



An all-rock breakwater is less suitable for the more irregular and deeper sections of a shoreline restoration project, primarily due to extremely soft soils. For those areas, the Biloxi Marsh project uses bags of lightweight-aggregate core (LWAC).

ARCOSA LIGHTWEIGHT USED IN MAN-MADE BERM ALONG LOUISIANA COASTLINE

Oversized geotextile bags filled with Arcosa lightweight are being used to protect the shoreline and restore marshes in the Biloxi Wildlife Management Area, a vital coastal ecosystem that protects the city of New Orleans, Louisiana.

The Biloxi Marsh project is located along a 7-mile stretch of the southeastern shoreline of Lake Borgne and the Biloxi Wildlife Management Area.

The same wave-induced erosion that had transformed Lake Borgne into a lagoon connected to the Gulf of Mexico by the time of the Louisiana Purchase is now wearing away at the marshes that surround it and separate it from Mississippi River Gulf Outlet Channel. Approximately 15,640 acres of land was lost between 1932 and 1990 along the 7-mile project reach.

In recent years, some areas of the shoreline have receded up to 50 feet per year. According to the Coastal Protection and Restoration Authority, the increased erosion was largely due to hurricanes Katrina, Rita, and Gustav.

This erosion has greatly endangered the nearly 40,000-acre Biloxi Wildlife Management Area. "The Biloxi Marsh project is a great example of using lightweight aggregate geotextile bags to create a berm," says Jeff Speck, Director of Technical Sales for Arcosa Lightweight.

"The first phase of this project was estimated to use about 30,000 cubic yards of material. When this phase was completed, we learned that project used less material than was expected because they had virtually no settlement."

Minimizing shoreline retreat will help to protect a portion of the marshes in the Biloxi Wildlife Management Area, thus helping to save an ecosystem that also serves as a protective barrier for the City of New Orleans and surrounding area against surge and waves during tropical events.

“Using these oversized bags containing lightweight aggregate not only prevents further erosion, they also control the wave action so that siltation occurs to rebuild the marsh,” notes Speck.

SHIPPED BY BARGE

The large geotextile bags are filled with the lightweight material at 234 Terminal located near Baton Rouge, LA. The filled bags are loaded onto barges and shipped to the job site for installation in St. Bernard Parish, Louisiana.

The total estimated cost of this project was estimated at \$22 million. The agency overseeing the restoration, The Coastal

Protection and Restoration Authority of Louisiana (CPRA), says the benefit at completion will be up to seven miles of shoreline protected and 300 acres of marsh restored. The marsh acts as a protective barrier for the City of New Orleans and the surrounding area against surge and waves during tropical events.

“Biloxi Marsh demonstrates that the design is proven, the results are successful and it is proving to be more economical than anybody thought it would be,” says Speck. “The reduction in the amount of settlement reduces the total volume of the material needed to fill the berm and that allows the money to go further.”



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