FINAL DESIGN REPORT
MISSISSIPPI RIVER SEDIMENT DELIVERY SYSTEM - BAYOU DUPONT (BA-39)

PLAQUEMINES/JEFFERSON PARISHES, LOUISIANA
NOVEMBER 2007

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Table of Contents

Section	Title	Page No.
1.0	INTRODUCTION	5
2.0	TIDES AND WATER LEVELS	7
3.0	SURVEYS	8
3.1	Secondary Monument	8
3.2	Fill Area Surveys	8
3.3	Borrow Area Surveys	10
3.4	Highway Crossing Surveys	10
4.0	GEOTECHNICAL EVALUATION	11
4.1	General Geological Evaluation	11
4.2	Soils Investigation	11
4.3	Global Slope Stability Analysis for Containment Dikes	12
4.4	Settlement Analyses	13
4.5	Borrow to Fill Ratio Recommendations	15
5.0	BORROW AREA EVALUATION	17
5.1	Borrow Area Delineation	17
5.2	Borrow Area Volume	19
5.3	Mississippi River Dredging	20
6.0	MARSH CREATION DESIGN	21
6.1	Marsh Creation Fill Areas	21
6.2	Marsh Fill Area Design	22
6.3	Containment Dike Design	23
7.0	DREDGE PIPELINE EVALUATION	25
7.1	Dredging Equipment	25
7.2	Landowners and Pipelines	25
7.3	Proposed Dredge Pipeline Corridor (See Figure 9)	26
8.0	CONSTRUCTION COST ESTIMATE	29
9.0	MODIFICATIONS TO APPROVED PHASE 0 PROJECT	30

10.0 LAND OWNERSHIP AND UTILITIES INVESTIGATION..... 30

11.0 CULTURAL RESOURCES ASSESSMENT 30

12.0 OYSTER LEASE IMPACTS..... 30

13.0 REVISED FULLY-FUNDED COST ESTIMATE 31

14.0 WETLAND VALUE ASSESSMENT 32

15.0 STATEMENT OF CONSTRUCTABILITY..... 32

16.0 DRAFT OMRR&R PLAN..... 32

17.0 UPDATED PRIORITIZATION SCORE..... 33

18.0 ECOLOGICAL REVIEW 35

19.0 COMMENTS ON PRELIMINARY (30%) DESIGN 35

20.0 REFERENCES..... 37

TABLES

Page No.

1. **Summary of Tidal Datum Determination……..……..……7**
2. **Average Marsh Elevation Survey Results…….……...……...……9**
3. **Summary of Marsh Fill Area Volumes……..……..……..……23**
4. **Containment Dike Quantities (Mechanically Dredged Material).....……..24**

FIGURES

Page No.

1. **Proposed Project Area and Features ...……...……..……...……5**
2. **Survey Monument and Soil Boring Locations……...……...……....12**
3. **Containment Dike Typical Section……...……..……14**
4. **Marsh Fill Settlement Curve…….....…….……..……..…15**
5. **USACE Mississippi River Dredging Restrictions……..……...……18**
6. **Designated Borrow Area……...……....……..…19**
7. **Shell Oil Pipeline and Proposed Marsh Creation Areas…….....……..…21**
8. **Property Boundaries……26**
9. **Proposed Dredge Pipeline Corridor…...……..……..27**
10. **Proposed Railroad Crossing……...28**
11. **Preliminary Design Review Conference Attendance……...……..……...35**

APPENDICES

A. **Secondary Monument Data Sheets**
B. **T. Baker Smith and Son and USACE Survey Drawings**
C. **Eustis Engineering and L. J. Capozzoli Boring Logs**
D. **Design Calculations**
E. **SHPO Letter**
F. **Wetland Value Assessment**
G. **Draft OMRR&R Plan**
H. **Ecological Review**
I. **30% Design Review Comments**

1.0 INTRODUCTION

The Mississippi River Sediment Delivery System – Bayou Dupont Project (herein referred to as BA-39) is located in the Barataria Basin about 3.7 miles northwest of Myrtle Grove as shown in Figure 1. The Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) Task Force designated BA-39 as part of the 12th Priority Project List in 2003. The Environmental Protection Agency (EPA) was designated as the lead federal sponsor for this project with funding approved through the Coastal Wetlands Planning, Protection, and Restoration Act of 1990 by the United States Congress and the Wetlands Conservation Trust Fund by the State of Louisiana. The Louisiana Department of Natural Resources (LDNR) is serving as the local sponsor with the Coastal Engineering Division (LDNR-CED) performing the engineering and design services.

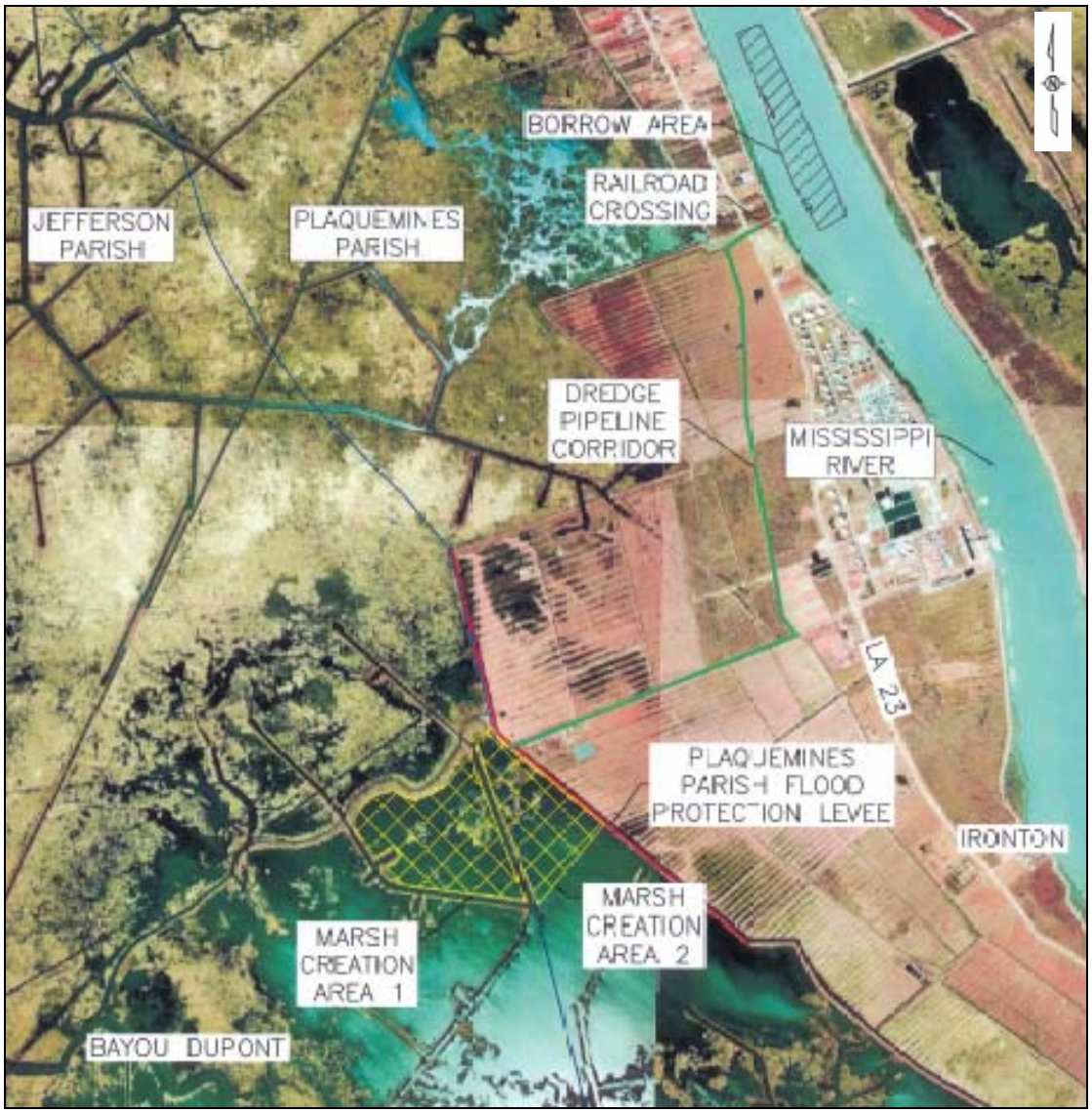

Figure 1 – Proposed Project Area and Features

The objective of the project is to create approximately 493 acres of sustainable marsh. This project constitutes using the renewable resource of Mississippi River sediment to create marsh in a rapidly eroding and subsiding section of the Barataria landbridge. Now converted to mostly open water, the poor condition of this marsh is likely due to a combination of subsidence, dredging of oil and gas canals, and lack of freshwater input. The project area is located near the Mississippi River and is a prime opportunity to utilize the relatively new initiative of creating marsh using Mississippi River sediment as opposed to hydraulically dredging material from within the Barataria Basin.

Restoration strategies to be used for this project include marsh creation via sediment delivery pipeline. Healthy marsh will be created by hydraulically dredging sediment from the Mississippi River to fill the open water and broken marsh areas west of the Plaquemines parish flood protection levee. (See Figure 1.)

Topographic, bathymetric, and magnetometer surveys and a geotechnical investigation have been completed for the marsh fill areas. Bathymetric, side-scan sonar, high-resolution seismic, and magnetometer surveys have been completed for the borrow area, as well as a geotechnical investigation. Additionally, a tidal datum analysis has been performed by LDNR-CED to determine the mean water elevations in the marsh fill areas. This information was used to evaluate the immediate and long-term properties of the marsh fill material.

