



Coastal Protection and
Restoration Authority of Louisiana

**State of Louisiana
Coastal Protection and Restoration
Authority**

2018 Annual Inspection Report

for

**North Lake Mechant Landbridge
Restoration Project (TE-44)**

State Project Number TE-44
Priority Project List 10

August 8, 2018
Terrebonne Parish

Prepared by:

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I. Introduction

The North Lake Mechant Landbridge Restoration Project (TE-44) is located in Terrebonne Parish, Louisiana approximately 15 miles southwest of Theriot, Louisiana and lies within the Penchant sub-basin of the Terrebonne hydrologic basin. The project area is bounded by Lake Mechant to the south, by Lake Pagie to the west, by Bayou DeCade to the north, and by the natural levee of Small Bayou LaPointe to the east (Appendix A – Project Features Map). The project encompasses approximately 7,570 acres of predominantly open water and intermediate marsh habitat with some fresh marsh in the northwest and brackish marsh in the southeast.

These marshes form a critical land bridge barrier that separates the fresh and intermediate marshes north of Bayou DeCade from the brackish waters and marine, tidally-dominated Lake Mechant system to the south. The goal of the TE-44 project is to protect and restore the North Lake Mechant land bridge and the Small Bayou LaPointe Ridge. Construction was completed in December of 2010 and consisted of the creation and nourishment of approximately 901 acres of marsh north of Lake Mechant utilizing dredged material from the lake; construction of approximately 89,270 linear feet of earthen containment dike; construction of approximately 2,200 linear feet of armored earthen dike; repair of an existing earthen plug; and construction of 8 canal plugs including the replacement of an existing fixed-crest weir.

The project has a twenty (20) year project life, which began in December, 2010. The principal project features include:

- Earthen Plug No. 1
- Earthen Plug No. 2
- Rebuilt Earthen Plug (No. 3)
- Earthen Plug No.4
- Rock Plug No. 1
- Rock Plug No. 2
- Sheetpile Plug No. 1
- Sheetpile Plug No. 2
- Sheetpile Plug No. 3
- Sheetpile Weir (existing weir replacement)
- Armored Earthen Dike (2,200 Linear Feet)
- Hydraulic-Dredged Fill Material (901 acres of marsh)

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the North Lake Mechant Landbridge Restoration (TE-44) Project is to evaluate the constructed project features in order to identify any deficiencies. The inspection results are used to prepare a report detailing the condition of the project features and recommendations of any corrective actions considered necessary. Should it be determined that corrective actions are needed, the CPRA shall provide, in the report, a detailed cost estimate for

engineering, design, supervision, inspection, construction, and contingencies, as well as an assessment of the urgency of such repairs. The annual inspection report also contains a summary of maintenance projects which were completed since the construction of the original project features and an estimated projected budget for the upcoming three (3) years for operation, maintenance, and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C. A summary of past operation and maintenance projects completed since construction of the North Lake Mechant Landbridge Restoration Project are outlined in Section IV.

The annual inspection of North Lake Mechant Landbridge Restoration (TE-44) Project took place on May 1, 2018. In attendance were Brian Babin and Todd Hubbell with CPRA, and Robert Dubois with US Fish and Wildlife Services. The inspection began around 9:00 a.m. at Rock Plug 2 and concluded around 11:30 a.m. near the northern end of the concrete articulated mats along Bayou Raccourci. The trip included a visual inspection of the project features, structures and marsh creation areas. Photographs of the project features are shown in Appendix B.

III. Project Description

The following completed, structural components jointly accepted by CPRA and USFWS will require operation, maintenance, repair, and/or rehabilitation throughout the twenty (20) year life of the project.

Earthen Plug No. 1

This canal plug is located at Lat. 29°20'36.3", Long. 90°59'36.3" along the eastern shoreline of Lake Pagie in an existing canal. It was constructed from dredged material from the canal on a geotextile fabric layer. The plug is 165 feet long (direction along the shoreline) by 50 feet wide. The plug was constructed to an elevation of +4.0' NAVD88.

Earthen Plug No. 2

This plug is located at Lat. 29°21'31.3", Long. 90°53'40.0" along the southern bank of Small Bayou LaPointe. It was constructed from dredged material on a geotextile fabric layer. The borrow area is located in the open water area south of the plug. The plug is 105 feet long (direction along the bank) by 60 feet wide. The plug was constructed to an elevation of +3.0' NAVD88.

