



PORT EVERGLADES 2014 MASTER/VISION PLAN

ADOPTED ON JUNE 24, 2014

EXECUTIVE SUMMARY

PRESENTED BY



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LIST OF ACRONYMS

Acronym	Description
AAPA	AMERICAN ASSOCIATION OF PORT AUTHORITIES
ADA	AMERICANS WITH DISABILITIES ACT
AGL	ABOVE GROUND LEVEL
AMP	ALTERNATIVE MARINE POWER
AMSL	ABOVE MEAN SEA LEVEL
APM	AUTOMATED PEOPLE MOVER
ASC	AUTOMATED STACKING CRANES
B/D	BARRELS PER DAY
BBL	BARRELS
BCAD	BROWARD COUNTY AVIATION DEPARTMENT
BCEMD	BROWARD COUNTY EMERGENCY MANAGEMENT DIVISION
BCEP&GMD	BROWARD COUNTY ENVIRONMENTAL PROTECTION AND GROWTH MANAGEMENT DEPARTMENT
BCT	BROWARD COUNTY TRANSIT
BEBR	BUREAU OF ECONOMIC AND BUSINESS RESEARCH
BMP	BEST MANAGEMENT PRACTICES
BOARD	BROWARD COUNTY BOARD OF COUNTY COMMISSIONERS
BOD	BIOCHEMICAL OXYGEN DEMAND
BSO	BROWARD SHERIFF'S OFFICE
B/YR	BARRELS PER YEAR
CAGR	COMPOUND ANNUAL GROWTH RATE
CBOB	SUBOCTANE BLENDSTOCK THAT WILL MEET FINISHED GASOLINE SPECIFICATIONS WHEN BLENDED WITH 10 PERCENT ETHANOL
CBP	US CUSTOMS AND BORDER PROTECTION
CCR	CONTINUOUS CATALYST REGENERATION
CIP	CAPITAL IMPROVEMENT PROGRAM
CHHA	COASTAL HIGH HAZARD AREAS
CLIA	CRUISE LINES INTERNATIONAL ASSOCIATION
CNG	COMPRESSED NATURAL GAS
CSXI	CSX INTERMODAL
CSXT	CSX TRANSPORTATION INC.
DC&A	DIAL CORDY AND ASSOCIATES INC.
DCC	DANIA CUT-OFF CANAL
DERA	DIESEL EMISSIONS REDUCTION ACT
DOE	DEPARTMENT OF ENERGY
DR-CAFTA	CENTRAL AMERICA FREE TRADE AGREEMENT WITH THE DOMINICAN REPUBLIC, BELIZE, EL SALVADOR, HONDURAS, NICARAGUA, GUATEMALA, AND COSTA RICA
DRI	DEVELOPMENT OF REGIONAL IMPACT
DWT	DEADWEIGHT TON
EA	ENVIRONMENTAL ASSESSMENT

Acronym	Description
ECA	EMISSIONS CONTROL AREA
EDI	ELECTRONIC DATA INTERCHANGE
EIA	ENERGY INFORMATION AGENCY
EISA	ENERGY INDEPENDENCE AND SECURITY ACT OF 2007
EPA	ENVIRONMENTAL PROTECTION AGENCY
E-RTG	ELECTRIC-POWERED RUBBER-TIRED GABTRY CRANE
ETS	ELECTRIFIED TRUCK STOPS
FAA	FEDERAL AVIATION ADMINISTRATION
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FEC	FLORIDA EAST COAST RAILWAY
FECI	FLORIDA EAST COAST INDUSTRIES
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FG	FUNCTIONAL GAIN
FHWA	FEDERAL HIGHWAY ADMINISTRATION
PM2.5	FINE PARTICULATE MATTER
FIT	FLORIDA INTERNATIONAL TERMINAL
FLL	FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT
FLP	OFFICE OF FREIGHT, LOGISTICS, AND PASSENGER OPERATIONS
FONSI	FINDING OF NO SIGNIFICANT IMPACT
FPC	FLORIDA PORTS COUNCIL
FPL	FLORIDA POWER AND LIGHT
FR	FEDERAL REGISTER
FSTED	FLORIDA SEAPORT TRANSPORTATION AND ECONOMIC DEVELOPMENT COUNCIL
FWC	FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
FY	FISCAL YEAR
G	GRANTS
GDP	GROSS DOMESTIC PRODUCT
GPS	GLOBAL POSITIONING SYSTEM
GRP	GROSS REGIONAL PRODUCT
GT	GROSS TONS
HEA	HABITAT EQUIVALENCY ANALYSIS
HOV	HIGH-OCCUPANCY VEHICLE
I	INTERNAL REVENUE
ICTF	INTERMODAL CONTAINER TRANSFER FACILITY
IEC	INNER ENTRANCE CHANNEL
ILC	INTERMODAL (OR INTEGRATED) LOGISTICS CENTER
IMC	BROWARD COUNTY INTERMODAL CENTER
IMF	INTERNATIONAL MONETARY FUND
IMO	INTERNATIONAL MARITIME ORGANIZATION
ISC	INDIAN SUB-CONTINENT
ITB	INTEGRATED TUG-BARGE

Acronym	Description
ITS	INTELLIGENT TRANSPORTATION SYSTEM
JOC	JOURNAL OF COMMERCE
JONES ACT	THE MERCHANT MARINE ACT OF 1920.A FEDERAL STATUTE THAT REQUIRES US-FLAGGED VESSELS TO BE BUILT IN THE US, OWNED BY US CITIZENS, AND DOCUMENTED UNDER THE LAWS OF THE US. IN ADDITION, ALL OFFICERS AND 75 PERCENT OF THE CREW MUST BE US CITIZENS. VESSELS THAT SATISFY THESE REQUIREMENTS COMPRISE THE "JONES ACT FLEET." THE JONES ACT RESTRICTS THE CARRIAGE OF GOODS BETWEEN US PORTS TO US- FLAGGED VESSELS.
KM/HR	KILOMETERS PER HOUR
LEED	LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN
LF	LINEAR FEET
LNG	LIQUIFIED NATURAL GAS
Lo/Lo	LIFT-ON/LIFT-OFF (USED TO DESIGNATE CARGO THAT IS LIFTED ON AND OFF A VESSEL RATHER THAN BEING ROLLED ON AND OFF
LOA	LENGTH OVERALL
LOS	LEVEL OF SERVICE
LPA	LOCALLY PREFERRED ALTERNATIVE
LPG	LIQUEFIED PETROLEUM GAS
LPP	LOCALLY PREFERED PLAN
LRTP	LONG-RANGE TRANSPORTATION PLAN
MAP-21	MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY ACT
MARAD	U.S. MARITIME ADMINISTRATION
MARPOL	INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS
MARSEC	MARITIME SECURITY SYSTEM
MBD	MILLION BARRELS PER DAY
MBTA	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
MIA	MIAMI INTERNATIONAL AIRPORT
MOL	MITSUI O.S.K. LINES
MPG	MILES PER GALLON
MPH	MILES PER HOUR
MPO	METROPOLITAN PLANNING ORGANIZATION
MSA	METROPOLITAN STATISTICAL AREA
MSC	MEDITERRANEAN SHIPPING COMPANY
MSL	MEAN SEA LEVEL
MTB	MAIN TURNING BASIN
MW	MEGAWATT
NCL	NORWEGIAN CRUISE LINE
NEPA	NATIONAL ENVIRONMENTAL POLICY ACT
NFA	NO FURTHER ACTION
NMFS	NATIONAL MARINE FISHERIES SERVICE
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Acronym	Description
NOx	NITROGEN OXIDES
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NPV	NET PRESENT VALUE
NS	NORFOLK SOUTHERN
NVOCC	NON-VESSEL OPERATING COMMON CARRIER
OCR	OPTICAL CHARACTER RECOGNITION
ODMDS	OCEAN DREDGED MATERIAL DISPOSAL SITES
OEC	OUTER ENTRANCE CHANNEL
OFAC	OFFICE OF FOREIGN ASSETS CONTROL
OPA 90	OIL POLLUTION ACT OF 1990
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	PRIVATE INVESTMENT
P3	PUBLIC PRIVATE PARTNERSHIP
P&G	PURVIN & GERTZ
PADD	PETROLEUM ADMINISTRATION FOR DEFENSE DISTRICT
PANAMAX VESSEL	VESSEL WHOSE DIMENSIONS (BEAM, LENGTH, AND/OR DRAFT) ALLOW IT TO TRAVERSE THE EXISTING PANAMA CANAL
PBI	PALM BEACH INTERNATIONAL AIRPORT
PD&E	PROJECT DEVELOPMENT AND ENVIRONMENTAL STUDY
PDVSA	PETROLEOS DE VENEZUELA, S.A.
PED	PORT EVERGLADES DEPARTMENT
PEDD	PORT EVERGLADES DEVELOPMENT DISTRICT
PJA	PORT JURISDICTIONAL AREA
PNW	PACIFIC NORTHWEST
POMTOC	PORT OF MIAMI TERMINAL OPERATING COMPANY
POST-PANAMAX VESSEL	VESSEL TOO LARGE TO TRAVERSE THE PRESENT CONFIGURATION OF THE PANAMA CANAL
POV	PRIVATELY OWNED VEHICLES
PPM	PARTS PER MILLION
PSA	PASSENGER SERVICES ASSOCIATION
RCCL	ROYAL CARIBBEAN CRUISE LINES
RFID	RADIO FREQUENCY IDENTIFICATION
RFP	REQUEST FOR PROPOSAL
RLI	REQUEST FOR LETTERS OF INTEREST
RMG	RAIL-MOUNTED GANTRY CRANE
Ro/Ro	ROLL-ON/ROLL-OFF (USED TO DESIGNATE CARGO THAT IS ROLLED ON AND OFF A VESSEL RATHER THAN BEING LIFTED ON AND OFF)
ROI	RETURN ON INCREMENTAL INVESTMENT
ROM	ROUGH ORDER OF MAGNITUDE
RTG	RUBBER-TIRED GANTRY CRANE
SAC	SOUTHPORT ACCESS CHANNEL

Acronym	Description
SAFETEA-LU	SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A LEGACY FOR USERS
SCFE	SOUTH CENTRAL FLORIDA EXPRESS
SEDS	STATE ENERGY DATA SYSTEM
SEIS	SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
SEFTC	SOUTHEAST FLORIDA TRANSPORTATION COUNCIL
SFECC	SOUTH FLORIDA EAST COAST CORRIDOR STUDY
SFRC	SOUTH FLORIDA RAIL CORRIDOR
SFRTA	SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY
SFWMD	SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SIB	STATE INFRASTRUCTURE BANK
SIS	STRATEGIC INTERMODAL SYSTEM
SOLAS	SAFETY OF LIFE AT SEA
SOx	SULFUR OXIDES
STB	SURFACE TRANSPORTATION BOARD
STS	SHIP-TO-SHORE CRANE
SUPER POST-PANAMAX VESSEL	VESSEL ABLE TO TRAVERSE THE EXPANDED CONFIGURATION OF THE NEW PANAMA CANAL LOCKS
TEU	TWENTY-FOOT EQUIVALENT CONTAINER UNIT
TGS	TWENTY-FOOT GROUND SLOT
TL 2.0	<i>FLORIDA: MADE FOR TRADE, FLORIDA TRADE AND LOGISTICS STUDY 2.0</i>
TOS	TERMINAL OPERATING SYSTEM
TPI	TONS PER INCH OF DISPERSION
TSM&O	TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS
TSP	TENTATIVELY SELECTED PLAN
U	UNFUNDED (POTENTIAL DEBT)
UK	UNITED KINGDOM
ULCC	ULTRA LARGE CRUDE CARRIERS
UMAM	UNIFORM MITIGATION ASSESSMENT METHOD
USACE	US ARMY CORPS OF ENGINEERS
USCG	UNITED STATES COAST GUARD
USDA APHIS/PPQ	US DEPARTMENT OF AGRICULTURE, ANIMAL AND PLANT HEALTH INSPECTION SERVICE, PLANT PROTECTION AND QUARANTINE
USDOT	UNITED STATES DEPARTMENT OF TRANSPORTATION
USFWS	US FISH AND WILDLIFE SERVICES
VCY	VIRTUAL CONTAINER YARD
VFN	VIRTUAL FREIGHT NETWORK
VFR	VISUAL FLIGHT RULES
VGO	VACUUM GAS OIL
VLCC	VERY LARGE CRUDE CARRIERS
WOA	WINDOW OF ACCESSIBILITY

Acronym	Description
YMS	YARD MANAGEMENT SYSTEM

EXECUTIVE SUMMARY

Introduction

The Broward County Board of County Commissioners (Board) approved the *2009 Port Everglades Master/Vision Plan* in March 2011. At that time, the Board also provided direction to the Port Everglades Department (Port) to prepare an update to the 2009 Plan every two to three years. To prepare the update for the 20-year period between 2015 and 2033, the Port contracted with AECOM, the firm and its sub-consultants that prepared the *2009 Port Everglades Master/Vision Plan*.

Similar to that in the 2009 Plan, the overarching goal of this three-phase *2014 Port Everglades Master/Vision Plan* is to

Create a plan to maximize market share and revenue through a realistic 5-year facility development program within a framework of 10- and 20- Year Vision Plans.

To carry out this planning assignment, the consultant team updated the following key work products in Phases I and II to reflect the new planning horizon and the changes that have occurred regionally, nationally, and internationally since 2011:

- Existing conditions assessment.
- Market assessment for the Port's core business lines.
- Business, financial, and asset utilization strategies.
- Conceptual and final 5-Year Master Plan and 10- and 20- Year Vision Plans.
- 5-Year Capital Improvement Program (CIP).

Phase III consists of a video to illustrate the anticipated project development over the planning horizon.

In this 2014 Plan, the 5-Year Master Plan covers Fiscal Years (FY) 2015 to 2019; the 10-Year Vision Plan covers FY 2020 to 2023, and the 20-Year Vision Plan covers FY 2024 to 2033.¹

¹ Initially, the planning milestones were 2014-2018, 2020-2023, and 2024-2033; these were changed for consistency with the Port's 5-year capital improvement program for FY 2015.

Planning Principles

A guiding principle of this Plan is to consistently reflect the Port's new mission statement:

“As a powerhouse for international trade, travel, and investment, Port Everglades leverages its world-recognized South Florida facilities and innovative leadership to drive the region’s economic vitality and provide the highest levels of service, safety, environmental stewardship, and community accountability.”



In addition, the Port's operating principle of stewardship and sustainability was reflected in an emphasis throughout the planning process on the economy, the environment, and the community.

Consensus-Building and Public Outreach Participation

The Public Outreach Program for the 2014 master planning initiative was developed to invite input into the planning process from everyone interested in the Port's growth and expansion. The program was designed to dispense information to the public, tenants, governmental entities, regulatory agencies, and other stakeholders and to encourage their participation and comments. Through workshops and one-on-one interviews conducted by the consultant team as an essential part of Plan preparation, the input and concerns of all interested stakeholders were recorded and taken into account to the maximum extent possible.

Public Meetings. An initial public meeting was held on June 24, 2013, at the Broward County Main Library during Phase I. The purpose of the meeting was to inform the public about the intended goals, planning process, and progress of Plan development, and receive input. To encourage awareness and participation, advertisements appeared in local newspapers, postcards were mailed to homeowner groups and community publications, and television and radio stations were contacted. Subsequent public meetings were held on October 8, 2013 and May 28, 2014 to update the public on the progress and content of the Plan and receive their input.

Audio and video tapes were made of these meetings. The PowerPoint presentations made during the meetings are available on-line through the project website (see below).

Tenant, Stakeholder, and Agency Meetings. An initial tenant/stakeholder meeting was conducted on June 20, 2013 to introduce the Plan update process. Once the market assessment updates were completed, another tenant and stakeholder meeting was held on September 19, 2013 to present the assessment findings. Subsequently, charrettes with the Port's tenants and stakeholders were held on October 30 and 31, 2013 to receive their first-hand input concerning project needs and other concerns to be addressed in the new Plan. Additional tenant and stakeholder meetings were held on November 21, 2013, January 9, 2014,

and May 27, 2014 to keep everyone abreast of how the Plan was evolving and the projects proposed for inclusion.

In addition, two environmental outreach meetings were held to update the environmental community, including regulatory agencies, on the progress of the planning process. The first meeting was held in June 2013 to discuss the *Draft Feasibility Report and Environmental Impact Statement* released by the U.S. Army Corps of Engineers (USACE) concerning the channel deepening and widening program. The second meeting, held on May 27, 2014 updated the environmental community on the progress of the USACE program and discussed other points of interest, such as the Port's initiatives on air and water quality, high mast lighting to protect sea turtles, energy efficiency, and future opportunities for natural gas and solar and wind panels. The County's efforts with respect to climate change were also highlighted. The environmental community was invited to the tenant/stakeholder meetings as well.

In addition to these meetings, the Chief Executive and Port Director organized several "Focus Group" workshops whose participants were individuals from each of the Port's business sectors; these participants were asked to provide input and direction on Plan development.

As part of the Port's Public Outreach Program, presentations about the Plan were also made to the Port Everglades Association, the Port Everglades Advocacy Team. Meetings with the Broward County Metropolitan Planning Organization were scheduled for July 2014.

One-on-One Interviews with Port Tenants and Stakeholders. In addition to the group workshops, one-on-one interviews were held with many of the Port's terminal operators, tenants, and other stakeholders to update information regarding their current operations, future plans, and any concerns. These interviews provided input into the respective market assessment updates and subsequent project development.

Workshop with the Board and Briefings with the County Administration. Several briefing sessions were held with the County Administrator to discuss project progress; and a public workshop was held with the Board on May 6, 2014 at the Broward County Governmental Center. Comments and input received from Board members were incorporated into the Plan.

Website. To present accurate information to those interested in this planning process and receive their comments, a project website was created. The project website address is www.portevergladesmasterplan.com. The website has proved to be a valuable tool that has given stakeholders an opportunity to check current meeting schedules, and access meeting presentations they may have missed or wish to review. Those interested may also communicate their questions, comments, and concerns via an email link. All questions submitted are answered, and general questions are posted on the FAQ page of the website. The website is also a vehicle by which Port Everglades can convey additional information concerning this project.

Summary. Through the Public Outreach Program, everyone with a stake in Plan development has had an opportunity to participate in the planning process. Port Everglades recognizes the impact the Port has, not only on its tenants and users, but also on the surrounding communities and region. Addressing and resolving issues and concerns throughout the planning process has

fostered an effective working relationship and consensus among the various stakeholders' interests and the recommendations contained in the ultimate Plan.

A list of all the meetings held during the planning process is provided in Appendix A.

Planning Process Summary

Phase I

The specific tasks completed in Phase I and submitted in October 2013 include the following:

Overview of Local and Regional Context for Port Development. The consultant team highlighted the socioeconomic factors in South Florida that help create the dynamic climate that contributes to Port Everglades' success across diverse business lines. Also included was an update of the various intermodal mobility programs affecting local and regional landside access and a comprehensive review of the environmental conditions in the Port area.

Review of Port Facilities and Infrastructure Assets. The consultant team evaluated the Port's deepwater facilities as well as the cargo, cruise, and petroleum storage infrastructure; and reviewed the Port's highway, freight rail, and airport connections and the synergies among them.

Updated Market Assessments. Specialized sub-consultants on the project team updated the 2009 market assessments to forecast the markets for the Port's core cargo and cruise businesses through the new planning horizon. Because of the continuing economic changes resulting from the global recession and its impact on international and domestic trade, this update of market conditions was critical to the Plan update.

Phase II

The following tasks were completed in Phase II and submitted to the Board for approval in June 2014:

Identification of Infrastructure Needs to Support the 2033 Forecasts. The consultant team integrated the results of the respective market assessments for cargo and cruise businesses with the results of the one-on-one tenant and stakeholder interviews to identify the projects that would support the anticipated growth across the business lines over the planning horizon.

This task, performed in an iterative process and facilitated by workshops with the Port's senior staff, resulted in the identification of the following key parameters of Port development:

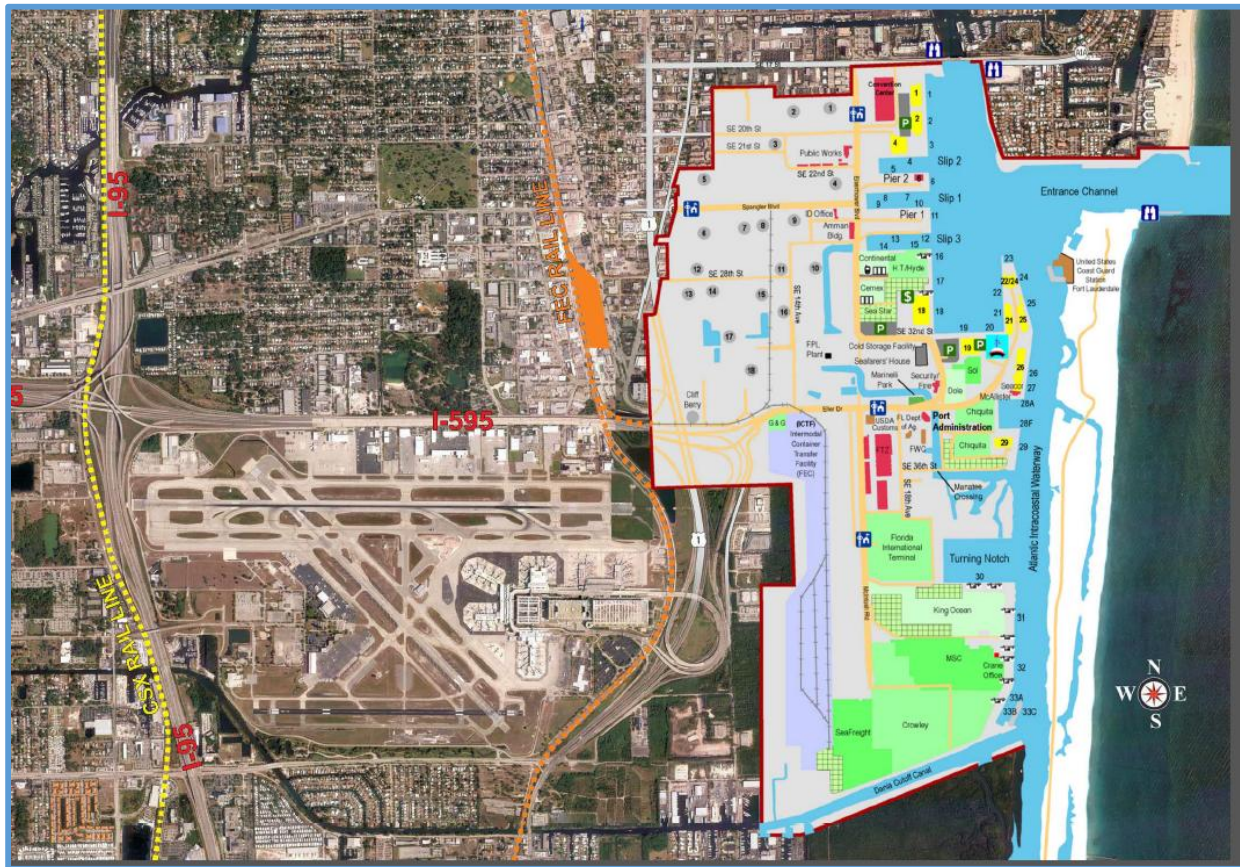
- Ability to berth fully laden super post-Panamax ships of 8,000 to 8,500 20-foot equivalent container units (TEUs).
- Additional cranes to load and unload the super post-Panamax ships swiftly.
- Berthing flexibility to serve the Port's diverse tenants and users.
- Longer cruise berths and wider slips to accommodate the latest generation of cruise ships.
- Petroleum berth modernization and redundancy to meet industry changes.

