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INTRODUCTION

The Deepwater Port Component (DPC) is one of two sub-elements in the Coastal Management Element, the other is the Natural Disaster Component. The DPC summarizes information in the Port Everglades Master/Vision Plan, adopted by the Broward County Board of County Commissioners on March 1, 2011, and provides the data and analysis relevant to the Port Everglades service area to fulfill the deepwater port requirements cited in Chapter 163.3178(2)(k), Florida Statutes (FS).

Part I of the DPC describes Port Everglades’ jurisdictional area (PJA), defines the planning horizons in the Port’s Master/Vision Plan, and provides a list of definitions and acronyms. Part II addresses the data requirements of Chapter 163.3178(2)(k)), FS, including inventories of land use, natural resources, areas subject to coastal flooding, historic resources and sites, estuarine pollution sources, beach and dune systems, and Port infrastructure. It also addresses natural disaster planning issues and deepwater port factors. Part III presents the Port’s 5-and 10-year maintenance and expansion plans. It includes forecasts for the Port’s key business lines -- containerized cargo, non-containerized cargo (dry bulk), liquid bulk (petroleum), and cruise -- and the specific projects planned to provide the capacity needed to meet those forecasts. Part IV then analyzes the data presented in Part II in the context of the Port’s planned development over the identified planning horizons. Part V concludes with DPC implementation.

A. General Description. Port Everglades is located on Florida's east coast, 23 miles north of Miami and 312 miles south of Jacksonville. Map 12-1 shows the Port’s South Florida location.

Port Everglades is one of the deepest ports in Florida and has one of the shortest, straightest entrance channels among the U.S. Atlantic Coast seaports. The Port’s outer channel project depth is 45 feet mean low water and the outer channel width is 500 feet. The inner channel and main turning basin project depths range from 31 to 42 feet mean low water. The inner channel is 450 feet wide from a point 1,000 feet within the jetty entrance. From this point, it flares to a width of 1,500 feet at the turning basin. Berth water depths vary up to 42 feet. The distance from the ocean entrance of the channel to the main turning basin is approximately 1.2 nautical miles. The main turning basin, which measures 1,200 feet east-to-west and 2,450 feet north-to-south, is 9,000 feet from the ocean sea buoy. The proximity of the main turning basin to the ocean buoy enables ships to dock within a half hour from reaching the ocean buoy, less time than is required at any other Atlantic port. The main turning basin’s north extension is 630 to 900 feet wide by 1,150 feet long. The south extension is 1,300 feet by 1,100 feet.

B. Service Area. Port Everglades' PJA encompasses a total of 2,190 acres, which includes 1,742 acres of upland and 448 acres of submerged land. Upland acreage falls in the following municipalities:

- 1,242 acres or 71.3 percent of the Port is located in the City of Hollywood.
- 232 acres or 13.3 percent of the Port is located in the City of Fort Lauderdale.
- 234 acres or 13.4 percent of the Port is located in the City of Dania Beach.
- 34 acres or 2 percent of the Port is located in unincorporated Broward County.

Map 12-2 shows the PJA and the surrounding area.
Map 12-1
Port Everglades Location
C. Planning Horizons. The short-term (5-year) planning horizon of the DPC is 2015, while the longer-term (10-year) planning horizon is 2019. The DPC projections, capital improvements program, and adopted Goals, Objectives, and Policies reflect these two planning horizons, incorporating the recommendations of the Port Everglades Master/Vision Plan, which also looks at the 20-year planning horizon of 2029.

D. Definitions. The following terms used in this DPC are defined as follows:

**Atlantic Intracoastal Waterway** - Navigable waterway between Maine and Key West, the use of which is regulated by Section 4, Rivers and Harbors Act of August 8, 1917. The U.S. Department of the Army, Jacksonville District, Corps of Engineers, and the U.S. Coast Guard, Seventh District are responsible for the enforcement of federal regulations in the Intracoastal Waterway from Fernandina to Key West, Florida.
**DEEPWATER PORT COMPONENT**

**Break-Bulk Cargo** - Ocean cargo that is not containerized, but is shipped in bagged, baled, or palletized units within the ship's hold. Port Everglades' current break-bulk cargo includes primarily steel/coils/rebar which may also be referred to as neo-bulk.

**Bulk Cargo** - Cargo stowed loose in the hold of a ship and not enclosed in any container such as boxes, bales, bags, or casks. This may include free-flowing cargo such as oil, grain, coal, or ore that can be pumped, run through a chute, or handled by dumping. Port Everglades’ bulk cargo includes liquid bulk commodities, such as petroleum, and dry bulk commodities, such as cement and crushed rock.

**Bunker** - A compartment for storing fuel or potable water below the decks of a vessel.

**Bunkering** - Loading fuel or potable water into a ship's bunker for the ship’s own use, as distinguished from loading it as cargo.

**Coastal High-Hazard Area** - The Coastal High-Hazard Area is defined as the Category 1 and 2 Hurricane Evacuation Zones, as shown on the “Flood Plains, Flood-Prone Areas and Coastal High-Hazard Areas” map in the Broward County Land Use Plan Map Series.

**Container** - A box for transporting cargo constructed to withstand transportation stresses, which allows for the intermodal movement among ships, railroads, and highway trucks.

**Container (Gantry) Crane** - A dockside crane, also called gantry crane, mounted on rails and designed to transfer containers to and from ships. Standard container cranes have a moveable boom that is stored in an up position when idle and is lowered into a horizontal position when in use. Low-profile container cranes usually have a horizontal boom that shuttles in and out over the ship, allowing for a structure of minimum height.

**Containerized Cargo** - Cargo that is carried in containers.

**Container-on-flat-car (COFC)** - A container mounted directly to a specially designed railroad flat car.

**Daily Cruise** - A cruise that embarks and disembarks from the same port within a twenty-four hour period. Port Everglades' daily cruises are associated with one-day and one-night trips, with destinations that include Freeport, Bahamas as well as cruises-to-nowhere. Daily cruise ships may include multiple embarkations within a single day.

**Deepwater Port** - Port listed in Sections 403.021(9) and 311.09(1), FS.

**Development of Regional Impact** - Any development that, because of its character, magnitude, or location, would have a substantial effect on the health, safety, or welfare of citizens of more than one county. Developments in Broward County, which exceed threshold standards in Chapter 380, FS must prepare an Application for Development Approval to be coordinated by the South Florida Regional Planning Council and adopted by the affected local government.

**Florida Seaport Transportation and Economic Development (FSTED) Program** - A funding program created by state statute to finance port facility projects that improve the movement and intermodal transportation of cargo and cruise passengers.
Foreign Trade Zone - A site in or near a U.S. Customs port-of-entry where all merchandise is considered to be in international commerce, outside U.S. Customs territory, and duties on merchandise can be deferred, reduced, or in some cases eliminated. Port Everglades is designated as Foreign-Trade Zone #25.

Hurricane Vulnerability Zone - The areas (hurricane evacuation areas and mobile home parks) delineated by the regional or local evacuation plan as requiring evacuation.

Home Port - A port that is utilized by a passenger or cargo vessel as its operational base.

In-Water Facility - In-water facilities serving waterborne commerce include ship berths, bulkheads, wharfs, piers, harbors, turning basins, and navigable channels.

Intermodal Container Transfer Facility (ICTF) - A rail yard that facilitates the transfer of cargo containers between ships, highway trucks, and railroad cars.

Lay-In - To berth in a harbor or port for the purpose of storage or repairs, but not to transfer cargo; also, the name of the berth.

Lift-on/Lift-off (Lo/Lo) - Containers and cargo lifted on and off ships by cranes.

Low-profile Container Crane - A container crane specially designed to meet specific height restrictions. Low-profile container cranes usually have a horizontal boom that shuttles in and out over the ship, allowing for a structure of minimum height.

Mobile Harbor Crane -- A crane mounted on a rubber-tired chassis that can handle all types of cargo and move easily between locations to provide operational flexibility.

Multi-day Cruise - A cruise that embarks and disembarks from the same port for more than one day at sea and that may include several ports-of-call. Cruise lines that serve Port Everglades offer 3- or 4- night to 144-night cruises, including Caribbean, trans-Panama Canal, trans-Atlantic, trans-Pacific, and world cruises.

Neo-bulk Cargo - Akin to break-bulk cargo, neo-bulk encompasses units of a single commodity, such as vehicles, lumber, or scrap metal.

Panamax Ship - A ship with a maximum width (beam) of 106 feet, a length of 965 feet, and a depth of -39.5 feet which is designed to pass through the existing Panama Canal locks.

Port Jurisdictional Area (PJA) - The Port Everglades PJA is defined by Chapter 59-1157, Laws of Florida, as amended.

Port-of-call - A port at which a vessel stops as part of an itinerary.

Port Tariff - A document, such as that adopted by the Board of County Commissioners and filed with the Federal Maritime Commission, which describes port facilities, establishes rules and regulations governing the use of port facilities, and sets fees for dockage, wharfage, terminal storage, gantry cranes, container yards, and port services.

Post-Panamax Ship - A ship with a beam greater than 106 feet which is too wide to pass through the current Panama Canal locks.

Project Depth - The maintained depth of navigable waters, as determined by the U.S.
**Army Corps of Engineers.**

**Roll-on/Roll-off (Ro/Ro)** - Containers and cargo rolled or driven on and off a ship.

**Stevedore** - A person or firm employed to load and unload ships; also known as a longshoreman.

**Strategic Intermodal System (SIS)** - Florida’s statewide transportation system designed to guide strategic investments linked to the state’s future economy. The SIS consists of Florida’s high priority roads, rail, waterways, deepwater ports, and commercial airports.

**Super-Post-Panamax** - The generation of cargo ships designed to pass through the new Panama Canal locks to be completed in 2014. These ships, which can carry 12,000 TEUs, can have a beam of 160.7 feet, a length of 1,200 feet, and a depth of -49.8 feet.

**Stick Crane** - A mobile landside crane, normally mounted on a truck chassis, used to load and unload cargo ships.

**Twenty-foot Equivalent Unit (TEU)** - A twenty-foot long shipping container, a standard shipping container size, often used to measure port capacity and performance.

**Throughput** - The number of containers, waterborne tonnage, or passengers that pass through a port during a given period.

**Trailer-on-flat-car (TOFC)** - A railroad flat car used to transport highway cargo trailers.

**Wharf** - A structure built on the shore of a harbor to berth ships; when extending along the shoreline, it is known as a marginal wharf; when extending into deep water, it is also known as a pier.

### E. Abbreviations

The following abbreviations are used in this DPC:

- **ACOE** United States Army Corps of Engineers
- **APM** Automated People Mover
- **BCAD** Broward County Aviation Department
- **BCEP&GMD** Broward County Environmental Protection and Growth Management Department
- **CBP** U.S. Customs and Border Protection
- **COFC** Container-on-flat-car
- **FAC** Florida Administrative Code
- **FDEP** Florida Department of Environmental Protection
- **FDOT** Florida Department of Transportation
- **FEC** Florida East Coast Railway
- **FEMA** Federal Emergency Management Agency
- **FLL** Fort Lauderdale-Hollywood International Airport
- **FPL** Florida Power & Light Company
- **FIHS** Florida Intrastate Highway System
- **FS** Florida Statutes
- **FSTED** Florida Seaport Transportation and Economic Development Program
- **FTZ** Foreign-Trade Zone
II. DATA REQUIREMENTS

The data requirements include inventories of existing land uses, natural resources, areas subject to coastal flooding, historic resources and sites, estuarine pollution sources, beach and dune systems, and infrastructure. This section also addresses natural disaster planning issues and deepwater port factors.

A Inventories of Existing Land Use. This section includes inventories of existing land uses, shoreline uses, water-dependent and water-related uses, and areas in need of redevelopment.

1. General description. Port Everglades contains three distinct areas, referred to as Northport, Midport, and Southport, which are illustrated on Map 12-3. The current uses in each of these areas are as follows:

   **Northport**, located approximately between 17th Street and SE 26 Street, accommodates cruise ships and petroleum tankers as well as break-bulk/neo-bulk, and dry bulk ships. The Broward County Convention Center, which is part of an approved Development of Regional Impact (DRI) that includes a proposed hotel complex and ancillary facilities, is located at Northport. In addition, Northport contains a Port-owned parking garage.

   **Midport**, located approximately between Spangler Boulevard and the Southport Turning Notch, is the Port’s main cruise ship berthing area, but also accommodates liquid bulk (petroleum), dry bulk (cement), and break-bulk
terminals. Nine multi-day cruise terminals are located in Midport, together with another Port-owned parking garage, the Port Administration building, Florida Power & Light (FPL), the Foreign-Trade Zone building, and Public Safety and other buildings.

Southport, located approximately between the Turning Notch and the Dania Cut-Off Canal to the east and from Eller Drive to the Dania Cut-Off anal to the west, is Port Everglades' primary container facility, accommodating both roll/on and roll/off (Ro/Ro) and lift/on and lift/off (Lo/Lo) cargo operations. Southport is the area that has experienced most of the Port's containerized cargo growth and will be the site of a proposed near-dock intermodal container transfer facility (ICTF) to move containerized cargo directly from ship to rail car.

2. **Inventory of existing land use coverage.** Map 12-4 identifies the various Port-related uses in the PJA while Table 12-1 provides an inventory of the existing land uses. The predominant existing land uses are preservation/recreation/water (635 acres or 29.0 percent), petroleum storage (339 acres or 15.5 percent), container areas (348 acres or 15.9 percent), and office/commercial (108 acres or 4.9 percent). Other significant uses in the PJA include FPL's Fort Lauderdale power plant, located on 44 acres in Midport and an easement on the western edge of Southport.

Several DRIs, adopted pursuant to Chapter 380, FS, are located in the PJA, as illustrated on Map 12-5. These include the Port Everglades Petroleum Terminal DRI, and the Mobil Oil DRI. The Northport DRI, which relates to the construction of a proposed hotel and ancillary facilities adjacent to the Convention Center, received a three-year extension in March 2009. The previously pending Amoco Oil DRI has been withdrawn and the Hollywood Harbor DRI has been abandoned. Adjacent to the Port is the Fort Lauderdale-Hollywood International Airport (FLL) DRI.
Map 12-4
Existing Land Uses - Port Jurisdictional Area
## Table 12-1
### Existing Land Uses - Port Jurisdictional Area

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acres</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Cruise Area</td>
<td>92</td>
<td>4.2</td>
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<tr>
<td>Convention Center</td>
<td>31</td>
<td>1.4</td>
</tr>
<tr>
<td>Container Yard</td>
<td>348</td>
<td>15.9</td>
</tr>
<tr>
<td>Liquid Bulk/Petroleum</td>
<td>339</td>
<td>15.5</td>
</tr>
<tr>
<td>Dry Bulk/Cement</td>
<td>12</td>
<td>0.6</td>
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<tr>
<td>General Cargo Area (Break-bulk)</td>
<td>16</td>
<td>0.7</td>
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<tr>
<td>Commercial</td>
<td>67</td>
<td>3.1</td>
</tr>
<tr>
<td>Florida Power and Light</td>
<td>44</td>
<td>2.0</td>
</tr>
<tr>
<td>Office</td>
<td>41</td>
<td>1.9</td>
</tr>
<tr>
<td>Conservation Area</td>
<td>57</td>
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<tr>
<td>Preservation/recreation/water</td>
<td>635</td>
<td>29.0</td>
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<td>Warehousing</td>
<td>44</td>
<td>2.0</td>
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<tr>
<td>Vacant Land</td>
<td>112</td>
<td>5.1</td>
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<tr>
<td>Transportation</td>
<td>200</td>
<td>9.1</td>
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<tr>
<td>Other</td>
<td>152</td>
<td>6.9</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>2,190</strong></td>
<td><strong>100.0</strong></td>
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Source: Master/Vision Plan analyses
Map 12-5
Developments of Regional Impact
Map 12-6 shows the existing grid and lease land uses for Port-owned land. The PED has 519 acres available for leasing as well as 400,000 square feet of warehouse space and 100,000 square feet of office space. The Port-owned twelve cruise terminals have 557,582 square feet of passenger-processing and baggage-handling areas.

3. **Inventory of shoreline uses.** Shoreline uses in the PJA include the following:

   - Transportation uses (the Port’s primary 35 berths used for cargo and cruise operations plus other smaller berths for lay-in and other uses).
   - Institutional uses (the U.S. Naval Surface Weapons Center, the U.S. Coast Guard Station, the Environmental Education Facility, and the Nova Southeastern University Oceanographic Center).
   - Recreational uses (a portion of the John U. Lloyd Beach State Recreation Area, 251 acres of barrier island between the Atlantic Ocean and the Intracoastal Waterway, from Port Everglades on the north to Dania Beach on the south).

Map 12-7 shows the locations of the Port’s primary 35 berths and Table 12-2 identifies the length, depth, and use of each berth. The other shoreline uses are shown previously on Map 12-3.

4. **Inventory of water-dependent and water-related uses.** Water-dependent uses are activities that can be carried out only on, or adjacent to, water areas because the use requires access to the water body. The water-dependent uses in the PJA include the Port’s cargo and cruise berths, the Florida Marine Patrol facility located adjacent to the FPL Discharge Canal, and the above-mentioned U.S. Coast Guard, U.S. Navy, and Nova Southeastern University facilities on the John U. Lloyd Beach State Recreation Area. These uses are also identified on Map 12-3.

Water-related uses are activities that are not directly dependent on access to a water body, but that provide goods and services directly associated with water-dependent or waterway uses. These include the Port’s Foreign-Trade Zone, petroleum storage tanks, offices and warehouses, institutional facilities, and parking garages.

