OVERVIEW OF COASTAL PROTECTION AND RESTORATION IN THE CALCASIEU/SABINE AND MERMENTAOU BASINS

State of the Coast 2018
New Orleans, LA

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SOUTHWEST COAST PROJECTS

CALCASIEU/SABINE BASIN

MERMENTAU BASIN

PROJECT TYPES

Structural | Nonstructural | Ridge
Protection | Risk Reduction | Restoration
Shoreline | Island | Mash | Sediment | Hydrologic
Protection | Restoration | Creation | Diversion | Restoration

Note: Small scale hydrologic restoration and wetland/riparian shoreline projects are included programmatically in the 2017 Coastal Master Plan. Consistency of individual projects will be determined on a case by case basis.

PROJECTS SELECTED FOR INCLUSION

The maps on the following pages depict the projects selected for inclusion in the 2017 Coastal Master Plan. The maps are accompanied by tables, which provide information on project details such as project descriptions, costs, and implementation periods. Further information on all projects considered can be found in Appendix A, Project Definition.

FIGURE 4.12
2017 Coastal Master Plan projects to be implemented in the Southwest Coast region: 28 restoration projects, 6 structural protection projects, and 12 nonstructural risk reduction projects.

Coastal Protection and Restoration Authority of Louisiana
Historical Persistent Land Loss 1932-2010
Constructed Protection and Restoration Projects
CAMERON PARISH SHORELINE (CS-33)

PROJECT AREA

HOLLY BEACH COMMUNITY

HWY 82
CAMERON PARISH SHORELINE (CS-33)
CAMERON PARISH SHORELINE (CS-33)

[Map showing coastal protection and restoration details, including project site and borrow sites.]
CAMERON PARISH SHORELINE (CS-33)
CAMERON PARISH SHORELINE (CS-33)

Loggerhead

Sea Turtles

Green Sea Turtle
CAMERON PARISH SHORELINE (CS-33)

Piping Plover – Migratory Bird impacted

Cameron Parish Shoreline Project
Bird Monitoring Activities during Construction

Terns – and other Nesting Birds could also be impacted. Buffer Zone Required.
CAMERON PARISH SHORELINE (CS-33)
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CAMERON PARISH SHORELINE (CS-33)

Cost: $45.8 million (100% 07-08 State Surplus funds)
Construction: $40+ million

Project Features:
- Constructed 5+ miles of beach
- Pumped 2 million cubic yards of sand from source 20+ miles in Gulf of Mexico
- Sand fencing
- Volunteer vegetative plantings

Project Status:
- Sand pumping complete: Feb 2014
- Sand fence re-built: October 2015
- Dunes forming adjacent to sand fencing
OYSTER BAYOU MARSH CREATION (CS-59)
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OYSTER BAYOU MARSH CREATION (CS-59)

**Project Features:** 950 acres of marsh creation & 7,200 feet of terrace construction

**Construction Cost:** $22.1 M

**Project Status:**
- Construction start: December 2016
- Marsh Creation completion: September 2017
- 54,857 ln ft of earthen containment dikes constructed
- Waterline along Hwy 82 relocated/Road crossing
- Dredged 4.31 MCY
BLACK BAYOU CULVERTS HR (CS-29)
BLACK BAYOU CULVERTS HR (CS-29)
Project Features:
- Ten - 10 ft. x 10 ft. concrete box culverts with aluminum flapgates
- Temporary by-pass roadway
- 11,825 SF of steel sheet piling
- 1,500 tons of rock rip rap

Construction Cost: $4.15 million

Construction Completed: January 2010
CALCASIEU SALINITY MEASURES (CS-65)
Planned Project Features

**Original 15% Design Scope:** A total of 14 structures along Calcasieu Ship Channel and connecting waterways

**Structure Types:**
- Rock berms with steel sheet pile salinity barriers, navigable sills and fish gaps
- Larger steel and concrete structures on East Pass and West Pass

**Post 15% Design Scope:**
The 5 most southern structures are being proposed
CALCASIEU SALINITY MEASURES (CS-65)

SOUTHERN STRUCTURES

A. Lake Wall – 22,000’, 2 navigation sills, fish openings
B. Nine Mile Cut – 2,000’, 1 navigation sill
C. Joe’s Cut – 2,400’, 1 navigation sill
D. West Pass – 700’, 1 navigation sill
E. East Pass – 2,000’, 1 navigation sill
## CALCASIEU SALINITY MEASURES (CS-65)

