DREDGING TO CONSTRUCT: RECENT AND FUTURE COASTAL RESTORATION PROJECTS IN LOUISIANA

NOVEMBER 20, 2014

WEDA
Western Dredging Association

CPRA
Coastal Protection and Restoration Authority of Louisiana

In 1990's,

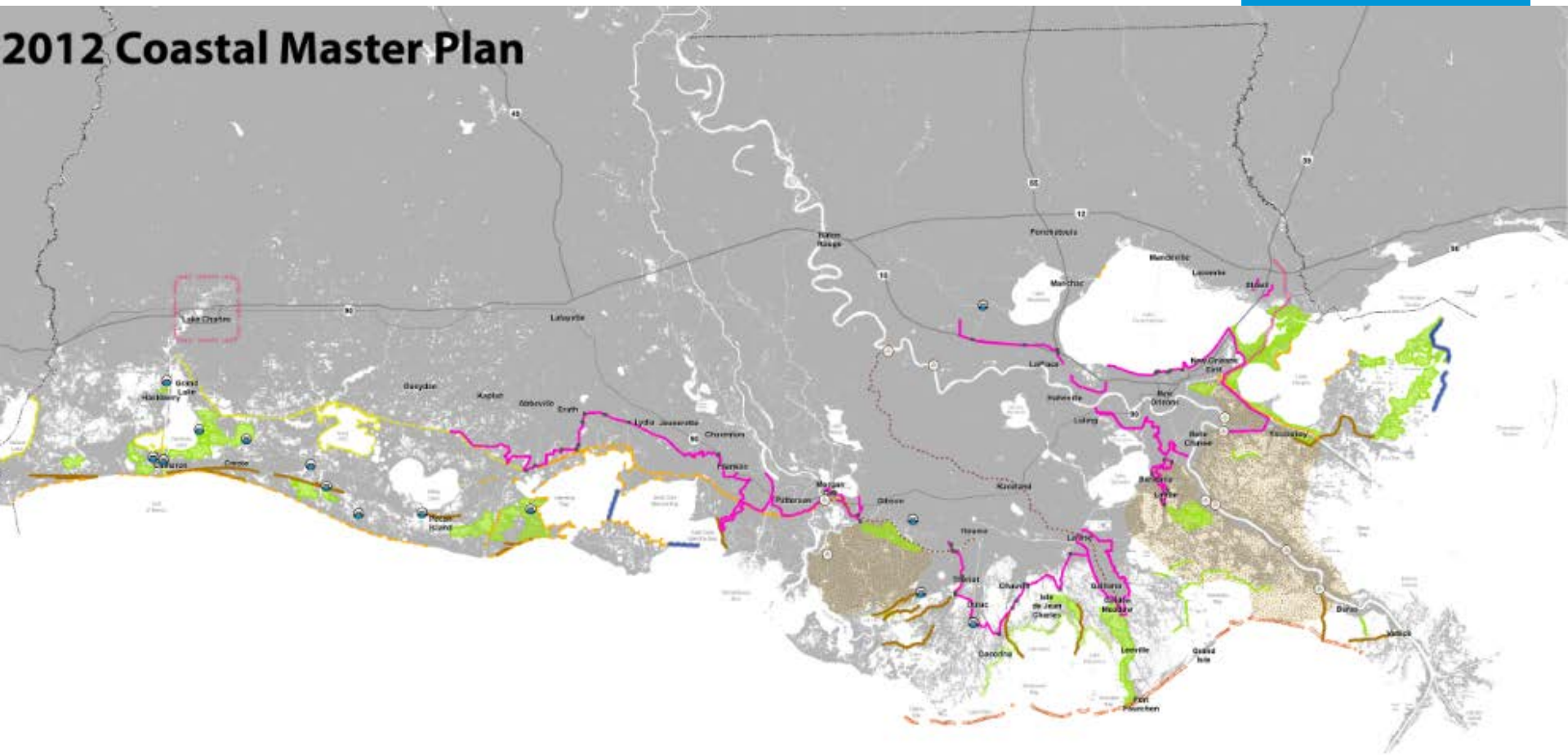
The beginning of coastal/ecosystem restoration/dredging in Louisiana these were considered big:

- 5 miles of 30 inch dredge pipe, no booster pumps;
- 100 acres of marsh and dune creation;
- 1-2 miles barrier island;
- $ 20-25 M projects with one funding source;

In 2014:

- 22 miles of 30 inch dredge pipe, 4 booster pumps;
- 1st hopper dredge project in 2013;
- 1st use of Ship Shoal in 2013 (20+ miles offshore);
- 500 + acres Marsh and Dune Creation;
- 3-5 miles barrier island;
- $ 80 - 100 M +;
- Multiple funding sources; Combining projects for efficiency;
- 1st dredging from Mississippi River 2010, now 5
- 1st dredging from Mississippi River to -70 NAVD, now to -90 NAVD;
- 1st use of electric booster pump;

2012 Coastal Master Plan



Projects Included:

- Structural Protection
- Bank Stabilization
- Oyster Barrier Reef
- Ridge Restoration
- Shoreline Protection
- Barrier Island Restoration
- Marsh Creation
- Sediment Diversion
- Hydrologic Restoration

Projects for Further Planning:

- Lake Pontchartrain Barrier
- Lake Charles Protection
- Terrebonne Bay Rim Marsh Creation
- Channel Realignment (Not Shown)

Recent & Future Barrier Island Projects

Project	Funding Source
West Belle	CWPPRA
Caminada Headland I	CIAP/State Surplus
Caminada Headland II	NFWF
East Grand Terre	CWPPRA/CIAP
Chenier Ronquille	NRDA
Chaland Headland	CWPPRA
Bay Joe Wise	CWPPRA
Shell Island East	LCA/Berm to Barrier
Shell Island West	NRDA
Pelican Island	CWPPRA
Scofield Island	CWPPRA/Berm to Barrier
Grand Liard	CWPPRA

Note: All CWPPRA Projects are NOAA Sponsored

- **Constructed**
- **Engineering & Design**
- **Under Construction**

Past Construction

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Restoration Authority of Louisiana

committed to **our coast**

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Restoration Authority of Louisiana

Total Project Budget	$150 million
Acres Benefited	616 dune/877 marsh
Linear Feet/	31,900 lf/6miles
Construction Completion Date	August 2013
Funding Programs	CWPPRA/Berm to Barrier

committed to **our coast**

West Belle Pass Barrier Headland Restoration (TE-52)

Total Project Budget	$33.9 million
Marsh Creation	333 acres
Construction Completion Date	October 2012
Funding Program	CWPPRA /NMFS

committed to **our coast**

Cameron Parish Shoreline Restoration (CS-33)

committed to our coast

Total Project Budget	$45.8 million
Dune Creation	300 acres
Construction Completion Date	February 2014
Funding Program	State Surplus

