



# PORT EVERGLADES MASTER/VISION PLAN

2024 UPDATE

## *Element 3: Plan Development and Final Plan*

Final Report

Prepared by

**AECOM**

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## 3.0 Definitions

### 3.0.1 Glossary of Terms

**Air Draft**

The maximum height of a vessel above the waterline.

**Apron**

Area immediately adjacent to the vessel berth where lines, provisioning, gangway, and other operations occur.

**Anchorage**

Location where a vessel may anchor. For cruise, in destinations where docks are not present to accommodate vessel operations, anchorages are used and passengers are shuttled to/from the cruise vessel to a landside location using a small boat (tender). Anchorages are generally only used in ports of call. For cargo, an area outside a port where a vessel anchors to await a berth assignment. For Port Everglades, the anchorage location is approximately two and one-half miles northeast of the entrance channel to the Port, as established by federal regulations.<sup>1</sup>

**Beam**

The width of a vessel at its widest part.

**Berth**

- (1) An anchorage or dock space for a vessel in port.
- (2) A bed, generally attached to the deck and/or bulkhead onboard a cruise vessel.

**Biofuels**

Fuels derived from biomass, including plant materials or animal waste. They represent one of the many alternative fuel options being explored by the cruise industry for potential use.

**Break Bulk**

General cargo or goods such as steel rebar or pipes that must be loaded/unloaded and handled individually or in pre-determined modular quantities (e.g., pallets). Break-bulk cargo is not handled in intermodal shipping containers or in bulk quantities as would be the case with petroleum, grain, and cement, for example.

**Bunker/Bunkering**

Marine fuel used for propulsion. The act of delivering marine fuel to a vessel.

**Cabin**

A private room on a ship for guests and staff. Also referred to as a "stateroom."

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<sup>1</sup> Source: 33 C.F.R. § 110.186

**Capacity**

The number of units (passengers, berths, containers, gallons, tons, etc.) that a given area or space can handle at a given time.

**Cruise Brand**

Term referring to individual cruise vessel operating companies (e.g., Carnival Cruise Line) to distinguish them from their corporate holding companies (e.g., Carnival Corporation).

**Cruise Line**

For purposes of this report, cruise line is used to describe a corporate holding company with one or more cruise brand(s) operating under its corporate umbrella (e.g., Carnival Corporation).

**Cruise Terminal**

Building where cruise passengers embark and/or disembark in a homeport destination.

**Cruise Terminal Operator**

An entity that manages and operates a cruise terminal. Responsibilities may include coordinating with cruise lines, managing terminal facilities and services, and ensuring passenger safety and comfort.

**Daily Cruises**

Term applied to vessel service transporting passengers, vehicles, or cargo from point to point. The key difference between daily cruises and multiday cruises is that daily cruises offer transportation services as their primary business focus and return to the port of origin the same day they depart.

**Debar/Debarkation**

To leave a ship and go ashore. Debarkation usually refers to leaving the ship at the end of the cruise.

**Decarbonization**

The process of reducing carbon emissions, often with the ultimate goal of achieving carbon neutrality.

**Draft**

The depth of water required by a vessel to float; the measurement in feet (or meters) of the extent to which the vessel projects below the surface of the water.

**Dry Bulk**

Commodity cargo that is transported in unpackaged, non-standardized, non-liquid granular form, usually in large quantities (e.g., cement, bauxite, coal, etc.).

**Embark/Embarkation**

The act of boarding a ship. Embarkation usually refers to boarding the ship at the beginning of the cruise.

**Ground Transportation Area (GTA)**

Zone in which vehicles, including buses, taxis, and private cars, are organized and accessed as part of cruise terminal/destination embarkation and disembarkation activities.

**Homeport**

A marine facility and destination locality that serves as the base of operations from which a multiday or daily cruise begins and/or terminates. Also referred to as a turnaround port.

**Itinerary**

Sailing routes and ports visited on a given cruise. Two itinerary types are generally observed. *Open-jaw itineraries* refer to those deployments where the cruise begins at one homeport and ends at another. *Round-trip or closed-jaw itineraries*—the more common type observed—begin and end from the same homeport.

