Coastal Protection and Restoration Authority of Louisiana

State of Louisiana
Coastal Protection and Restoration Authority

2015 Annual Inspection Report

for

LITTLE LAKE SHORELINE PROTECTION / DEDICATED DREDGING NEAR ROUND LAKE (BA-37)

State Project Number BA-37
Priority Project List 11

October 1, 2015
Lafourche Parish

Prepared by:

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I. Introduction

The Little Lake Shoreline Protection/Dedicated Dredging near Round Lake (BA-37) Project is a shoreline protection and marsh creation project located in the central Barataria Basin in Lafourche Parish, Louisiana. The project area lies along the southwestern shoreline of Little Lake and extends from Breton Canal to Plumb Point (See Appendix A).

The Little Lake Shoreline Protection/Dedicated Dredging near Round Lake (BA-37) project is co-sponsored by the National Marine Fisheries Service (NMFS) and the Coastal Protection and Restoration Authority (CPRA) of Louisiana. The project was authorized by Section 303(a) of Title III Public Law 4101-646, the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) enacted on November 29, 1990, as amended. The project was approved on the eleventh (11^{th}) Project Priority List.

The property associated with the Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project is owned by Clovelly Lands, a subsidiary of General Agricultural Services, Ltd.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project (BA-37) 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 recommending any corrective actions considered necessary. Should it be determined that corrective actions are needed, the CPRA shall provide, in the annual inspection report, a detailed cost estimate for engineering, design, supervision, inspection, construction, and contingencies, and an assessment of the urgency of such repairs (O&M Plan, 2008). The annual inspection report also contains a summary of maintenance projects which were completed since completion of constructed project features and an estimated projected budget for the upcoming three (3) years for operation, maintenance, and rehabilitation. In addition to the three (3) year budget, a spreadsheet has been included showing the baseline O&M funding, current approved O&M funding levels, and the twenty (20) year projected expenditures for the remaining project life. The three (3) year and twenty (20) year projections for operation and maintenance are shown in Appendix C. A summary of past operation and maintenance projects completed since construction of the Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project is outlined in Section IV.

The annual inspection of the Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project (BA-37) took place on May 18, 2015. In attendance were Brian Babin, Glen Curole and Travis Byland of CPRA; Jason Kroll and Dona Rogers with NMFS; and Randy Moertle representing the landowner. The attendees met at the Clovelly Canal Boat Launch and traveled to the project area by boat. The annual inspection began at approximately 09:30am at the west end of the rock shoreline protection at Segment 1 near Breton Canal and

ended at the southeast end of the rock dike near John the Fool Bayou. The field trip included a visual inspection of the 24 rock dike segments of the shoreline protection, all warning signs, and the outer edges of the marsh creation area. The marsh creation area was viewed from the Tennessee Gas Pipeline, the southwest corner of the marsh fill area, the southern containment boundary, and along the south shoreline of Round Lake. The inspection ended at approximately 11:30 pm with a water level reading of 1.95' NAVD88 at station BA-02-57. Photographs from the inspection are located in Appendix B.

III. Project Description and History

The project consisted of constructing 25,976 linear feet of shoreline protection rock dike in open water along the Little Lake shoreline and using dredged material from Little Lake to create/nourish 920 acres of marsh along the Little Lake shoreline.

The project area is characterized by open water areas and fragmented intermediate marsh with a high rate of marsh loss due to shoreline erosion, subsidence, and pipeline and oilfield access canal construction. The purpose of the project is to reduce erosion along the Little Lake shoreline, create new marsh in the open water areas, and maintain and nourish the existing, deteriorated marsh.

The principle project features include:

- Shoreline Protection – 25,976 feet of rock dike constructed in 24 segments along the shoreline. Two lifts were constructed over the entire length using DOTD Class 250-lb rock with top EL 2.5' NAVD88 (first lift to EL 1.0'), 3.5' crown width, 4:1 front slope and 2:1 back slope. The rock dike was constructed on a geotextile fabric base. Fish dips (20' openings in the dike) are located between the segments with a 2-ft thick, 40-ft wide rock scour pad constructed at each dip flush with existing bottom. A third lift was constructed along segments 10 through 24 using Corps Class R650 rock. For segments 10 through 20 the lift was placed to top EL 3.5' NAVD88, with 2.0' crown width, and 2:1 front and back slopes. Segments 21 and 22 were placed to top EL 4.0' NAVD88, with 2.0' crown width, and 2:1 front and back slopes. Segments 23 and 24 were placed to top EL 4.0' NAVD88, with 3.5' crown width, 4:1 front slope and 2:1 back slope. Galvanized steel settlement plate riser pipes were installed in each rock segment.