Under Construction

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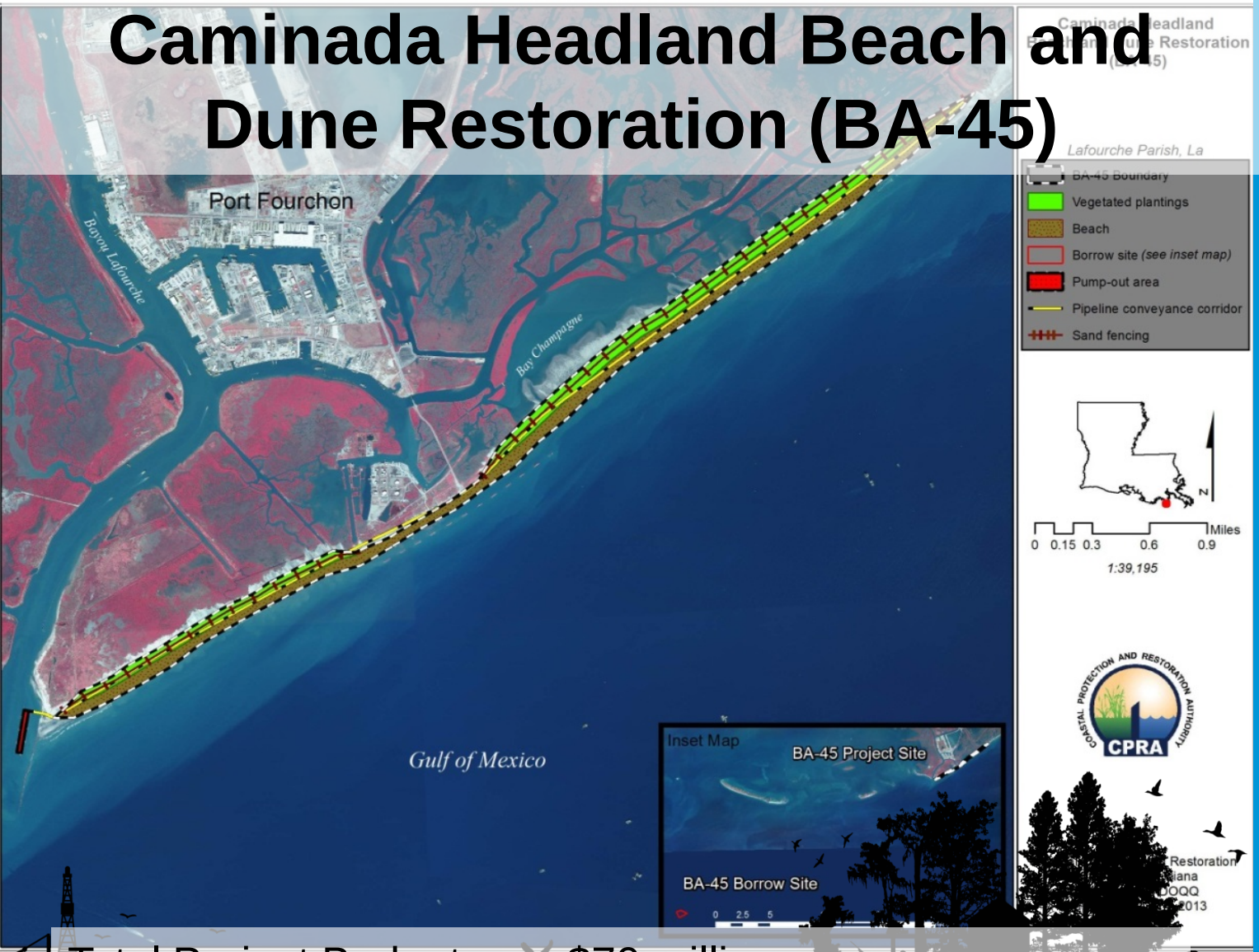
Caminada Headland Beach and Dune Restoration (BA-45)



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Total Project Budget	$70 million
Linear Feet	31,000 (303 acres)
Status	Construction
Funding Programs	CIAP/State Surplus

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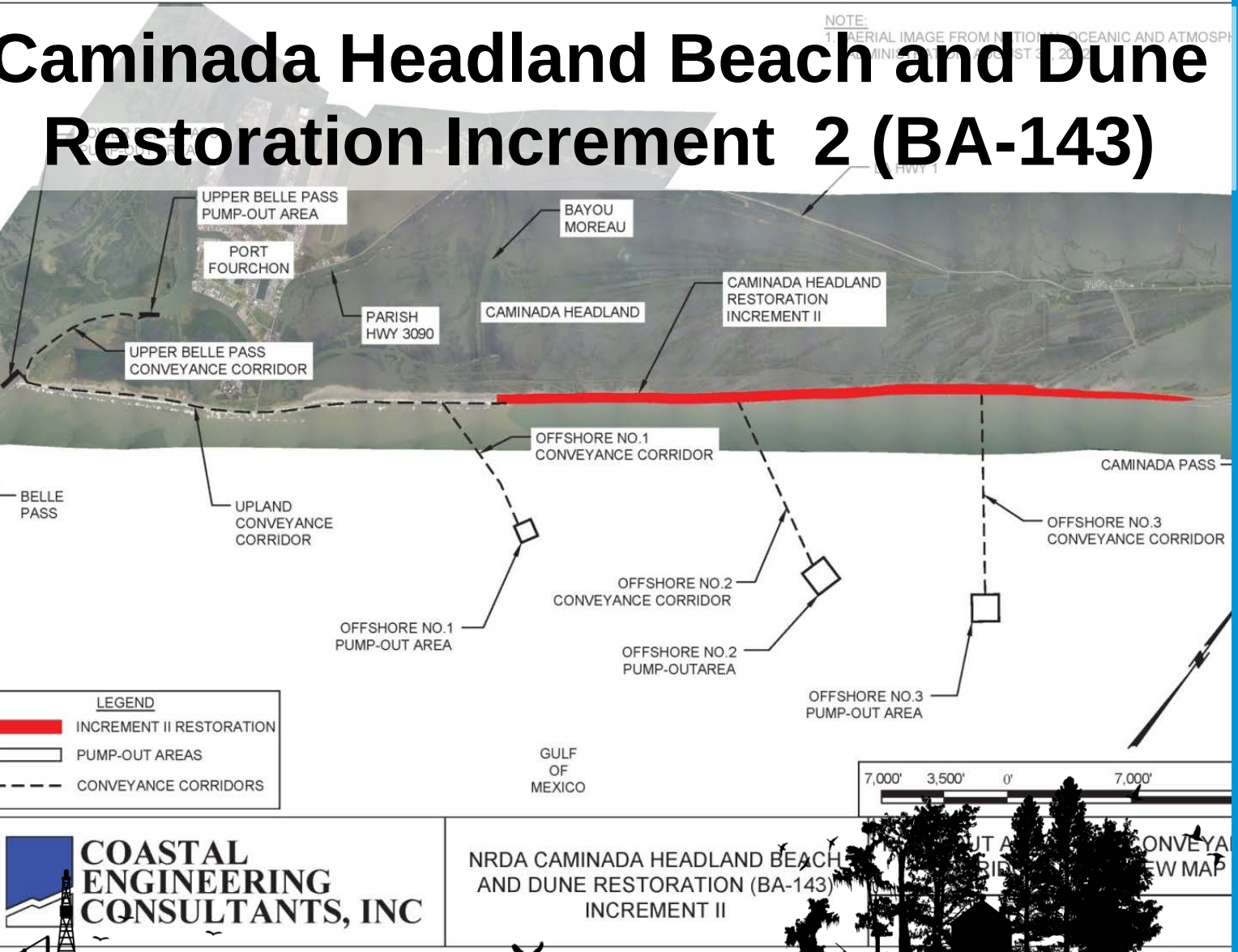
Caminada Headland Beach and Dune Restoration – Increment I

Caminada Headland Beach and Dune Restoration Increment 2 (BA-143)



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Total Project Budget	$ 145 million
Linear Feet/acres	39,000/489 acres
Status	Construction

