

DREDGED MATERIAL BENEFICIAL USE DISPOSAL HISTORY OF BAYOU RIGAUD

The Rivers and Harbors Act of March 2, 1919 authorized the CEMVN to construct a 37-mile long channel, 5 feet deep by 50 feet wide from Bayou Villars to Grand Isle, Louisiana. This channel ran from Lake Salvador and Bayou Villars past the town of Barataria via Bayou Barataria, then through a newly cut channel called Dupre Cut to Bayou Cutler, thence along Bayou St. Denis and Mud Lake into the open Barataria Bay, and then through Barataria Pass. Disposal of dredged material was along the banks or in open water on either side of the new channel. The project was completed in 1925.

The Rivers and Harbors Act of July 3, 1958 authorized an enlargement and realignment of the Barataria Bay Waterway channel. The 1958 Act provided for a channel approximately 37 miles long with a 12-foot depth and 125-foot width at Mean Low Gulf (MLG) from its beginning at the Gulf Intracoastal Waterway at Lake Salvador to Grand Isle. The new channel followed the route of the previous channel to Mile 15.5 in Bayou St. Denis, and then was relocated along the western shore of Barataria Bay and through Barataria Pass to the 12-foot depth contour in the Gulf of Mexico, with a 4.3-mile extension of the project to include the westerly 4.3 miles of Bayou Rigaud. This project modification was completed in 1963. Fifi Island became the primary placement site for maintenance of this channel. Bayou Rigaud dredged material was not beneficially used (BU) to restore/create coastal habitat until the 2006 maintenance event.

The Bayou Rigaud navigation channel is currently maintained to a depth -12 feet MLG plus 2 feet of advance maintenance and 2 feet of allowable overdepth over a width of 125 feet.

1960

Background:

During the 1960 construction of the Bayou Rigaud navigation channel (contract DACW29-60-C-0326: 26 May 1960 – 18 January 1961), dredged material removed from the Mile 0.3 to Mile 4.34 reach was placed into the Fifi Island upland disposal area and 5 Grand Isle upland disposal areas. The cutterhead dredge HERBERT J performed all maintenance dredging for this contract. The Bayou Rigaud channel was dredged to a depth of -12 feet MLG plus 2 of advance maintenance and a width of 125 feet. The westernmost segment of the Bayou Rigaud channel, approximately 7,000-foot in length, was realigned during this contract work.

Dredged Material Placement Event:

From 7 July 1960 through 4 November 1960, the HERBERT J placed an estimated 718,500 cubic yards (CY) of material dredged from the Bayou Rigaud navigation channel into the 6 upland disposal sites on Fifi Island and Grand Isle. The Fifi Island disposal area consisted primarily of marsh habitat while the Grand Isle disposal areas consisted primarily of both open water and marsh habitat.

Containment and Access:

Earthen retention dikes were constructed around all 6 upland disposal areas for this work. The small bay area located on the eastern bayside of Grand Isle was diked off as part of Grand Isle disposal area 1.

Results:

Unknown

1965

Background:

During the 1965 maintenance of the Bayou Rigaud navigation channel (contract DACW29-66-C-0163: 1 October 1965 - 15 November 1965), dredged material removed from the Mile 0.7 to Mile 4.34 reach was placed in the Fifi Island upland disposal areas. The cutterhead dredge TCHEFUNCTE performed all maintenance dredging for this contract. The Bayou Rigaud channel was dredged to a depth of -12 feet MLG plus 2 feet of advance maintenance and a width of 125 feet.

Dredged Material Placement Event:

The TCHEFUNCTE placed an estimated 472,294 CY of material dredged from the Bayou Rigaud navigation channel into Fifi Island upland confined disposal areas.

Containment and Access:

Unknown

Results:

Unknown

1968

Background:

During the 1968 maintenance of the Bayou Rigaud navigation channel (contract DACW29-68-C-0176: 5 June 1968 – 28 April 1969), dredged material removed from the Mile 0.7 to Mile 4.34 reach was placed in the Fifi Island upland disposal areas. The cutterhead dredge PAUL F JAHNCKE performed all maintenance dredging for this contract. The Bayou Rigaud channel was dredged to a depth of -16 feet MLG (-12 foot authorized channel depth plus 2 feet of advance maintenance and 2 feet of allowable overdepth) and a width of 125 feet.

Dredged Material Placement Event:

The PAUL F JAHNCKE placed an estimated 437,135 CY of material dredged from the Bayou Rigaud navigation channel into Fifi Island upland confined disposal areas. Approximately 9,871 CY was also dredged from the US Coast Guard boat basin on Grand Isle under this contract.

Containment and Access:
Unknown

Results:
Unknown

1976

Background:

During the 1976 maintenance of the Bayou Rigaud navigation channel (contract DACW29-76-C-0125: 30 December 1975 – 17 January 1976), dredged material removed from the Mile 0.5 to Mile 4.1 reach was placed in the Fifi Island upland disposal areas. The cutterhead dredge BEAN 32 performed all maintenance dredging for this contract. The Bayou Rigaud channel was dredged to a depth of -16 feet MLG (-12 foot authorized channel depth plus 2 feet of advance maintenance and 2 feet of allowable overdepth) and a width of 125 feet.