**Length Overall (LOA)**

Total length of a vessel in feet (or meters), including any incidental structure that may extend this dimension.

**Liquid Bulk**

Free-flowing liquid cargoes, such as gasoline, jet fuel, crude oil, liquefied natural gas, industrial chemicals, etc. that are typically transported in large quantities via tanker vessel and stored in tanks at or near ports for distribution/consumption.

**Liquefied Natural Gas (LNG)**

A natural gas that has been cooled down to a liquid state (about -260 degrees Fahrenheit) to significantly reduce the volume of natural gas for shipping and storage. LNG is a cleaner burning fossil fuel that significantly reduces harmful emissions compared to conventional marine fuels.

**Load Factor**

The occupancy rate of a cruise ship is computed based on all the passengers on the ship (i.e., both lower berths and the additional upper berths added to the rooms), divided by the lower berths of the vessel. Typically, most ships sail near or above 100 percent capacity, meaning more than two people are sailing in cabins (i.e., upper berths are added to host families).

**Lower Berth**

Beds on the floor, which are typically used to measure capacity and vessel size by assuming two lower berths per cabin. On modern cruise ships, cabins will have one or two available upper berths, that either fold out of the wall or drop down from the ceiling. These are used by an additional third or fourth person who is sharing the cabin.

**Marine Terminal**

Facility, including storage yards as well as associated buildings, where cargo handling activity occurs, usually within a physically defined and secure (i.e., gated) area.

**Maximum Passenger Capacity**

The total number of passengers that can be accommodated on the cruise vessel in lower berths and other flexible berths (also referred to as upper berths).

**Mixed-Use Facility**

Refers to a facility or complex with more than one type of real estate or operational use. Mixed-use facilities generally:

- (1) are contiguous in nature,
  - (2) are developed within a broader master plan constructed at one time or in phases, and
  - (3) provide for a symbiotic relationship to occur among all uses such that the sum of the mixed-use facility from a real estate or operational perspective is greater than its parts.
- Mixed-use maritime facilities often include cruise, ferry, marina, commercial, residential, recreational, and other upland transportation facilities.

**Multiday Cruises (Cruises)**

Leisure-oriented voyages on deep-water, ocean-going cruise vessels of two or more nights, often to a variety of destinations or ports of call. Multiday cruises are offered either by regional or international operators marketing to a variety of consumer sectors and nationalities.

**Neo-Panamax**

Vessels classified as Neo-Panamax are of the maximum dimensions that will fit through the newest set of locks in operation by the Panama Canal (366 meters [1,200 feet] long by 49 meters [161 feet] wide by 15.2 meters [50 feet] in depth).

**Panamax**

Vessels classified as Panamax are of the maximum dimensions that will fit through the original locks of the Panama Canal (304 meters [998 feet] long by 33.5 meters [110 feet] wide by 25.9 meters [85 feet] deep). Thus, a Panamax vessel will usually have dimensions of close to 294 meters (965 feet) long by 32.3 meters (106 feet) wide by 12.5 meters (40 feet) in depth.

**Peak (or Peaking)**

Period of greatest intensity of use or volume. Port Everglades' peak days for cruise activity, for example, are Saturday and Sunday since those are the days that, on average, see the greatest number of cruise ship calls and/or passenger disembarkations during a given cruise season.

**Penetration Rate**

Percentage of the total potential market that is currently addressed by a given product or service. For example, in 2016, North America (including Canada, the United States, Mexico, the Caribbean, and Central America) had a penetration rate for cruise of 2.3 percent (13.34 million cruisers/579 million total population).

**Port of Call**

A destination visited as part of a cruise itinerary. The focus of the port of call is on tourism activities adjacent to the cruise arrival area and the transportation of passengers to regional points of interest. This can also be referred to as a downstream destination.

**Post-Panamax (PP)**

Size standard that exceeds the largest vessel dimension capable of transiting the original Panama Canal locks (304 meters [998 feet] long by 33.5 meters [110 feet] wide by 25.9 meters [85 feet] deep). These measurements are generally based on the beam and LOA of the vessel.