  Segments 1 – 24: Two lifts DOTD Class 250-lb, EL 2.5' NAVD88, 3.5' crown width, 4:1 front slope and 2:1 back slope

  Segments 10 – 20: Third lift Corps Class R650, EL 3.5' NAVD88, 2.0' crown width, 2:1 front and back slopes

  Segments 21 and 22: Third lift Corps Class R650, EL 4.0' NAVD88, 2.0' crown width, 2:1 front and back slopes

Segments 23 and 24: Third lift Corps Class R650, EL 4.0' NAVD88, 3.5' crown width, 4:1 front slope and 2:1 back slope

- Marsh Creation/Nourishment – Approximately 920 acres was filled with dredge material cut from Little Lake with a target fill height of EL 2.1' NAVD88 (min EL 1.8' and max EL 2.4'). Actual fill elevations varied across the site; however, the average elevation (derived from the individual grid elevations) of the as-built marsh creation area was EL 2.3' NAVD88. For specific as-built elevations of marsh creation area grid points, see Project Completion Report and As-Built Drawings (2007). The in-place fill volume was computed as 3,463,089 cubic yards based on the as-built surveys. The estimated volume of material cut from the borrow area was 3,818,213 cubic yards.

  Additionally, 17,000 spartina alterniflora (smooth cordgrass) plugs were planted in the marsh creation area.

The Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project (BA-37) has a twenty-year (20 year) project life which began in March 2007. Attached is the three (3) year projected budget for the project (See Appendix C).

IV. Summary of Past Operation and Maintenance Projects

Below is a summary of completed maintenance projects and operation tasks performed since completion of the Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project (BA-37).

May 2008 – Survey of marsh creation area was performed by Shaw Coastal, Inc. The marsh elevations at the grid points within the marsh creation area as well as top elevations of the 24 rock dike settlement plates were collected. This survey represents the first of the scheduled O&M surveys to be performed but is actually the second post-construction survey. The first post-construction survey was performed by Shaw Coastal, Inc. in May 2007 with remaining construction funds immediately following acceptance of the project. The actual surveying consultant costs associated with the 2008 survey was $36,007.28.

July 2009 – Survey of marsh creation area was performed by Shaw Coastal, Inc. The marsh elevations at the grid points within the marsh creation area as well as top elevations of the 24 rock dike settlement plates were collected. This survey represents the second of the scheduled O&M surveys to be performed but is actually the third post-construction survey. The actual surveying consultant costs associated with the 2009 survey was $42,590.40.

July 2010 – Survey of marsh creation area was performed by Morris Hebert, Inc. The marsh elevations and the grid points within the marsh creation area as well as the tops elevations of the rock dike settlement plates were collected. This survey represents the third of the scheduled O&M surveys to be performed but is actually the forth post-construction survey. The actual surveying consultant costs associated with the 2010 survey is $23,500.

September 2011 – Survey of the marsh creation area, rock dike, and settlement plates was performed by Morris Hebert, Inc. The marsh elevations and the grid points within the marsh creation area, the profile of the rock dike sections, as well as the tops elevations of the rock dike settlement plates were collected. This survey represents the last of the scheduled O&M surveys to be performed post-construction. The actual surveying consultant cost associated with the 2011 survey was $60,013.23.

V. Inspection Results

Rock Segments 1 – 24 (Photos 1 – 21, Appendix B)

All rock segments were visually inspected by boat. It appears that all rock segments have experienced some degree of settlement with the most obvious settlement on the western end of the project (Segments 1 through 8), where only two (2) rock lifts were made during construction. Segments 10 through 24 received a third lift during construction and appear to be in good to fair condition.

Currently, Rock Segments 1 and 2 have no marsh or vegetation along its southern edge, only open water. The fringe mash that once separated Brusle Lake and Bay L'Ours, located just south of Segments 1 and 2 had eroded following Hurricane Katrina in 2005. This land loss occurred during construction of the project and the rock segments were put in place as designed and contracted. Due to the liability associated with the rock dike being below the water surface during high tides and the lack of existing marsh behind the structure, NMFS and CPRA has decided to degrade Segments 1 and 2. In lieu of recovering the rock riprap and installing at another location, we have decided to degrade the rock dike to a safe elevation along the lake bottom. We decided against trying to recover the rock riprap due to the additional cost associated with this method. The last survey of the entire rock shoreline was conducted in 2011. We are also recommending that a complete survey of the rock dike be included in the scope of work for degrading Segments 1 and 2. Since a design survey of Segments 1 and 2 will be required to complete the contact documents for the maintenance event to degrading the dikes, we believe that it would be a great opportunity to profile all of the segments to re-evaluate the rock structure. We anticipate that the design surveys for degrading Segments 1 and 2 will begin in late December 2015.