The project team, consisting of members of EPA and LDNR, performed a kick-off meeting on April 23, 2004. Based on that meeting, a plan was developed to identify and address all of the project requirements. A 30% Design Review Conference was held on July 11, 2007 at the LDNR office in Baton Rouge, Louisiana. Comments and recommendations from the 30% Design Review are discussed in Section 19. Formal responses to comments from CWPPRA agencies are included in Appendix I. The engineering and design, environmental compliance, real estate negotiations, operations/maintenance planning, and cultural resources investigations have been completed to the 95% level as required by the CWPPRA Standard Operating Procedures, March 2007, Section 6h, “Final Design.”

2.0 TIDES AND WATER LEVELS

Calculations performed during the design of BA-39 include the determination of a tidal datum, or the mean high/mean low water (MHW/MLW) elevations (NAVD88).

LDNR monitoring gage BA03C-CR-61 was selected to determine historical water levels due to its close proximity to the project area and database availability. This gage is located in Bayou Dupont at 29° 37' 23.30"N, 90° 01' 53.18"W, approximately two and a half (2.5) miles west of the project area. Approximately 3 years of hourly water level data was recorded from November 1, 2000 to December 31, 2003 and used in the tidal datum evaluation.

A normal tidal epoch lasts approximately nineteen (19) years. In order to accurately estimate MHW and MLW, a data set which has less than nineteen (19) years of data should be correlated to a gage which has data from a full tidal epoch using a technique known as the Range-Ratio method. National Oceanic and Atmospheric Administration (NOAA) station #8761724, located at Grand Isle, Louisiana near Barataria Pass at 29° 15' 48"N, 89° 57' 24"W, was used as the control station for determining this correlation. The period of record used for the nineteen (19) year tidal epoch is from January 1, 1985 to December 31, 2003. The results of the tidal datum determination for BA-39 are shown in Table 1. A more detailed summary of how this tidal datum was calculated is shown in Section I of the Design Calculations Packet located in Appendix D.

KNOWN VARIABLES	ELEV. FT NAVD88
MHWc = 19 YEAR MEAN HIGH WATER AT CONTROL STATION	1.37
MTLc= 19 YEAR MEAN TIDE LEVEL AT CONTROL STATION	0.85
MLWc = 19 YEAR MEAN LOW WATER AT CONTROL STATION	0.32
MRc = 19 YEAR MEAN TIDE RANGE AT CONTROL STATION	1.05
TLc = MEAN TIDE LEVEL FOR THE OBSERVATION PERIOD AT CONTROL STATION	0.99
Rc = MEAN TIDE RANGE FOR THE OBSERVATION PERIOD AT CONTROL STATION	1.06
TLs = MEAN TIDE LEVEL FOR THE OBSERVATION PERIOD AT SUBORDINATE STATION	0.83
Rs = MEAN TIDE RANGE FOR THE OBSERVATION PERIOD AT SUBORDINATE STATION	0.37
CALCULATED VARIABLES	ELEV. FT NAVD88
MHWs = 19 YEAR MEAN HIGH WATER AT SUBORDINATE STATION (MHWs=MTLs+MRs/2)	0.87
MTLs= 19 YEAR MEAN TIDE LEVEL AT SUBORDINATE STATION (MTLs=TLs+MTLc-TLc)	0.69
MLWs = 19 YEAR MEAN LOW WATER AT SUBORDINATE STATION (MLWs=MTLs-MRs/2)	0.50
MRs = 19 YEAR MEAN TIDE RANGE AT SUBORDINATE STATION (MRs=(MRc*Rs)/Rc)	0.37

REFERENCE: Cole, George M. Water Boundaries. New York, NY: John Wiley & Sons, Inc., 1997. pp. 24-27.

Table 1 – Summary of Tidal Datum Determination

3.0 SURVEYS

In order to facilitate the design of the marsh creation areas, topographic, bathymetric, and magnetometer surveys were performed within each marsh fill area.

Mississippi River survey data obtained from the U.S. Army Corps of Engineers (USACE) was used to design the proposed borrow area. These surveys were performed in 1992 and 2003. Example cross sections may be found in Appendix B.

3.1 Secondary Monument

The secondary monument "BA03C-SM-02" was installed just north of West Ravenna Road, approximately two (2) miles west of LA Highway 23, in January 2003 (See Figure 2). The coordinates of the monument are 29º 39' 28.688493"N, 90º 00' 33.422775"W. Due to its close proximity to the marsh fill areas, this monument was used as the horizontal and vertical control for the fill area survey. The data sheet for this monument is located in Appendix A.

3.2 Fill Area Surveys

Topographic, bathymetric, magnetometer, and average marsh elevation surveys were performed within the proposed marsh creation areas by T. Baker Smith & Son, Inc. A Trimble dual-frequency 4700 GPS RTK unit and a Sokkia SET II total station instrument with SDR 33 electronic field book collector were used to perform the survey. This work was completed in March 2005. Although the surveys were performed prior to hurricanes Katrina and Rita, they are still representative of the current topography.

The survey baseline was established northeast of the proposed marsh creation areas in a northwest – southeast orientation. The survey transects for the topographic surveys intersect the baseline at 500 ft. intervals. Elevations were recorded at 25 ft. intervals or less when topographic features that may have an influence on the project were discovered. Eleven (11) short cross sections were taken at intervals across the existing spoil banks in between and around the two fill areas. The survey layout and survey details are shown on the T. Baker Smith & Son, Inc. survey drawings located in Appendix B.

Ten (10) magnetometer lines were surveyed within the BA-39 marsh creation areas. (See layout in Appendix B.) The magnetometer did not record any magnetic anomalies in the fill area other than the known existing 20" Shell Oil pipeline that runs along the Plaquemines parish flood protection levee (See Figure 1). The top of the pipeline averages an elevation of -4.1' NAVD88. The estimated depth of cover is approximately 4'. Three (3) existing oilfield structures just outside of the fill areas were surveyed and examined. Details of these surveys are shown on the T. Baker Smith & Son, Inc. survey drawings located in Appendix B.

Average Marsh Elevation Surveys were conducted at two (2) predetermined locations. These surveys consisted of a minimum of twenty spot elevations at each location utilizing the same equipment used to acquire the elevations in the marsh creation areas. Average marsh elevations for each location were derived by using the following procedure: (sum of elevations at location number divided by the total number of elevations at same location number = Average Elevation). Table 2 shows the data acquired from the two (2) average marsh elevation surveys. The average marsh elevation survey points are shown on the T. Baker Smith & Son, Inc. survey drawings located in Appendix B. The average marsh elevation of +0.88' NAVD88 was used in the determination of the proposed marsh elevation used for design. This elevation was determined to be unhealthy for the area, and other factors were used to establish the design marsh elevation. See Section 6.2 for details.

SPOT ELEVATION NUMBER	POINT 1 29°39'26.0"N 90°1'28.8"W	POINT 2 29°39'3.7"N 90°0'52.6"W
1	0.770	1.436
2	0.765	1.043
3	0.356	1.379
4	1.201	1.268
5	0.799	1.179
6	0.706	0.812
7	0.716	0.898
8	0.414	0.847
9	0.860	1.067
10	0.730	0.983
11	0.902	0.906
12	0.693	1.091
13	0.946	0.273
14	0.624	0.800
15	0.998	0.435
16	0.770	0.732
17	0.713	0.826
18	0.873	1.422
19	0.686	1.369
20	0.945	1.011
21	1.043	1.133
22	0.950	0.696
23	0.963	0.916
24	0.861	0.893
25		0.639
AVERAGE	0.804	0.962
CUMULATIVE AVERAGE = + 0.883' NAVD88		

Table 2 – Average Marsh Elevation Survey Results (Locations shown in Appendix B)

3.3 Borrow Area Surveys

USACE hydrographic surveys of the Mississippi River performed in 1992 and 2003 were used to designate the borrow area. The bathymetry of the Mississippi River changes continuously, but there is no significant volume change between these two surveys. The USACE maintained navigation channel will serve as the eastern boundary of the proposed borrow area. The channel has been located in accordance with USACE restrictions and is shown on the plans.

Approximately 8.4 line miles of bathymetric, side-scan sonar, high-resolution seismic, and magnetometer surveys were also performed in the borrow area in August 2007 by the Louisiana State University Coastal Studies Institute. A comparison of borrow volumes was done using the 2007 and 2003 bathymetric data. As anticipated, the volume change was determined negligible and confirms the previous evaluation. The location of the Mississippi River pipeline crossings were verified by the magnetometer data. Bathymetric and magnetometer surveys will also be performed by the contractor prior to excavation of material. Drawings from the 2007 borrow area survey are included in Appendix F of the construction specifications.

3.4 Highway Crossing Surveys

A topographic survey was conducted by T. Baker Smith and Son, Inc. to facilitate possible pipe-jacking underneath LA 23 at the intersection of LA 23 and Ravenna Road. (See cross sections in Appendix B).

A topographic profile was taken by the LDNR-CED survey crew from LA 23 at the Naomi siphon to the Mississippi River along the proposed dredge pipeline corridor. See Section 7.3 for details. The secondary monument "BA03C-SM-01" was used as the vertical control for the profile. The coordinates of the monument are 29° 41' 58.771906" N, 89° 59' 13.505879" W (See Figure 2). This information is included in the Plans. The data sheet for this monument is located in Appendix A.

4.0 GEOTECHNICAL EVALUATION

In order to determine the suitability of the soils in the BA-39 project area for the various proposed marsh creation features, geotechnical subsurface investigation and analyses were performed by Eustis Engineering Company, Inc., (EEC), and completed on October 4, 2006. Additional geotechnical investigation and analyses were performed by Louis J. Capozzoli and Associates, Inc., (LJC), and were completed on July 16, 2007. EEC and LJC were tasked to collect soil borings, perform laboratory tests to determine soil characteristics, calculate self-weight consolidation of the marsh fill material, and determine adequate borrow to fill ratios for dredge and fill operations. EEC was tasked to perform global slope stability analyses on the containment dikes, calculate underlying settlements of the containment dikes, and calculate underlying consolidation of the marsh creation areas and self-weight consolidation of the marsh fill for different fill elevations. LJC was tasked to evaluate the grain size distribution of the borrow material and calculate the settlement of the marsh fill material. A detailed summary of the geotechnical subsurface investigation and analyses is presented in the Geotechnical Investigation reports prepared by EEC and LJC, available upon request. Both evaluations were used to determine constructed marsh creation fill elevations.