5. **Areas in need of redevelopment.** Table 12-3 identifies all the Port-owned buildings by building number, indicating the year built, address, port use, floor area in square feet, and existing use for each building. These buildings are generally in good condition; however, as noted on Table 12-8 in Part III, improvements to Cruise Terminals 2, 4, 19, 21, and 26 are identified in the Port Master Plan along with parking garage improvements. (Map 12-3 includes the numbers of the main buildings referenced on Table 12-3.)
Map 12-7
Port Berth Locations
## Table 12-2
Existing Berth Inventory*

<table>
<thead>
<tr>
<th>Berth Number</th>
<th>Length (In feet)</th>
<th>Depth (In feet mean low water)</th>
<th>Berth Usage</th>
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<tr>
<td><strong>NORTHPORT</strong></td>
<td></td>
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<tr>
<td>1A</td>
<td>180</td>
<td>12</td>
<td>Lay-in</td>
</tr>
<tr>
<td>1B</td>
<td>220</td>
<td>23</td>
<td>Lay-in</td>
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<td>1, 2, 3</td>
<td>1,601</td>
<td>31</td>
<td>Cruise/Occasional cargo/Navy</td>
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<td>4</td>
<td>9, 00</td>
<td>43</td>
<td>Cruise/Occasional cargo</td>
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<td>4A, 4B</td>
<td>290</td>
<td>43</td>
<td>Ro/Ro</td>
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<tr>
<td>5</td>
<td>900</td>
<td>43</td>
<td>General cargo/Petroleum tanker</td>
</tr>
<tr>
<td>6</td>
<td>380</td>
<td>38</td>
<td>Lay-in</td>
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<tr>
<td>7, 8</td>
<td>1,200</td>
<td>38</td>
<td>Petroleum tanker</td>
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<td>8A, 9A</td>
<td>300</td>
<td>38</td>
<td>Miscellaneous</td>
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<td>9, 10</td>
<td>1,200</td>
<td>38</td>
<td>Petroleum tanker</td>
</tr>
<tr>
<td>11</td>
<td>500</td>
<td>38</td>
<td>Barge</td>
</tr>
<tr>
<td>12A, 13A</td>
<td>300</td>
<td>38</td>
<td>Miscellaneous</td>
</tr>
<tr>
<td>12, 13</td>
<td>1,226</td>
<td>38</td>
<td>Petroleum tanker</td>
</tr>
<tr>
<td><strong>MIDPORT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14, 15</td>
<td>1,226</td>
<td>38</td>
<td>Cement/Other cargo</td>
</tr>
<tr>
<td>16, 17, 18</td>
<td>1,648</td>
<td>38</td>
<td>Cruise (Oasis -class)/Cargo (weekdays)</td>
</tr>
<tr>
<td>19, 20</td>
<td>1,300</td>
<td>38</td>
<td>Cruise/ Cargo/Navy</td>
</tr>
<tr>
<td>21, 22</td>
<td>1,475</td>
<td>38</td>
<td>Cruise/Cargo/Navy</td>
</tr>
<tr>
<td>23</td>
<td>240</td>
<td>38</td>
<td>Miscellaneous</td>
</tr>
<tr>
<td>24, 25</td>
<td>1,369</td>
<td>40</td>
<td>Cruise</td>
</tr>
<tr>
<td>26, 27</td>
<td>1,337</td>
<td>40</td>
<td>Cruise</td>
</tr>
<tr>
<td>28A</td>
<td>480</td>
<td>27</td>
<td>Tug</td>
</tr>
<tr>
<td>28B</td>
<td>275</td>
<td>27</td>
<td>Lay-in</td>
</tr>
<tr>
<td>28C</td>
<td>350</td>
<td>27</td>
<td>Lay-in</td>
</tr>
<tr>
<td>28D</td>
<td>350</td>
<td>27</td>
<td>Lay-in</td>
</tr>
<tr>
<td>28E</td>
<td>275</td>
<td>27</td>
<td>Lay-in</td>
</tr>
<tr>
<td>28F</td>
<td>400</td>
<td>27</td>
<td>Containerized cargo/Other cargo</td>
</tr>
<tr>
<td>29</td>
<td>800</td>
<td>40</td>
<td>Containerized cargo/Cruise</td>
</tr>
<tr>
<td><strong>SOUTHPORT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>900</td>
<td>44</td>
<td>Containerized Cargo</td>
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<tr>
<td>31, 32</td>
<td>2,000</td>
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<tr>
<td>33A</td>
<td>800</td>
<td>44</td>
<td>Containerized Cargo</td>
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<tr>
<td>33B</td>
<td>400</td>
<td>44</td>
<td>Containerized Cargo (Ro/Ro)</td>
</tr>
<tr>
<td>33C</td>
<td>400</td>
<td>44</td>
<td>Containerized Cargo (Ro/Ro)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25,222</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: [http://www.pepilots.com/navigation.htm](http://www.pepilots.com/navigation.htm)

* For current depths, please consult pilots’ website.
## Table 12-3
**Existing Building Inventory**

<table>
<thead>
<tr>
<th>Location/Description</th>
<th>Address</th>
<th>City</th>
<th>Yr Bld</th>
<th>Sq Ft</th>
<th>Existing use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal #18 (Bldg 18)</td>
<td>1901 SE 32 Street</td>
<td>Hollywood</td>
<td>1964</td>
<td>259,370</td>
<td>Cruise terminal</td>
</tr>
<tr>
<td>Northport Parking Garage</td>
<td>1901 Eisenhower Blvd</td>
<td>Ft Lauderdale</td>
<td>1994</td>
<td>146,700</td>
<td>Parking garage</td>
</tr>
<tr>
<td>Midport Garage &amp; Ops (Bldg 20)</td>
<td>2020 Eller Drive</td>
<td>Hollywood</td>
<td>1994</td>
<td>715,897</td>
<td>Parking garage</td>
</tr>
<tr>
<td>Terminal (Bldg 21)</td>
<td>2021 Eller Drive</td>
<td>Hollywood</td>
<td>1967</td>
<td>138,700</td>
<td>Cruise terminal</td>
</tr>
<tr>
<td>Warehouse/Terminal (Bldg 29)</td>
<td>2200 SE 35 Street</td>
<td>Hollywood</td>
<td>1991</td>
<td>80,200</td>
<td>Cruise terminal/whse</td>
</tr>
<tr>
<td>Administration Building</td>
<td>1850 Eller Drive</td>
<td>Ft Lauderdale</td>
<td>1987</td>
<td>81,700</td>
<td>Office</td>
</tr>
<tr>
<td>Warehouse/terminal (Bldg 2)</td>
<td>1801 SE 18 Street</td>
<td>Ft Lauderdale</td>
<td>1957</td>
<td>85,504</td>
<td>Cruise terminal/whse</td>
</tr>
<tr>
<td>Terminal (Bldg 25)</td>
<td>2025 Eller Drive</td>
<td>Hollywood</td>
<td>1987</td>
<td>86,000</td>
<td>Cruise terminal</td>
</tr>
<tr>
<td>Warehouse/terminal (Bldg 26)</td>
<td>2026 Eller Drive</td>
<td>Hollywood</td>
<td>1987</td>
<td>115,518</td>
<td>Cruise terminal</td>
</tr>
<tr>
<td>Warehouse (Bldg 81)</td>
<td>3501 Mcintosh Rd</td>
<td>Hollywood</td>
<td>2001</td>
<td>81,858</td>
<td>Warehouses/offices</td>
</tr>
<tr>
<td>Foreign Trade Zone Warehouse (Bldg A)</td>
<td>3500 Block Mcintosh Rd</td>
<td>Hollywood</td>
<td>1977</td>
<td>204,659</td>
<td>Warehouses/offices</td>
</tr>
<tr>
<td>Warehouse/terminal (Bldg 19)</td>
<td>2019 Eller Drive</td>
<td>Hollywood</td>
<td>1966</td>
<td>95,000</td>
<td>Cruise terminal/whse</td>
</tr>
<tr>
<td>Terminal (Bldg 4)</td>
<td>1800 SE 20 Street</td>
<td>Ft Lauderdale</td>
<td>1987</td>
<td>100,405</td>
<td>Cruise terminal/whse</td>
</tr>
<tr>
<td>Warehouse/terminal (Bldg 1)</td>
<td>1800 SE 18 Street</td>
<td>Ft Lauderdale</td>
<td>1958</td>
<td>75,778</td>
<td>Cruise terminal/whse</td>
</tr>
<tr>
<td>Maintenance Facility Bldg (Bldg 187)</td>
<td>2101 Eisenhower Blvd</td>
<td>Ft Lauderdale</td>
<td>1990</td>
<td>13,850</td>
<td>Maintenance/Office</td>
</tr>
<tr>
<td>Terminal (Bldg 22/24)</td>
<td>2022/24 Eller Drive</td>
<td>Hollywood</td>
<td>1968</td>
<td>46,439</td>
<td>Cruise terminal</td>
</tr>
<tr>
<td>Offices &amp; Warehouses (Bldg 28)</td>
<td>2051 Se 35 Street</td>
<td>Hollywood</td>
<td>1966</td>
<td>37,049</td>
<td>Office</td>
</tr>
<tr>
<td>Public Safety Bldg &amp; Fire Station</td>
<td>1901 Eller Drive</td>
<td>Hollywood</td>
<td>1988</td>
<td>21,558</td>
<td>Fire station/Public Safety</td>
</tr>
<tr>
<td>Seabulk Bldg-Office (Bldg 27)</td>
<td>2200 Eller Drive</td>
<td>Hollywood</td>
<td>1989</td>
<td>38,758</td>
<td>Office</td>
</tr>
<tr>
<td>Crane Transformer Vault &amp; Maint Bldg</td>
<td>2050 SE 42 Street</td>
<td>Hollywood</td>
<td>1993</td>
<td>6,530</td>
<td></td>
</tr>
<tr>
<td>Foreign Trade Zone Warehouse (Bldg F)</td>
<td>3500 Block Mcintosh Rd</td>
<td>Hollywood</td>
<td>1988</td>
<td>92,231</td>
<td>Warehouse</td>
</tr>
<tr>
<td>Crowley Cargo Trans Admin Bldg (100)</td>
<td>4300 Mcintosh Road</td>
<td>Hollywood</td>
<td>1990</td>
<td>31,000</td>
<td>Office</td>
</tr>
<tr>
<td>Security Operations Ctr</td>
<td>1901 Eller Drive</td>
<td>Hollywood</td>
<td>2003</td>
<td>5,424</td>
<td>BSO Offices</td>
</tr>
<tr>
<td>Howard Amman Office Bldg (Bldg 611)</td>
<td>2550 Eisenhower Blvd</td>
<td>Ft Lauderdale</td>
<td>1964</td>
<td>20,346</td>
<td>Office</td>
</tr>
<tr>
<td>Foreign Trade Zone Warehouse (Bldg E)</td>
<td>3506 Block Mcintosh Rd</td>
<td>Hollywood</td>
<td>1982</td>
<td>59,675</td>
<td>Warehouse</td>
</tr>
<tr>
<td>Crowley Cargo Maintenance(#110)</td>
<td>4300 SE 18 Avenue</td>
<td>Hollywood</td>
<td>1990</td>
<td>7,500</td>
<td>Maintenance facility</td>
</tr>
<tr>
<td>Foreign Trade Zone Warehouse (Bldg B)</td>
<td>3500 Block Mcintosh Rd</td>
<td>Hollywood</td>
<td>1977</td>
<td>23,830</td>
<td>Warehouse</td>
</tr>
<tr>
<td>APM Terminal Cargo Yard Buildings</td>
<td>4000 Mcintosh Rd</td>
<td>Hollywood</td>
<td>2005</td>
<td>0</td>
<td>Office</td>
</tr>
<tr>
<td>Offices (Bldg Otd)</td>
<td>2049 SE 35 Street</td>
<td>Hollywood</td>
<td>N/A</td>
<td>14,280</td>
<td>Office</td>
</tr>
<tr>
<td>Crowley Cargo Maritime Ops(#100)</td>
<td>4500 SE 20 Avenue</td>
<td>Hollywood</td>
<td>1990</td>
<td>35,610</td>
<td>Office</td>
</tr>
<tr>
<td>Plumbers Shop (Bldg 64)</td>
<td>1500 SE 24 Street</td>
<td>Hollywood</td>
<td>1960</td>
<td>9,559</td>
<td>Maintenance facility</td>
</tr>
<tr>
<td>Warehouse (Bldg 6)</td>
<td>1900 SE 23 Street</td>
<td>Ft Lauderdale</td>
<td>1960</td>
<td>15,970</td>
<td>Warehouse</td>
</tr>
<tr>
<td>Utility Building (Bldg 21a)</td>
<td>2021a Eller Drive</td>
<td>Hollywood</td>
<td>1967</td>
<td>1,600</td>
<td></td>
</tr>
<tr>
<td>Crowley Cargo Produce Insp(#113)</td>
<td>4230 Mcintosh Rd</td>
<td>Hollywood</td>
<td>1990</td>
<td>2,200</td>
<td>Produce Inspection</td>
</tr>
<tr>
<td>Foreign Trade Zone Fire Pump Bldg (D)</td>
<td>3500 Block Mcintosh Rd</td>
<td>Hollywood</td>
<td>1977</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Southport Phase IV &quot;FPL&quot; Vault(Sp)</td>
<td></td>
<td>Hollywood</td>
<td>1967</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Linehandler Building</td>
<td>3510 SE 19 Avenue</td>
<td>Hollywood</td>
<td>1993</td>
<td>11,779</td>
<td>Office</td>
</tr>
<tr>
<td>Public Works Storage/Maint. (Bldg 68)</td>
<td>1601 SE 22 Street</td>
<td>Ft Lauderdale</td>
<td>1960</td>
<td>7,800</td>
<td>Maint./Storage whse</td>
</tr>
<tr>
<td>Crowley Cargo Guard House (#114)</td>
<td>4190 Mcintosh Rd</td>
<td>Hollywood</td>
<td>1990</td>
<td>0</td>
<td>Guard house</td>
</tr>
<tr>
<td>Public Works (Bldg 67)</td>
<td>1651 SE 22 Street</td>
<td>Hollywood</td>
<td>1979</td>
<td>6,451</td>
<td>Maint./Storage whse</td>
</tr>
<tr>
<td>Public Works (Bldg 69)</td>
<td>1501 SE 22 Street</td>
<td>Ft Lauderdale</td>
<td>1960</td>
<td>4,560</td>
<td>Maint./Storage whse</td>
</tr>
<tr>
<td>W/R (Bldg 612)</td>
<td>1451 SE 22 Street</td>
<td>Ft Lauderdale</td>
<td>1964</td>
<td>3,081</td>
<td>Maint./Storage whse</td>
</tr>
</tbody>
</table>
Table 12-3 (Continued)

<table>
<thead>
<tr>
<th>Location/Description</th>
<th>Address</th>
<th>City</th>
<th>Yr Blt</th>
<th>Sq Ft</th>
<th>Existing use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building 65</td>
<td>1300 SE 26 Street</td>
<td>Hollywood</td>
<td>1960</td>
<td>3,637</td>
<td>Office/warehouse</td>
</tr>
<tr>
<td>Transformer Vault (Bldg 28a)</td>
<td>2028a Eller Drive</td>
<td>Hollywood</td>
<td>1977</td>
<td>9,072</td>
<td>FPL Transformer Vault</td>
</tr>
<tr>
<td>W/R Continental Cement (Bldg 613)</td>
<td>2800 Eisenhower Blvd</td>
<td>Ft Lauderdale</td>
<td>1985</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Public Works Welding Shed (Bldg 66)</td>
<td>2101 Eisenhower Blvd</td>
<td>Ft Lauderdale</td>
<td>1990</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>Single wide trailer - GFC - SE 28th St.</td>
<td>Eller Drive</td>
<td>Ft Lauderdale</td>
<td>N/A</td>
<td>0</td>
<td>Office</td>
</tr>
<tr>
<td>Railroad Scale House (Bldg 66b)</td>
<td>1501 SE 24 Street</td>
<td>Ft Lauderdale</td>
<td>1962</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Transformer Vault (Bldgs 34, 48, 55)</td>
<td>1501 SE 24 Street</td>
<td>Ft Lauderdale</td>
<td>1967</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Rest Rooms (Bldgs 11 and 12)</td>
<td>1501 SE 24 Street</td>
<td>Ft Lauderdale</td>
<td>1999</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Building 46/47 (CVB)</td>
<td>1850 Eisenhower Blvd</td>
<td>Ft Lauderdale</td>
<td>1984</td>
<td>41,649</td>
<td></td>
</tr>
<tr>
<td>U.S. Customs House</td>
<td>1580 SE 24th Street</td>
<td>Hollywood</td>
<td>1939</td>
<td>5,472</td>
<td>Office</td>
</tr>
<tr>
<td>Foreign Trade Zone (Bldg C)</td>
<td>3400 Mcintosh Rd</td>
<td>Hollywood</td>
<td>1987</td>
<td>1,200</td>
<td>Office</td>
</tr>
<tr>
<td>Source: Port Everglades Department 2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Inventories of Natural Resources. This section includes inventories of vegetative cover, wetlands, wildlife habitats, living marine resources, and other local natural resources.

1. **Vegetative cover, wetlands, and wildlife habitats.** Map 12-8 shows the locations in the PJA of existing vegetative cover associated with mangrove forest concentrations. This cover includes a mature mangrove stand to the west and north of the Southport Turning Notch. This area is encumbered by a 57-acre Conservation Easement issued to the Florida Department of Environmental Protection (FDEP).

As discussed in Part III, the Port has obtained FDEP approval to initiate procedures for the eventual release of 8.7 acres of the easement for the Southport Turning Notch expansion, which is included in the 5-Year Master Plan. Also included in the 5-Year Master Plan is the creation of approximately 16.5 acres of mangrove wetlands in uplands adjacent to the Notch to replace the 8.7-acre easement being released. Several other mangrove concentrations in the PJA are shown on Map 12-8. In addition, port entrances, roadways, office buildings, passenger terminals, and parking facilities are landscaped with native and ornamental plant species.

**Listed species.** Portions of the PJA serve as habitat for various listed species. The following have been reported in the Port Everglades area (see Figure 1.12-4 in Element 1 of the Port Everglades Master/Vision Plan):

- West Indian manatee (*Trichechus manatus*).
- Johnson’s seagrass (*Halophila johnsonii*).
- Three species of sea turtles—loggerhead (*Caretta caretta*), green (*Chelonia mydas*), and leatherback (*Dermochelys coriacea*).
- Wood stork (*Mycteria americana*).
- Small-toothed sawfish (*Pristis pectinata*).
- Brown pelican (Pelecanus occidentalis).
- Least tern (Sterna antillarum).
- Peregrine falcon (Falco perigrinus).
- White ibis (Eudocimus albus).
- Elkhorn coral (Acropora palmata).
- Staghorn coral (Acropora cervicornis).
The waters surrounding Port Everglades also serve as habitat for the West Indian manatee, a federally listed endangered species. Port Everglades, designated as a manatee sanctuary by state statutes, is one of about two dozen manatee wintering sites designated as manatee protection zones. Manatees congregate in the vicinity of the Port at locations such as the FPL Discharge Canal and Intracoastal Waterway next to the Conservation Easement. Manatees also visit portions of West Lake Park south of the Port property.

The beach and dune areas of John U. Lloyd Beach State Recreation Area serve as sea turtle nesting areas. The locations of these wildlife habitats in the PJA are shown on Map 12-8; however, not all of these areas have been designated as critical habitat for these species under federal or state regulations.