The spoil material broadcasted behind the rock dike segments during construction appear to be in good condition and has fully vegetated. Also, it appears that the SAV (submerged aquatic vegetation) behind the rock segments continues to increase from past inspections.

Marsh Creation Area (Photos 22 – 26, Appendix B)

We were only able to visually inspect the marsh creation area from the perimeter of the project, along the Tennessee Gas Pipeline, marsh fringe along Round Lake between Breton Canal and John the Fool Bayou, and the southern containment dike. The fill material in the

marsh creation area appeared to be in very good condition and fully vegetated. The latest post construction survey of the fill area was completed in 2011. Below is a table showing the average grid elevations from 2006, the year construction was completed, through 2010. The final post construction survey of the marsh fill area was conducted in 2011 and is shown in Figure 1. The next scheduled post-construction survey of the marsh creation area is recommended for 2017. Since we will be conducting design surveys for degrading Segment 1 and 2 dikes, we would also recommend that the planned marsh surveys for 2017 be included as well. There is a cost savings to performing this work at the same time as surveying for the maintenance event and profiling of the rock dike.

The average grid elevations for the marsh creation area surveys are shown in the table below.

Survey	Average Grid Elevation (FT, NAVD88)
As-Built (May-Aug 2006)	2.2
Post-Construction (May 2007)	1.49
Post-Construction (May 2008)	1.40
Post-Construction (June 2009)	1.14
Post-Construction (July 2010)	1.23

VI. Conclusions and Recommendations

As observed on post-construction surveys and visual inspections of the rock dike structure along the southern marsh of Little Lake and Round Lake, all of the rock dike segments have experienced some settlement. Over time, the settlement of the rock dike in the vicinity of Segments 1 and 2 has presented potential hazardous conditions with the dike extending out into open water in the area were land once existed. A combination of high tides causing the rock dike to become submerged and the lack of a marsh shoreline behind both segments has resulted in a decision by NMFS and CPRA to degrade Segments 1 and 2. Design surveys for degrading Segments 1 and 2 is expected to begin in December 2015 and construction to start in May 2016.

The marsh creation area appears to be completely vegetated and the post-construction surveys indicate elevations are approaching the average marsh elevation for the area. The final post-construction surveys for the marsh creation area are scheduled for years 10 (2017) and 15 (2022) of the project life. There are no other funds allocated for the marsh creation portion of the project other than the surveying of the area grid points. Since we are so close to the 10 year survey event, we are recommending that the marsh surveys be included in the scope of work for the upcoming demolition of Segments 1 and 2. With NMFS approval, we will modify the scope of work for the maintenance event to include these scheduled 2017 surveys.