**Revenue Passenger**

This generally refers to homeport passengers or, in some very limited cases, port-of-call passengers, whereby passenger counts reflect the port's passenger wharfage or tariff rate charging policy. For homeport calls, the actual number of passengers is doubled to show that the cruise operator is charged by the port for the passenger embarking/disembarking the vessel at a set fee.

**RORO**

Maritime term for roll-on/roll-off cargo such as passenger vehicles, tractor trailers, buses, railcars, etc. that are driven on and off a ship under their own power or using a platform vehicle, such as a truck and trailer or self-propelled modular transporter.

**Shore Power**

A process that allows ships in port to connect to the local electrical grid and shut down their engines, which can help to reduce emissions in port cities.

**Super Post-Panamax (SPP)**

Generally, refers to the largest vessels in existence today. These vessels are defined not only by their dimensions, but also their carrying capacity (i.e., 3,000+ passengers for cruise and 12,000-14,000+ twenty-foot equivalent units [TEUs] for container ships).

**Tariff**

A schedule of fees charged to port users, especially marine terminal and vessel operators, to cover some or all costs associated with port operations and other fiduciary obligations (e.g., infrastructure development and maintenance).

**Terminal Operator**

Entity with primary responsibility for managing marine/cruise terminal and related operations, usually under contract to a public port authority or other public or quasi-public ownership interest.

**Transit Passenger**

By literal definition, the status of cruise passengers at a port of call. This term can also be used to describe passengers who remain on a homeport cruise ship for back-to-back sailings.

**Twenty-Foot Equivalent Unit (TEU)**

Unit of cargo used to describe the capacity of modular container ships and container terminals. It is based on the volume of a 20-foot-long (6.1 meter) intermodal container, which is the historical standard metal container used in container shipping. Most containers in use today are forty-foot equivalent units (FEU); however, TEU remains the standard unit of measurement.

**Use Ratio (Utilization Percentage)**

The ratio of days that a berth is occupied to available berth days (total calls/total available berth days). For example, in a year-round market, a single berth is theoretically available for a total of 365 days. If that berth receives 52 calls (one vessel sailing weekly round-trip itineraries year-round) then its use ratio is .142, or 14.2 percent (52/365).

**XL-Sized Cruise Vessels/Berths**

The largest vessels in today's global cruise fleet. The largest vessels today are over 350 meters (1,150 feet) long. XL berths can accommodate the world's largest, XL, cruise ships.

### 3.0.2 List of Acronyms

<b>AI</b>	Artificial Intelligence
<b>APM</b>	Automated People Mover
<b>ATTAIN</b>	Advanced Transportation Technologies and Innovation Program
<b>BA</b>	Bermello Ajamil
<b>BCA</b>	Benefit-Cost Analysis
<b>BCAD</b>	Broward County Aviation Department
<b>BUILD</b>	Better Utilizing Investments to Leverage Development Program
<b>CAGR</b>	Compound Annual Growth Rate
<b>CIP</b>	Capital Improvement Program
<b>CT</b>	Cruise Terminal
<b>CTDS</b>	Cruise Terminal Design Standards
<b>CY</b>	Container Yard
<b>DERA</b>	Diesel Emissions Reductions Act
<b>ECT</b>	Everglades Company Terminal (Formerly Port Everglades Terminal [PET])
<b>EV</b>	Electric Vehicle
<b>FAA</b>	Federal Aviation Administration
<b>FDEP</b>	Florida Department of Environmental Protection
<b>FDOT</b>	Florida Department of Transportation
<b>FECR</b>	Florida East Coast Railway
<b>FIT</b>	Florida International Terminal
<b>FLL</b>	Fort Lauderdale-Hollywood International Airport
<b>FPL</b>	Florida Power and Light
<b>FY</b>	Fiscal Year
<b>FFY</b>	Federal Fiscal Year
<b>GDP</b>	Gross Domestic Product
<b>GTA</b>	Ground Transportation Area
<b>HOV</b>	High-Occupancy Vehicle
<b>I</b>	Interstate
<b>ICTF</b>	Intermodal Container Transfer Facility
<b>ICW</b>	Intracoastal Waterway
<b>IJA</b>	Infrastructure Investment and Jobs Act
<b>ILA</b>	International Longshoremen’s Association
<b>IMF</b>	International Monetary Fund
<b>INFRA</b>	Nationally Significant Multimodal Freight and Highway Projects Program
<b>IRA</b>	Inflation Reduction Act
<b>IRR</b>	Internal Rate of Return
<b>KPI</b>	Key Performance Indicator
<b>LNG</b>	Liquified Natural Gas
<b>LOA</b>	Length Overall

