preference is based on the following factors under ACOE's regulations:

- Mitigation Banks Reduce Risk and Uncertainty of Compensatory Mitigation. ACOE's regulations explain that "use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services." This is so because mitigation banks provide mitigation that is provided in advance of the impact, rather than after the fact. 33 C.F.R. § 332.3(b)(2).

- Mitigation Banks Reduce Risk That Compensatory Mitigation Will Not Be Successful. The "use of mitigation bank credits can also help reduce risk that

[1] See also 33 C.F.R. § 332.3(g) (providing that "[m]itigation banks and in-lieu fee programs may be used to compensate for impacts to aquatic resources . . . in accordance with the preference hierarchy []."

[2] The 2004 National Defense Authorization Act provided that "[t]o the maximum extent practicable, the regulatory standards and criteria [under the ACOE mitigation regulations] shall maximize available credits and opportunities for mitigation," among other requirements. Section 314(b), 2004 National Defense Authorization Act (Pub. L. 108-136). The Water Resources Development Act (WRDA) of 2007 also directed that ACOE, with respect to civil works projects, "[i]n carrying out a water resources project that involves wetlands mitigation and that has impacts that occur within the service area of a mitigation bank, the Secretary, where appropriate, shall first consider the use of the mitigation bank if the bank contains sufficient available credits to offset the impact and the bank is approved in accordance with [applicable guidance and requirements]." Section 2036(c)(1) of WRDA 2007 (Public Law 110-114).

mitigation will not be fully successful." Mitigation bank credits are not released until specific milestones associated with the mitigation bank site's protection and development are achieved. 33 C.F.R. § 332.3(b)(2).

- Mitigation Banks Provide Greater, Focused Ecological Benefit. "Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation." 33 C.F.R. § 332.3(b)(2).

- Use of Mitigation Bank Taps and Leverages Extensive Investments Already Made. ACOE's regulations note that "development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs." 33 C.F.R. § 332.3(b)(2).

Here, mitigation bank credits can play a crucial role in providing mitigation for the Canal Project because:

- Use of credits would ensure that the Canal Project utilizes available mitigation bank credits from applicable service areas, providing a rapid, available source of mitigation.
- Appropriately reflects Louisiana state law, which requires that mitigation for the Canal Project be obtained from willing sellers, under Act 734 of the Louisiana Legislature (2010 Regular Session). The EA acknowledges that "mitigation for this project is dependent upon compliance with Louisiana state law which requires that mitigation is obtained from willing sellers, making all of the mitigation options, except for the use of mitigation banks, problematic."
- Use of mitigation bank credits would source a large part of the necessary mitigation, eliminate mitigation risk and cost uncertainty associated with other mitigation approaches, and support and strengthen ecological projects within mitigation banks in the Amite River Watershed.
- Use of mitigation bank credits would shift the risk of success of the mitigation project from the Canal project sponsors to the mitigation bank sponsor.

Other Mitigation Options Evaluated in EA

Expanded Comite River Plan Alternative

This mitigation option, as proposed, would make an additional 835 acres of land available for mitigation from potential "willing sellers." In addition to the major potential impediments to successful mitigation identified in the EA, this option has proved problematic in that the Canal project sponsors have only been able to acquire 75 acres in this area, making it appear to be unlikely that a sufficient amount of land can be acquired. Furthermore, should this alternative be chosen, mitigation will not be in place in advance of impacts and the risk of failure will be borne by the Canal Project sponsors.

Finally, this area is located within the Lake Pontchartrain Basin and cannot adequately offset impacts within the Mississippi River Basin.

McHugh Swamp Alternative

This mitigation option, as proposed, would involve the mechanical clearing and grubbing of approximately 262 acres of tallow tree stands and new plantings. In addition to the major potential impediments to successful mitigation identified in the EA, this option cannot provide sufficient mitigation for all of the anticipated impacts. Furthermore, as with the previous alternative, mitigation will not be in place in advance of impacts and the risk of failure will be borne by the Canal Project sponsors. Additionally, there is no evidence that some or all of the land within the McHugh Swamp can be acquired from willing sellers. Finally, this area is located within the Lake Pontchartrain Basin and cannot adequately offset impacts within the Mississippi River Basin.

