PL-646 CWPPRA
PROJECT COMPLETION REPORT

PROJECT NAME	Raccoon Island Marsh Creation
CWPPRA/STATE PROJECT NO	TE-48 Phase B

Report Date March 31, 2014 By: Natural Resources Conservation Service

1. Project Personnel

CPRA Project Manager	Dustin White	(985) 342-4512
CPRA Construction Project Mgr	Brian Babin	(985) 447-0956
CPRA Monitoring Manager	Glen Curole	(985) 447-0995
Federal Agency Project Manager	Loland Broussard	(337) 291-3069
Federal Agency Contracting Officer	Vicki Supler	(318) 473-7645
Federal Agency Design Engineer	Jennette Pelto	(318) 473-7770
Federal Agency COTR	Loland Broussard	(337) 291-3069
Federal Agency Inspector (ECM)	Craig Taylor	
Federal Agency Inspector	Mel Rodrigue	(985) 447-6050

2. Project Location & Description

The project is located in Terrebonne Basin on the western-most island of the Isles Dernieres barrier island chain in Terrebonne Parish, Louisiana.

The project consisted of constructing a containment dike along the northern shore to create a back bay enclosure that was filled with sediments dredged from the gulf.

3. Final Constructed Features

Approximately 58 acres of marsh creation and nourishment was included in this project. This consisted of constructing approximately 9,769 linear feet of earthen containment dike with 400 linear feet of geotextile tubes and 4,620 linear feet of geotextile dike protection being used to protect the bay side dike until adequate consolidation of the marsh platform has been achieved. 735,340 cubic yards of hydraulically dredge earthen material was placed in the marsh creation area.

4. Project Cost Elements

	Project Cost Estimates	Cost Incurred as of Construction Completion*
Construction	**$ 11,287,279.00**	**$ 11,160,636.93**
E & D	**$ 2,131,654.00**	**$ 1,784,936.04**
Landrights	**$ 13,190.00**	**$ 13,852.70**
Monitoring	**$ 275,868.00**	**$ 193,589.21**
O & M	**$ 82,203.00**	**$ 12,632.49**
Total	**$ 13,790,194.00**	**$ 13,165,647.37**

*Based on LANA Report from 9/13/2013

5. Items of Work

Item	Work	Estimated Quantity	Unit	Estimated Unit Price	Estimated Amount	Unit Bid Price	Bid Amount	Final Quantity	Final Amount	% Over/ Under
1	Mobilization and Demobilization	1	JOB	$4,000,000.00	$4,000,000.00	$3,150,000.00	$3,150,000.00	1	$3,461,950.00	109.90%
2	Construction Surveys	1	JOB	$200,000.00	$200,000.00	$75,000.00	$75,000.00	1	$105,339.00	140.45%
3	Excavation, Marsh Creation Dredging	640,000	CY	$6.21	$3,971,929.13	$4.75	$3,040,000.00	735,340	$3,492,865.00	114.90%
4	Earthfill, Containment Dike	1	JOB	$620,000.00	$620,000.00	$1,000,000.00	$1,000,000.00	1	$1,295,040.00	129.50%
5	Staff Gauge Units	28	EA	500.00	$14,000.00	$350.00	$9,800.00	28	$9,800.00	100.00%
6	Contractor Quality Control	1	JOB	100,000.00	$100,000.00	$50,000.00	$50,000.00	1	$50,000.00	100.00%
7	Geotextile	1	JOB	0.00	$0.00	$0.00	$0.00	1	$1,876,684.00	
		Total Estimate		**$8,905,929.13**		**Total Bid**	**$7,324,800.00**		**$10,291,678.00**	

Modifications					
M1	This change order increased the marsh creation area platform elevation from +3.0' to +3.5', modified the dike alignment, and increased the containment dike elevation from +4.5' to +5.0'.				
The following items where changed on the Bid Schedule:					
		Quantity	Unit	Unit Price	Total Cost
3	Excavation, Marsh Creation Dredging	48,800	CY	$4.75	$231,800.00
4	Earthfill, Containment Dike	1	JOB	$295,040.00	$295,040.00
			Total Modification #1		**$526,840.00**

M2	This change order added Bid Item #7 - Geotextile. This included furnishing, filling, and installing geotextile tubes, scour aprons, and anchor tubes along the bayside containment dike.				
The following items where changed on the Bid Schedule:					
		Quantity	Unit	Unit Price	Total Cost
1	Mobilization and Demobilization	1	JOB	$311,950.00	$311,950.00
2	Construction Surveys	1	JOB	$30,339.00	$30,339.00
7	Geotextile	1	JOB	$1,123,790.00	$1,123,790.00
			Total Modification #2		**$1,466,079.00**

