

Chaland Headland Barataria Barrier Island Restoration Project (BA-38-2)



Based on the reach prioritization completed for the Barataria shoreline segment, Chaland Headland was identified as a project area for further development. This project involved an assessment of the Chaland Headland existing and future conditions including the development of island and marsh restoration alternatives. The final plan took into consideration the unique features of the project area including closure of island breaches and avoidance of significant oil infrastructure.

Client: NOAA-NMFS,
co-sponsored by LDNR

Design Summary: 1.75M cy of sand,
735,000 cy of marsh fill & dredging an
access canal

Borrow Area: Quatre Bayou borrow area
located 2.5 miles southwest of the project
area contained sand and marsh fill

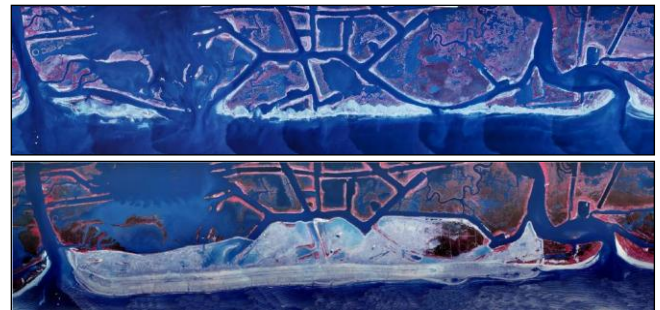
Key Elements: Beach and Marsh Design
Addressing oil infrastructure
Geotechnical investigation
Construction over sight

CPE developed a beach design based on cross-shore modeling using SBeach. Longshore modeling was performed using GENESIS. A sediment budget was also developed to determine the difference between pre-construction and post-construction conditions.

The project design had to consider 3 major breaches, one over 800 feet wide and whether this could be filled by pumping alone. The design also had to account for a significant amount of oil infrastructure. Some of the inactive oil pipelines were cut and plugged while other pipelines were avoided by hauling dike fill rather than sidcasting. The closure of an access canal to existing oil infrastructure required the construction of an alternate canal behind the marsh creation/restoration area.

CPE also located a sand borrow area just 2.5 miles to the southwest of the project area that contained 4-8 feet of sand fill over lain by 4-10 feet of marsh fill. CPE conducted borrow area impact modeling to ensure that dredging the borrow area would not have an adverse impact to adjacent shorelines.

CPE developed cost estimates, plans and specifications and assisted with project permitting and bidding. CPE also provided construction observations and assisted with construction management.



Pre and Post Construction Infrared aerial image of the project area.

Weeks Marine, Inc constructed the project between March and December, 2006 at a cost of \$14.8M. Hurricane Katrina caused a few months delay and caused shoaling in the access channel but the project was successfully completed within budget.

The final project created 230 acres of beach/dune and 254 acres of marsh. This project won the American Shore and Beach Preservation Association's Top Restored Beach for 2007.