- Terminal and access improvements to increase operational efficiencies and service.
- Bulkhead maintenance to preserve the Port's assets.

The projects to meet these parameters are located across the entire Port Jurisdictional Area, which is shown in Figure ES-1, and includes Northport, Midport, and Southport.²

² **Northport** accommodates cruise ships and petroleum tankers as well as other bulk ships; **Midport** is the Port's main cruise ship berthing area, but also accommodates both containerized and non-containerized cargo; **Southport** is the location planned for most of the Port's containerized cargo growth.

Figure ES-1
PORT EVERGLADES JURISDICTIONAL AREA



Preparation of Conceptual 20-Year Vision Plan. Keeping in mind the Port's mission statement, with its emphasis on economic vitality and environmental stewardship and sustainability, the consultant team reviewed the physical opportunities and constraints within the Port to develop realistic infrastructure improvement concepts. The resulting concepts reflected a variety of factors, including the updated market assessments, the USACE *Deepening and Widening Study*, bulkhead replacement scheduling, Southport Turning Notch extension planning, and airspace object height restrictions. They also reflected industry trends for cargo and cruise operations and terminal design, alternative berthing configurations, operational enhancement opportunities, and potential circulation and parking requirements.

Business and Asset Utilization Strategies. The consultant team identified business and asset utilization strategies that would help the Port make the most of its facilities and other resources.

Development of Financial Strategies for Plan Implementation. To assist in Plan implementation, the consultant team worked with Port staff to assess potential 5-Year Master Plan projects using a decision-matrix tool created to assess the competitiveness, economic, and stewardship aspects of a given project

Identification of Goals, Objectives, and Policies. To fulfill Chapter 163 planning requirements, the consultant team updated the previously developed goals, objectives, and policies that were incorporated into the Deepwater Port Component of the Broward County *Comprehensive Plan* and the Transportation Element.

Interface with On-Going Programs of Sister County Agencies and Other Stakeholders. Planning for Port Everglades' development and expansion cannot occur in a vacuum as several of the entities located in proximity to the Port are engaged in their own concurrent planning initiatives. The consultant team, in conjunction with Port staff, maintained contact with these entities to address issues of mutual interest and coordinate planning efforts. In several cases, these planning efforts have not been concluded in the same time frame as the Port's Plan. The summary below notes ongoing initiatives reflected in the planning process.

Fort Lauderdale-Hollywood International (FLL) Airport Height Restrictions. Flight arrival and departure patterns from FLL extend over portions of the Port devoted to cargo operations, particularly Southport and Midport. The flight paths restrict the height of structures as well as vessels located under the flight paths. Since the 2009 Plan was prepared, the Port worked with the Federal Aviation Administration (FAA) and the Broward County Aviation Department (BCAD) to identify the maximum height of cranes and vessels that would be permitted in these portions of the Port and received approval of the proposed berth and crane locations.

Automated People Mover and Intermodal Center (SunPort Project). The Florida Department of Transportation (FDOT), the Port, and FLL have studied options for developing an Automated People Mover and Intermodal Center to serve as a transportation hub and connection for local residents, Port and FLL employees, and the increasing number of cruise passengers who fly into FLL for cruises from the Port. In 2009, after years of study, the Federal Highway Administration (FHWA) released the project's final draft Environmental Assessment (EA) for public comment and the Port and airport staff held a public hearing on June 25, 2009. After the public hearing, the draft EA was revised to address public comments and subsequently submitted to FDOT and FHWA on September 11, 2009.

Phased project implementation will depend on the FHWA's Finding of No Significant Impact (FONSI), Board approval to proceed with the next step of the project, and the identification of external funding sources. Until funding is identified, however, the FONSI cannot be issued. Consequently, at this time, the EA document has been placed on hold until a funding plan for the project can be developed. Once funding is identified, Broward County and FDOT can restart the process to obtain the FONSI from FHWA.

Broward County Convention Center. The Board is pursuing an expansion to the convention center and the development of an on-site hotel. While the plans for this expansion and development are still evolving, it is possible that the adjacent Northport parking garage may be partially or completely torn down to make way for the proposed new facilities. The Port is monitoring how this program develops, as it will have an impact not only on the Port's parking infrastructure, but also on the cruise facilities in Northport.

In the Port's 2009 Plan, a two-phase project to remove the convention center from the Port's security perimeter was proposed. As discussed later in this document, the first phase, moving the security gate on Eisenhower Boulevard further to the south is expected to be implemented in 2015, the second phase of the project, the creation of a by-pass road, has been removed from the program.

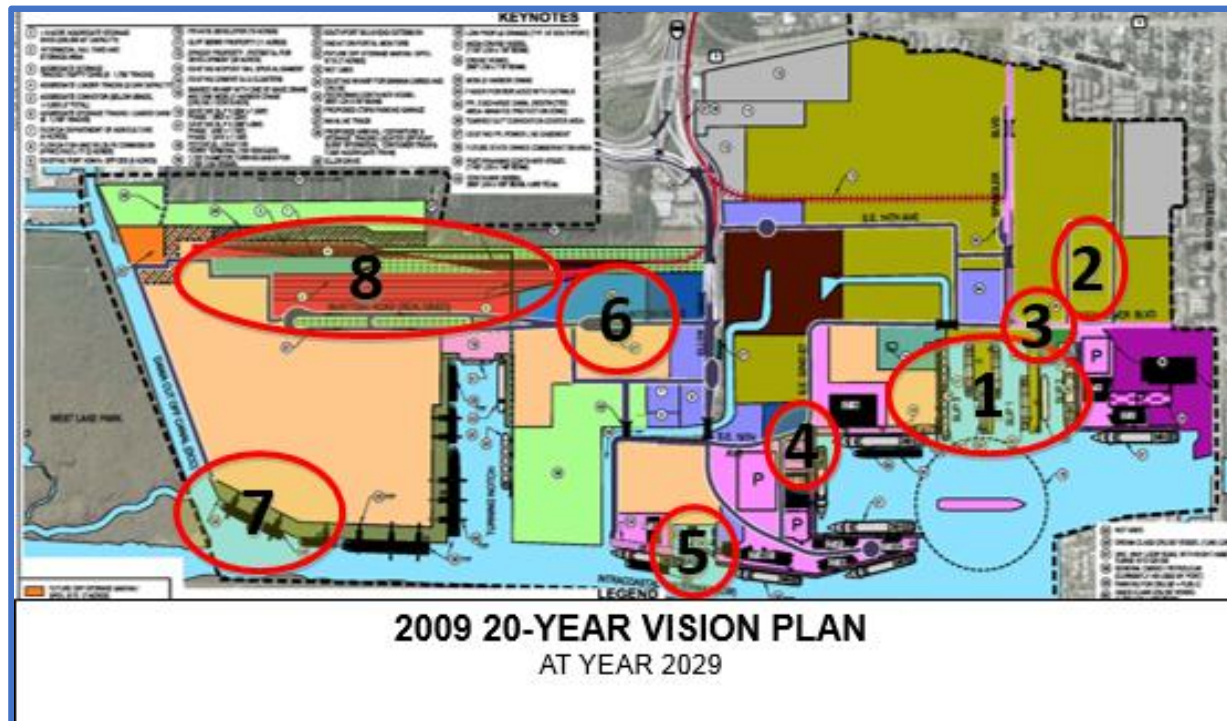
Florida East Coast Railway (FEC) Intermodal Container Transfer Facility (ICTF).

Since the 2009 Plan was approved, with its recommendation to develop an ICTF, the FEC and the Port collaborated on the implementation of the recommended facility. The ICTF, which is unique in that it will serve both international and domestic cargo, is scheduled to open in the summer of 2014. In addition, the FDOT accelerated the construction of the Eller Drive overpass, which will prevent vehicular traffic from being impeded by the rail traffic moving to and from the Port.

USACE Deepening and Widening Program. In June 2013, the USACE released its long-awaited *Draft Feasibility Report and Environmental Impact Statement* concerning the proposed deepening and widening of the Port's harbor and channels. During the course of this planning process, as the USACE document was under review, the consultant team worked with Port staff to identify the anticipated project timing and funding once the final Chief's Report for the project was released and the project submitted for federal authorization and funding allocation.

Plan Refinement. With input from Port staff, tenants, and other stakeholders, the consultant team refined the conceptual 20-Year Vision Plan into 10- and 20-Year Vision Plans and a 5-Year Master Plan and CIP. In the transition from the 2009 Plan to the 2014 Plan, new projects were added, some of the projects in the 2009 Plan were modified or moved from one time frame into another, and several projects were removed from the program altogether. For reference, the 2029 20-Year Vision Plan from the 2009 Plan is illustrated in Figure ES-2, which identifies the locations of project changes. In addition to the new projects discussed in the Element 5 section later in this document and the rescheduling of several projects, these changes to the 2009 Plan include:

Figure ES-2
AREAS OF CHANGE IN THE 2009 MASTER/VISION PLAN



- Modifications to the planned dimensions of Slips 1, 2, and 3, consistent with the bulkhead study results and industry needs (1).
- Repurposing of an underutilized County-owned parcel of land for neo-bulk storage (2).
- Relocation of the security gate on Eisenhower Boulevard and removal of the by-pass road from the program (3).
- Removal of the Cruise Terminal 18 parking garage from the program. Based on current and projected parking demand, the need is not sufficient to require the construction (4).
- Filling of the Tracor Basin (5).
- Relocation of the Foreign-Trade Zone (6).
- Reconfiguration of Berth 33 (7).
- Relocation of the crushed rock (aggregate) facility (8).

As input into the 2009 Plan, an outside engineering firm conducted a bulkhead study³ for the Port to identify a schedule for replacing Berths 1 through 29. In this 2014 Plan, the resulting bulkhead replacement schedule has been coordinated with the USACE's future portwide deepening and widening program, the ongoing update of the Plan, and the current conditions of the existing steel sheet pile bulkhead walls. Bulkhead improvements are proposed within the 5-, 10-, and 20-year planning horizons, respectively, and are described in each of the sections below. The detailed study is attached in Appendix G.

³ Halcrow, *Bulkhead Study Update and Cathodic Protection System Evaluation*, August 2010.

Preparation of a Cost-Feasible 5-Year Capital Improvement Plan and Affordability

Analysis. The consultant team worked with Port staff to identify the various types of funding available for the projects proposed for the first five years of Plan implementation and developed a cost-feasible, affordable document.

Phase III

Upon approval of the *2014 Master/Vision Plan*, the consultant team will prepare a video that illustrates the anticipated project development over the planning horizon.

Master Plan Elements

Phases I and II of the 2014 Plan contain six elements. The contents of each element are summarized below.

Element 1: Existing Conditions Assessment

Element 1 of the 2014 Plan presents an overview of the Port, including land uses, a facility inventory update, the status of the projects in the 2009 5-Year Master Plan, berthing and yard capacity analyses, on-port traffic circulation and parking, the intermodal transportation network, and environmental conditions. Underlying this overview is an analysis of the socioeconomic characteristics of the South Florida region, with Port Everglades lying at the heart of the three interdependent counties -- Miami-Dade, Broward, and Palm Beach -- which together constitute the state's most populous region and its strongest trade and tourism economic engines.

Port Everglades, portions of which are located in the cities of Fort Lauderdale, Hollywood, and Dania Beach, and in unincorporated Broward County, encompasses an area of about 2,190 acres adjacent to the Intracoastal Waterway. With its containerized cargo, liquid and dry/neo-bulk commodities, and cruise activities, the Port is one of the most diversified in Florida.

Port Everglades ranks eleventh among the top mainland U.S. container ports, moving 927,572 TEUs in FY 2013, a 0.43 percent increase over the 923,600 TEUs moved in FY 2012 and a gradual return to the record 985,095 TEUs moved in FY 2008, before the great recession. To deal with the growth projected during the planning period, the Port is pursuing aggressive strategies. Since the 2009 plan was published, the Port has proceeded with the extension of its Southport turning notch to create additional berths, has collaborated with the FEC on the development of an ICTF to increase container-handling capacity, and is working with the USACE to obtain federal approval for harbor deepening and widening, as discussed later in this document.

As Table ES-1 shows, in FY 2013, the Port handled 22.5 million tons of cargo (3.5 million tons of exports and 7.8 million tons of imports as well as 11.2 million tons of domestic cargo, predominantly petroleum).

Table ES-1
THREE-YEAR SUMMARY OF OPERATIONS AT PORT EVERGLADES

Source: Port Commerce Report

Operation	FY 2011	FY 2012	FY 2013
Containers (TEUs)	880,999	923,600	927,572
Cargo Tonnage	22,087,515	22,116,275	22,452,473
Cruise Passengers	3,952,843	3,757,320	3,600,636,

The Port is the primary storage and distribution seaport for refined petroleum product in South Florida. It provides jet fuel to the area's three international airports and smaller regional airports, distributes gas to facilities in a 12-county area, and handles other diverse fuels.

The Port's Foreign-Trade Zone No. 25 extends to several non-contiguous sites, including acreage in Davie, about six miles west of the Port, and farther west in the Miramar Park of Commerce. These off-port locations help diversify and spread the economic opportunities and jobs generated by Port operations.

In addition to its substantial cargo operations, Port Everglades also serves a dozen cruise lines and more than 40 cruise ships, which made 772 ship calls and embarked and disembarked 3.6 million multi-day and single-day revenue cruise passengers in FY 2013. Approximately 50 percent of these passengers are reported to fly through South Florida airports to and from their cruises from Port Everglades.

According to a FY 2013 assessment of the Port's economic activities, Port Everglades generates almost \$25.8 billion worth of business activity annually. More than 202,700 Florida jobs are impacted by the Port, including over 11,400 people who work for companies that provide direct services at the Port. In addition, \$733.5 million of state and local taxes were generated by activity at the cargo and cruise terminals, including \$575.5 million generated by the related users throughout the state.

Element 2: Market Assessment

Element 2 presents the findings of the market assessments conducted for the core business sectors at the Port. These include containerized cargo; non-containerized cargo, such as dry and break-bulk (neo-bulk) commodities; liquid bulk (petroleum products) cargo; and cruise.

On the cargo side, the Port's diversified operations include:

- Containerized cargo, with commodities such as bananas and other fruit, vegetables, beverages, apparel, ceramic and mosaic tile, electrical products, machinery, auto parts, and other imports and exports.
- Dry bulk cargo, including cement and clinkers.

- Liquid bulk, comprising diverse petroleum products such as gasoline, diesel, jet, and other fuel.
- Break-bulk, also called neo-bulk, including building materials such as steel coils/rebar.
- Rolling stock such as yachts and other boats, trucks, automobiles, buses, and equipment.

On the cruise side, the Port's broad spectrum of passenger operations encompasses more than 40 cruise ships from a dozen cruise lines, whose itineraries range from single day cruises to the Bahamas to lengthy world cruises.

In addition to these core businesses, other activities at the Port include a petroleum storage tank farm, serving 12 counties; the Foreign-Trade Zone 25, used by over 60 businesses; and an annual "Fleet Week USA," honoring the US Navy and Coast Guard. This diversity is a key strength that has contributed to both the Port's significant growth and its sound financial performance.

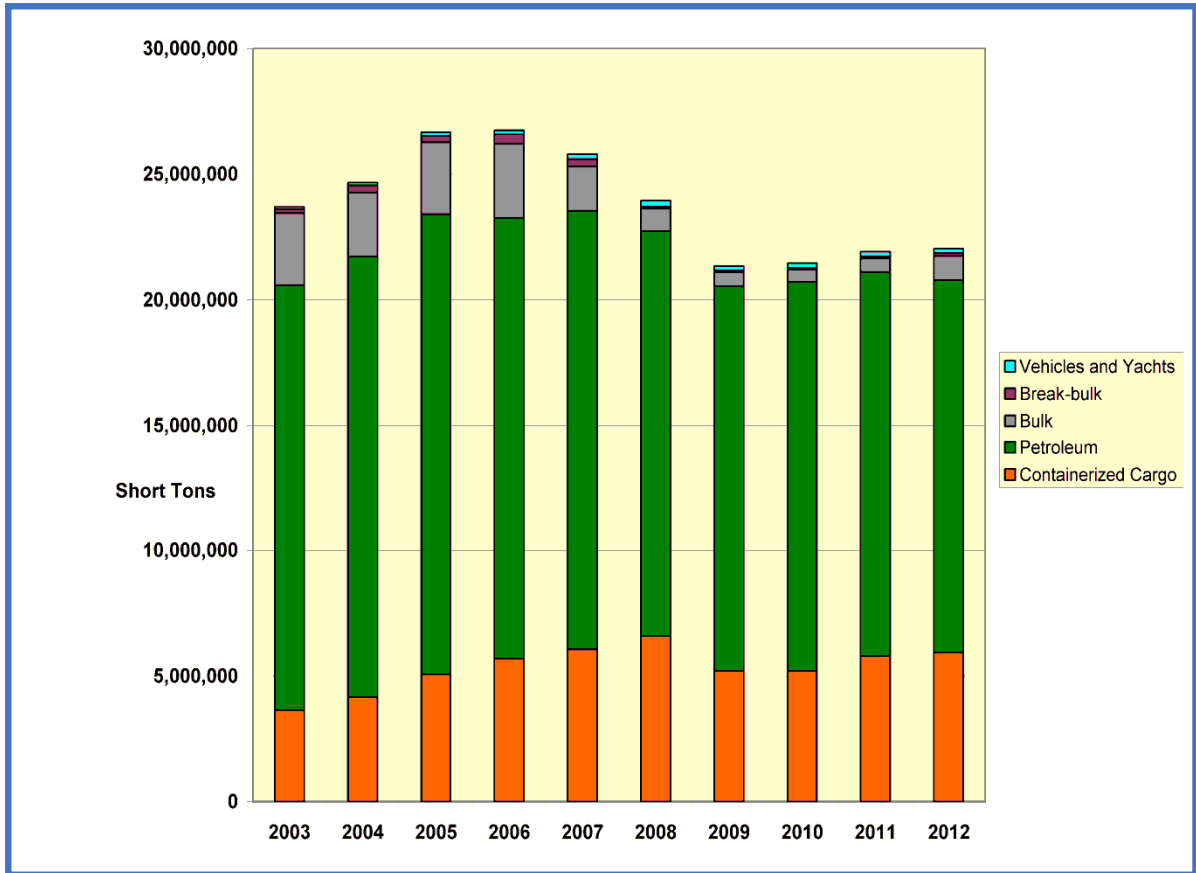
Historic Overview

As a complement to examining the market opportunities for Port Everglades in each of its core businesses over the 20-year planning period through 2033, the consultant team looked at how these businesses have matured over the ten-year period from FY 2002/2003 (FY 2003) through FY 2011/2012 (FY 2012).

Cargo Operations. Over the ten years from FY 2003 through FY 2012, the Port's tonnage decreased from 23.9 million tons to 22.1 million tons, after reaching a high of 27.1 million tons in FY 2005, prior to the economic downturn. This decline primarily reflects changes in the Port's liquid and dry bulk throughput, as discussed below. Since FY 2009, however, the Port has seen a steady increase in tonnage. The Port's ten-year tonnage throughput is shown in Figure ES-3.

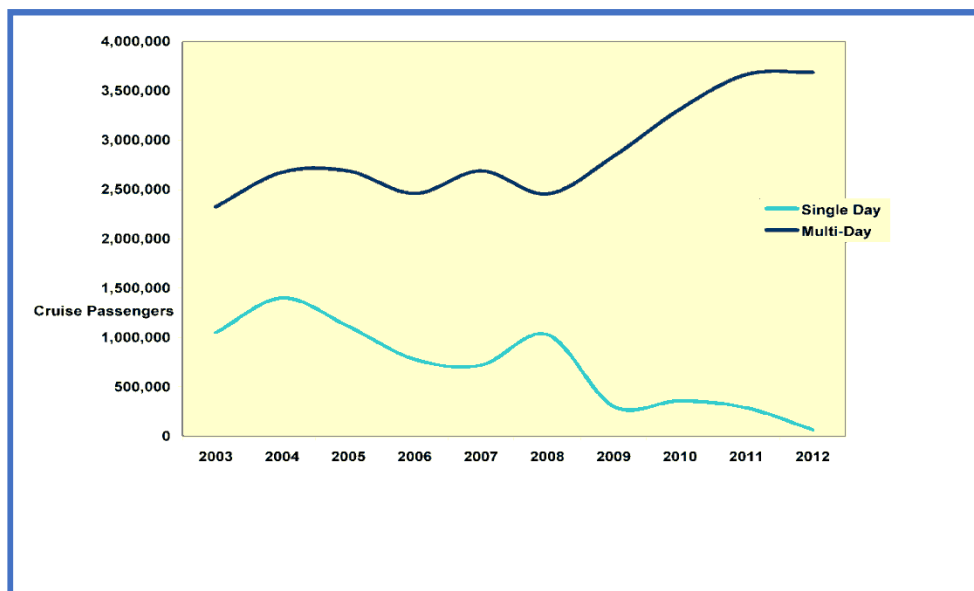
Containerized cargo movements at Port Everglades, expressed in 20-foot equivalent container units, or TEUs, have also grown over the ten-year period. In FY 2003, 569,743 TEUs crossed the Port's docks; by FY 2012, that number had increased to 923,600, a 62.1 percent rise over the period. The Port's TEU count, which peaked in FY 2008 at 985,095 TEUs, declined slightly in FY 2009, but has since been on a steady upswing.

Figure ES-3
COMPARISON OF TONNAGES AT PORT EVERGLADES BY CARGO TYPE
FY 2003 through FY 2012



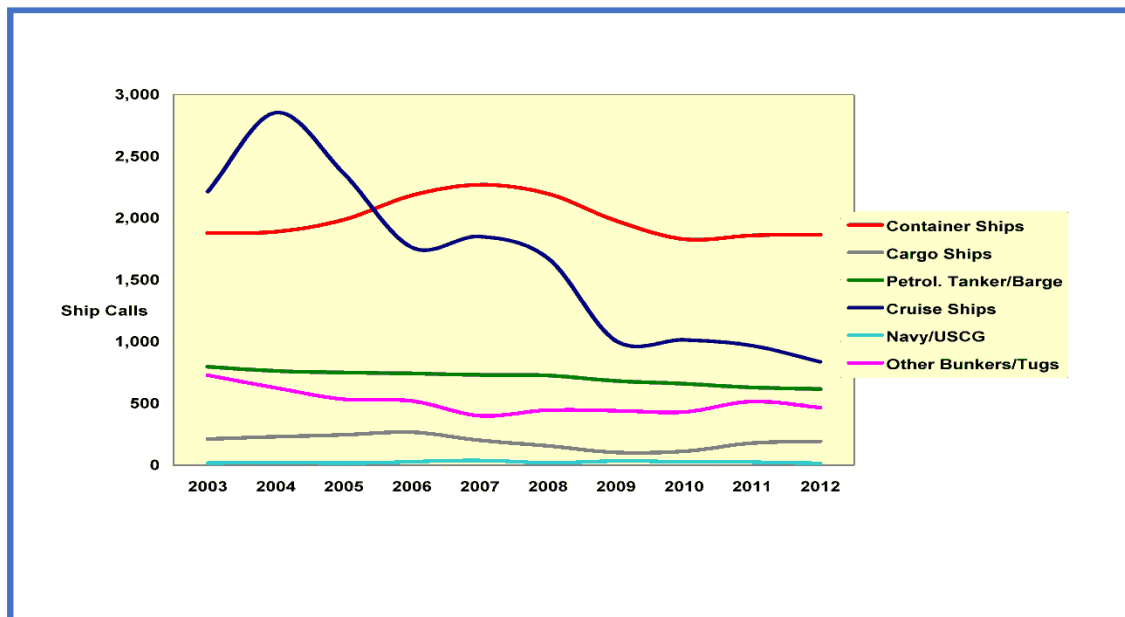
Cruise Operations. Port Everglades has seen an 11 percent increase in the total number of passengers cruising from the Port in the ten-year period, from 3.38 million passengers in FY 2003 to 3.78 million in FY 2012. As shown in Figure ES-4, however, the two categories of cruises -- multi-day and single-day -- have experienced different passenger growth patterns. Whereas the number of multi-day passengers cruising from Port Everglades increased by 58.4 percent over the ten-year period, the number of day cruisers actually declined by 93.5 percent. This decline is attributable to a variety of factors, including new competitive landside gaming opportunities.

