

# LAKE WORTH INLET (PALM BEACH HARBOR) NAVIGATION IMPROVEMENT PROJECT PALM BEACH COUNTY, FLORIDA

24 January 2014



**ABSTRACT:** Lake Worth Inlet connects Palm Beach Harbor to the Atlantic Ocean. The port is located in Riviera Beach, Palm Beach County, Florida. The Port of Palm Beach is the fourth busiest container port in Florida and the eighteenth busiest in the continental United States. The non-Federal sponsor is the Port of Palm Beach.

Lake Worth Inlet, serving as the entrance channel to the port, is inadequate both in width and depth, negatively impacting future port potential and creating economic inefficiencies with the current fleet of vessels. Based on existing vessel sizes, the port is operating with insufficient channel width and depth. These deficiencies cause the local harbor pilots in conjunction with the U.S. Coast Guard to place restrictions on vessel transit to ensure safety. In turn, these restrictions lead to light loading, tidal delays, and maneuvering difficulties - resulting in economic inefficiencies that translate into costs to the national economy. Additionally, the entrance channel is also a rapidly shoaling area causing additional restrictions.

Channel widening and turning basin expansion measures were analyzed during ship simulation with input from harbor pilots to determine the minimum footprint required for improved maneuverability and to allow larger vessels to call. Incremental depths were considered in combination with the widening footprint to arrive at the final array of alternatives. Ultimately, a 39-foot project depth with the widening footprint (channel widening and a Main Turning Basin expansion) became the recommended plan.

The Recommended Plan provides NED benefits as a result of transportation cost savings (existing vessels, such as tankers and bulkers, will be able to load more cargo per trip, and slightly larger vessels will be able to call on the port). Additionally, there will be a reduction in maneuverability concerns for all vessels, a reduction in tidal delays, and reduction in restrictions placed in the channel due to high shoaling.

The recommended plan proposes the following: deepen the entrance channel from 35 feet to 41 feet and widen from 400 feet to between 440-460 feet plus a southern approach flare; deepen the inner channel from 33 feet to 39 feet and widen from 300 feet to 450 feet; deepen the main turning basin from 33 feet to 39 feet and extend the southern boundary of the turning basin an additional 150 feet. Suitable sand would be placed in the nearshore. Some material would be beneficially used for proposed mitigation; unsuitable material would be taken to the Palm Beach Ocean Dredged Material Disposal Site.

The plan also includes an advance maintenance plan which includes dredging the settling basins to -26 to -51 feet on the north side of the entrance channel to catch sand; deepening portions of the entrance channel to -47 and -51 feet; and sheet pile on the north jetty for stabilization due to the close proximity of dredging to the existing jetty in that area. The advance maintenance plan and jetty stabilization were not included in the plan formulation screening, as they are considered to be optimizations and an added benefit to the recommended plan. The improved advance maintenance plan reduces the frequency of operation and maintenance (O&M) dredging to 1 time every 2 years (from 1 time every year) and produces a savings to the O&M program, as well as reducing restrictions placed for shoaling.

Anticipated environmental impacts as a result of the project include those to seagrass and hardbottom resources. Approximately 8.25 to 11.25 acres of seagrass habitat and 4.9 to 9.8 acres of hardbottom habitat would be affected through implementation of the recommended plan. Mitigation of the impacts will be offset by the creation of artificial reefs and new seagrass beds. Additionally, successful protection measures developed for manatees and other protected species during dredging activities at Palm Beach Harbor, and other harbors throughout the Jacksonville District, will continue to be implemented to ensure the species' protection.

The estimated total cost for the Recommended Plan, including associated costs, is \$88,556,000 (Oct 2014 price level) which is shared \$57,581,000 Federal and \$30,975,000 non-Federal (includes LERR credit and sponsor paying an additional 10% of the construction of the general navigation feature over a period of 30 years). The total estimated first cost of the project, not including associated costs, is \$88,531,000 including an estimated Federal share of \$66,393,000 and an estimated non-Federal share of \$22,138,000. Average annual navigation benefits are estimated at \$7,940,000 with total annual costs of \$3,960,000, producing an overall benefit-to-cost ratio of 2.0.

This project was formally coordinated with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the Florida Department of Environmental Protection as well as other Federal, state, and local agencies. .

**REPORT DOCUMENTATION:** Pertinent documentation on the project, the results of the CWRB, and subsequent Washington-Level Review Actions, are linked below:

- CWRB Agenda
- [Project Summary](#)
- [CWRB Briefing Slides](#)
- [CWRB Lessons Learned](#)
- CWRB Meeting Record
- State & Agency Review Comment Letters
- Documentation of Review Findings
- [Signed Chief of Engineers Report](#)
- [Advance Copy to Congressional Committees](#)
- ASA(CW) Memo to OMB
- OMB Response
- ASA(CW) Transmittal to Congress
- Signed Record of Decision
- Authorization

**ADDITIONAL INFORMATION:**

[South Atlantic Division](#)

[Jacksonville District – Planning Division – Project Documents](#)

(At right, click on Lake Worth Inlet project)