BENEFICIAL USE OF DREDGED MATERIAL DISPOSAL HISTORY MISSISSIPPI RIVER, BATON ROUGE TO THE GULF OF MEXICO, LA, SOUTHWEST PASS

The natural distributaries of the Mississippi River have been used as navigational channels by Europeans since 1682 when La Salle explored the mouth of the river. The site of New Orleans was selected in the early 1700s, and levee construction began as early as 1717 at New Orleans to control flooding. By 1726 a levee 5400 feet long, 18 feet wide and 3 feet high had been constructed. By 1735, levees extended on both sides of the river from 30 miles above New Orleans to 12 miles below, and by 1858 extended to the Ohio River. The effect of the levee system was largely to contain floodwaters within the river channel. Although the levees decreased the number of crevasses that occurred during flood stage of the river, they increased the intensity of the crevasses which did occur, and the modem delta experienced an overall growth in area between 1890sto the mid1920s.

In 1720, only South Pass of the Mississippi River was utilized for navigation. However, since most commerce came from an easterly direction, a pilot station known as Balize was established on an island off of Balize Bayou which was a distributary of Northeast Pass. The Balize settlement was destroyed before 1767 by a flood and the pilot station was moved to the north shore of Northeast Pass. By the late 1700s, Northeast Pass was being surpassed by Pass a Loutre as a main navigational channel, and South Pass had shoaled considerably. Southwest Pass (SWP) had the greatest water depth over the distributary mouth bar, and by 1813, had become the major channel. Between 1852 and 1869, attempts to increase the depth of the channel at SWP and Pass a Loutre included jettying, dredging the channel mouth bar, blasting mudlumps, agitation of the bottom with steam-driven propellers, and dragging iron harrows across the bar. None of these techniques were successful and bar deposits soon reformed when attempts ceased. The building of jetties at SWP commenced in 1902 and was largely completed in 1908, although work on the project continued for nearly another decade, including damming of upstream subsidiary channels.

During the first half of the 1900's, the Mississippi River's SWP navigation channel was maintained to a 35-foot depth. The Rivers & Harbors Act of 1945 authorized a 40- foot deep by 800-foot wide navigational channel, and in 1961 the SWP navigational channel was enlarged to achieve a 40-foot depth. The Rivers & Harbors Act of 1985 authorized a 55-foot deep channel. The SWP navigational channel is currently maintained by the US Army Corps of Engineers, New Orleans District at a 45-foot depth and 750-foot width between Mile 4.0 Above Head of Passes (AHP) to Mile 17.5 Below Head of Passes (BHP). Between Mile 17.5 BHP and Mile 22.0 BHP the navigational channel is maintained to a 45-foot depth and 600-foot width. Construction to enlarge the channel dimensions to the current 45-foot maintained depth began in 1987. The 45-foot channel was completed from SWP to Mile 181 AHP in 1988. Construction of the 45-foot channel from Mile 181 AHP to Baton Rouge (Mile 232.4 AHP) was initiated in 1994 and completed in the same year.

Although dredging records prior to 1956 are sketchy, records indicate that SWP has been dredged annually in discontinuous reaches since at least 1945. Currently, SWP is dredged annually in discontinuous reaches from Mile 4.0 AHP to Mile 22.0 BHP. Both hopper and hydraulic cutterhead dredges are used to maintain the upper Mile 4.0 AHP to Mile 18.8 BHP

reach, and hopper dredges are used to maintain the lower Mile 18.8 BHP to Mile 22.0 BHP reach. Hopper dredged material from the lower part of the reach including the lower jetty and bar channel reach of the river is either agitation dredged or deposited in a designated ocean dredged material disposal site. Hopper dredged material from the upper part of the reach is deposited in an open water disposal area, the Hopper Dredge Disposal Area (HDDA), at the entrances to Pass a Loutre and South Pass. Historically, this disposal area has been dispersive and shoal material has been scoured from the site during high river flows. Hydraulically dredged SWP shoal material historically has been placed into one of three different categories of disposal areas: 1) unconfined into the open waters located on either side of SWP (including East Bay and West Bay), 2) behind existing foreshore dikes for bank stabilization purposes, and 3) shallow open water areas for wetland creation.

Since 1975, material hydraulically dredged from SWP has been utilized to create marsh. The 1976 Mississippi River, Baton Rouge to the Gulf of Mexico Final Environmental Impact Statement (FEIS) Supplement, and the 1982 Deep-Draft Access to the Ports of New Orleans and Baton Rouge, Louisiana FEIS, both outlined placement of dredged material in open water habitats for marsh creation purposes.