Profit Island Alternative

The mitigation option, as proposed, would include reforesting approximately 135 acres of wetlands that are currently fields and managing woody vegetation on 975 acres by increasing woody species diversity. In addition to the major potential impediments to successful mitigation identified in the EA, as with the previous alternative, mitigation will not be in place in advance of impacts and the risk of failure will be borne by the Canal Project sponsors. Additionally, there is no evidence that some or all of the land within the McHugh Swamp can be acquired from willing sellers.

Perhaps more importantly, Profit Island is located inside the levees of the Mississippi River and within the Mississippi River Basin. As a result, CEMVN has long taken the position that restoration and enhancement activities at Profit Island cannot adequately mitigate for impacts within the Lake Pontchartrain Basin. Because most of the impacts will occur within the Lake Pontchartrain Basin, this alternative cannot provide adequate mitigation for the vast majority of the impacts. In addition, Profit Island has been proposed several times since as late as 2002 as a mitigation bank site and has never been approved, calling into question how now, it can be considered an appropriate site for mitigation for the Canal Project.

Conclusion

We support CEMVN's development of the EA and CEMVN's work on the Canal Project. We hope that these comments highlight the appropriateness in utilizing mitigation bank credits as an important source of the mitigation for the Canal Project. Mitigation banks in the area — including the Zachary Mitigation Bank — have proven to be highly successful and can provide advance mitigation to assist CEMVN and its partners in completing the Canal Project.

Thank you for the opportunity to submit these comments. If you have any questions or would like to discuss this letter, please do not hesitate to let us know.

Sincerely yours,

for Amy Sutton

Mr. Danny Moran
President of Holcomb Resources, Member

cc: Mr. Steve W. Roberts, U.S. Army Corps of Engineers, New Orleans District (steve.w.roberts@usace.army.mil)

Mr. William Barron
(wbarron@barroncompanies.com)

Roberts, Steve W MVN

From: Meffert, Doug [dmeffert@audubon.org]
Sent: Saturday, July 14, 2012 6:38 PM
To: Roberts, Steve W MVN
Cc: Kemp, Paul; Driscoll, Melanie; Meffert, Doug; Richard Martin (rmartin@TNC.ORG)
Subject: Audubon Louisiana: Profit Island EA comments

July 14, 2012

Mr. Steve W. Roberts

New Orleans District

U. S. Army Corps of Engineers

Environmental Planning and Compliance Branch

P.O. Box 60267

New Orleans, Louisiana 70160-0267

steve.w.roberts@usace.army.mil <mailto:lrichard@irwinllc.com>

RE: National Audubon Society (NAS) response to supplemental mitigation options proposed for the Comite River Diversion Project, East Baton Rouge Parish, Louisiana EA#426

Dear Mr. Roberts:

We are familiar with the supplemental mitigation options proposed to include Profit Island. Together with Richard Martin from the Louisiana Nature Conservancy, an NAS science team including Melanie Driscoll, NAS regional Director of Bird Conservation and Dr. Paul Kemp, NAS Vice-President and Director of the Louisiana Coastal Initiative, inspected the Island on May 22 as guests of Mr. Troy Furr, who owns the island with his sister. They returned from the trip enthusiastic about the prospect for restoration of former bottomland hardwood and swamp habitat on Profit Island. Accordingly, as Executive Director of the newly formed Audubon

Louisiana office in Baton Rouge, I want to reiterate National Audubon's support for this proposed element of the Comite River Diversion Project mitigation

Sincerely,

Douglas Meffert, D.Env.