<b>MEGA</b>	National Infrastructure Project Assistance Program
<b>MHC</b>	Mobile Harbor Crane
<b>MPDG</b>	Multimodal Project Discretionary Grant
<b>MPO</b>	Metropolitan Planning Organization
<b>MSC</b>	Mediterranean Shipping Company, S.A.
<b>M/VP</b>	Master/Vision Plan
<b>NOFO</b>	Notice of Funding Opportunity
<b>PAB</b>	Private Activity Bond
<b>PBB</b>	Passenger Boarding Bridge
<b>PIDP</b>	Port Infrastructure Development Program
<b>PJA</b>	Port Jurisdictional Area
<b>POV</b>	Privately Owned Vehicle
<b>PP</b>	Post-Panamax
<b>PROTECT</b>	Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Program
<b>ROI</b>	Return on Investment
<b>RORO</b>	Roll-On/Roll-Off
<b>RTG</b>	Rubber Tire Gantry
<b>SF</b>	Square Feet
<b>SPP</b>	Super Post-Panamax
<b>SR</b>	State Road
<b>STNE</b>	Southport Turning Notch Expansion
<b>STS</b>	Ship-to-Shore
<b>TBD</b>	To Be Determined
<b>TEU</b>	Twenty-Foot Equivalent Units
<b>TGS</b>	Twenty-Foot Ground Slots
<b>TIFIA</b>	Transportation Infrastructure Finance and Innovation Act
<b>USACE</b>	United States Army Corps of Engineers
<b>USCBP</b>	United States Customs and Border Protection
<b>USCG</b>	United States Coast Guard
<b>USDA</b>	United States Department of Agriculture
<b>USDOT</b>	United States Department of Transportation
<b>USEPA</b>	United States Environmental Protection Agency
<b>USMHP</b>	United States Marine Highway Program
<b>VSA</b>	Vessel Sharing Agreement

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## 3.1 Introduction

The 2024 Update of the Port Everglades Master/Vision Plan (M/VP) is intended to serve as a roadmap for the future of the Port. The 2024 M/VP Update aims to guide the Port’s land use practices and capital investment decisions while supporting the Port’s pursuit of new market opportunities and strategic enhancements to Port operations. Element 3 begins with a summary of the planning process undertaken to support the development of the 2024 M/VP Update and includes an overview of the market assessments prepared for the Port’s four primary business lines – cruise, liquid bulk, containerized cargo, and non-containerized cargo – which are detailed in full in Element 2 of the 2024 M/VP Update. To set the stage for new proposed Port investments, Element 3 reviews the status of the projects proposed in the 2020 M/VP Update and includes an assessment of design trends for both cruise and cargo terminals, a discussion of potential operational enhancements at Port Everglades, and a facility needs assessment. Element 3 concludes with descriptions of the projects selected for the Port’s 5-, 10-, and 20-year investment plans, including the decision matrix used to evaluate and select projects and an affordability analysis of future Port investments.

## 3.2 Conceptual Planning Process

The planning process for the 2024 M/VP Update involves a collaborative effort among the AECOM team, the Port's senior staff, tenants, customers, and stakeholders to achieve the Port's goal of creating a plan that facilitates growth in volume and associated revenue while maintaining a diverse portfolio of operations through a realistic 5-year Master Plan, that will inform the Capital Improvement Program (CIP), and within the 10- and 20-year Vision Plan framework. Through meetings (both public and private) and other forums, such as telephone and email communication, this process engages a broad range of Port stakeholders, including various Broward County administration and sister agencies, and state and federal agencies, such as:

- Broward County Aviation Department (BCAD) and other departments,
- Broward Metropolitan Planning Organization (MPO),
- Florida Department of Transportation (FDOT),
- Florida Department of Environmental Protection (FDEP),
- United States Army Corps of Engineers (USACE),
- U.S. Coast Guard (USCG),
- U.S. Customs and Border Protection (USCBP), and
- Federal Aviation Administration (FAA).

