

# 2011 City of Anna Maria and Coquina Beach, Beach Fill Placement Projects Anna Maria Island, Manatee County, Florida



Coastal Planning & Engineering, Inc. (CPE), a Shaw Group Company, has provided services to help restore approximately 8,000 feet of shoreline on Florida's Anna Maria Island. The project, conceived by Manatee County, Fla., is intended to provide storm protection for residents and infrastructure, maintain recreational opportunities and comply with government mandates to preserve the state's beaches.

A popular tourist destination, Anna Maria Island was severely impacted by the 2004-2005 hurricane season and is considered critically eroded by the state of Florida. As the engineer of record for the Anna Maria Island Beach Nourishment project, CPE provided the design, engineering, permitting, technical consultation and construction oversight services to help restore a portion of the island's receding coastline.

"This project underscores the importance of beach nourishment as an element of defense against storms, while also creating opportunities for recreation and restoring habitats for sea turtles and shorebirds," said Thomas Pierro, CPE's senior coastal engineer for the project.

The beach restoration effort included identification, dredging and placement of 30,000 cubic yards of sand to reconstruct a four-foot-high beach (approximately 3,000 feet long and 75 feet wide) along the City of Anna Maria shoreline on the northern end of the island. An additional 214,000 cubic yards of sand was used to reconstruct a four-foot-high beach (approximately 5,000 feet long and 145 feet wide) along Coquina Beach on the southern end of the Island.

The CPE project team's geology department identified the sand source and used remote sensing surveys and physical samples to obtain high quality sand from the borrow area, located in the Gulf of Mexico's Passage Key Inlet ebb tidal shoal.

Because the beaches were at opposite ends of the island, CPE designed a four-mile-long pipeline corridor which allowed the dredging contractor to use the same equipment to deliver sand to both ends of the island. The effort maximized available equipment, sped project delivery and reduced impact to beach recreation and wildlife.

As part of the beach restoration project, CPE also designed a 4.9-acre artificial reef approximately 1,100 feet off the coast of Coquina Beach. The reef will consist of 13,500 limestone boulders, each weighing an average of 2.5 tons.

According to Pierro, the reef was designed to mitigate impacts to the beach's habitat, which may become covered by sand as waves readjust the constructed beach into the natural varying shape of its profile. It also will be a part of Manatee County's artificial reef program, developed to increase and enhance recreational fishing and diving in addition to creating and restoring marine habitats.

Pierro praised the effort and project support provided by Charlie Hunsicker, Manatee County's natural resource director. "Charlie is an avid supporter of Florida's beach management program and has been integral to the project's success, helping organize the program, schedule and budgets."

**Client:** Manatee County, Florida

**Beach Construction Cost:** \$5.4 M

**Dates:** March - April 2011

**Design:**

City of Anna Maria Segment:

Volume: 30,000 CY, Length: 3,000 feet

Coquina Beach Segment:

Volume: 214,000 CY, Length: 5,000 feet

**Borrow Area:** Passage Key Inlet ebb tidal shoal.

**Key Elements:**

Two separate project segments

Construction of an artificial mitigative reef

"I consider it an honor and a privilege to have worked with such a talented team on this important beach restoration project" Charlie Hunsicker - Manatee County's Natural Resource Director