Vice-President & Executive Director

Cc:

G. Paul Kemp, Ph.D.

Vice-President, National Audubon Society

Director, Louisiana Coastal Initiative

Louisiana Audubon

6160 Perkins Rd, Suite 135

Baton Rouge, LA 70808

225-772-1426 c

225-768-0821 f

pkemp@audubon.org

Douglas J. Meffert, D. Env., MBA

The Nature Conservancy
Protecting nature. Preserving life.™

Post Office Box 4125
Baton Rouge, Louisiana 70821

Tel (225) 338-1040
Fax (225) 338-0103

nature.org/louisiana

July 16, 2012

U.S. Army Corps of Engineers
Attn: Steve Roberts
Mississippi Valley Division, New Orleans District
Regional Planning and Environmental Planning Division, South
P.O. Box 60267
New Orleans, LA 70160

Dear Mr. Roberts:

Nature Conservancy staff have reviewed the recently released Draft Environmental Assessment titled "Comite River Diversion, Supplemental Mitigation Options" dated June 2012 (EA #426). As part of the review process, we joined staff from National Audubon Society and representatives of the landowners on a site visit to Profit Island on May 22nd, 2012. Our review of the assessment document as well as our site inspection strongly indicates that Profit Island would be a valuable part of a mitigation plan for the Comite Diversion and we support including some or all of Profit Island in a comprehensive mitigation plan.

Profit Island has significant restoration, enhancement and protection potential and could become an important platform for conservation work within the batture portion of the Lower Mississippi River. Although we have some questions about the proportion of former cottonwood plantation that could be restored to a more diverse bottomland forest type (as opposed to pure protection), we generally agree with the mitigation potential identified in the assessment. It is important to state that any successful mitigation will require that an appropriate long-term owner/manager be identified and that adequate funding be provided for acquisition, restoration and long-term management (i.e., management endowment).

Thank you for the opportunity to comment on the proposed mitigation options for the Comite Diversion.

Sincerely,

Keith Ouchley
State Director

100% post-consumer materials

BARON BUDD, P.C.℠ DALLAS | AUSTIN | LOS ANGELES | BATON ROUGE

9015 Bluebonnet Boulevard
Baton Rouge, LA 70810-2812
800.347.2392
tel 225.927.5441
fax 225.927.5449

Home Office:
3102 Oak Lawn Avenue
Suite 1100
Dallas, TX 75219-4281
800.222.2766
tel 214.521.3605
fax 214.520.1181

July 16, 2012

Via U.S. Mail (Express Mail Delivery) & E-Mail Delivery

To: Ms. Joan M. Exnicios
Chief, Environmental Planning Branch
U. S. Army Corps of Engineers, New Orleans District
Department of the Army
Regional Planning and Environmental Division, South
Environmental Planning and Compliance Branch
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Comments on Public Notice of June 15, 2012, Comite River Diversion, Supplemental Mitigation Options, East Baton Rouge Parish, Louisiana, EA #426

Dear Ms. Exnicios:

The following comments are submitted on behalf of Resource Environmental Solutions, LLC (RES) and St. Gabriel Land Company, LLC(SGL). RES, a Baton Rouge based company, is an industry leader in supplying ecological offsets throughout the United States and in Louisiana. SGL is a land management company engaged in land management, forestry and restoration in the State of Louisiana. RES is the owner of approximately 2,400 acres in the Spanish Lake Basin. SGL is the owner of approximately 1,750 acres in the Spanish Lake Basin. These two properties are contiguous and make up what has been described as Spanish Lake Area #8(also known as BLR-2) in the April 13, 2012 letter authored by Secretary LeBas of LA DOTD to Colonel Fleming of the USACE New Orleans office. (letter attached hereto) RES and SGL, as Spanish Lake Area #8, submit these comments in response to the Draft Environmental Assessment #426(EA#426) published by the US Army Corps of Engineers(USACE), New Orleans District relative to supplemental mitigation options for the Comite River Diversion project in East Baton Rouge Parish, Louisiana ("the Project").

RES and SGL fully support the consideration of a multiple willing seller approach for evaluating the most productive and cost effective mitigation alternatives for all stakeholders. A review of all available options will inevitably result in selection of the best mitigation offset alternative for the Project considering all known factors.

RES and SGL provide three substantive comments herein for consideration. The first deals with the limited scope of supplemental mitigation alternatives considered within the EA. In addition, the first comment requests both clarification of initial selections as alternatives as well as requesting additional consideration be given to supplemental mitigation alternatives identified earlier by LA DOTD. The second comment addresses the method of selection of mitigation – fee title versus conservation easement. This distinction will factor into the costs borne by taxpayers for the selected mitigation solution. The third comment reviews the proposed alternatives within EA #426.

