BENEFICIAL USE OF DREDGED MATERIAL DISPOSAL HISTORY

PORT FOURCHON, LA

2001 - 2007

The Bayou Lafourche, Louisiana, project was authorized by the Rivers and Harbors Act of August 30, 1935, which provided for a 6-foot deep by 60-foot wide navigational channel from Larose to the Gulf of Mexico with a jettied entrance at Belle Pass. The Rivers and Harbors Act of July 14, 1960, provided for a 12-foot deep by 125-foot wide navigational channel to the 12-foot contour in the Gulf of Mexico. Construction of the Port Fourchon, Lafourche Parish, Louisiana Project in southern Lafourche Parish, Louisiana, was authorized by Section 101(a)(16) of the Water Resources Development Act of 1996, which provided for an inshore channel, with a depth of -24 feet Mean Low Gulf (MLG) over a bottom width of 300 feet, in Belle Pass and Bayou Lafourche extending from the Gulf of Mexico through the developed area of Port Fourchon (Mile 0.0 to Mile 3.4), and an entrance channel extending approximately 1.3 miles from the gulf shore to the -26 foot MLG contour with a depth of -26 feet MLG over a bottom width of 300 feet.

Since 1990, dredged material has been placed unconfined at a shoreline nourishment disposal site on the west side of the channel behind the west jetty, and at the ocean dredged material disposal site (ODMDS) . The shoreline nourishment disposal area extends from the beach into the Gulf of Mexico. The inner limit of the disposal area is 1500 feet west of the channel centerline. It was anticipated that between maintenance dredging events, dredged material placed at the shoreline nourishment placement sites would be dispersed by wave action and storm events onto the adjacent shoreline, into the littoral drift, and off shore. In 2000, the shoreline nourishment site was expanded to include the east side of the channel behind the east jetty. The ODMDS has not been used by U.S. Army Corps of Engineers, New Orleans District (CEMVN) since it assumed maintenance responsibility for the Port Fourchon entrance channel. 2001 marked the first CEMVN maintenance dredging effort for the Port Fourchon project.

Port Fourchon Project (1998 Aerial Photograph)

2001

Background:
During the fiscal year (FY) 2001 initial construction event (contract DACW29-01-C-0044: 28 June 2001 to 7 August 2001) for the entrance channel reach (jetties and bar channels), the cutterhead dredge TOM JAMES placed a total of approximately 1,958,664 cubic yards of dredged material removed from the Mile 0.5 to Mile -1.8 reach unconfined at a shoreline nourishment placement site located on the west side of the channel, and in an abandoned dead

end pipeline canal (Phillips Canal) located on the channel east bank at about Mile 1.6 for marsh restoration.

Dredged Material Placement Event:

1. Approximately 1,830,698 cubic yards of material was placed behind the west jetty for shoreline nourishment. Dredged material placed at the shoreline placement site was discharged parallel to the existing shoreline, into the surf zone, no closer than 100 feet from the top of the shoreline bank, and no closer than 1,200 feet from the gulf end of the west jetty. Dredged material was discharged to a maximum initial elevation of +6.0 feet MLG.

2. Approximately 127,966 cubic yards of material was placed in Phillips Canal. Dredged material was discharged into this canal to elevations conducive to marsh development.

Containment and Access:

1. Dredged material was placed unconfined at the shoreline placement site behind the west jetty. The dredge pipeline was laid over the existing jetty stone to access the placement site.

2. An earthen plug was constructed across the mouth of Phillips Canal to prevent dredged material placed at this site from re-entering the adjacent channel. Earthen borrow material was obtained from within the canal. Effluent was directed through 2 openings in the canal's west bank where pipeline ditches intersect the canal in an effort to nourish eroding marsh located west of the canal. Pipeline and construction equipment access to this placement site was limited to the open water in the canal and the canal banks.

Results:

Approximately 38 acres of shoreline habitat were created behind the west jetty, and approximately 6 acres of marsh habitat were created in the Phillips Canal by this placement effort.

2003

Background:
During the FY 2003 maintenance event (contract DACW29-03-C-0009: 27 November 2002 to 12 December 2002) for the entrance channel reach (jetties and bar channels), the cutterhead dredge DREDGE 32 placed a total of approximately 388,534 cubic yards of dredged material removed from the Mile 0.5 to Mile -1.8 reach unconfined at a shoreline nourishment placement site located on the east side of the channel.