Existing Port tenants, customers, users, employees, stakeholders, the public, and other affected and interested parties were also interviewed throughout the planning process to understand their current and future operational requirements. In total, 32 meetings were held with stakeholders and the public to inform the development of the 2024 M/VP Update. In February and March 2025, four charrettes with Port tenants and other stakeholders were conducted by business line, including for energy, non-containerized cargo, cruise, and containerized cargo (see **Figure 3.2.1** below). These charettes included a review of the key findings from the 2024 M/VP Update Market Assessment (Element 2) and presentations and working sessions to discuss and evaluate potential capital project ideas for inclusion in the 5-year Master Plan and the 10- and 20-year Vision Plans. A fifth charette was also conducted to present the combined initial results from the four separate business line charettes. The input received from these charettes and throughout the stakeholder engagement process has been incorporated into the 2024 M/VP Update.

**Figure 3.2.1: 2024 M/VP Update Charettes (February/March 2025)<sup>2</sup>**

### 3.2.1 Common Charrette Themes

During the charrettes conducted with representatives of the Port’s energy, non-containerized cargo, cruise, and containerized cargo business lines, several themes common to all parties were identified. The key points of discussion during the charrettes generally centered around the following themes:

- **Port Perimeter Gates and Traffic:**
  - Balancing the need for Port security with access and traffic control functions
  - Assessing whether Port security gates should be eliminated or adjusted to better meet Port and user needs
  - Traffic congestion into and within the Port
- **Berthing Conflicts:**
  - Availability of berths
  - Conflicts over berth usage between different vessel types
- **Big Ship Readiness:**
  - Port readiness to host larger cruise ships and container ships
  - Port readiness to accommodate increasing sizes of dry bulk and tanker ships
- **Accommodating Future Growth:**
  - Availability of landside space and conflicts between different land uses
  - Cargo being “squeezed” into smaller terminals
  - Consolidation and optimization of terminals and cargo types

<sup>2</sup> Source: AECOM

- **Construction Impacts on Port Users:**
  - Impacts from the Slip 1 Widening and Main Channel Deepening and Widening projects
  - Relocation of USCG, pilots, tugs, and tankers

The program of projects selected for inclusion in the 2024 M/VP Update reflects an attempt to address many of these themes through planned capital investments. These projects are further detailed in Section 3.10.

### 3.2.2 Iterative Planning and Design

An iterative planning and design process was used during the development of the 2024 M/VP Update to evaluate and refine future land use alternatives for the Port using the following three dimensions as a guide throughout:

1. **Competitiveness:** This dimension evaluates how well a project enhances the Port's ability to compete and grow within global trade networks:
  - **Capacity:** Direct or indirect increase in berth or yard throughput, road or parking capacity
  - **Efficiency:** Improvements in operational speed, cost, cargo flow or productivity.
  - **Market Positioning:** Reinforces the Port's strategic role in trade routes.
  - **Cargo/Market Diversification:** Expands into new cargo types or client sectors, reducing dependency on a narrow base and supporting growth.
2. **Economics:** This dimension focuses on the financial and broader economic value of the project:
  - **Return on Investment (ROI):** Expected financial return to the Port.
  - **Economic Impact:** Contribution to job creation and economic activity locally and regionally.
  - **Future Adaptability:** Ability to remain relevant amid evolving trade flows and regulations.
  - **Funding Leverage:** Potential to attract federal/state grants or private investment.
3. **Sustainability:** This dimension assesses how the project supports long-term operational and environmental goals:
  - **Asset Preservation:** Extends or protects the life of existing infrastructure.
  - **Environmental Compliance:** Supports regulatory compliance and mitigation efforts.
  - **Resiliency:** Enhances the Port's ability to withstand extreme events or disruptions.
  - **Energy and Resource Efficiency:** Reduces resource use and emissions over time.