Comment #1:

In the Public Notice and accompanying EA #426, the method of selection of the three mitigation alternatives under consideration is not discussed and seems arbitrary given the documentation requesting consideration of multiple supplemental mitigation options:

1) A USACE letter dated March 29, 2012 from Major General Temple to Senator Vitter(attached hereto) indicates that an EA will be completed in 120 days that provides alternative mitigation options including Profit Island. While an EA was completed within the 120 day timeframe, it seems incomplete in that it did not contemplate all the valid alternative mitigation options.

2) An LA DOTD letter of April 13, 2012 from Secretary LeBas to Colonel Fleming of the USACE New Orleans(attached hereto) specifically requests that the USACE perform an assessment of the options and impacts associated with the development of an amended mitigation plan. Moreover, eight (8) alternative mitigation sites were submitted for consideration, however without explanation, only three (3) of these eight (8) were considered, those being: Comite River Mitigation Area #1 and #2; McHugh Swamp Mitigation Area #3, and 5; and Profit Island Mitigation Area #6. The other 5 alternative mitigation sites were not considered in the EA. **Why were these five (5) alternative mitigation sites not considered in EA #426? Expediency to complete the EA within 120 days potentially discounts known willing-seller alternatives without appropriate due diligence and precludes taxpayers from knowing if their funds were best utilized appropriately and that all options were exhausted before recommending a short list of alternatives.**

3) A NFS letter of April 18, 2012 to a Willing Seller Property Owner, First Louisiana Resources, LLC, requests entry onsite to evaluate an alternative mitigation site during the forthcoming year. (St. Gabriel Land, LLC received the same letter). This alternative mitigation site, Spanish Lake Area #8 (also known as the "BLR-2 Option"), while obviously a viable alternative mitigation site that the NFS will consider in light of the April 18th letter was not considered in EA#426. **That the NFS has requested site access but has yet to visit the site indicates that the site is a valid candidate for use as a supplemental mitigation alternative.**

Further, EA#426 Section 2.1 discounts all non-included alternatives: "Additional areas that may be able to provide mitigation credits have been identified by the Amite River Basin Commission, but to date have not been investigated. These or other areas may be addressed in subsequent EA if the alternatives addressed in this EA cannot provide sufficient, cost-effective credits to completely meet the mitigation obligations for the project. The omission of other possible mitigation alternatives from this EA does not preclude consideration of those in the future if one or more of the selected options is not implementable." (EA #426 p. 10.) We contend that none of the 3 (three) supplemental mitigation alternatives can completely meet the mitigation obligations for this project. **Therefore, consideration of the other named mitigation alternatives is formally requested as is consideration of implementable options including. Spanish Lake Area #8 (also known as BLR-2). Spanish Lake Area #8 is the only mitigation alternative option with landowners with proven expertise in wetland mitigation, and an existing ecological restoration summary (attached to this response),as well as an existing ecological restoration plan. The public deserves that all available options be considered to determine what is in the best interest of the State and other stakeholders.**

Positive factors that should be considered when evaluating the Spanish Lake BLR-2 Option as a valid supplemental mitigation alternative, include but are not limited to the following:

- **The site is immediately available by Willing Sellers;**
- **The site is owned by only 3 landowners, all are Willing Sellers;**
- **The landowners are the only Willing Seller landowners with a sizeable knowledge base and significant expertise as proven developers and stewards of wetland mitigation solutions throughout Louisiana;**
- **The site is available at a price attractive to the Permittee, the LA DOTD;**
- **The site is located in the correct watershed to be considered a valid mitigation option – HUC 08070202, the Amite River Watershed;**
- **The site contains 4,153 acres suitable for mitigation. At the low end of the WVA range of the currently identified Alternative Sites, a WVA value of .162 generates 677.65 AAHUs, exceeding the requirement for 671.45 AAHUs.**