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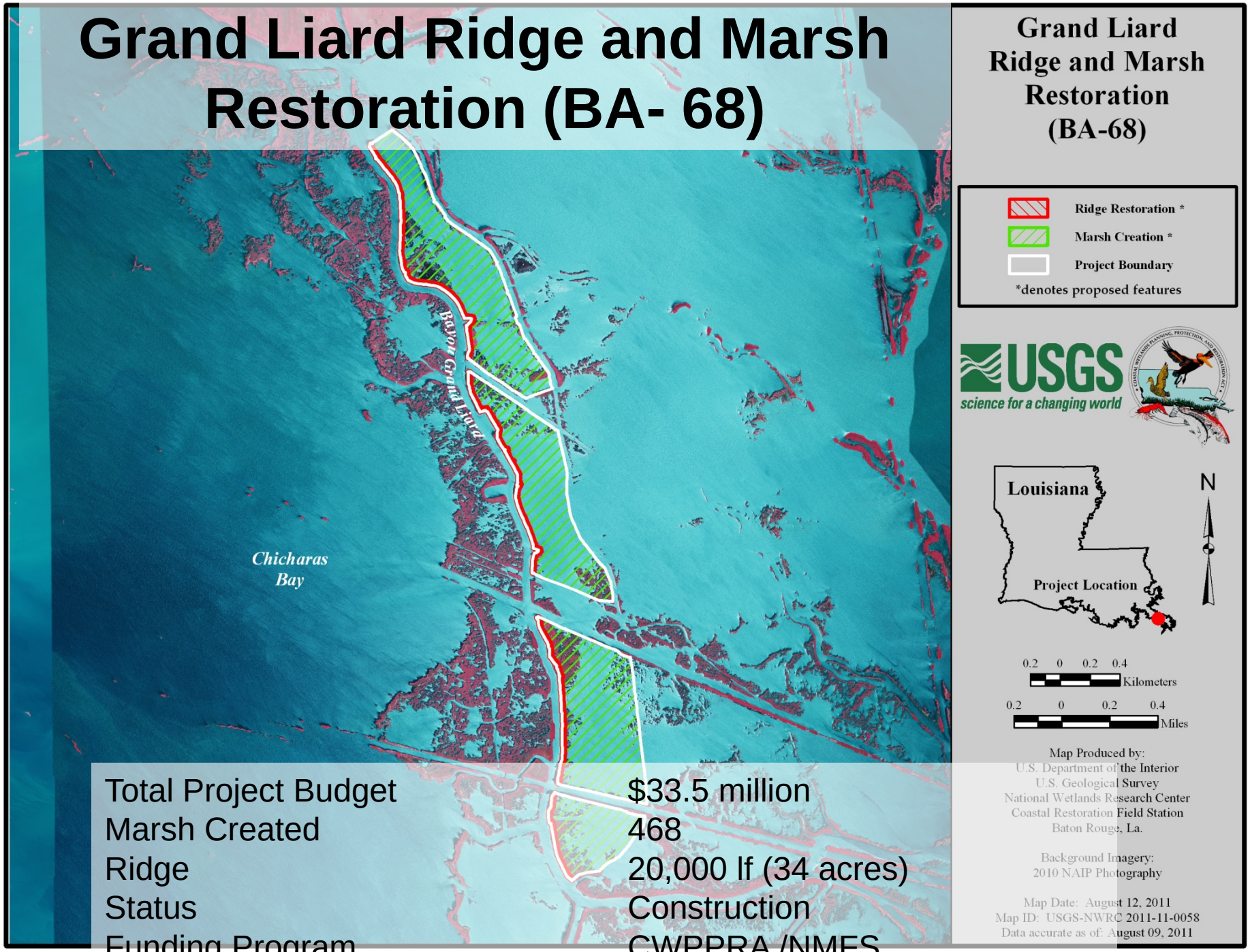
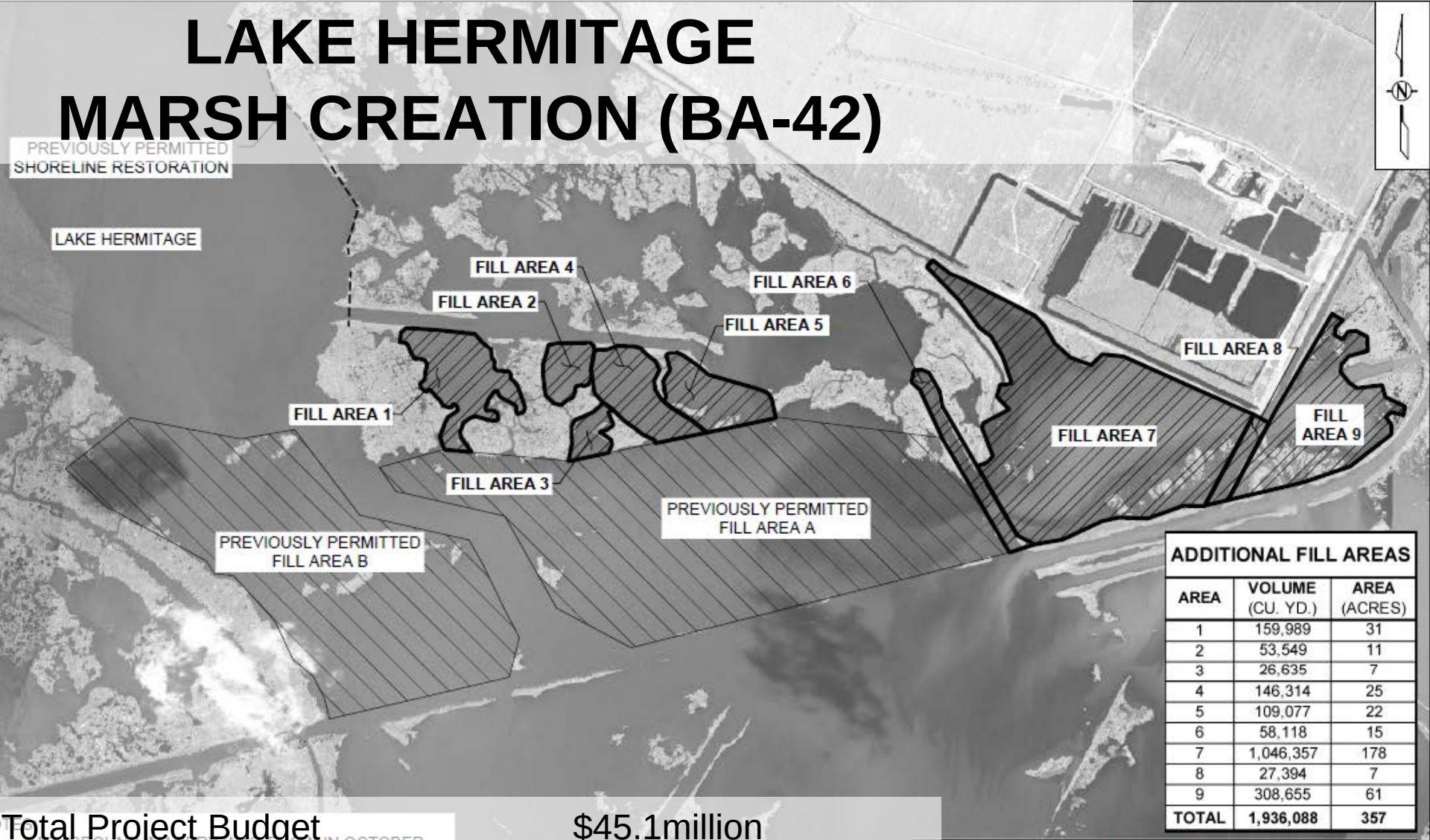
Grand Liard Ridge and Marsh Restoration (BA- 68)



Total Project Budget	$33.5 million
Marsh Created	468
Ridge	20,000 lf (34 acres)
Status	Construction
Funding Program	CWPPRA /NMFS

LAKE HERMITAGE MARSH CREATION (BA-42)



ADDITIONAL FILL AREAS

AREA	VOLUME (CU. YD.)	AREA (ACRES)
1	159,989	31
2	53,549	11
3	26,635	7
4	146,314	25
5	109,077	22
6	58,118	15
7	1,046,357	178
8	27,394	7
9	308,655	61
TOTAL	**1,936,088**	**357**

Total Project Budget	$45.1million
Acres Benefited	1,010
Construction Completion Date	Summer 2014
Funding Programs	CWPPRA NRDA DNR Beneficial Use

Lake Hermitage Marsh Creation
February 2013

Lake Hermitage Marsh Creation
February 2014

NRDA – Lake Hermitage

MISSISSIPPI RIVER LONG DISTANCE SEDIMENT PIPELINE (BA-43 EB)