4.1 General Geological Evaluation

The upper 50 feet of sediment located in the marsh fill area is mostly sediment deposited from the present Mississippi River course during approximately the past 1000 years. The surface and subsurface are characterized by up to 10 feet of marsh deposits. The marsh deposits consist of very soft organic clays and peat with relatively high water content. Underlying the marsh deposits are interdistributary deposits, approximately 30 feet thick, composed of very soft to soft clays with silt and shells. Prodelta deposits underlie the interdistributary deposits, consisting of medium to stiff clays.

The borings taken in the Mississippi River indicate that the borrow area, mostly fine grain sand (approximate median grain size=0.3 mm), is located on an expanding sand bar. Boring logs are included in Appendix C.

4.2 Soils Investigation

A total of eight (8) subsurface borings were drilled by EEC in the project area during the period of March 1, 2006 through April 3, 2006. Three (3) borings were drilled between River Miles 60.0 and 61.3 of the Mississippi River to depths of forty (40) ft., four (4) borings were drilled in the marsh fill areas to depths of forty (40) ft., and one (1) boring was drilled in the marsh fill area to a depth of sixty (60) ft. Between May 15, 2007 and May 24, 2007, LJC drilled three (3) borings between River Miles 63.6 and 65.0 of the Mississippi River to depths of forty (40) ft. and two (2) borings along Highway 23 to depths of fifty (50) ft. Boring locations are shown in Figure 2. The soil samples were tested in the laboratory for classification, strength, and compressibility. Testing included: field or miniature vane, unconfined compression, unconsolidated undrained triaxial

compression, Atterberg limits, grain size distribution, consolidation, settling column, and self-weight consolidation.

Figure 2 – Survey Monument and Soil Boring Locations

4.3 Global Slope Stability Analysis for Containment Dikes

Global slope stability analyses were performed by EEC for the earthen containment dikes using Bishop's Method of Slices with the program Slope/W, Version 4.20 by Geo-Slope International, Ltd. Circular arcs were divided into vertical slices to delineate the failure planes, and the factor of safety was determined by summing forces and moments. A

minimum safety factor of 1.3 was used for analyses. For the containment dikes, engineering soil properties from Borings B-4A, B-5A, B-6A, B-7A, and B-8A were used to conduct the global slope stability analyses.

4.4 Settlement Analyses

Consolidation settlement analyses for the marsh fill and the containment dikes were performed using a set of spreadsheets implementing the Westergaard stress distribution theory. Terzaghian theory was used to evaluate rate and magnitude of consolidation. Consolidation test parameters were used on soil types in which consolidation tests were taken. These parameters were used on similar soil types based on geotechnical engineering judgment. For soil layers containing no consolidation test data, published correlations for pre-consolidation pressures, coefficients of consolidation, and compression/re-compression indices were used to obtain consolidation indices using shear strength, Atterberg Limits, and moisture content values.

4.4.a Containment Dike Settlement Analysis

Settlement calculations by EEC for the earthen containment dikes were based on the soil conditions at Borings B-4A, B-5A, B-6A, B-7A, and B-8A (see Appendix C for boring logs). Containment dike settlement is composed of two (2) parts: (1) the settlement in the foundation soils due the weight of the containment dikes, and (2) the settlement within the containment dike itself due to self-weight consolidation. A crown width of 6.0 ft. and 1(V):3(H) side slopes were used based on the results of the slope stability analysis (See Figure 3) producing a safety factor of 1.64. A calculated mean low water depth of +0.5’ NAVD88, (See Section 2), was used throughout the project area, and a dike crown elevation of +4.5’ was initially evaluated. The containment dikes were ultimately designed using a crown elevation of +3.0’ NAVD 88 to account for one foot of freeboard above the proposed marsh fill elevation of +2.0’ NAVD88. In general, the settlement over twenty (20) years of the containment dikes in the project area was estimated to be 1.0 to 1.25 feet, with 0.75 to 1.25 feet occurring in the first five years. With the target marsh elevation for the project area being approximately +1.3’ NAVD88, (see Section 6.2 for details), it is concluded that containment dikes built in the project area to an elevation of +3.0’ NAVD88 would not settle to marsh elevation. Therefore, containment dikes will be degraded and/or gapped post-construction.

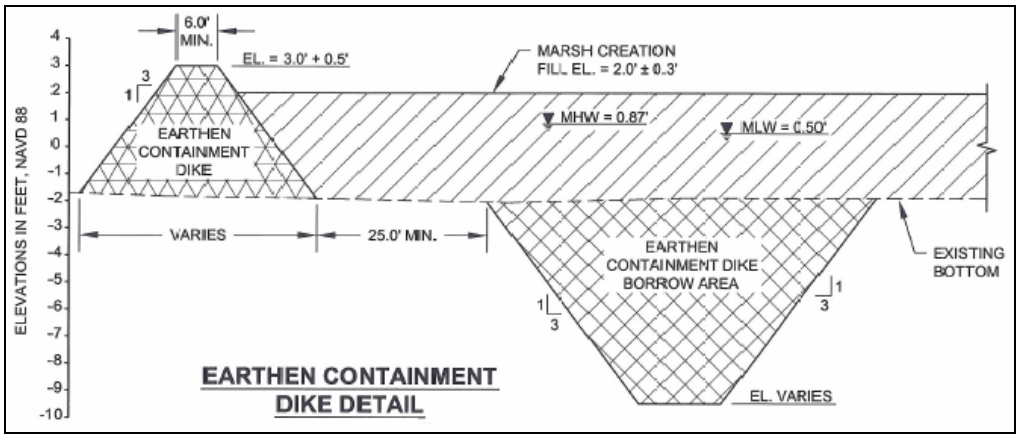

Figure 3 – Containment Dike Typical Section

4.4.b Marsh Fill Settlement Analyses

Eustis Engineering Company, Inc.

Settlement calculations for the marsh fill area foundation soils were also based on Borings B-4A, B-5A, B-6A, B-7A, and B-8A (see Appendix C for boring logs). The total marsh fill settlement is composed of the settlement that will occur in foundation soils underlying the deposition area and the settlement within the marsh fill itself due to self-weight consolidation. River borings taken by EEC were evaluated for self weight consolidation, and marsh fill elevations of +1.5 ft., +2.5 ft., +3.5 ft., +4.5 ft., and +5.5 ft. were evaluated. As with the containment dikes, settlement values in the marsh fill areas were found to be relatively low. The settlement curves showed that most of the settlement in the foundation soils of the marsh fill area would occur within the first year after construction.

Louis J. Capozzoli and Associates, Inc.

LDNR provided LJC with boring logs and test results from EEC for the foundation soils to use in settlement analyses. Consolidation tests were performed on the borrow area material from borings taken by LJC to estimate how much settlement occurs within the mass of marsh fill itself due to self-weight consolidation. A composite sample from Borings B-1B, B-2B, and B-3B was used for these tests. The time-rate of settlement for this test was calculated for +1 ft., +1.5 ft., +2 ft., and +2.5 ft. fill elevations.

In addition to traditional hand calculations, LJC evaluated the marsh settlement using the USACE model Primary Consolidation, Secondary Compression, and Desiccation of Dredged Fill (PSDDF). Geotechnical parameters were entered into the program and settlement calculations over twenty years were generated. The input data for the PSDDF model are the results produced by the self-weight consolidation test including specific

gravity, void ratios, effective stress values, primary and secondary consolidation parameters, and permeability values. Input parameters for the foundation soils include specific gravities, void ratios, effective stress values, primary and secondary consolidation parameters, and permeability values from several soil layers in approximately the top twenty feet of the foundation. The results of the model runs were similar to the hand calculations.

Recommended Marsh Fill Elevation

LDNR evaluated the results of both geotechnical investigations and used the data to develop settlement curves representative of actual field conditions. Based on analyses performed by EEC and LJC, LDNR-CED recommends using a constructed marsh fill elevation of +2.0' NAVD88. See Figure 4 for the settlement curve used in design.