Earthen Plug No. 3 (Rebuilt)

This existing plug is located at Lat. 29°20'24.5", Long. 90°56'04.4" at the south end of a canal south of Raccourci Bay. The existing earthen plug was rebuilt using dredged material placed on geotextile fabric to an elevation of +4.0' NAVD88.

Earthen Plug No.4

This plug is located at Lat. 29°20'55.2", Long. 90°55'14.7", across the Small Bayou LaPoint between Rock Plug No. 1 and Earthen Plug No.3. The earthen plug was constructed using dredge material from Small Bayou LaPoint to an elevation of approximately +4.0' NAVD. This plug was not included in the original design of the project but was added to the proposed features during construction.

Rock Plug No. 1

This plug is located at Lat. 29°21'10.9", Long. 90°54'24.6" along the southern bank of Small Bayou LaPointe. The plug was constructed using DOTD Class 250 lb Riprap to an elevation of +4.0' NAVD88 with a 10-foot crest width and 3 to 1 side slopes on a geotextile fabric base. The plug is 260 feet long.

Rock Plug No. 2

This canal plug is located at Lat. 29°21'40.9", Long. 90°53'28.9" just east of Small Bayou LaPointe in an intersecting pipeline canal. The plug was constructed using DOTD Class 250 lb Riprap to an elevation of +4.0' NAVD88 with a 10-foot crest width and 3 to 1 side slopes on a geotextile fabric base. The plug is 166 feet long.

Sheet Pile Plug No. 1

This plug is located at Lat. 29°20'22.2", Long. 90°59'09.2" along the southern bank of an access canal between Lake Pagie and Lake Mechant. The plug was constructed using PDA-27 Grade 42 steel sheet pile sections to an elevation of +4.0' NAVD88. The sheet pile was installed to a maximum depth of -35.0' NAVD88. The plug is 207 feet long with earthen wingwalls constructed at both ends to an elevation of +5.0' NAVD88. The wingwalls were constructed from dredged material and armored with articulated concrete mats on geotextile fabric.

Sheet Pile Plug No. 2

This canal plug is located at Lat. 29°20'00.2", Long. 90°58'32.2" in an access canal between Lake Pagie and Lake Mechant. The plug was constructed using PDA-27 Grade 42 steel sheet pile sections to an elevation of +4.0' NAVD88. The sheet pile was installed to a maximum depth of -23.0 feet NAVD88. The plug is 282 feet long with earthen wingwalls constructed at both ends to an elevation of +5.0' NAVD88. The wingwalls were constructed from dredged material and armored with articulated concrete mats on geotextile fabric.

Sheet Pile Plug No. 3

This canal plug is located at Lat. 29°20'22.2", Long. 90°56'12.3" in an access canal south of Raccourci Bay. The plug was constructed using PDA-27 Grade 42 and 50 steel sheet pile sections to an elevation of +4.0' NAVD88. The sheet pile was installed to a maximum depth of -44.5' NAVD88. The plug is 177 feet long with earthen wingwalls constructed at both ends to an elevation of +5.0' NAVD88. The earthen wingwalls were constructed from dredged material and armored with articulated concrete mats on geotextile fabric.

Sheet Pile Weir (existing weir replacement)

This canal plug/weir is located at Lat. 29°20'19.8", Long. 90°57'19.5" in a natural channel north of Lake Mechant. An existing timber pile and timber sheeting weir was removed near this location. The new weir was constructed using PDA-27 Grade 42 steel sheet pile sections to an elevation of +4.0' NAVD88. The sheet pile was installed to a maximum depth of -34' NAVD88. A 40-foot wide weir opening was constructed to an elevation of 0.0' NAVD88 near the center of the channel. The plug is 116 feet long with earthen wingwalls constructed at both ends to an elevation of +5.0' NAVD88. The earthen wingwalls were constructed from dredged material and armored with articulated concrete mats above a geotextile fabric.