Up until 1987 (construction of the 45-foot deep channel), cutterhead dredges working in the eastern half of the channel in the Head of Passes reach (Mile 1.0 AHP to Mile 0.0) were allowed to place dredged material into the HDDA.

Fiscal Year 1970

Under contract 70-C-0209, the cutterhead dredges ORLEANS and BURLINGTON (working from 16 June 1970 to 2 October 1970) removed a total of 6,634,031 cubic yards (CY) from the SWP Mile 0.8 AHP to Mile 18.8 BHP dredging reach. All dredged material was placed in existing upland, confined disposal facilities (**CDFs**) located along either side of the channel. It was noted that **CDFs** located below Mile 9.0 BHP were either at maximum capacity, or nearly so.

Results

Final contract cost was $1,302,705.

Fiscal Year 1971

Under contract **71-C-0192**, the cutterhead dredges PAUL F. JAHNCKE, FRITZ JAHNCKE, and PONTCHARTRAIN (working from 21 June 1971 to 28 October 1971) removed a total of 5,985,642 CY from the SWP Mile 0.8 AHP to Mile 18.8 BHP dredging reach.

Dredged material was primarily placed in existing **CDFs** located adjacent to the channel on both sides. Inspectors noted that these disposal areas were beginning to run out of capacity to contain additional dredged material.

Dredged material was also placed in 2 natural outlets on the east bank located at **Mile 10.3 BHP** (Outlet E-3) and **Mile 17.7 BHP**, respectively, with the intent of filling these outlets. An unknown amount of dredged material was placed in the **Mile 10.3 BHP** outlet, which built up to an elevation of about +3.5 feet Mean Low Gulf (MLG) along the north and south sides of the outlet. About 187,000 CY were placed in the **Mile 17.7 BHP** outlet and built up to an elevation of about +4.0 feet MLG.

An experimental open water disposal area was designated along the east bank of the river between **Mile 11.96 BHP** and **Mile 14.17 BHP**. Dredged material placed at this experimental disposal site was discharged unconfined just riverside of the top of the bank with the majority of material to be confined to an underwater area about 700 feet wide with no material being discharged closer than 200 feet from the landside toe of the channel cut.

Results

Final contract cost was $1,262,723.