- **All indications are that the WVA value for this alternative site will exceed this lower-end-of-the-WVA-range value. Any extra AAHUs generated by this mitigation site would be made available for use by the Permittee, the LADOTD, for other projects as needed and appropriate, and,**
- **Spanish Lake Area #8, the BLR-2 Option, provides a single site mitigation solution in the right place at the right price with an existing restoration plan that exceeds the required 671.45 AAHUs allowing timely mitigation selection and implementation, thereby supporting the goal of prompt mitigation access to enable Project *completion.***

Comment #2:

Compared with the purchase of credits from an approved compensatory mitigation bank, the Willing Seller acquisition of mitigatable acreage is the cost effective option to the Permittee if the Permittee is allowed to purchase perpetual servitudes for the project. This is a known valid alternative, however one that must be specifically requested for approval by Headquarters of the US Army Corps of Engineers. (This per the November 3, 2010 letter from Colonel Fleming to Secretary LeBas of LADOTD.) To date, noting that letters of authorization for entry onto lands deemed potentially suitable as alternative mitigation sites continue to be sent, it seems that the Servitude-acquisition approach has been removed from consideration. In line with this comment, **clarification of the method of acquisition of mitigation for the Project is requested – fee title or perpetual servitude?**

Comment #3:

Within Section 2.2, p. 13, the No Action alternative is correctly described – a mitigation obligation of 671.45 AAHUs remains valid and is required to be fulfilled. Selection of the no action alternative, meaning no additional mitigation will be acquired, will mean the USACE and NFS can no longer proceed with the Project as mitigation must be purchased and satisfied prior to the Project continuation. **As such the No Action alternative is not a valid option.**

In Section 2.3, p. 13, Expansion of the current mitigation area is problematic as:

1. Sand pit restoration is required to make this a valid alternative by **generating the right number of AAHUs at an appropriate price.** Consideration of the high cost of sand pit-style wetland restoration activities versus the number of restoration credits generated make this a cost-prohibitive option. **High restoration costs, relative to other named mitigation alternatives, renders the expansion of the current mitigation area an invalid option.**

2. **Expansion of the existing mitigation area was not considered a valid option in the past due to lack of participating landowners. There is no reason to believe the situation has changed from days past and, as such, expansion of the existing mitigation area should not be considered a valid option.**

In Section 2.4, p. 16, the Profit Island alternative is problematic as clearly described by the Appendix A, section 3.3, p. A-3:

1. Major potential impediments to successful mitigation on Profit Island include the depth and duration of seasonal flooding, sedimentation patterns of flood events, competition with invasive vines and competition with fast growing/less desirable species and existence inside Mississippi River levees.
2. **Restoration of the site, as described in the EA, will not yield the required number of AAHUs, negating the site as a valid option.**

In Section 2.5, p. 18, the McHugh Swamp alternative is problematic for a number of reasons:

1. For the site to be mitigatable, the planted pine forest currently providing wildlife habitat will need to be clear cut and then restored. This approach violates known procedures for mitigation solutions allowed by the Federal Sponsor, the US Army Corps of Engineers, which publicly espouses that wetland mitigation not be preceded by clear cutting forests for the purposes of establishing locations for compensatory mitigation.
2. The site is inundated by invasive species such as Chinese tallow – an ongoing, long term eradication plan will be costly and likely unsuccessful.
3. **Preservation of this site must include both the costs of long term invasive species control and implementation of an adaptive management plan, thereby negating this site as a valid supplemental mitigation alternative.**

Based on the foregoing, RES and SGL request that all of the mitigation alternatives be considered to insure that the best site is selected based on all factors including what is in the best interest of the State, taxpayers, and other stakeholders.

If you have any questions or if I can be of any further assistance, please do not hesitate to contact me.