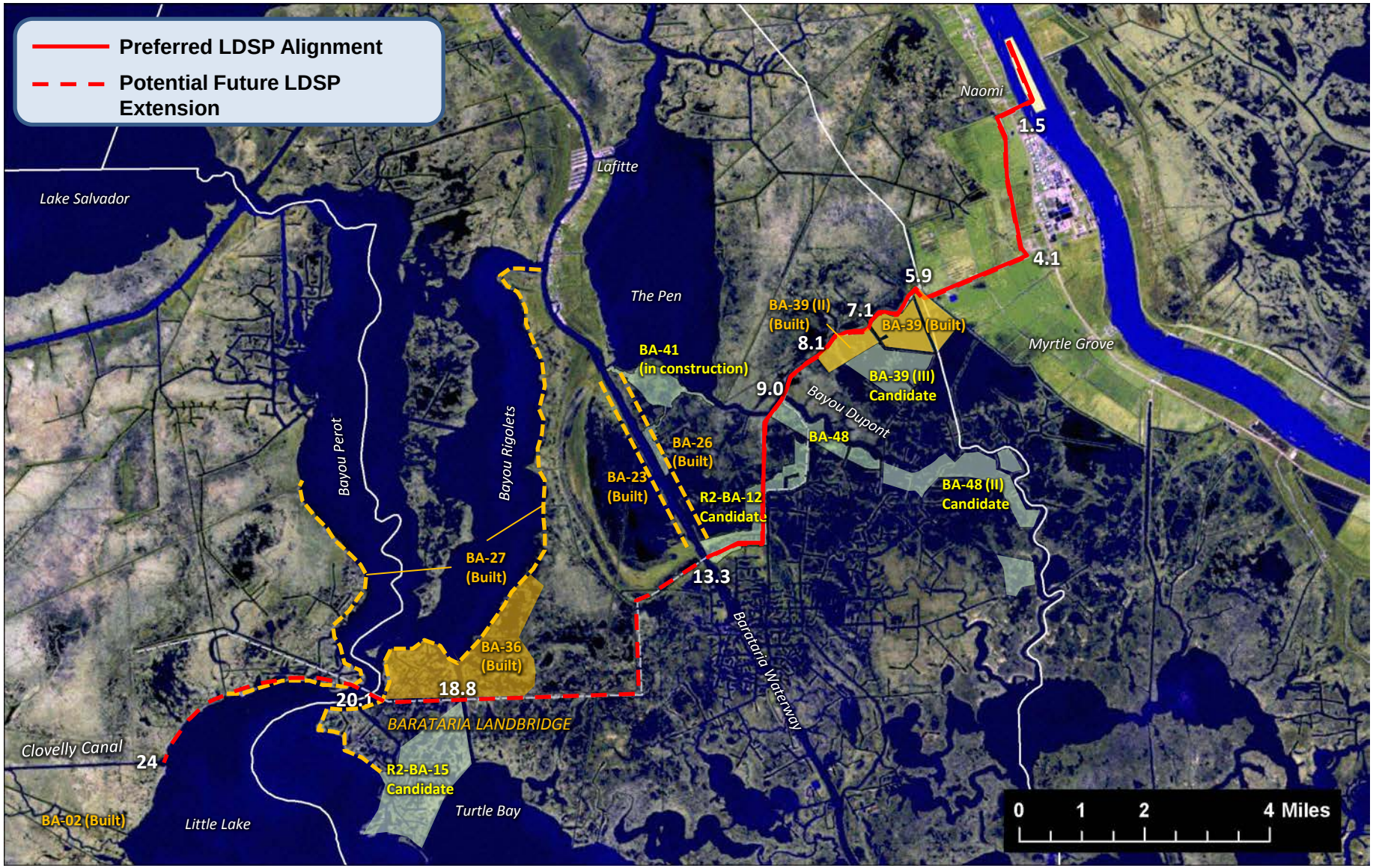
BAYOU DUPONT MARSH AND RIDGE CREATION (BA-48)

Unique Aspects of the Projects

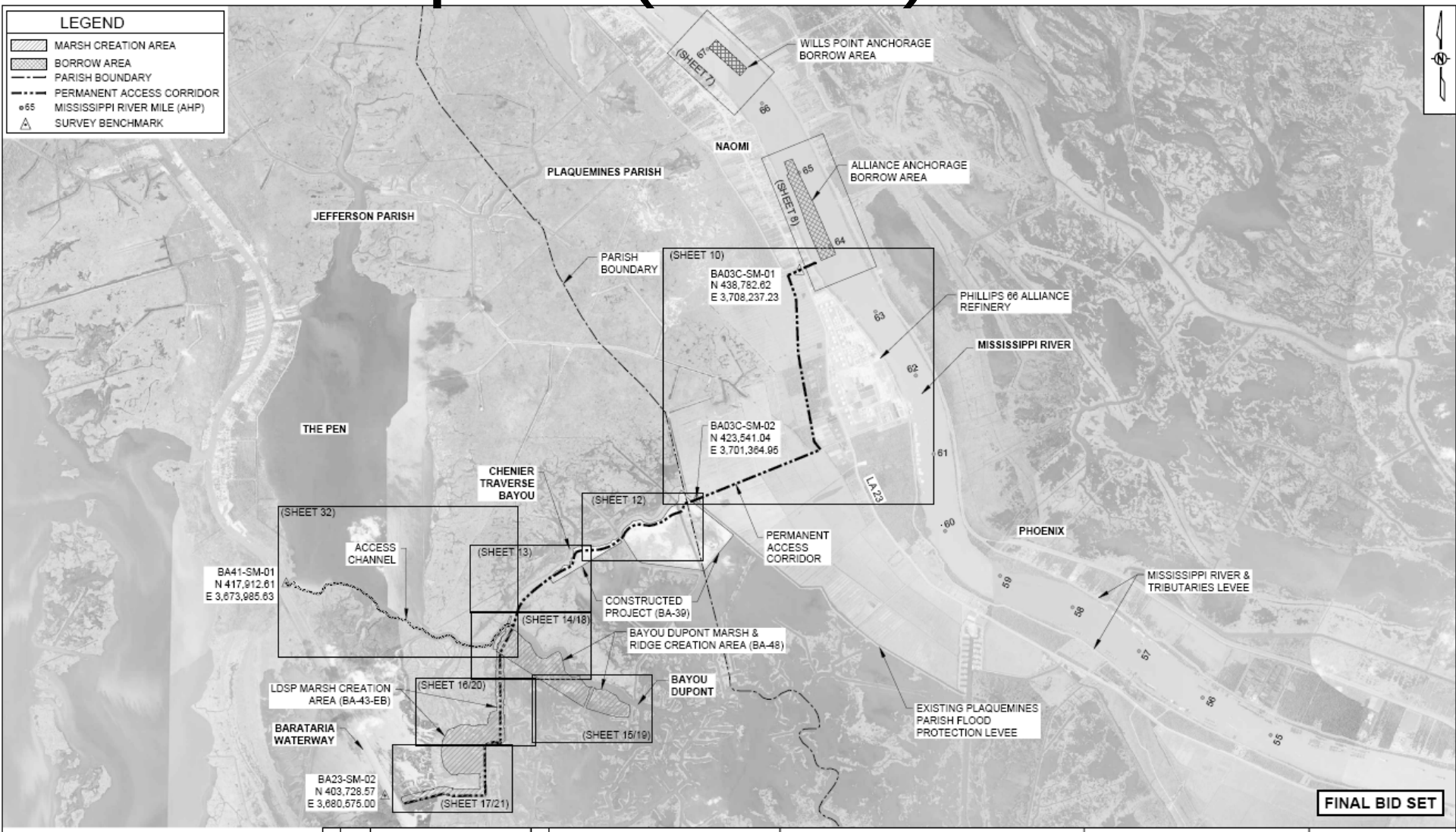
- Two separate projects were combined into one bid package.
- 7 funding sources.
- Parish, state and federal agencies project partners.
- Use sustainable sediment sources (Mississippi River) to restore and nourish wetlands in an area where sediments are limited.
- Provide an access corridor (13 miles) that can be reused on future restoration projects.