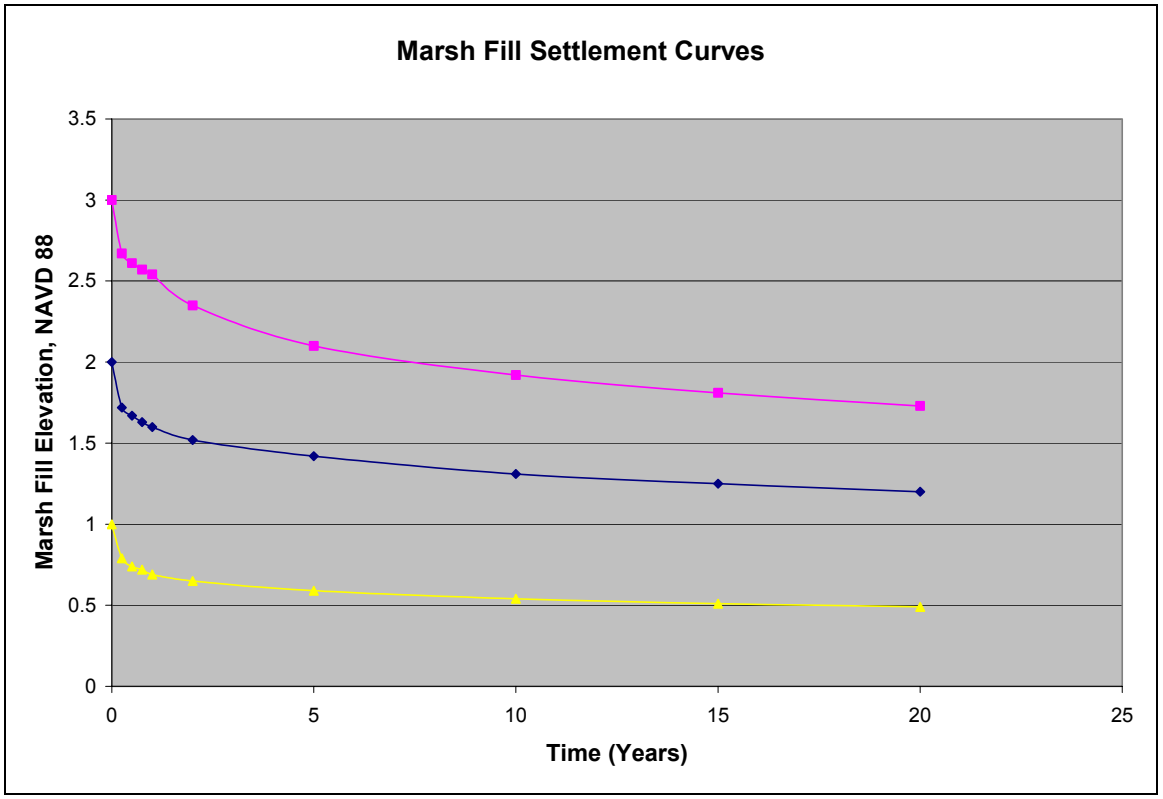

Figure 4 – Marsh Fill Settlement Curves

4.5 Borrow to Fill Ratio Recommendations

LDNR tasked EEC to approximate estimated borrow to fill ratios for BA-39. Two (2) cases were considered in this analysis: (1) the quantity of material that will be dredged

hydraulically and placed in the fill areas and (2) the quantity of in-situ borrow material necessary to construct the containment dikes using mechanical dredging techniques.

In designing beneficial use marsh creation projects, the USACE applies a "bulking factor" to the quantity of dredged material. This theorizes that the volume of material in-situ will be less than the volume of the material after placement. When disturbed, fine grain materials such as silts and clays increase in volume. Sand typically occupies nearly the same volume in-situ as it does after placement. In past experience in constructing marsh creation projects, LDNR has found that significant losses occur at the dredge's point of cut and in the fill area due to water runoff. LDNR's goal is to produce the healthiest possible marsh elevation. Therefore, the volume of material required for the marsh fill must be conservatively estimated. Therefore, a borrow to fill ratio has been applied in lieu of a bulking factor.

The borrow to fill ratio for the hydraulically dredged material from the Mississippi River was estimated based on experience from past dredging projects. Sandy sediments tend to require lower borrow to fill ratios, for moisture contents less than 40%, at approximately 1.25:1 to 1.5:1 (EEC 19). Borrow to fill ratios for silts and clays are typically between 2:1 for moisture contents between 40% and 60% and 3:1 for moisture contents greater than 60% (EEC 18). These estimates exclude shrinkage and discarding unsuitable organic materials. Considering these figures and in-situ soil conditions, LDNR has selected a borrow to fill ratio of 1.5:1 for the marsh fill material to account for dredging losses.

The borrow to fill ratio for mechanical dredging of the containment was primarily based on the expected transport losses during construction and water loss shrinkage of the clayey material in the project area. Based on these factors and EEC recommendations, a borrow to fill ratio of 2.5:1 for mechanical dredging was used for design.

5.0 BORROW AREA EVALUATION

The controlling factors of this design component include the borrow area delineation and the borrow area volume. The size of the borrow area is also governed by the volume of material calculated to fill the marsh creation areas as discussed in Section 5.2. The borrow area must also contain sufficient sediment for the marsh fill requirements in a relatively small, accessible area.

5.1 Borrow Area Delineation

5.1.a USACE Mississippi River Dredging Guidelines

The following is a list of USACE physical borrow area guidelines and restrictions:

- All excavations must be made at least 750 feet from any levee centerline.
- Borrow areas must be outside the USACE maintained navigation channel.
- Excavation in the river must not be made less than 4,000 feet upstream of a bridge crossing.
- The side slopes of the borrow area must be no steeper than 1(V):5(H).
- The excavation must proceed from landside to riverside limits to minimize the possibility of overburden failure of the bank.

The eastern boundary of the borrow area is delineated by the navigation channel, and the western boundary is delineated by a 750 foot USACE offset from the centerline of the levee. This boundary exists to ensure that a 1.3 factor of safety remains for the global slope stability of the Mississippi River levee. If the elevation of existing ground landside of the river levee is greater than the elevation of existing ground on the river side, the elevation of the land side must be projected towards the river to intersect the 750' offset line. At this intersection, side slopes of 1(V):5(H) are projected toward the river to the intersection of the mudline. Dredging may only take place from this point. Along most of the borrow area, this is the governing criteria used to delineate the dredge limits. At some points, the ground elevation on the landside is less than the elevation of the river side, for which the centerline of the levee was projected 750' toward the water to delineate the western boundary of the borrow area. For a cross-sectional diagram of this USACE regulation, see Figure 5. LIDAR data was used to determine the landside ground elevations near the river levee, and these were used to delineate the western boundary of the borrow area.

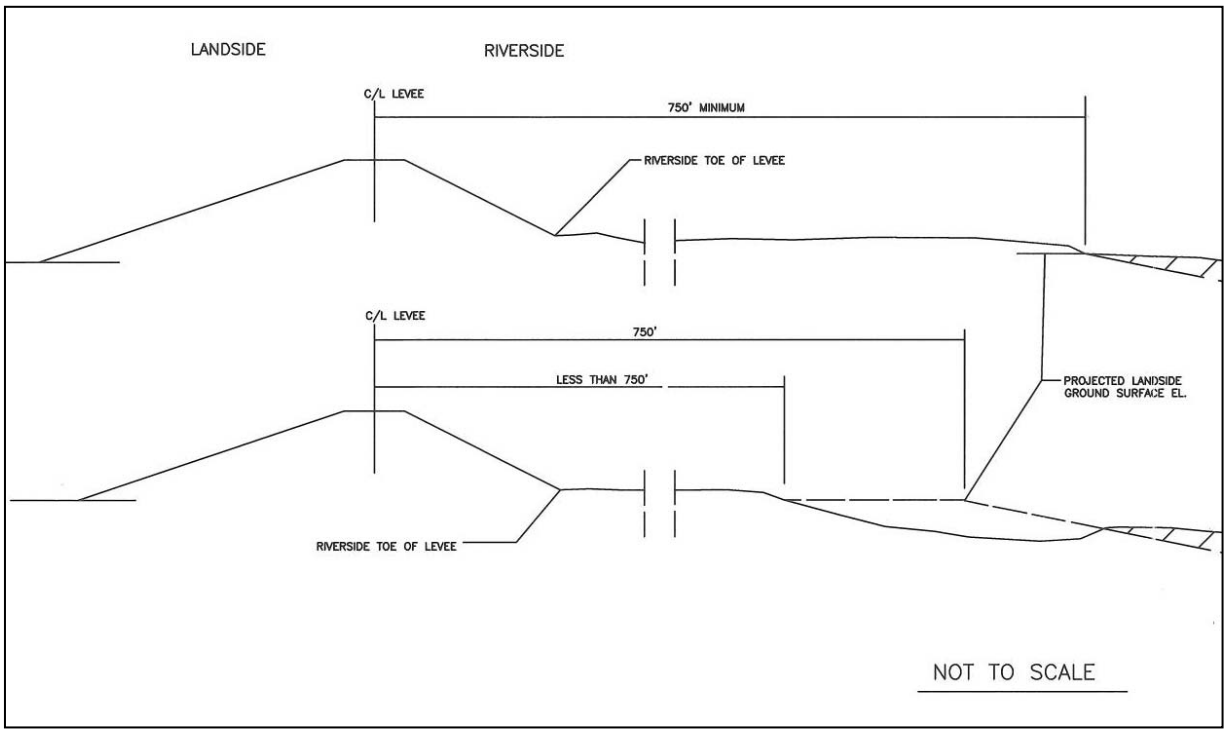

Figure 5 – USACE Mississippi River Dredging Restrictions

Borrow Area Location

In the stretch of river between RM 63.6 and 65.0, (encompassing the borrow area), the navigation channel is located near the eastern bank, delineating the eastern boundary of the borrow area. There is no bridge within 4,000 feet of this area. There is minimal revetment along the western bank of this river section. The easternmost location of the revetment is approximately 600 feet from the centerline of the levee, therefore not an issue for this project. See Figure 6 for the designated borrow area for BA-39. This borrow area is located north of Alliance Refinery, so barge traffic and refinery operations should not be a problem for the contractor. The borrow area is adjacent to the Naomi siphon, which is owned by Plaquemines parish. The footprint is restricted immediately downstream by pipelines and inaccessible depths. Upstream of the footprint of the borrow area is too deep to dredge.

5.1.b Pipelines and Utilities

A submerged transmission line owned by Entergy is located south of the borrow area. To prevent disturbance of the line, Entergy has provided surveys to LDNR, and a magnetometer survey has located the line. The southern boundary of the borrow area has been delineated 500 feet upstream of the line. LDNR has collected as much information as possible regarding known pipelines and utilities in the project area. However, the contractor will be required to perform a magnetometer survey of the borrow area prior to the excavation of material.

5.2 Borrow Area Volume

Based on the delineated footprint for the borrow area, a volume was computed. A total of 3,502,665 cubic yards of borrow material is required to fill Marsh Creation Areas 1 and 2. The proposed borrow area contains approximately 3,940,000 cubic yards of material and is located on an expanding point bar that should replenish efficiently.