Dredged Material Placement Event:
Approximately 388,534 cubic yards of material was placed behind the east jetty for shoreline nourishment. Dredged material placed at the shoreline placement site was discharged parallel to the existing shoreline, into the surf zone, no closer than 100 feet from the top of the shoreline bank, and no closer than 2,000 feet from the east jetty. Dredged material was discharged to a maximum initial elevation of +6.0 feet MLG.

Containment and Access:
Dredged material was placed unconfined at the shoreline placement site behind the east jetty. The dredge pipeline was laid over the existing jetty stone to access the placement site.

Results:
Approximately 5 acres of shoreline habitat were created behind the east jetty by this placement effort.

Port Fourchon BU Placement Site: East Jetty (2004)

2005

Background:
During the FY 2005 maintenance event (contract W912P8-05-C-0002: 6 November 2004 to 14 December 2004) for the entrance channel reach (jetties and bar channels), the cutterhead dredge GEORGE D WILLIAMS placed a total of approximately 1,020,330 cubic yards of dredged material removed from the Mile 0.5 to Mile -1.8 reach unconfined at a shoreline nourishment placement site located on the west side of the channel.

Dredged Material Placement Event:
Approximately 1,020,330 cubic yards of material was placed behind the west jetty for shoreline nourishment. Dredged material placed at the shoreline placement site was discharged parallel to the existing shoreline, into the surf zone, no closer than 100 feet from the top of the shoreline bank, and no closer than 1,200 feet from the gulf end of the west jetty. The end of the discharge location upon completion of work was located approximately 2,000 feet west of the channel jetties, and approximately 250 feet from the existing top shoreline bank. Dredged material was

limited to a maximum discharge initial elevation of +6.0 feet MLG. However, dredged material never exceeded a discharge elevation of +5.0 feet MLG.

Containment and Access:
Dredged material was placed unconfined at the shoreline placement site behind the west jetty. The dredge pipeline was laid over the existing jetty stone to access the placement site.

Results:
Approximately 40 acres of shoreline habitat were created behind the west jetty by this placement effort.

Port Fourchon BU Placement Site: West Jetty (2005)

2006

Background:
During the FY 2006 maintenance event (contract W912P8-06-C-0125: 14 April 2006 to 13 May 2006) for the entrance channel reach (jetties and bar channels), the cutterhead dredge TOM JAMES placed a total of approximately 605,005 cubic yards of dredged material removed from the Mile 0.5 to Mile -1.8 reach unconfined at a shoreline nourishment placement site located on the west side of the channel.

Dredged Material Placement Event:
Approximately 605,005 cubic yards of material was placed behind the west jetty for shoreline nourishment. Dredged material placed at the shoreline placement site was discharged parallel to the existing shoreline, into the surf zone, no closer than 100 feet from the top of the shoreline bank, and no closer than 1,200 feet from the gulf end of the west jetty. Dredged material was limited to a maximum discharge initial elevation of +5.0 feet MLG.

Containment and Access:
Dredged material was placed unconfined at the shoreline placement site behind the west jetty. The dredge pipeline was laid over the existing jetty stone to access the placement site.

Results:
Approximately 25 acres of shoreline habitat were created behind the west jetty by this placement effort.

Port Fourchon BU Placement Site: West Jetty (2006)

2007

Background:
During the FY 2007 maintenance event (contract W912P8-06-C-0213: 4 March 2007 to 25 April 2007) for the inland channel Mile 3.4 to Mile 0.0 reach, the cutterhead dredges TOM JAMES and VENTURE removed a total of approximately 537,717 cubic yards of dredged material

which were placed at a Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) wetlands restoration site and the shoreline nourishment site located on the east side of the channel.