Wildlife habitat. In addition to listed species such as manatees and sea turtles, the waters and lands in and around Port Everglades provide habitat for a variety of other plant and animal wildlife. Numerous species of mammals, fish, and birds take refuge in the mangroves, canals, and trees that surround the Port. The waters to the south of the Port, including the waters bordering West Lake Park and the Dania Cut-Off Canal, are considered essential fish habitat under the Magnuson-Stevens Fishery Conservation and Management Act of 2002 (67 FR 2343).

2. Living marine resources. Portions of the PJA support live corals and seagrasses, in addition to providing shelter for fish, invertebrates, and other juvenile marine organisms. Marine game fish such as snook, tarpon, barracuda, and jacks also share the coastal habitat; however, land-based fishing is not permitted on Port property in the PJA.

Coral. The Outer Entrance Channel, which leads into Port Everglades from the Atlantic Ocean, acts as habitat for coral species such as Siderastrea siderea and Stephanocenia intersepta. The hard-bottom areas further off shore exhibit live growth, with turf algae being the most dominant, followed by macro-algae, sponges, octocorals, scleractinians, zonathids, and tunicates. This marine habitat is regulated by federal, state, and county environmental protection agencies. In addition, two Acropora coral species were listed in 2006 as threatened under the federal Endangered Species Act and critical habitat was designated in 2008 along the outer edge of the Port’s Entrance Channel.

Benthic assessments performed in September 2007 directly north of Port Everglades included an assessment for the presence of Acropora coral colonies at 20 different locations. These included sites along the northern border of the Port’s Entrance Channel. The study documented live Acropora coral colonies at three of the twenty sites surveyed. The colonies were located in the northwest portion of the study area, about 0.25 miles northwest of the Entrance Channel. In addition, hard-bottom habitat assessments performed at Port Everglades documented high coverages of turf algae and less than 1 percent live coverage for other species of coral (see Section 1.12.7 of Element 1 of the Port Everglades Master/Vision Plan for more details).

Seagrasses. Though limited, areas in the waters surrounding Port Everglades provide habitat for a variety of seagrasses, including the endangered marine plant,
Halophila johnsonni (Johnson’s grass) (see Figure 6.2-8 of Element 6 in the Port Everglades Master/Vision Plan).

3. Other natural resources. The mangrove areas shown in Map 12-8 are the locations of Local Areas of Particular Concern (LAPC) designated by Broward County in the PJA. LAPCs are environmentally sensitive lands containing native vegetative communities. Prior to final permit approval for any proposed development that may affect or include land designated as a LAPC, the Broward County Land Development Code requires the preparation of an environmental impact statement. Should a proposed development negatively impact the resource, appropriate mitigation will be required.

C. Areas Subject to Coastal Flooding. The "Flood Plains, Flood-Prone Areas, and Coastal High-Hazard Area" map of the Broward County Land Use Plan Map Series shows the areas in the PJA that are subject to coastal flooding. As indicated by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (12011CO307F and 12011CO219F), most of the PJA is located in Flood Zone AE. An area of Midport around the intersection of Eller Drive and Eisenhower Boulevard is in Zone X (outside the 500-year flood plain); a second Midport area, east of Eisenhower Boulevard and centered on Spangler Boulevard is in Zone VE. In addition, the beach and dune portion of the PJA, located in John U. Lloyd Beach State Recreation Area, is designated Flood Zone VE.

D. Inventory of Historic Resources. The term “historic resources” refers to all areas, districts or sites containing properties listed on the Florida Master Site File, the National Register of Historic Places, or designated by a local government as historically, architecturally, or archaeologically significant. The former U.S. Customs House, located at the southwest corner of Spangler Drive and Eisenhower Boulevard, is listed in the Florida State Master Site File (Site BD00210).

E. Estuarine Pollution Sources. Potential sources of pollution in the PJA include stormwater outfalls maintained by the PED, petroleum piers that may leak historical petroleum contamination into the harbor if breached, the petroleum storage tank areas and connecting pipelines, and the Florida Marine Patrol boat storage and repair facility. No marine vessel is totally leak-free. Residual pollution may occasionally be traced to ships that illegally discharge bilge water or spill petroleum products into the Port's berth and harbor area.

Several other land uses in or adjacent to the PJA, such as the U.S. Naval Surface Weapons Center, the Nova Southeastern University Oceanographic Center, the U.S. Coast Guard Station, and the residential area along the north side of the Port’s Entrance Channel may contribute to the existing sources of pollution. In addition to activities occurring on the Port, water from areas to the north, west, and south pass through the harbor. As such, these waters may contain stormwater generated from associated roadways, parking lots, marinas, and residential areas located outside of the PJA. These sources of discharges have not been identified with regard to any impact on the water quality in the PJA.

F. Natural Disaster Planning Issues. This section addresses hurricane evacuation planning and post-disaster redevelopment planning as they pertain to the PJA. The Natural Disaster Component of the Coastal Management Element provides general natural disaster planning information.
1. **Hurricane evacuation planning.** This subsection addresses the areas in the PJA requiring evacuation, the number of persons requiring evacuation, the transportation routes and constraints on evacuation routes, and the time needed to evacuate during a 100-year storm event or a Category 3 storm event.

   a. **Hurricane vulnerability zone.** The Hurricane Vulnerability Zone comprises the areas the regional or local hurricane evacuation plan delineates as requiring evacuation. It includes areas requiring evacuation in the event of a 100-year storm or a Category 3 storm event. According to the Natural Disaster Component of the Coastal Management Element, Broward County Comprehensive Plan, the entire PJA is located in the Hurricane Vulnerability Zone.

   b. **Number of persons requiring evacuation, hurricane shelter and shelter spaces available.** There are no residential areas in the PJA. Thus, there are no persons requiring an evacuation shelter. Port personnel, such as employees of Public Works, Public Safety, Administration, and other divisions of the PED, must evacuate following the securing of the premises in accordance with the Port Everglades Hurricane Procedure & General Disaster Plan & Continuity of Operations Manual, revised April 20, 2011. Essential Port personnel are required to remain on standby at their homes during a storm event, while Public Safety personnel coordinate operations at the Broward County Emergency Operations Center in accordance with the Broward County Emergency Operations Plan and the above-referenced Port Everglades Hurricane Procedure & General Disaster Plan & Continuity of Operations Manual.

   c. **Evacuation routes, transportation, and hazard constraints.** Evacuation routes are those routes designated by county civil defense authorities or the regional evacuation plan for the movement of persons to safety in the event of a hurricane. Eller Drive, which directly connects the Port with the Florida Intrastate Highway System (FIHS), serves as the primary evacuation route in the PJA. The eastern terminus of I-595 begins at Eller Drive, providing direct access to I-95, I-75, and Florida’s Turnpike. The secondary evacuation route is Spangler Drive/SR 84, which connects with U.S. 1 and I-95.

   The primary transportation constraint on evacuation routes is the volume-to-capacity ratio on the internal and external roadway system; the widening of Eller Drive has helped reduce this constraint on the internal system. The primary hazard constraints on the primary and secondary evacuation routes are the rate and height of flooding caused by the storm tides associated with hurricane storm events.

   d. **Evacuation times.** Port personnel are to be evacuated prior to the attainment of flood stage. It is estimated that the securing of Port facilities will be completed at least 12 hours prior to projected landfall. In addition, the Harbormaster will strongly advise and recommend that all vessels in port leave well in advance of the approaching hurricane; however, the decision to remain in port or ride out the hurricane at sea rests with a vessel's master. Vessels
remaining in port must comply with the U.S. Coast Guard's requirements, as listed in their *Hurricane and Natural Disaster Plan*. Requests for berths approximately 24 hours prior to the hurricane's anticipated arrival are handled on a case-by-case basis.

2. **Post-disaster redevelopment.** Port Everglades provides essential transportation and cargo storage/distribution services to the South Florida region and serves as a primary facility for the collection, storage, and distribution of materials necessary for regional post-disaster redevelopment following a major storm event. It is expected that any damaged port facilities will be rapidly reconstructed to conditions that existed prior to the hurricane.

   a. **Existing and proposed uses in coastal high-hazard areas.** The Coastal High-Hazard Area refers to the evacuation zone for a Category 1/2 hurricane. According to the “Flood Plains, Flood-Prone Areas and Coastal High-Hazard Area” Map in the Broward County Plan Use Plan Map Series, all existing and proposed uses in the PJA would be affected by a Category 1 or 2 storm event, requiring implementation of the *Port Everglades Hurricane Procedure & General Disaster Plan & Continuity of Operations Manual* upon the issuance of a hurricane watch by the National Hurricane Center and the Broward County Emergency Management Division.

   b. **Structures with a history of repeated damage.** No structures in the PJA with a history of repeated damage have been identified.

   c. **Inventory of infrastructure in Coastal High-Hazard Area.** All Port uses and infrastructure shown on Map 12-3 are located in the Coastal High-Hazard Area.

G. **Inventory of Beach and Dune Systems.** The John U. Lloyd Beach State Recreation Area includes an approximately 150-foot-wide beachfront with no well-formed dune structures. This broad, flat beach is popular for swimming and sunning. When driving on the beach was banned, sand dunes, anchored by sea oats and other rare beach plants, did, however, begin to reform. FDEP, together with the Natural Resources Planning and Management Division of the Broward County Environmental Protection and Growth Management Department (BCEP&GMD), are directly responsible for the maintenance of the beach areas in the PJA.

1. **Past trends in erosion and accretion.** Sand material has historically been accreting on the north side of the Port Everglades Entrance Channel jetties, with erosion occurring on the south side of the jetties. Sand also accumulates along the south side of the north jetty and a western section of the Entrance Channel.

2. **Shore protection structures.** Shore protection structures in the PJA include the concrete and steel bulkheads that form the ship berths and marginal wharfs, the riprap shoreline that protects the mangrove forest bordering the Southport Turning Notch, and the rock jetties that protect the Port Everglades Entrance Channel.

3. **Effects of shore protection structures.** The jetties lining the Port’s Entrance Channel are composed of large boulders that help maintain channel project depth. Due to
the prevailing southerly littoral current, sand material is deposited on the north side of the jetties, with scouring occurring on the south side of the jetties. The riprap that lines the Southport Turning Notch prevents erosion in the adjacent mangrove forest by breaking the wave action from tides, winds, and passing ships; prevents flotsam and jetsam from collecting in the mangrove area; and provides additional habitat for aquatic species.

4. **Identification of existing and potential beach nourishment areas.** The beach area in the John U. Lloyd Beach State Recreation Area, located south of the Entrance Channel jetties, experiences historic erosion due to the location of the jetties and the effect of the southerly littoral current. This area continues to be a location for potential beach renourishment. For example, in recent years, a rock spur was built from the Port’s south jetty and two rock T-head groins were built just south of the jetty to accommodate beach fill. These structures serve to stabilize the beach at that very dynamic location without adverse down drift impacts. About 50,000 cubic yards of sand were removed from a shoal that was beginning to obstruct the navigation channel, and the material was placed on the beach at the park. Port Everglades, which once owned the northern portion of the John U. Lloyd Beach State Recreation Area, donated this land to the State of Florida; therefore, the PED does not maintain the beach areas in the PJA. The Natural Resources Planning and Management Division of the BCEP&GMD provides for beach nourishment together with the FDEP and the U.S. Army Corps of Engineers (ACOE). Historic dredging information indicates that maintenance dredging material from the Port Everglades Harbor and channels is not suitable for beach renourishment.

H. **Inventory of Public Access Facilities.** Since the events of September 11, 2001, public access to Port Everglades is restricted, based on state and federal statutes.

1. **Public access points.** The beaches in the PJA, which are located in the John U. Lloyd Beach State Recreation Area, are accessible by the public. These beaches have guarded swimming areas, public rest rooms and showers, picnic facilities, public dockage and boat ramps, and an Environmental Education Center, built by the Port to promote environmental awareness. As the Port is no longer an unrestricted open port, those wishing to access the Port must enter by one of four security gates -- located on Eller Drive, Spangler Boulevard, Eisenhower Boulevard and McIntosh Road -- and show required identification. The locations of these gates are marked with an S on Map 12-3.

2. **Private property open to public.** In addition to the four Port-operated security gates, shown on Map 12-3, individual security gates at private or leased terminals in Midport and Southport, control access to these properties on the Port. As the Convention Center is currently in the restricted zone, everyone attending events there must show some form of identification. The PED does provide opportunities for controlled public access to the Port, subject to advance registration, during Fleet Week, when Navy ships are berthed at the Port, and for other special events.

3. **Parking facilities.** The PED maintains several parking facilities. These include the 2,500-space Northport parking garage, which serves the Broward County Convention Center and the passenger terminals at Northport, and the 2,000-space Midport parking garage, which serves the passenger terminals at Midport. Surface parking is also provided at Port-owned buildings for use by Port staff, tenants, and visitors to the Port for business.
purposes; these buildings include the Port Administration Building, the Public Safety Building, the Port Maintenance Division facility, the Amman Building, the Seabulk Building, the Foreign-Trade Zone, and various passenger terminals, such as Cruise Terminal 18, which has approximately 1,000 spaces. Parking is also provided for the longshoremen/stevedores serving the cruise and cargo vessels.

4. Coastal roads and facilities providing scenic overlooks. Several Port roadways, including Eller Drive, Eisenhower Boulevard, SE 19th Avenue, and SE 32 Street, provide scenic views of the working harbor, but these are no longer available for unrestricted public access. Marinelli Gardens, located on the north side of Eller Drive, just west of the FPL Discharge Canal, includes parking and picnic tables along the canal. North Ocean Drive, located in the John U. Lloyd Beach State Recreation Area, provides access to the oceanfront beaches, with overlooks of the Port, the Intracoastal Waterway, and Whiskey Creek. A paved, lighted jetty at the north end of the park provides excellent fishing and an opportunity to view ships arriving at and departing from the Port.

5. Marinas, boat ramps, and public docks. The one private marina previously located in the PJA is no longer at the Port. The Broward Sheriff’s Office maintains a floating dock in the FPL Discharge Canal for moving their harbor patrol boats and the Florida Marine Patrol operates a dry storage and repair facility adjacent to the canal. The Port also permits the temporary lay-in of large privately owned yachts at several berths.

On the eastern shore of the Intracoastal Waterway, four marina-type facilities are operated by governmental and educational agencies. A boat-launching ramp/dock is maintained in John U. Lloyd Beach State Recreation Area for transient park visitors. In addition, the U.S. Coast Guard, the U.S. Navy, and Nova Southeastern University operate facilities for the exclusive use of their vessels. The only boat ramp in the PJA is located in the John U. Lloyd Beach State Recreation Area. This ramp is part of the park's public dock facility. The only public dock in the PJA is also located in the John U. Lloyd Beach State Recreation Area.

6. Fishing areas and piers. Port Everglades is designated as a manatee sanctuary by state statute. As such, fishing in the PJA is prohibited except in the John U. Lloyd Beach State Recreation Area and along the south jetty of the Port’s Entrance Channel. There are no fishing piers in the PJA; the nearest fishing pier is located in the City of Dania Beach, adjacent to the southern portion of the park, which is outside of the PJA.

7. Open space. The only beachfront open space in the PJA is located in the John U. Lloyd Beach State Recreation Area, which is managed by the FDEP.

I. Inventory of Infrastructure.

1. Roadways. Map 12-9 identifies the roadways in the PJA and their connections to the regional highway network. The Port is located at the eastern terminus of I-595, which connects with I-95, Florida’s Turnpike, and I-75 -- all components of the state’s Strategic Intermodal System (SIS) -- as well as with other major arterials such as U.S. 1, U.S. 441 (SR 7), and SR 84. U.S. 1 also connects the Port with FLL, just a few minutes away.

From the regional highway network, Port Everglades has three points of access:
- **Eller Drive**, which connects with I-595. This southernmost east-west access to the Port is the road most traveled by trucks headed to and from the Southport container facility and by buses and passenger vehicles headed to and from the Port’s Midport cruise terminals.

- **Spangler Boulevard**, which is a continuation of SR 84, and enters the Port from the west, just to the north of the Midport area.

- **Eisenhower Boulevard**, which runs north and south, unlike the other two access roads, provides access to the Port from its northernmost edge, SE 17th Street/SR A1A. As the main entrance to Northport, this road serves the Convention Center, the Northport parking garage, and three of the Port’s cruise terminals.

In addition to Eller Drive, Eisenhower Boulevard, and Spangler Boulevard, internal roads serving various terminals and other Port facilities include SE 14th Avenue, SE 19th Avenue, McIntosh Road, SE 20th Street, SE 28th Street, SE 18th Avenue, SE 22 Street, SE 25th Street, SE 26th Street, SE 30th Street, SE 32nd Street, SE 35th Street, and SE 36th Street. Ocean Drive, located in John U. Lloyd Beach State Recreational Area provides access to beaches, shoreline parking, and the marine facilities operated by the U.S. Coast Guard, the U.S. Navy, and Nova Southeastern University.

2. **Bridges or causeways.** The 17th Street Causeway Bridge, which borders the PJA on the north, is a drawbridge spanning the Intracoastal Waterway. The original 1950s bridge, which had a 25-foot clearance, has been rebuilt. The new bridge opened in April 2002. This new structure includes wider traffic lanes, bicycle lanes, and a 55-foot vertical clearance to reduce the frequency of opening the span for passing boats. In the PJA, a PED-maintained fixed bridge along Eller Drive spans the FPL Discharge Canal in Midport. A second bridge has been built over the FPL Discharge Canal to connect the dockside of the Midport area with the backlands west of the canal in Southport; this bridge eliminates the need for container traffic traveling between the two locations to leave and then reenter through the security area. A fixed bridge maintained by the state is located in John U. Lloyd Beach State Recreation Area along Ocean Drive, the main park roadway that spans Whiskey Creek.
Map 12-9
Existing Roadways, Ingress and Egress Points
3. **Sanitary sewer facilities.** The PED owns and operates the sanitary sewer transmission lines and lift stations in the PJA; these are maintained by the Public Works Division, with the exception of the property located in the John U. Lloyd Beach State Recreation Area, which is served by an on-site treatment facility. The locations of these sanitary sewer facilities are illustrated on Map 12-10. In accordance with an adopted Large User Agreement between the PED and the City of Fort Lauderdale, the City treats the sewage at the G.T. Lohmeyer Plant, which has an operating capacity of 55.7 million gallons per day (mgd) maximum 3-month average daily flow. Between October 2009 and September 2010, the PJA average daily flow was .124 mgd. Approximately 20 percent of the PJA is currently not served by wastewater collection or advanced treatment systems. These areas are primarily located in the petroleum tank farms, the I-595 right-of-way, and open space and recreation uses. The non-serviced areas rely on temporary facilities or small septic tank systems.