Figure ES-4
COMPARISON OF CRUISE PASSENGERS AT PORT EVERGLADES BY CRUISE TYPE
FY 2003 through FY 2012



Ship Calls. The vessels calling at Port Everglades to transport the various types of cargo and cruise passengers range from simple barges and small cargo ships to large oil tankers, bulk ships, and container ships to day cruisers and mega cruise ships. Figure ES-5 illustrates the call patterns of each vessel type. The dramatic fluctuations in the cruise ship calls reflect two factors: first, the decline in the single-day cruises, and second, the increasingly larger cruise ships that make fewer calls while carrying more passengers.

Figure ES-5
COMPARISON OF SHIP CALLS AT PORT EVERGLADES BY TYPE
FY 2003 through FY 2012



What is apparent from a comparison of the declining number of petroleum, container, and cruise vessel calls with the growth in the Port's tonnage, TEU movements, and number of multi-day cruise passengers is that the ships are getting bigger and carrying more tons, more TEUs, and more passengers per vessel call. This conclusion is documented in the market assessments that follow this section.

Port Revenues. As the final piece in this historic overview, the consultant team looked at how the Port's revenues from its core business sectors have changed over the ten-year period. In FY 2003, the Port's total operating revenues were \$89.4 million; by FY 2012, these revenues had increased to \$142.9 million, a 59.8 percent increase. Waterborne operating revenues were \$68.9 million in FY 2003 and \$122.0 million in FY 2012, a 76.9 percent increase.

Market Assessments

Containerized Cargo. The underlying goals of the containerized cargo forecasts were to:

- Benchmark overall growth targets, by year, through FY 2033 (in tons, loaded TEUs, and total TEUs).

- Identify key markets, opportunities, constraints, and plan responses.
- Point to opportunities and key strategic decisions to be specifically addressed in Phase II of this 2014 Plan.

Approach. The following steps were followed in this assessment:

- Gather data from Port Everglades, the USACE, PIERS, the United States Department of Transportation, and other sources.
- Formulate definitions for the baseline, baseline plus, and high forecast scenarios. In consultation with Port staff, it was decided that the USACE forecast was ideally suited to serve as the baseline scenario and that any additions to the baseline traffic would be tied to specific carrier/customer traffic-routing decisions, and not to hypothetical market capture or market share targets.
- Meet with and interview key freight stakeholders to discuss and understand their respective outlooks on markets and services.
- Develop statistical projections. The USACE forecast (in metric tons) was translated into short tons, loaded TEUs, and total TEUs. Estimates for additional traffic under the Baseline Plus and High forecast conditions were then added in the appropriate years.
- Apply a series of sensitivity tests to the three forecast scenarios. These sensitivity tests were designed to address key container market variables identified through stakeholder interviews and discussions with Port staff. Table ES-2 summarizes these variables.

**Table ES-2
KEY CONTAINER MARKET VARIABLES**

Known Strengths	Issues, Variables, Unknowns
<ul style="list-style-type: none"> • Largely captive local market. • Southport improvements (turning notch, wharf, cranes). • USACE recommendation for 48-foot authorized depth. • Truck access and backland availability generally good. • Future on-port intermodal container transfer facility (ICTF). • Americas markets. • Cost structure, strong tenant relationships and commitments. 	<ul style="list-style-type: none"> • Berth limitations – length, number. • Crane limitations – air draft, number. • Seasonality of commodity demand. • Adequacy of 48-foot authorization and impacts of maintaining at 49 feet vs. 50 feet. • Carrier alliances (especially P3), vessel deployment strategies, vessel types, in light of improvements at competing ports and evolving fleet mixes. • Extent of transshipment vs. direct services • ICTF operations and ability to serve hinterland markets. • Transload/integrated logistics center (ILC) potential, on site vs. at inland ports. • Impact of not implementing the recommended deepening.

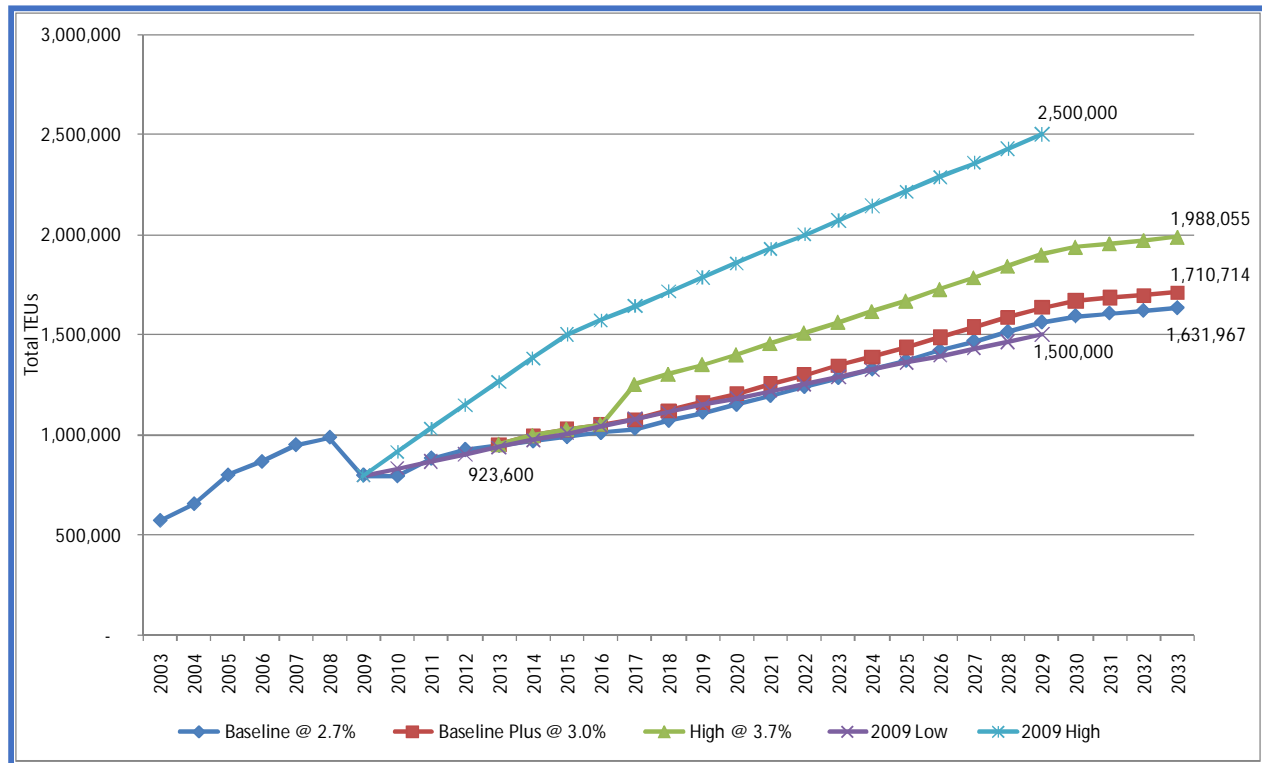
Forecast Summary. Annual containerized cargo demand at Port Everglades was forecast under three scenarios.

- **Baseline.** The baseline scenario is fully consistent with the USACE *Draft Feasibility Report and Environmental Impact Statement*, reflecting no change in Port Everglades' commodity trade lane market shares with respect to competing South Atlantic ports (Charleston, Savannah, Jacksonville, Palm Beach, and Miami).
- **Baseline-Plus.** The baseline-plus scenario includes two factors that are nearly certain to increase Port Everglades' market share:
 - Relocation of the Hapag-Lloyd GAX service from PortMiami to Port Everglades, as of August 2013. The baseline-plus scenario adds the expected traffic from this service in its first full year of operation (15,000 TEUs in FY 2014), with subsequent growth over time.
 - Construction of the new near-dock ICTF south of Eller Drive and west of McIntosh Road. The near-dock facility will eliminate the current cost (estimated at around \$175 per trip) for trucks to haul containers to off-port rail terminals. The Baseline Plus forecast assumes that improved rail competitiveness will have two effects: it will allow some Port traffic that would otherwise move by truck to shift to rail; and it will attract new over-the-wharf cargo that would not otherwise call at Port Everglades.
- **High.** The high scenario adds a new weekly all-water Asia service to Baseline-Plus traffic. One of the major opportunities for all South Atlantic ports is additional all-water trade with Asia. It is likely that Asia trade will be handled by some mix of transshipment services (smaller feeder vessels in hub-and-spoke services) and larger vessels transiting the Suez and the Panama canals and calling directly at U.S. ports.

While it is impossible to predict the exact mix between direct and transshipped volumes, or to predict exactly which South Atlantic ports will receive which direct calls, carrier discussions suggest that, in the near future, South Florida could see two weekly all-water Asia direct calls -- probably via the Panama Canal with 5,500+ TEU vessels, and possibly via the Suez Canal as well with 8,500+ TEU vessels, according to carrier discussions. (The Panama Canal will also accommodate 8,500 TEU vessels, should carriers deploy them.). The high forecast scenario anticipates that Port Everglades is successful in capturing one of these weekly all-water Asia calls, starting with 100,000 containers per year (175,000 TEUs) in FY 2017.

All three scenarios, shown in Figure ES-6, assume 48-foot channel depths, along with flat or nearly flat demand growth during construction of planned major improvement projects (Turning Notch extension, new berths, harbor and channel deepening, and near-dock rail).

**Figure ES-6
CONTAINERIZED CARGO FORECAST SUMMARY**



(Total TEUS)

The baseline scenario anticipates growth to 1.63 million TEUs by 2033, equivalent to a compound annual growth rate of 2.7 percent. The baseline-plus forecast anticipates growth to 1.71 million TEUs, an equivalent growth rate of 3.0 percent per year, and a portwide rail share of 12.4 percent. The high forecast anticipates growth to 1.99 million TEUs, an equivalent growth rate of 3.7 percent per year, and a portwide rail share of 12.4 percent.

For historical comparison, the new baseline forecast is almost identical to the low forecast from the 2009 Port Everglades Master/Vision Plan; however, the new High forecast scenario is more conservative than the high forecast from the 2009 plan. The new High forecast reflects the slower than expected pace of economic recovery, flat or nearly flat growth during major Port construction, and a more conservative target for capture of new business.

Non-Containerized Cargo: Dry Bulk and Neo-Bulk Assessment. The underlying goals of this analysis for dry bulk, break-bulk, yachts and vehicles were to:

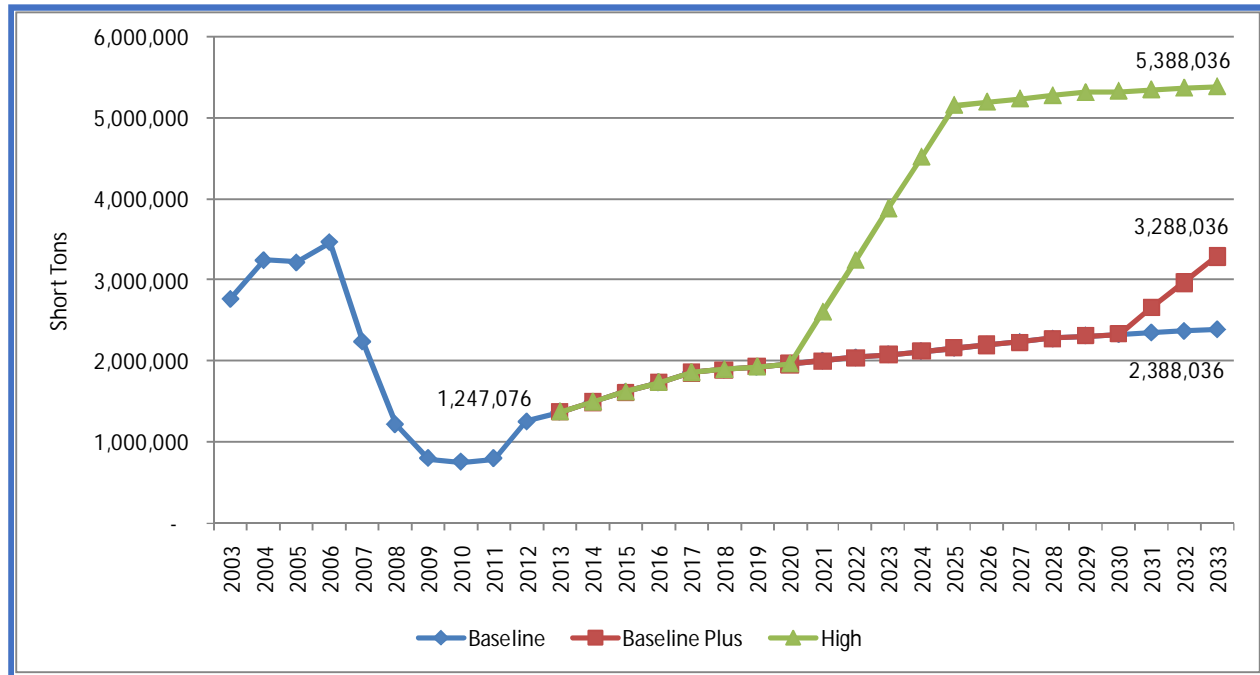
- Benchmark overall growth targets, by year, through FY 2033 (in short tons).
- Identify key markets, opportunities, constraints, and plan responses.
- Point to opportunities and key strategic decisions to be specifically addressed in Phase II of the Master/Vision Plan.

Approach. As with the container forecast, the key steps included: data development; scenario formulation; stakeholder interviews and research; and statistical projections. Unlike the container forecast, demand for these commodity types is not expected to vary based on factors such as channel depth, carrier strategies, etc., so sensitivity testing of the resulting forecasts was not performed.

Forecast Summary. Annual cargo demand for dry bulk, break-bulk, yachts and vehicles was forecast under three scenarios (see Figure ES-7).

- **Baseline.** The baseline scenario is fully consistent with the USACE *Draft Feasibility Report and Environmental Impact Statement*, reflecting no change in Port Everglades' commodity trade-lane market shares with respect to competing South Atlantic ports (Charleston, Savannah, Jacksonville, Palm Beach, and Miami). The USACE forecast combines the various commodity types -- cement, crushed rock, steel/rebar, vehicles and yachts, etc. These commodities tend to co-vary, since they are all tied to construction activity and gross domestic product (GDP).
- **Baseline-Plus.** The baseline-plus forecast starts with the baseline forecast, and adds a new import terminal for crushed rock to replace a portion of Lake Belt limestone production. Currently, South Florida is supplied with limestone by mines in the "Lake Belt" region west of Miami. The assumption is that Lake Belt mines are permitted to operate through 2040 (their estimated lifespan), with imports through Port Everglades beginning in 2030 and ramping up gradually to the year 2040. The baseline-plus forecast also assumes that rail service would be available for the new rock import facility. Without rail service, such a facility is unlikely to be viable.
- **High.** Like the baseline-plus forecast, the high forecast starts with the baseline forecast, and adds a new import terminal for crushed rock. It assumes, however, that no additional mining permits are issued beyond 2019-2023. In this scenario, all Lake Belt production has to be replaced through other means. Imports through Port Everglades begin in 2020 and ramp up rapidly. The Port Everglades import terminal would begin operation in FY 2021, ramping up rapidly to full operation by FY 2025. The high forecast also assumes that rail service would be available for the new rock import facility.

**Figure ES-7
 DRY BULK, BREAK-BULK, YACHTS AND VEHICLES FORECAST SUMMARY
 (SHORT TONS)**



Unlike the container forecast, these commodities would not be significantly impacted by major port construction between FY 2013 and FY 2016.

For these commodity groups, Port Everglades’ volumes peaked at around 3.5 million tons in FY 2006. With the recession, volumes dropped to less than 1 million tons between FY 2009 and FY 2011. Much of the tonnage is in construction-related commodities (cement, steel rebar) and expensive consumer durable goods (yachts and vehicles), where demand tends to be cyclical with general economic conditions.

Under the baseline forecast, demand recovers to nearly 2 million tons by FY 2017, and grows thereafter at a conservative rate of 1.6 percent per year, reaching nearly 2.5 million tons by FY 2033. To this figure, the baseline-plus forecast adds 0.9 million tons of import rock in FY 2033, while the high forecast adds 3.0 million tons of import rock in FY 2033.

Liquid Bulk Assessment (Petroleum Products). IHS Purvin & Gertz, part of the AECOM team, was responsible for conducting the *Petroleum Sector Strategy Study* for Port Everglades in 2005, which was incorporated into the 2006 *Port Everglades Master Plan* and then updated in the 2009 *Port Everglades Master/Vision Plan*. While the study results were consistent with the outlook for petroleum products at the time, changes have occurred in the U.S. and global markets since the study was originally conducted for Port Everglades. Accelerated growth in domestic crude oil and natural gas has lowered operating costs for U.S. Gulf Coast refiners. Various Caribbean refineries, such as Hovensa in the US Virgin Islands, unable to compete with US Gulf Coast refiners, shut down in 2011 and 2012. As a result, Port Everglades has seen its

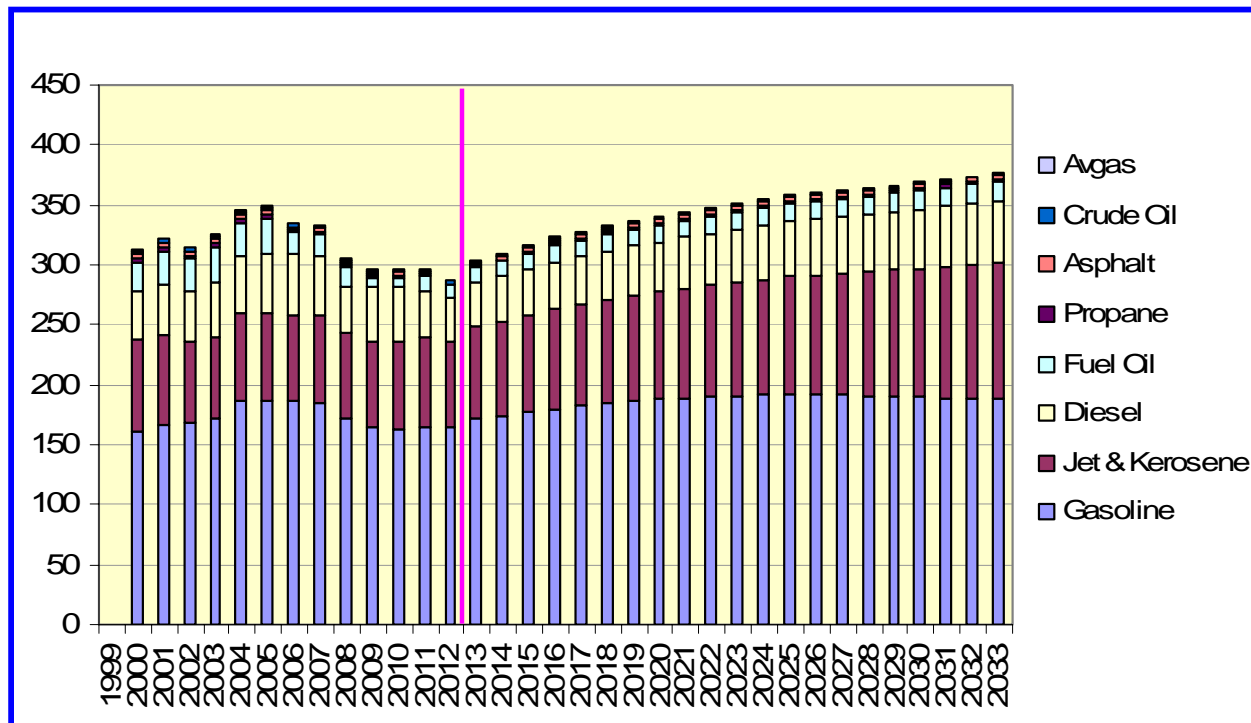
petroleum supply shift from foreign sources to domestic sources. This forecast takes these recent developments into account.

Approach. The analysis considered a variety of factors, including overall product demand, competitive seaports in Florida, and refinery changes,

- **Product Demand.** Due to expectations of strong population growth, Florida's annual demand growth rate for light products is anticipated at a rate of 1.3 percent per year from 2013 through 2023 before slowing down to an annual growth rate of 0.5 percent through 2033. For the same period, the 12-county market served by Port Everglades will rebound from recent recession-driven declines. The Port is expected to see growth of 1.2 percent annual average through 2023, before seeing demand growth slow to 0.4 percent annually through 2033.
- **Competitive Seaports in Florida.** Of the seven major commercial seaports in Florida, four have significant petroleum terminaling capabilities: Port Everglades, the Port of Tampa, the Port of Jacksonville, and Port Canaveral. One telling shift in market dynamics since 2009 has been the emergence of Port Canaveral as a petroleum terminal. Based on the most recent available data, it appears that the expansion did not significantly impact petroleum volumes into Port Everglades.
- **Refinery Changes.** Strong product demand growth in Latin America and low refinery reliability in Mexico have led to increased exports from the U.S. Additionally, numerous refinery shutdowns on the U.S. East Coast led to additional Gulf-Coast production to be directed to the Northeast U.S. via pipeline due to the relatively lower pipeline shipping costs.
Expectations of continued low cost natural gas and crude oil advantages for U.S. Gulf Coast refineries will lead to sustained utilization rates and provide continued supply into Port Everglades, keeping reliance on foreign barrels at historically low levels.

Forecast. Summary. The Port Everglades petroleum throughput forecast summary is provided in Figure ES-8. Total throughput volumes will grow from just over a projected 300,000 barrels per day (B/D) in 2013 to nearly 376,000 B/D by 2033. Gasoline continues to be the leading product; however, due to more rapid diesel and jet demand growth, the percentage of the throughput attributed to gasoline falls over the forecast period from 57 percent of the total in 2013 to 50 percent by 2033. Jet throughputs will see strong growth, seeing the percentage of throughput growing from 25 percent in 2013 to 31 percent in 2033.

