

# PORT EVERGLADES NAVIGATION STUDY, BROWARD COUNTY, FLORIDA

## INTEGRATED GENERAL REEVALUATION REPORT II AND SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT



PETROLEUM TANKERS



CONTAINER VESSELS



CRUISE VESSELS

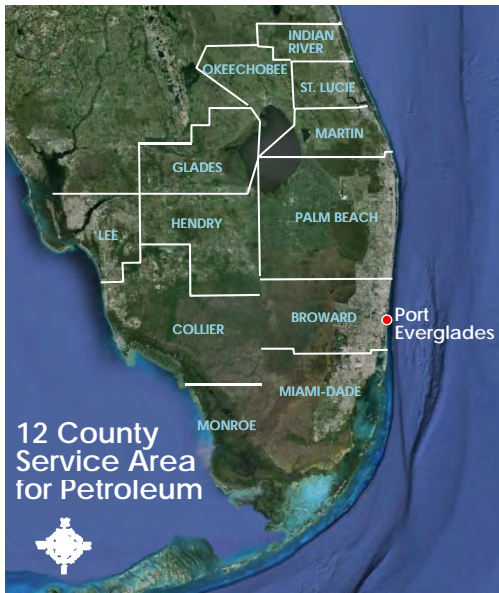


CONGESTION/TIGHT CONDITIONS



NON-FEDERAL SPONSOR: BROWARD COUNTY

February 2015



12 County Service Area for Petroleum

### PROJECT OVERVIEW

Port Everglades is located in the heart of Greater Fort Lauderdale and the City of Hollywood, Florida. It is a manmade harbor, first authorized in the 1930s – since that time, it has become a significant economic force in Florida and the Nation. It is South Florida's main seaport for receiving petroleum products; a leading container port ranking 2<sup>nd</sup> in Florida and 32<sup>nd</sup> in the nation in terms of total tonnage; and is one of the top cruise ports worldwide. In addition, it is a military port, home to both the U.S. Coast Guard and the U.S. Navy. Port Everglades is a key node for trade routes to Europe and South America.

The port is strategically located with access to a multi-modal transportation network including the Atlantic Ocean shipping lanes, the Florida East Coast Railway, Florida's highway system, and the Fort Lauderdale-Hollywood International Airport. Four major interstates and links to CSX rail service provide fast access to major markets throughout the United States. The Florida East Coast Railway recently completed construction of a new near-dock intermodal container transfer facility at Port Everglades providing direct rail access to international and domestic containers at the port.

With this project, there is an opportunity to reduce transportation costs and bring in the forecasted volume of goods into the harbor on fewer, larger and more efficient ships. Currently, navigation in the port is challenged by insufficient channel depths and widths. The configuration of the current Federal project dates back to the 1970s, making it difficult to accommodate the larger Post-Panamax container vessels and Aframax tanker vessels of today. Navigation is further challenged by strong and unpredictable cross currents in or near the outer entrance channel. These currents can exceed 5 knots and unpredictably change directions, resulting in vessel delays of hours to days while vessels wait at anchor for better conditions.

### RECOMMENDED PLAN

Refer to map on reverse side

Deepen from 42 to 48 feet (Inner Entrance Channel, Main Turning Basin, Southport Access Channel & Turning Notch)

Deepen from 45 to 55 feet (Outer Entrance Channel)

Widen in select areas

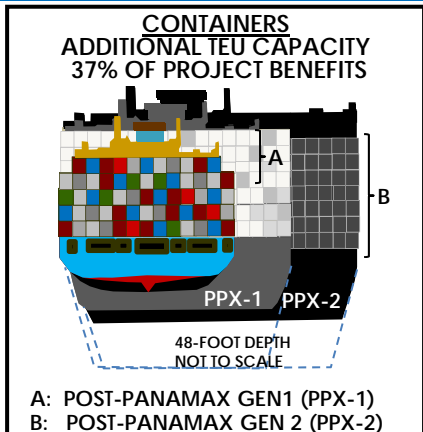
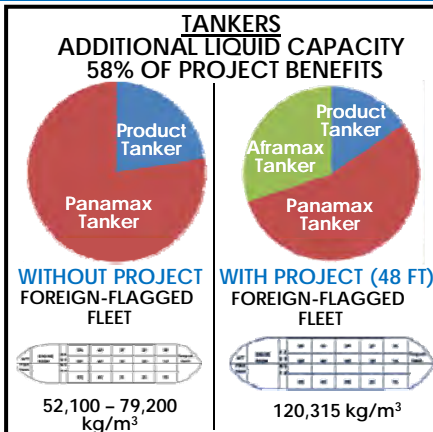