4. **Potable water facilities.** The PED owns and operates the potable water transmission lines in the PJA. These lines are maintained by the Public Works Division, with the exception of the property located in the John U. Lloyd Beach State Recreation Area. The locations of these lines are illustrated on Map 12-11. In accordance with an adopted Large User Agreement between the Port and the City of Fort Lauderdale, the City supplies potable water to the Port. Water is delivered from either the Peele-Dixie or the Fiveash Water Treatment Plant and enters the Port’s distribution system through five master meters. The meters and maximum delivery capacity are located at S.E. 17th Street (19,000 gallons per day (gpd)), S.E. 20th Street (271,000 gpd), S.E. 24th Street (103,000 gpd), S.E. 28th Street (207,000 gpd), and Eller Drive (835,000 gpd). Based on daily flow data from the City’s master flow meters for March 8, 2010 through March 14, 2010, the Port's average daily demand is 1.4 mgd.

5. **Man-made drainage facilities.** Port Everglades owns and maintains the man-made drainage facilities in the PJA. This system is maintained in accordance with a National Pollution Discharge Elimination System (NPDES) permit in cooperation with the FDEP as delegated by the U.S. Environmental Protection Agency (EPA). There are two types of drainage systems in the PJA: one is piped and the other uses surface water discharge through ditches and swales. Drainage facilities in the PJA are identified on Map 12-12. (The PED is currently updating this map; the revised map will be included in the DPC as soon as it is available.)

6. **Solid waste facilities.** The Port Everglades Public Works section hauls away a major portion of the solid waste generated by the Port. More than a dozen firms are authorized to haul waste for private owners and operators in the PJA. The solid waste collected in dumpsters is transferred to the Southwest Regional Landfill or the South County Resource Recovery Facility. The wastes generated by the foreign-flag ships that call at the Port are disposed of by several privately contracted haulers. The respective cruise lines contract with several franchised companies for the pick-up and disposal of the waste from their ships, which is hauled away to various locations out of the county.
Map 12-10
Sanitary Sewer Facilities

Legend
- Port Jurisdiction

Sanitary Sewer Features
- Meter
- Bend
- Clean-Out
- Eff-Well
- FM-ARV-MH
- Force Main Valve

Sanitary Sewer Lines
- Lift Station
- LS-Vent
- Pipe End
- Sanitary Man Hole
- Sanitary Valve
- Force Main
- Gravity Main

Source: Public Works Department, Seaport Engineering and Construction Division
Map 12-11
Potable Water Facilities

Source: Public Works Department, Seaport Engineering and Construction Division
Map 12-12
Drainage Facilities

Source: Public Works Department, Seaport Engineering and Construction Division
7. **Railroad facilities.** Port Everglades is served by an internal railroad network that is owned by the PED and maintained by the Florida East Coast (FEC) Railway, per an existing agreement. As Map 12-13 shows, the main rail line accesses the Port along Eller Drive then turns north to the west of SE 14th Avenue, branching to spurs to the east; these spurs are no longer operational. The FEC maintains a rail cargo yard west of Andrews Avenue and south of SR 84, outside the PJA. This yard serves as a trailer-on-flat-car (TOFC) and container-on-flat-car (COFC) transfer facility, with containers and trailers drayed between the Port's cargo ships and the FEC railroad system. The on-port, near-dock ICTF to be built during the 5-year planning period, shown in red on Map 12-13, will make these transfers more efficient, expedite cargo movements, and reduce truck traffic.

J. **Inventory of Deepwater Port Factors.**

1. **Economic base.** Port Everglades plays a vital role in the South Florida region, annually contributing an estimated $13.9 billion to the local and regional economy and generating more than 143,000 local and regional jobs. Table 12-4 illustrates the Port’s waterborne commerce activity between 2001 and 2010. The Port is the second busiest cruise port in the world, with over 3.7 million passengers in FY 2009/2010, and ranks 12th among the mainland U.S. container ports, moving 793,227 TEUs (twenty-foot equivalent container units) in FY 2009/2010. The Port also supplies a 12-county region with gasoline, fuel oil, and aviation fuel. Other commodities handled by the Port include cement and clinkers, steel coils and rebar, aggregates, and gypsum. Trucks, trailers, tractors, automobiles, buses, and yachts and other boats are also shipped through the Port.

2. **Landside transportation needed to support Port Everglades.** Map 12-9, shown previously, identifies the ingress and egress points in the Port for motorized traffic. These points include Eller Drive at I-595, Spangler Boulevard/SR 84 at U.S. 1, and Eisenhower Boulevard at SE 17th Street/SR A1A, which directly connect the Port to the FIHS and SIS. The eastern terminus of I-595 in the PJA, provides ingress and egress at Eller Drive. I-595 intersects with I-95, Florida’s Turnpike, and I-75 to the west of the PJA. Spangler Boulevard, which becomes SR 84 at U.S. 1, intersecting with I-95 to the west of the PJA, provides a secondary access to the FIHS/SIS.

**In-water facilities.** The in-water facilities at Port Everglades, including the Port’s three slips and thirty-five primary berths, several of which have Ro/Ro ramps, are shown on Map 12-7 (see Part II.A.3). The Port has more than 25,000 lineal feet of bulkhead.

4. **Maintenance of in-water facilities.** The PED is responsible for maintaining project depths within 100 feet of the bulkheads, within all slips, within the last 1,000 feet of the Intracoastal Waterway between the "knuckle" or curve at Midport to the Dania Cut-Off Canal, and within the southern extension of the main turning basin. The ACOE is responsible for maintaining the project depths in the remainder of the PJA. The Port conducts depth soundings to monitor any depth changes, which may be caused by siltation or propeller backwash. Port Everglades Harbor has not experienced a need for frequent maintenance dredging activities; however, the Port does require periodic depth maintenance in Slips 1, 2, and 3.
Map 12-13
Rail Facilities

![Image of Rail Facilities Map]

**Legend:**
- Yellow: Main Line in Service
- Teal: Permanent Out of Service Track and Crossing
- Pink: Industry Track Temporary Out of Service
- Red: Future ICTF/Future Aggregate Facility
Table 12-4
Waterborne Commerce Report

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5. Management of dredged material. Limited upland areas are available to the Port for the disposal of dredged materials. With the exhaustion of possible alternative locations to place fill on land, other than a 6-acre site in the southwest corner of the Port, the EPA and ACOE have suggested ocean dredged material disposal sites (ODMDS). In a meeting between regulatory agencies in November 2004, the tentative site depicted in Map 12-14 was selected. This ODMDS is a one-nautical-mile by one-nautical-mile square located four nautical miles off the Broward County coast, with the center of the area at 26 07.00 N Latitude and 80 01.50 W Longitude. The bathymetric elevations range from 195 meters to 215 meters deep. This ODMDS has not previously been used as a disposal area.

Three ODMDS management goals were specified by the agencies at the 2004 meeting: marine environmental protection, beneficial use of dredged material whenever possible, and documentation of disposal activity at the site. Disposal levels have been limited in the past at the nearby interim site to no more than 30,000 cubic yards annually. The ACOE is conducting a study to expand the ODMDS to accommodate the additional 11 million cubic yards to be generated by the planned deepening and widening activities.

6. Selection criteria for upland dredge disposal sites. The selection of upland dredge disposal sites in the PJA is to be restricted to Port-owned property. Minimal social, cultural, or other ancillary non-Port-related activities are expected to be impacted by the location and development of an upland dredge disposal site, since Port-owned property is considered industrial in nature and is located within the influence of saltwater groundwater. Upland dredge disposal is, however, expected to be minimal.

7. Hazardous material handling and cleanup. Procedures for the handling and disposal of regulated or hazardous materials found on Port property are included in the Port Tariff. The Port generates small amounts of regulated waste from operations such as container crane maintenance, vehicle maintenance, painting, and other minor activities. The Port provides for the disposal of these materials through a contract with a licensed disposal company to handle these substances.

8. Handling and cleanup of petroleum products. Port Everglades serves as the primary port-of-entry for petroleum products in South Florida. These petroleum products are off-loaded from vessels to privately owned oil tank storage facilities through at-dock manifolds and underground pipelines. Petroleum transfers are carried out by the Port’s private sector users in accordance with applicable state and federal regulations. An established notification protocol involving federal and state agencies as well as the Port in the event of a spill.

Over the years, petroleum product has accidentally been discharged from petroleum facilities, including underground pipelines and storage tanks, forming plumes of free-phase and dissolved petroleum product in the ground and ground water. To facilitate environmental investigation, assessment, and remediation of historical petroleum contamination on Port lands, several of the petroleum terminal operators with facilities located in the PJA have formed a non-profit corporation called the Port Everglades Environmental Corporation (PEECO).
Map 12-14
ACOE and EPA Ocean Dredge Material Disposal Site
November 2004

Source: U.S. Army Corps of Engineers. Depths in meters.
III. 5- AND 10-YEAR MAINTENANCE AND EXPANSION PROGRAM

The Port Everglades Master/Vision Plan identifies projects in Northport, Midport, and Southport to meet the anticipated demand in its core business lines: containerized cargo, liquid bulk (petroleum) dry bulk (crushed rock/aggregates), and cruise. This section presents forecasts for each of these business lines over the 5- and 10-year planning horizons, followed by a summary of the projects proposed to meet the forecasted demand. This information provides the context for the subsequent analysis of Port conditions and impacts in Part IV.

A. Economic Assumptions. The economic assumptions used to identify projected needs at the Port over the 5-, 10-, and 20-year planning horizons were prepared by specialized industry professionals who were part of the consulting team tasked with updating the Port’s Master Plan.

B. Foreseeable Changes in Shipping Technologies and Port Operations.

1. Changes in shipping technologies.

a. Cruise shipping. The predominant trend in passenger ships is the continuing development of large-capacity megaships, as exemplified by the two 5,400-passenger ships, Royal Caribbean Cruise Line’s Oasis of the Seas and the Allure of the Seas, the world’s largest cruise ships, which began year-round cruising from Port Everglades in 2009 and 2010, respectively. The Port expanded Cruise Terminal 18, the largest single-ship terminal in the world, to serve these ships. In addition, the Port completed a 15-year agreement with Carnival Corporation that guarantees a minimum of 25.5 million passenger movements over the life of the contract, with the Port providing major renovations to upgrade four existing cruise terminals over the next three years. As the homeport for these and other ships, such as the Celebrity Equinox, MSC Poesia, Silver Seas Silver Spirit, Seabourn Odyssey, all of which arrived in the 2009/2010 season, Port Everglades is expected to become the No. 1 cruise port in the world in the next few years.

The cruise industry forecasts continued growth of approximately 6.6 percent in 2011. Twelve new ships joined the fleet in 2010 and fourteen new ships will be launched in 2011, several of which have already begun or will be homeporting at Port Everglades. The attractiveness of Port Everglades as a cruise port is confirmed by feedback from cruise line stakeholders and an assessment of the Port’s overall cruise tourism infrastructure (both soft and hard).

The assessment of the Port’s future passenger and vessel throughput, berth demand, and utilization for future cruise operations resulted in the following key conclusions:

- The larger ships in the cruise fleet will require longer berths to support them.
- Larger terminals, with supporting landside infrastructure, will also be needed to support these bigger ships.
The Port should continue to manage existing berths and work with cruise line partners to increase weekday use, taking the burden off weekend infrastructure requirements.

Much of the growth opportunities will depend on addressing the infrastructure requirements of future cruise vessels entering the Caribbean region.

b. Cargo shipping. Port Everglades, as part of the South Florida “Gateway to the Americas,” conducts significant trade with the countries in Latin America and the Caribbean. In recent years, approximately 85 percent of the Port’s container activity was dedicated to this trade. Honduras, Guatemala, Costa Rica, Brazil, and Colombia were the Port’s top trading partners in FY 2009/2010.

Growth in Asian Import Market and All-Water Service. Import cargo from Asia continues to fuel the growth in the U.S. container trade, historically dominated by the West Coast ports; but events in the past decade have resulted in increased diversification to all-water services of containerized cargo via various U.S. East Coast ports. A significant share of Asian cargo consumed in Central and South Florida moves intermodally via the West Coast ports; this cargo represents an all-water service market for the Port to target, particularly with the expansion of the Panama Canal in 2014. To target this market, the Port should pursue the infrastructure -- water depth, berths, cranes, storage capacity, and circulation system -- needed to accommodate ships carrying up to 7,000 TEUs.

East Coast competitors of Florida’s seaports, have been penetrating the Central and South Florida markets, primarily due to the growth of all-water services. This penetration is also a target for Port Everglades. The Port should continue to market global carriers in this trade and target the Central and South Florida accounts that are currently moving through other East Coast ports as well as using intermodal service via West Coast ports.

Latin American and Caribbean Export Market. The South Florida ports -- Everglades, Miami, and Palm Beach -- have historically dominated the Latin American and Caribbean export markets. This domination has been facilitated by the concentration of Latin American- and Caribbean-related businesses located in South Florida, including export distribution and consolidation centers, and a strong local truck market. Free trade agreements with Chile and DR-CAFTA (the Dominican Republic, Belize, El Salvador, Honduras, Nicaragua, Guatemala, and Costa Rica) strengthen and sustain the Latin American and Caribbean economies that rely on this U.S. export market.

Port Everglades’ favorable geographic location makes it an ideal port-of-call for cargo shipping lines serving Latin America and the Caribbean Basin. The Port also serves as a transshipment point for the transfer of containerized cargo between Latin America/Caribbean Basin ports and those in Europe. The Port Everglades Master/Vision Plan addresses these current opportunities as well as the future opportunities anticipated with the opening of the new Panama Canal locks in 2014. Proposed projects in the 5- and 10-year planning periods to
develop the Port’s container-handling capacity include the expansion of the Southport Turning Notch, the addition of two container cranes, the development of the near-dock ICTF, and improvements to McIntosh Road to facilitate truck traffic in and out of the container yards. As current Ro/Ro operations give way to more Lo/Lo operations, the Port is also preparing for these and other changes in technology.

2. **Changes in port operations.** The federal and state security mandates following the events of 9/11 required the Port to implement significant new measures to protect Port facilities, tenants, users, and the local community from potential threats. The Port has also implemented several “green” initiatives in response to growing concern about global climate change.

**FLL Height Restrictions.** Port Everglades is uniquely located only two miles from the FLL. Both the Broward County Aviation Department (BCAD) and the PED have developed master plans that recommend expansions of their respective facilities and operations to meet the projected needs for the airport and seaport services that are vital to the regional economy. Flight arrival and departure patterns from FLL, including the north runway and the new 9,000-foot south runway that is being designed extend over portions of Southport, the site of the Port’s planned expansion of containerized cargo operations over the next ten years. The flight patterns of planes using these runways restrict the height of structures as well as vessels located under the flight paths. In developing the *Port Everglades Master/Vision Plan*, the PED coordinated extensively with the BCAD as to the optimum locations for berthing the Super Post-Panamax ships expected to call at the Port once the expansion of the Panama Canal is complete, and for siting the new cranes that will serve these ships. It is understood that Federal Aviation Administration (FAA) approval will be needed prior to implementation of any projects in these Port areas which could penetrate FLL’s approach and departure surfaces. Based on the work completed, the PED has submitted applications to the FAA for approval of the proposed berth and crane locations.

**Airport-Seaport Connectivity.** A second area of collaboration between the PED and the BCAD involves the close link between the seaport and the airport regarding the transport of cruise passengers. Nearly sixty percent of the Port's multi-day cruise passengers arrive via FLL. The majority of these passengers arrive and depart on Saturdays and Sunday, creating the potential for significant congestion, especially as the Port serves more megaships with over 5,000 passengers each, many of whom are from abroad. Passengers currently transfer from the airport to the seaport terminals by buses under contract with the individual cruise lines. Concurrently with the preparation of this Master/Vision Plan, the PED and the BCAD, in conjunction with the Florida Department of Transportation (FDOT) jointly conducted a Project Development & Environment Study for the Broward County Intermodal Center and Automated People Mover (APM) system, followed by an Environmental Assessment, which is 95 percent complete. A public hearing on the Environmental Assessment was held in June 2009; but, since August 2009, the process has been on hold, pending development of a complete funding plan. Once potential funding is identified, the county and FDOT may restart the process.
and proceed to obtain a Finding of No Significant Impact, which would then allow the county to seek federal funds for the project.

The Port’s Master and Vision Plans are compatible with the recommended alternative for the APM system and right-of-way for the system has been preserved on Port property. The two proposed stations for a future APM coincide with both the Midport and Northport cruise passenger intermodal centers. The APM station at Northport will serve the Broward County Convention Center as well as Cruise Terminals 2 and 4. All alternatives included a universal baggage system that will automatically transfer passengers’ baggage to their respective ships.

3. **Estimates of types and volumes of commodities to be handled.** The Port’s markets for containerized cargo, non-containerized cargo (dry bulk and neo-bulk), and liquid bulk (petroleum) are fully discussed in Element 3 of the *Port Everglades Master/Vision Plan*. Specific forecasts for the planning milestones, as prepared by the specialized industry professionals who were part of the consulting team, are summarized below.

   a. **Containerized cargo.** Based on the estimated FY 2008/2009 containerized volume and interviews with Port Everglades’ tenants, Martin Associates identified low, medium, and high growth scenarios for the Port over the 20-year planning period. The low scenario container forecast by terminal assumes a 3 percent growth of base cargo and no new market penetration. The medium scenario assumes a 50 percent capture of the local truck hinterland market and a 25 percent capture of the Central Florida market by 2015, with a 3 percent growth thereafter. The high scenario assumes the capture of the local truck hinterland and Central Florida market shares as well as an initial 10 percent additional intermodal market, growing to 15 percent as the Port’s proposed ICTF develops. By 2029, the unconstrained container throughput at Port Everglades is projected to range between 1.5 million and 2.5 million TEUs. The low (baseline), medium, and high container forecasts through the 2029 planning horizon are shown in Figure 12-1.

**Figure 12-1**
Low/Medium/High Container Forecast
b. **Non-containerized cargo (dry bulk and neo-bulk).** The overwhelming proportion of the dry bulk cargoes handled through Port Everglades is related to the construction industry, which experienced dramatic declines as the recession hit the local, regional, and statewide economies. Similarly, the largest proportion of the neo-bulk cargoes is related to the construction industry, including steel (rebar and sheets) and, previously, lumber. Figure 12-2 shows the base, high, and low forecasts for the dry bulk and neo-bulk cargoes at the Port, through the 2029 planning horizon, as prepared by Michael L. Sclar Associates, Inc.