Dredged Material Placement Event:

1. Approximately 426,202 cubic yards of dredged material removed from the inland channel was placed semi-confined at the West Belle Pass Headlands Restoration CWPPRA (TE-23) project for wetlands restoration. Dredged material was discharged into a shallow open water area (WA-1) of this site to a maximum initial slurry elevation of about +4.0 feet MLG with an anticipated final elevation, following compaction and dewatering, of about +2.0 to 2.5 feet MLG. While the majority of the placement site did not exceed this elevation limit, final elevations at the pipeline discharge locations were found to have exceeded the +4.0 feet MLG limit by about 1 foot (+5.0 feet MLG). Dredged material slurry was allowed to overflow onto eroding wetland areas adjacent to the open water discharge location to nourish the eroding marsh. Dredged material slurry overflow was limited to a maximum elevation of about 1 foot above the existing marsh elevation.

2. Approximately 111,515 cubic yards of dredged material that could not be placed in the CWPPRA project disposal site was placed along the Gulf of Mexico shoreline adjacent to the east jetty for beach nourishment. The discharge points were located on the beach and the dredged material was placed unconfined, parallel to the shoreline, into the surf zone no closer than 100 feet from the top bank of the shoreline. Dredged material was discharged to a maximum initial slurry elevation of +6.0 feet MLG. No direct discharge was allowed within 2,000 feet of the east jetty. It was anticipated that between maintenance events, dredged material placed in this beach nourishment site would be dispersed by waves and storm events onto the shoreline, into the littoral drift, and off shore.

Containment and Access:

1. An existing earthen levee (Tennessee Gas pipeline canal levee) along the CWPPRA placement area's western border was refurbished by bucket dredge where necessary over a length of about 3,500 feet to a maximum elevation of about +6.0 feet MLG to prevent dredged material from flowing into adjacent canals, waterways, and oyster leases. Earthen borrow material was obtained from within the placement site, and earthen levees were allowed to degrade naturally.

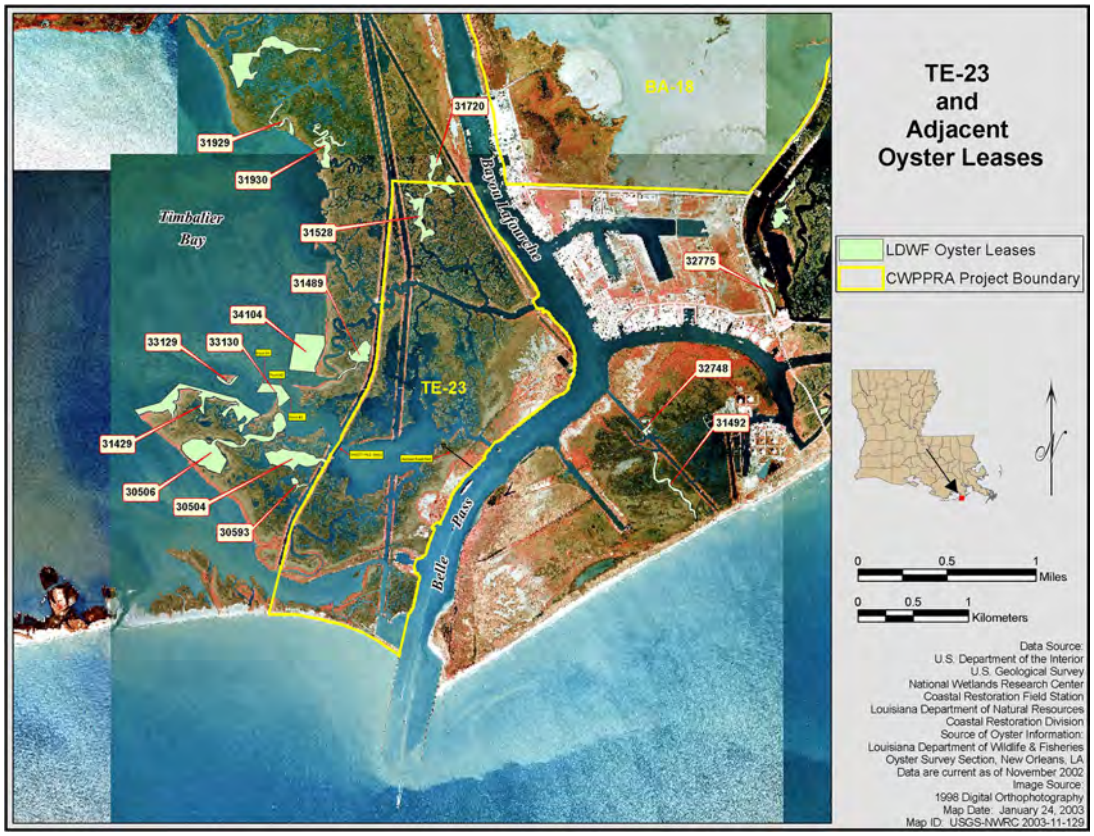
   A vinyl sheetpile closure was also constructed at a gap in the Tennessee Gas pipeline canal levee. The sheetpile closure was constructed to a maximum elevation of about +6.0 feet MLG over a length of about 16,250 feet. The sheetpile closure suffered a failure during this work, and dredged material was redirected to the shoreline placement site while the sheetpile closure was being repaired. Access for levee refurbishment and sheetpile closure construction was allowed along the canal levee and from within the CWPPRA placement site.

