Beneficial Re-use of Dredge Material – Sabine National Wildlife Refuge

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Overview

► Beneficial Use Program by the New Orleans District
► Beneficial Use in the Calcasieu Area
► CWPPRA Program
► CWPPRA Project Status
► Sabine National Wildlife Refuge Marsh Creation
► Sabine Cycle 1-5 Overview
Sabine National Wildlife Refuge
Beneficial Use
USACE Beneficial Use of Dredged Material

Mississippi River

Shallow Draft Crossings

Deep Draft Crossings

New Orleans Harbor

Baptiste Collette

Beneficial Use Sites

Coastal Zone
Dredging Frequency

Inland - Annually
Bar – Annually

Cubic Yards

Inland – 4,000,000
Bar – 7,000,000

Grain Size

Inland
12% Sand  35% Silt  53% Clay

Bar
9% Sand  45% Silt  46% Clay
Beneficial Use of Dredged Material

Calcasieu River and Pass

- Yellow: Beneficial Use Placement Sites

Coastal Habitat Acres Created

2326 Acres
CWPPRA Program
What is CWPPRA?

- In 1990, Congress passed the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) (Public Law 101-646, Title III).

- Multi-agency program that plans, designs, and builds projects to create or restore Louisiana coastal wetlands (typically considered small scale, postage stamp projects across the coastal area)

- Original authorization was in Nov 1990 - extended 3 times - currently resulting in authorization through 2019
CWPPRA: An Interagency Program

- The CWPPRA program emphasizes intergovernmental cooperation. The Louisiana Coastal Wetlands Conservation and Restoration Task Force consists of representatives from five federal agencies and the State of Louisiana (CPRA):

  - US Army Corps of Engineers
  - US Fish & Wildlife Service
  - Natural Resources Conservation Service
  - National Marine Fisheries Service
  - Environmental Protection Agency

Each agency brings a different, but complementary, perspective to the table.
CWPPRA Project Status

TOTAL CWPPRA PROJECTS: 200

ACTIVE PROJECTS: 150

- Constructed, 101
- Deauthorized, 43
- Phase I, 31
- Phase II, 18
- Transfer, 4
- Inactive, 3
Sabine Refuge Marsh Creation Project
Sabine National Wildlife Refuge

- The Refuge occupies the marshes between the Calcasieu and Sabine Rivers
- Established in 1937
- The Refuge consists of approximately 124,500 acres; about 1/3 is open water with the rest consisting of fresh, intermediate, and brackish marsh.
- Managed by the U.S. Fish & Wildlife Service
- Designated as an “Internationally Important Bird Area”
- One of the tools used to manage the Refuge is creation of marsh through beneficial use of dredge material
Sabine Refuge Marsh Creation Project Background

- Approved on Priority Project List (PPL) 8 in January 1999.
- Project consists of 5 marsh creation sites on the Sabine Refuge to create $\approx 1,120$ acres
- Using dredge material from Calcasieu River Ship Channel maintenance dredging.
- The Corps Operations Division pays for dredging the Calcasieu River and CWPPRA only pays for the incremental cost of pumping to the Sabine Refuge.
- Later broken up into 5 separate cycles
Sabine Cycle Update

- **Cycle 1**
  - Completed Jan 2002
  - Created 200 acres marsh at a cost of $3.4 M

- **Cycle 2**
  - When designed, it included a permanent pipeline feature and a marsh creation site of \( \approx 227 \) acres
  - Marsh creation site was removed from Cycle 2 in 2008
    - State of Louisiana constructed project using surplus CIAP funds
  - Permanent pipeline constructed in May 2010

- **Cycle 3**
  - Initial construction completed in March 2007
  - Constructed \( \approx 230 \) acres
**Project Overview:**

- In 2004, $11.5M in funding for design and construction of Cycle 2 was approved, which included a marsh creation site and permanent pipeline feature to be used for future marsh creation projects in the area.

- In 2008, an additional $5M was approved by the CWPPRA Task Force.

- Pipeline was estimated to provide a potential cost savings of $2M each use.
CWPPRA Sabine Refuge Marsh Creation Project, Cycle II Permanent Pipeline (CS-28-2)

**Project Features:** carbon steel, permanent dredged material disposal pipeline

- 29” inside diameter, 0.5” thickness
- measures 3.54 miles in length
- From East to West, commences near Mile 13.3 of the Calcasieu River Ship Channel, terminates at the northeastern corner of the Sabine Refuge.
- Pipeline is buried an average of 4-5 ft below surface, with the exception of the 2 above ground booster hookup stations

![Booster Pump Station](image)
Sabine Permanent Pipeline
CWPPRA Sabine Refuge Marsh Creation Project, Cycle II Permanent Pipeline (CS-28-2)

CS-28 During Dredge Placement

Cycle 2
May 2011

CS-28 1 Year Post Marsh Creation

Cycle 2 – Jun 2012
Calcasieu River and Pass
Sabine National Wildlife Refuge

CWPRRA PROJECTS

FY 2001 (Cycle 1) – 186 Acres
FY 2007 (Cycle 3) – 180 Acres
FY 2010 (Cycle 2) – 282 Acres
Cycle 4 & 5 Update

- Total Net Acres: 331
- Current Fully Funded Estimate: $10,328,064
- Reach of channel where dredge material will come from: Miles 15-10.5 (400' width, -42' depth)
- Amount of material required: approx 1.8 Million CY
- Construction will utilize permanent pipeline and beneficial use of dredged material from FY14/15 Calcasieu River Ship Channel Maintenance
- Construction contract in the process of being awarded
Take-aways

- The New Orleans District beneficially uses dredge material across the entire state of Louisiana.
- In the Calcasieu Sabine area, there are multiple restoration sites available for placement of dredge material from the Calcasieu Ship Channel.
- Dredging and restoration in this area is critical as it protects and allows for navigational traffic bringing valuable commerce through the Port of Lake Charles.
- The Dredged Material Management Program (DMMP), approved 23 December 2010, has identified several areas in the Sabine Refuge, potentially creating 5,295 acres by using the permanent pipeline.
Take-aways

- The permanent pipeline allows for future restoration on the Sabine National Wildlife Refuge
  - However, not included in 2012 State Master Plan
- The CWPPRA program and USACE will continue to look for restoration options using beneficial use of dredge material.
  - Sabine success from USACE partnership with FWS. Thanks to FWS staff for their cooperation, assistance & leadership:
    • Jeff Weller, Field Supervisor
    • Darryl Clark, Senior Field Biologist
    • Robert Dubois, Biologist/Project Manager
Questions?