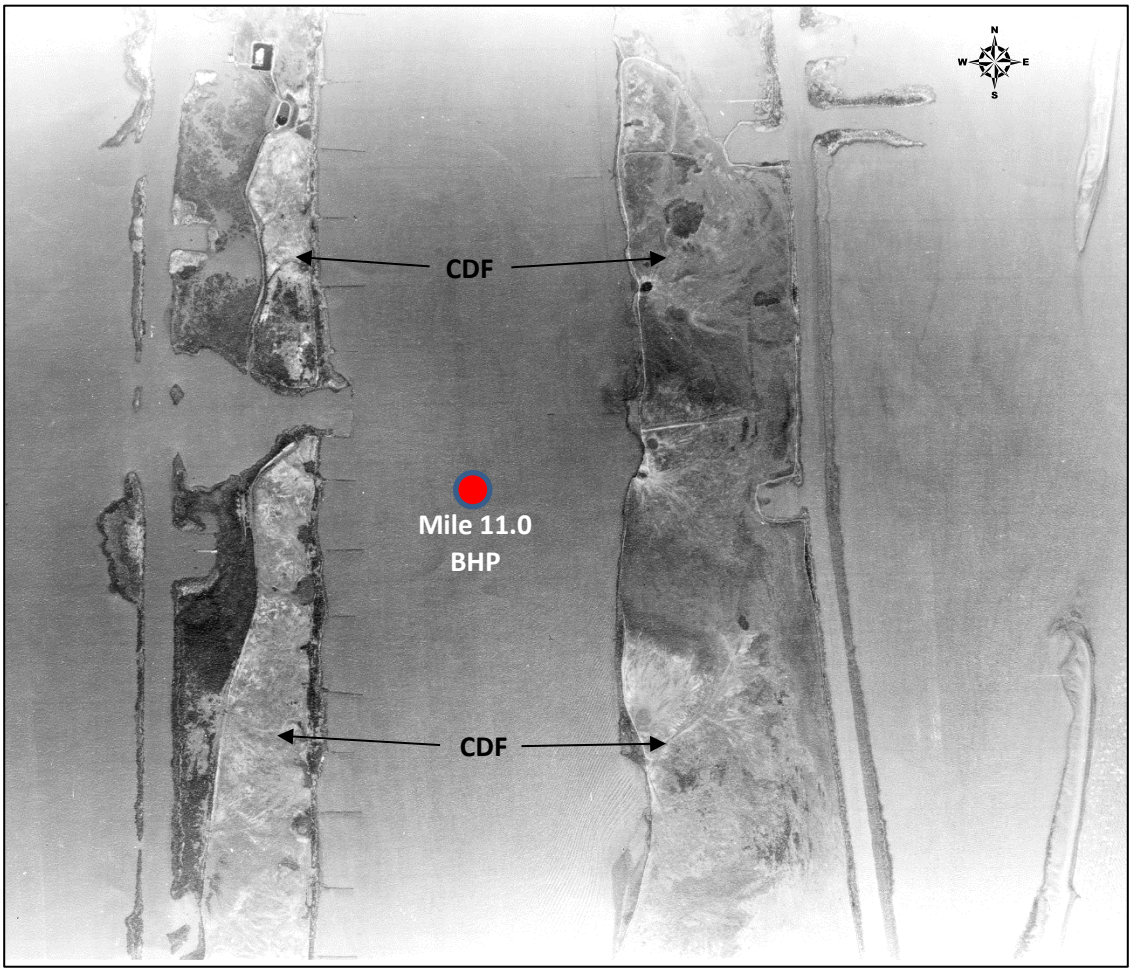
Fiscal Year 1972

Under contract **72-C-0179**, the cutterhead dredges PAUL F. JAHNCKE and PONTCHARTRAIN (working from 20 June 1972 to 3 October 1972) removed a total of 5,736,075 CY from the SWP Mile 0.8 AHP to Mile 18.8 BHP dredging reach. Dredged material was primarily placed in existing **CDF**s located adjacent to the channel on both sides.

Dredged material was also placed in 2 natural outlets located on the east bank at **Mile 10.3 BHP** (Outlet E-3) and **Mile 17.7 BHP**, respectively, with the intent of filling these outlets. The **Mile 17.7 BHP** outlet was filled to an elevation of +1.5 feet MLG.

Results

Final contract cost was $1,412,030.



SWP Mile 11.0 BHP (1972)

Fiscal Year 1973

Under contract **73-C-0152**, the cutterhead dredges PONTCHARTRAIN, PAUL F. JAHNCKE, FRITZ JAHNCKE, and MANCHAC (working from 24 April 1973 to 20 March 1974) removed a total of 13,935,768 CY from the SWP Mile 0.8 AHP to Mile 18.8 BHP dredging reach. Dredging was performed during a major flood event on the Mississippi River. Because of flood conditions, maintenance dredging was allowed to begin before all **CDF** retention dikes could be refurbished. Dredging work under this 1973 contract was not completed until March 1974.

Dredged material was placed in existing **CDFs** and in open water areas along the channel banklines. Shoal material removed from the Head of Passes reach was placed in open water along the western edge of the channel bankline (about 250 feet out from the bankline) due to the fast current velocity (6 feet/second) and distance from the dredging cut to the bank. A wide sand bar resulted from this placement effort. Dredged material was also placed in open water along the bankline in other dredging reaches if **CDFs** were not yet ready to accept material. Inspectors again made note that the existing **CDFs** were all nearly full and new disposal areas would soon

be necessary to continue maintenance of the channel. It was also noted that the channel's east bank between Miles 10.0 BHP and 17.0 BHP was badly eroded, and in some spots it was estimated that about half of the **CDFs** had been eroded away.

Dredged material was also placed in the **Sanitary Canal** that was located behind the abandoned USACE naval base at Burrwood Bayou on the east bank of the channel between Miles 14.5 BHP and 15.5 BHP.

Results

Final contract cost was $3,321,000.

SWP Head of Passes – 1973

SWP Head of Passes – June 1973
(Cutterhead dredge working and pumping into the West Bay disposal site)

Fiscal Year 1974

Under contract **74-C-0204**, the cutterhead dredges FRITZ JAHNCKE, PAUL F JAHNCKE, and PONTCHARTRAIN (working from 20 March 1974 through 30 September 1974) removed a total of 12,755,255 CY from the SWP Mile 0.8 AHP to Mile 18.8 BHP dredging reach. For the second consecutive year, dredging was performed during a major flood event on the Mississippi River. Dredged material was placed in existing **CDFs** and in open water areas along the channel banklines. Exact placement sites used and volumes placed at each site were not recorded.

Results

Final contract cost was $4,130,260.