The borrow volume is computed by simply multiplying the fill volume by the borrow to fill ratio of 1.5 for hydraulically dredged material as mentioned in Section 4.5. A conventional cutterhead dredge can cut to a maximum depth of approximately 70 feet below the water surface. Historical water surface elevation data in the Mississippi River at Alliance shows that the water elevation in the summer and fall typically fluctuates between +3' and +4' NAVD88. Since this is the most likely time for the material to be dredged, the maximum depth of cut was assumed to be -66' NAVD88 to account for a water level elevation of +4' NAVD88. The borrow volume was maximized to account for any unforeseen issues that may arise. The total volume of available sediment to an elevation of -66' NAVD88 in this reach of the river is approximately 3,940,000 cubic yards, based on the USACE 2003 hydrographic survey. The total fill volume required is 3,502,665 cubic yards, (including refilling containment dike borrow areas). Details on the borrow site design are shown in Section IV of the Design Calculations Packet located in Appendix D.

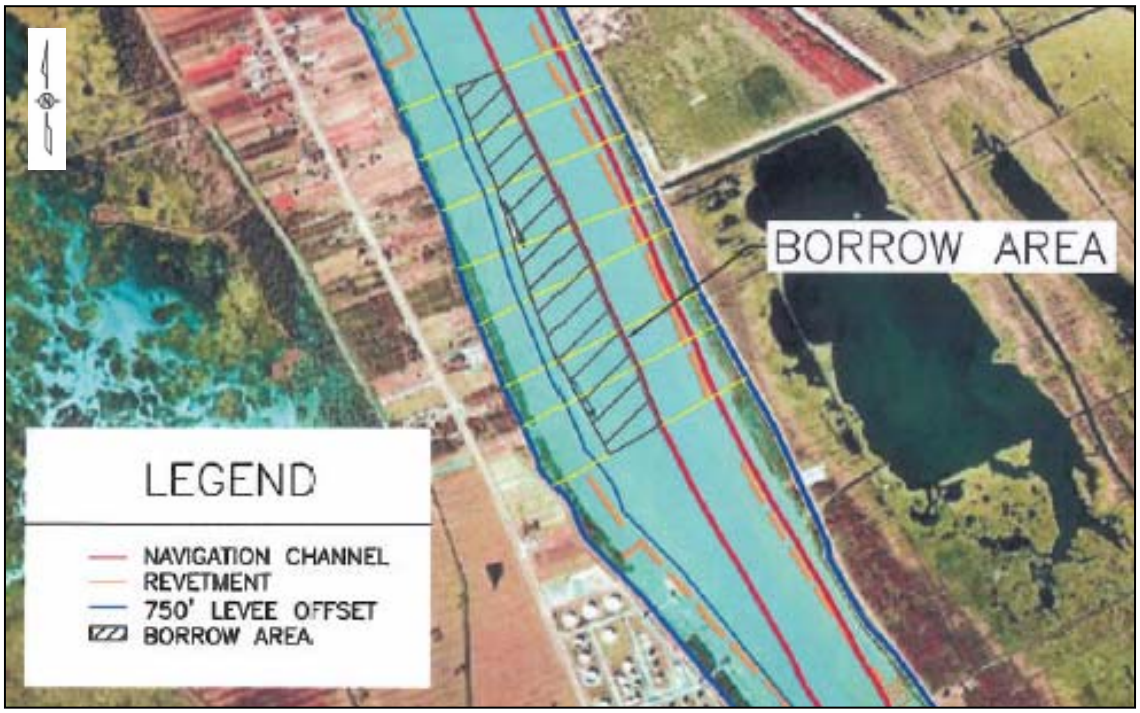

Figure 6 – Designated Borrow Area

5.3 Mississippi River Dredging

A few major concerns with dredging large quantities of sediment from the Mississippi River existed in the preliminary Engineering and Design phase of the project. The Mississippi River is dredged regularly to maintain navigation and obtain borrow material for construction projects. However, from a river hydraulics standpoint, the potentially major implications of dredging this large quantity of material at one time, at one location, must be considered. To address these concerns, LDNR consulted Tony Thomas, of Mobile Boundary Hydraulics, PLLC, as recommended by the USACE. Mr. Thomas is considered to be a leading expert in the areas of river engineering, sedimentation engineering, hydraulics, and computer programming. Mobile Boundary Hydraulics prepared a report entitled Review of Mississippi River Sediment Delivery System – Bayou Dupont which is available upon request.

Upon evaluation of the BA-39 project, Mr. Thomas concluded that hydrodynamic modeling of the Mississippi River borrow area is not necessary and that dredging the volume required for BA-39 would not have a significant impact on the bed load of the Mississippi River or thalweg.

6.0 MARSH CREATION DESIGN

The project objective is to create marsh by pumping sediment from the Mississippi River into the designated areas shown in Figure 1. The marsh creation design was broken into two (2) components: the marsh creation fill areas and the containment dikes. The design and analysis of each component is discussed in the sections below.

6.1 Marsh Creation Fill Areas

Marsh Creation Areas 1 and 2 were chosen as the fill areas for BA-39 due to the volume quantities and the marsh fill containment dike constructability recommendations.

Marsh Creation Area 1 encompasses approximately 295 acres in water depths ranging from 1-2 feet. This area is bounded by the Cheniere Traverse Bayou ridge to the north and existing spoil banks to the west, east, and south due to oil field canal construction. These spoil banks will provide for easier and more economical construction of containment. Minimal in-situ material will be required to construct stable containment dikes. Marsh Creation Area 2 encompasses approximately 198 acres. The eastern boundary of this site is contained by the Plaquemines parish flood protection levee. The western boundary is contained by an existing spoil bank. Containment dikes will be required on the southeastern and northern edges of Marsh Creation Area 2 and the northern boundary of Marsh Creation Area 1. Based on previous project experience and recommendations from the geotechnical consultant, new containment dikes can be constructed in these areas.

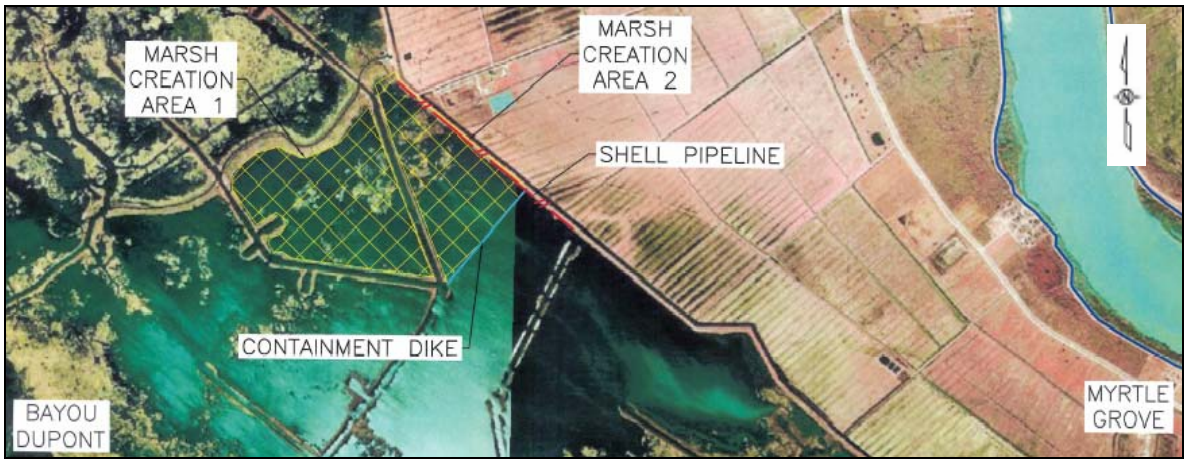

Figure 7 – Shell Oil Pipeline and Proposed Marsh Creation Areas

6.2 Marsh Fill Area Design

Marsh Fill Target Elevation

The main design component of BA-39 involves the calculation of the fill area volumes. Before this could be accomplished, a desired, long-term marsh elevation had to be determined. The constructed marsh fill elevation is the marsh fill elevation at the end of construction reached by the placement of hydraulically dredged material to achieve healthy marsh for a twenty year design life. This elevation was governed by several factors including average healthy marsh elevation, the tidal datum, the physical properties of the borrow material, and the estimated settlement of the underlying soils.

The first step of the fill elevation design involved an examination of the existing marsh conditions. The average marsh elevation survey performed during the fill area survey revealed that the average marsh elevation of the highest natural marsh in the project area was approximately +0.88' NAVD88 (see Section 3.2 for additional details). The existing marsh evaluated is not representative of healthy marsh, considering it is extremely broken and surrounded by patches of open water. The calculated tidal datum (MHW=0.87' NAVD88, MLW=0.50' NAVD88) shown in Section 2.0 verified that the existing marsh predominantly fell in the upper portion of the project inter-tidal zone, the range of elevations that lie in between the upper and lower extents of the tidal datum. In order to evaluate the performance of the created marsh over the twenty year life of the project (standard for CWPPRA), the project team decided that the criteria would be marsh elevation. To achieve a sustainable marsh elevation throughout the life of the project, the marsh platform will initially have to be pumped to an elevation higher than MHW during construction and settle into the inter-tidal zone over time. Considering the unfavorable constructability of pumped marsh fill, pumping to elevation +2.0 ft. will yield a marsh elevation as close as possible to +1.3' NAVD88. Based on physical observations of LDNR ecologists and field biologists, this will meet healthy marsh requirements. In addition, the previously constructed LDNR Bayou Dupont Dedicated Dredging project, approximately 3.8 miles to the west near the south shore of the Pen, was surveyed at elevation +1.34' NAVD88 in March of 2007. Upon visual inspection, this area is exceptionally healthy. Using this elevation, the marsh will be inundated approximately 25% of the time after initial settlement. Considering the dominant species of vegetation in the area, *spartina patens*, this level of flooding should be ideal (See Appendix H). Filling below this elevation will result in an elevation below the intertidal range at the end of the twenty year design life.