Armored Earthen Dike

This dike is located along the east bank of Bayou Raccourci, a natural channel between Raccourci Bay and Lake Mechant, along the western boundary of Fill Area 6. The dike was constructed using dredged in-situ material from within Fill Area 6 to an elevation of +4.0' NAVD88 with a 4-foot crest width, 4 to 1 side slopes on a geotextile fabric base. The earthen dike was armored with articulated concrete mats. The mats are 20 feet long by 8 feet wide and consist of individual 4.5-inch thick concrete cells cast onto a copolymer fiber rope. The dike is 2,200 feet long. This site includes aluminum warning signs mounted on a 30' treated timber piling with galvanized hardware.

Dredged Material Fill Areas

Marsh creation target fill elevations of +3.5' and +4.0' NAVD 88 and marsh nourishment target fill elevations of +2.5' were met. All earthen containment dikes were constructed to an elevation of 4.0' NAVD88 with a 3-foot crest width and 4 to 1 side slopes. **Although these project features have been constructed as part of the North Lake Mechant Landbridge Restoration Project, there are no provisions in the O&M Plan for marsh nourishment of the newly created marsh areas.**

Fill Area 1 – 57.7 acres located east of Lake Pagie bordered by a constructed, continuous earthen containment dike to the north and east; a pipeline canal to the south; and the shoreline of Lake Pagie to the west.

Fill Area 2A – 141.0 acres located north of Lake Mechant along the eastern shoreline of Lake Pagie. This area is bordered by constructed earthen containment dikes and the eastern shoreline of Lake Pagie to the west; a pipeline canal to the north; existing marsh and a constructed earthen containment dike to the east; and Fill Area 2B to the south..

Fill Area 2B – 108.7 acres located north of Lake Mechant along the eastern shoreline of Lake Pagie. This area is bordered by constructed earthen containment dikes and the eastern shoreline of Lake Pagie to the west; Fill Area 2A to the north; existing marsh and a constructed earthen containment dike to the east; and Lake Mechant to the south.

Fill Area 2/3 – 24.7 acres bordered by existing marsh and a constructed earthen containment dike to the south; a pipeline canal to the north; Fill Area 2A to the west and Fill Area 3 to the east.

Fill Area 3 – 134.0 acres bordered by Lake Mechant to the south; a pipeline canal to the north and east; and a constructed, continuous earthen containment dike to the west.

Fill Area 4 – 124.8 acres bordered by Lake Mechant and existing marsh to the south; a pipeline canal to the west; a constructed, continuous earthen containment dike to the north; and a natural channel and existing marsh to the east. This fill area includes approximately 24 acres of marsh nourishment at the east end where fill placement was limited to a maximum of 6 to 12 inches above existing marsh.

Fill Area 5 – 28.6 acres located north of Lake Mechant bordered by a constructed, continuous earthen containment dike to the west and a natural channel to the east.

Fill Area 5-1 – 90.1 acres located south of Bay Raccourci bordered by Bayou Raccourci to the west and a natural channel to the east, and existing marsh and a constructed earthen containment dike to the west.

Fill Area 6 – 47.8 acres located north of Lake Mechant bordered by Bayou Raccourci and a constructed armored earthen dike to the west; a constructed earthen containment dike along the southern shoreline of Raccourci Bay to the north; and existing marsh to the east. This fill area includes approximately 16 acres of marsh nourishment at the southern end where fill placement was limited to a maximum of 6 to 12 inches above existing marsh.

Fill Area 7 – 31.0 acres bordered by a constructed earthen containment dike along the southern shoreline of Raccourci Bay to the north, existing marsh to the south, and an access canal to the east.

Fill Area 8 – 113.2 acres bordered by a constructed, continuous earthen containment dike to the north and the Small Bayou LaPointe ridge to the south.

IV. Summary of Past Operation and Maintenance Projects

To date, there have been no maintenance events undertaken or project features rehabilitated. **This section will be used to reference all maintenance activities on future inspection reports.**

V. Inspection Results

Rock Plug No. 1

The Rock Plug 1 structure located along the south bank of Small Bayou LaPointe across the old Lil' Deuce Cut appears to be in good condition. There are no visible signs of settlement since construction or obvious erosion and washouts around the embankment tie-ins. There was a warning sign and floating buoy missing on the northeast side of the structure. The other signs and buoys appear to be in fair condition. It is recommended that the aluminum warning sign and floating buoy be replaced during the next maintenance event in the area. (Appendix B, Photos 5 through 7)