SETTLEMENT PLATES																							
		CONSTRUCTION						POST-CONSTRUCTION				POST-CONSTRUCTION				POST-CONSTRUCTION			
S.P. #	STATION	DATE INSTALLED	ELEV. INST.	FINAL ELEV.	DATE OF FINAL ELEV.	Δ (FT) (INST. TO FINAL)	TIME (DAYS)	2008 ELEV.	DATE OF 2008 ELEV.	Δ (FT) (FINAL TO 2008)	TIME (DAYS)	2009 ELEV.	DATE OF 2009 ELEV.	Δ (FT) (FINAL TO 2009)	TIME (DAYS)	2010 ELEV.	DATE OF 2010 ELEV.	Δ (FT) (FINAL TO 2010)	TIME (DAYS)
1	14+23	11/27/06	6.48	5.87	02/11/07	-0.61	76	5.71	05/02/08	-0.16	446	5.62	08/20/09	-0.25	921	5.60	07/26/10	-0.27	1261
2	23+93	11/14/06	6.32	3.95	02/11/07	-2.37	89	3.60	05/02/08	-0.36	446	3.48	08/20/09	-0.48	921	3.56	07/26/10	-0.39	1261
3	34+22	11/09/06	7.02	5.17	02/11/07	-1.85	94	4.93	05/02/08	-0.23	446	4.94	08/20/09	-0.23	921	4.94	07/26/10	-0.23	1261
4	44+41	11/06/06	6.96	4.57	02/11/07	-2.39	97	4.41	05/02/08	-0.16	446	4.46	08/20/09	-0.12	921	4.32	07/26/10	-0.25	1261
5	54+75	11/06/06	7.71	5.90	02/11/07	-1.81	97	5.66	05/02/08	-0.23	446	5.65	08/20/09	-0.25	921	5.48	07/26/10	-0.42	1261
6	63+17	11/05/06	6.98	4.70	02/11/07	-2.28	98	4.70	05/02/08	0.00	446	4.61	08/20/09	-0.09	921	4.56	07/26/10	-0.14	1261
7	71+47	11/05/06	7.92	4.42	02/11/07	-3.50	98	4.08	05/02/08	-0.34	446	4.03	08/20/09	-0.39	921	4.20	07/26/10	-0.23	1261
8	82+37	10/25/06	6.98	5.51	02/11/07	-1.47	109	5.32	05/02/08	-0.19	446	5.29	08/20/09	-0.22	921	5.33	07/26/10	-0.18	1261
9	92+32	10/26/06	6.70	5.84	02/11/07	-0.86	108	5.82	05/02/08	-0.02	446	5.82	08/20/09	-0.02	921	5.83	07/26/10	-0.01	1261
10	102+21	09/28/06	6.96	5.28	02/11/07	-1.68	136	5.18	05/02/08	-0.10	446	5.08	08/20/09	-0.20	921	5.26	07/26/10	-0.02	1261
11	112+90	09/01/06	6.40	4.19	02/11/07	-2.21	163	3.82	05/02/08	-0.37	446	3.69	08/20/09	-0.50	921	3.86	07/26/10	-0.33	1261
12	123+14	07/09/06	7.74	6.16	02/11/07	-1.58	217	5.74	05/02/08	-0.41	446	5.68	08/20/09	-0.48	921	5.66	07/26/10	-0.50	1261
13	133+25	07/06/06	7.32	3.61	02/11/07	-3.71	220	3.24	05/02/08	-0.37	446	3.09	08/20/09	-0.53	921	3.14	07/26/10	-0.48	1261
14	144+18	06/27/06	6.68	5.56	02/11/07	-1.12	229	5.38	05/02/08	-0.18	446	5.40	08/20/09	-0.16	921	5.29	07/26/10	-0.27	1261
15	154+23	06/16/06	7.02	5.17	02/11/07	-1.85	240	4.93	05/02/08	-0.24	446	4.96	08/20/09	-0.21	921	4.71	07/26/10	-0.45	1261
16	164+05	06/03/06	6.95	6.10	02/11/07	-0.85	253	5.93	05/02/08	-0.17	446	5.86	08/20/09	-0.24	921	5.82	07/26/10	-0.28	1261
17	175+51	05/21/06	7.53	6.36	02/11/07	-1.17	266	6.27	05/02/08	-0.10	446	6.27	08/20/09	-0.09	921	6.15	07/26/10	-0.21	1261
18	190+71	05/18/06	7.68	5.97	02/11/07	-1.71	269	5.74	05/02/08	-0.23	446	5.60	08/20/09	-0.38	921	5.58	07/26/10	-0.39	1261
19	203+43	05/06/06	8.51	6.27	02/11/07	-2.24	281	6.09	05/02/08	-0.18	446	5.94	08/20/09	-0.33	921	5.85	07/26/10	-0.41	1261
20	216+05	04/11/06	7.80	5.65	02/11/07	-2.15	306	5.52	05/02/08	-0.13	446	5.34	08/20/09	-0.30	921	5.28	07/26/10	-0.37	1261
21	229+62	04/05/06	7.31	4.81	02/11/07	-2.51	312	4.65	05/02/08	-0.15	446	4.34	08/20/09	-0.47	921	4.41	07/26/10	-0.40	1261
22	240+24	03/31/06	8.38	4.58	02/11/07	-3.80	317	4.35	05/02/08	-0.24	446	4.26	08/20/09	-0.32	921	4.21	07/26/10	-0.38	1261
23	250+46	03/26/06	7.64	5.16	02/11/07	-2.49	322	4.99	05/02/08	-0.17	446	4.62	08/20/09	-0.54	921	4.79	07/26/10	-0.37	1261
24	262+76	03/21/06	8.26	6.71	02/11/07	-1.55	327	6.69	05/02/08	-0.02	446	6.51	08/20/09	-0.20	921	6.51	07/26/10	-0.20	1261

Δ (FT) – Change in Elevation between noted surveys in feet
TIME (DAYS) – Time Elapsed between noted surveys in days

Settlement Plate Elevation Comparison July 2010 and September 2011																							
S.P. #	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
2010 Ele.	5.60	3.56	4.94	4.32	5.48	4.56	4.20	5.33	5.83	5.26	3.83	5.66	3.14	5.29	4.71	5.82	6.15	5.58	5.85	5.28	4.41	4.21	4.79	6.51
2011 Ele.	5.61	3.43	4.78	4.21	5.48	4.61	3.91	5.13	5.65	4.94	3.59	5.46	2.96	5.22	4.67	5.76	6.10	5.48	5.78	5.25	4.31	4.00	4.65	6.35
Δ Ele.	0.01	-0.13	-0.16	-0.11	-0.00	0.05	-0.29	-0.20	-0.18	-0.22	-0.24	-0.20	-0.18	-0.07	-0.04	-0.06	-0.05	-0.10	-0.07	-0.03	-0.10	-0.21	-0.14	-0.16