Dredged Material Placement Event:

The BEAN 32 placed an estimated 737,682 CY of material dredged from the Bayou Rigaud navigation channel into Fifi Island upland confined disposal areas.

Containment and Access:
Unknown

Results:
Unknown

1982-1983

Background:

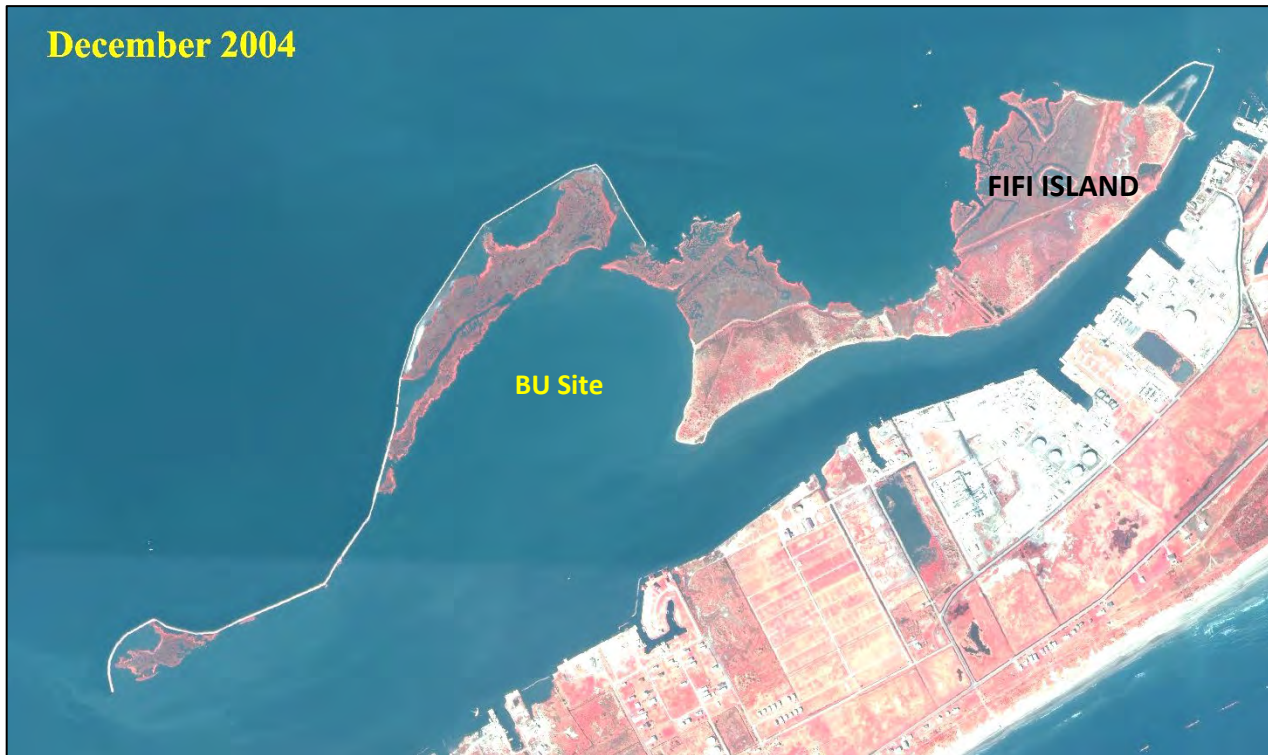
During the 1982-1983 maintenance of the Bayou Rigaud navigation channel, 2 separate maintenance dredging contracts were utilized. Under contract DACW29-82-C-0475, the cutterhead dredges MIKEN and RIVERLANDS performed maintenance dredging work in Bayou Rigaud from 16 November 1982 through 11 January 1983. On 11 January 1983, the contractor (Miken Construction) left the job site and the contract was terminated on 18 March 1983. The cutterhead dredge GALVESTON was then brought in under contract DACW29-83-C-0212 to complete maintenance dredging of the Bayou Rigaud navigation channel. The Bayou Rigaud channel was dredged to a depth of -16 feet MLG (-12 foot authorized channel depth plus 2 feet of advance maintenance and 2 feet of allowable overdepth) and a width of 125 feet.

Dredged Material Placement Event:

From 4 August 1983 through 11 October 1983, the GALVESTON placed an estimated 318,966 CY of material dredged from the Bayou Rigaud navigation channel into the upland confined disposal areas on Fifi Island.

Containment and Access:
Unknown

Results:
Unknown



Fifi Island BU Placement Site: Pre-Placement Event (December 2004)

2006

Background:

During the 2005-2006 maintenance of the Bayou Rigaud navigation channel (contract W912P8-05-C-0039: 12 July 2005 - 2 May 2006), dredged material removed from the Mile 0.0 to Mile 4.3 reach was placed into the Fifi Island marsh creation disposal area Site A. The cutterhead dredge DREDGE 32 performed all maintenance dredging for this contract. The Bayou Rigaud channel was dredged to a depth of -15 feet MLG ((-12 foot authorized channel depth plus 2 feet of advance maintenance) and a width of 125 feet.