Rock Plug No. 2

Rock plug 2 appears to be in fair condition. At the time of the inspection, the rock plug was over-grown with vegetation making it difficult to view the structure. We were unable to inspect the bank tie-ins due to limited access and the amount of vegetation covering the structure. We did not notice any signs of breaching on either end of the structure, or flow around the structure. The warning signs and floating buoys in front of the structure were in fair condition with only slight damage to the southwest sign that had been vandalized and damaged by a shotgun. (Appendix B, Photos 1 through 3)

Earthen Plug No. 1

The Earthen Plug 1 structure located on the eastern edge of Lake Pagie appeared to be in good condition. The plug was viewed from the "Y" canal and was heavily vegetated with no signs of erosion or washouts of the bank tie-ins. There are no recommendations for corrective action at this time. (Appendix B, Photos 23)

Earthen Plug No. 3

Earthen Plug No. 3 is located between fill areas 7 & 8 in the vicinity of Sheetpile Plug No.3. The structure is difficult to identify and access due to the presence of tall cut grass in front of the structure and very shallow water along the bankline. We were unable to see the structure to determine if any settlement or erosion has occurred. (No photos were taken)

Earthen Plug No. 4

Earthen Plug No. 4 is located in Small Bayou LaPointe between Rock Plug 1 and Fill Area 8. At some point after construction, the earthen plug was breached by vandals and continues to erode. The breach has completely eroded away with a small portion of the earthen plug connecting the north bank. Due to the remote location of this structure, any corrective action would require a marsh excavator tracking long distances to make repairs. We will continue to work with the landowner and federal sponsor on identifying other areas of the ridge that may be breached or eroded and include these repairs in the first scheduled maintenance event. (Appendix B, Photo 9).

Armored Earthen Dike

The Armored Earthen Dike on the west bank of Bayou Raccourci appears to be in fair condition. As reported on previous inspections, the articulated mats were inundated with woody vegetation emerging through the seams and in front of the concrete mats. The woody vegetation that is growing through the mats raises some concerns regarding the stability of the rope as the trees/shrubs continue to grow. The vegetative growth will be monitored during future inspections. As previously reported, there were isolated sections of the mat that appeared to be sliding towards the channel creating a separation of the concrete blocks at several locations causing a strain on the copolymer rope. Also, there are some variations in height of the embankment along the length of the armored earthen dike. This is believed to be caused by differential settlement of the dredged material and the weight of the articulated mats. These areas of concern will be monitoring closely on future site visits to determine if corrective actions are needed. (Appendix B, Photos 24 through 31)

Sheetpile Weir (existing weir replacement)

The steel sheetpile weir structure appears to be in good condition. There were no visual signs of corrosion or damage to the sheet pile or top channel cap. There doesn't appear to be any erosion or washouts around the embankment tie-ins as well. The warning signs and supports are also in good condition. There are no recommendations for corrective action at this time. (Appendix B, Photo 13)

Sheetpile Plug No. 1

Sheetpile plug 1 is located along the south bank of the northwest reach of the "Y" Canal, just north of Lake Mechant. There are no signs of settlement or corrosion of the sheet pile, channel cap, warning signs or supports. The embankment tie-ins are armored with articulated concrete mats and also show no signs of settlement or erosion around structure. There are no recommendations for corrective actions at this time. (Appendix B, Photos 20 through 22)

Sheetpile Plug No. 2

The Sheetpile Plug No.2 suffered catastrophic structural damage due to Hurricane Isaac in August 2012. A large portion of the center section of the sheet pile wall has collapsed over into the channel allowing water to pass through/over the structure. The structure is damaged in such a way that there are minimal options for repairing the structure, it must be removed and then replaced. CPRA has initiated a claim with the Federal Emergency Management Agency (FEMA) as the structure was damaged during a natural disaster. In

May 2015, FEMA had rejected CPRA's claim for funding the repair of the steel sheetpile structure. CPRA has appealed FEMA's decision and is currently awaiting a ruling on the appeal. Due to condition of the structure and the delays in CPRA's appeal to FEMA, CPRA has decided to proceed with the removal and replacement of the steel sheetpile plug using state funds. An engineering firm has been selected to prepare bid documents for this maintenance event. It is estimated that construction should be completed by late 2019. (Appendix B, Photos 14 through 19)