![Figure 12-2](image)

On the downside, these forecasts reflect the decline in the local and regional construction industry during the recessionary period; on the upside, they reflect the eventual addition of two to four million tons of crushed rock to replace high quality local sources that may be affected by permitting issues. The dry bulk and neo-bulk markets for Port Everglades are projected to recover to 92.1 percent of the peak 2006 levels by 2029 under the base line forecast. Continued depressed tonnages and more muted recovery result in a low forecast that reaches only 61.9 percent of the peak 2006 levels. Under the high forecast, Port Everglades’ dry bulk and neo-bulk cargoes reach 7.6 million tons or 229.1 percent of the peak volumes in 2006.

c. **Liquid bulk cargo (petroleum).** Purvin & Gertz, which conducted the Petroleum Sector Strategy Study for Port Everglades in 2005, updated that study for the Port Everglades Master/Vision Plan. Figure 12-3 summarizes the petroleum throughput forecast for the Port through the 2029 planning horizon. Total throughput volumes are expected to grow from just over a projected 300,000 barrels per day in 2008 to 323,000 barrels per day by 2029.
4. **Projected number of passengers to be handled.** The projections of multi-day and daily cruise passenger embarkations, as developed by Bermello Ajamil & Partners, Inc., are illustrated in Figure 12-4. The number of revenue cruise passengers embarking and disembarking from the Port is expected to increase steadily from a total of 3.67 million in FY 2010 to 4.0 million in 2015 and 4.47 million in 2019, reaching 5.16 million at the end of the 20-year planning period in 2029.
5. **Summary of market forecasts for the 5-, 10-, and 20-year planning horizons.** Figure 12-5 summarizes the market forecasts for each of the Port’s business lines at the Plan milestones: 2014, 2019, and 2029.

**Figure 12-5**

**Summary of Market Forecasts by Business Line for the Plan Milestones**

<table>
<thead>
<tr>
<th>Business Line</th>
<th>5-Year Plan</th>
<th>10-Year Plan</th>
<th>20-Year Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Containerized Cargo (TEUs)</td>
<td>1,541,258</td>
<td>1,786,740</td>
<td>2,401,230</td>
</tr>
<tr>
<td>Non-Containerized Cargo (Dry/Neo-bulk) (Tons)</td>
<td>3,476,035</td>
<td>6,517,482</td>
<td>7,625,627</td>
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<tr>
<td>Liquid Bulk Cargo (Petroleum) (Tons)</td>
<td>15,199,717</td>
<td>16,026,912</td>
<td>16,699,008</td>
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<tr>
<td>Cruise (Revenue Passengers)</td>
<td>4,014,910</td>
<td>4,471,527</td>
<td>5,161,118</td>
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</tbody>
</table>

6. **The needed expansions to in-water and on-land facilities.** The needed expansions to in-water and on-land facilities are identified in the 5-Year Master Plan and 10-Year Vision Plan. These expansions are described in detail in Element 5 of the *Port Everglades Master/Vision Plan* and summarized in the next section (III.C).

7. **The infrastructure required to meet anticipated needs.** The infrastructure
required to meet the landside access needs of projected cargo and passenger demands include: the future development of an APM/Airport-Seaport Connector to ease the transfer of passengers between the airport and seaport terminals; the construction of a near-dock ICTF to enhance rail access for containerized cargo, the construction of the Eller Drive Overpass to facilitate rail operations; the ongoing realignment of McIntosh Road to alleviate truck congestion and delays, and the construction of a By-Pass Road to allow non-Port-related traffic to access the Convention Center without passing through Port security. With the exception of the APM, which is awaiting a final design decision and funding plan, these infrastructure requirements are included in the Port Everglades Capital Improvements Program and in the FDOT District 4 Work Program for FY 2012-2016.

C. Deepwater Port Master/Vision Plan.

1. **Future port expansion for an initial five-year period.**
   a. *In-water facilities.* The *Port Everglades Master/Vision Plan* identifies several in-water projects in Northport, Midport, and Southport to improve capacity and accommodate the projected demands for passengers and cargo through 2015 and 2019.

   **Northport** in-water facility projects in the 5-year planning period include the following:

   **New and reconfigured bulkheads at Berths 9 and 10 in Slip 1.** The Port’s bulkhead replacement schedule is based on the findings of the *Bulkhead Study Update and Cathodic Protection System Evaluation for Port Everglades Berths 1 through 29*, prepared by Halcrow in August 2010. All three slips (1, 2, and 3) in Northport need to be reconfigured to accommodate future longer and wider petroleum tankers; but only the initial widening of Slip 1 will take place during the 5-year period.

   **Slip 2 Westward Lengthening.** Slip 2 lengthening to the west will increase the slip from 900 linear feet (LF) to 1,150 LF to accommodate larger cruise ships.

   **Midport** in-water facility projects in the 5-year planning period include the following:

   **Tracor Basin Finger Pier Replacement with Catwalk + Dolphin.** The Tracor Basin in Midport is used to berth tugboats. The existing finger pier will be replaced with a steel girder catwalk, with a dolphin at the front, to allow for vessel mooring.

   **Southport** in-water facility projects in the 5-year planning period include the following:

   **Upland Enhancement.** The Port’s upland enhancement project, to be initiated in the 5-year planning period, consists of creating approximately 16.5 acres of mangrove wetlands on an uplands site adjacent to the Turning Notch in
exchange for releasing 8.7 acres of the existing Conservation Easement at the west end of the existing Notch (see discussion in Part IV).

**Westlake Mitigation.** In addition to easement replacement, the impacts caused by removal of the 8.7 acres of mangroves must be mitigated in accordance with local, state, and federal environmental permitting requirements. The Port proposes to accomplish this mitigation at West Lake Park, and has shared the design and permitting costs of restoration activities at West Lake with the BCAD to provide mitigation credits for impacts associated with needed expansion at the Port and other county properties.

**Turning Notch Expansion (Contract 1).** The Turning Notch expansion at the existing 42-foot water depth is to be broken into two contracts. Contract 1, to be implemented in the 5-year planning period, will cover the waterside expansion work, including excavation, dredging, and bulkhead construction; the related landside work, is programmed for a separate Contract 2 and will begin near the end of the 5-year planning period.

In addition to the above projects at specific locations of the Port, the 5-Year Master Plan includes continuing expenditures for the ACOE Deepening and Widening Design of the Port’s harbor and channels.

**b. Landside facilities.**

**Northport** landside projects in the five-year planning period include the following:

**By-Pass Road.** At Port Everglades, where once the public could pass through the Port to reach local destinations, post-9/11 security mandates eliminated this access. The phased By-Pass Road has been designed to allow the public to travel between the intersection at Eisenhower Boulevard and 17th Street to Spangler Boulevard and U.S. 1 without passing through a Port security gate. It essentially “carves out” the Convention Center from the Port, thus allowing the public direct access to the Convention Center from 17th Street. Phase 1 of this project will see the Port’s security checkpoint shift to the south by approximately 1,500 feet. In addition to offering swift, direct access to the Convention Center, Phase 1 construction will enable the Port to retain a security checkpoint on Eisenhower Boulevard, thus continuing to allow cruise passengers and others wishing to enter the Port access from 17th Street. Phase 2 is estimated to be completed by 2016.

**Improvements to Cruise Terminals 2 and 4.** Renovations to Cruise Terminal 2 are required due to changes in defining the Port-secured area from the public space at and around the Convention Center; these renovations will allow simultaneous embarkation and disembarkation processing. Improvements to Cruise Terminal 4 are necessary to accommodate larger passenger ships and increase the baggage-handling area in the terminal.
New Petroleum Tank Farm. The existing terminal, which was built during World War II, will be rebuilt as a modern terminal by the operator the County chooses through a competitive selection process. The new oil terminal at the Port is expected to store various petroleum products.

Midport landside projects in the five-year planning period include the following:

Improvements to Cruise Terminals 19, 21, and 26. These improvements are needed to increase the respective terminals’ capacity to accommodate larger cruise ships and enhance passenger flows and other aspects of the embarkation and debarkation processes, in accordance with the Port’s long-term agreement with Carnival Corporation.

Cruise Terminal 18 Parking Garage. This new facility will add 1,600 structured parking spaces above a passenger intermodal zone to serve the Port’s Midport cruise passengers and provide 400 spaces for employee parking.

Southport landside projects in the five-year planning period include the following:

ICTF Tracks and Storage Yard. A near-dock ICTF will be built to transfer international intermodal containers between ship and rail, and the reverse. Currently such containers must be drayed to and from the Port to off-Port rail terminals, either at Andrews Avenue in Fort Lauderdale or in Hialeah in Miami-Dade County. The ICTF project consists of initially bringing a new rail track under the Eller Drive Overpass (scheduled for construction in FY 2011) with a second track to be provided later if demand warrants. The new rail track expands into five working tracks totaling approximately 15,000 LF to service up to an 8,000-LF train. The total ICTF area, including the tracks, is approximately 35 acres; the marshaling area (between McIntosh Road and the easternmost track) is approximately 17 acres.

McIntosh Road Improvements. McIntosh Road is the entry road to the Southport container terminals. The realignment project creates a loop road with through lanes and lanes for de-acceleration, queuing, and acceleration. The design, which maximizes turning radii and mandates right-hand turns, also provides lanes for making a U-turn at two places, eliminating the need for vehicles to go through the security gate twice. Appropriate signage will be provided for all truck routes.

Super Post Panamax Crane (1). In the 5-Year Master Plan, the Port will purchase one 100-foot-gauge Super Post-Panamax crane to serve the lightly loaded Post-Panamax vessels currently calling at the Port. The crane will be able to serve 22-row-wide container vessels and will be specially designed as a low-profile crane to meet the FAA height restrictions. This is the first of five cranes the Port will be purchasing over 20 years to handle the forecast container volume.
Table 12-5 shows the capital improvement projects proposed in the 5-Year Master Plan and Table 12-6 shows the Port’s complete capital improvement program for the five-year period. (The latter table includes projects other than the infrastructure projects in the Master Plan.). Map 12-15 illustrates the Port’s 5-Year Master Plan. The full-size map is available on the Port website at http://www.broward.org/Port/MasterPlan/Documents (see Page ES-36 in the Executive Summary).

### Table 12-5

5-Year Master Plan Capital Improvement Projects

<table>
<thead>
<tr>
<th>5-Year Master Plan</th>
<th>Years 2011 - 2015</th>
<th>Estimated Cost (Millions)</th>
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<tr>
<td>Northport</td>
<td>Slip 1 New Bulkheads and Reconfiguration - Phase 1</td>
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<td></td>
<td>By-Pass Road - Phase 1</td>
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<td>By-Pass Road - Phase 2</td>
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<td>Cruise Terminal #2 Improvements</td>
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<td>Cruise Terminal #4 Improvements</td>
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<td>New Petroleum Tank Farm</td>
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<td></td>
<td>Cruise Terminal #21 Improvements</td>
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<td>Cruise Terminal #26 Improvements</td>
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<td></td>
<td>CT #18 Parking Garage</td>
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<td></td>
<td>Tracor Basin Finger Pier Replace with Catwalk+Dolphin</td>
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<td>ICTF- Rail &amp; Yard</td>
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<td></td>
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<tr>
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<td><strong>$453.08</strong></td>
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### Table 12-6

Total 5-Year Capital Improvement Program

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<tr>
<th>FY 2011 to 2015, 5-Year Capital Improvement Plan ($ Millions)</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
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<td>Master Plan Projects</td>
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<td>ACOE Dredging Project</td>
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<td>0.500</td>
<td>-</td>
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<tr>
<td>Other Port Capital Improvements</td>
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<tr>
<td>Total</td>
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<td>103.830</td>
<td>104.291</td>
<td>119.253</td>
<td>83.637</td>
<td>505.215</td>
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Map 12-15
Five-Year Master Plan Future Land Use
2. **Future port expansion for the ten-year period**

a. *In-water facilities.* The in-water facility projects proposed for implementation in the 10-year planning period are summarized below by Port area.

**Northport** projects in the 10-year planning period include the following:

**Berths 1, 2, and 3 New Bulkheads.** New bulkheads will be constructed for Berths 1, 2, and 3, based on recommendations in the previously cited Bulkhead Study.

**Midport** projects in the 10-year planning period include the following:

**Berths 16, 17, and 18 New Bulkheads.** New bulkheads will be constructed for Berths 16, 17, and 18, based on recommendations in the Bulkhead Study.

**Southport** projects in the 10-year planning period include the following:

**Turning Notch Expansion (Contract 2).** Contract 2 of the Turning Notch expansion covers the landside work, including wharf construction, crane rails, utilities and filling.

In addition to the above projects at specific locations of the Port, the 10-Year Master Plan includes continuing expenditures for the **ACOE Deepening and Widening.** Project construction is scheduled to start in January 2015 and be completed by January 2017.

b. *Landside facilities.*

**Northport landside** projects in the ten-year planning period include the following:

**Cruise Terminal 4 Parking Garage.** A new 1,680-space structured parking facility will be built west of Cruise Terminal 4 and over a passenger intermodal zone to serve future parking needs for both Cruise Terminals 2 and 4.

**Midport** landside projects in the ten-year planning period include the following:

**Multimodal Facility - Phase 1.** This passenger intermodal center will integrate an at-grade intermodal zone, or ground transportation area, with a structured parking facility above to serve all the Midport cruise terminals. In the 10-Year Vision Plan, the first phase of the multimodal facility will be built, which will include a structured parking facility with approximately 2,000 parking spaces.

**Southport** landside projects in the ten-year planning period include the following:
Crushed Rock Aggregate Terminal. This facility is envisioned to meet a portion of Florida’s needs for crushed rock aggregate with supplies imported from off-shore locations. The vessel carrying the crushed rock aggregate will be unloaded at one of the newly constructed berths in the expanded Turning Notch onto a conveyor belt, which will transfer the product via an underground conveyance, crossing McIntosh Road, for storage inside a covered warehouse. From there, the product will be loaded directly onto rail cars, operating on the new set of rail tracks located west of the ICTF tracks.

Foreign-Trade Zone plus U.S. Customs and Border Protection Relocation. A new Foreign-Trade Zone (FTZ) facility and a new facility to house the U.S. Customs and Border Protection (CBP) inspection services will be constructed west of McIntosh Road in the Port-secured area on an approximately 21-acre site. The proximity of the new FTZ facility to the new CBP facility will improve the traffic flow in and out of Southport in support of the Port’s growing cargo throughput.

Super Post-Panamax Cranes (2). Two additional ship-to-shore 100-foot gauge gantry cranes will be added to Southport to serve larger vessels.

Container Yard Improvements. After the Turning Notch is expanded, the increase in Southport cargo throughput will require storage densification in the container yard. This project installs the necessary site infrastructure to accommodate future rubber-tired gantry cranes to increase container storage densification in the Southport terminal yards.

Table 12-7 summarizes the capital improvement projects proposed in the 10-Year Vision Plan and Map 12-16 illustrates the Port’s 10-Year Vision Plan. The full-size 10-Year Vision Plan map is available on the Port website at http://www.broward.org/Port/MasterPlan/Documents (see Page ES-39 in the Executive Summary).
### Table 12-7
10-Year Vision Plan Projects

<table>
<thead>
<tr>
<th>10-Year Vision Plan</th>
<th>Years 2016 - 2019</th>
<th>Estimated Cost (Millions)</th>
</tr>
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<tbody>
<tr>
<td>Northport</td>
<td>Berth 1, 2, 3 New Bulkheads</td>
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<td>CT#4 Parking Garage</td>
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<tr>
<td>Midport</td>
<td>Berth 16, 17, 18 New Bulkheads</td>
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<td>Multimodal Facility - Phase 1</td>
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<td>Southport</td>
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<td>Crushed Rock Facility</td>
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<td>Foreign Trade Zone + Customs &amp; Border Protection</td>
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<td>Relocation</td>
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<td>Super Post Panamax Cranes (2)</td>
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<td>Container Yard Improvements</td>
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<td>Port-wide</td>
<td>ACOE Deepening and Widening</td>
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<tr>
<td>Total</td>
<td></td>
<td><strong>$547.22</strong></td>
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</tbody>
</table>
Map 12-16
10-Year Vision Plan Future Land Use
3.  In-water facility maintenance for at least a ten-year period. On January 5, 1996, the ACOE issued Permit 1989002282 (IP-EJ) REISSUANCE, which allows the Port to conduct maintenance dredging of berths and slips. This permit, valid until 2016; is currently being modified to include the upland disposal site in the southwest corner of Southport. The permit would either be renewed or extended closer to the time of the current expiration, most likely for another ten years. The state FDEP permit is being reauthorized to use the same disposal site; the Broward Environmental Protection Division has already modified their permit to include this disposal location.

IV.  ANALYSIS REQUIREMENTS

A.  Existing Land Use Analysis.

1.  Conflicts among shoreline uses. There are no identified conflicts among shoreline uses in the PJA, the result of the following actions covering the entire PJA: the adoption of the Port Everglades Transportation Area land use designation by the Broward County Land Use Plan; the adoption of a unified zoning district; the designation of the Port Everglades Development District (PEDD) by the municipalities of Fort Lauderdale, Hollywood, and Dania Beach; and the adoption of an Interlocal Agreement, dated May 6, 1994, between Broward County and the three municipalities, which specifies jurisdictional responsibilities in the PJA.

2.  Need for water-dependent and water-related uses. On March 1, 2011, the Broward County Board of County Commissioners adopted the Port Everglades Master/Vision Plan. This document replaces the previous Port Everglades Master Plan Update 1995-2005, adopted by the PED on November 28, 1995 and incorporated into the Broward County Comprehensive Plan as the Deepwater Port Element in 1997. It also updates a more recent plan adopted by the Board in 2007, but not integrated into the DPC. The Port Everglades Master/Vision Plan recommends that several water-dependent and water-related capital improvements be made in the PJA to meet projected demands through the 5- and 10-year planning horizons. These are discussed in Part III.C above.

B.  Natural Resources Analysis.

1.  Vegetative cover, wetlands, and wildlife habitats.

   Vegetative Cover and Wetlands. The ACOE, FDEP, South Florida Water Management District and the BCEP&GMD regulate any dredging and filling activity within mangrove habitats. It is the purpose and intent of these agencies to ensure no net loss in the function and value of existing wetland habitats. Therefore, any adverse impacts to existing mangroves are regulated by avoidance as the first priority, minimization as the second priority, and mitigation as the third priority.