M3	This change order increased the cubic yards to be dredged to a total of 750,000 cy.				
The following items where changed on the Bid Schedule:					
		Quantity	Unit	Unit Price	Total Cost
3	Excavation, Marsh Creation Dredging	61,200	CY	$4.75	$290,700.00
			Total Modification #3		**$290,700.00**

M4	This change order is to stop the installation of geotextile tubes, scour aprons, and anchor tubes in Modification #2. Added the work to install geotextile fabric, anchor tubes, and plastic sheeting along and over the bay side containment dike in order to provide protection of the newly constructed containment dike to allow for the consolidation and stabilization of the marsh creation area platform with newly filled dredge material.				
The following items where changed on the Bid Schedule:					
		Quantity	Unit	Unit Price	Total Cost
7	Geotextile	1	JOB	$752,894.00	$752,894.00
			Total Modification #4		**$752,894.00**

M5	This change order deobligated the unusued portion of funds for final contract closeout due to the decrease in quantity for the marsh creation dredging as confirmed by final "as built" survey data.				
The following items where changed on the Bid Schedule:					
		Quantity	Unit	Unit Price	Total Cost
3	Excavation, Marsh Creation Dredging	(14,660)	CY	$4.75	($69,635.00)
			Total Modification #5		**-$69,635.00**

6. Construction and Construction Oversight

Prime construction contractor	**Weeks Marine Inc.**
Subcontractor	**Wilco Marsh Buggies & Drag Lines, Inc.**
Subcontractor	**T. Baker Smith**
Subcontractor	**Infrastructure Alternative**
Original construction contract	**$ 7,324,800.00**
Change orders	**$ 2,966,878.00**
Over/Under runs	**$ 0.00**
Final construction contract	**$ 10,291,678.00**

7. Major Equipment Used

Containment Dike Construction
6001 Link Belt Dragline on BT211 Barge
(2) 325 Cat Long Reach Excavator on Pontoons
325 Cat Short Reach Excavator on Pontoons
(2) 330 Cat Long Reach Excavator on Pontoons (Wilco)
Small Mud Boat
Large Mud Boat
(2) Alum Cabin Work Boats
Survey Skiff

Hydraulic Dredging

30” Dredge “E.W. Ellefsen”
30” Booster Barge
Crewboat “Cheyenne”
Crewboat “Sabine”
Crewboat “Sequoia”
Dredge Tender “Shai James”
Tug Boat “Virginia”
Tug Boat “Timmy Guidry”
Tug Boat “Delta Widegon”
Weeks 589 Anchor Barge
Tug Boat “Hooking Bull”
Survey Boat “Trinity”

Containment Dike Protection

Note: All equipment, except where otherwise noted, was owned and operated by Weeks Marine.

8. Construction Sequence

There were 3 major construction activities that were part of this construction contract. Weeks Marine built 9,683 linear ft. of earthen containment dike which was used to totally contain approximately 58 acres of dredged fill material on the north side of Raccoon Island; 735,340 cubic yards of hydraulically dredged material from an offshore borrow source was pumped into the containment area; and 4,620 linear feet of geotextile fabric was installed to provide protection for the bayside containment dike for a minimum period of 1 year.

Weeks Marine began mobilizing excavation equipment to the job site on October 14, 2012, and began constructing the containment dike on the east side of the island the following day. At the same time they mobilized a quarter barge which they anchored in protected waters on the bay side of Whiskey Island which was off the job site. The COR, while visiting the job site on October 17, 2012, noted a bad alignment of interior containment dike staking at several locations. The staking alignment was verified by ECM surveyors as compliant with contract plans. Contract Modification No. 1 was processed to correct such miss-alignment. The modification also increased the target elevation of the marsh platform as per a request from LDWF and subsequently increased the required height of all containment dikes.