This iterative process began with the AECOM team developing a range of project ideas, as well as soliciting project ideas from Port staff, tenants and stakeholders. These project ideas were presented, discussed, and reviewed with Port staff, tenants, and stakeholders through a series of meetings, presentations, workshops, and charettes to solicit feedback and refine the ideas into a list of potential projects.

These projects were then evaluated, further refined, scored, and ranked to select the best-value projects. Scoring and ranking was initially performed by the AECOM team, with the results presented to senior Port staff, who were then asked to also perform scoring and ranking. The results of these assessments were used to further refine projects for inclusion in the draft program.

Cost estimates were prepared and the result of financial modeling and affordability analyses were used to develop a preferred plan that was selected within anticipated budget constraints in concurrence with Port management. The results from the market forecasts, capacity analyses, and needs assessments were used to scale the Port's future investments in line with projected growth by business line.

### **3.2.3 Plan Drivers**

Four planning components provided the essential inputs for the development of the 2024 M/VP Update discussed in this element:

- The existing conditions assessment, presented in M/VP Element 1 that provided a summary of the Port's existing infrastructure and operating environment,
- The market assessments previously presented in M/VP Element 2 that updated the forecasts for the Port's four business lines,
- The status of the various projects from the 2020 M/VP Update, particularly key projects such as the Southport Turning Notch Expansion (STNE), installation of Super Post-Panamax Cranes in Southport, the USACE Channel Deepening and Widening Project, and Port-wide bulkhead improvement projects, and
- The conceptual feasibility and affordability of potential new projects in the context of the Port's past, current, and expected future financial position.

Together, these components provided the foundation for the project selection and prioritization process conducted to arrive at the final list of investments in the 5-year Master Plan and 10-year and 20-year Vision Plans included in this M/VP Update.

### 3.3 Market Assessment Summary

The detailed market assessments presented in Element 2 are summarized below for the Port's four principal business lines, namely:

- Cruise
  - Multi-day
  - Daily
- Containerized Cargo
- Energy, which includes Liquid Bulk
- Non-Containerized Cargo
  - Dry bulk
  - Break-bulk
  - Automobiles
  - Other (yachts and other roll-on/roll-off [RORO] cargo)

Some of the key findings from the market assessments, which are further detailed in Sections 3.3.1 through 3.3.5, including the following:

#### 1. Cruise Market Trends:

- The cruise market has significantly rebounded from the COVID-19 pandemic and Port Everglades exceeded 4 million cruise passengers for the first time in 2024.
- 20-year forecasts show an increase to more than 6 million passengers.
- Port Everglades primary competitors in the cruise market – PortMiami and Port Canaveral in Florida, as well as the Port of Galveston in Texas – have invested significantly more in expansion of cruise terminals and berths.
- Over 60 (or more) cruise ships new builds are on order over the next 4-5 years, with the larger ships increasing in size.

#### 2. Containerized Cargo Market Trends:

- Containerized cargo growth has fluctuated, peaking in 2018 but declining in 2020 due to the COVID-19 pandemic and shifting trade patterns. Container volumes recovered in 2021 and exceeded 1 million TEUs each year from 2021 to 2024, with this level of volume expected to be reached again in 2025. It is important to note that the current federal tariff measures implemented after the 2024 study period may influence future trends in the container cargo market, and their full impact remains to be assessed.
- The Central America and Caribbean trade lanes remain dominant but have experienced declines due to relocations of ocean carrier services to ports closer to key cargo owners.
- Approximately 35 percent of containerized moves require cold storage, highlighting the need for expanded refrigeration facilities at or near the Port.

- The USACE Channel Deepening and Widening project remains essential to achieve the forecasted 20-year growth (of 2 million TEUs) and attract new direct services from Asia, the Mediterranean, and Northern Europe.
- Port Everglades ranks sixth among South Atlantic ports in terms of TEUs handled and has lost ground to faster-growing competitors like Savannah and Jacksonville.

### **3. Energy (Liquid Bulk) Cargo Market Trends:**

- The Port receives about 130 million barrels per year, and over 350,000 barrels per day via barges and tankers.
- Petroleum products in total will remain relatively constant, although jet fuel will increase (with diesel expected to decline and other products remain relatively stable).