### ECONOMIC ANALYSIS

**Ship Simulation:** Defined widening footprint  
**Incremental Analysis:** Widening evaluated independently and with deepening  
**Turning Basins:** Included with widening measure due to their interdependencies  
**47-foot Depth:** National Economic Development (NED) Plan  
**48-foot Depth:** Locally Preferred Plan (LPP)

DEPTH	AVERAGE ANNUAL COSTS*	AVERAGE ANNUAL BENEFITS	AVERAGE ANNUAL NET BENEFITS	BCR
46 feet	\$15,000,000	\$45,100,000	\$30,100,000	3.0
<b>LPP and Recommended Plan: 48 feet</b>	<b>\$16,860,000</b>	<b>\$48,240,000</b>	<b>\$31,400,000</b>	<b>2.9</b>
<b>NED Plan: 47 feet</b>	<b>\$15,900,000</b>	<b>\$46,900,000</b>	<b>\$31,000,000</b>	<b>2.9</b>
49 feet	\$17,800,000	\$48,300,000	\$30,500,000	2.7

\*Costs include IDC and O&M



### COST (FY15 Discount Rate 3.375% & October 2014 Price Level)

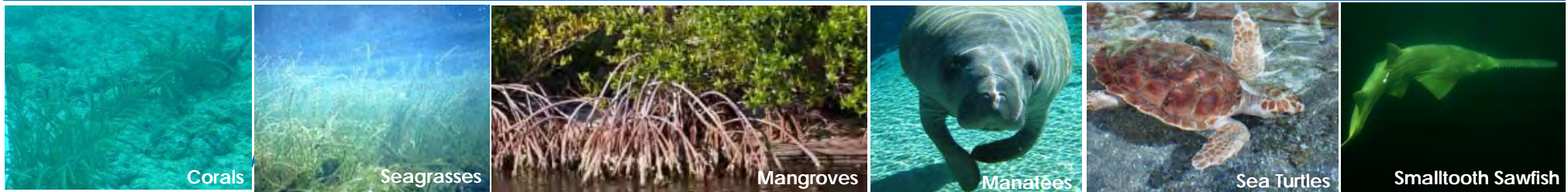
**FIRST COST:** \$ 322,700,000  
**TOTAL COST:** \$ 374,100,000 (Includes Aids to Navigation and Local Service Facility Costs)  
**Federal Share (75% to 45 feet and 50% from 45 to 47 feet):** \$189,900,000  
**Non-federal Share:** \$ 184,200,000  
 ➤ \$166,200,000(25% to 45 feet and 50% from 45 to 47 feet) + \$18,000,000 (100% of additional cost for the LPP)

**BENEFIT/COST RATIO (BCR)**

- Recommended Plan/Locally Preferred Plan (LPP) BCR: 2.9
- National Economic Development (NED) Plan BCR: 2.9