Sheetpile Plug No. 3

Overall, Sheetpile Plug No. 3 appeared to be in good condition with no damage or corrosion of the steel sheetpile or channel cap. The bank tie-ins and articulated erosion mats were also in good condition with no erosion or washouts present, and the warning signs on the structure were intact and visible. There are no recommendations for corrective action at this time. (Appendix B, Photos 10 through 12)

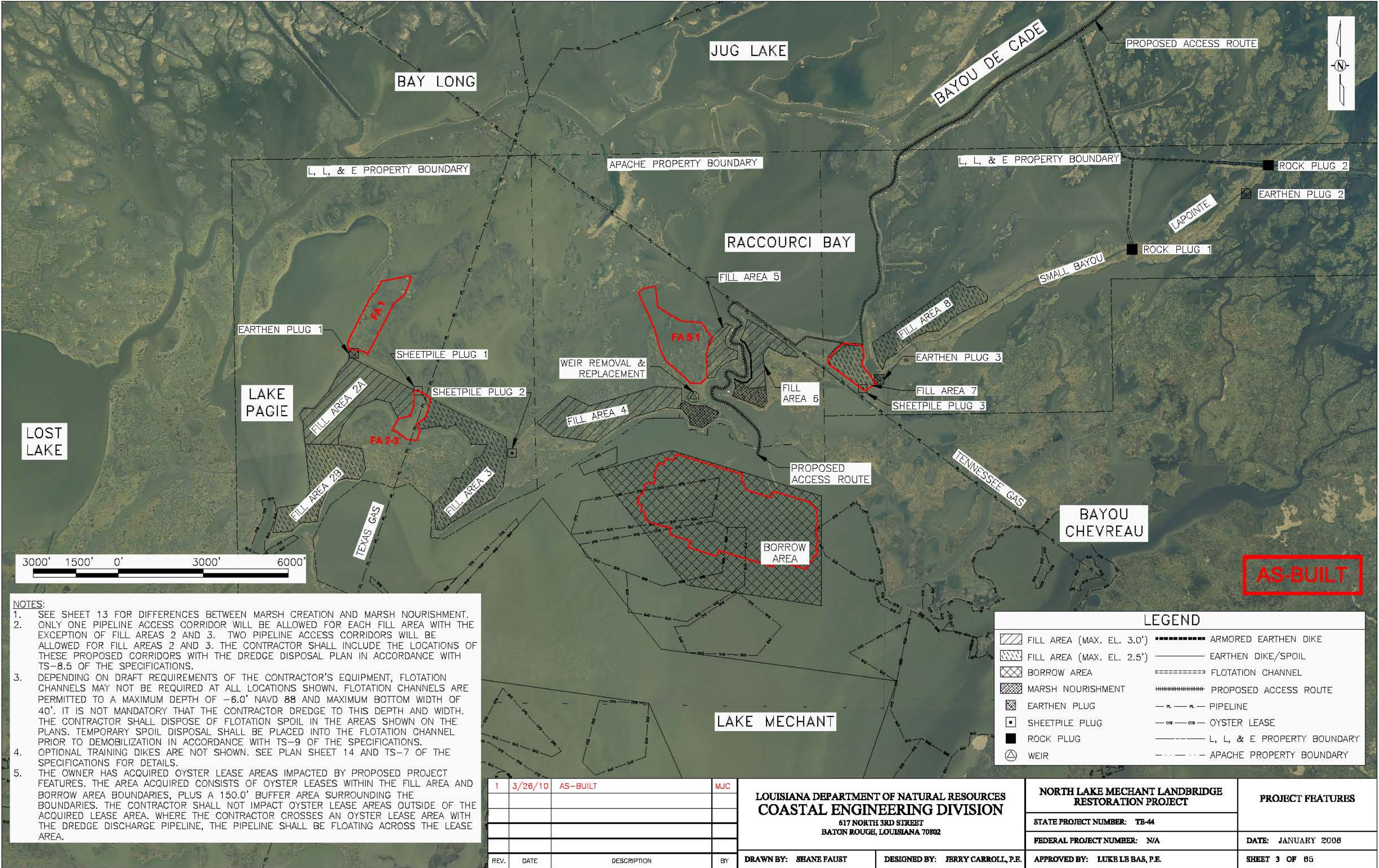
Y Canal – Southern Tip

From previous inspections, concerned persons informed CPRA of a thinning portion of land at the southern tip of the "Y" canal. The narrow strip of land is covered with vegetation and oyster shell fragments and appears to experience regular overtopping during high water events. After further review, this area is north of the re-established land bridge (Fill area No.3 and 4) and will experience less tidal influence once the Steel Sheetpile Plug No.2 is replaced, thus reducing erosion in the area. We shall continue to monitor this areas of concern. We are not recommending immediate action at this time.