Fiscal Year 1975

Prior to 1975, cutterhead dredged material was placed in **CDFs** located adjacent to the channel, and in an open water disposal area located between the channel's eastern edge and bankline between **Mile 0.0** and **Mile 1.0 BHP**. By the end of the 1974 dredging season, most of these **CDFs** were full. In the fall of 1974, following informal discussions with personnel from the National Marine Fisheries Service and the Louisiana Department of Wildlife and Fisheries, a

new disposal plan was devised that allowed for the development of marsh and beach habitat. Dredged material was to be placed unconfined in the shallow open waters of East and West Bays. In order to achieve an elevation suitable for the development of marsh and beach habitat, discharge of dredged material would be limited to a maximum initial elevation of about +3.0 feet MLG.

Using dredged material to create coastal habitat in this manner resulted in an increased cost to routine maintenance dredging contracts. Although retention dikes no longer had to be built or maintained for disposal operations, the limiting discharge elevation of about +3.0 feet MLG required that the dredge discharge pipeline had to be moved frequently to avoid exceeding this height restriction. In addition, since marsh creation placement sites could not be overtopped once constructed to the limiting elevation, the dredge pipeline lengths became longer in order to reach new areas of shallow open water.

Under contract **75-C-0168**, the cutterhead dredges JIM BEAM, DREDGE 32, and DAVE BLACKBURN (working from 8 February 1975 through 6 November 1975) removed a total of 10,740,986 CY from the SWP Mile 0.8 AHP to Mile 18.8 BHP reach. For the third consecutive year, dredging was performed during a major flood event on the Mississippi River.

West Side Placement: Marsh Creation

Approximately 82,000 CY were placed in the shallow open water of Dixon Bay along the west bank of Company Canal at **Mile 6.4 BHP** for marsh creation. Dredged material was discharged into this disposal site to an elevation of +4.0 feet MLG.

West Side Placement: Non-Beneficial Use

Approximately 256,500 CY were placed into the existing **CDF** located in West Bay between **Mile 1.3 BHP** and **Mile 2.0 BHP**. Dredged material was discharged into this disposal site to an elevation of +5.0 feet MLG.

Approximately 370,000 CY were placed in the shallow open water of Dixon Bay along the west bank of Company Canal at **Mile 5.9 BHP**. Dredged material was discharged into this disposal site to an elevation of +8.0 feet MLG.

Approximately 83,000 CY were placed at an existing **CDF** located at **Mile 10.0 BHP** at the intersection of Outlet W-2 and Company Canal. Dredged material was discharged into this disposal site to an elevation of +5.0 feet MLG.

Approximately 114,518 CY were placed at an existing **CDF** located at **Mile 11.8 BHP** on the northwestern bankline of the Outlet 11.8 W intersection with Company Canal. Dredged material was discharged into this disposal site to an elevation of +5.0 feet MLG.

Approximately 380,226 CY were placed at an existing **CDF** located at **Mile 12.0 BHP** on the southwestern bankline of the Outlet 11.8 W intersection with Company Canal. Dredged material was discharged into this disposal site to an elevation of +5.0 feet MLG.

Approximately 138,120 CY were placed into an existing **CDF** located at **Mile 13.3 BHP** along the west bank of Company Canal. Dredged material was discharged to an elevation of +4.0 feet MLG.

East Side Placement: Marsh Creation

Approximately 210,000 CY were placed unconfined into the shallow open water of East Bay at about **Mile 8.1 BHP** for marsh creation. Dredged material was discharged into this disposal site to an elevation of +4.0 feet MLG.

East Side Placement: Non-Beneficial Use

Approximately 243,500 CY were placed into a mandatory disposal area located on the headland separating South Pass from SWP. Dredged material was discharged into this disposal site to an elevation ranging from +3.0 feet MLG to +5.5 feet MLG.

Approximately 440,000 CY were placed unconfined in shallow open water on the East Bay side of the eastern stone jetty between **Mile 16.8 BHP** and **Mile 17.5 BHP**. Dredged material was discharged to an elevation of +5.5 feet MLG.

Approximately 157,000 CY were placed unconfined in shallow open water on the East Bay side of the east jetty between **Mile 17.7 BHP** and **Mile 18.0 BHP**. Dredged material failed to achieve a subaerial elevation at this disposal site.

East Side Placement: Shoreline Nourishment

Approximately 856,000 CY were placed unconfined at a mandatory shoreline nourishment disposal site located on the east bank in East Bay between **Mile 10.4 BHP** and **Mile 11.3 BHP**. Dredged material was discharged into this disposal site to an elevation of +6.0 feet MLG.