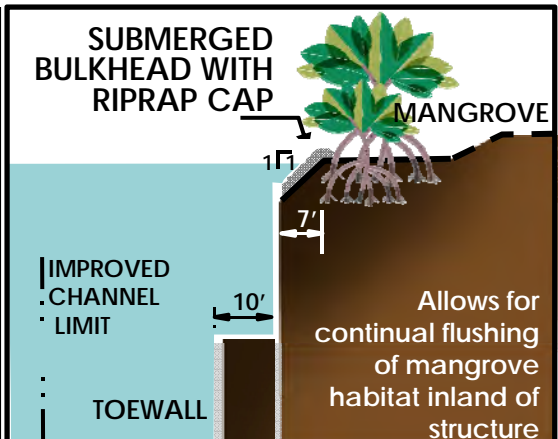
### ENVIRONMENT



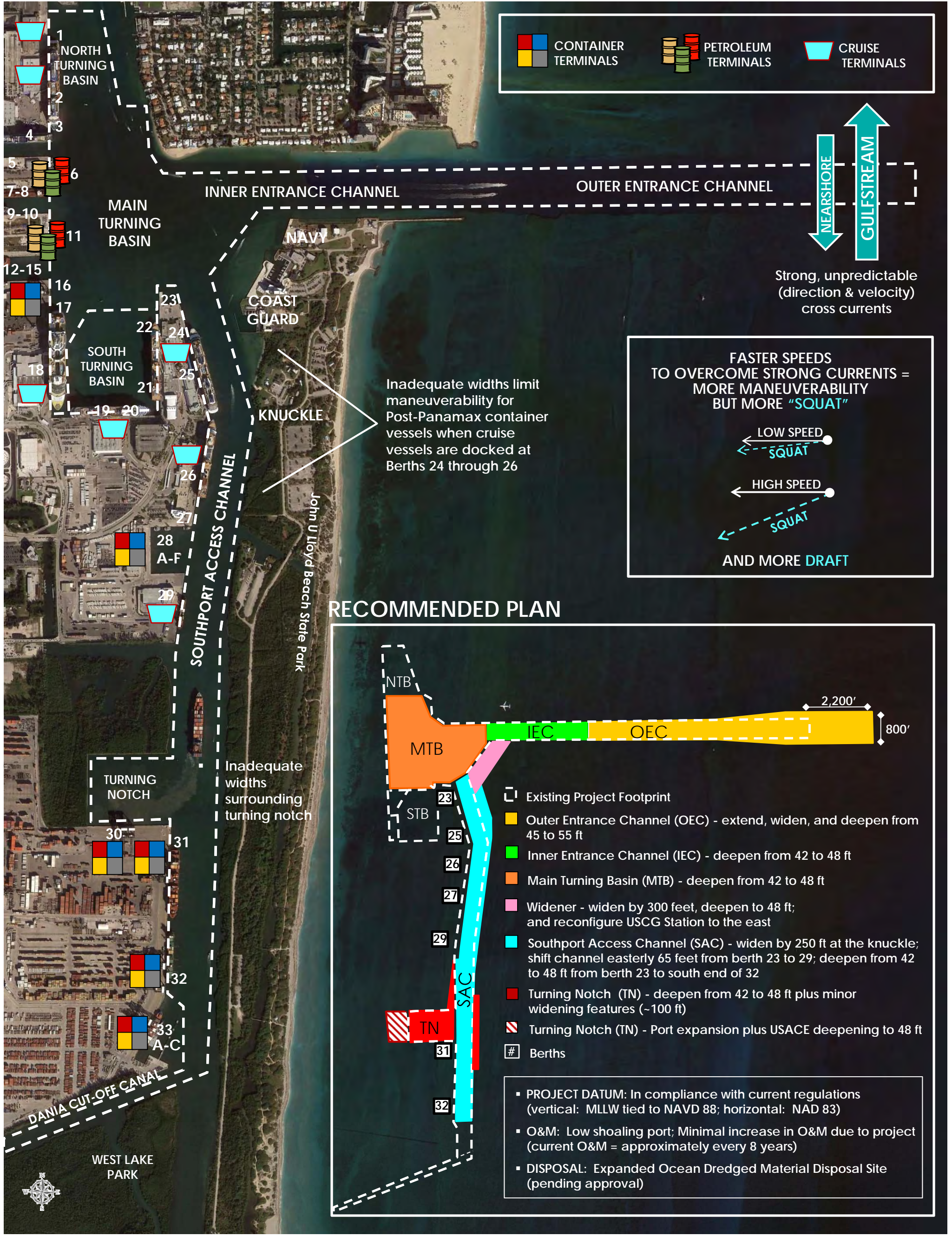
IMPACTS	MITIGATION	TOTAL MITIGATION COST	THREATENED AND ENDANGERED SPECIES
<ul style="list-style-type: none"> <li>Direct removal of ~14.62 acres of hardbottom/reef habitat</li> <li>Below dredging depth hardbottom: (10% mitigation up front) .71 acres</li> <li>Vegetated seagrass habitat: ~4.21 acres</li> <li>Unvegetated seagrass habitat: ~3.20 acres</li> <li>Mangroves: ~1.16 acres</li> </ul>	(based on functional analysis conducted jointly with the National Marine Fisheries Service - NMFS) <ul style="list-style-type: none"> <li>Creation of ~5 acres of artificial reef with relocation of ~11,500 corals</li> <li>Outplanting of ~103,000 nursery raised corals to existing reef enhancement areas of ~18 acres</li> <li>~2.4 seagrass functional units (~24 to 29 acres) and ~1 mangrove functional unit (~3-3.6 acres): West Lake Park</li> </ul>	<ul style="list-style-type: none"> <li>Mangrove, Seagrasses, Artificial Reef: \$35.6 M</li> <li>Construction Monitoring: \$900K</li> <li>Coral Propagation: \$16.3 M</li> </ul>	Successful protective measures currently employed during operations for species such as manatee, sea turtles and smalltooth sawfish will continue to be utilized.

### REDUCED IMPACTS OVER TIME

COMPONENT	2000 (ac)	2004 (ac)	2008 (ac)	2012 (ac)	2013 (ac) DRAFT EIS	2015 (ac) FINAL EIS
Seagrasses (vegetated only)	40.28	1.38	4.3	4.01	4.01	4.21
Mangroves	52.89	12.3	10.44	1.2	1.16	1.16
Hardbottom High Relief (direct removal)	25.61	10.82	10.5	11.09	10.10	9.87
Hardbottom Low Relief (direct removal)	13.97	14.89	4.57	5.55	5.07	4.74
Hardbottom (below dredge depth)	-----	-----	-----	-----	0	.71
Indirect Effects w/in 150m of channel during construction (3yrs)				2.27	2.27	2.19







**PORT EVERGLADES HARBOR NAVIGATION PROJECT EXISTING CONDITIONS & RECOMMENDED PLAN**