VI. Conclusions and Recommendations

The North Lake Mecant (TE-44) project appears to be in good condition with minor deficiencies such as missing signs at Rock Plug No.1, woody vegetation protruding through the articulated concrete mats along Bayou Raccourci, and a couple of small breaches in the Small Bayou Lapointe Ridge. The immediate concern is the structural failure of Steel Sheetpile Plug No.2. Engineering and Design of the removal and replacement of Plug No.2 is currently underway and the final bid documents are scheduled to be completed by the end of 2018.

Appendix A
Project Features Map



NOTES:

1. SEE SHEET 13 FOR DIFFERENCES BETWEEN MARSH CREATION AND MARSH NOURISHMENT.
2. ONLY ONE PIPELINE ACCESS CORRIDOR WILL BE ALLOWED FOR EACH FILL AREA WITH THE EXCEPTION OF FILL AREAS 2 AND 3. TWO PIPELINE ACCESS CORRIDORS WILL BE ALLOWED FOR FILL AREAS 2 AND 3. THE CONTRACTOR SHALL INCLUDE THE LOCATIONS OF THESE PROPOSED CORRIDORS WITH THE DREDGE DISPOSAL PLAN IN ACCORDANCE WITH TS-8.5 OF THE SPECIFICATIONS.
3. DEPENDING ON DRAFT REQUIREMENTS OF THE CONTRACTOR'S EQUIPMENT, FLOTATION CHANNELS MAY NOT BE REQUIRED AT ALL LOCATIONS SHOWN. FLOTATION CHANNELS ARE PERMITTED TO A MAXIMUM DEPTH OF -6.0' NAVD 88 AND MAXIMUM BOTTOM WIDTH OF 40'. IT IS NOT MANDATORY THAT THE CONTRACTOR DREDGE TO THIS DEPTH AND WIDTH. THE CONTRACTOR SHALL DISPOSE OF FLOTATION SPOIL IN THE AREAS SHOWN ON THE PLANS. TEMPORARY SPOIL DISPOSAL SHALL BE PLACED INTO THE FLOTATION CHANNEL PRIOR TO DEMOBILIZATION IN ACCORDANCE WITH TS-9 OF THE SPECIFICATIONS. OPTIONAL TRAINING DIKES ARE NOT SHOWN. SEE PLAN SHEET 14 AND TS-7 OF THE SPECIFICATIONS FOR DETAILS.
4. THE OWNER HAS ACQUIRED OYSTER LEASE AREAS IMPACTED BY PROPOSED PROJECT FEATURES. THE AREA ACQUIRED CONSISTS OF OYSTER LEASES WITHIN THE FILL AREA AND BORROW AREA BOUNDARIES, PLUS A 150.0' BUFFER AREA SURROUNDING THE BOUNDARIES. THE CONTRACTOR SHALL NOT IMPACT OYSTER LEASE AREAS OUTSIDE OF THE ACQUIRED LEASE AREA. WHERE THE CONTRACTOR CROSSES AN OYSTER LEASE AREA WITH THE DREDGE DISCHARGE PIPELINE, THE PIPELINE SHALL BE FLOATING ACROSS THE LEASE AREA.

LEGEND	
	FILL AREA (MAX. EL. 3.0')
	FILL AREA (MAX. EL. 2.5')
	BORROW AREA
	MARSH NOURISHMENT
	EARTHEN PLUG
	SHEETPILE PLUG
	ROCK PLUG
	WEIR
	ARMORED EARTHEN DIKE
	EARTHEN DIKE/SPOIL
	FLOTATION CHANNEL
	PROPOSED ACCESS ROUTE
	PIPELINE
	OYSTER LEASE
	L, L, & E PROPERTY BOUNDARY
	APACHE PROPERTY BOUNDARY

1	3/26/10	AS-BUILT	MJC
REV.	DATE	DESCRIPTION	BY

LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL ENGINEERING DIVISION 617 NORTH 3RD STREET BATON ROUGE, LOUISIANA 70802		NORTH LAKE MECHANT LANDBRIDGE RESTORATION PROJECT		PROJECT FEATURES
		STATE PROJECT NUMBER: TB-44		
				FEDERAL PROJECT NUMBER: N/A
DRAWN BY: SHANE FAUST	DESIGNED BY: JERRY CARROLL, P.E.	APPROVED BY: LUKE LB BAS, P.E.		SHEET 3 OF 65

Appendix B

Photographs



Photo No.1 – View of Rock Plug No.2 located on the northeast edge of the project area looking east. Heavy vegetation on both sides of the structure.