Very truly yours

J. Burton LeBlanc, IV

The items accompanying this response are:
1) Letter, March 29, 2012, General Temple to Senator Vitter
2) Letter, April 13, 2012, Secretary LeBas to Colonel Fleming
3) Letter, April 20, 2012, ARBC to Willing Seller, First Louisiana Resource, LLC
4) Letter, November 3, 2010, Colonel Fleming to Secretary LeBas
5) Letter, April 12, 2012, Resource Environmental Solutions, to USACE Project Manager

cc: Steve Roberts, Project Manager, via email (steve.w.roberts@usace.army.mil)

FROM THE DESK OF
MR AND MRS EDMUND STERLING

July 16, 2012
Mr. Steve Roberts
U.S. Army Corps of Engineers
CEMVN-PDC-CEC
P.O. Box 60267
New Orleans, Louisiana 70160-0267

This letter comes as follow-up to the notice sent to us referencing the Draft Environmental Assessment (EA)#426 titled, "Amite River and Tributaries, Louisiana, Comite River Diversion, Supplemental Mitigation Options, East Baton Rouge Parish, Louisiana. We greatly appreciate the notice of information but found it very difficult to understand your honest intent as it relates to our property. Please be advised that as owners of property that is now being considered in this project, we are requesting public hearings be held to inform and educate property owners. Additionally, by simply including our property in the proposed action, you may have negatively impacted the value of our home. A form letter with a reference to a web site is an inadequate way to inform and engage the public considering the significant impact. Please feel free to contact us if you have any questions. We can be reached by contacting Terrie Sterling at 225.202.8298 or at the address you have on file. We look forward to hearing from you in the very near future.

Respectfully yours,

Mr. & Mrs Edmund Sterling

Mr and Mrs Edmund Sterling

6864 Lower Zachary Rd, Zachary, Louisiana 70791

Roberts, Steve W MVN

From: Troy Furr [troyfurr@hotmail.com]
Sent: Monday, July 16, 2012 12:42 PM
To: Roberts, Steve W MVN
Cc: Charles Jones
Subject: Public Comment on Comite Diversion EA

Steve,

Pg 21, paragraph 2.6.6 states that the Comite Diversion project straddles only two catalog units (HUC 08070201 and HUC 08070202). I think that this is incorrect and that the project also straddles HUC 08070100. My reasoning: Construction of the "Brooke's Lake Closure" is part of the Comite Diversion project. All of the work at Brooke's Lake will occur within the natural floodplain of the Mississippi River. There are no levees at this point on the river and Brooke's Lake is routinely flooded during normal high water stages.

We appreciate your hard work.

Troy Furr
Profit Island Owner

RODNEY ALEXANDER
5TH DISTRICT, LOUISIANA

WASHINGTON
316 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-8490
FAX: (202) 225-5639

COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEES:
ENERGY AND WATER
LABOR, HEALTH AND HUMAN SERVICES, EDUCATION
FINANCIAL SERVICES

Congress of the United States
House of Representatives

July 12, 2012

Colonel Edward Fleming
District Commander
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Colonel Fleming,

It has been brought to my attention that the New Orleans District, Corps of Engineers has recently sent out a Public Notice in regards to the Comite River Diversion Supplemental Mitigation Options / EA #426. I find this Public Notice to not only be confusing, but extremely frustrating.

As you are aware, the Comite River Diversion project has been in the works for many years now. Over the years there have been hiccups and road blocks that have arisen along the way that have kept this project from moving forward. In recent months my office has been in communication with your staff in an effort to try and assist in making sure that this project continues to move forward in a timely manner. One example of the efforts being made is your decision to allow this project to go through the EA process in order to hopefully expedite the timeframe. This is a tremendous help and I appreciate you making that decision.

Although the decision to go through the EA process is extremely helpful, I also feel as though it is helpful to evaluate ALL possible site options in order to make sure that we not only get the most cost effective site, but that we get the most time efficient one as well. As was stated in the Public Notice EA #426 on page 10, "These or other areas may be addressed in a subsequent EA if the alternatives addressed in this EA cannot provide sufficient, cost-effective credits to completely meet the mitigation obligations for the project." My question is how do we know that the sites listed in EA #426 are the most cost effective if all possible sites inside the watershed are not considered, and why have to go through a subsequent EA when all possible sites could be evaluated together? It was my understanding based on conversations that my office had with your staff that all known sites would be included in this EA. Based on that understanding, my office was told to have those with possible sites turn them in so that they could be added to the list of possible mitigation sites to be evaluated in the EA. I am aware of two (2) letters that were sent to your office requesting that additional sites be added. The first was sent on April 12th and requested the addition of the BLR-2 option, which is located within the Amite watershed under the hydrologic unit code 08070202, and the second was a letter sent to your office on April 13th by the Louisiana Department of Transportation (LADOTD) suggesting seven (7) possible sites, of which only two (2) were included.