   The future land use designation of the Port Everglades Transportation Area will have no direct impact on vegetative cover in the PJA. The Port has, however, obtained FDEP approval to initiate procedures for the eventual release of 8.7 acres of the existing
conservation easement for the Southport Turning Notch expansion project, which is included in the 5-Year Master Plan. Also included in the 5-Year Master Plan is the proposed creation of approximately 16.5 acres of mangrove wetlands within uplands adjacent to the Southport Turning Notch to replace the 8.7-acre easement being released.

**Listed Species.** The Port is committed to addressing the protection of wildlife within its property and along the waterways. This commitment includes implementation of federal, state, county, and local species protection plans, adherence to special construction techniques and/or guidelines that address wildlife concerns, and participating in scientific programs associated with resource protection.

The Florida Manatee Sanctuary Act of 1978 established the entire state of Florida as a “refuge and sanctuary for manatees” and allowed for the enforcement of boat-speed regulations in manatee-designated protection zones. The West Indian manatee is protected federally by both the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Port Everglades is one of about two dozen manatee wintering sites designated as manatee protection zones.

Removal of the dry-stack boat storage facility from its former site on the FPL Discharge Canal eliminated the 400 boats that previously entered the warm waters of the canal to access the facility. The elimination of this boat traffic helps safeguard the federally protected manatees and their young who frequent these waters as well as the manatee nursery in this portion of the canal.

Many steps are being taken to protect the West Indian manatee during dredging projects and from routine boating traffic in the canals. The Port’s dredge protection plan includes these guidelines to ensure manatee protection:

- Contractors are informed of manatee permit stipulations and life history traits prior to construction.
- A safety zone in which all work ceases upon sighting of a manatee is established approximately 300 yards from a drill or blast rig.
- Manatee observers and side-scan sonar are utilized to monitor the presence of manatees within safety zones.
- Manatee warning signs are placed on all waterborne equipment.
- All water traffic proceeds at slow speed.
- Appropriate agencies are contacted in the event of injury or death to manatee individuals.

Other initiatives include year-round recording of manatee sightings on observation logs; installation of manatee-grating devices on outfall pipes; installation of fenders on the sides of vessels, which provide adequate space at berth to prevent the wedging of manatees between the dock and hull of a vessel; prohibiting recreational access to the FPL Discharge Canal; and supporting manatee research. In addition, the approximately
16.5-acre mangrove easement created in the 5-Year Master Plan will provide a buffer between upland Port activities and the area most frequented by manatees. Finally, the continued enforcement of no fishing and no wake boat speeds will help protect the seasonal manatee population in the PJA.

The PED also continues to protect the endangered sea turtle species that utilize the nearby waters and beaches of John U. Lloyd Beach State Recreation Area. The beaches and dunes along the eastern margin of the Port have long been recognized as sea turtle nesting grounds. Coastal lighting in developed areas has been shown to impact the activities of nesting turtles, prompting changes to and reduction of the Port’s lighting systems.

To curb interaction with crawling and nesting turtles along the beach adjacent to the Port, changes have been made to diminish the intensity of lights in the Midport area visible from the park to the east. Dockside lighting at Berths 24 through 27 and 29, both pole- and building-mounted, have been adjusted downward to safely light the dock areas while limiting scatter. Circuits have been reconfigured with controls added to the building automation system for the roof-level parking deck at Terminal 29, the Midport parking garage, and the decorative lighting on the Harbormaster Tower. Lighting in these facilities as well as in the planned new garage is scheduled to remain fully turned off when not in use for the duration of turtle nesting season.

**Wildlife Habitat.** Impacts to waters and lands in and around Port Everglades, which provide habitat to various wildlife species, are strictly controlled by federal, state, county, and local regulations. The waters to the south of the Port, including the waters bordering West Lake Park and the Dania Cut-Off Canal, are considered essential fish habitat under the Magnuson-Stevens Fishery Conservation and Management Act of 2002 (67 FR 2343). These essential fish habitats supply the necessary waters and substrate to fish for spawning, breeding, feeding, and growth to maturity.

Widening the navigation channels with environmentally friendly bulkheads, that is, bulkheads that do not penetrate the water surface, wherever possible, will allow tidal flows to be maintained at the shoreline and critical habitat areas. The Port will also continue to participate in the Broward County Reef Tire Removal Program, a joint venture between county, state, and federal entities which will remove from nearby coastal waters approximately 700,000 tires originally intended to form artificial reef habitat.

2. **Living marine resources.** The existing riprap placed along the eastern shore of the Intracoastal Waterway and the Southport Turning Notch provides structures that attract marine life and will continue to be monitored and maintained by the Port.

Existing coral habitat in the Port area is regulated by federal, state, and county environmental protection agencies; however, recommendations discussed in the Port Master Plan are not expected to impact living coral resources.

The waters surrounding Port Everglades provide habitat for a variety of seagrasses, including *Halophila johnsonni* (Johnson’s grass), *Halophila decipiens* (Paddle grass), and...
Halodule wrightii (Cuban shoal grass). In 1998, H. johnsonni was listed as an endangered marine plant. Adverse impacts to seagrasses are regulated in the same manner as mangroves and other coastal wetland plants by federal, state, and county environmental protection agencies. In 2009, seagrass distribution was mapped for the Port’s harbor area by Dial Cordy and Associates, Inc. updating information from 2006. Comparison of the 2009 mapping results (see Figure 6.2-8 in Element 6 of the Port Everglades Master/Vision Plan) and the draft Tentatively Selected Plan outlined by the ACOE (see Map 12-17 later in this section) indicates that seagrass distribution in the Port area will be impacted by activities associated with the 10-Year Vision Plan.

Based on preliminary evaluations, widening of the Southport Access Channel, as well as the corner, or Widener, section on the northeast end of the South Access Channel will directly impact approximately two to three acres of Johnson’s grass and Paddle grass. Mitigation credits will be allocated from the West Lake Park comprehensive restoration project discussed in Element 5 of the Port Everglades Master/Vision Plan to offset impacts associated with the deepening and widening of Port channels. In addition to the direct impacts, any secondary impacts resulting from proposed deepening and widening activities would also be subject to regulation. Regulation may include, but not be limited to, turbidity containment efforts and monitoring during those activities.

3. **Other natural resources.** The future land use designation of the Port Everglades Transportation Area will not have direct impact on LAPCs in the PJA. An environmental impact statement for any proposed development that may affect or include land designated a LAPC will continue to be required by the Broward County Land Development Code prior to the issuance of any development orders.

C. **Analysis of Areas Subject to Coastal Flooding.** The entire operating area of the PJA is designated either Flood Zone AE, X, or VE by the FEMA Flood Insurance Rate Maps. Therefore, all future development and redevelopment in the PJA will be subject to the conditions and code requirements for the PJA in the FEMA Flood Insurance Program.

1. **Sea level rise and coastal flooding.** Changes in sea level have the potential to massively reconfigure geomorphology, change tidal variation, alter salinity patterns, and impact ecological processes in South Florida’s coastal habitats, including wetlands, mangrove forests, and seagrass beds.

Though sea-level rise rates have historically been measured from 5 to 10 centimeters per 100 years, that rate has accelerated tenfold in the past hundred years. With the influences of global climate change, sea levels are predicted to rise 0.5 feet by 2050 and 1.1 feet by 2100. The effects of that rate of change may not be inherently visible within the context of the Port’s 20-Year Vision Plan, but it is imperative that long-term planning strategies look toward the future.

To anticipate the eventual effects of global climate change on the Port’s shoreline, BCEP&GMD mapped the incremental effects of sea level increases adjacent to the Port, identifying areas at risk for sea level rise in one-foot increments; up to three feet. Most of
the areas shown affected by the rise are low-lying with existing vegetation, including mangroves, in the environmentally protected areas. Also affected by sea level rise are the shallow seagrass beds present in various locations in the vicinity of the Port.

2. **Sea level rise and mangroves.** Mangrove communities are highly productive systems, providing valuable habitat for fisheries, shorebirds, marine mammals, snakes, and crocodiles. Many of the world’s marine species, including important coastal fisheries, rely on coastal wetlands for at least part of their life cycle. The complex root systems of mangroves serve as refuge for large numbers of species, as well as providing stabilization for sediments, thereby reducing coastal erosion and improving water clarity. Coastal mangrove tracts can provide protection from storm surges to adjacent land and human populations, and prevent damage to freshwater ecosystems and agricultural areas from saltwater intrusion.

As sea levels rise, the seaward and landward margins of the mangrove community migrate inland to maintain their preferred environmental conditions, including period, frequency, and depth of inundation; and salinity. Depending on the ability of mangrove species to colonize new habitat at a rate that keeps pace with the rate of relative sea level rise, the slope of adjacent land, and the presence of obstacles to landward migration such as seawalls and other shoreline protection structures, some sites will revert to a narrow mangrove fringe or lose the mangrove community altogether (Gilman et al., 2006).

Sea level rise has a direct impact on the frequency and duration of inundations and drying periods of coastal mangrove wetlands, which support a community of small marsh fishes critical as a food source to wading birds such as wood storks, egrets, and roseate spoonbills. Regular periods of water level recession serve to concentrate the fish assemblages in densities adequate to support wading bird nesting. Landward salinity intrusion is another impact of higher sea levels in coastal wetlands. It is a major factor limiting distribution and abundance of various fish species, submerged aquatic vegetation, and estuarine alligator and crocodile populations.

Based on BCEP&GMD’s analysis, a one-foot rise in sea level will impact the vast majority of mangrove communities in the Port area. Development of the land surrounding the mangrove pockets in Port Everglades prevents the natural landward migration of the mangrove communities with rising sea levels; however, the projected time frame for a one-foot sea level rise exceeds that of even the 20-Year Vision Plan.

3. **Sea level rise and seagrasses.** A major impact on seagrasses of changes resulting from sea level rise will be the redistribution of existing habitats. Distribution changes will result from the effects of salinity change on seed germination, propagule formation, photosynthesis, growth, and biomass (Short and Neckles, 1999).

Changes in water depth also impact the flow patterns and deposition of sediments in and around seagrass beds. Alteration of the sediment composition is expected to cause shifts in community structure. Some species have been shown to persist in nutrient-rich sediments high in organic content, whereas others occur in patches characterized by more sandy sediments. An increase in the deposition of sandy beach and offshore sediments in
seagrass beds can be expected to promote a shift in species composition. Increased water depth will impact the amount of light reaching existing seagrass beds, thereby affecting productivity, and could result in community decline.

4. **Sea level rise and underground stormwater systems.** Other areas that could be affected by the rise in sea level are the underground stormwater management systems consisting of exfiltration piping and trenches that are used to filter surface water runoff. These systems need to be above the water table to filter pollutants from the stormwater runoff. Underground exfiltration systems are typically used in paved parking areas and container storage yards to maximize the paved area for use by Port operations.

D. **Analysis of Historic Resources.** Only one building in the PJA has been identified as containing historic resources. The former U.S. Customs House, once federally owned, but transferred to the Broward County in 2004, is listed in the Florida Master File (Site BD00210). Florida’s Historical Resources Division determined the property to be eligible for designation on the National Register of Historic Places, but no action has been taken to pursue this eligibility. Any future discovery and preservation of historic or archeological resources in the PJA will be subject to applicable local, state, and federal regulations.

E. **Estuarine Pollution Analysis.**

1. **Assessment of general conditions.** Port Everglades does not function in the classical definition of an estuary. This man-made port facility receives waters from the south via the Intracoastal Waterway, from the west via the Dania Cut-Off Canal, and from the north by way of the New River system. All land in the Port is bulkheaded except for the FPL cooling water intake and discharge canal and a 50-acre mangrove area in Southport, which is protected by riprap. The Port has conducted sediment analysis, chemical analysis of the water column, and macroinvertebrate investigations associated with dredging projects or for scientific study. Data indicate that, for all parameters studied, the health of the Port's environment is within the standards set by local, state, and federal agencies; however, the Port has no control on the quality of the water that enters the Port through the referenced water systems.

2. **Assessment of development and redevelopment.** As discussed in IV.B.1 Natural Resources Analysis, the Port has obtained FDEP approval to initiate procedures for the eventual release of 8.7 acres of the existing mangrove conservation easement to expand the Southport Turning Notch and create additional dock space. Also included in the 5-Year Master Plan is the proposed creation of approximately 16.5 acres of mangrove wetlands within uplands adjacent to the Southport Turning Notch to replace the 8.7-acre easement being released. Mitigation credits will be allocated from the West Lake Park comprehensive restoration project, to offset impacts associated with the Turning Notch expansion. In addition to the direct impacts, any secondary impacts resulting from proposed deepening and widening activities would also be subject to regulation. Regulation may include, but not be limited to, turbidity containment efforts and monitoring during those activities.
Reducing traffic congestion and trip generation as part of the 5-Year Master Plan, will reduce air emissions throughout the Port and the region. Importing crushed rock aggregate will reduce the existing environmental issues with the present quarries in Florida. The new crushed rock facility, planned as part of the 10-Year Vision Plan, will be enclosed for dust containment and not generate any air pollutants from the rock.

Also in the 10-Year Vision Plan, expanding the three slips at Northport and reducing the widths of Piers 1 and 2 will remove a portion of the petroleum contamination currently contained in the Pier bulkheads. Any remaining product will be contained within new bulkheads with greater lifespan and durability.

3. **Assessment of the impact of facilities proposed in the Transportation and Infrastructure Elements of the Broward County Comprehensive Plan upon water quality, circulation patterns, and accumulation of contaminants in sediments.** It is anticipated that the facilities proposed in the Transportation and Infrastructure Elements will have no significant impact on the water quality, circulation patterns, and accumulation of contaminants in sediments located in the PJA.

4. **Actions needed to remedy existing pollution problems.** The non-profit PEECO, representing the majority of petroleum terminal operators in the PJA, has identified areas of concern that exhibit free-floating petroleum product landward of the Port's bulkheads. In cooperation with the Port, PEECO has worked with the FDEP and has prepared a Contamination Assessment Report, conducted a comprehensive Environmental Risk Assessment, and conducted initial remediation activities in the Port-owned common areas containing underground petroleum pipelines. Subsequent activities involving PEECO, the Port, and FDEP have centered around ongoing free-phase petroleum hydrocarbon removal from the ground on the petroleum piers using state funds from the Inland Protection Trust Fund.

5. **Regulatory programs used to maintain or improve estuarine quality.** The PED will continue to pursue the maintenance of estuarine quality through the implementation of the Port’s NPDES permit, which requires the water quality management of stormwater runoff in the PJA and will continue to install pollution-retardant structures in all new drainage facilities in accordance with best available construction technology practices.

Section 27 of the Broward County Code specifies pollution regulations which are enforced by the BCEP&GMD. These regulations enforce the provisions of the Federal Clean Air and Clean Water Acts in Broward County, which include the PJA. All requests for construction and maintenance dredging will follow federal, state, and county dredge and fill permitting procedures, which require the application of turbidity controls during dredge and fill activities along the waterfront.

The Port's Oil Spill Contingency Plan is fully coordinated with the U.S. Coast Guard, the South Florida Regional Planning Council, the Florida Marine Patrol, the Broward County Emergency Management Division, the Broward County Sheriff's Office, and the Port Everglades Public Safety Division. This coordination is managed by the Port Everglades
Cleanup Committee, which maintains oil spill response equipment on a full-time basis. The Port’s Public Safety Division also maintains its own equipment and serves as the first line of defense in the event of an oil spill.

F. Analysis of Natural Disaster Planning Issues.

1. **Analysis of hurricane evacuation planning.**

   a. *Hurricane vulnerability zones.* All of the PJA is located in Broward County's Hurricane Vulnerability Zone. Deepwater ports, by definition, are constructed in coastal areas. In South Florida, all coastal areas are subject to periodic hurricane impacts. Hurricane preparedness, hurricane mitigation, and post-disaster redevelopment will continue to be significant considerations when developing operation plans and capital improvements programs in the PJA.

   b. *Number of persons requiring evacuation.* Residential uses are not permitted in the PJA; therefore, it is anticipated that no residents will require evacuation from the PJA due to an anticipated hurricane storm event. Ships in port will be encouraged by the Harbormaster to evacuate the Port well before the arrival of the storm. The crews are expected to accompany their ships that leave port. The evacuation of Port Everglades' employees and tenants will occur in accordance with the *Port Everglades Hurricane Procedure & General Disaster Plan & Continuity of Operations Manual.*

   c. *Number of persons requiring public hurricane shelter.* Residential uses are not permitted in the PJA; therefore, it is anticipated that no residents will require public hurricane shelters due to an anticipated hurricane storm event. Ships in port will be encouraged by the Harbormaster to evacuate the Port well before the arrival of the storm. The crews are expected to accompany their ships that leave port. The evacuation of Port Everglades' employees and tenants to their homes will occur in accordance with the *Port Everglades Hurricane Procedure & General Disaster Plan & Continuity of Operations Manual.*

   d. *Number of shelter spaces available.* Port Everglades is located entirely in the Hurricane Vulnerability Zone; consequently, there are no existing or proposed shelter spaces in the PJA.

   e. *Evacuation routes.* It is anticipated that Eller Drive and Spangler Boulevard will continue to serve as the primary hurricane evacuation routes in the PJA. These two roadways provide direct access to the FIHS/SIS, which will be relied on to transfer personnel, commercial vehicles, and equipment away from the Hurricane Vulnerability Zone. The widening of Eller Drive to a 4-lane roadway has improved the PED’s ability to evacuate the PJA in a timely manner.

   f. *Transportation and hazard constraints on evacuation routes.* The primary
constraint on the PJA evacuation routes is the susceptibility to flooding. Heavy rainfall, high tides, and storm surge associated with a hurricane could impact the availability of Eller Drive and Spangler Boulevard for use as evacuation routes. It is, therefore, imperative that the PED and Port tenants secure their premises and evacuate their employees well before the inundation of the Port's evacuation routes by heavy rains and storm surge from an impending hurricane.

g. Evacuation times. The Port Everglades Hurricane Procedure & General Disaster Plan & Continuity of Operations Manual anticipates that all Port administration and Port tenant personnel would be evacuated at least 12 hours before the anticipated landfall of a hurricane. This would allow sufficient time to evacuate the Port before the evacuation routes become impassible from flooding and storm surge.

2. Estimate of the projected impact on hurricane evacuation planning.

a. Anticipated population density. Residential uses are not permitted in the Port Everglades Transportation Area future land use category of the Broward County Land Use Plan; therefore, no population density is anticipated in the PJA.

b. Special needs of the elderly, handicapped, and hospitalized. Residential uses are not permitted in the Port Everglades Transportation Area land use category of the Broward County Land Use Plan; therefore, no special needs of the elderly, handicapped, and hospitalized are anticipated in the PJA.

c. Other special needs of the existing and anticipated populations. Residential uses are not permitted in the Port Everglades Transportation Area land use category of the Broward County Land Use Plan; therefore, no special needs of the existing and future populations are anticipated in the PJA.