Figure 1. Rock Dike Settlement Plate Data

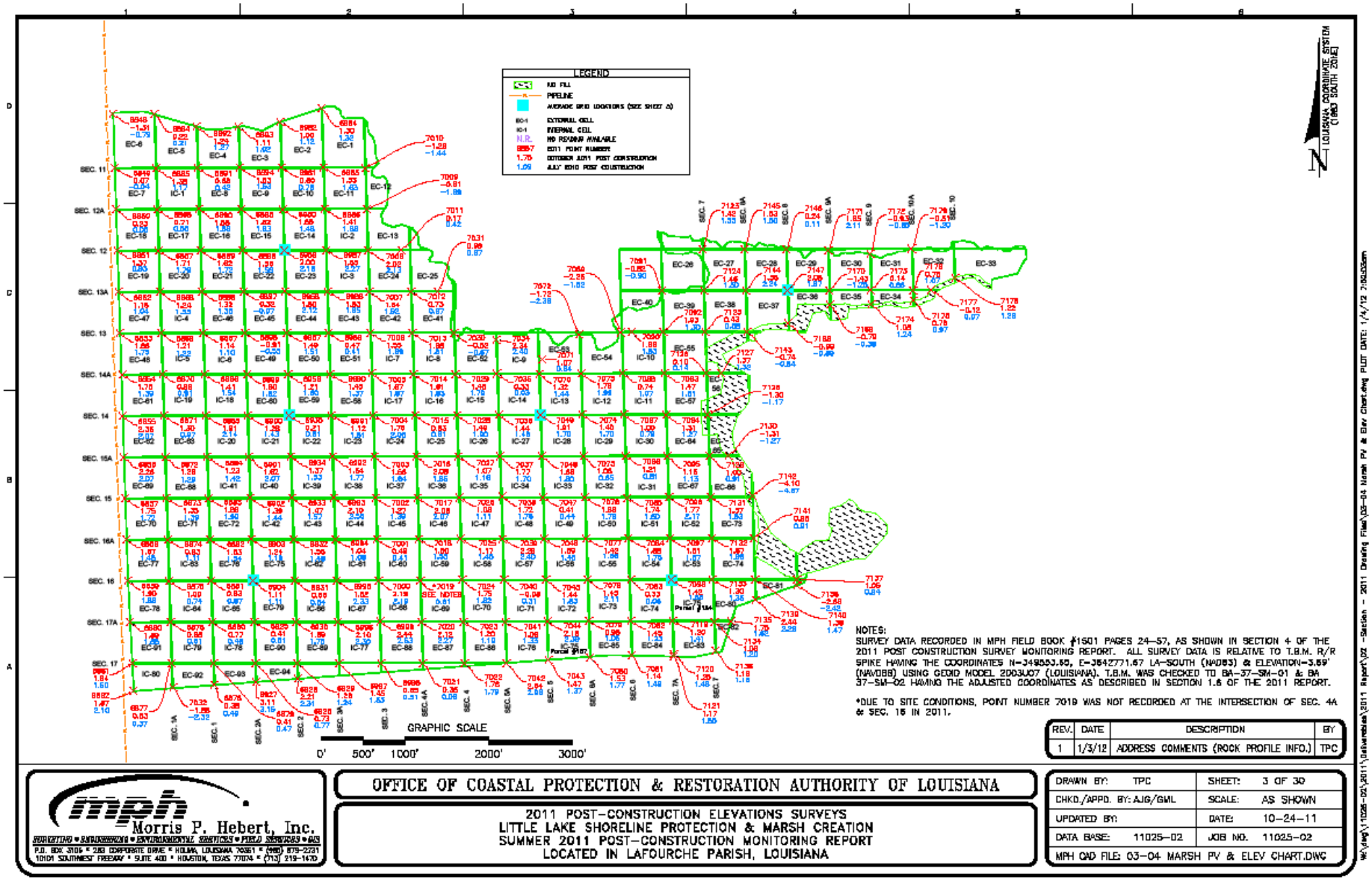


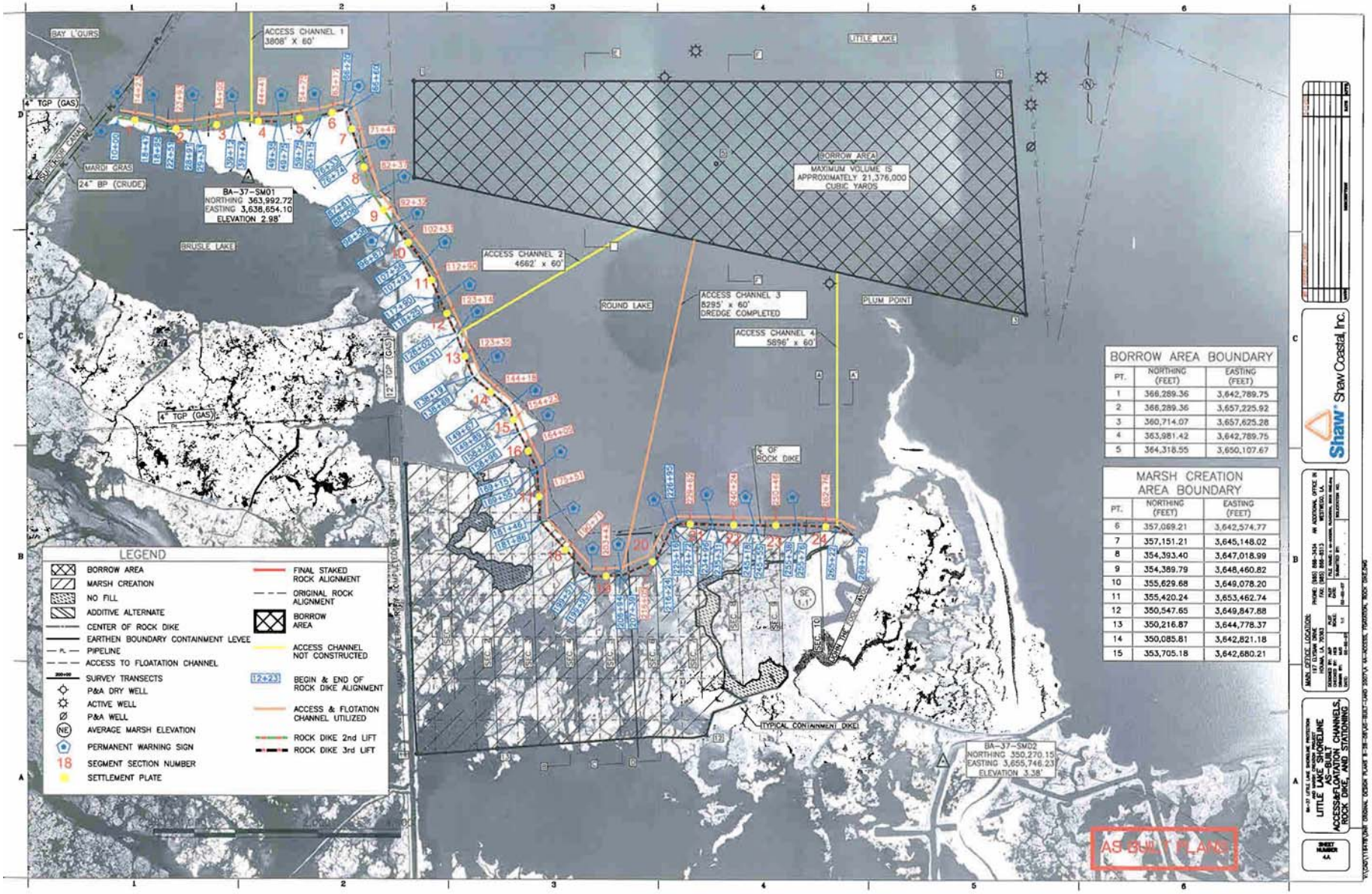
Figure 1. Marsh Creation Area Grid Surveying showing July 2010 and September 2011 Elevations

Appendix A

Project Features Map

Vicinity Map of Little Lake Shoreline Protection / Dedicated Dredging Near Round Lake Project (BA-37)

Location Map of Little Lake Shoreline Protection / Dedicated Dredging Near Round Lake Project (BA-37)



As-Built Project Features - Little Lake Shoreline Protection / Dedicated Dredging Near Round Lake Project (BA-37)

Appendix B

Photographs

Photo 1: Beginning of the rock dike (Segment 1) near Sta. 10+00 at the entrance of Breton Canal.

Photo 2: Beginning of rock dike (Segment No.2) looking southward.

Photo 3: Low area along the rock dike (Segment No.2) near Sta. 23+93.

Photo 4: View of the end of rock dike (Segment No.2) and beginning of Segment No.3.

Photo 5: View of the rock dike Segment No.2 and No.3 and timber warning signs.