In order to determine the constructed fill elevation, LDNR tasked EEC and LJC to evaluate consolidation values due to marsh creation in the project area. The purpose of these analyses was to assist in the determination of a construction fill elevation that will produce marsh as close as possible to the desired marsh elevation throughout the twenty year design life and that will fall within the desired zone for the longest period of time possible. Based on the settlement curves, it appears that the majority of the settlement will be complete approximately two (2) years after construction. However, the marsh will continue to settle throughout the twenty year project life. It was also concluded that

a constructed marsh fill elevation of +2.0' NAVD88 will ultimately settle to an elevation of +1.2' NAVD88 at year twenty. These settlement values are composed of foundation settlement and self-weight consolidation settlement. Because this value is extremely close to what was determined to be healthy marsh elevation, a constructed marsh fill elevation of +2.0' NAVD88 with a vertical construction tolerance of ±0.3' was chosen for this project. The perimeter of the marsh creation areas will be planted with native species upon construction completion. Approximately one year post-construction, the natural colonization of vegetation will be evaluated, and if deemed necessary, additional native species will be planted.

Marsh Fill Volumes

Once the constructed marsh fill elevation was determined, the marsh fill volumes were calculated. Cross-sectional areas of the transects in each fill area were calculated using the data produced by the Fill Area Survey described in Section 3.2. Marsh fill area volumes were then computed using these areas. Table 3 shows the results of the volume calculations for each marsh fill area. A more detailed summary of the marsh fill area design is shown in Section II of the Design Calculations Packet located in Appendix D.

MARSH FILL AREA	AREA (acres)	MARSH FILL VOLUME AT +2.0 (yd^3)	HYDRAULICALLY DREDGED VOLUME REQUIRED (yd^3)*
AREA 1	295	1,352,240	2,028,360
AREA 2	198	906,854	1,360,281
Totals	493	2,259,094	3,388,641

Table 3 – Summary of Marsh Fill Area Volumes
***Determined using a fill elevation of +2.0' NAVD88 and a Borrow to Fill Ratio of 1.5:1**

Pipelines and Utilities

In Marsh Creation Area 2, the magnetometer survey performed by TBS located a 20" Shell crude oil pipeline along the Plaquemines parish flood protection levee. Negotiations and agreements with Shell are underway. Shell pipeline requirements are included in the Plans and Specifications. The contractor will be required to perform a magnetometer survey in the marsh creation areas prior to excavation and placement of material.

6.3 Containment Dike Design

The primary design parameters associated with the containment dike design include crown elevation, crown width, and side slopes. LDNR tasked EEC to determine these parameters for slope stability and settlement analyses. For a marsh fill elevation of +2.0' NAVD88, EEC concluded that containment dikes should be built to a +3.0' NAVD88

crown elevation, with a 6 ft. crown width, and 1(V):3(H) side slopes. The containment dikes shall be constructed using in-situ material from within each fill area and will mostly involve enhancing existing spoil banks. For stability purposes, EEC recommended that the dike borrow pits be located at least 25 ft. from the toe of the dike and excavations be no more than ten (10) feet deep or to approximately elevation -12' NAVD88. Once these parameters were determined, cross-sectional areas and containment volumes were calculated using the methods described in Section III of the Design Calculations located in Appendix D. Table 4 summarizes the containment dike volume calculations. The total in-situ borrow volume that will be refilled by hydraulically dredged material is calculated to be 76,016 cubic yards. Applying the borrow to fill ratio for hydraulic dredging of 1.5:1 produces a total volume 114,024 cubic yards that will be dredged to refill the borrow pits. Adding this value to the total volume required to fill the marsh fill areas (3,388,641 cubic yards) yields a total hydraulically dredged volume of 3,502,665 cubic yards for the marsh fill, or a volume of 2,335,110 cubic yards in place.

CONTAINMENT DIKE	DIKE LENGTH (ft)	CALCULATED VOLUME (yd^3)
Area 1 - W	7,691	8,712
Area 1 - E	5,079	6,244
Area 1 - N	4,809	3,637
Area 2 - W	5,266	4,558
Area 2 - E	1,070	1,200
Area 2 - S	2,906	11,423
Total (in place)	26,821	35,774
Total (borrow) (2.5:1 cut:fill)		89,435

Table 4 – Containment Dike Quantities (Mechanically Dredged Material)

Enhanced spoil banks and containment along the northern boundaries of the Marsh Creation Areas will be degraded to marsh elevation upon the completion of project construction to achieve a consistent marsh creation platform and promote tidal exchange. The degradation of the containment dike along the southeastern boundary of Marsh Creation Area 2 will be evaluated during construction. If tidal exchange is sufficient subsequent to the degradation of the other containment, this containment dike will be left in place to create a more sustainable marsh platform. The remaining containment dike will be monitored, and if tidal exchange or marsh condition become unfavorable, the dike will be gapped or degraded.

7.0 DREDGE PIPELINE EVALUATION

The dredge slurry pipeline will measure up to 30 inches in diameter and cross the Mississippi River levee. The pipeline will be placed between the proposed borrow area and the marsh creation areas. (See Figure 9.)

7.1 Dredging Equipment

Several equipment concerns should be considered when selecting a dredge pipeline corridor. A conventional, non-modified, hydraulic dredge can cut to a depth of approximately seventy feet, therefore limiting the depth of any given borrow area. If the contractor chooses to use a booster pump, the pipeline corridor must be wide enough to facilitate this station with sufficient access to deliver fuel. Closer proximity to a traversable road reduces the cost of mobilization and demobilization due to the fact that the contractor may truck in equipment such as the pipeline sections. Minimal changes in elevation along the pipeline corridor will prevent the loss of head in the pipeline, reducing the amount of fuel and horsepower required to move the dredged material.

7.2 Landowners and Pipelines

Marsh Creation Areas 1 and 2 are owned by River Rest, L.L.C. and The Livaudais Company, L.L.C. Negotiations with both landowners are underway. The selected pipeline corridor is owned by Plaquemines parish and Conoco-Phillips, and agreements with these landowners are being negotiated. See Figure 8 for property boundaries.

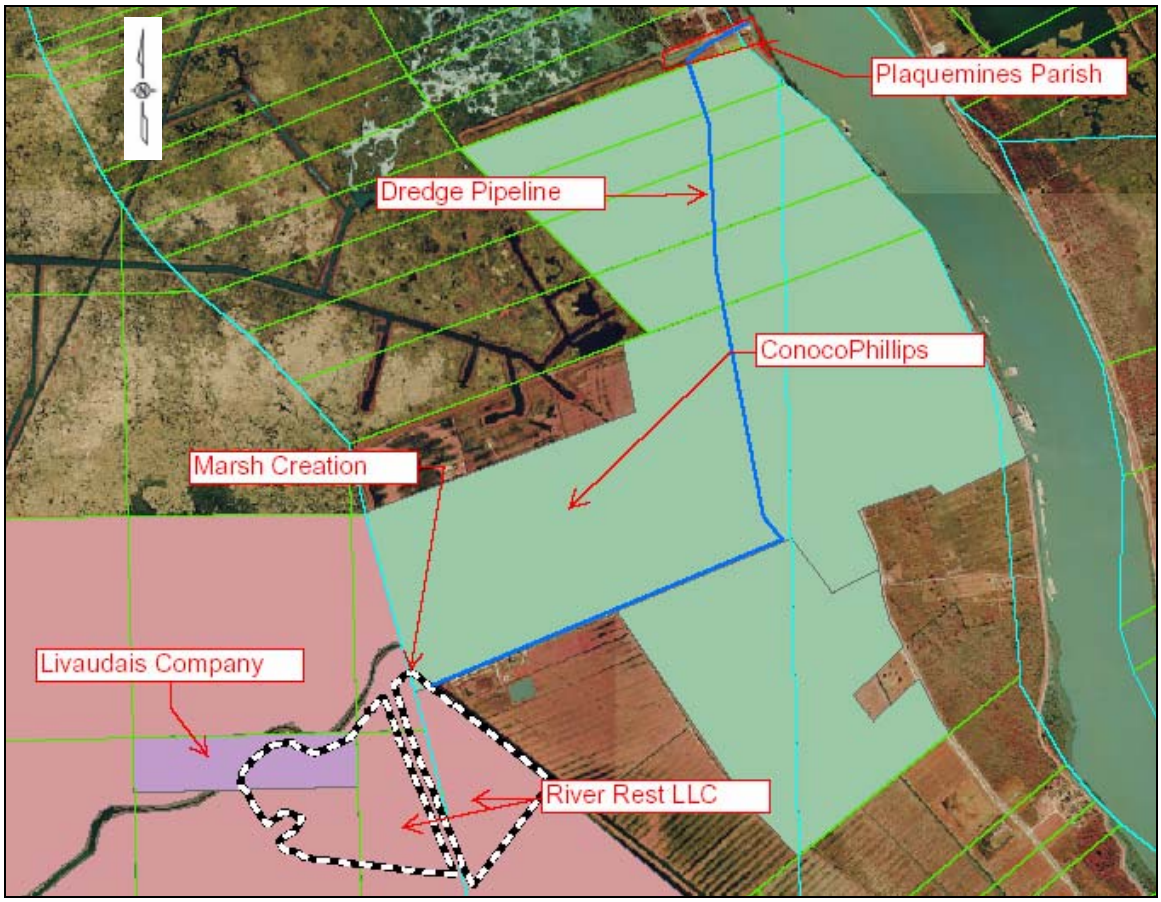

Figure 8 – Property Boundaries

Overhead transmission lines owned by Entergy are located near the LA 23 crossing. Negotiations with Entergy are underway, and surveys of the locations have been evaluated by LDNR. All construction operations will comply with the National Electric Safety Code and will not impede Entergy's operations. LDNR has consulted with Entergy in drafting construction specifications.