Approximately 195,000 CY were placed unconfined at a mandatory shoreline nourishment disposal site located on the east bank in East Bay between **Mile 11.3 BHP** and **Mile 11.6 BHP**. Dredged material was discharged into this disposal site to an elevation of +6.0 feet MLG.

Approximately 452,000 CY were placed unconfined at a mandatory shoreline nourishment disposal site located on the east bank in East Bay between **Mile 11.9 BHP** and **Mile 12.5 BHP**. Dredged material was discharged into this disposal site to an elevation of +5.0 feet MLG.

Approximately 313,000 CY were placed unconfined at a mandatory shoreline nourishment disposal site located on the east bank in East Bay between **Mile 13.0 BHP** and **Mile 13.5 BHP**. Dredged material was discharged into this disposal site to an elevation of +5.0 feet MLG.

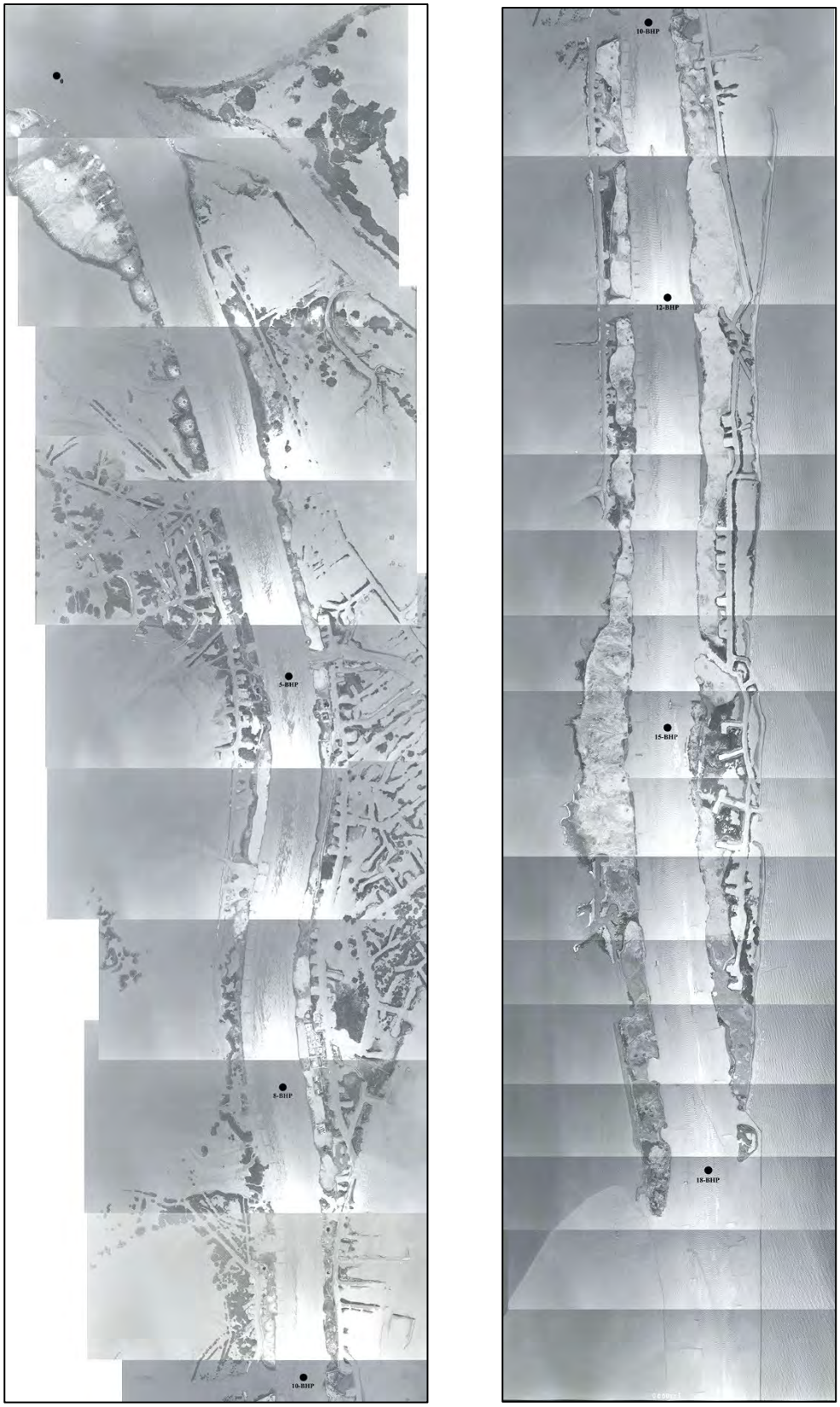
Approximately 287,000 CY were placed unconfined at a mandatory shoreline nourishment disposal site located on the east bank in East Bay between **Mile 13.7 BHP** and **Mile 14.1 BHP**. Dredged material was discharged into this disposal site to an elevation of +5.0 feet MLG.