   Access for construction equipment and pipeline from the channel across existing emergent marsh into the CWPPRA project placement area was limited to an

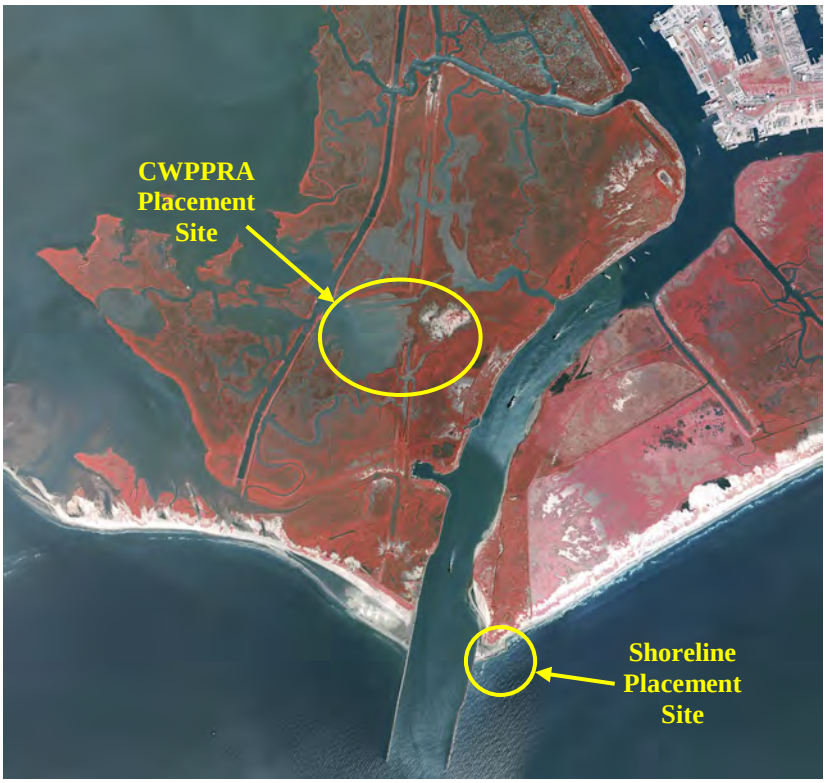
approximately 75-foot wide corridor used in the 1998 original construction event for this project. This access corridor was extended for a maximum length of approximately 4,000 feet in an east-west direction, and then approximately 500 feet in a north-south direction. A temporary 32-foot wide board road was constructed over existing marsh located along the first 1,600 feet of the access corridor alignment beginning from the channel bankline. The board road was enlarged at its beginning and end segments by construction of 200-foot long by 40-foot wide equipment staging areas. About 4,000 cubic yards of clay-sand fill material was deposited within the access corridor prior to the construction of the board road to provide a relatively even foundation for placement of the board road, and to offset damage to the underlying marsh caused by soil compression due to board road use. When disposal work was completed, the board road was removed and additional fill material was placed where necessary along the access corridor to re-establish elevations to pre-work levels.

2. Dredged material was placed unconfined at the shoreline placement site behind the east jetty. The dredge pipeline was laid over the existing jetty stone to access the placement site.

Results:
Approximately 89 acres of marsh habitat were created at the CWPPRA placement site. Approximately 3 acres of shoreline habitat were created at the shoreline nourishment site located behind the east jetty.