7.3 Proposed Dredge Pipeline Corridor (See Figure 9)

The proposed dredge pipeline transport corridor makes use of the Plaquemines parish tract of land near the Naomi siphon. A suitable Mississippi River levee road crossing shall be built as per the USACE's requirements as shown in the plans, as will be done where the pipeline crosses the Plaquemines Parish flood protection levee (See Figure 9). One 36" casing pipe will be installed underneath the railroad in the Plaquemines parish tract of land in accordance with New Orleans and Gulf Coast Railway Company specifications. (See Figure 10.) The Louisiana Department of Transportation and Development (DOTD) plans to raise LA 23 near the Naomi Siphon in early 2008 and has agreed to install a 36" concrete culvert at the location shown in the BA-39 plans (See Figure 9). The funding for this project feature will be provided by BA-39 Phase II construction funding, if awarded in 2008. The DOTD raising of LA 23 at La Reussite

project is in the final stages of design and LDNR will review the DOTD construction plans and specifications prior to bidding. Crossings installed under the railroad and LA 23 will be capped and left in place for use in future marsh creation projects as per the objectives of this project. The pipeline will be placed along a dirt road through the pasture west of LA 23 to West Ravenna Road. At this point, West Ravenna Road will be excavated to place the pipeline underneath a layer of crushed aggregate sufficient for vehicle crossings. The pipeline will then be placed along the southern side of West Ravenna Road to the Plaquemines Parish flood protection levee. After crossing this levee, the pipeline will discharge into Marsh Creation Areas 1 and 2. Please see Figure 9 for details.

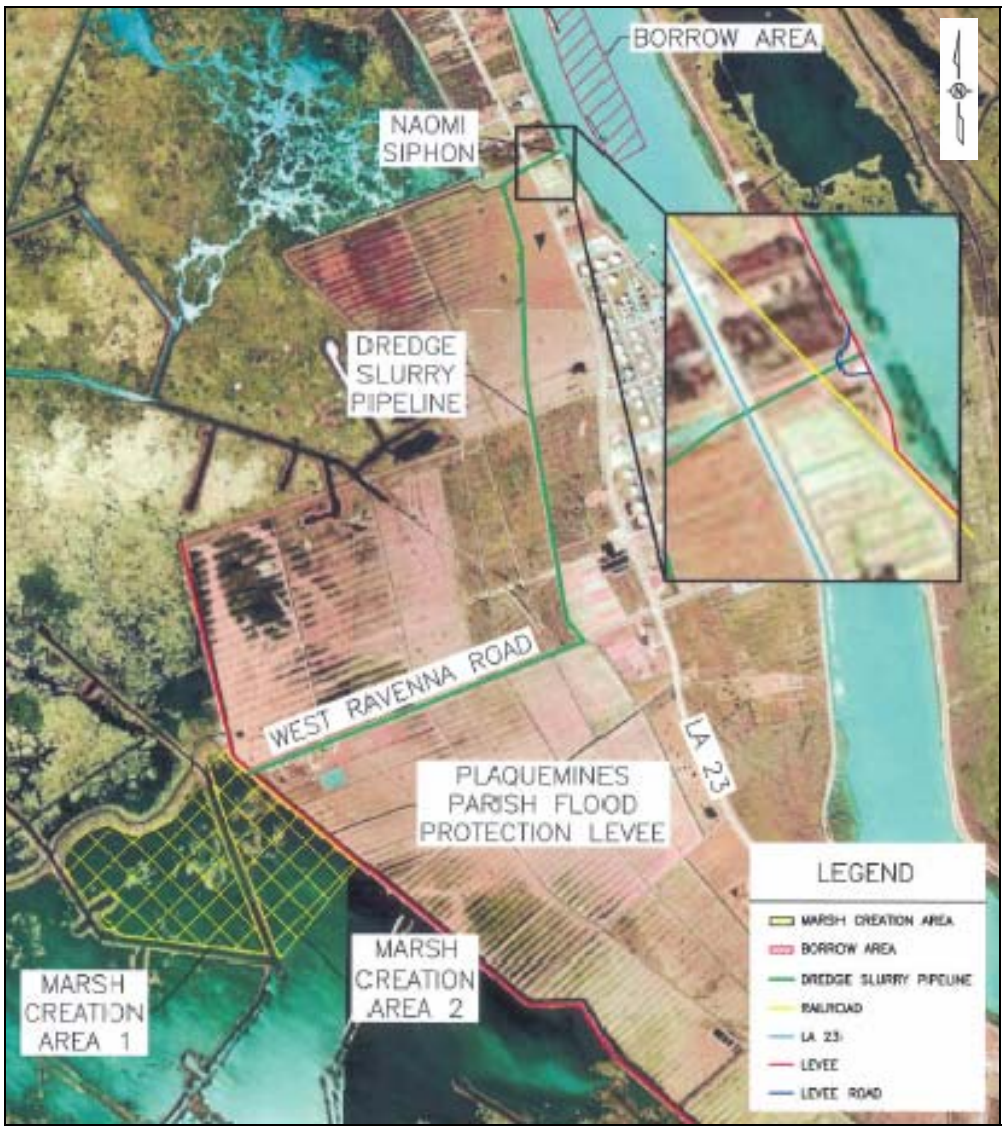

Figure 9 – Proposed Dredge Pipeline Corridor

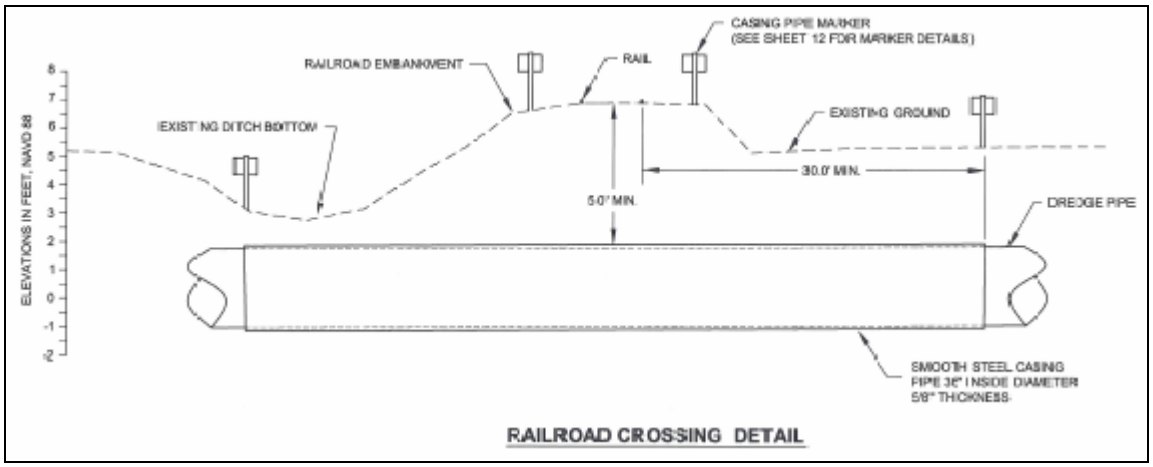

Figure 10 – Proposed Railroad Crossing

8.0 CONSTRUCTION COST ESTIMATE

BA-39 PRELIMINARY CONSTRUCTION COST ESTIMATE

Item No.	Work or Material	Quantity	Unit	Unit Cost	Amount
1	Mobilization/Demobilization	1	LS	$1,950,000	$1,950,000
2	Surveying	1	LS	$300,000	$300,000
3	Earthen Containment Dikes	26,821	LF	$20	$536,420
4	Jacked or Bored Casing Pipe	240	LF	$550	$132,000
5	Casing Pipe Caps	4	EA	$2,500	$10,000
6	Marsh Creation	2,335,110	CY	$6.75	$15,761,993
7	Settlement Plates	5	EA	$3,000	$15,000
8	Vegetative Plantings	1	LS	$253,642	$253,642

Subtotal = $18,959,055
Contingency (25% x Subtotal) = $4,739,764

TOTAL ESTIMATED CONSTRUCTION COST = $23,698,819

Payment for the Marsh Creation item will be made on the fill as opposed to payment on the cut. Since the bathymetry of the Mississippi River changes rapidly, basing payment on the borrow pit survey would not be an accurate representation of the actual cubic yardage dredged.

9.0 MODIFICATIONS TO APPROVED PHASE 0 PROJECT

As a result of Phase 1 activities, the approved Phase 0 project has undergone project area modifications. The Phase 0 project included one marsh fill area to total 538 acres of marsh creation. The fill marsh area was moved approximately one mile to the northwest to address constructability concerns. Approximately 295 acres will be created in Marsh fill Area 1, and approximately 198 acres will be created in Marsh Fill Area 2. Environmental and ecological changes were considered and discussed with project team members. It was concluded that from an engineering standpoint, utilizing Marsh Fill Areas 1 and 2 would produce a more successful project at the small expense of reducing the acreage by approximately 8%.

10.0 LAND OWNERSHIP AND UTILITIES INVESTIGATION

Upon the evaluation of a tax assessor's report and a title report attained by the LDNR Land Section, four land owners were determined to be affected by BA-39. Pipelines and utilities in the project area were identified and ownership was verified. The USACE is currently in the process of granting 303(e) approval.

Land agreements for the two owners of the marsh creation areas, River Rest L.L.C. and The Livaudais Company, L.L.C., have been completed. Agreements are being reviewed by the Plaquemines Parish Government and Conoco-Phillips, the two owners of the dredge pipeline corridor.

Pipelines in the project area are owned by Chevron and Shell, and communication with these companies is ongoing. Land agreements for the Plains pipelines south of the borrow area in the Mississippi River are being reviewed by Plains. Communication is ongoing with Entergy, which operates a submerged transmission line in the Mississippi River, south of the borrow area. Communication is also ongoing with Plaquemines Parish regarding the water line near LA 23 that will be crossed by the dredge slurry pipeline.

11.0 CULTURAL RESOURCES ASSESSMENT

Included in Appendix E is a statement by the State Historic Preservation Office that BA-39 will not affect any known historic properties or archaeological sites.

12.0 OYSTER LEASE IMPACTS

No oyster leases exist in the marsh creation areas or borrow area.