Results

For this contract work, approximately 82,000 CY of dredged material were placed for marsh creation on the west side of the channel, and approximately 210,000 CY of dredged material were placed for marsh creation on the east side of the channel. Approximately 2,103,000 CY were placed for shoreline nourishment on the east side of the channel.

Final contract cost was $5,632,200.

SWP Mile 5.9R BHP Placement Site – 1975-1976



SWP 1975

Fiscal Year 1976

Under contract **76-C-0203**, the cutterhead dredges BEAN #32 and DUPLEX (working from 14 May 1976 through 7 December 1976) removed a total of 10,002,529 CY from the SWP Mile 1.0 AHP to Mile 18.8 BHP reach. All dredged material was placed in shallow open water disposal sites in East Bay and West Bay. Dredged material discharge was limited to a maximum initial height of +3.0 feet MLG for marsh creation and beach nourishment.

West Side Placement: Marsh Creation

Approximately 616,741 CY were placed in 4 separate shallow open water discharge locations in West Bay between approximate miles **0.1 AHP** and **1.0 BHP** for marsh creation.

Approximately 1,507,075 CY were placed at 10 separate shallow open water discharge sites in West Bay between miles **2.3 BHP** and **6.4 BHP** for marsh creation.

Approximately 579,652 CY were placed at 4 separate shallow open water discharge locations in West Bay between miles **7.0 BHP** and **8.8 BHP** for marsh creation.

Approximately 1,160,544 CY were placed at 4 separate shallow open water discharge locations in West Bay between miles **9.6 BHP** and **11.7 BHP** for marsh creation.

Approximately 1,699,548 CY were placed at 17 separate shallow open water disposal sites in West Bay between miles **13.4 BHP** and **17.5 BHP** for marsh creation.

Approximately 96,875 CY were placed in a ditch located on the inside of the west jetty stone at about mile **17.8 BHP** for marsh creation.

Approximately 63,877 CY were placed at a shallow open water disposal site located on the inside of the west jetty stone at about mile **18.0 BHP** for marsh creation.

East Side Placement: Marsh Creation

Approximately 181,380 CY were placed at a shallow open water disposal site on the east bank miles **5.8 BHP** and **6.7 BHP** for marsh creation.

Approximately 792,826 CY were placed at 3 separate shallow open water discharge locations in East Bay between miles **8.0 BHP** and **9.0 BHP** for marsh creation.

Approximately 661,069 CY were placed at 3 separate shallow open water discharge locations in East Bay between miles **9.6 BHP** and **11.0 BHP** for marsh creation.

Approximately 345,128 CY were placed between miles **14.6 BHP** and **15.3 BHP** in the eroded marsh area located between the channel east bank and Burrwood Bayou for marsh creation. This site included portions of the old USACE naval base.

East Side Placement: Shoreline Nourishment

Approximately 486,398 CY were placed at a 4 separate shallow open water disposal sites in East Bay for shoreline nourishment between miles **12.7 BHP** and **13.9 BHP**.

Approximately 572,791 CY were placed at 3 separate sites in East Bay for shoreline nourishment between miles **15.8 BHP** and **16.7 BHP**.

Approximately 350,097 CY were placed at 6 separate discharge sites alongside the east jetty stone in East Bay for shoreline nourishment between miles **16.9 BHP** and **18.3 BHP**.

Results

For this contract work, approximately 5,724,312 CY of dredged material were placed for marsh creation on the west side of the channel, and approximately 1,980,403 CY of dredged material were placed for marsh creation on the east side of the channel. Approximately 1,409,286 CY were placed for shoreline nourishment on the east side of the channel.

Final contract cost was $5,984,888.