NEW ORLEANS
New Orleans
Westwego
Marrero
Gretna
Chalmette
Meraux
Timberlane
Woodmere
Violet
Belle Chasse
Couba Island
St Bernard
Lake Salvador
Bonne, Isle
Jean Lafitte
Ile De Barataria
Delacroix Island
Lafitte
Jefferson
Larose
Project Sites
Bay Dosgris
Galliano
© 2014 Google
Image NOAA
Google earth
Imagery Date: 3/5/2013 29°44'01.76" N 90°03'08.59" W elev 0 ft eye alt 38.41 mi

General Extent of LDSP and other Projects



LDSP (BA-43) and Bayou Dupont (BA-48)



Project Overview

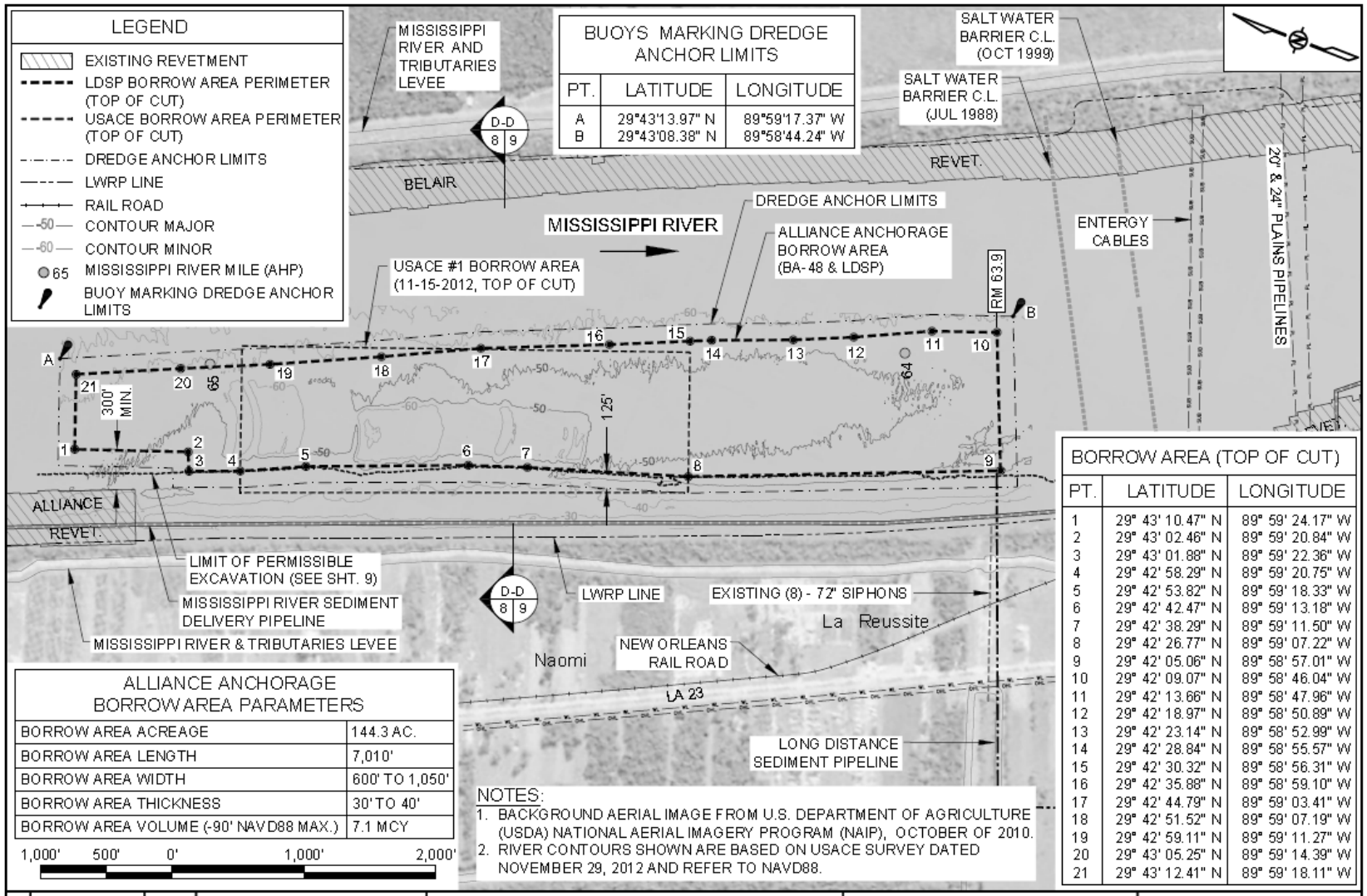
Bayou Dupont Marsh and Ridge Creation (BA-48)

- Create 277 Acres of Marsh
- Nourish 93 Acres of Marsh
- Create 20 Acres (11,000 linear feet) of Ridge

Mississippi River Long Distance Sediment Pipeline (BA-43)

- Create 415 Acres of Marsh

Alliance Anchorage Borrow Site Design



BUOYS MARKING DREDGE ANCHOR LIMITS		
PT.	LATITUDE	LONGITUDE
A	29°43'13.97" N	89°59'17.37" W
B	29°43'08.38" N	89°58'44.24" W

ALLIANCE ANCHORAGE BORROW AREA PARAMETERS	
BORROW AREA ACREAGE	144.3 AC.
BORROW AREA LENGTH	7,010'
BORROW AREA WIDTH	600' TO 1,050'
BORROW AREA THICKNESS	30' TO 40'
BORROW AREA VOLUME (-90' NAVD88 MAX.)	7.1 MCY

NOTES:
1. BACKGROUND AERIAL IMAGE FROM U.S. DEPARTMENT OF AGRICULTURE (USDA) NATIONAL AERIAL IMAGERY PROGRAM (NAIP), OCTOBER OF 2010.
2. RIVER CONTOURS SHOWN ARE BASED ON USACE SURVEY DATED NOVEMBER 29, 2012 AND REFER TO NAVD88.

BORROW AREA (TOP OF CUT)		
PT.	LATITUDE	LONGITUDE
1	29° 43' 10.47" N	89° 59' 24.17" W
2	29° 43' 02.46" N	89° 59' 20.84" W
3	29° 43' 01.88" N	89° 59' 22.36" W
4	29° 42' 58.29" N	89° 59' 20.75" W
5	29° 42' 53.82" N	89° 59' 18.33" W
6	29° 42' 42.47" N	89° 59' 13.18" W
7	29° 42' 38.29" N	89° 59' 11.50" W
8	29° 42' 26.77" N	89° 59' 07.22" W
9	29° 42' 05.06" N	89° 58' 57.01" W
10	29° 42' 09.07" N	89° 58' 46.04" W
11	29° 42' 13.66" N	89° 58' 47.96" W
12	29° 42' 18.97" N	89° 58' 50.89" W
13	29° 42' 23.14" N	89° 58' 52.99" W
14	29° 42' 28.84" N	89° 58' 55.57" W
15	29° 42' 30.32" N	89° 58' 56.31" W
16	29° 42' 35.88" N	89° 58' 59.10" W
17	29° 42' 44.79" N	89° 59' 03.41" W
18	29° 42' 51.52" N	89° 59' 07.19" W
19	29° 42' 59.11" N	89° 59' 11.27" W
20	29° 43' 05.25" N	89° 59' 14.39" W
21	29° 43' 12.41" N	89° 59' 18.11" W