ALEXANDRIA
1412 CENTRE COURT, SUITE 402
ALEXANDRIA, LA 71301
(318) 445-0818
FAX: (318) 445-3776

MONROE
1900 STUBBS AVENUE, SUITE B
MONROE, LA 71201
(318) 322-3500
FAX: (318) 322-3577

THIS STATIONERY PRINTED ON RECYCLED FIBERS

RODNEY ALEXANDER
5TH DISTRICT, LOUISIANA

WASHINGTON
316 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-8490
FAX: (202) 225-5639

COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEES:
ENERGY AND WATER
LABOR, HEALTH AND HUMAN SERVICES, EDUCATION
FINANCIAL SERVICES

Congress of the United States
House of Representatives

I understand the comment period for this public notice closes on July 16th, so I ask that you please take the time to review all the information in regards to this project before the comment period closes in hopes that we can have all possible sites added to this EA in order to find the most cost and time efficient sites available. If it is not possible to have all sites added to this EA then I ask that you please provide me a detailed explanation as to why the decision was made to limit this EA to only two (2) of the possible sites that are available and have been presented.

As always, I appreciate your attention to this matter and I look forward to hearing from you soon.

Sincerely,

Rodney Alexander
Member of Congress

ALEXANDRIA
1412 CENTRE COURT, SUITE 402
ALEXANDRIA, LA 71301
(318) 445-0818
FAX: (318) 445-3776

MONROE
1900 STUBBS AVENUE, SUITE B
MONROE, LA 71201
(318) 322-3500
FAX: (318) 322-3577

THIS STATIONERY PRINTED ON RECYCLED FIBERS

Roberts, Steve W MVN

To: Kelsoe, Darrell; Boe, Richard E MVN
Cc: Duplantier, Bobby MVN
Subject: RE: EA / Comite River Diversion Project (UNCLASSIFIED)

From: Johnson, Jonathan [mailto:Jonathan.Johnson@mail.house.gov]
Sent: Wednesday, July 11, 2012 11:53 AM
To: Duplantier, Bobby MVN; Wingate, Mark R MVN
Subject: EA / Comite River Diversion Project

Mark and Bobby,

I hope this finds y'all doing well!

I'm writing you today in hopes that you can clarify for me the Public Notice for the Comite River Diversion Supplemental Mitigation Options / EA #426. When we spoke back in March we had discussed the problems that this project has faced in the past, and the plans to hopefully get this project moving forward and toward completion. In order to see that this was the case y'all were going to be requesting that this project go the EA route in hopes of shortening the overall time frame for the project. I appreciate y'all working to make this happen. That being said, it was also discussed that y'all were going to include all potential sites in the service area to be considered in the EA. I was told to get those who have other potential sites that they would like to have considered to send them in so they could be included. As I review the Public Notice EA #426 I notice that the additional sites that was sent to y'all on April 12th, the BLR-2 option, was not included in the EA. This is not only confusing, but also extremely frustrating. This project has been going on for many years now, and our belief is that all possible options should be being considered and reviewed in order to make sure the best site is located. We believe including all possible options is the best course of action in order to save us from the possibility of having to go down this road again in the future.

In order to help us understand why this possible site was not include, please provide me with a detailed explanation as to why all sites have not been included in this EA, especially the BLR-2 option submitted on April 12th.

Thank you for your efforts in moving this project forward and I look forward to hearing from you very soon!