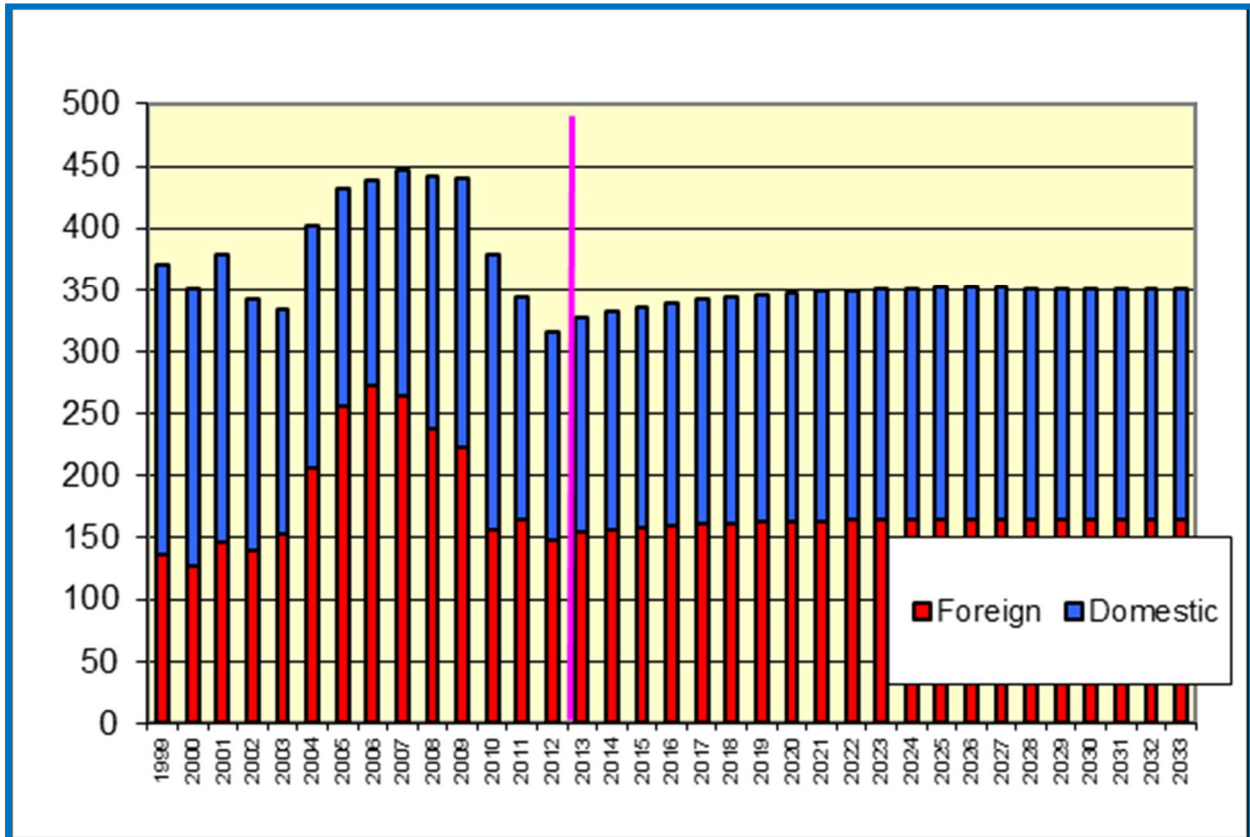
**Figure ES-8
PORT EVERGLADES THROUGHPUT
(Thousand Barrels/Day)**



Most of the growth in refined products is due to jet and diesel demand. The U.S. recently has become a net exporter of diesel and continues to import gasoline. Europe and Latin America are significantly short of diesel and exports from the U.S. have increased to historical highs. Thus, Port Everglades' throughput will increasingly be sourced domestically, since gasoline demand (which can be foreign sourced) is expected to stay flat and diesel/jet demand (which is now primarily domestically sourced) is expected to grow.

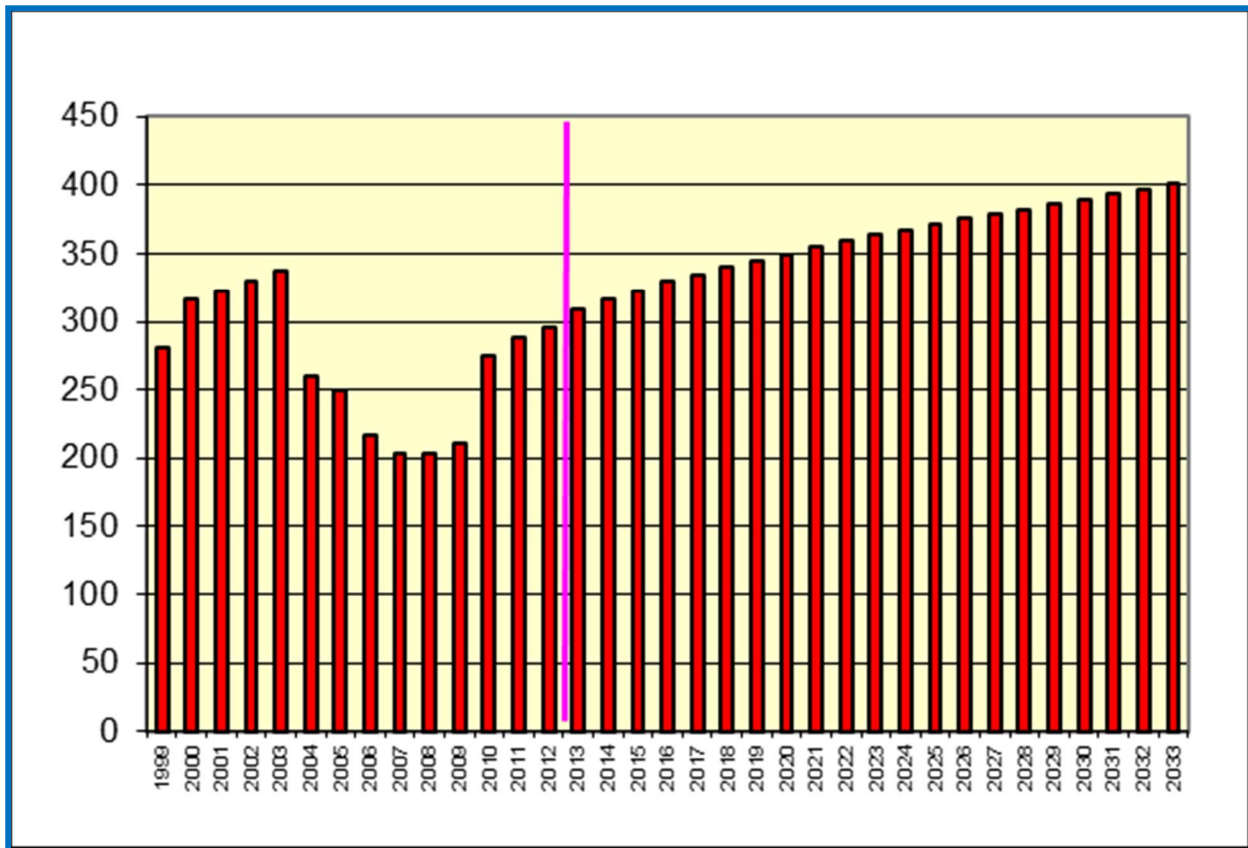
Vessel Calls. Figure ES-9 illustrates the projected number of annual vessel calls for the period from 2000 to 2033. To meet growing product demand in the region Port Everglades serves, the number of domestic tanker calls is expected to increase at an annual average of 0.6 percent through 2025. Then, despite rising throughput, domestic tanker calls are expected to flatten out through the forecast period due to reduced supply out of the U.S. Gulf Coast.

**Figure ES-9
TANKER CALLS AT PORT EVERGLADES
(Calls/Year)**



Foreign tanker calls have fallen significantly since the Hovensa refinery shutdown; barge calls have, however, increased strongly. Port Everglades and other ports in Florida increasingly depended on barge shipments from Gulf Coast refineries to meet product demand as tanker calls fell. These barge calls increased by 50 percent, from just over 200 in 2009 to over 300 by 2012. Barge calls, as shown in Figure ES-10, are expected to continue increasing to meet local demand growth, reaching more than 400 calls by 2033, a 33 percent growth.

Figure ES-10
BARGE CALLS AT PORT EVERGLADES
 (Calls/Year)



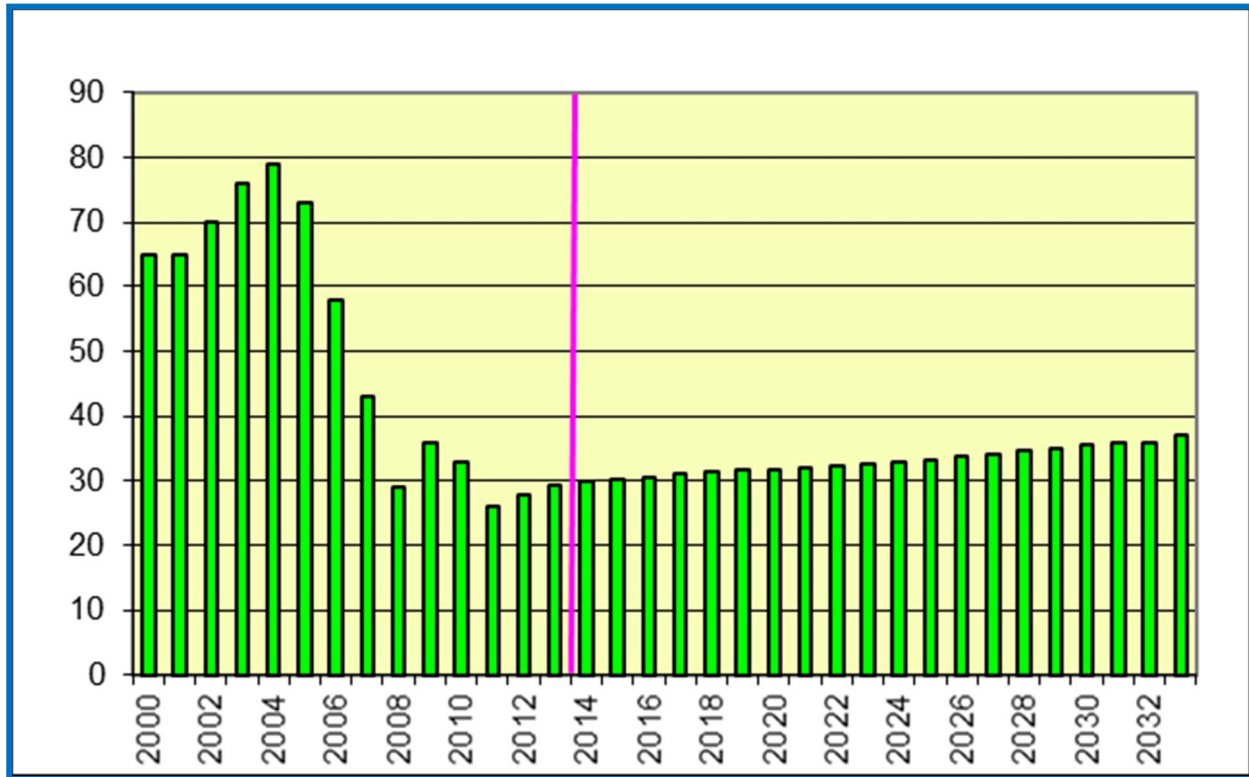
After Hurricane Katrina destroyed the Dynegy plant in Venice, Louisiana, in 2005, the volume of their available propane to bring into the Port decreased significantly. Much of their market share has since been taken by C-3, through Tampa, resulting in the dramatic decrease in barge calls in recent years. Demand is forecast to resume a growth trend in 2013 through the end of the forecast period, as shown in Figure ES-11.

Several factors must be considered when making decisions regarding the Port’s liquid bulk infrastructure.

- Deliveries to the Port are not ratable and annual average volumes may not reflect peak activity at the Port, masking actual facility limits.
- Reductions in demurrage costs may create a competitive advantage.

- Crude and natural gas prices are inherently volatile. If Gulf-Coast refiners lose their competitive advantage, petroleum products may shift once again to foreign sources.
- There is uncertainty in the planning basis, as forecasts are inherently uncertain.

Figure ES-11
LPG BARGE CALLS AT PORT EVERGLADES
(Calls/Year)



Cruise Assessment. The objective of the cruise market forecast is to develop estimates of constrained and unconstrained growth in cruise passenger volumes over the 5-, 10-, and 20-year milestones of this 2014 Plan. While some growth can be accommodated by enhancements to existing infrastructure and operations, more aggressive or unconstrained growth will require an assumption of expanded capacity.

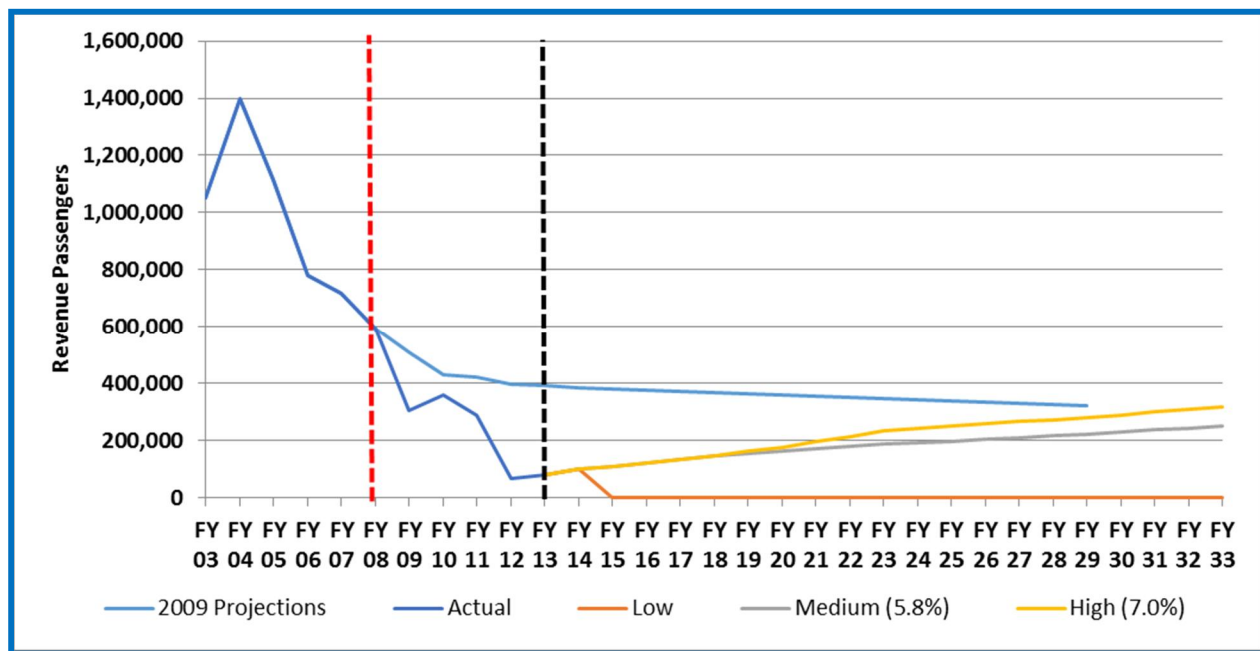
Approach. Forecasts for multi-day and single-day cruisers were developed separately. For multi-day forecasts, port and industry input was used, as appropriate, to drive forecasts for FY 2014 and FY 2015. Subsequent years were developed based on an analysis of the available demand (constrained and unconstrained) along with the ability of Port Everglades to provide additional capacity through a variety of operational and infrastructure enhancements and expansions, including: weekend utilization; summer sailings; non-weekend sailings; 9 multi-day ships per day; port-of-call; and vessel repositioning and larger ships. Low, medium and high forecasts developed for the existing 8-ship capacity represent “constrained” conditions. An “unconstrained” high forecast also was developed to represent a 9-ship scenario.

For single-day forecasts, growth estimates were developed based on a range of growth rates and key infrastructure assumptions. Possible development of a Cuban market represents the primary unconstrained opportunity for single-day service. Estimates for this potential opportunity have not been calculated at this time as the timing is uncertain.

Forecast Summary. The forecasts for the single-day market are shown in Figure 2.3-1. For the low estimate, the entire single-day market will be gone without a terminal to operate from due to the expected demolition of Cruise Terminal 1 for the Convention Center expansion. The medium (“most likely”) estimate has volumes growing at an annual rate of 5.8 percent to 251,000 by FY 2033. The high estimate grows at an annual rate of 7.0 percent to 317,000. An unconstrained high forecast was not developed for the single-day market.

Compared to the 2009 plan, the single-day cruise market has experienced vast changes. Anticipated volumes were expected to continue to decrease, but at a much slower rate than the actual performance. Forecasts presented here have these volumes growing back to where this market was expected to decline to, as Figure ES-12 shows.

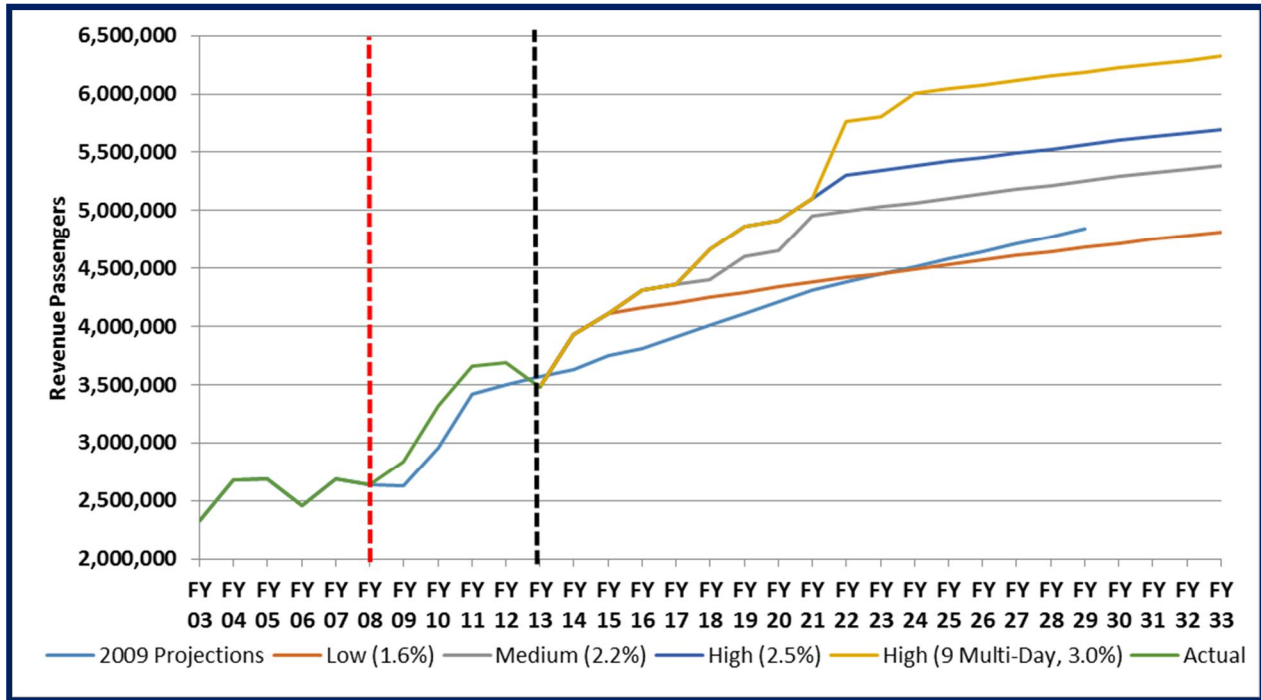
**Figure ES-12
SINGLE-DAY CRUISE PROJECTIONS COMPARED TO 2009 PLAN**



The forecast growth of the multi-day cruise passenger market is shown in Figure ES-13. For constrained conditions, low estimates for the multi-day market result in an average annual increase of 1.6 percent, predominantly fueled by the large growth anticipated in FY 2014 and FY 2015. Growth in the medium and high scenarios range from 2.2 percent to 2.5 percent, modest growth on a year-to-year basis, but with significant volume increases by FY 2033. For unconstrained conditions, the high estimate results in an average annual increase of 3.0 percent.

These forecasts are all above the “most likely” scenario from the 2009 plan until FY 2024. At this point, the previous forecast surpasses the low estimate. Continuing the average annual growth of 1.9 percent predicted from FY 2011 to FY 2029 results in the current medium scenario staying above the previous forecast by about 150,000 revenue passengers. Most likely, this difference is due to the significant growth expected between FY 2013 and 2014 from the introduction of more summer sailings.

Figure ES-13
MULTI-DAY CRUISE PROJECTIONS COMPARED TO 2009 PLAN



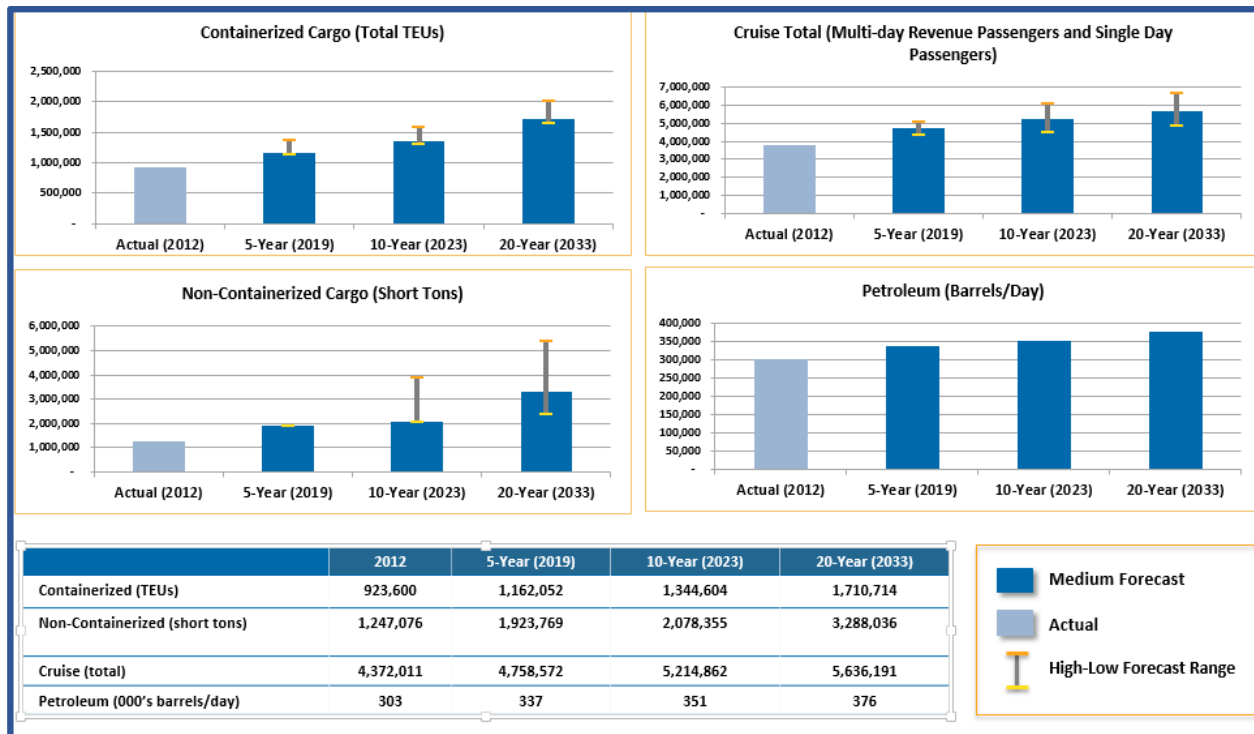
Market Assessment Summary Figure ES-14, on the next page, summarizes the market forecasts for the respective Port business lines. These forecasts have driven the Plan development presented in Elements 5 and 6 later in this document.