Port Fourchon CWPPRA Project (TE-23)



Port Fourchon BU Sites: CWPPRA Post-Placement (2007)


Port Fourchon BU Site: CWPPRA Access Corridor Board Road (11 January 2006)

Port Fourchon BU Site: CWPPRA Access Corridor Board Road (27 March 2007)

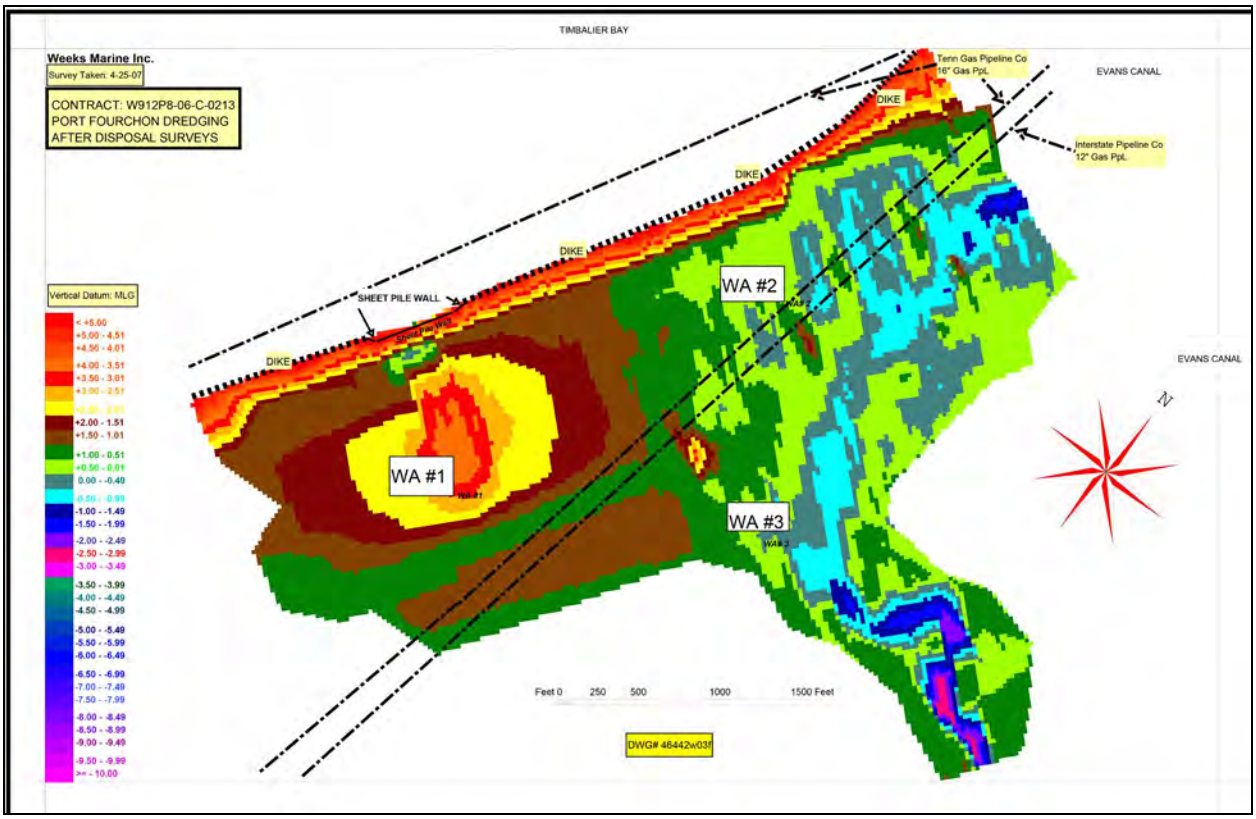
Port Fourchon BU Site: CWPPRA Marsh Creation Site (11 January 2006)

Port Fourchon BU Site: CWPPRA Sheetpile Closure Construction (11 January 2006)

Port Fourchon BU Site: CWPPRA Sheetpile Closure (27 March 2007)

Port Fourchon BU Site: CWPPRA Sheetpile Closure (12 April 2007)

Port Fourchon BU Site: CWPPRA Sheetpile Closure Failure (12 April 2007)



Port Fourchon BU Site: CWPPRA As-Built Post-Placement Elevation Survey (25 April 2007)

Port Fourchon BU Site: East Jetty (November 2007)