Photo No.2 – view of the southern bank tie-in of Rock Plug No.2 with heavy vegetation on both sides of the structure.



Photo No.3 – view of timber and floating warning signs on the west side of Rock Plug No.2.



Photo No.4 – view of breach in Small Bayou LaPointe Ridge between Rock Plug No.2 and Earthen Plug No.1



Photo No.5 – overall view of Rock Plug No.1 along Small Bayou LaPointe Ridge looking south.



Photo No.6 – view of the west bank tie-in of Rock Plug No.1 along Small Bayou LaPointe Ridge.



Photo No.7 - view of east bank tie-in and missing sign of Rock Plug No.1 along Small Bayou LaPointe Ridge.



Photo No.8 – view along the crest of Rock Plug No.1 looking west along Small Bayou LaPointe Ridge.



Photo No.9 – View of eroded earthen plug along Bayou LaPointe Ridge between Rock Plug No.1 and Earthen Plug No.3 that was vandalized several years back.



Photo No.10 – View of steel Sheetpile Plug No 3 located at the end of an existing channel along the south bank of Raccourci Bay.



Photo No. 11 - View of the east bank tie-in and articulated mats of Steel Sheetpile Plug No.3



Photo No. 12 - View of the west bank tie-in and articulated mats of Steel Sheetpile Plug No.3



Photo No.13 – View of Weir Removal and Replacement Structure along small channel along west bank of Bayou Raccourci.



Photo No.14 – Overall view of Steel Sheetpile Plug No. 2 which was damaged during Hurricane Issac in 2012.



Photo No.15 – View of west bank tie-in and damaged sheet pile section and floating/lighted buoy of Steel Sheetpile Plug No. 2.



Photo No.16 – View of damaged center section of Steel Sheetpile Plug No. 2 and floating/lighted buoy.



Photo No.17 – View of damaged center section of Steel Sheetpile Plug No. 2



Photo No.18 – View of damaged steel sheetpile section and east bank tie-in of Sheetpile Plug No.2.



Photo No. 19 – View of floating/lighted buoy installed on both sides of damaged Sheetpile Plug No.2. Two (2) buoys were installed on both sides of the structure.



Photo No.20 – View of Steel Sheetpile Plug No.1 and bank tie-in on west side of structure located along Y-Canal east of Lake Pagie.



Photo No.21 – View of Steel Sheetpile Plug No.1 located along Y-Canal east of Lake Pagie.



Photo No.22 – View of Steel Sheetpile Plug No.1 and bank tie-in on east side of structure located along Y-Canal east of Lake Pagie.



Photo No.23 – View of earthen embankment plug located along the east bank of Lake Pagie at the head of the Y-Canal.



Photo No.24 – View of the articulated mats along the east bank of Bayou Raccourci.



Photo No.25 – View of the articulated mats along the east bank of Bayou Raccourci.



Photo No.26 – View of the articulated mats along the east bank of Bayou Raccourci.



Photo No.27 – View of the articulated mats along the east bank of Bayou Raccourci.



Photo No.28 – View of an existing warning sign along the east bank of Bayou Raccourci adjacent to the articulated concrete mats.



Photo No.29 – View of the articulated mats along the east bank of Bayou Raccourci.



Photo No.30 – View of the articulated mats along the east bank of Bayou Raccourci.



Photo No.31 – View of the articulated mats along the east bank of Bayou Raccourci.