13.0 REVISED FULLY-FUNDED COST ESTIMATE

Project:	Bayou Dupont Sediment Delivery System (BA-39)	Date:	5-Oct-07	Revised:	18-Oct-07
Computed by:	Stan Lancaster	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization/Demobilization	1	LS	$1,950,000	$1,950,000
2	Surveying	1	LS	$300,000	$300,000
3	Earthen Containment Dikes	26,821	LF	$20.00	$536,420
4	Jacked or Bored Casing Pipe	240	LF	$550.00	$132,000
5	Casing Pipe Caps	4	EA	$2,500.00	$10,000
6	Marsh Creation	2,335,110	CY	$6.75	$15,761,993
7	Settlement Plates	5	EA	$3,000.00	$15,000
8	Vegetative Plantings	1	LS	$253,642	$253,642

ESTIMATED CONSTRUCTION COST **$18,959,055**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY **$23,698,818**

TOTAL PROJECT COSTS

PHASE I (Fully Funded Costs)

Federal Costs

Engineering and Design:

Engineering	$1,192,648			
Geotechnical Investigation	$51,990			
Hydraulic Modeling				
Data Collection (including elevation surveying ….)				
Cultural Resources	$10,398			
NEPA Compliance	$31,194			
			SubTotal:	$1,286,230

	EPA			**USE**
Supervision and Administration (includes NEPA Compliance)	$406,561			$406,561
Corps Administration				$1,034

State Costs

Supervision and Administration (including PM, ecological review and engineering review)				$357,171
Easements and Land Rights				
Oyster Issues(# of Leases)	0 Leases	$0		
Land Rights		$103,980		
			SubTotal:	$103,980
Monitoring				
Monitoring Plan Development	$25,893			
Monitoring Protocol Cost	$11,867			
			SubTotal:	$37,760

* *Monitoring is now done through CRMS except on projects that an agency requests project specific monitoring and projects such as Barrier Island projects and Demo projects.*

Total Phase I Fully Funded Costs: **$2,192,736**

PHASE II

Federal Costs

Estimated Construction Cost +25% Contingency		$23,698,818		
Oyster Issues(# of Leased Acres)	0 Leased AC	$0		
			SubTotal:	$23,698,818
Supervision and Inspection	270 days @	$1,425.00	per day (10 hrs)	$384,750
Supervision and Administration				$355,482

State Costs

Supervision and Administration				$405,482
			Total Phase II Cost Estimate:	**$24,844,533**

TOTAL ESTIMATED PROJECT FIRST COST **$27,037,269**

14.0 WETLAND VALUE ASSESSMENT

The Wetland Value Assessment (WVA) for BA-39 is included in Appendix F.

15.0 STATEMENT OF CONSTRUCTABILITY

Upon the evaluation of field investigations, land ownership investigations, and engineering and design, the project team states that this project is constructible.

16.0 DRAFT OMRR&R PLAN

The draft Operations, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) Plan for BA-39 is included in Appendix G.

17.0 UPDATED PRIORITIZATION SCORE

FINAL PRIORITIZATION FACT SHEET
October 22, 2007

Project Name
Mississippi River Sediment Delivery System- Bayou Dupont (BA-39)

Goals

1. Restore approximately 369 acres of emergent marsh in an area that is currently mostly open water.
2. Nourish approximately 102 ac of existing brackish marsh.

Proposed Solution

The project would use a hydraulic cutter head dredge to mine sediment from the Mississippi River. Sediments would be pumped through pipeline to the receiving area. An appropriate conduit for the dredge discharge pipe to pass through will be jacked and bored under Louisiana Highway 23 and the Missouri Pacific railroad line to deliver the sediments to the project area. Because the sediments are sandy and because of existing landscape features along the project perimeter, the need for containment of pumped material is limited. Vegetative planting with appropriate wetland species will be performed along the perimeter initially, with more planting later if deemed to be necessary.

Proposed Prioritization Criteria Scores and Justification

Cost Effectiveness (cost/net acre)
The estimated total fully funded project cost is $. The project protects/creates 326 net acres. Therefore, the cost per acre for this project is $/net acre.

The proposed score for this criterion is x.

Area of Need, High Loss Area
The selected landloss rate was for the period (USGS 1988-2006; PPL17 Candidate Project, Bayou Dupont Marsh and Ridge Creation (NMFS 2007)): 1.72%.

The proposed score for this criterion is 5.

Implementability
There are no known implementability issues.

The proposed score for this criterion is 10.

Certainty of Benefits
The proposed project is a marsh creation project in the deltaic plain.

The proposed score for this criterion is 7.

Sustainability of Benefits
TY20 net acres (326 ac) projected through TY30 based on FWOP conditions, suggests that 298 ac would remain. 326-298/326=9% decrease in net acres.

The proposed score for this criterion is 8.

Increasing riverine input in the deltaic plain or freshwater input and saltwater penetration limiting in the Chenier plain
The project will not result in increases in riverine flows.

The proposed score for this criterion is 0.

Increased sediment input
The project will input some sediment (<5 million cubic yards) from external sources. The project will input 3.5 million cu yd from the Mississippi River.

The proposed score for this criterion is 5.

Maintaining landscape features critical to a sustainable ecosystem structure and function
The project will not create or protect any critical landscape features.

The proposed score for this criterion is 0.

Weighting per criteria:

Criterion		Weight	Score	Weighted Score
I	Cost-Effectiveness	2.0		
II	Area of Need	1.5	5.0	7.5
III	Implementability	1.5	10.0	15.0
IV	Certainty of Benefits	1.0	7.0	7.0
V	Sustainability	1.0	8.0	8.0
VI	HGM Riverine Input	1.0	0.0	0.0
VII	HGM Sediment Input	1.0	5.0	5.0
VIII	HGM Structure and Function	1.0	0.0	0.0
Total				

Preparer of Fact Sheet
Ken Teague, EPA, 214-665-6687, Teague.Kenneth@epa.gov

References

CWPPRA Economic Work Group. 2007. Phase 2 fully-funded cost estimate.

EPA. 2007. Bayou Dupont Sediment Delivery System (BA-39). Project Information Sheet for Wetland Value Assessment.

18.0 ECOLOGICAL REVIEW

The Ecological Review for BA-39 is included in Appendix H.

19.0 COMMENTS ON PRELIMINARY (30%) DESIGN

The Preliminary Design Review Meeting for BA-39 was held on July 11, 2007 at the Baton Rouge office of LDNR. The meeting announcement was sent out to all CWPPRA agencies, as well as other organizations involved in the project. This meeting included a detailed presentation on the history of the project, the design process, and the status of all CWPPRA Standard Operating Procedures (SOP) requirements. Figure 11 shows the attendance for the BA-39 Preliminary Design Review Conference. Responses to formal comments submitted for the 30% Design Review are included in Appendix J.

Mississippi River Sediment Delivery System - Bayou Dupont
30% Design Review Conference Sign-in Sheet July 11, 2007

Name	Organization	Phone	e-mail
Brad Miller	LDNR/CED	225-342-4122	brad.miller@la.gov
Whitney Thompson	LDNR/CED	225-342-9419	whitney.thompson@la.gov
Melanie Magee	EPA	214-665-7161	magee.melanie@epa.gov
Fay Lachney	USACE	504-~~338~~-862-2309	Fay.V.Lachney@mvn02.usace.army.mil
KEITH O'CAIN	USACE	504-862-2746	Keith.J.O'Cain@mvn02.usace.army.mil
Robert Spears	P.P.G.	504-297-5343	Robert_Spears@CMAACCESS.com
David Lindquist	LDNR/CRD	225-342-9683	david.lindquist@la.gov
Kenneth Ballinger	LDNR/CED	225-342-7362	kenneth.ballinger@la.gov
Rudy Simoneaux	LDNR/CED	225-342-6750	rudy.simoneaux@la.gov
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CHRISTOPHER KNOTTS	LDNR/CED	225-342-6871	chris.knotts@la.gov
Beau Tate	LDNR/CED	225-342-6736	beau.tate@la.gov
MARY FRIEDMANN	LDNR/CED	225-342-7285	MARY.FRIEDMANN@la.gov
Marnie Winter	Jeff Parish	504-736-6443	mwinter@jeffparish.net
Neil Mallrough	SCI/Jeff Parish	504-347-3600	oneil.mallrough@shawgrp.com
JoyceMontgomery	LDNR/LAND	225-342-5068	joycem@DNRSTATE.LA.US
Russ Joffrion	LDNR/CED	225-342-6850	russ.joffrion@la.gov
Tim Landers	EPA	214-665-6608	landers.timothy@epa.gov
CLAYTON BREELAND	DNR/CED	225-~~3~~42-6749	clayton.breeland@la.gov
Kristi Cantu	DNR/CED	225 219 0381	kristi.cantu@la.gov
TOM BERNARD	DNR/NOFU	504 280-4071	thomas.bernard@La.gov
RALPH L. BERSET	DNR/CED	225-342-1952	ralph.liberset@la.gov
Rickey Brouillette	DNR/CED	225-342-0931	rickey.brouillette@la.gov

Figure 11 – Preliminary Design Review Conference Attendance

The USACE raised one issue in regards to the proposed borrow area. This borrow site has been used for the saltwater barrier sill in times of low water when saltwater threatens the local drinking water supply. The sill has been built by the USACE twice, once in 1988 and once in 1999. LDNR was aware of this project and had attempted to reach a consensus with the USACE prior to the 30% Design Review. This proposed borrow source is the only reasonable alternative for the BA-39 project. Because it is an accessible, expanding sand bar that is expected to refill efficiently, future projects currently in the planning phase are also evaluating the use of this borrow area. Coupled with the proposed railroad and highway crossings, this area may become a prime area for riverine sediment marsh creation in this degraded region of southeast Louisiana.

After discussions with the USACE, it has been decided to seek alternate borrow sources for the saltwater barrier sill. The infrequent and unpredictable construction of the saltwater sill precludes the practicality of reserving this valuable resource exclusively for sill construction.

20.0 REFERENCES

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