Photo 6: View of low area along the rock dike at the beginning of Segment No.4.

Photo 7: View of the rock dike (Segments 5 and 6) and warning sign looking eastward.

Photo 8: View of the rock dike (Segments 6 and 7) looking southward near Sta. 66+60.

Photo 9: View of the rock dike (Segment No.8) and warning sign looking westward.

Photo 10: View of the rock dike (Segments 10 and 11) looking southward.

Photo 11: View of the rock dike (Segment No.13 and 14) looking southward.

Photo 12: View of the rock dike between Segments 13 and 14.

Photo 13: View of the rock dike near Segments 15 and 16 looking southward.

Photo 14: View of the rock dike near Segments 15 and 16 looking southward.

Photo 15: View of the rock dike near Segment 18 looking southward.

Photo 16: View of the rock dike at Segment No.18 looking southward.

Photo 17: View of the rock dike and timber warning sign at the beginning of Segment No. 21.

Photo 18: View of the rock dike (Segment No.21) looking eastward.

Photo 19: View of the rock dike near Segments 22 and 23.

Photo 20: View of the rock dike at Segment No.24 looking eastward.

Photo 21: View of the east end of the rock dike (Segment No.24) near Sta. 269+76.

Photo 22: View of the earthen containment dike on the southern side of the fill area near the pipeline canal looking northeast.

Photo 23: View of an opening in the southern containment dike near the pipeline canal looking northeast.

Photo 24: View of the southern containment dike near the pipeline canal looking eastward.

Photo 26: View of the marsh and open water just inside the opening of the southern containment dike.

Appendix C

Three Year Budget Projection

LITTLE LAKE SHORELINE PROTECTION & DEDICATED DREDGING / BA37 / PPL11

Three-Year Operations & Maintenance Budgets 07/01/2015 - 06/30/2018

Project Manager	O & M Manager	Federal Sponsor	Prepared By
	Ledet	*NMFS*	*Babin*

	2015/2016	2016/2017	2017/2018
Maintenance Inspection	$ -	$ 21,454.00	$ 22,097.00
Administration (CPRA)	$ 62,227.00	$ -	$ -
Administration (NMFS)	$ -	$ -	$ -
Maintenance/Rehabilitation			

15/16 Description: Degrade 1900' of rock dike on the northern end of project near Breton Canal.

E&D	$ 68,250.00
Construction	$ 510,000.00
Construction Oversight	$ 32,400.00
Sub Total - Maint. And Rehab.	$ 610,650.00

16/17 Description:

E&D	$ -
Construction	$ -
Construction Oversight	$ -
Sub Total - Maint. And Rehab.	$ -

17/18 Description:

E&D	$ -
Construction	$ -
Construction Oversight	$ -
Sub Total - Maint. And Rehab.	$ -

	2015/2016	2016/2017	2017/2018
Total O&M Budgets	**$ 672,877.00**	**$ 21,454.00**	**$ 22,097.00**

O&M Budget (3-yr Total)	**$ 716,428.00**
Unexpended O&M Funds	**$ 165,027.00**
Remaining O&M Budget (Projected)	**$ (551,401.00)**

LITTLE LAKE SHORELINE PROTECTION & DEDICATED DREDGING / BA37 / PPL11

Three-Year Operations & Maintenance Budgets 07/01/2015 - 06/30/2018

Project Manager	O & M Manager	Federal Sponsor	Prepared By
	Ledet	*NMFS*	*Babin*

	2015/2016	2016/2017	2017/2018
Maintenance Inspection	$ -	$ 21,454.00	$ 22,097.00
Administration (CPRA)	$ 62,227.00	$ -	$ -
Administration (NMFS)	$ -	$ -	$ -
Maintenance/Rehabilitation			

15/16 Description: Degrade 1900' of rock dike on the northern end of project near Breton Canal.

E&D	$ 68,250.00
Construction	$ 510,000.00
Construction Oversight	$ 32,400.00
Sub Total - Maint. And Rehab.	$ 610,650.00

16/17 Description:

E&D	$ -
Construction	$ -
Construction Oversight	$ -
Sub Total - Maint. And Rehab.	$ -

17/18 Description:

E&D	$ -
Construction	$ -
Construction Oversight	$ -
Sub Total - Maint. And Rehab.	$ -

	2015/2016	2016/2017	2017/2018
Total O&M Budgets	**$ 672,877.00**	**$ 21,454.00**	**$ 22,097.00**

O&M Budget (3-yr Total)	**$ 716,428.00**
Unexpended O&M Funds	**$ 165,027.00**
Remaining O&M Budget (Projected)	**$ (551,401.00)**

OPERATIONS & MAINTENANCE BUDGET WORKSHEET

Project: **BA-37 Little Lake Shoreline Protection / Dedicated Dredging Near Round Lake**

FY 15/16 –

Administration (NMFS)		$ 0
CPRA Administration:		$ 62,277
Maintenance:		$610,650
E&D:	$ 68,250	
Construction:	$510,000	
Construction Oversight:	$ 32,400	

Operation and Maintenance Assumptions:
Maintenance Event No.1 to degrade approximately 1,900 linear (Segment No.1 and 2) of existing rock dike from Breton Canal southward.