SWP Mile 9.8R BHP Placement Site - 1976

Fiscal Year 1977

Under contract **77-C-0140**, the cutterhead dredges NEW YORK, DUPLEX, and BUSTER BEAN (working from 14 May 1977 to 9 September 1977) removed a total of 5,193,624 CY from the SWP Mile 1.0 BHP to Mile 18.0 BHP reach. All dredged material was placed in shallow open water disposal sites in East and West Bays. Dredged material discharge was limited to a maximum initial height of +3.0 feet MLG for marsh creation and beach nourishment. On 20 May 1977, the cutterhead dredge DUPLEX was struck and sunk by tanker vessel C.Y.S. ALLIANCE at about Mile 13.8 BHP while working in the eastern half of the channel. The DUPLEX was replaced by the cutterhead dredge NEW YORK.

West Side Placement: Marsh Creation

Approximately 100,000 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 1.5 BHP** for marsh creation.

Approximately 120,548 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 1.8 BHP** for marsh creation.

Approximately 326,546 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 12.4 BHP** for marsh creation.

Approximately 392,760 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 13.5 BHP** for marsh creation.

Approximately 169,393 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 14.1 BHP** for marsh creation.

Approximately 90,000 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 14.3 BHP** for marsh creation.

Approximately 90,000 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 15.1 BHP** for marsh creation.

Approximately 93,507 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 15.6 BHP** for marsh creation.

Approximately 224,064 CY were placed confined in an area of shallow open water and broken marsh on the west side of the channel at about **Mile 16.5 BHP** for marsh creation.

During disposal activities at this site, the back earthen retention dike failed and some dredged material spilled into the adjacent Company Canal. All spilled dredged material was removed from this canal and placed back into the confined disposal facility after repairing the back dike.

Approximately 424,070 CY were placed unconfined in shallow open water on the west side of the channel at about **Mile 17.0 BHP** to **Mile 17.3 BHP** for marsh creation.

East Side Placement: Marsh Creation

Approximately 535,698 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 8.3 BHP** for marsh creation.

Approximately 70,213 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 9.9 BHP** for marsh creation.

Approximately 176,537 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 10.3 BHP** for marsh creation.

East Side Placement: Shoreline Nourishment

Approximately 114,887 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 11.0 BHP** for shoreline nourishment.

Approximately 243,663 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 11.7 BHP** for shoreline nourishment.

Approximately 174,338 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 12.5 BHP** for shoreline nourishment.

Approximately 251,622 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 13.1 BHP** for shoreline nourishment.

Approximately 95,744 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 13.5 BHP** for shoreline nourishment.

Approximately 295,384 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 14.1 BHP** for shoreline nourishment.

Approximately 326,690 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 14.3 BHP** for shoreline nourishment.

Approximately 410,681 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 15.5 BHP** for shoreline nourishment.

Approximately 450,828 CY were placed unconfined in shallow open water on the east side of the channel at about **Mile 16.8 BHP** for shoreline nourishment.

Results

For this contract work, approximately 2,030,888 CY of dredged material were placed for marsh creation on the west side of the channel, and approximately 782,448 CY of dredged material were placed for marsh creation on the east side of the channel. Approximately 2,363,837 CY were placed for shoreline nourishment on the east side of the channel.

Final contract cost was $3,400,996.

Fiscal Year 1978

Under contract **78-C-0122**, the cutterhead dredges LOUISIANA and BLACKBURN (working from 1 May 1978 to 10 October 1978) removed a total of 7,221,388 CY from the SWP Mile 1.0 AHP to Mile 18.8 BHP reach. Nearly all dredged material was placed in shallow open water disposal sites in East and West Bays. Dredged material discharge was limited to a maximum initial height of +3.0 feet MLG for marsh creation and beach nourishment.

West Side Placement: Marsh Creation

The cutterhead dredge BLACKBURN discharged dredged material unconfined in shallow open water, broken marsh sites west of the channel for marsh creation at the following locations: **Mile 0.3 BHP, Mile 0.5 BHP, Mile 0.8 BHP, Mile 1.0 BHP, Mile 1.3 BHP, Mile 1.8 BHP**, and **Mile 2.8 BHP**. Quantities of dredged material placed at each of these sites was not recorded.

The BLACKBURN placed approximately 347,406 CY unconfined in shallow open water on the west side of the channel at about **Mile 6.0 BHP** for marsh creation.

The LOUISIANA placed dredged material unconfined on the western side of the channel in shallow open water for marsh creation at **Mile 6.0 BHP** (347,406 CY), **Mile 6.3 BHP** (24,927 CY), **Mile 12.5 BHP** (379,177 CY), **Mile 13.0 BHP** (100,467 CY), **Mile 13.6 BHP** (229,860 CY), **Mile 14.1 BHP** (143,598 CY), **Mile 14.9 BHP** (270,000 CY), **Mile 15.5 BHP** (357,000 CY), **Mile 17.0 BHP** (288,000 CY), **Mile 17.7 BHP** (285,000 CY), **Mile 18.0 BHP** (85,000 CY), **Mile 18.3 BHP** (98,000 CY), and **Mile 18.5 BHP** (77,000 CY).