<table>
<thead>
<tr>
<th>RECOMMENDED SOUTHERN STRUCTURES</th>
<th>ESTIMATED CONSTRUCTION COST</th>
</tr>
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<tbody>
<tr>
<td>A. EAST PASS</td>
<td>$12,060,756</td>
</tr>
<tr>
<td>B. WEST PASS</td>
<td>$5,422,683</td>
</tr>
<tr>
<td>C. JOE’S CUT</td>
<td>$11,230,542</td>
</tr>
<tr>
<td>D. LAKE WALL</td>
<td>$118,719,371</td>
</tr>
<tr>
<td>E. NINE MILE CUT</td>
<td>$8,151,277</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$155,584,629</strong></td>
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</tbody>
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Coastal Protection and Restoration Authority of Louisiana
CALCASIEU SALINITY MEASURES (CS-65)

15% Design Status

Completed in April 2018

- Intend to submit permit application for construction with 15% design package in July 2018

Likely start of construction in 2021
RABBIT ISLAND MC (CS-80)

- The westernmost nesting ground for colonial nesting birds, including brown pelicans, in Louisiana.
- Since 1955, the island has lost 89 acres of landmass, or 35% of its area.
- The island is 200 acres, with much of that being open water, and the majority of the land at or below sea level.
- Highest elevation measures approximately two feet above sea level.
- Located centrally along the Chenier Plain, about one mile from the southwestern shore of Calcasieu Lake and two miles west of the Calcasieu ship channel.
RABBIT ISLAND MC (CS-80)
RABBIT ISLAND MC (CS-80)

Post-construction acreage:
- Restore and enhance over 200 acres of rookery habitat to increase nesting habitat for colonial nesting water birds

Restoration Category:
- Replenish and Protect Coastal and Marine Resources

Estimated Project Cost: $24,000,000
Constructed Protection and Restoration Projects
ROCKEFELLER REFUGE SHORELINE DEMO
REEF BREAKWATER WITH LWA CORE (ME-18)

CONSTRUCTED 2009
CIAP FUNDING
ROCKEFELLER REFUGE SHORELINE REEF BREAKWATER WITH LWA CORE (ME-18)
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**Project Features:** Construct lightweight aggregate core breakwaters along shoreline for 3 miles, approximately 150’ offshore on -3.5’ contour.

**Construction Cost:** $18.9 million (Potential Expansion) CWPPRA funding

**Project Status:**
- NTP issued November 1, 2017
- Additional dollars made available from other agencies
- Construction completion: June 24, 2019 (600 calendar days)
INTRODUCTION

FRESHWATER
SOUTH OF HWY 82
FRESHWATER INTRODUCTION SOUTH OF HWY 82 (ME-16)
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Project Features:
- Four pipe barrel structure locations, (48 “ diameter), (3 or 4 barrel)
- 26,000 LF of earthen terraces
- 101,970 CY of spray dredging
- 39,432 CY of bucket dredging

Construction Cost: $3.94 million

Construction Completed: December 2006
MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)

BEFORE

AFTER
MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)

MARSH SIDE

FWB SIDE BEHIND ROCK DIKE
MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)
MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)
MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)
MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)

Project Features:
- Dredged 715,500 CY from Freshwater Bayou
- 12,348 LF of containment dikes
- 104 AC of marsh created
- 19 AC of marsh nourished

Construction Cost: $2.98 million

Construction Completed: March 2015
SOUTH WHITE LAKE SP (ME-22)
SOUTH WHITE LAKE SP (ME-22)

2007

2017
SOUTH WHITE LAKE SP (ME-22)

2016
SOUTH WHITE LAKE SP (ME-22)

Project Features:
- Dredged approx. 1.1 MCY of flotation excavation (11 miles)
- 241,329 tons of #650 stone

Construction Cost: $9.66 million

Construction Completed: August 2006
Project Effects on the Basin

- Shoreline protection projects have been highly successful
- Hydrologic restoration projects have been successful when conditions allow
- Marsh creation projects also successful, provide instant benefits
- Terracing projects have effectively reduced fetch and increased SAV
- Demonstration projects have provided valuable data for project development
- These projects are all consistent with CPRA’s Master Plan
Proposed Master Plan Funding

- Barrier Island Restoration: $1.5B
- Hydrologic Restoration: $0.4B
- Marsh Creation: $0.1B
- Ridge Restoration: $5.1B
- Sediment Diversion: $0.9B
- Shoreline Protection: $6.0B
- Structural Nonstructural: $19.0B

Total Funding: $50 Billion

Restoration: $25B
Risk Reduction: $25B