Florida dredging project reestablishes unusable slips

by **Anna Townshend**

At the end of 2009, Dinner Key Marina in Miami began its first dredging project since it opened in 1955. The project will dredge only 9,000 cubic yards of sediment but costs $1.4 million. Though this figure sounds inflated for the amount of sediment being moved, disposing of the sediment, which testing showed had elevated levels of contaminants, added considerable cost to the project.

Once its completed, the six-month dredging project will restore the marina, as well as Seminole Dinghy Dock & Boat Ramp, to their original 6 to 8 foot depths. Work at the boat ramp lasted only two weeks and prompted intermittent closures. The dredging at Dinner Key Marina, however, will be done without any closures or displacement of its 500 long-term customers.

The project and funding

Describing the project at as "maintenance dredging" may be a bit misleading because Dinner Key Marina has never been dredged before, according to Stephen Bogner, marinas manager for the city of Miami's marinas.

Bogner said that the 581-slip Dinner Key Marina sits on the western shore of Biscayne Bay, which is open to anything blowing across the Atlantic. He could find no historical record of dredging ever taking place at the marina.

Over the years, "it's [the sediment] built up along the seawall, not necessarily in the majority of the slips," Bogner said, though eight slips have become unusable due to their shallow depths.

The city of Miami contracted with Coastal System International of Coral Gables, Fla., a consulting engineering firm, to do the design and permitting work. Coastal Systems has contracted with the city on similar projects since the mid-1990s.

The city opened up the dredging project for public bid and received three proposals, Bogner said. American Earthmover Inc. of Miami won the project with the lowest bid.

Permitting and disposal

Typically, the planning and permitting for a project of this scope would take around two years, said Tim Blankenship, director of engineering at Coastal Systems International. Permitting for Dinner Key came close to that in spite of some additional obstacles.

Blankenship said that the environmental permitting agencies involved in the project didn't present a universal front, which made getting through the permitting process more difficult. Both the U.S. Army Corps. of Engineers and the Florida Dept. of Environmental Protection considered the project a maintenance dredge. Miami-Dade County's Dept. of Environmental Resources Management, however, considered the project a new dredge, Blankenship said. To meet the county's additional requirements, the marina had to undertake environmental testing for contaminants, which took extra time and money.

The $1.4 million dredging project at Dinner Key Marina in Miami began at Seminole Dinghy Dock & Boat Ramp. A mechanical dredge will remove 9,000 cubic yards of sediment.

Soil testing revealed elevated levels of contaminants (heavy metals and arsenic) in the dredged sediment. The levels were not enough to be considered hazardous but high enough to require extra precaution and permits for its disposal. All this, of course, led to increased time and effort in launching the project.

The marina could not dispose of the dredged material upland of the marina because the contaminated sediment exceeded the levels allowed for residential exposure, Blankenship explained. Instead, the material would travel to an offsite drying and containment area—a remote parking lot area at Marine Stadium Marina—before it could be moved to its final destination at the county landfill. Relocating sediment to new containment locations adds more cost to a project.

The work effort

For the Dinner Key Marina project, a mechanical dredge works well due in part to its small scope (only 9,000 cubic yards) but also because the project requires the dredge to maneuver into many tight spaces along the seawall, by finger piers, and among slips.

Typically, a mechanical dredge provides more control in these smaller areas, according to Blankenship. The mechanical dredge arm scoops sediment out of the water and places it into containers on another barge. From there, the containers of sediment will travel across Biscayne Bay, to be offloaded to the drying and containment area at its other municipal facility.

Why all the way across the Bay? "I guess because of the aesthetics of dredged material, it wouldn't have been well received [on the marina land]," Blankenship said. Drying sediment can often be unsightly and foul smelling.

Logistics and communication

Bogner said the six-month project began at Seminole Dinghy Dock & Boat Ramp, a floating dock that services about 60 dinghies. In some places, the boat launch had shoaled to less than one foot.

Though the boat ramp closed only intermittently for dredging work, the contractor and the marina had to coordinate their work during the Orange Bowl Regatta, Bogner said.

For the regatta about 600 vessels came to the area, and many of them were launched from the Seminole boat launch, which required additional planning. "We understand this is a significant event for the city," said Bogner, and they worked around the busiest times at the ramp, so as to not bring significant delays for regatta visitors. With Bogner also in charge of staging boats for the regatta, it was an easy accommodation, he said, but his advice would apply across the board: "It requires good communication."

After dredging about two weeks at the dinghy dock, the project began moving northward along the seawall at Dinner Key Marina following the contour of the facility. With no plans to displace customers, this also requires complex logistics.

To accommodate the dredging project and customers, the marina will move vessels as needed and relocate them to any of its 80 open transient slips.

Bogner communicated with his customers about the dredging project through letters with billing statements and explicit communication via the marina staff. He assured customers that if the project forces the relocation of customers' boats, the marina will call boat owners far in advance so they know when and to where their boats will be moved.

In addition to private boats, Dinner Key Marina also houses commercial boats—seven commercial shrimp vessels, six Sea Tow vessels, and one 90-foot commercial private charter vessel. "We have to make sure they can all operate on a daily basis," said Bogner.

Funding partnership

The Dinner Key Marina dredging project, now well on its way, took a strong partnership through the Dept. of Public Facilities, and the Dept. of Capital Improvements to move the project forward. "It was a case of interdepartmental cooperation," said Bogner.

The dredging project was funded through the issuance of city bonds, as well as a $400,000 grant from the Florida Inland Navigation District, a special state-taxing district for the continued management and maintenance of the Atlantic Intercoastal Waterway.

At its expected completion in June, Dinner Key Marina will have the use of eight additional slips. In addition, this project will also restore depths all along its 2,500-foot seawall deep enough to serve all of its customers' 30- to 60-foot boats.

The Dinner Key project has seen challenges in terms of permitting and the handling, drying, and disposing of contaminated materials but seen few long-term setbacks. Moreover, Bogner now expects a smooth ride. "You've got to meet with all the stakeholders involved, and if you plan well, you can figure out bumps in the road," Bogner said. ⚓