JJ

Jonathan Johnson

State Director

Congressman Rodney Alexander (LA-05)

1900 Stubbs Ave., Suite B
Monroe, LA 71201
318-322-3500
318-322-3577 FAX

1412 Centre Court, Suite 402
Alexandria, LA 71301
318-445-0818
318-445-3776 FAX

Sign up for our e-Newsletter <http://alexander.house.gov/index.cfm?sectionid=93&sectiontree=29,93>

Twitter <http://twitter.com/USRepAlexander> RSS Feed <http://alexander.house.gov/common/rss/?rss=24> YouTube <http://www.youtube.com/RepRodneyMAlexander> Flickr <http://www.facebook.com/pages/Rodney-Alexander/20002702544#!/pages/Rodney-Alexander/20002702544?v=wall>

Classification: UNCLASSIFIED
Caveats: NONE

NOTICE: This e-mail and any files transmitted with it are the property of ARCADIS U.S., Inc. and its affiliates. All rights, including without limitation copyright, are reserved. The proprietary information contained in this e-mail message, and any files transmitted with it, is intended for the use of the recipient(s) named above. If the reader of this e-mail is not the intended recipient, you are hereby notified that you have received this e-mail in error and that any review, distribution or copying of this e-mail or any files transmitted with it is strictly prohibited. If you have received this e-mail in error, please notify the sender immediately and delete the original message and any files transmitted. The unauthorized use of this e-mail or any files transmitted with it is prohibited and disclaimed by ARCADIS U.S., Inc. and its affiliates. Nothing herein is intended to constitute the offering or performance of services where otherwise restricted by law.

MACK "BODI" WHITE
STATE SENATOR
DISTRICT 6
808 O'Neal Lane
Baton Rouge, LA 70816
(225) 272-1324
(855) 532-9796
Fax: (225) 272-1382
whitem@legis.la.gov

SENATE
STATE OF LOUISIANA

COMMITTEES
Commerce
Education
Finance
Judiciary C

July 2, 2012

Mr. Steve Roberts
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160

Re: Comite River Diversion Mitigation

After serving two terms from 2004-2012 in the Louisiana House for District 64 and currently serving as State Senator for District 6, I represent many citizens in East Baton Rouge Parish that could be directly affected by the Comite River Diversion mitigation.

My office is contacted regularly by concerned citizens who could potentially be affected at their business, homes, and churches with the original limited mitigated area of the project. I am pleased that the mitigation area will be expanded enabling the credits to be approved in a timely manner and keep the Comite River Diversion project moving. I am in full support of including land adjacent to the Comite River, Profit Island, McHugh Swamp and commercial mitigation banks as compensatory mitigation for the impact of this project.

Thank you for your time and consideration. Please don't hesitate to contact my office if you need any assistance.

Sincerely,

Mack "Bodi" White

Mack "Bodi" White
State Senator, District 6

MW/swb

ALABAMA-COUSHATTA TRIBE OF TEXAS
571 State Park Road 56 • Livingston, Texas 77351 • (936) 563-1100

July 23, 2012

U.S. Army Corps of Engineers
New Orleans District
Attn: CEMVN-PDN-NCR (Swanda)
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Mr. Swanda:

On behalf of Mikko Oscola Clayton Sylestine and the Alabama-Coushatta Tribe of Texas (ACT), our appreciation is expressed on your efforts to consult us regarding the Comite River Diversion Supplemental Mitigation Options in East Baton Rouge Parish.

Our Tribe maintains ancestral associations throughout the state of Louisiana despite the absence of written records to completely identify Tribal activities, villages, trails, or grave sites. However, it is our objective to ensure significances of American Indian ancestry especially of Alabama-Coushatta origin are administered with the utmost regard.

Upon review of your June 22, 2012 correspondence, we concur with your "No Historic Properties Affected" recommendation. No known impacts to cultural assets of the Alabama-Coushatta Tribe of Texas are anticipated in conjunction with this proposal. In the event of inadvertent discovery of archaeological artifacts and/or human remains, activity in proximity to the location must cease and appropriate authorities, including our office, notified without delay for additional consultations.

Should you require further assistance, please do not hesitate to contact us.

Sincerely,

Bryant J. Celestine
Historic Preservation Officer

Telephone: 936 – 563 – 1181 celestine.bryant@actribe.org Fax: 936 – 563 – 1183