Element 3: Plan Development

Element 3 starts with a summary of the updated market assessments and the facility needs to meet the market opportunities forecasted over the 20-year planning horizon. It then reviews the status of the projects proposed in the 2009 plan and identifies those projects proposed in that plan which require further examination and refinement for this 2014 plan update. The element continues with a review of design trends for both cruise and cargo terminals, discusses potential operational enhancements, and then describes the projects proposed in the 2014 Plan, concluding with an analysis of parking and anticipated truck traffic to be generated by the forecasted container growth.

Figure ES-14

2014 MARKET FORECAST SUMMARY



The iterative process the consultant team conducted to refine the with continual input from the Port’s senior staff, tenants, and other stakeholders as well as the County Administration, governmental agencies, and the Board was a critical part of this element. In the course of charrettes conducted with representatives of each of the business lines, several concerns common to all were identified. One of the most significant of these was internal traffic circulation. Whether petroleum trucks having to stop on Spangler Boulevard while waiting to access terminals; automobiles, buses, taxis, vans, and provisioning trucks entering or exiting the cruise areas, particularly in what is called the “lollipop” area, with Cruise Terminals 21, 22, 23, 24, and 25; or trucks carrying containers waiting to enter or exit through the McIntosh Road security gate, the need for a comprehensive study of the Port’s traffic circulation system was paramount in the eyes of the Port’s tenants and users. Other concerns identified, as the Port looks to advance its infrastructure development, relocate certain uses, and improve operational efficiencies, include short-term and long-term taxi and bus staging, the potential need to relocate the tugs that currently berth in the Tracor Basin, and the flow pattern of containers to and from the new ICTF.

The maintenance of operations during construction, the potential need for liquefied natural gas or compressed natural gas (LNG/CNG) facilities for bunkering or truck provisioning as the use of these fuels becomes more common, and the availability of land for future ferry operations were also of interest to the Port’s tenants and other stakeholders. Some of these matters have been addressed during this planning process; others remain for the Port to study in the future.

The discussion of the projects proposed for these milestone years is presented in Element 5 later in this document.

Element 4: Strategy Development

Element 4 assesses business, financial, and asset utilization strategies the Port can implement to achieve its planning goals. It also describes the decision-matrix tool used to evaluate projects proposed for Plan inclusion and presents the goals, objectives and policies the Port has identified for incorporation in the Deepwater Component and Transportation Element of the *Broward County Comprehensive Plan*.

Underlying this element are the following objectives:

- Identify business strategies that will drive the Port's future growth and development.
- Identify asset utilization strategies that will optimize benefits to the Port and the County through financial return, market opportunities, competitive advantage, and economic benefits.
- Identify financial strategies that will both meet the Port's "financial sufficiency mandate" and fund Plan recommendations.
- Utilize the results of FDOT's project-specific regional economic impact model to evaluate the new and modified capital infrastructure projects identified in the 5-Year Master Plan and 10-Year Vision Plan.
- Encourage the use of public-private partnerships and other funding sources, as appropriate to achieve value-added infrastructure improvements.

The Port's previously cited new mission statement, as presented in the Port's *Strategic Plan 2014-2018*, provides the foundation for these objectives. As another point of reference for this element, Port Everglades directly supports achieving the Board of County Commissioners' 2012-2016 strategic goals.

Business and Asset Utilization Strategies. The following ten key business and asset utilization strategies were identified to meet the Port's growth objectives and maintain sustainability:

- The Port will be an international hub for trade, increasing European and Asian cargo while strengthening its base of trade with Central and South America and the Caribbean.
- Port revenues need to cover bond requirements and fund investments to maintain assets in a state of good repair as well as make capital improvements.
- Capital improvements should enhance flexibility and multi-use of infrastructure assets.
- Diversification of commodity throughput should be maintained.
- Operational efficiencies, such as mitigating traffic congestion and increasing petroleum-receiving system efficiencies, should be developed and maintained.
- Tenant land use and traffic efficiencies should be encouraged.

- Operating costs, such as security/electricity, should be reduced to increase net revenues.
- A benefit/cost matrix of return on investment, economic benefit to the community, regulatory/customer service, and environmental impact should be used to make Go/No-Go decisions on proposed infrastructure projects.
- The utilization of alternative funding sources, such as public-private partnerships, should continue to be pursued and implemented, building on the precedents already established with the ICTF development and several cruise terminal renovations.
- Synthesizing the synergies among Broward County's many assets -- the Port, the Airport, the Convention Center, the marine industry, and the environment -- is a win for all.

Financial Strategies. The 5-Year Master Plan and the 10- and 20-Year Vision Plans (see the Element 5 section below), are the road maps to identifying the infrastructure that is projected to meet market demand at the respective planning milestones. The 10- and 20-Year Vision Plans answer the question: "If Port Everglades is to meet the expected market demand at a milestone year, what infrastructure will be needed?" The 5-Year Master Plan has been further refined by establishing estimated order-of-magnitude design and construction costs and schedules for project construction within the 5-year fiscal period.

The projects in the 5-Year Master Plan are incorporated with the Port's continuing general infrastructure, maintenance, and renewal programs to create a 5-year capital improvement program (CIP). This CIP needs to be a program that can be implemented within identified project budgets and have the funding available at the time needed. The 5-Year CIP presented in this Plan (see Element 6 section below) has been developed with County staff and represents a program that is capable of being implemented within the established time frame. Projects in the 5-Year CIP in this 2014 Plan were selected because of their added value to the Port in the near term. The financial strategy used in developing the 5-Year CIP applied the above factors to analyze key projects and incorporate sustainable and high value-added projects in the capital program.

Decision-Matrix. Consistent with the 2009 Plan, this 2014 Plan utilizes a decision-matrix to evaluate the new projects proposed for inclusion in the Master Plan. For this Plan, however, the decision-matrix was given additional resonance by tying the evaluation criteria directly to the previously cited Port's new mission statement:

"As a powerhouse for international trade, travel, and investment, Port Everglades leverages its world-recognized South Florida facilities and innovative leadership to drive the region's economic vitality and provide the highest levels of service, safety, environmental stewardship, and community accountability."

Table ES-3 shows the resulting criteria used to assess each of the proposed new or modified projects in the Plan.

Table ES-3
DECISION-MATRIX CRITERIA

Category	Measure	
Competitiveness	Capacity	Operational flexibility
Economics	Port return on investment	Regional economic benefit
Stewardship	Asset preservation	Environmental preservation

Some projects in the 5-Year Master Plan do not produce revenue directly, but, as in the case of the McIntosh Road realignment, are needed to mitigate existing traffic congestion and anticipate future mobility needs. Without traffic and security improvements, the needs of the tenants/stakeholders, regulatory agencies, and the public cannot be met. These investments contribute indirectly to the success of revenue-generating projects essential to maintain Port tenant and user satisfaction and meet regulatory requirements. Other projects, such as the petroleum-receiving berths and slips, directly contribute to port revenues and need improvements to meet identified user needs; these types of projects rank highly using the decision-matrix tool.

Competitiveness. Maintaining industry competitiveness is at the heart of the Port's mission, as it is only by remaining competitive that the Port will be able to provide the regional economic and other benefits of port operations.

- **Capacity.** Whether modernizing cruise terminals to provide more efficient passenger flow and baggage-handling for the increasing numbers of people embarking and disembarking from the larger cruise ships calling at the Port, or extending the turning notch in Southport to provide more container ship berths, a project's ability to add to the Port's capacity is an important evaluation criterion.
- **Operational Flexibility.** Port Everglades serves ships of varying dimensions, accommodates many tenants with sometimes overlapping schedules, and is committed to providing the highest levels of safety and security to all its tenants and users. Projects such as filling the Tracor Basin and reconfiguring Berth 33 to provide additional berth length are examples of why operational flexibility matters as an evaluation criterion.

Economics. The two aspects of economics addressed by the decision-matrix include Port return on investment and regional economic benefits. Project cost, ROI, and economic benefits can be quantified and evaluated analytically, as described below (see Appendix K and Appendix L for the detailed analyses).

Port Return on Investment. This criterion included project costs and the return on incremental investment.

- **Project Cost.** The cost of a project includes professional design as well as inspection services during construction. Initial capital costs must be evaluated in addition to long-term maintenance and operating costs. Construction costs for projects in the 10- and 20-Year Vision Plans use current 2014 dollars in the order-of-magnitude cost estimates to avoid discrepancies in projected escalation factors.

- **Return on Incremental Investment (ROI)**. The Port's investment may be the value of land or the cost of capital improvements for the project. The ROI measures the amount by which economic or financial benefits exceed the value of the Port's investment. The ROI considers both the initial capital investment as well as the operating cost and maintenance cost over the analysis period. The dollar amount of future economic benefits and revenues is discounted at 4 percent per year.

Regional Economic Benefits. Regional economic benefits consist of two components: 1) economic impacts quantified by gross regional product (GRP) and jobs; and 2) transportation impacts, quantified as monetized benefits resulting from reduced truck and rail miles of travel. These both are indicators of the sustainability of a project.

Port investments serve as a catalyst for economic benefits in three ways:

- Stimulating growth in cargo that satisfies the needs of consumers and businesses for fuel, consumables, construction materials, and other commodities at a comparatively lower cost than if the goods were imported from elsewhere.
- Stimulating growth in cruise passenger volumes that captures revenue and value-added opportunities, including spending by cruise passengers in Broward County in hotels, restaurants, and stores, and spending by the crew for electronics and other goods; and spending by the cruise industry itself for fuel, provisions, and administrative expenses.
- Reductions in transportation impacts, including reduced truck and rail miles travelled resulting from the use of direct water service from foreign imports directly to South Florida consumers.

The economic impact assessment focuses on the stream of benefits generated over a 30-year analysis period. The assessment utilizes FDOT's seaport project evaluation tool. This model has been developed specifically for use in Florida and is tailored to the structure of Florida's economy. It is an established and accepted tool for port planning in the state.

Benefits are estimated based on the economic impacts generated by increased cargo and/or passenger throughput. Two types of impacts were measured: jobs, including direct and indirect/induced; and gross regional product: the total output of firms providing services in support of the seaport activity.

The transportation impact assessment also evaluates the stream of benefits generated over a 30-year analysis period. Five different measures were evaluated including livability, safety, economic competitiveness, state of good repair, and environmental sustainability. Benefits are estimated based on transportation impacts generated by a decrease in truck and rail miles of travel.

Stewardship. Stewardship and sustainability are essential elements of the Port's mission. Typically these elements are thought of in terms of environmental preservation, but they also can be applied to the preservation of the Port's assets.

- **Asset preservation.** Projects included in the Plan such as bulkhead improvements, cruise terminal renovations, and the like are examples of asset preservation. Such projects are essential to maintaining the Port's initial investments and to protecting these assets for future use.
- **Environmental preservation.** Environmental preservation reflects not only the additional cost to a project of mitigation of other requirements, but also acknowledges project acceptance by both the regulatory agencies and the public.

Element 5: The Final Master/Vision Plan

Element 5 presents the final 5-Year Master Plan and the 10- and 20-Year Vision Plans, based on input from senior Port staff, the Port's Focus Group, and charrettes conducted with Port tenants, users, and other stakeholders. Reflecting this input, the final 2014 Plan presented in this element includes the infrastructure improvements needed to support the major projects identified in the 2009 Plan – the Southport turning notch extension, the intermodal container transfer facility (ICTF), and the harbor and channel deepening and widening – and to meet the forecasted market demand for the Port's four core business lines over the planning horizon..

The Southport turning notch extension, ICTF, and harbor and channel deepening and widening, projects are a springboard for the Port's future growth and industry competitiveness. In support of these projects, the 2014 Plan introduces nine new or modified infrastructure improvements to the complement of the improvements already included in the 2009 Plan. Each of these new projects is discussed and illustrated in the sections that follow, accompanied by the evaluation criteria from the decision-matrix. For reference in the following project discussions, berth locations are shown in Figure ES-15.

Figure ES-15
BERTH LOCATIONS AT PORT EVERGLADES



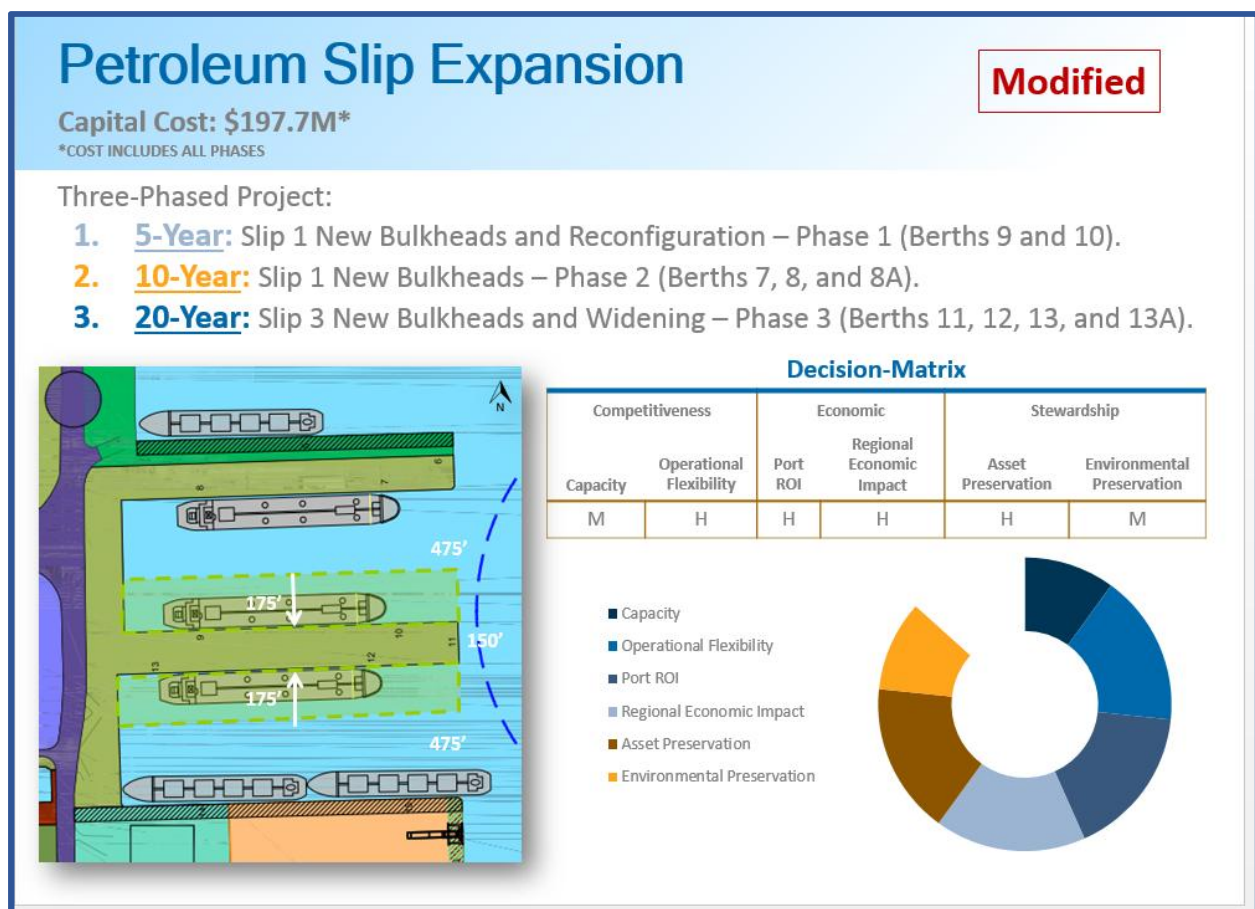
The 5-Year Master Plan (2015-2019)

Northport

Berths 1, 2, 3 New Bulkheads. New bulkheads will be constructed for Berths 1, 2, and 3 in the 5-Year Master Plan, based on the previously cited *Bulkhead Study*.

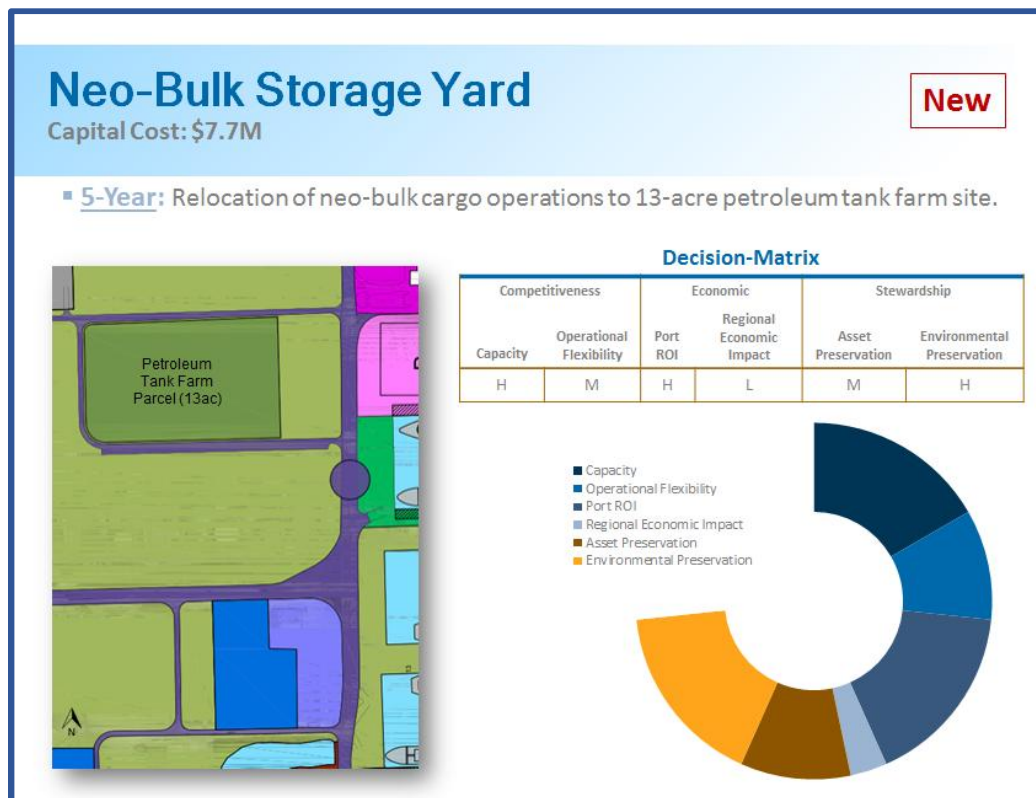
Petroleum Slip Expansion: Slip 1 New Bulkheads and Reconfiguration Phase 1 (Berths 9 and 10). To accommodate the Port’s petroleum operations, the 2009 Plan called for widening Slip 1 to the south by 125 LF and to the north by 50 LF; however, the reconfiguration to the north would have obstructed the entrance channel range lights used by the port pilots. To address this issue, the 2014 Plan calls for the widening to occur entirely to the south, in a three-phase process to rebuild bulkheads and widen Slip 1 and Slip 3 for modernization, capacity, and safety-driven expansion. Figure ES-16 shows the entire three-phased project.

**Figure ES-16
PETROLEUM SLIP EXPANSION**



Neo Bulk Storage Yard. The loss of grid space resulting from the Slip 2 extension necessitates the relocation of the neo-bulk storage yard currently situated adjacent to the western end of Slip 2. The former molasses tank farm, located west of Eisenhower Boulevard, was identified as the preferred location for this storage (see Figure ES-17). The neo-bulk commodities will continue to be unloaded at Berth 5.

**Figure ES-17
NEO-BULK STORAGE YARD**

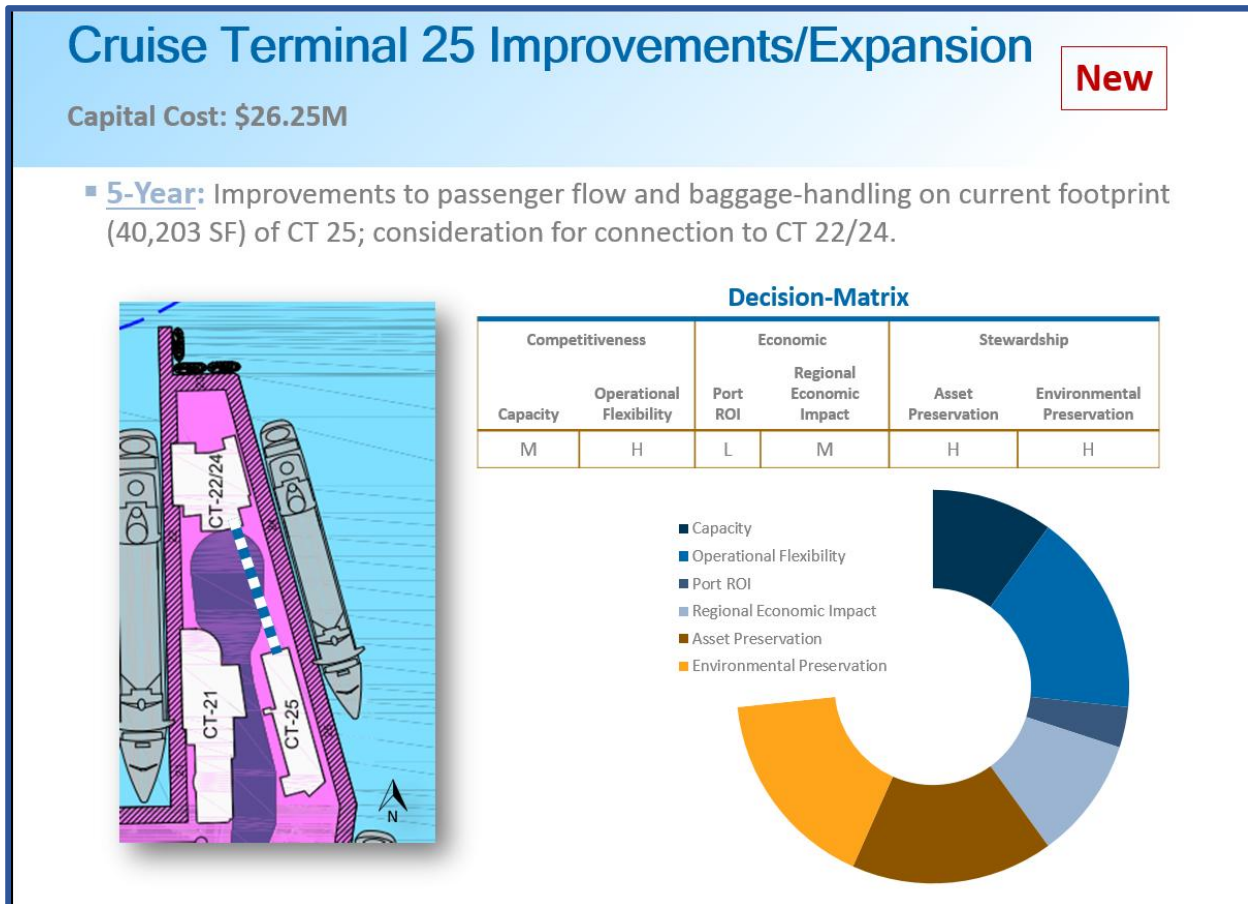


Slip 2 Westward Lengthening. Slip 2 lengthening to the west will increase the slip's length from 900 LF to 1,150 LF to accommodate the larger cruise ships calling at the Port. Based on studies of the slip and adjacent land, the slip in its entirety will be lengthened to the west. This project will allow Berth 4 to accommodate up to a 1,040-foot length overall (LOA) cruise vessel.