3. Measures that could be adopted to maintain or reduce hurricane evacuation.

The PED is carrying out the following measures:

- Maintenance of Eller Drive as the primary evacuation route, together with close coordination between the PED and the Broward County Emergency Management Division, to insure the maintenance or reduction of hurricane evacuation times in the PJA.

- Annual reviews and updates of the Port Everglades Hurricane Procedure & General Disaster Plan & Continuity of Operations Manual, together with the participation by Port Everglades staff in Broward County's annual hurricane simulation exercises, to further the maintenance of effective hurricane preparedness in the PJA.

- A policy encouraging the early dismissal of non-essential Port personnel as a means of reducing hurricane evacuation times.

4. Post-Disaster redevelopment analysis.
a. **Existing and proposed land use in high-hazard areas.** All existing and proposed land uses in the PJA are located in the Coastal High-Hazard Area. Therefore, following a major storm event, it is anticipated that most of the Port infrastructure would require redevelopment. Port Everglades is vital to the maintenance of South Florida's economy, necessitating the reconstruction of all damaged structures and infrastructures in the PJA to pre-storm conditions.

b. **Structures with a history of repeated damage.** There are no structures in the PJA with a history of repeated damage from coastal flooding or hurricanes; therefore, no action regarding this concern is required.

c. **Coastal or shore protection structures.** Coastal or shore protection structures in the PJA include the jetties along the Port Everglades Entrance Channel, riprap along the shoreline of the Southport Turning Notch, and the vertical bulkheads that protect the berths in the PJA from prop wash. All of these structures would be affected by storm surge and high velocity waves during a hurricane storm event. Port Everglades is vital to the maintenance of South Florida's economy, necessitating the reconstruction of all damaged coastal or shore protection structures in the PJA to pre-storm conditions. The ACOE is responsible for maintaining the entrance channel jetties, while the PED is responsible for maintaining the riprap and bulkheads in the PJA.

d. **Infrastructure in high-hazard areas.** All infrastructure in the PJA is located in the Coastal High-Hazard Area. Following a major storm event, all of the Port's above-ground infrastructure could require redevelopment. Port Everglades is vital to the maintenance of South Florida's economy, necessitating the reconstruction of all damaged structures and infrastructure in the PJA to pre-storm conditions.

e. **Beach and dune conditions.** The PJA's beaches and dunes are located entirely in the John U. Lloyd Beach State Recreation Area. The park includes an approximately 150-foot wide beach with small secondary dune structures. This beach area would be subject to storm surge and high velocity waves during a hurricane storm event, which could drastically alter the location and amount of sand along the beach. The low beach elevation and insignificant dune structures could result in a breach of the ocean into the Intracoastal Waterway during the storm's high tide. The FDEP is responsible for the maintenance of state-owned parks and beaches and should coordinate with the Natural Resources Planning and Management Division of the BCEP&GMD in developing a contingency plan for beach renourishment following a storm event.

5. **Analysis of measures to reduce exposure to hazards.**

a. **Relocation.** There are no residential uses requiring relocation in the PJA.
The port and water-dependent non-residential uses in the PJA, by their nature, cannot be relocated. Such uses as ship berths, passenger and cargo terminals, petroleum storage tanks, cement storage silos, bulk and container cargo yards, warehouses, and administrative offices must remain in the PJA to insure the Port's and the South Florida region's continued economic viability. It is expected that any hurricane-related damage to these uses would be expeditiously repaired to their pre-storm conditions to reduce any resultant long-term economic loss.

b. **Structural modification.** No modifications to existing structures are recommended. All structures in the PJA have been built in accordance with existing building codes and will be rebuilt to pre-storm conditions in accordance with current building codes.

c. **Public acquisition.** No public acquisition of privately owned property in the PJA is recommended for the purpose of reducing the impact of natural hazards to the general public.

6. **Coastal high-hazard area.**

   a. **Analysis of the potential for relocating threatened infrastructures.** All infrastructure in the PJA is located in the Coastal High-Hazard Area. It is anticipated that much of the Port's infrastructure would require redevelopment following a major storm event. Port Everglades is vital to the maintenance of South Florida's economy, necessitating the reconstruction of all damaged structures and infrastructure in the PJA to pre-storm conditions. It can be concluded that, to preserve and protect the regional economy, there is no potential for relocating threatened infrastructure located in the PJA.

G. **Beach and Dune Analysis.**

1. **Past trends in erosion and accretion.** Sand material has historically been accreting on the north side of the Port Everglades Entrance Channel jetties with erosion occurring on the south side of the jetties. Consequently, approximately 7,000 cubic yards per year of sand material are deposited in the vicinity of the Port Entrance Channel. To date, this has not restricted or impaired navigational operations. In addition, winter storms tend to erode the beaches to the south, requiring periodic renourishment.

2. **Effects of shore protection structures.** The Port Everglades Entrance Channel is lined by rock jetties composed of large boulders that aid in maintaining channel project depth. Due to the prevailing southerly littoral current, sand material is deposited on the north side of the jetties with scouring occurring on the south side of the jetties.

3. **Measures which could protect or restore beaches.** The beaches in John U. Lloyd Beach State Recreation Area could be protected and restored by implementing an ongoing system that would transfer sand across the Port Everglades Entrance Channel between the north and south jetties. The *Port Everglades Inlet Master Plan*, prepared by Coastal Technology Corporation for the Broward County Department of Natural Resource Protection, dated March 1994, recommended several alternatives for addressing
the beach accretion and erosion at the inlet. They include 1) the continuance of the ACOE project to place 288,000 cubic yards of sand every six years along the park to achieve 100 percent sand bypassing; 2) the installation of a sand trap to provide for future mechanical bypassing of southerly movement; 3) exploration of the feasibility of importing Aragonite sand for beach nourishment; 4) the placement of a combined spur structure and offshore breakwater immediately south of the southern jetty; and 5) consideration of the removal of a portion of the northern jetty to create a weir to reduce the accretion to the north. Research has since been conducted on the characteristics and extent of submerged marine resources that could be affected by a sand transfer plan, resulting in a report dated April 2008 titled, “Broward County Port Everglades Sand Bypass Project: Benthic Habitat Mapping and Assessment.” This report did not contain evaluation of project alternatives. The PED, however, continues to encourage and coordinate with the BCEP&GMD with respect to constructing a sand bypass system to transport sand from the north side of the Port’s Entrance Channel north jetty to the south side of the south jetty.

H. Capacity and Need for Public Access Facilities.

1. **Analysis of the capacity and need for public access facilities.**

   a. **Public access points to beach or shoreline through public lands.** The beaches and shoreline in the PJA are located in the state-owned and maintained John U. Lloyd Beach State Recreation Area. Public access to beaches and the ocean front is presently adequate. No deficiencies are identified which would require improvements to increase public access to beaches and the shoreline in the PJA.

   The security measures imposed by state and federal mandates have restricted public access to the Port itself. In addition, U.S. CBP regulations require that the Port control public access to the dockside areas. Even had these measures not been imposed, unlimited public access to the working harbor area of the Port poses a danger to public safety and must be controlled. Port operations involve the use of specialized off-road equipment, which may cause delays in normal traffic flow in the PJA. In addition, dock-side operations include the use of heavy equipment, such as gantry cranes, mobile stick cranes, hustler tractors, and port packer front-end loaders which facilitate the loading, unloading, storage, and movement of cargo and containers.

   b. **Private property open to the general public.** The only private property in the PJA which was once open to the general public -- the popular restaurant called "Burt and Jacks" -- is no longer on the Port. Because of the present federal and state security mandates, no other such private property open to the general public is envisioned.

   c. **Other legal means of public access.** Access to Port Everglades, which was once an open port, is now controlled by four manned security gates, in
compliance with federal and state security mandates. The general public, therefore, no longer has unlimited legal access to the PJA, but must show appropriate identification and have a specific Port-related purpose for accessing the Port.

d. Parking facilities. To accommodate the anticipated needs of the cruise passengers sailing on the larger ships calling at the Midport terminals, the 5-Year Master Plan includes a new parking garage at Terminal 18, which will add 1,600 structured parking spaces above a passenger intermodal zone, with 400 spaces for employee. In the 10-Year Vision Plan, a new 1,680-space structured parking facility will be constructed west of Cruise Terminal 4 and over a passenger intermodal zone to serve future parking needs for Cruise Terminals 2 and 4.

e. Coastal roads and facilities providing scenic overlooks. The PJA contains several roads that provide scenic overlooks of the working harbor; these are not, however, accessible to the general public. In addition, the Port maintains Marinelli Gardens, a small park located at Eller Drive on the FPL Discharge Canal. Scenic overlooks are not, however, compatible with commercial port operations, particularly in the era of heightened security; therefore, no additional scenic overlooks are recommended in the working harbor area.

f. Marinas. The privately owned and operated dry marina, previously located in the PJA has moved from the Port; but a small parcel in the southwest corner of the Port has been identified for a potential dry-storage facility in the future. The Florida Marine Patrol operates a dry storage and repair facility adjacent to the FPL Discharge Canal. In addition, small boat docks are maintained by the U.S Navy, the U.S. Coast Guard, and Nova Southeastern University at the northern end of John U. Lloyd Beach State Recreation Area. These operations are expected to continue without impact to Port operations or living marine resources.

g. Boat ramps. The only public boat ramps in the PJA are located in the John U. Lloyd Beach State Recreational Area. A boat ramp is also located at the Florida Marine Patrol facility, which is utilized exclusively for patrol boats. Public boat ramps are not compatible with commercial port operations and are not recommended within the working harbor area.

h. Public docks. The only public dock in the PJA is located in the John U. Lloyd Beach State Recreational Area. Public docks are not compatible with commercial port operations and are, therefore, not recommended within the working harbor area.

i. Fishing piers. There are no fishing piers in the PJA; however, there is a catwalk along the south jetty of the Port Everglades Entrance Channel which may be accessed for fishing. As the PJA is a manatee sanctuary, designated by state statute; fishing is a prohibited use. Further, fishing piers are not compatible with commercial port operations and are, therefore, not recommended within the
working harbor area.

j. Fishing area. As the PJA is a manatee sanctuary, designated by state statute; land-based fishing is a prohibited use west of the east line of the Intracoastal Waterway. It is recommended that land-based fishing continue to be prohibited in the PJA, with the exception of the catwalk along the south jetty of the Port Everglades Entrance Channel. In addition, fishing from small boats is not compatible with the navigation of large ships and tugs in a confined harbor.

2. Coordination of above analysis with the Recreation and Open Space Element and the County-Wide Manatee Protection and Boat Facility Siting Plan (if applicable). The PJA includes portions of the municipalities of Fort Lauderdale, Hollywood, Dania Beach, and unincorporated Broward County. In accordance with the Interlocal Agreement dated May 6, 1994 between Broward County and the affected municipal jurisdictions, the Port will continue to be responsible for maintaining access to facilities in the PJA, consistent with federal and state security mandates. The PJA includes the marina-like facilities operated by the U.S. Coast Guard, the U.S. Navy, and Nova Southeastern University in the northern portion of the John U. Lloyd Beach State Recreation Area, these are not public facilities.

I. Infrastructure Analysis.

1. Analysis of existing infrastructure.

a. Demand upon, capacity of, and areas served by roadways. Table 12-8 provides a traffic analysis for the roadways in the PJA for 2011. The PED’s traffic count data from March 2011 was used to calculate the existing Level of Service (LOS). All roads in the PJA currently operate at a LOS of C or better.

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<tbody>
<tr>
<td></td>
<td>Roadway</td>
<td>From To</td>
<td>No. of Lanes</td>
<td>Friday VPD</td>
<td>Saturday VPD</td>
</tr>
<tr>
<td></td>
<td>Eisenhower Boulevard</td>
<td>SE 12 Street - SE 20 Street</td>
<td>4LD</td>
<td>31,000</td>
<td>6,097</td>
</tr>
<tr>
<td></td>
<td>Spangler Boulevard</td>
<td>U.S. 1 - Eisenhower Boulevard</td>
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<td>31,000</td>
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<td>SE 14 Avenue</td>
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<td>14,200</td>
<td>1,733</td>
</tr>
<tr>
<td></td>
<td>Eller Drive</td>
<td>McIntosh Road - SE 19th Street</td>
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<td>31,000</td>
<td>6,119</td>
</tr>
<tr>
<td></td>
<td>McIntosh Road</td>
<td>Eller Drive - South</td>
<td>4LD</td>
<td>31,000</td>
<td>9,305</td>
</tr>
</tbody>
</table>
b. **Demand upon, capacity of, and areas served by bridges or causeways.** A 4-lane bridge along Eller Drive spans the FPL Discharge Canal. This bridge was expanded from a 2-lane bridge to a 4-lane bridge as part of the widening of Eller Drive. A newly constructed bridge also spans the FPL Discharge Canal to facilitate truck traffic between Midport and Southport and eliminate the need for trucks and other vehicles to pass through security between the two destinations. The rebuilt 17th Street Causeway Bridge, with its higher vertical clearance, helps relieve congestion in proximity to the Port.

c. **Demand upon, capacity of, and areas served by sanitary sewer facilities.** The adopted Large User Agreement between the City of Fort Lauderdale and the PED obligates the City to accommodate all existing and future sewage treatment demand in the PJA throughout the planning period. It is anticipated that the sewage treatment plant serving the Port will have adequate available capacity to meet Port needs through the 2015 and 2019 planning horizons.

d. **Demand upon, capacity of, and areas served by potable water facilities.** The adopted Large User Agreement between the City of Fort Lauderdale and the PED obligates the City to accommodate all existing and future potable water demand in the PJA throughout the planning period. It is anticipated that the potable water plants serving the Port will have adequate available capacity to meet Port needs through the 2015 and 2019 planning horizons.

e. **Demand upon, capacity of, and areas served by solid waste facilities.** Since Port Everglades has not experienced any difficulties in solid waste collection and disposal, it may be assumed that capacity exists to handle the Port's existing needs. Due to the long-term capacity of the Southwest Regional Landfill and the South County Resource Recovery Facility, it is expected that there will be sufficient capacity to accommodate Port Everglades' anticipated solid waste demands through the 2015 and 2019 planning horizons.

f. **Demand upon, capacity of, and areas served by man-made drainage facilities.** Maintaining its drainage system in accordance with an NPDES permit, Port Everglades expects it will be able to accommodate all existing and anticipated drainage demand in the PJA without impacting natural resources. Periodic flooding along some of the Port's internal roadways and upland areas during peak rainstorm events may, however, require additional improvements and maintenance. It is recommended that the Port continue to monitor the man-made drainage system to identify and mitigate inadequate drainage conditions when they occur.

g. **Demand upon, capacity of, and areas served by public shore protection structures.** The jetties along the Port Everglades Entrance Channel have been adequately protecting the channel’s 45-foot project depth, which is necessary for the continued economic viability of the Port. The riprap shore-protection
structures placed along the Southport Turning Notch have been adequately protecting the upland areas from erosion resulting from waves and boat wakes. It is expected that these upland areas will continue to be protected during the planning period; the design of the Turning Notch expansion will take this need into consideration.

h. **Demand upon, capacity of, and areas served by beach renourishment projects.** As recommended in the previous DPC, the PED is continuing to encourage and coordinate with the BCEP&GMD with respect to constructing a sand bypass system to transport sand from the north side of the Port’s Entrance Channel north jetty to the south side of the south jetty.

2. **Analysis of future infrastructure needs.**

a. **2015 future needs for facilities.** Table 12-9a provides a traffic analysis of the roadways in the PJA for the 5-Year Master Plan (2015). A growth rate of 1.8 percent was utilized and calculated by the consultant from Element 3 of the Port Everglades Master/Vision Plan. After accounting for the growth in cargo and cruise businesses, all roads in the PJA will operate at an LOS of C or better.

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<td></td>
<td>Friday VPD</td>
<td>Saturday VPD</td>
</tr>
<tr>
<td>Eisenhower Boulevard</td>
<td>SE 12 Street to SE 20 Street</td>
<td>4LD</td>
<td>31,000</td>
<td>6,430</td>
<td>6,430</td>
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<tr>
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<td>Eller Drive to South</td>
<td>4LD</td>
<td>31,000</td>
<td>9,813</td>
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</tr>
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</table>

*b.* **2019 future needs for facilities.** Table 12-9b provides a traffic analysis of the roadways in the PJA for the 10-Year Vision Plan (2019). A growth rate of 2.61 percent was utilized and calculated by the consultant from Element 3 of the Port Everglades Master/Vision Plan. After accounting for the growth in cargo and cruise businesses at the Port, all roads in the PJA will operate at an LOS of C or better.
Table 12-9b
Projected 2019 Roadway Level of Service

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<td></td>
<td>Friday VPD</td>
<td>Saturday VPD</td>
</tr>
<tr>
<td>Eisenhower Boulevard</td>
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<td>4LD</td>
<td>31,000</td>
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<tr>
<td>Spangler Boulevard</td>
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<td>SE 14 Avenue</td>
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<tr>
<td>Eller Drive</td>
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<tr>
<td>McIntosh Road</td>
<td>Eller Drive to South</td>
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<td>31,000</td>
<td>11,163</td>
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</tbody>
</table>

2029 future needs for facilities. Table 12-9c provides a traffic analysis of the roadways in the PJA for the 20-Year Vision Plan (2029). A growth rate of 1.23 percent was utilized and calculated by the consultant from Element 3 of the Port Everglades Master/Vision Plan. After accounting for the growth in cargo and cruise businesses at the Port, all roads within the PJA will operate at an LOS of C or better.

Table 12-9c
Projected 2029 Roadway Level of Service

<table>
<thead>
<tr>
<th>2029</th>
<th>Roadway Segment</th>
<th>No. of Lanes</th>
<th>Daily Capacity</th>
<th>Two-Way Daily Traffic Volumes</th>
<th>Daily Levels of Service</th>
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<tbody>
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<td>Friday VPD</td>
<td>Saturday VPD</td>
</tr>
<tr>
<td>Eisenhower Boulevard</td>
<td>SE 12 Street to SE 20 Street</td>
<td>4LD</td>
<td>31,000</td>
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<tr>
<td>Spangler Boulevard</td>
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<td>4LD</td>
<td>31,000</td>
<td>8,647</td>
<td>8,647</td>
</tr>
<tr>
<td>SE 14 Avenue</td>
<td>Eller Drive to North</td>
<td>2LD</td>
<td>14,200</td>
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<tr>
<td>Eller Drive</td>
<td>McIntosh Road to SE 19th Street</td>
<td>4LD</td>
<td>31,000</td>
<td>8,296</td>
<td>5,908</td>
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<tr>
<td>McIntosh Road</td>
<td>Eller Drive to South</td>
<td>4LD</td>
<td>31,000</td>
<td>12,615</td>
<td>12,615</td>
</tr>
</tbody>
</table>

The following traffic and circulation improvements will result from Plan implementation over the 5- and 10-year planning horizons:
• Constructing the By-Pass Road and relocating the Port’s security gate will mitigate traffic congestion on U.S. 1, between Spangler Boulevard and 17th Street and on 17th Street between U.S. 1 and Eisenhower Boulevard.