BY	DESCRIPTION	DATE
SA	REVISION 5	12/12/12
SA	REVISION 4	08/24/12
SA	REVISION 3	03/09/12

MOFFATT & NICHOL
ONE AMERICAN PLACE
301 MAIN STREET, SUITE 800
BATON ROUGE, LA 70825
225-927-7793

COASTAL PROTECTION & RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

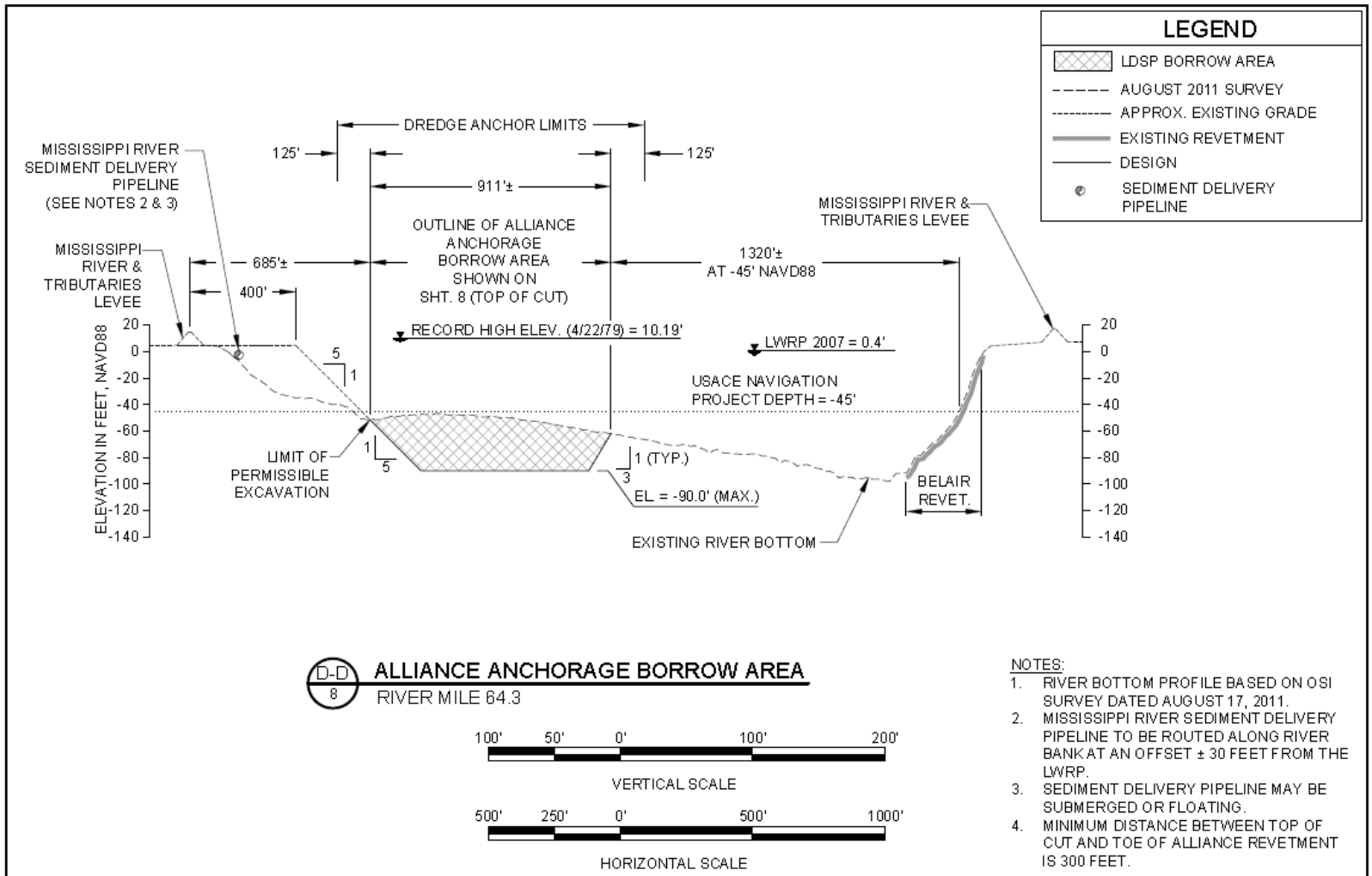
MISSISSIPPI RIVER
LONG DISTANCE SEDIMENT PIPELINE

ALLIANCE ANCHORAGE BORROW AREA LAYOUT

STATE PROJECT NUMBER: [illegible]
DATE: DECEMBER 2 2 1

DRAWN BY: YC
DESIGNED BY: SA
APPROVED BY: MAURY CHATELLIER, P.E.
FEDERAL PROJECT NUMBER: N/A
SHEET 8 OF 41

Alliance Anchorage Borrow Site Design



D-D 8 **ALLIANCE ANCHORAGE BORROW AREA**
RIVER MILE 64.3

100' 50' 0' 100' 200'
VERTICAL SCALE

500' 250' 0' 500' 1000'
HORIZONTAL SCALE

NOTES:
1. RIVER BOTTOM PROFILE BASED ON OSI SURVEY DATED AUGUST 17, 2011.
2. MISSISSIPPI RIVER SEDIMENT DELIVERY PIPELINE TO BE ROUTED ALONG RIVER BANK AT AN OFFSET ± 30 FEET FROM THE LWRP.
3. SEDIMENT DELIVERY PIPELINE MAY BE SUBMERGED OR FLOATING.
4. MINIMUM DISTANCE BETWEEN TOP OF CUT AND TOE OF ALLIANCE REVETMENT IS 300 FEET.

BY	DESCRIPTION	DATE
SA	REVISION 5	12/12/12
SA	REVISION 4	08/24/12
SA	REVISION 3	03/09/12

MOFFATT & NICHOL
ONE AMERICAN PLACE
301 MAIN STREET, SUITE 800
BATON ROUGE, LA 70825
225-927-7783

COASTAL PROTECTION & RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

MISSISSIPPI RIVER
LONG DISTANCE SEDIMENT PIPELINE

ALLIANCE ANCHORAGE BORROW AREA
TYPICAL SECTION

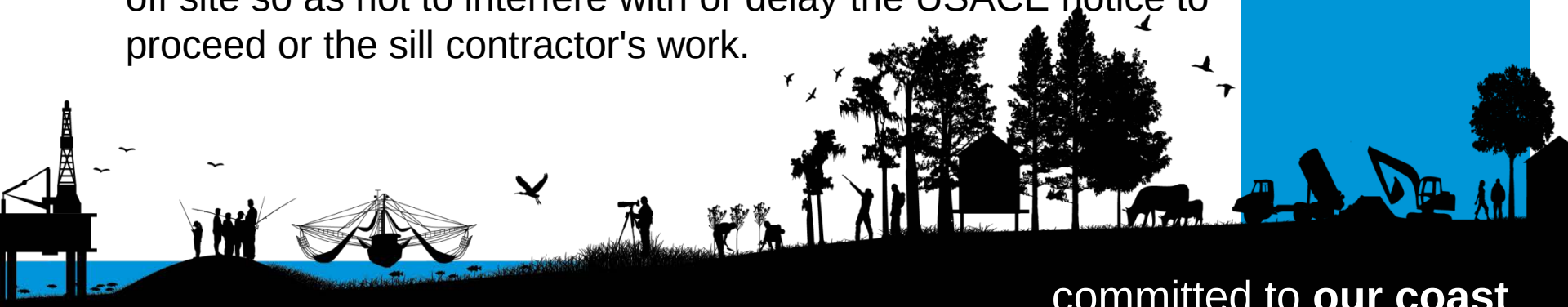
STATE PROJECT NUMBER: BA-43 (EB)
DATE: DECEMBER 12, 2012

DRAWN BY: YC
DESIGNED BY: SA
APPROVED BY: MAURY CHATELLIER, P.E.
FEDERAL PROJECT NUMBER: N/A
SHEET 9 OF 41

Permit Conditions

CPRA
Coastal Protection and Restoration Authority of Louisiana

- Ensure 500,000 cubic yards (cy) are always available above elevation -70 NGVD, within the Alliance Anchorage Borrow area for the sill.
- If USACE issues contract to construct the sill, Contractor can bid on sill.
- If awarded Contractor shall stop work on project and construct the sill.
- If contractor not awarded, shall suspend project work and move off site so as not to interfere with or delay the USACE notice to proceed or the sill contractor's work.