As work progressed on the bayside containment dike, it was evident due to the sandy nature of insitu borrow material and erosive wave action from continual northern frontal passages, building the dike in most areas was requiring up to 3 passes and taking much longer than expected. As per contract requirement, Weeks Marine was obligated to maintain a minimum template section of the dike for the duration of the contract. They opted to do so by keeping 2 excavators continually rebuilding the dike and protecting the bayward slope with plastic sheeting. On January 15th, 2013, Weeks Marine subcontracted 2 additional long-reach excavators and operators from Wilco Marsh Buggies and Draglines, Inc. Work on the dike began progressing at a much faster pace. Weeks Marine, as specified in their dredging plan, installed 1 dewatering box on the far east end of the marsh platform and 9 on the far west end. On February 2, 2013, NRCS confirmed from as-built surveys that the entire length of the containment dike met contract requirements and Weeks Marine was given the go-ahead to begin dredging operations. On February 20th, the containment dike at 4 of the 9 dewatering boxes on the west side of the marsh platform failed due to suspected inadequate compaction of dike material. That day, NRCS representatives were onsite and were able to visually depict the height of the platform due to its dewatered state. Immediate concerns were raised due to approximately 44% of the contract volume of material had been dredged and it appeared only 25% of the platform had been filled. Modification No. 3 was issued on March 6, 2013, to address this deficiency. Weeks Marine stopped dredging operations on March 15, 2013, with a surveyed volume of material pumped at 735,340 cubic yards. Weeks Marine and NRCS had previously agreed to target 740,000 cubic yards so as not to exceed the BOEM MOA agreement volume of 750,000.

Due to the adverse soil and weather conditions listed above regarding the bayside dike, NRCS was concerned that once all construction was complete the longevity of the dike

would be short term and erosion of the newly created marsh platform could be excessive. As such, all parties agreed that a supplemental method of protecting the outside slope of the dike was required to provide protection for a minimum of one year to allow the platform to vegetate and stabilize. On February 26, 2013, Modification No. 2 provided for the placement of geotextile tubes, scour aprons and anchoring tubes (e.g. geotubes) on the bayside of the dike to provide such protection. Infrastructure Alternatives (IA) was subcontracted by Weeks Marine to fabricate and install 4,381 linear feet of geotube adjacent to the outside slope of the bayside containment dike. On March 17th NRCS personnel met with IA and Weeks Marine to discuss problems IA was having with the geotubes containing the fine-grained insitu borrow material. On March 29th, Modification No. 4 was issued replacing the geotube with the alternative of covering 4,620 linear feet of containment dike with plastic sheeting then overlaying the sheeting with geotextile material. The plastic sheeting covered the front slope of the dike and geotextile material covered the entire dike from it's intersect with the marsh platform on one side over to it's intersect with the bay bottom on the opposite side.

It was recommended by NRCS and agreed to by Weeks Marine and LDWF that one of the dewatering structures on the west end of the platform remained in place to allow control of water flow into and out of the marsh platform area. It was also agreed that the 400 linear feet of geotube installed would remain in place and be monitored for longevity, stability and its effectiveness in reducing wave energy. LDWF has agreed to take responsibility for both structures.

9. Contract Modifications & Field Changes

Modification #1: This modification was needed to increase the marsh creation platform from a +3.0' to a +3.5' elevation, increase CLIN #3 from 640,000 CY to 688,800 CY, modify the dike alignment, and increase the containment dike elevation from a +4.5' to +5.0' elevation. The result was a net increase to the contract of $526,840.00.

Modification #2: This modification was needed to add 4,381 linear feet of geotextile tube, scour apron, and anchor tube to protect the bayside dike. CLIN 7 was added to the contract. The result was a net increase to the contract of $1,466,079.00.

Modification #3: This modification was needed to increase the cubic yards of dredge fill material from 688,800 cubic yards to 750,000 cubic yards, which was the maximum the BOEMRE permit allowed. This was a net increase to the contract of $290,700.00.

Modification #4: This modification was needed to discontinue placement of the geotextile tube, scour apron, and anchor tube and to install 4,620 linear feet of geotextile fabric and anchor tube along the bayside dike. This was a net increase to the contract of $752,894.00

Modification #5: This modification was needed to decrease the quantity of dredge fill material to 735,340 cubic yards, based off of As-Built surveys. This was a net decrease to the contract of $69,635.00.

10. Pipeline and Utility Crossings

Utility Type	Owner	Rep. To Contact
2 – 30" Pipeline	Trunk Line Gas Co.	Bennett Comeaux Houma/Terrebonne Offshore System (985) 876-5712 x 5421

11. Construction Safety

a. None

12. Additional Comments

See attached NRCS Supplement

13. Significant Construction Dates:

	Date	Bid I.D.
Site Showing	6/20/2012	
Bid Opening	7/23/2012	AG-7217-S-12-0009
Construction Contract Award	8/20/2012	AG-7217-C-12-0013
Preconstruction Conference	9/10/2012	
Notice to Proceed	9/28/2012	
Mobilization	10/13/2012	
Construction Start	10/15/2012	
Construction Completion	4/23/2013	
Final Inspection	4/27/2013	
Release of Claims	5/6/2013	
Close-out Meeting	6/11/2013	