Construction:	
Mobilization/Demobilization: (Lump Sum)	$ 75,000
Rock Dike Degradation: (Lump Sum)	$300,000
Post-Construction Survey (Multi-Beam):	$ 50,000
Construction Cost:	$425,000
Contingency (20%):	$ 85,000
Total Estimated Construction Cost:	**$510,000**

Engineering, Design and Construction Oversight:	
Engineering/Design: (7.5% Construction)	$ 38,250
Surveying: (Field Work – 7 days @ $3,250/Day) (Data Processing/Report: - 50 hrs @ $85/hr.)	$ 27,000
Permitting: ($3,000)	$ 3,000
Construction Inspection: (300 hrs @ $100/hr.)	$ 30,000
Construction Admin: (20 hrs. @ $120/hr.)	$ 2,400
Total Engineering/Design, Construction Oversight:	**$100,650**

CPRA Direct Costs

Maintenance Event No.1:

Engineer 4 – 150 hrs. @ $60/hr. =	$ 9,000
Engineer 6 – 40 hrs. @ $73/hr. =	$ 2,920
Engineer 7 – 10 hrs @ $79/hr. =	$ 790
	$12,710
Inspection:	
CPRA Engineer 3 – 12 hrs@ $60/hr.:	$ 720
CPRA Engineer 6 – 12 hrs @ $73/hr.	$ 876
CPRA Scientist 4 – 10 hrs @ $50/hr.	$ 500
	$ 2096
Report:	
CPRA Engineer 6 – 60 hrs. @ $73/hr.	$ 4,380
Total Direct CPRA Costs:	**$25,871**

CPRA Indirect Costs

2012 Maintenance Project:

Engineer 4 – 150 hrs. @ $127.30/hr. =	$19,095
Engineer 6 – 40 hrs. @ $154.88/hr. =	$ 6,195
Engineer 7 – 10 hrs @ $167.61/hr. =	$ 1,676
	$26,966
Inspection:	
CPRA Engineer 3 – 12 hrs@ $127.30/hr.:	$ 1,528
CPRA Engineer 6 – 12 hrs @ $154.88/hr.	$ 1,856
CPRA Scientist 4 – 10 hrs @ $167.61/hr.	$ 1,676
	$ 5,060
Report:	
CPRA Engineer 6 –. 60 @ $154.88/hr.	$ 9,293
Total Indirect CPRA Costs:	**$36,406**

FY 16/17 –

Administration (NMFS)			$ 0
O&M Inspection & Report			$ 21,454
CPRA Administration:			$ 0
Maintenance:			$ 0
E&D:	$	0	
Construction:	$	0	
Construction Oversight:	$	0	

Operation and Maintenance Assumptions:

Increase of 3% for inflation on inspection/report.

CPRA Direct Costs

Inspection:	
$2,096 x 3% inflation =	$2,159
Report:	
$4,380 x 3% =	$4,511
Total Direct CPRA Costs:	**$6,670**

CPRA Indirect Costs

Inspection:	
$5,060 x 3% =	$ 5,212
Report:	
$9,293 x 3% =	$ 9,572
Total Indirect CPRA Costs:	**$14,784**

FY 17/18 –

Administration (NMFS)			$ 0
O&M Inspection & Report			$ 22,097
CPRA Administration:			$ 0
Maintenance:			$ 0
E&D:	$	0	
Construction:	$	0	
Construction Oversight:	$	0	

Operation and Maintenance Assumptions:
Increase of 3% for inflation on inspection/report.

CPRA Direct Costs

Inspection:	
$2,159 x 3% inflation =	$2,224
Report:	
$4,511 x 3% =	$4,646
Total Direct CPRA Costs:	**$6,870**

CPRA Indirect Costs

Inspection:	
$5,212 x 3% =	$ 5,368
Report:	
$9,572 x 3% =	$ 9,859
Total Indirect CPRA Costs:	**$15,227**

2015-2018 Accounting

Approved CWPPRA Budget (LANA Report):	**$346,309.00**
Total Expenditures (LANA Report):	**$181,281.93**
Unexpended Funds:	**$165,027.07**