OVERALL GOAL

CPRA
Coastal Protection and Restoration Authority of Louisiana

Work together with the U.S. Army Corps of Engineers, Navigation Industry, and U. S. Coast Guard, to ensure Safety, Open Navigation Channel, and Mississippi River Operations while restoring the coast of Louisiana.

Back Containment Dike
Ridge

Mississippi River
Corridor
Previous Marsh
Creation Project
Corridor
Ridge
Back Containment Dike
Patrick M. Qui
www.gulfcoastairph
985.788.345
A SDAV owned smal

Project Details & Timeline

- Construction cost is $79 million
- Currently in dredge phase (November 6, 2014)
- Construct Bayou Dupont Marsh and Ridge project first
- Anticipated completion December 2015

Future Construction

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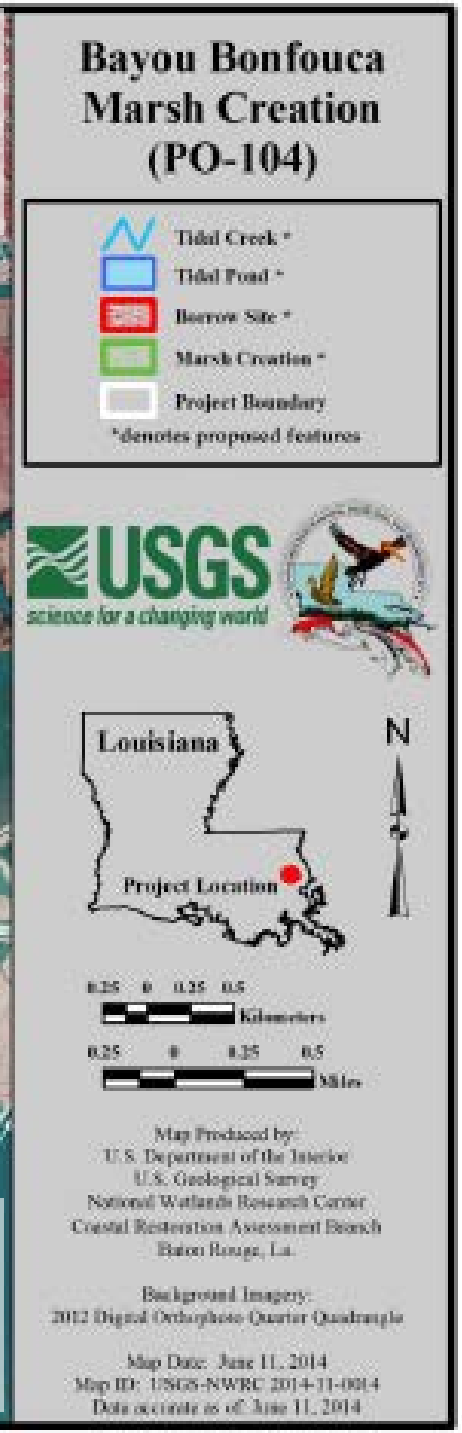
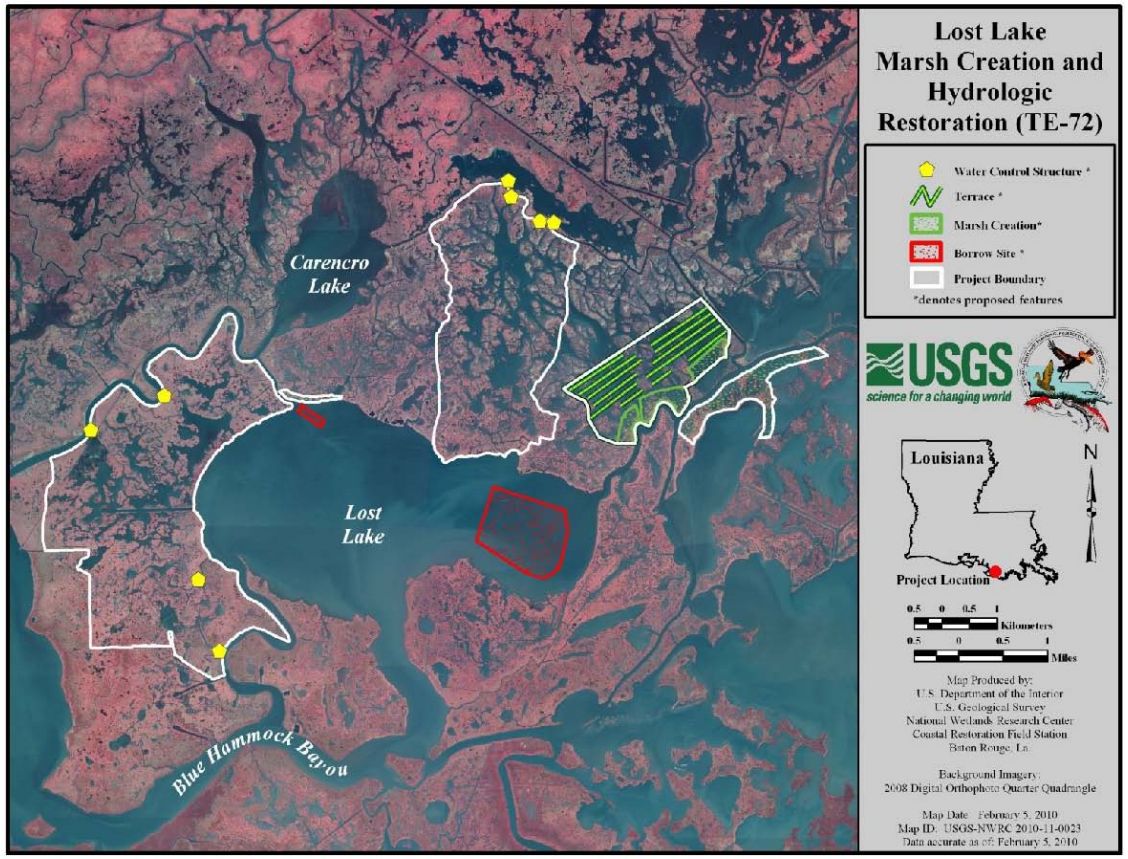
Bayou Bonfouca
Marsh Creation (PO-104)



Acres Benefited	621
Status	Engineering and Design
Funding Program	CWPPRA/USFWS

Lost Lake Marsh Creation and Hydrologic Restoration (TE-72)



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Marsh Created 468
Status Funded for Construction
Funding Programs CWPPRA/USFWS