### **4. Non-Container Cargo Market Trends:**

- Cement dominates and is anticipated to potentially double from the current 1.2 million tons per year over the next 20 years, with growth forecasted for other dry bulk products (such as aggregates).
- Minimal growth is expected for other non-containerized cargo, which includes break bulk import (steel), yachts, autos, and other RORO cargo.

### **5. Capacity Challenges:**

- Road congestion along McIntosh Road and insufficient truck staging areas limit container growth potential.
- Berth conflicts between cargo and cruise operations, particularly during the cruise season, hinder operational efficiency.
- Channel width and depth constraints prevent optimal handling of post-Panamax vessels.

### **6. Infrastructure Investment Needs:**

- Channel Deepening and Widening:
  - Expedite the completion of the Channel Deepening and Widening project to 50 feet to accommodate larger vessels.
  - Ensure complementary berth deepening to align with channel depth improvements.
- Road and Traffic Enhancements:
  - Invest in realigning McIntosh Road and creating additional truck staging areas to alleviate congestion and improve access.
  - Identify improvements to perimeter gate operations to alleviate traffic congestion entering the Port.
- Cold Storage Expansion:

- Develop additional cold storage facilities to support perishable trade, potentially leveraging land near Fort Lauderdale-Hollywood International Airport (FLL).
- Terminal Upgrades:
  - Redevelop and enhance container terminals to increase efficiency and capacity, focusing on densification and intermodal connectivity.
- Berth Utilization Optimization:
  - Redesign berths and usage strategies to minimize conflicts between cruise and cargo operations in Midport and cruise/petroleum/cement/break bulk operations in Northport.
- Future-Focused Trade Development:
  - Position the Port to capture a larger share of Asian and Northern European trade by enhancing rail and shipping connectivity through partnerships with carriers.
- Digital and Smart Port Initiatives:
  - Invest in Port-wide digitalization, including predictive analytics for cargo flow, vessel scheduling, and real-time tracking systems.

By addressing these areas, Port Everglades can better accommodate projected growth, mitigate competitive challenges, and strengthen its position as a key trade hub. More detailed summaries of the market assessments performed for Port's four principal business lines (and presented in Element 2) are summarized below.

### 3.3.1 Cruise

The global cruise industry, accounting for just 2 percent of the worldwide travel market, has demonstrated resilient growth from 2000 to 2019, with a 5 percent compound annual growth rate (CAGR). Despite a 15-month industry shutdown from March 2020 to June 2021 due to the COVID-19 pandemic, the cruise sector rebounded strongly, surpassing its 2019 record high of 27.8 million global passengers by welcoming over 30.6 million passengers in 2023. Looking forward, the industry holds considerable untapped potential to expand further by attracting new consumers and continuing to serve its existing clientele.

A significant growth constraint has been vessel capacity rather than customer demand. Currently, the industry consists of 430 ocean-going cruise ships with 706,000 lower berths. An additional 63 ships are expected to add 134,000 more berths by 2036, resulting in a 19 percent total increase in lower berth capacity and a 15 percent increase in the number of ships.

Regionally, the Caribbean consistently leads in capacity offered and is also travelers' preferred destination. In 2024, it was approximately 42 percent of global capacity, followed by the Mediterranean at 16 percent, Northern/Western Europe at 10 percent, and Asia Pacific at 7 percent. The Caribbean remains the primary cruise region, set to receive the largest share of newbuild deployments and adding over a million total passengers to the region's capacity. Investments exceeding \$2 billion in the Caribbean highlight the region's ongoing appeal and position it for the largest share of new deployments and passenger capacity. These destination

port and tourism developments suggest that the Caribbean is expected to continue as the world's leading cruise region, with cruise lines intending to deploy additional traffic to the region for decades to come.

Located in Southern Florida, Port Everglades serves as a significant gateway to the Caribbean. It faces primary competition from PortMiami and Port Canaveral, each vying for the same key consumers, including national drive/fly markets and international traffic, and offering similar downstream Caribbean cruise products. Over the last five years, the market share has shifted as cruise lines have invested in new cruise facility infrastructure upgrades – with more planned for the coming years – at PortMiami and Port Canaveral while Port Everglades' share has decreased due to limited new cruise infrastructure over the similar period.