Appendix C

Three Year Budget Projection

North Lake Mechant Landbridge Restoration (TE-44)
Three-Year Operations & Maintenance Budgets 07/01/18- 06/30/21

<u>Project Manager</u>	<u>O & M Manager</u>	<u>Federal Sponsor</u>	<u>Prepared By</u>
	<i>Ledet</i>	<i>USFWS</i>	<i>Babin</i>

	2018/2019	2019/2020	2020/2021
Maintenance Inspection	\$ 16,002.00	\$ 16,482.00	\$ 16,976.00
Structure Operation	\$ -	\$ -	
CPRA Administration	\$ 12,426.00	\$ -	\$ -
COE Administration	\$ -	\$ -	\$ -

Maintenance/Rehabilitation

18/19 Description	Earthen Plug Refurbishment

<i>E&D</i>	\$ 19,725.00
<i>Construction</i>	\$ 59,375.00
<i>Construction Oversight</i>	
<i>Sub Total - Maint. And Rehab.</i>	<u>\$ 79,100.00</u>

19/20 Description	

<i>E&D</i>	\$ -
<i>Construction</i>	\$ -
<i>Construction Oversight</i>	\$ -
<i>Sub Total - Maint. And Rehab.</i>	<u>\$ -</u>

20/21 Description:	

<i>E&D</i>	\$ -
<i>Construction</i>	\$ -
<i>Construction Oversight</i>	\$ -
<i>Sub Total - Maint. And Rehab.</i>	<u>\$ -</u>

	2018/2019	2019/2020	2020/2021
<u>Total O&M Budgets</u>	<u>\$ 107,528</u>	<u>\$ 16,482</u>	<u>\$ 16,976</u>

O&M Budget (3 Yr Total)	<u>\$ 140,986</u>
Unexpended O&M Funds	<u>\$ 844,329</u>
Remaining O&M Funds	<u>\$ 703,343</u>

OPERATIONS & MAINTENANCE BUDGET WORKSHEET

Project: North Lake Mechant Landbridge Restoration (TE-44)

FY 18/19 –

CPRA Administration \$ 12,426

Inspection/Report: \$ 16,002

Operation: \$ 0

Maintenance: \$ 79,100

E&D: \$ 19,725

Construction: \$ 59,375

Construction Oversight: \$ 0

Operation and Maintenance Assumptions:

Maintenance Event No.1

Small Bayou Lapointe Ridge Breach Repairs Below are estimated costs for refurbishing sections of the embankment.

Maintenance Event No.1

Earthen Embankment Refurbishment

Construction Cost:

Mobilization: \$ 20,000

Embankment Construction: \$ 25,000

(500 lf. @ \$50/lf.)

Seeding/Fertilizing: \$ 2,500

Construction Cost: \$ 47,500

Contingency (25%): \$ 11,875

Total Estimated Construction Cost: \$ 59,375

Engineering: \$7,125

(12% Construction Cost)

Surveying: \$2,800

(1days @ 2,800/day)

Inspection: \$6,800

(80 hr. @ \$85/hr.)

Construction Admin: \$3,000

Total Professional Services \$ 19,725

Total Overall Estimated Project Budget: \$79,100

CPRA Direct Costs

Maintenance No.1

CPRA Engineer 4 – 50 hrs. @ \$68/hrs.: \$ 3,400

CPRA Engineer6 – 12 hrs. @ \$78/hr. \$ 936

Total Direct CPRA Costs: \$ 4,336

CPRA Indirect Costs**Maintenance No.1**

CPRA Engineer 4 – 50 hrs. @ \$127/hr.:	\$ 6,350
CPRA Engineer 6 – 12 hrs. @ \$145/hr.	<u>\$ 1,740</u>
	\$ 8,090

Total CPRA Administration: \$12,426

Inspection/Report:

\$15,536 x 3% = \$16,002

FY 19/20 –

Administration		\$	0
O&M Inspection & Report		\$	16,482
Operation:		\$	0
Maintenance:		\$	0
E&D:	\$	0	
Construction:	\$	0	
Construction Oversight:	\$	0	

Operation and Maintenance Assumptions:

O&M Inspection and Report – 3% inflation

FY 20/21 –

Administration		\$	0
O&M Inspection & Report		\$	16,976
Operation:		\$	0
Maintenance:		\$	0
E&D:	\$	0	
Construction:	\$	0	
Construction Oversight:	\$	0	

Operation and Maintenance Assumptions:

O&M Inspection and Report – 3% inflation

O&M Accounting:

Total O&M Budget (Lana Report):	\$ 916,383
CPRA Expenditures to Date (LaGov)	<u>\$ 72,054</u>
Unexpended O&M Budget:	\$ 844,329