Midport

Cruise Terminal 25 Improvements/Expansion (Design/Construction). The current footprint of Cruise Terminal 25 and its associated ground transportation area are not sufficiently sized to handle the increasingly large cruise ships handled at Berth 24/25. Improvements are required to the cruise terminal building to better service passenger flows and luggage-handling and to assure the terminal has safe and efficient access to parking. As part of this project, the concept of connecting Cruise Terminal 25 to Cruise Terminal 22/24 (35,996 SF) will be studied. Figure ES-18 illustrates these improvements. Although this project has a low return on investment to the Port, its operational advantages make it a sound choice for implementation.

Figure ES-18
CRUISE TERMINAL 25 IMPROVEMENTS/EXPANSION (DESIGN/CONSTRUCTION)



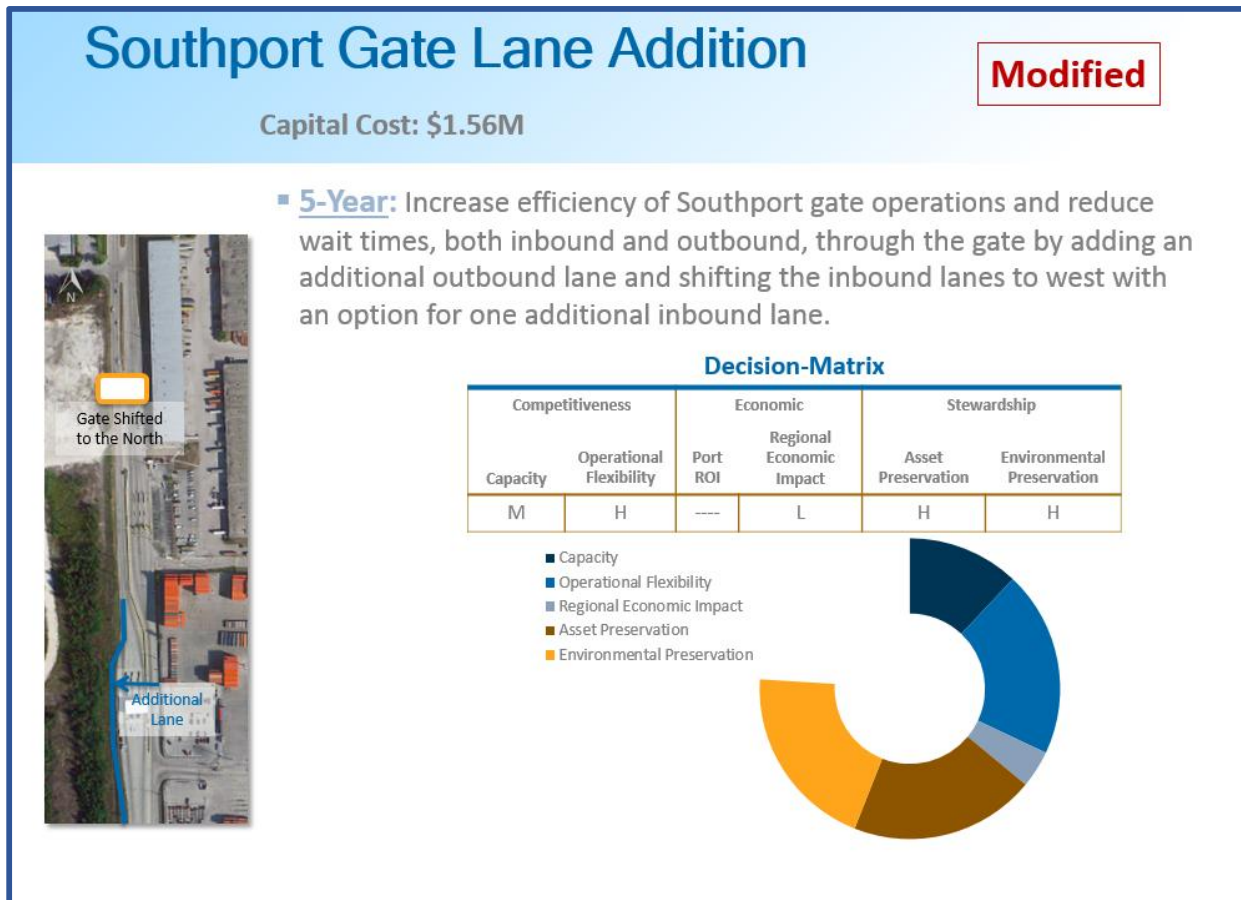
Southport

Westlake Mitigation (Southport Turning Notch Extension). The mitigation project at West Lake Park is part of the overall mitigation for the development of the Southport turning notch extension. The entire project is expected to result in the creation of 24.2 acres of mangrove habitat, 7.0 acres of mud flats/tidal pools, 8.6 acres of tidal channels, 8.0 acres of seagrass habitat, 13.4 acres of marine hammock, 1.9 acres of structural habitat (riprap/crib structure), and 2.0 acres of supplemental structural restoration (along the Dania Cut-Off Canal). The project will also enhance 32 acres of existing mangroves by way of riprap replacement, and preserve 23.3 acres of mangrove habitat throughout-parcel acquisition.

Two Super Post-Panamax Cranes. These super post-Panamax cranes will be the first two of five the Port will purchase over 20 years to handle the forecast container volumes.

McIntosh Road Southport Gate Lane Addition. Due to truck congestion on the outbound lanes of the Southport container operational area, expansion of the McIntosh Road gate in Southport is needed. Adding one outbound lane and shifting the inbound lanes to the west will alleviate this congestion. The project, shown in Figure ES-19, includes provisions for an additional inbound lane to the west if required in the future.

Figure ES-19
MCINTOSH ROAD SOUTHPORT GATE LANE ADDITION



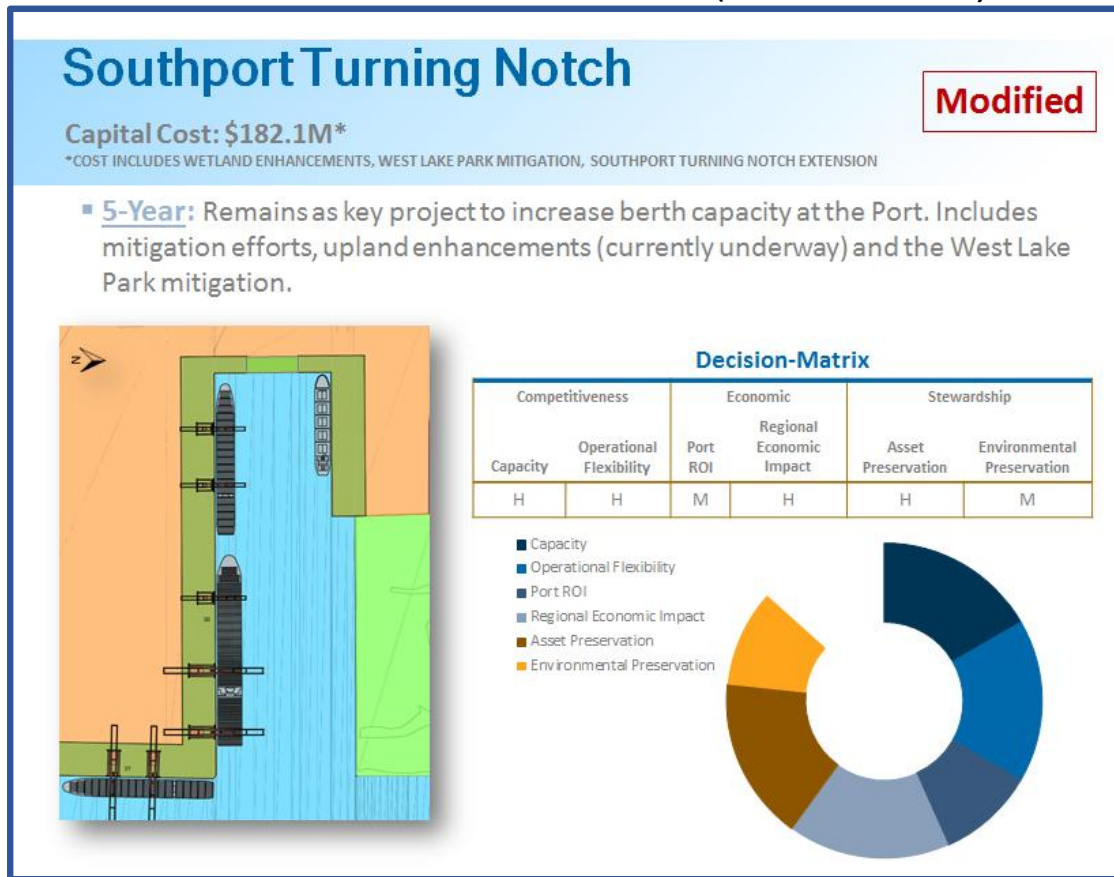
Southport Turning Notch Extension. Extending the Southport turning notch to the west at first at the existing 42-foot water depth, as shown in Figure ES-20, and later at the 48-foot depth is needed to develop additional berth capacity for the diverse cargo ships calling at the Port. Work on the turning notch is dependent on the completion of the ongoing uplands enhancement and mitigation project. Construction is, however, currently expected to begin in 2016, with completion estimated for 2018. This project has been updated from the 2009 Plan to include only one contract for the all waterside and landside elements. It also includes the extension of crane rails to the western end of the extended Berth 30 to allow for the use of the existing cranes.

Figure ES-20
SOUTHPORT TURNING NOTCH EXTENSION (AT 42- AND 48-FOOT DEPTHS)



Figure ES-21 shows the future turning notch after the east end is deepened to 48 feet as part of the USACE deepening and widening program.

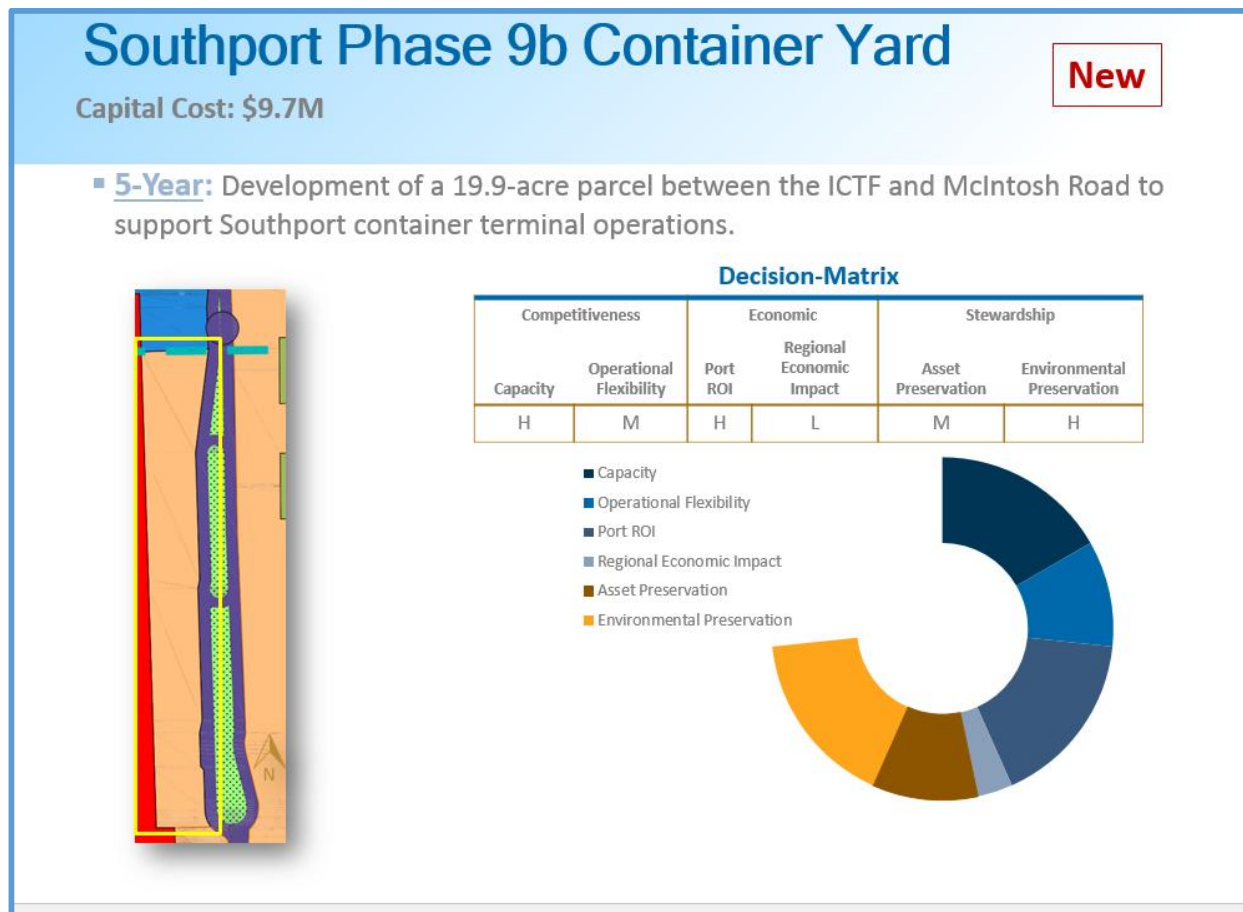
Figure ES-21
SOUTHPORT TURNING NOTCH EXTENSION (AT 48-FOOT DEPTH)



Southport Phase 9a Container Yard (10). Due to the Southport turning notch extension project, the Southport Phase 9A container yard (approximately 16 acres) is to be developed on the current Foreign-Trade Zone (FTZ) site east of McIntosh Road. For this project to proceed, the FTZ (see discussion below) will be relocated to the west of McIntosh Road, leaving the 16 acres for container yard development. The project calls for the demolition of two warehouse buildings and development of infrastructure consistent with the planned Southport container yard densification improvements (see below).

Southport Phase 9b Container Yard. An approximately 19.9-acre parcel located west of McIntosh Road, which is acreage previously earmarked for crushed rock or aggregate storage, will now provide Southport container yard support services (see Figure ES-22).

Figure ES-22
SOUTHPORT 9b CONTAINER YARD



Foreign-Trade Zone Relocation. FTZ 25 will be relocated to the west of McIntosh Road to a Port-owned parcel (approximately 17 acres). The U.S. Customs and Border Protection operations will continue to operate out of Building B and E of the existing FTZ site, allowing the new site to be solely used for private businesses with FTZ operations.

New Crane Rails (Berths 30, 31, and 32). In support of the programmed purchase of the five new super post-Panamax cranes, a new set of crane rails is required along the length of Berths 30, 31, and 32 due to the larger crane gauge (expected to be between 120 to 125 feet).

Portwide Improvements

USACE Deepening and Widening Program. As discussed above, in June 2013, the USACE released its long-awaited *Draft Feasibility Report and Environmental Impact Statement* concerning the proposed deepening and widening of the Port’s harbor and channels. The feasibility study was initiated in 2001 with Broward County’s Port Everglades Department - the local, non-federal, sponsor for the federal civil works harbor deepening and widening project to be implemented by the USACE.

Finding that the Port’s existing federal channel project depth of 42 feet does not provide an adequate, safe depth for large tankers and container ships visiting the harbor; that the next

generation of container ships and oil tankers requires significantly more channel depth to operate efficiently; and that a wider and deeper outer entrance channel will greatly improve the safety of navigation, the USACE identified an economically and environmentally sound Tentatively Selected Plan (TSP) to deepen the Port's channel from 42 feet to 48 feet and widen the channel entrance (see Figure ES-23). (When constructed, the project will include an additional two feet of over depth, one foot of which is required and one foot of which is allowable, for a total of 50 feet.)

Figure ES-23
USACE DEEPENING AND WIDENING PROGRAM:
TENTATIVELY SELECTED PLAN

Source: USACE Draft Feasibility Study, 2013

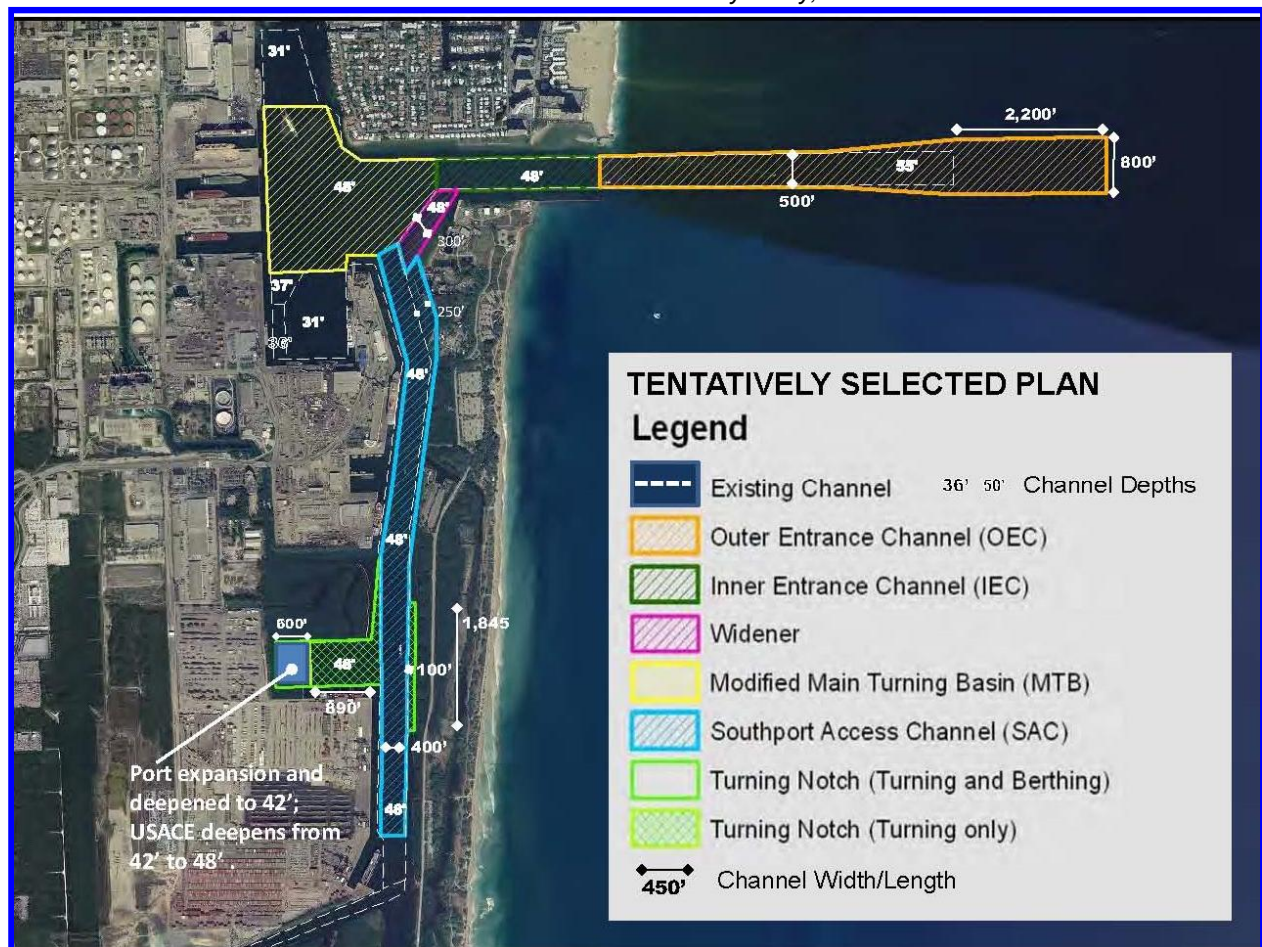
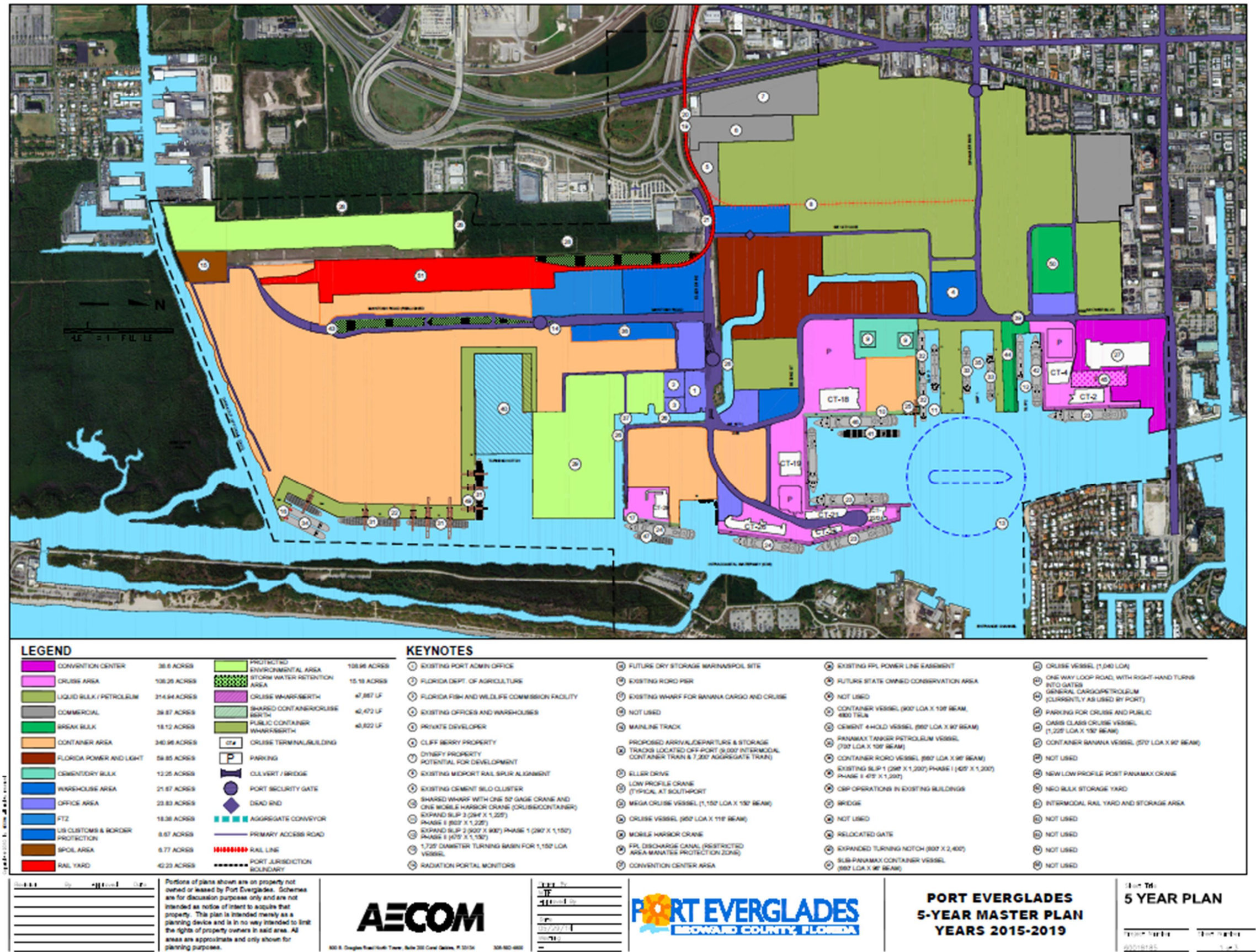


Figure ES-24 shows the final 5-Year Master Plan.