• Relocating the existing security gate on Eisenhower Boulevard further south will eliminate non-Port traffic from queuing at that gate.

• Carving out the Broward County Convention Center from the Port’s secured area will eliminate the existing traffic that flows through the Port to and from the center.

• Routing buses, taxis, and privately owned vehicles (POVs) to/from Cruise Terminal 2 over the By-Pass Road rather than through the Port’s security gates will alleviate peak cruise traffic congestion.

• Developing the ICTF, programmed in the 5-Year Master Plan, to move containers by rail in lieu of by truck will eliminate 171,500 annual truck trips at full operational use.

• Developing the crushed rock aggregate facility, programmed in the 10-Year Vision Plan, will allow some of Florida’s needs for this commodity to be fulfilled without generating additional truck trips. Since the rock will leave the Port by rail, the import of this commodity will not generate additional truck trips. The facility will transport 4 million tons of crushed rock by rail, rather than using the 200,000 trucks that would otherwise be needed. The use of rail, therefore, will eliminate 400,000 truck trips to/from the Port and the regional roadway system.

• Locating CBP inspection facility inside the secured Port area will reduce traffic through the Eller Drive gate.

• Adding a new parallel road and cruise passenger intermodal center south of Cruise Terminal 19 will reduce taxi and POV traffic on East Eller Drive and eliminate bus traffic from that roadway segment.

• Entering buses into a centralized intermodal facility at 19th Avenue, west of East Eller Drive, will reduce traffic on that roadway segment.

• Reconfiguring the McIntosh Road alignment and road section with separate queue lanes and only right-hand turns into each container terminal will alleviate congestion on that critical road.

• Developing the first phase of the cruise passenger intermodal center at Midport, programmed in the 10-Year Vision Plan, and the second phase, to be developed in the 20-Year Vision Plan, will have positive cumulative effects on the circulation of cruise-related vehicles. The intermodal center will
eliminate buses traveling farther east on Eller Drive to alleviate traffic congestion in front of the cruise terminals on the Midport peninsula. Baggage trucks from FLL will deliver and pick-up baggage at each cruise terminal. Provision trucks will also access the wharfs directly for each cruise terminal.

b. **Fiscal impact of estimated costs.** The FDOT FY 12-16 Amended Final Tentative Work Program (as of 04/07/11) includes several intermodal improvements that will facilitate road and rail traffic and circulation through the Port. The high-priority Eller Drive Overpass, which will provide grade separation and enhance circulation, is scheduled to begin in 2011. Construction of the on-Port rail and ICTF is programmed to start in 2012 and continue into 2013. Construction of the phased By-Pass Road is programmed to begin in 2012. The McIntosh Road realignment is under way. In addition to these intermodal improvements, the Work Program also includes portwide dredging, cruise terminal improvements, and new bulkheads at Berths 9 and 10.

c. **Funding sources/phasing of any needed improvements.** The intermodal transportation projects included in the FDOT FY 12-16 Amended Final Tentative Work Program will be funded from a number of sources. The Eller Drive Overpass is funded with district and SIS funds ($48 million); the ICTF is funded with a combination of district and SIS program grants ($18 million); the By-Pass Road will be funded with a combination of district and Transportation Regional Incentive Program (TRIP) funds ($11 million); and the McIntosh Road Realignment is being funded with district, SIS, and FSTED program funds ($5.7 million). The Port’s match of the grant funds for specific projects is included in the capital improvements program.

3. **Deepwater Port Infrastructure.**

a. **Landside transportation needed to support Port Everglades.** The primary entrance to Port Everglades is Eller Drive, which directly connects to I-595 at SW 14th Avenue. I-595 is being significantly remodeled through a public/private partnership from east of I-75 to west of I-95. The eventual implementation of the APM between FLL and the Port will facilitate the transfer of cruise passengers between airport and seaport terminals. This project is, however, not currently programmed, as a funding plan and final design have not yet been identified.

Spangler Boulevard and Eisenhower Boulevard also serve as primary accessways into the PJA. The previously described By-Pass Road is being constructed to achieve a pre-911 condition.

The FEC provides rail access to the PJA along Eller Drive. The main line turns north just west of SE 14th Avenue, branching to several spurs to the east, as shown previously on Map 12-13. As part of the Port’s 5-Year Master Plan, the construction of the near-dock ICTF will facilitate the transfer of containers from shop to rail.
b. *In-water facilities.* The in-water facilities to be improved during the 5- and 10-year planning periods are identified in III.C.

c. *Maintenance of in-water facilities.* Port Everglades will continue to perform regular depth soundings throughout the long-term planning horizon to monitor the siltation rate and depth changes at the Port's berths and in the turning basins. These facilities will be maintained when the project depth requirements may become compromised through siltation, seawall undermining, and prop backwashing.

Maintenance of the Port's bulkheads is essential to its continued economic viability. The previously cited *Bulkhead Study Update and Cathodic Protection System Evaluation for Port Everglades Berths 1 through 29*, completed in 2010, provides scheduling recommendations for the replacement of existing bulkheads; these recommendations have been followed in the scheduling of new bulkheads over the 5-, 10, and 20-year planning periods in the Port Master/Vision Plan.

d. *Management of dredged material.*

**Dredging for harbor and channel deepening and widening.** The ACOE is conducting a detailed study of Port facility improvements that includes deepening and widening the Entrance Channel and deepening areas of the Port itself, pending review and approval by the ACOE South Atlantic Division and Headquarters for public release. As shown in Map 12-17, these improvements include:
Deepening and widening the Outer Entrance Channel (OEC) from an existing 45-foot project depth over a 500-foot channel width to 57 feet by 800 feet for a flared extension and extending 2,200 feet seaward.

Deepening the Inner Entrance Channel (IEC) from 42 feet to 50 feet.

Deepening the ship simulator-optimized portion of the Main Turning Basin (MTB) from 42 feet to 50 feet.

Widening the rectangular shoal region to the southeast of the MTB (Widener) by about 300 feet and deepening to 50 feet.

Widening the South Access Channel (SAC) in the proximity of Berths 23 to 26, referred to as the knuckle, by about 250 feet and relocating the United States Coast Guard (USCG) facility easterly on USCG property.

Shifting the existing 400-foot-wide SAC about 65 feet to the east from approximately Berth 26 to the south end of Berth 29 to provide a transition back to the existing federal channel limits.
Deepening the SAC from about Berth 23 to the south end of Berth 32 from 42 feet to 50 feet.

- Deepening the Turning Notch, including the Sponsor-expanded portion from 42 feet to 50 feet with an additional 100-foot widening parallel to the channel on the eastern edge of the SAC over a length of about 1,845 feet.

- Widening the western edge of the SAC for access to the Southport Turning Notch from the existing federal channel edge near the south end of Berth 29 to a width of about 100 feet at the north edge of the Turning Notch.

The Southport Turning Notch expansion at existing water depth is the sole responsibility of the sponsor, the Port.

As of March 30, 2011, the ACOE schedule for conducting the remaining phases of the study and implementing construction of these improvements is as follows:

- Finalize draft feasibility report, November 4, 2011.
- End public comment on draft report, February 12, 2012.
- EIS Record of Decision (ROD), September 13, 2013.
- Federal funding appropriate for project, November 14, 2013.
- Advertise dredging contract (contingent on funding), September 14, 2014.
- Award dredging contract, December 18, 2014.
- Initiate construction, February 16, 2015.

Management of dredged material  Because of inadequate upland dredge disposal areas and the ACOE’s conclusions that the Port requires an off-shore site for the disposal of both maintenance and construction dredged materials, the Port Everglades Harbor ODMDS was designated by EPA Region 4 in February 2005. An Environmental Impact Statement was completed in 2004 in support of this designation. The existing ODMDS, previously shown in Map 12-14, is an approximately one square nautical mile, located approximately four nautical miles east-northeast of the Port Everglades Harbor. This site is located on the upper continental slope on the western edge of the Florida Current and consists of primarily soft-bottom habitat in water depths of 195 to 215 meters (640 to 705 feet).

The ODMDS was designed for the disposal of maintenance material projects not to exceed 500,000 cubic yards, as the Site Management and Monitoring Plan developed in 2004 for the Port Everglades Harbor ODMDS placed project volume restrictions of 500,000 cubic yards until capacity modeling was completed. In 2009, the ACOE initiated capacity modeling for the proposed deepening and widening project at Port
Everglades and results have indicated that the existing ODMDS is insufficient in size to contain the footprint from this project. EPA and the ACOE have initiated the process of expanding the existing Port Everglades ODMDS.

There are two possible site configurations and one no action option:

- **No Action Alternative**: The No Action Alternative is defined as not designating an expansion of the Port Everglades ODMDS, pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act. This would lead to continued use of the existing site for the placement of material from operations and maintenance dredging; and/or the emergency one-time designation of a site by the ACOE under Section 102 of the Act for the dredged material generated by the proposed Port expansion.

- **East-West Disposal Release Zone Alternative**: This configuration was designed based on an east-west oriented disposal release zone. This expanded configuration encompasses the existing ODMDS. It shares the same southern and eastern borders and extends north and west to the red one-centimeter contour line (see Map 12-14). This expanded site is approximately four square nautical miles.

- **North-South Disposal Release Zone Alternative**: This configuration was designed based on a north-south oriented disposal release zone. This expanded configuration encompasses the existing ODMDS. It shares the same southern and eastern borders as the existing site and extends north and west to the blue one-centimeter contour line. This expanded site is approximately four square nautical miles.

Both alternative configurations are within the boundaries of previous surveys collected during the original site designation as well as routine monitoring conducted by the EPA.

The goal of the site selection process is to select a location that minimizes the risk of harm to the marine environment and human health, and facilitates the necessary dredging and subsequent placement of dredged material. The site must meet selection criteria specified in EPA’s Ocean Dumping Regulations. Compliance with the requirements of the National Environmental Policy Act (NEPA) is an integral part of the site designation process. The NEPA document will present information to evaluate the suitability of potential sites and disposal alternatives. It will be based on available information as well as new information collected and developed specifically for this site expansion and designation and will succinctly document the considerations made in selecting the specific configuration of the ODMDS. EPA and the ACOE are currently conducting applicable studies and working cooperatively in the collection of additional field data required for the preparation of an Environmental Assessment supporting the site expansion.

The projected schedule for completion of major ODMDS tasks is as follows:
Hazardous material handling and cleanup. The Port's procedures for the handling and disposal of regulated or hazardous materials in the PJA have been successful in meeting the needs mandated by federal, state, and local government standards. It is recommended that these procedures be annually updated to insure consistency with current plans and procedures of the Broward County Emergency Management Division.

Handling and cleanup of petroleum products. The Port's procedures for the handling and cleanup of petroleum products in the PJA have been successful in meeting the needs mandated by federal, state and local government standards. It is recommended that these procedures be annually updated to insure consistency with current standards and protocols as well as the current plans and procedures of the Broward County Emergency Management Division.

4. Requirements for maintaining in-water facilities and for the management of dredged material from both maintenance and expansion. Requirements for maintaining in-water facilities and for the management of dredged material from both maintenance and expansion are specified in Sections IV.I.3.c and IV.I.3.d

5. Impact of Port maintenance and expansion.

a. Vegetative cover, wetlands, and wildlife habitats. Port maintenance and expansion proposed in the Port Master/Vision Plan will have minimal impact on the existing natural resources in the PJA. The proposed water-dependant and water-related Port infrastructure improvements occur on urban land that contains no existing natural resources. The Southport Turning Notch expansion will proceed once FDEP accepts the initial mitigation program as productive and the required permits are issued.

b. Beaches and Dunes. Port maintenance and expansion plans proposed in the Port Master/Vision Plan will have no impact on existing beaches and dunes in the PJA, which include only the northern beachfront of John U. Lloyd Beach State Recreation Area. It is expected that any beach erosion associated with the impact of the Port Everglades Entrance Channel jetties will be continually monitored by the FDEP and the Natural Resources Planning and Management Division of the BCEP&GMD. Short-term storms tend to be more damaging to beaches and dunes than the ongoing littoral drift.

c. Submerged lands. Port maintenance and expansion plans proposed in the Port Master/Vision Plan will have minimal impact on submerged lands in the
PJA. The Port owns the submerged lands in the PJA that are not owned by the State of Florida. It is expected that no submerged lands in the PJA will be impacted, with the exception of periodic berth depth maintenance resulting from siltation, undermining by ship and tug propeller backwashing, and debris deposited by loading and unloading ships.

d. Floodplains. Port maintenance and expansion plans proposed in the Port Master/Vision Plan will have minimal impact on floodplains in the PJA. New development and redevelopment in upland portions of the PJA will continue to be constructed in compliance with the standards specified by the building codes and land development regulations of the affected local government.

e. Living marine resources. Port maintenance and expansion plans proposed in the Port Master/Vision Plan will have minimal impact on living marine resources. The Plan provides for the continued maintenance of the Port Everglades Entrance Channel jetties and the riprap seawall along the existing Southport Turning Notch, which serves as an underwater structure that promotes the protection and proliferation of living marine resources.

The Port Everglades manatee sanctuary, as designated by state statute, will continue to allow the safe haven for the manatees that populate the FPL Discharge Channel during the winter months. The Natural Resources Planning and Management Division of the BCEP&GMD and the FDEP will continue to monitor the beachfront for sea turtle nests. In addition, the protection of off-shore coral reefs will continue to be an important factor in the establishment of an ODMDS by the ACOE and the U.S. EPA.

f. Water quality. Port maintenance and expansion plans proposed in the Port Master/Vision Plan will have minimal impact on water quality in the PJA. The proximity of the PJA to the Atlantic Ocean facilitates strong tidal flushing which keeps the Port's water areas relatively free of pollutants.

g. Water quantity. Port maintenance and expansion plans proposed in the Port Master Plan will have minimal impact on water quantity in the PJA. The Large User Agreement between the Port and the City of Fort Lauderdale insures there will continue to be adequate potable water available, concurrent with the impact of development in the PJA.

h. Public access. Federal and state security measures restrict public access to the Port. The By-Pass Road, Phase 1 of which is included in the 5-Year Master Plan, has been designed to allow the public to travel between the intersection at Eisenhower Boulevard and 17th Street to Spangler Boulevard and U.S. 1 without passing through a Port security gate. It essentially “carves out” the Convention Center from the Port, thus allowing the public direct access to the Convention Center from 17th Street. The public will not, however, have unrestricted access to Port facilities because of security considerations.
DEEPWATER PORT COMPONENT

i. **Historic Resources.** Anticipated future expansion and operations of Port Everglades will have no impact on historic resources. Any new designation or identification of historic resources in the PJA will be protected, in accordance with the Broward County Code.

j. **Land use and infrastructure of adjacent areas.** The PJA is generally bounded by the 17th Street Causeway to the north, by West Lake Regional Park to the south, by the Atlantic Ocean to the east, and U.S. 1 and FLL to the west. This creates a self-contained, well defined commercial port area. Although it is anticipated that the Port’s future expansion and operations will have little impact on adjacent land uses or adjacent infrastructure, it is recommended that compatibility between Port-related uses and any adjacent residential uses be considered by the affected local jurisdiction during the land use amendment and development order review process.

The PED shall continue to coordinate regularly with the BCAD and the FAA to ensure that the new berths and crane locations proposed in the Southport Turning Notch expansion plan are compatible with FLL operations and height restrictions for that area of the Port.

The PJA includes portions of the municipalities of Fort Lauderdale, Hollywood, Dania Beach, and Broward County. The Interlocal Agreement dated May 6, 1994 among these respective jurisdictions identifies roles and responsibilities in the PJA. Chapter 163.3178(2)(k)(5) requires the adoption of a procedure by Broward County and the affected jurisdictions which will resolve any inconsistencies between the respective local government comprehensive plans and the DPC through a dispute resolution process. As provided under Chapter 186.509, FS, this procedure is to be utilized in the event the local government and Broward County are unable to resolve the inconsistencies. The dispute resolution process shall be consistent with the Broward County Intergovernmental Coordination Element.

IV. IMPLEMENTATION

A. **Authority.** The PED of Broward County shall be the agency responsible for implementing the programs identified in the DPC, in accordance with federal, state, and local government regulations.

1. **Chapter 59-1157, Laws of Florida, as amended,** defined the PJA and established the Port Everglades Authority.

2. **Port Everglades Code,** adopted by the Port Everglades Authority on June 20, 1991, specifies the powers and duties of the Port Everglades Authority, together with the rules and regulations which apply within the PJA.

3. **Chapter 94-429, Laws of Florida,** provides for the assumption by the Broward
County Board of County Commissioners of the powers and duties of the Port Everglades Authority.

4. **Resolution No. 94-1302**, adopted by the Broward County Board of County Commissioners, on October 25, 1994, incorporates the rules and regulations of the Port Everglades Authority into the Broward County Administrative Code.

5. **Interlocal Agreement between the Municipalities of Hollywood, Fort Lauderdale, Dania Beach, and Broward County, dated May 6, 1994**, defines the roles and responsibilities of the affected jurisdictions in the PJA.

6. **Port Everglades Development District (PEDD)** specifies the zoning regulations applicable in the PJA which have been adopted by the municipalities of Hollywood, Fort Lauderdale, and Dania Beach.


B. Sources.

1. **Port Everglades Master/Vision Plan**, AECOM, adopted by the Broward County Board of County Commissioners on March 1, 2011.


5. **Bulkhead Study Update and Cathodic Protection System Evaluation for Port Everglades Berths 1 through 29**, Halcrow, August 2010.


7. **Port Everglades Operating Budget for Fiscal Year 2011**, Port Everglades Department of Broward County, March 31, 2011.


10. **Florida Department of Transportation FY 12-16 Amended Final Tentative Work Program**, April 7, 2011.


12. **Port Everglades Inlet Sand Bypass Project Mitigation for Impacts to Rubble-Dominated Hardbottom Communities**, Broward County Natural Resources Planning & Management Division, Cheryl L. Miller, Coastal Eco-Group, Inc.,
DEEPWATER PORT COMPONENT