Colonial nesting shorebirds/seabirds were present, but avoided, at the **Mile 15.0 BHP**, **Mile 13.6 BHP**, and **Mile 12.5 BHP** sites located on the west side of the channel.

East Side Placement: Marsh Creation

The BLACKBURN placed approximately 420,196 CY semi-confined at **Mile 8.3 BHP** on the east side of the channel for marsh creation. An earthen dike was required along the southern boundary of the site to avoid disturbing a colony of nesting shorebirds/seabirds that had established itself on previously placed dredged material.

East Side Placement: Shoreline Nourishment

The BLACKBURN placed dredged material unconfined for shoreline nourishment along East Bay at **Mile 13.0 BHP, Mile 13.4 BHP, Mile 13.6 BHP, Mile 14.5 BHP**, and **Mile 15.5 BHP**. Quantities of dredged material placed at each of these sites was not recorded.

The cutterhead dredge LOUISIANA placed dredged material unconfined for shoreline nourishment along East Bay at **Mile 10.5 BHP** (228,247 CY), **Mile 10.6 BHP** (160,000 CY),

Mile 11.2 BHP (173,000 CY), **Mile 11.7 BHP** (207,000 CY), **Mile 16.8 BHP** (322,545 CY), **Mile 17.2 BHP** (127,200 CY), **Mile 17.4 BHP** (101,166 CY), **Mile 17.8 BHP** (134,495 CY), **Mile 18.2 BHP** (89,350 CY), and **Mile 18.6 BHP** (183,297 CY).

East Side Placement: HDDA Non-Beneficial Use

Approximately 54,685 CY were removed from the eastern half of the channel between **Mile 1.0 AHP** and **Mile 0.0** and placed unconfined in the northwestern portion of the **HDDA**.

Bankline Stabilization

The BLACKBURN placed dredged material behind foreshore rock dikes along the west bank for bankline stabilization at **Mile 8.1 BHP, Mile 8.3 BHP**, and **Mile 8.7 BHP**. Quantities of dredged material placed at each of these sites was not recorded.

Results

For this contract work, exact quantities of dredged material placed were not recorded for several placement sites. Therefore, estimations of quantities placed for specific beneficial uses of dredged material efforts is not possible.

Final contract cost was $4,982,757.

SWP Head of Passes – November 1978

Fiscal Year 1979

Under contract **79-C-0167**, the cutterhead dredges LOUISIANA and BLACKBURN (working from 16 April 1979 to 27 August 1979) removed a total of 5,834,999 CY from the SWP Mile 1.0 AHP to Mile 18.8 BHP reach. All dredged material was placed in shallow open water disposal sites in East and West Bays. Dredged material discharge was limited to a maximum initial height of +3.0 feet MLG for marsh creation and beach nourishment. Quantities of dredged material placed at each of these sites was not recorded.

West Side Placement: Marsh Creation

Dredged material was placed for marsh creation on the west side of the channel between **Mile 0.1 AHP** and **Mile 1.8 BHP**, at **Mile 5.7 BHP**, and at **Mile 18.0 BHP**.

East Side Placement: Marsh Creation

Dredged material was placed for marsh creation on the east side of the channel at **Mile 8.5 BHP**.

East Side Placement: Shoreline Nourishment

Dredged material was placed for shoreline nourishment on the east side of the channel at **Mile 10.7 BHP, Mile 12.3 BHP, Mile 13.2 BHP, Mile 14.7 BHP, Mile 15.5 BHP, Mile 16.9 BHP, Mile 17.2 BHP**, and **Mile 17.4 BHP**.

Bank Stabilization

Dredged material was placed for bank stabilization behind foreshore rock dikes on the west side of the channel between **Mile 9.1 BHP** and **Mile 9.2 BHP**.

Results

Final contract cost was $5,322,080.

Notes

From 1976 through 1979, most disposal did not appear to result in intertidal elevations. However, new marsh could be seen at River Mile 1.81 BHP, between River Mile 1.95 BHP and 2.93 BHP, and between River Mile 5.0 BHP and 6.0 BHP. Dredged material was placed over existing man-made marsh between River Mile 13.55 BHP and 14.23 BHP because contractors failed to extend the dredge pipe beyond existing marsh into areas of shallow open water.