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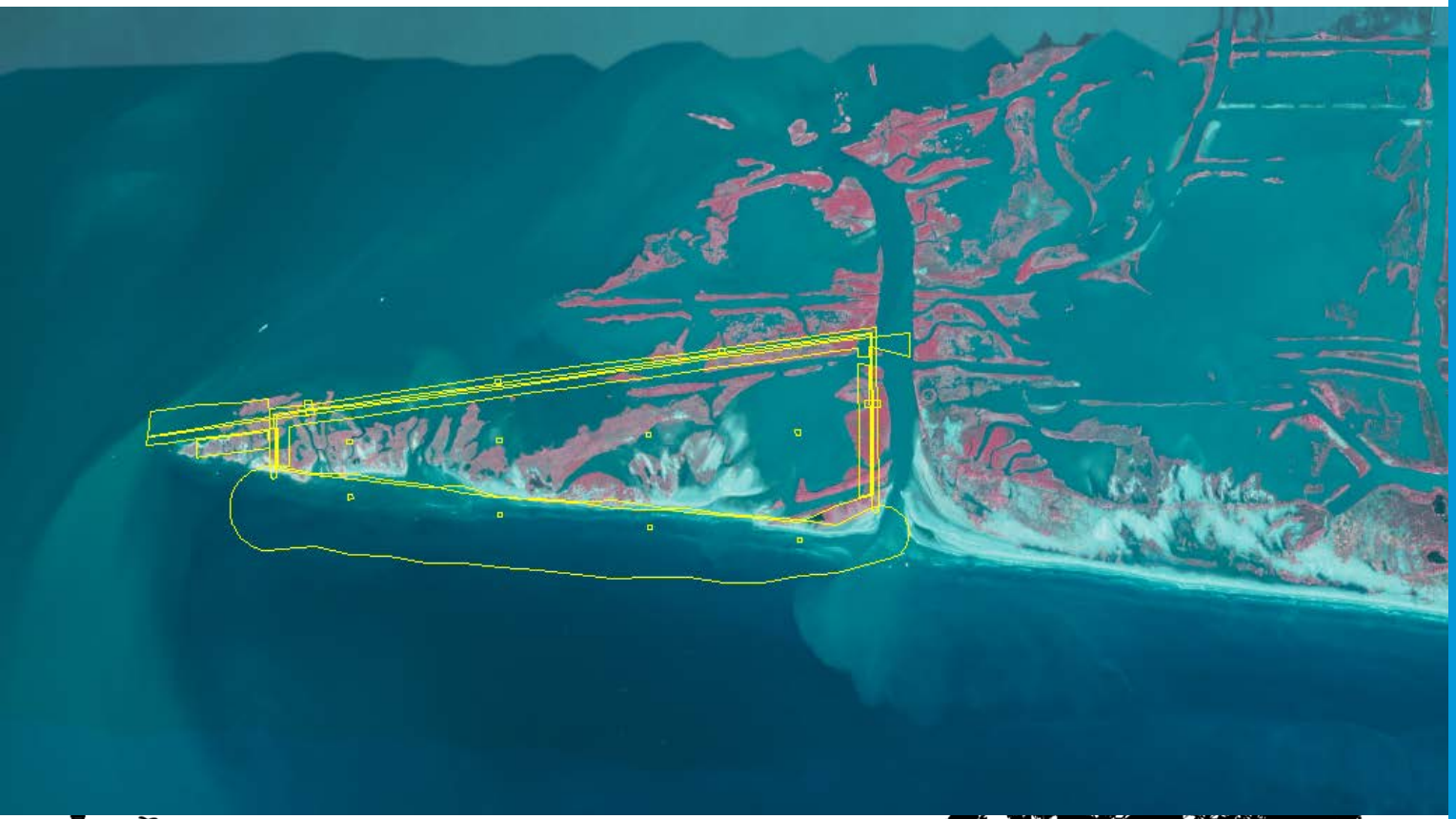
Cheniere Ronquille Barrier Island Restoration (BA-76)

CPRA
Coastal Protection and Restoration Authority of Louisiana



Acres Benefited	411
Status	Engineering and Design
Funding Program	NRDA /NOAA

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Shell Island West (BA-111)

Marsh Creation	311 acres
Status	Engineering and Design
Funding Program	NRDA

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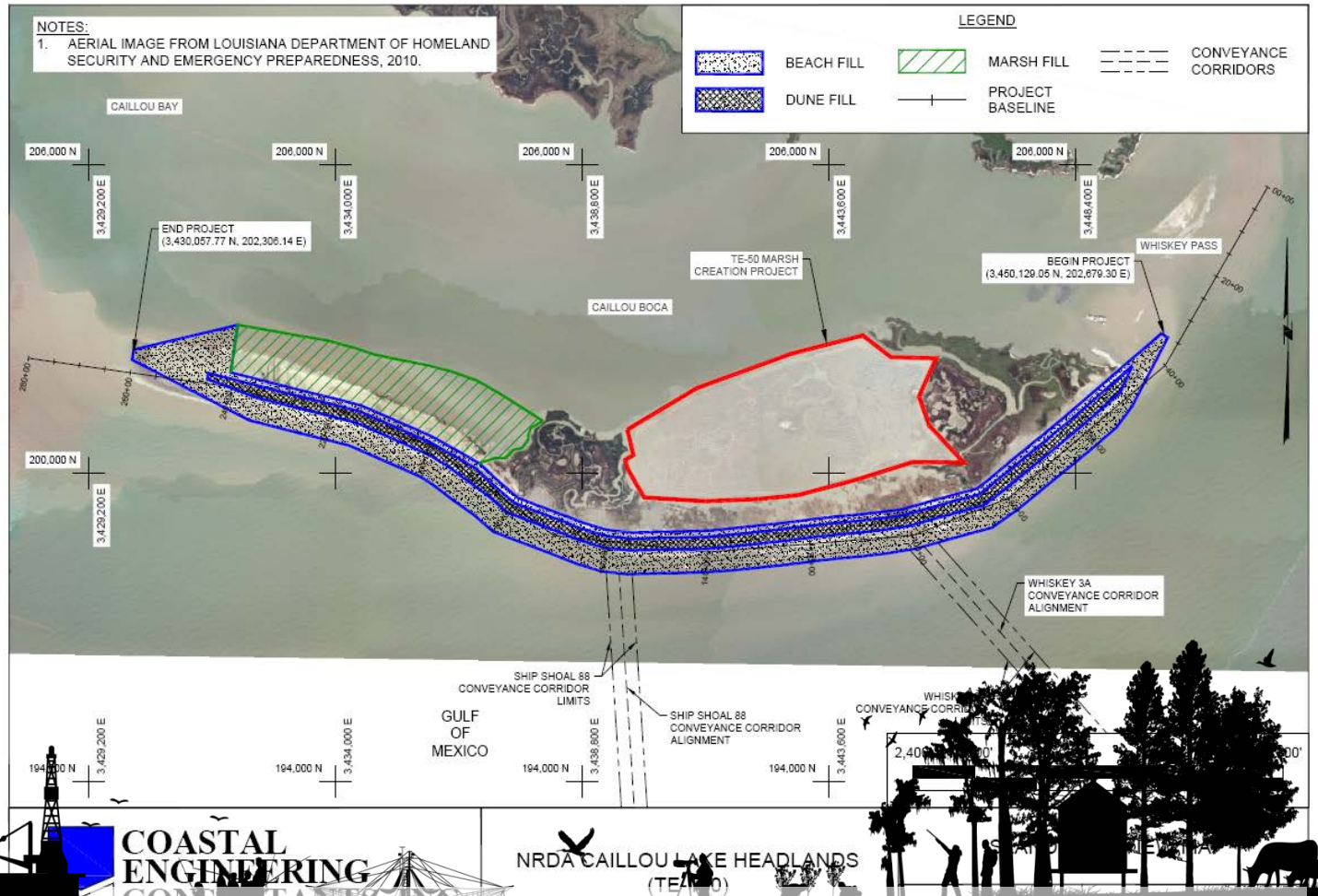
Committed to **our coast**

NRDA Caillou Lake Headlands (TE-100)

CPRA
Coastal Protection and Restoration Authority of Louisiana



Marsh Creation
Status
Funding Programs

146 (497 dune)
Engineering and Design
NRDA

committed to **our coast**

Oyster Bayou Marsh Restoration (CS-59)

Marsh Created 510 acres

Status Engineering and Design

Funding Programs CWPPRA/NMFS

Caminada Headlands Back Barrier Marsh Creation (BA-171)

Marsh Create/Nourish	430 acres
Status	Engineering and Design
Funding Programs	CWPPRA/EPA

East Timbalier Island Restoration (TE-118)

Dune/Marsh Creation	TBD
Status	Preliminary Engineering and Design
Funding Programs	NFWF

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2013/03/29

QUESTIONS?
COASTAL PROTECTION AND RESTORATION AUTHORITY
CPRA
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