Figure ES-24
FINAL 5-YEAR MASTER PLAN



5-Year Master Plan Cost Estimates. Reasonable order-of-magnitude cost estimates are provided in Table ES-4 for each project discussed above in the 5-Year Master Plan. For projects that were also identified in the 2009 Plan, cost estimates have been updated to reflect 2014 conditions. Cost estimate details are provided in Appendix H.

Table ES-4
5-YEAR PROJECT COST ESTIMATE
(In millions of 2014\$)

5-Year Master Plan: 2015-2019		
Port Area	Project	Cost
Northport	Berths 1,2,and 3 New Bulkheads	\$24.90
	Slip 1 New Bulkheads and Reconfiguration – Phase 1 (Berths 9 and10)	\$83.90
	Neo Bulk Storage Yard	\$7.70
	Slip 2 Westward Lengthening	\$19.50
Midport	Cruise Terminal 25 Improvements/Expansion	\$26.25
Southport	Westlake Mitigation (Southport Turning Notch Extension)	\$6.10
	Super Post Panamax Cranes (2)	\$30.00
	Southport Turning Notch Extension	\$147.50
	McIntosh Road Gate Lane Addition	\$1.56
	Southport Phase 9a Container Yard	\$8.80
	Southport Phase 9b Container Yard	\$9.70
	Foreign-Trade Zone Relocation (Public-Private Partnership)	\$54.00
	New Crane Rails (Berths 30,31,32)	45.00
Portwide	USACE Deepening and Widening Design	\$5.30
TOTAL		\$470.21

The 10-Year Vision Plan (2020 -2023)

Northport

Slip 1 New Bulkheads Phase 2 (Berths 7 and 8). This project, which is Phase 2 of the petroleum slip expansion, addresses the new bulkheads at Berths 7 and 8 in Slip 1. This project includes rebuilding the existing bulkheads in their current alignment. As discussed above, keeping Berths 7 and 8 in their current position will alleviate any impacts to the range lights used by the pilots. These new bulkheads (Berths 7 and 8) are 1,200 LF in length, no change from the current dimension. This project includes dredging in the remaining half of Slip 1, paralleling Berths 7 and 8, consistent with the proposed USACE channel deepening and widening.

Cruise Terminal 4 Parking Garage. A new 1,680-space structured parking facility will be constructed west of Cruise Terminal 4 and over a ground transportation area to serve future parking needs for both Cruise Terminal 4 and Cruise Terminal 2.

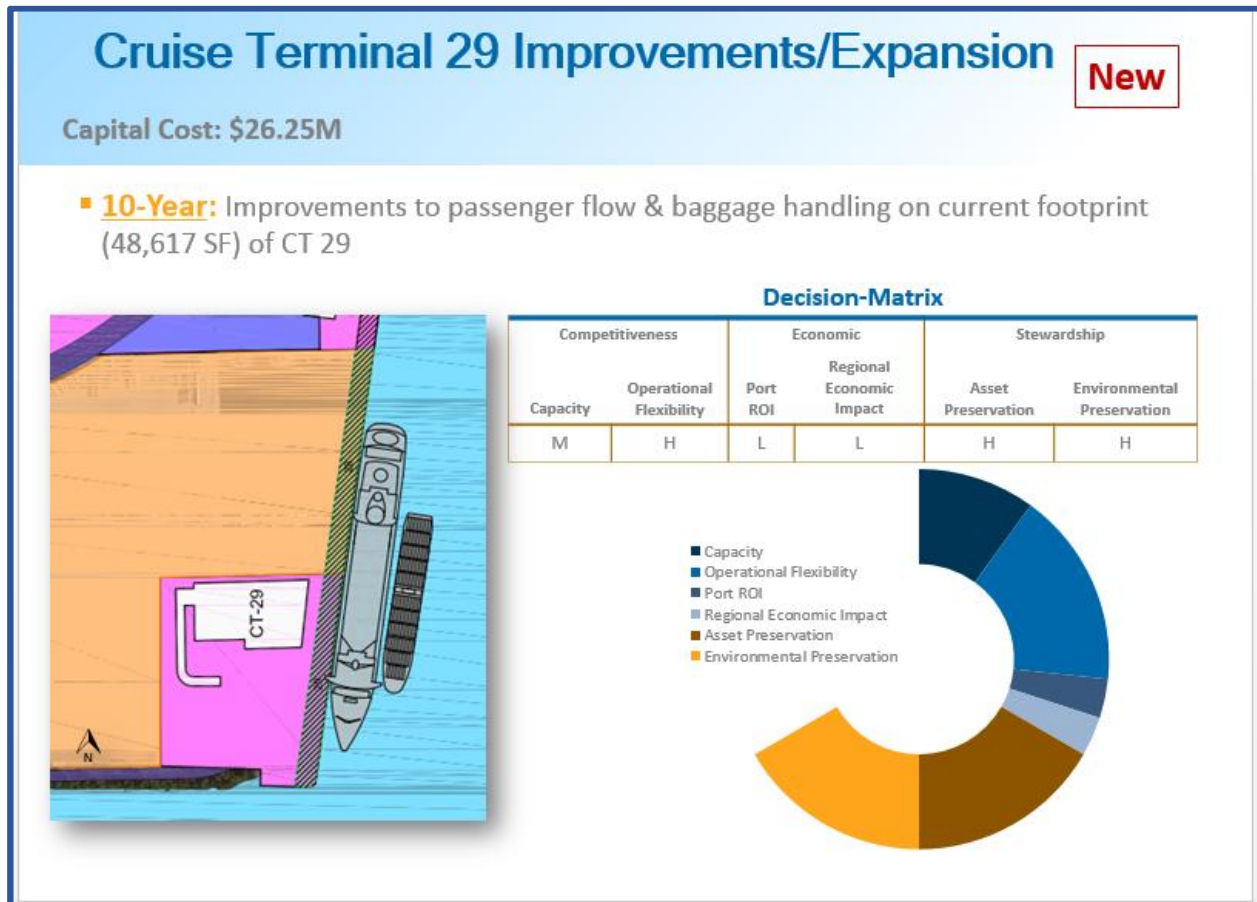
Berth 14 and 15 New Bulkheads. New bulkheads will be constructed for Berths 14 and 15.

Midport

Berths 16, 17, and 18 New Bulkheads. New bulkheads will be constructed for Berths 16, 17, and 18.

Cruise Terminal 29 Improvements and Expansion (Design/Construction). Improvements to the Port’s Intracoastal Waterway Southport Access Channel as part of the USACE deepening and widening program will provide greater operational flexibility for the Port to handle cruise ships at Berth 29. Additionally, filling of the Tracor Basin (see discussion below), will provide a longer berth and allow the facility to service ground operations more efficiently. The Port will undertake a detailed planning and design study to select the best alternative for expanding and upgrading Cruise Terminal 29. Figure ES-25 describes the Cruise Terminal 29 project. Although this project has a low return on investment to the Port, its operational advantages make it a sound choice for implementation.

**Figure ES-25
CRUISE TERMINAL 29 IMPROVEMENTS/EXPANSION**

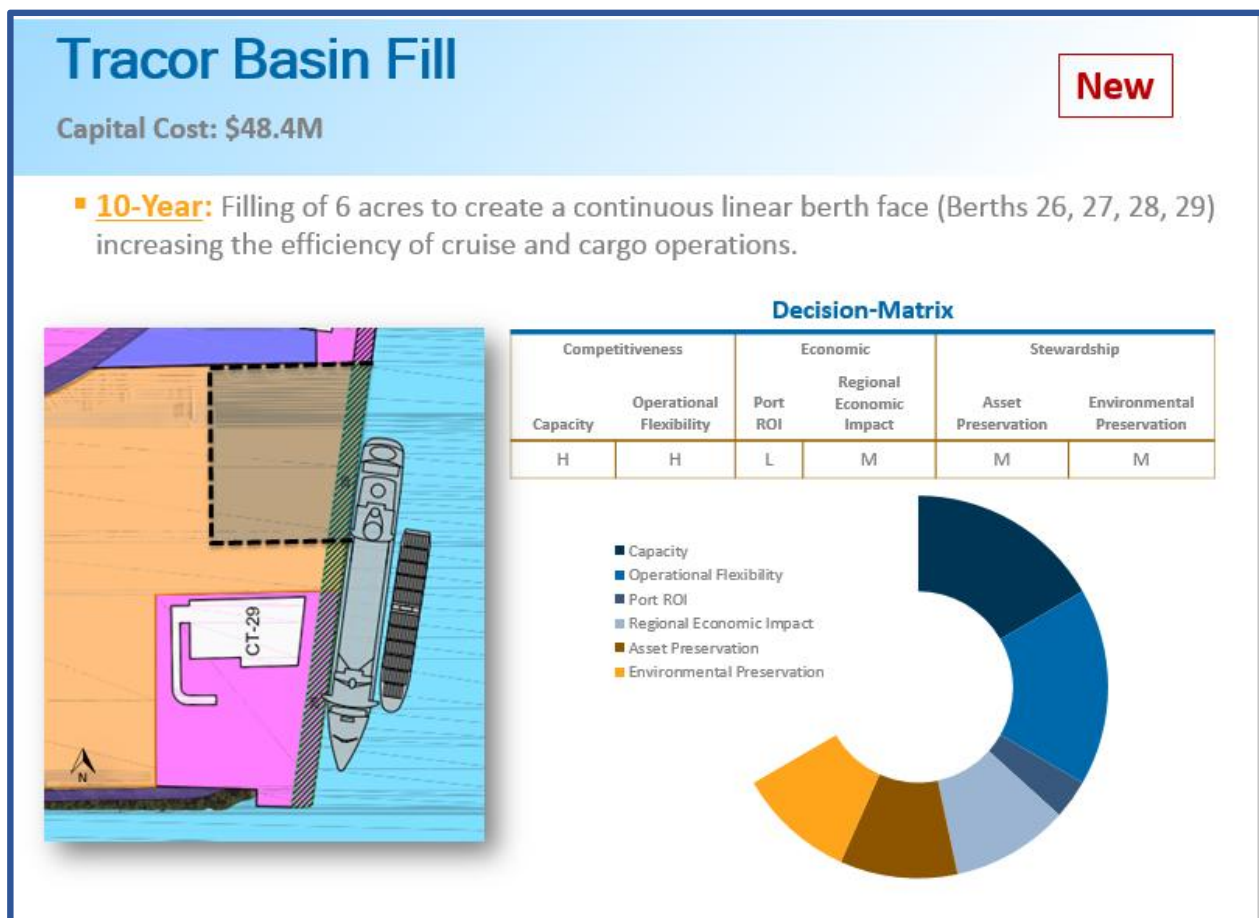


Multimodal Facility - Phase 1. This passenger multimodal center will integrate an at-grade ground transportation area with a structured parking facility above to serve the Midport cruise terminals. When fully completed, the multimodal facility will provide 4,000 additional parking spaces at Midport and will have an elevated transport concourse with moving walkways to

connect the Midport cruise terminals. The multimodal center will provide a central location for the loading/unloading of buses, shuttles, and taxis and will relieve congestion at peak times in front of the cruise terminals. In the 10-Year Vision Plan, only the first phase of the multimodal facility will be built, which will include a structured parking facility with approximately 2,000 parking spaces. Phase 1 will not provide the elevated transport concourse and moving walkways to connect the Midport cruise terminals.

Tracor Basin Fill. This project includes the total fill of the Tracor Basin (approximately six acres), lengthening Berth 29 to the north and creating a continuous berth length of 2,800 LF from Berth 27 to Berth 29. This project will allow larger cruise vessels to call at Cruise Terminal 29, will provide more efficient provisioning and loading operations, and will connect the operations at Cruise Terminal 29 with the Midport cruise operations at Berths 24-27. Container operations will also benefit with an additional six acres of storage, creating better connectivity to the Southport yards and berths. Figure ES-26 describes this project. Although this project has a low return on investment to the Port, its operational advantages make it a sound choice for implementation.

**Figure ES-26
TRACOR BASIN FILL**



Berths 21 and 22 New Bulkheads. New bulkheads will be constructed for Berths 21 and 22.

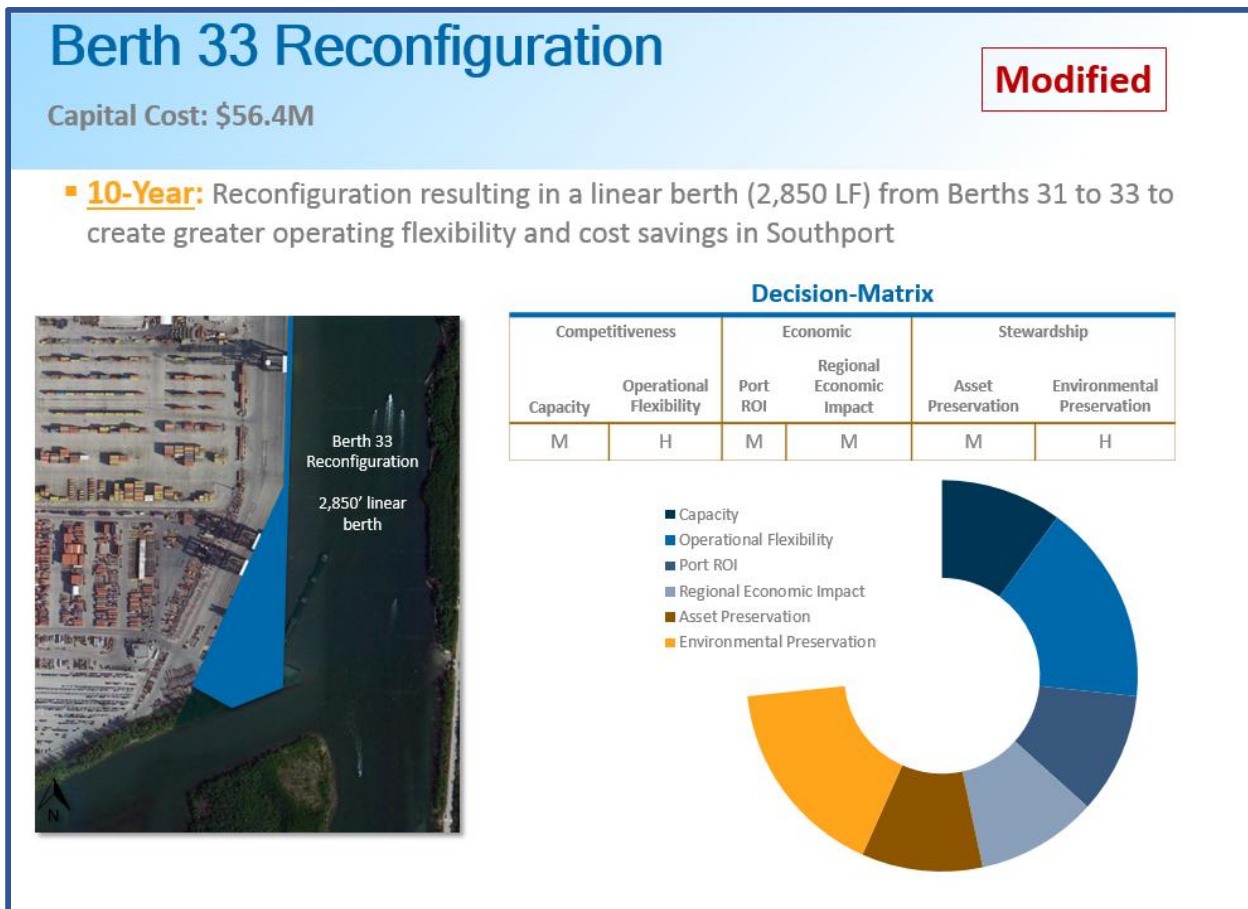
Southport

Two Super Post-Panamax Cranes. Two additional gantry cranes will be added to Southport to serve larger vessels. This addition will provide a total of 11 gantry cranes at Southport - four super post-Panamax cranes plus seven existing low-profile cranes.

Container Yard Densification Improvements. After the turning notch is extended, 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 (RTG) cranes to increase container storage densification in the Southport terminal yards.

Berth 33 Reconfiguration. Berths 33 B and C will be demolished and Berth 33A will be realigned and filled, creating approximately 2.3 acres of new container yard space. The reconfiguration will result in a continuous berth of 2,850 LF for Berths 31, 32, and 33. This reconfiguration will create greater operating flexibility and cost savings by removing the need to articulate the tracks for the new super post-Panamax gantry cranes. Figure ES-27 shows the conceptual project design.

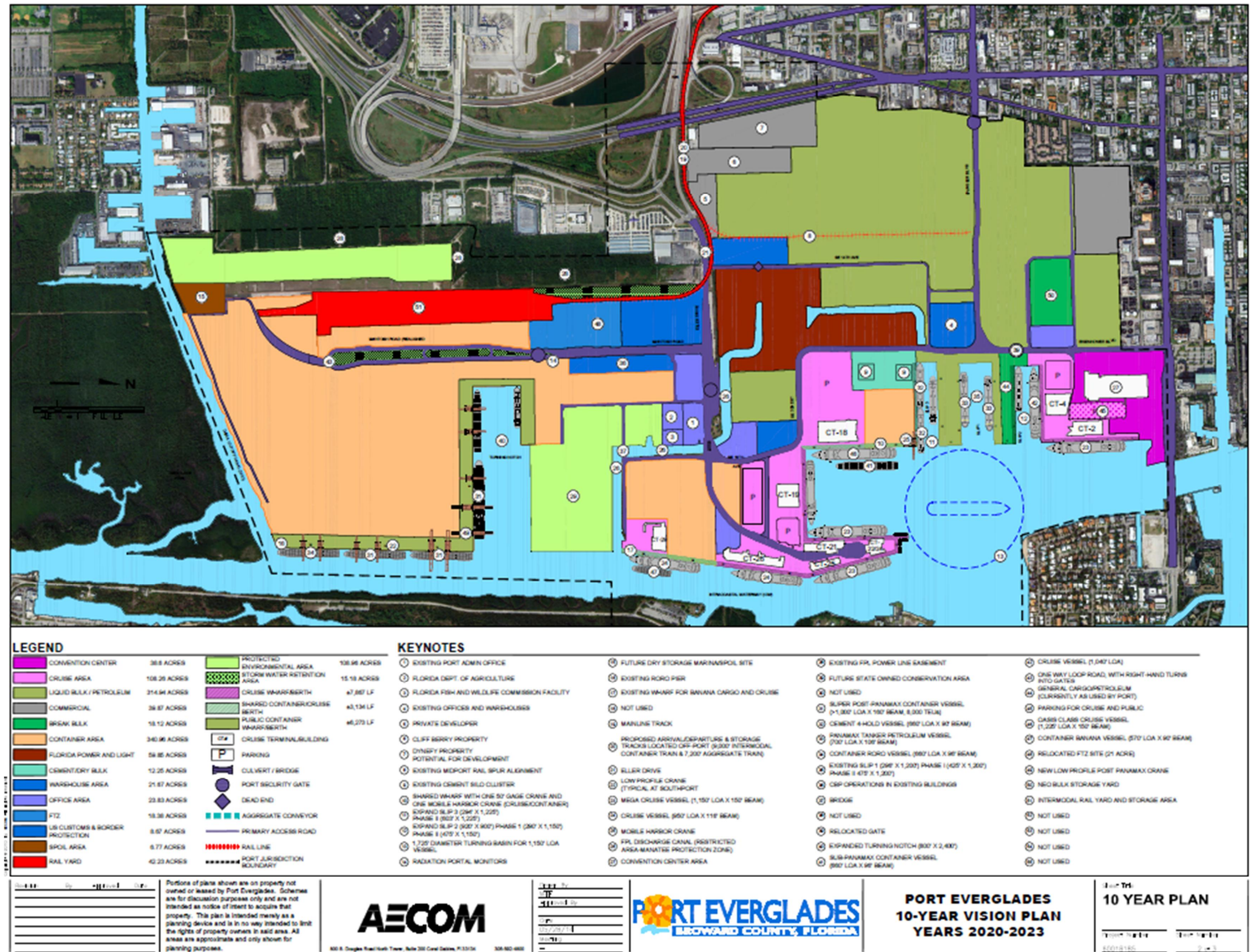
**Figure ES-27
BERTH 33 RECONFIGURATION**



USACE Deepening and Widening Program (12). The construction of the USACE deepening and widening program described above is anticipated to begin in the 10-year time frame.

Figure ES-28 shows the final 10-Year Vision Plan.

Figure ES-28
FINAL 10-YEAR VISION PLAN



10-Year Vision Plan Cost Estimates. Reasonable order-of-magnitude cost estimates are provided in Table ES-5 for each project discussed in the 10-Year Vision Plan. For projects that were also identified in the 2009 Plan, cost estimates have been updated to reflect the 2014 conditions. For new projects in the 2014 Plan, new cost estimates were prepared. Cost estimate details are provided in Appendix H.

**Table ES-5
10-YEAR PROJECT COST ESTIMATE
(In millions of 2014\$)**

10-Year Vision Plan: 2020-2023		
Port Area	Project	Cost
Northport	Slip 1 New Bulkheads- Phase 2 (Berths 7 and 8)	\$29.50
	Cruise Terminal 4 Parking Garage	\$36.00
	Berths 14 and 15 New Bulkheads	\$27.40
Midport	Berth 16,17, and 18 New Bulkheads	\$25.50
	Cruise Terminal 29 Improvements/Expansion	\$26.25
	Multimodal Facility-Phase 1	\$39.30
	Tracor Basin Fill	\$48.40
	Berths 21 and 22 New Bulkheads	\$20.50
Southport	Super Post Panamax Cranes (2)	\$30.00
	Container Yard Densification Improvements	\$33.70
	Berth 33 Reconfiguration	\$56.40
Portwide	USACE Deepening and Widening Construction	\$368.00
TOTAL		\$740.95

The 20-Year Vision Plan (2024-2033)

Northport

Berths 1A, 1B, 1C, and 1D New Bulkheads. New bulkheads will be constructed for Berths 1A, 1B, 1C, and 1D.

Slip 2 New Bulkheads and Widening (Berths 4, 5, and 6). New bulkheads will be constructed for existing Berths 4 and 5 in Slip 2 and for the connection between these two berths. The new bulkhead for Berth 5 will be positioned so that the overall width of Slip 2 can accommodate a 1,040-foot LOA cruise ship on the north side and a general cargo vessel on the south. Slip 2 will be widened from approximately 286 LF to 475 LF. According to the recommended construction schedule for the new bulkheads, this widening will take place when the existing Berths 4 and 5 require new bulkheading.

Slip 3 New Bulkheads and Widening Phase 3 (Berths 11, 12, and 13) (3). This project, which is Phase 3 of the petroleum slip expansion addresses new bulkheads at Berths 11, 12, and 13 in Slip 3. The project includes widening Slip 3 to the north by 175 LF, from 300 LF to 475 LF; the new bulkhead (Berths 12 and 13) is 1,230 LF in length, no change from the current dimension.