Work on this contract was delayed by the passages of Hurricane Katrina (29 August 2005 landfall) and Hurricane Rita (24 September 2005 landfall). Following passages of these hurricanes, work did not start up again until 19 January 2006 with re-initiation of perimeter earthen retention dike construction.

Dredged Material Placement Event:

Between 31 March 2006 and 2 May 2006, the DREDGE 32 removed approximately 528,595 CY of shoal material from the Bayou Rigaud navigation channel and discharged this material into an approximately 166-acre marsh creation disposal area (Site A).

Dredged material was discharged within shallow open water areas of disposal Site A to a maximum initial elevation of about +3.5 feet MLG (with an expected final height of about +2.3 feet MLG following dewatering and compaction).

Approximately 40,000 CY removed from the flotation access corridor segment located nearest to Fifi Island was also placed into disposal Site A to a maximum initial elevation of about +3.5 feet MLG.

Approximately 77,000 CY removed from the flotation access corridor segment paralleling the rock dike construction footprint was placed behind the rock dike in shallow open water. Flotation/access channel material placed behind the rock dike was deposited to a maximum initial elevation of +3.0 feet MLG.

Containment and Access:

An earthen perimeter retention dike was constructed around disposal Site A by barge-mounted bucket dredges. Retention dikes were constructed to a maximum elevation of approximately +5.0 feet MLG. Borrow material for dike construction came from within the disposal area.

A low-level weir was constructed along the northern disposal area boundary to allow effluent waters to flow out of the disposal area westward across the island's existing wetlands before entering Barataria Bay in order to protect existing oyster leases to the north, and to allow for filtration reduction of ammonia levels in the effluent waters before discharging into the bay.

An interior baffle dike was constructed 700 feet from the southern boundary of the disposal area and ran east-to-west with an elevation of about +3.5 feet MLG. The baffle dike was constructed of earthen material taken from within the disposal area and extended to within 200 feet of the retention dikes on either side. This design was intended to enhance sediment retention nearest the southern part of the discharge area and to allow for effluent movement over and around the baffle dike.

A rock dike was constructed along the northern side of the island above disposal Site A to an elevation of about +3.0 feet MLG to help direct effluent waters flowing through the disposal area low-level weir westward through wetland areas. The rock dike also provided protection for this portion of Fifi Island from bayside wave erosion effects. Rock dike construction was performed by barge-mounted equipment accessing from the bay side of the rock dike alignment.

Results:

Approximately 145 acres of marsh and mud flats were created at the Fifi Island disposal Site A by placement of approximately 528,595 CY of shoal material removed from the Bayou Rigaud navigation channel and approximately 40,000 CY removed from flotation access channel dredging during 2006. Disposal Site A was not entirely filled with this placement event, and additional capacity remained for future Bayou Rigaud maintenance dredging events.



Fifi Island Post-BU Placement Event (December 2006)

2011

Background:

During the 2011 maintenance of the Bayou Rigaud navigation channel (contract W912P8-10-C-0119: 13 January 2011 – 13 February 2011), dredged material removed from the Mile 0.0 to Mile 4.3 reach was placed in the Fifi Island marsh creation disposal area Site A. The cutterhead dredge KELLY L performed all maintenance dredging for this contract. The Bayou Rigaud channel was dredged to a depth of -15 feet MLG (-12 foot authorized channel depth plus 2 feet of advance maintenance and 1 foot of allowable overdepth) and a width of 125 feet.

Dredged Material Placement Event:

Between 13 January 2011 and 13 February 2011, the KELLY L removed approximately 342,602 CY of shoal material from the Bayou Rigaud navigation channel and discharged this material into marsh creation disposal area Site A. Dredged material was discharged within shallow open water areas of disposal Site A to a maximum initial elevation of about +3.5 feet MLG (with an expected final height of about +2.3 feet MLG following dewatering and compaction).

Containment and Access:

Existing earthen retention dikes and rock dikes, constructed during the 2006 Bayou Rigaud maintenance dredging event, were refurbished as necessary for this maintenance dredging event.

Results:

Approximately 130 acres of marsh and mud flats were created at the Fifi Island disposal Site A by placement of approximately 342,602 CY of shoal material removed from the Bayou Rigaud navigation channel during 2011. A majority of the marsh/mud flat habitat created during the 2006 Bayou Rigaud maintenance event had subsided below the water surface by the time of the 2011 maintenance event. Some additional capacity remained in disposal Site A following this placement event.



Fifi Island Post-BU Placement Event (January 2012)



Fifi Island Post-BU Placement Event (21 September 2011)

December 2013



Fifi Island BU Placement Site (December 2013)



Fifi Island BU Placement Site (January 2020)