Midport

New Bulkheads (4, 6, 7, 8). New bulkheads will be constructed for Berths 19, 20, 23, 24, 25, 26, and 27.

Multimodal Facility – Phase 2. Phase 2 of the multimodal facility will extend the work completed in Phase 1 and will include the addition of 2,000 more spaces and the implementation of the elevated pedestrian moving walkway connecting the 4,000-space parking structure with the Midport cruise terminals. This passenger multimodal center will integrate an at-grade ground transportation area, with a structured parking facility above to serve the Midport cruise terminals. It will provide a central location for the loading/unloading of buses, shuttles, and taxis and will relieve congestion at peak times in front of the cruise terminals.

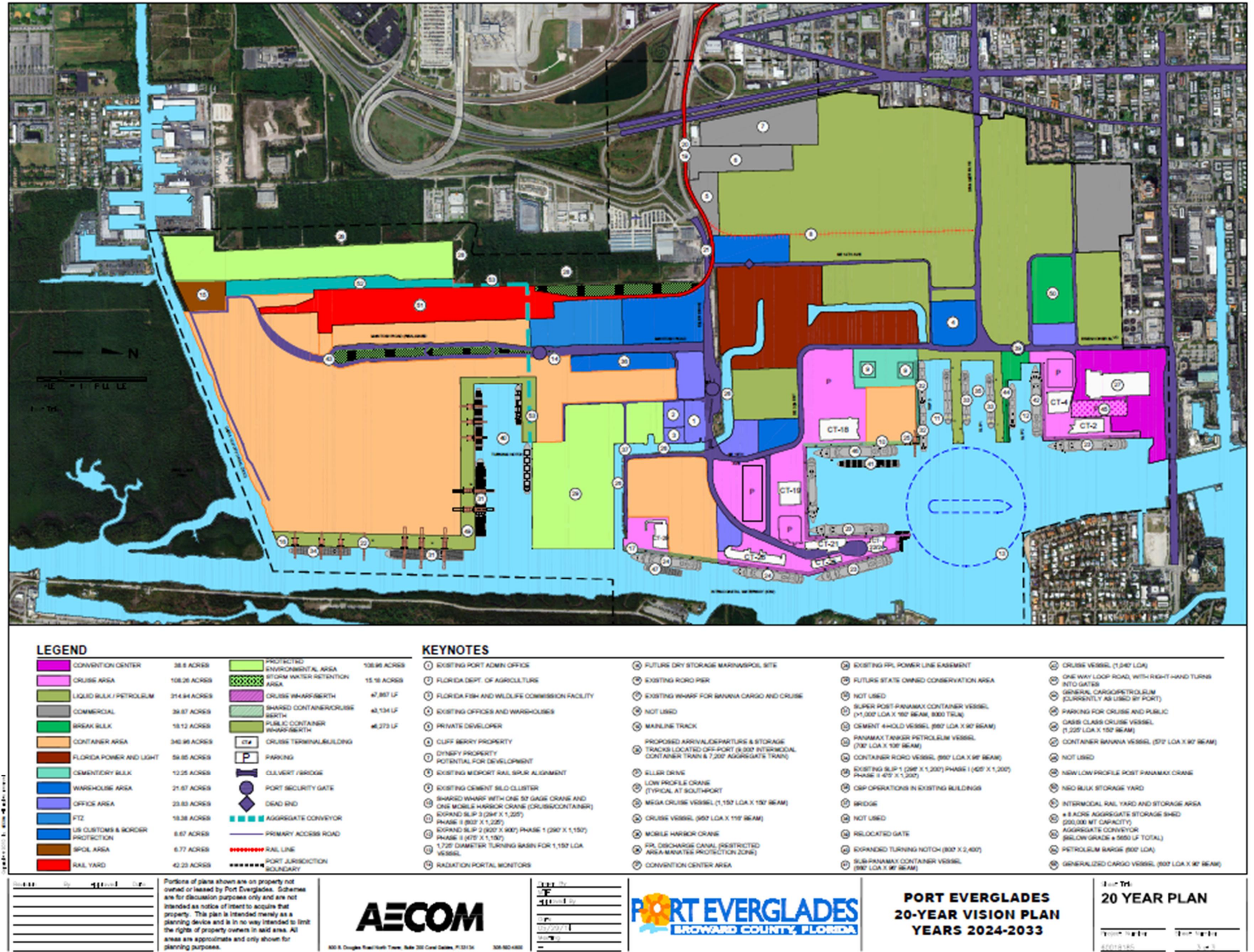
Southport

Crushed Rock (Aggregate) Facility. This facility is envisioned to meet a portion of Florida's needs for crushed rock (aggregate) with supplies from off-shore locations. The berth for aggregate vessels will be located on the north side of the turning notch. Material will be transferred via an underground conveyance, crossing McIntosh Road and continuing west of the ICTF tracks to the facility. This project was modified from the 2009 Plan by relocating the previously designated aggregate storage operations to the south to avoid impacts to the ICTF. The new aggregate storage parcel is approximately 20 acres and is located west of the southern half of the ICTF.

One Super Post-Panamax Crane. An additional 120-foot-gauge gantry crane will be added to Southport to serve larger vessels. This addition will provide a total of 12 gantry cranes at Southport (five super post-Panamax cranes plus seven existing low-profile cranes).

Figure ES-29 shows the final 20-Year Vision Plan.

Figure ES-29
FINAL 20-YEAR VISION PLAN



20-Year Vision Plan Cost Estimates. Reasonable order-of-magnitude cost estimates are provided in Table ES-6 for each project included in the 20-Year Vision Plan. For projects that were also identified in the 2009 Plan, cost estimates have been updated to reflect 2014 conditions; for new projects in the 2009 Plan, new cost estimates were prepared. Cost estimate details are provided in Appendix H.

Table ES-6
20-YEAR VISION PLAN PROJECT COST ESTIMATE
(In millions 2014\$)

20-Year Vision Plan: 2020-2023		
Port Area	Project	Cost
Northport	Berths 1A, 1B, 1C, and 1D New Bulkheads	\$9.90
	Slip 2 New Bulkheads and Widening (Berths 4, 5, 6)	\$50.10
	Slip 3 New Bulkheads and Widening- Phase 3 (Berths 11, 12, 13)	\$84.30
Midport	Berth 19, 20 New Bulkheads	\$17.00
	Multimodal Facility-Phase 2	\$112.40
	Berth 23 New Bulkhead	\$3.70
	Berths 24 and 25 New Bulkheads	\$12.40
	Berths 26 and 27 New Bulkheads	\$20.70
Southport	Crushed Rock (Aggregate Facility) (Public-Private Partnership)	\$61.80
	Super Post Panamax Cranes (1)	\$15.00
TOTAL		\$387.30

Element 6: Plan Implementation

This element discusses implementation of the 2014 Plan, presents the Port's 5-Year CIP, summarizes the estimated costs of the Port's complete 20-year development program, and provides an affordability analysis for the 5-Year Master Plan and 10-Year Vision Plan.

As required by Chapter 163, Florida Statutes, port master plans must include an assessment of plan impacts on vehicular traffic, the natural environment, and other resources. Summarized below, are some of the traffic and environmental impacts that will result from the development program as well as certain traffic and circulation issues that need study.

Traffic Impacts. Several major projects that have either been completed or are schedule for completion in 2014 or 2015 will have a positive impact in and around the Port. These include:

- The FEC ICTF.
- The Eller Drive overpass.
- McIntosh Road realignment.
- Port and Convention Center security improvement.

When completed later in 2014, the ICTF and the Eller Drive overpass will facilitate the use of rail to reduce traffic at the Port. As an essential complement to the ICTF, the Eller Drive overpass provides a grade separation for freight rail at the main access roadway to Port Everglades and eliminates a potential blockage on Eller Drive and the associated delay of truck, bus, taxi, and passenger car movements in and out of the Port. In 2033, container operations are expected to avoid more than 222,000 truck trips and bulk operations are expected to avoid an estimated 300,000 truck trips to and from the Port.

The realignment of McIntosh Road, which was completed in March 2014, was intended to speed the flow of trucks moving in and out of the Southport container terminals. Reduced queuing times and less congestion have resulted from this improvement project. When the Southport (McIntosh Road) gate lane addition is implemented, the northbound flow of exiting traffic from Southport will be increased, while the southbound flow of traffic entering Southport is maintained at an adequate level-of-service.

Other traffic and circulation improvements that will result from Plan implementation include:

- Relocating the existing security gate on Eisenhower Drive further to the south will significantly reduce non-Port traffic queuing at that gate.
- Carving out the Broward County Convention Center from the Port's secured area will significantly reduce the existing traffic that flows through the Port to and from the Convention Center.
- Entering buses into a centralized intermodal facility at 19th Avenue, west of East Eller Drive, will reduce traffic on that roadway segment.
- Developing the first phase of the cruise passenger multimodal 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, including buses, shuttles, and taxis as well as baggage trucks from FLL and provision trucks.

- Developing the crushed rock (aggregate) facility, programmed in the 20-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.

Other areas of traffic impact to be considered include a way-finding program, petroleum truck staging, taxi staging, the traffic circulation needs of all the vehicles servicing the Midport cruise terminals, and final access to the 9a and 9b container yards and the relocated Foreign-Trade Zone.

Environmental Impacts. In addition to mitigating potential environmental impacts, the projects in the 2014 Plan encourage environmental improvements due to the nature of the respective projects. Examples are:

- When completed, the mitigation program for the Southport turning notch extension will create 16.5 acres of mangrove wetland within uplands adjacent to the Southport turning notch to replace the 8.7-acre easement being released. In addition, mitigation credits will be allocated from the West Lake Park comprehensive restoration project, to offset impacts associated with the turning notch extension.
- Expanding the three slips at Northport and reducing the widths of the existing Piers 1 and 2, will remove a portion of the petroleum contamination currently contained within the Pier bulkheads. Any remaining product will be contained within new bulkheads with greater lifespan and durability.
- 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.
- Reducing traffic congestion and trip generation, as described in the preceding narrative, will reduce air emissions throughout the Port and the region.
- Changes to the Port's lighting configuration are helping protect sea turtles during their nesting season.
- Importing crushed rock (aggregate) will reduce the existing environmental issues with the present quarries in Florida. The new facility at Port Everglades will be enclosed for dust containment and not generate any air pollutants from the rock.

Plan Costs and Funding

Decision-Matrix Evaluation Summary

As discussed in the Element 4 section of this document, the project decision-matrix was used to evaluate the new and modified projects considered for inclusion in the 2014 Plan, whether in the 5-Year Master Plan and resulting capital improvement program (CIP) or in the 10-Year and 20-Year Vision Plans. The 5-Year CIP has been developed with Port staff and represents a program that is capable of being implemented within the established time frame. Projects in the 5-Year CIP were selected because of their qualifications as “sustainable” and “value-added.” “Value-added” means the projects provide added value to the Port. “Sustainable” refers to the projects’ contribution to social (i.e., economic impacts identified in the Plan) and environmental factors in addition to the traditional return on investment dollars.

Table ES-7, on the next page, summarizes how the decision-matrix evaluated each of the nine new or modified projects proposed for inclusion in either the 5-year Master Plan and CIP or the 10-Year Vision Plan. Each of the six metrics is reported as high (H), medium (M), or low (L). , Detailed information on the costs for these nine projects is provided in Appendices H and I; ROI data are provided in Appendix J.

5-Year Capital Improvement Program

The 5-Year Master Plan identifies the infrastructure the Port needs to meet the 5-year projected market demand and the locations of the respective infrastructure components. This infrastructure has been further translated into specific construction projects with project costs and the years in which each project is needed. The project costs for design/inspection services and construction have then been scheduled for one of the five fiscal years, 2015 through 2019, in the CIP.

The 5-Year CIP lists the project costs in three categories; namely:

- General Infrastructure.
- Master Plan Projects.
- Other Port Capital Improvements (Maintenance, Renewal, and Replacement).

The General Infrastructure and Other Port Capital Improvements (Maintenance, Renewal, and Replacement) categories consist of limited scope projects of a maintenance and infrastructure renewal nature. The Master Plan Projects category includes the projects that have been identified by this master planning program and are needed to meet the projected market demands. These include the USACE Dredging Project, which consists of projects that support recommendations from the USACE deepening and widening program.

The cost of the Master Plan projects in the CIP (\$435.62 million) is not the same as the total cost of the projects identified in the 5-Year Master Plan in Element 5 (\$470.20 million) because of differences in how projects are built into the CIP. Element 5 includes the full cost of a project, regardless of whether 1) partial funding was allocated for it in a prior CIP, 2) other parties such as the federal government or the state might share in the cost; or 3) the project’s costs might extend over years beyond those covered by the CIP.

**Table ES-7
DECISION MATRIX: MASTER PLAN PROJECTS BY PHASE**

Project	Year	Competitiveness		Economics		Stewardship	
		Capacity	Operational Flexibility	Port ROI	Regional Economic Benefits	Asset Preservation	Environmental Preservation
Petroleum Slip Expansion	5-year CIP	M	H	H	H	H	M
Neo-Bulk Storage Yard	5-year CIP	H	M	H	L	M	H
Cruise Terminal 25 Improvements/Expansion	5-year CIP	M	H	L	M	H	H
Southport Turning Notch Extension	5-year CIP	H	H	H	H	H	M
Southport Phase 9B Container Yard	5-year CIP	H	M	H	L	M	H
Southport Gate Lane Addition	5-year CIP	M	H	*	L	M	H
Cruise Terminal 29 Improvements/Expansion	10 year Vision Plan	M	H	L	L	H	H
Tracor Basin Fill	10 year Vision Plan	H	H	L	M	M	M
Berth 33 Reconfiguration	10 year Vision Plan	M	H	M	M	M	H

* The Southport Gate Lane Addition offers important operational flexibility to the Port, but does not generate revenue; directly, as a result, a financial ROI cannot be calculated.

Table ES-8 summarizes how the project costs have been allocated across the years. Over the five-year period, the project costs in each of the three categories are:

- General Infrastructure \$ 17.950 million.
- Master Plan Projects \$435.617 million.
- Other Port Capital Improvements \$158.403 million.

The total CIP cost over the five fiscal years is \$634.950 million (including reserves).

Table ES-8
5-YEAR CAPITAL IMPROVEMENT PROGRAM SUMMARY
(In 2014 \$millions)

FY 2015 to 2019, 5-Year Capital Improvement Program						
	FY15	FY16	FY17	FY18	FY19	Total
General Infrastructure	5.250	5.050	2.550	2.550	2.550	17.950
Master Plan Projects	104.477	102.710	102.340	17.350	108.740	435.617
Other Port Capital Improvements	67.086	33.083	32.201	15.503	10.529	158.403
Reserves	3.000	3.000	3.000	10.981	3.568	22.981
Total	179.813	143.843	140.091	46.383	125.387	634.950
Private Investment	27.000	27.000				54.000

The CIP also identifies the following six project funding sources.

- **State Grants:** anticipated grants that have not been secured for expenditure within the five-year period.
- **Interest Income:** interest earned by the Port on reserves and other funds and accounts over the course of the year.
- **Bond Proceeds/Interim Financing:** the amount of the CIP that is currently unfunded and not funded through anticipated grants, but may be available through the potential issuance of debt.
- **Internal Funding:** (transfer from operating fund): net revenue from existing Port operations, plus net revenue from Port operations as a result of new projects constructed in the five-year period, plus reallocated funds from previous projects.
- **Fund Balance (previous internal funding):** funds remaining at the end of a fiscal year which are carried over to support the budget at the end of the next fiscal year.
- **Private Investment:** the estimated participation in the cost of infrastructure improvements by tenants /stakeholders. This cost has been added to the CIP since these private investment projects add value to the Port's infrastructure base and become a base for the Port to derive net revenue.

The projected amounts, over the five-year period, for each of the six funding sources are:

- | | |
|-----------------------------------|------------------|
| ▪ State Grants | \$119.4 million. |
| ▪ Interest Income | \$ 0.4 million. |
| ▪ Bond Proceeds/Interim Financing | \$275.0 million. |
| ▪ Transfer from Operating Fund | \$211.4 million. |
| ▪ Fund Balance | \$ 35.2 million |
| ▪ Private Investment | \$ 54.0 million. |

The first five funding sources total \$635.518 million in public funds. In addition \$54.0 million in private funds is anticipated over the fiscal period. Together this funding is slightly more than the total of the 5-year CIP, as summarized in Table ES-9.

Table ES-9
FUNDING SOURCES OF 5-YEAR CAPITAL IMPROVEMENT PLAN
(In 2014 \$millions)

FY 2015 to 2019, 5-Year Capital Improvement Plan						
REVENUES	FY15	FY16	FY17	FY18	FY19	Total
State Grants	16.568	29.562	35.562	2.000	35.750	119.442
Interest Income	0.400	-	-	-	-	0.400
Less 5%*	(0.848)	(1.378)	(1.878)	(0.100)	(1.738)	(5.942)
Bond Proceeds/Interim Financing	78.330	86.670	61.664	-	48.336	275.000
Transfer from Operating Fund	50.133	28.989	44.743	44.483	43.039	211.388
Fund Balance	35.231	-	-	-	-	35.231
Total Public	179.813	143.843	140.091	46.383	125.387	635.518
Private Investment	27.000	27.000				54.000

*Under State statute, revenues are budgeted at 95 percent of anticipated receipts.

Comparison of 2014 and 2009 Plan Costs

It is anticipated that the Port's 20-Year Vision Development Program, at full build-out over the 20-year planning horizon, if warranted by market demand, will have an order-of-magnitude cost of approximately \$1.6 billion, as summarized in Table ES-10, \$137 million more than the 2009 20-Year Vision Development Program. Overall, the anticipated expenditures are higher in the first 10 years of the current plan, compared with the prior plan. This reflects the Port's need to repair and recapitalize a number of bulkheads that have reached the end of their useful life as well as expenditures for the USACE deepening and widening program.

**Table ES-10
COMPARISON OF 2014 AND 2009 PLAN COSTS**

Plan Time Frame	Costs	
	2014 Plan (In 2014\$ millions)	2009 Plan (In 2011\$ millions)
5-Year Master Plan	\$470.20	\$453.08
10-Year Vision Plan	\$741.01	\$547.22
20-Year Vision Plan	\$387.41	\$461.00
Total	\$1,598.62	\$1,461.30

The Port's Development Program, including the 5-Year Master Plan and the 10- and 20-Year Vision Plans is, however, a road map laid out to achieve the market demand projected at the time this 2014 Plan was prepared. The global marketplace and the maritime community's competitive response to that marketplace is constantly evolving. Thus, this Plan is presented as a flexible document, requiring periodic re-examination and re-evaluation of the parameters that affect the Port's development. Future projects need to provide the infrastructure necessary to serve the re-evaluated market assessment and Go/No Go decisions should be made through the strategic decision-making process defined in this planning program to achieve the economic goals of Broward County and its dynamic Port.

Affordability Analysis

The Port Everglades Department conducted a planning and financial "affordability" analysis to determine the potential mechanisms to finance the projected 5-Year Master Plan and 10-Year Vision Plan projects from FY 2015 through 2024. The purpose of the analysis was to provide an informed estimate of the potential financial impact of implementing these projects through the 10-year planning horizon. This is necessary to demonstrate that the Port can 1) meet the requirements of existing bond covenants from past investments that were financed in part through debt, and 2) maintain existing operations while undertaking these new investments. To obtain this estimate, a comprehensive analysis was performed to determine potential revenues and expenses over the 10-year period; net income was then compared with the potential debt the Port would have to carry forward to finance the projects.

- **Future Revenue Calculations.** Future revenues comprise three sources: anticipated revenues from the Port's ongoing businesses and revenues generated from new projects as they come online, supplemented by capital grants. To calculate future revenues from ongoing businesses, the Port started with the FY 2013 actuals collected from the various revenue centers. An annual 2.5 percent tariff increase was assumed to calculate total future revenues for each year. Revenue from new projects utilized projections on how each new project would come online, adding volumes gradually over time. The market forecasts were utilized as a check to ensure that the sum of existing

and new project volumes in a business line did not exceed the projected market total for the Port.

- **Future Expense Calculations.** To calculate future expenses, Port staff applied a ratio of operating expenses as a percentage of revenues. The calculated revenues minus the expenses provided the net operating income necessary to meet minimum requirements of existing debt service as well as meet additional bond tests.
- **Debt Service Estimates.** New debt service was estimated in consultation with the Port's Finance Division; it is sized and structured to reflect the pattern of expenditures, repayment of past debt, maintenance of required reserves, and the need to maintain coverage ratios. Port bond covenants require minimum coverage ratios of 110 percent and 125 percent of operating income divided by annual debt service requirements.

The detailed affordability analysis worksheet is provided in Appendix K.

Tables ES-11 and ES-12 summarize the results of the analysis for projected bond covenant debt coverage in FY 2015 to FY 2019 and FY 2020 to FY 2024, respectively. The analysis calculated the debt service coverage based on existing and new bond debt that would be required to fund the combined total of ongoing investments to maintain the Port, Master/Vision Plan projects and the USACE channel deepening and widening program, assuming the Port's share of the program is being funded as debt service by the Port. **The results show the bond covenant debt service coverage test requirements met and exceeded the required 110 percent and 125 percent tests for FY 2015 through FY 2024.**

Table ES-11
PROJECTED DEBT SERVICE COVERAGE
(FY 2015 – 2019)
(In \$ thousands)

	FY2015	FY2016	FY2017	FY2018	FY2019
Revenues	\$149,362	\$154,046	\$160,672	\$177,157	\$195,863
Expenses	80,760	83,183	85,678	93,478	102,552
Net amount available for debt service	69,602	71,863	75,993	84,679	94,311
Existing Senior Lien Debt Service	28,758	28,762	19,225	19,230	19,235
New Senior Lien Debt Service		-	10,984	14,682	18,379
Subtotal Senior Lien Debt Service	28,758	28,762	30,209	33,912	37,614
Subordinate Lien Debt Service	3,304	3,298	3,305	3,304	3,305
Total Debt Service	\$32,062	\$32,060	\$33,514	\$37,215	\$40,919
Test (125%)	2.42	2.50	2.52	2.50	2.51
Test (110%)	2.17	2.24	2.27	2.28	2.30

Table ES-12
PROJECTED DEBT SERVICE COVERAGE WITH USACE DEEPENING AND WIDENING
(2020 – 2024)
(In \$thousands)

	FY2020	FY2021	FY2022	FY2023	FY2024
Revenues	\$217,928	\$243,645	\$272,617	\$305,312	\$341,864
Expenses	113,733	126,937	142,052	159,340	178,913
Net amount available for debt service	105,196	117,708	131,565	146,972	163,952
Existing Senior Lien Debt Service	19,230	19,229	19,231	19,229	19,231
New Senior Lien Debt Service	31,078	43,777	43,777	43,777	43,777
Subtotal Senior Lien Debt Service	50,308	63,006	63,008	63,007	63,008
Subordinate Lien Debt Service	3,302	3,307	3,303	3,306	3,305
Total Debt Service	\$53,611	\$66,313	\$66,313	\$66,314	\$66,314
Test (125%)	2.09	1.87	2.09	2.33	2.60
Test (110%)	1.96	1.78	1.98	2.22	2.47