However, given the aggressive growth experienced by the global cruise industry, and more specifically, the Caribbean region, continued passenger growth is anticipated at Florida homeports, coupled with more and higher-utilized cruise facilities at the major Florida ports in the mid- to long-term to keep up with projected demand.

The cruise market assessment highlights the Caribbean's role in influencing future cruise traffic at Port Everglades, projecting over a 20-year period to 2044, with 2024 and 2025 as the baseline. Three projection methodologies were utilized that provide base, mid, and high projections, which are not intended to represent specific alternative scenarios per se, but rather to define the range of potential future growth for the Port overall.

The base case serves as the base projection, directly tied to the lowest estimates from the market capture methodology. This projection assumes no significant changes in cruise line deployments or terminal developments beyond current commitments and acts as a cautious estimate. The mid case builds on the base projection, assuming moderate growth through seasonal deployments and additional cruise brands, driven by anticipated terminal renovations. The high case extends the mid scenario with the most optimistic outlook, anticipating year-round deployments and significant growth due to terminal enhancements.

As such, future growth at Port Everglades will occur within the range defined by the base and high projections, with the mid and high projections providing a long-term strategy for Port development in order to achieve these levels.

Feedback indicates that current terminals may not be adequately equipped to manage operations for the largest vessels or provide facilities that compare to ones being built in competing destinations. Consequently, investments aimed at supporting optimal cruise operations have the potential to push projections toward the higher end of the forecast and beyond. This is because improved conditions for operators can facilitate additional capacity and accommodate larger vessels. Conversely, if future Port infrastructure fails to meet cruise operators' requirements, this could lead to projections falling toward the lower end of the forecast, in which case the existing berth capacity would be sufficient.

Given this, and under the most likely forecast scenario, growth opportunities are anticipated for the Port, with revenue passenger CAGRs ranging from 0.6 percent to 3.2 percent due to the continued deployment trends in the Caribbean region. That equates to revenue passengers growing from 3.0 million in 2023, to between 4.2 and 6.9 million by 2044.

**Table 3.3.1** shows the range of cruise projections across different growth scenarios between 2025 and 2044. This analysis forecasts a need ranging from eight to 11 berths by the end of the projection period. However, the need for additional berths requires that the Port take strategic action to achieve the higher end of the forecasts. For example, under the low deployment forecast, the current eight berths are sufficient to handle this level of passengers.

**Table 3.3.1: Berth Demand by Projection Scenario (2025–2044)<sup>3</sup>**

Year	2025–2029	2030–2034	2035–2039	2040–2044
<b>Mid Market Capture Scenario 1</b>				
Projection if the Port can maintain its 2024/2025 market capture rate through the duration of the projection period – unconstrained view of the potential market available for Port Everglades.				
<b>Low</b>	8	8	9	10
<b>Mid</b>	8	9	10	11
<b>High</b>	8	9	11	12
<b>Mid Market Capture Scenario 2</b>				
More realistic projection with continued growth for the Port, but a slow decline in market capture over the period, as seen historically.				
<b>Low</b>	8	8	8	8
<b>Mid</b>	8	8	8	8
<b>High</b>	8	8	9	9
<b>Mid Deployment Scenario</b>				
Uses the Port's 2024 and 2025 schedules as a baseline and explores various deployment scenarios or opportunities. The low serves as the foundational projection, directly tied to the lowest estimates from the likely market capture methodology. This scenario assumes no significant changes in cruise line deployments or terminal developments beyond current commitments and acts as a cautious estimate; the mid introduces a more optimistic view, predicated on several key developments and assumptions of increased deployments and terminal developments; the high expands upon the mid scenario, presenting the most optimistic outlook in this methodology.				
<b>Low</b>	8	8	8	8
<b>Mid</b>	8	9	9	10
<b>High</b>	8	9	10	11

<sup>3</sup> Source: Bermello Ajamil (BA)

Additionally, the need for more berths may be delayed if Port Everglades can increase the utilization of existing berths to enhance cruise facility efficiencies. In particular, the Port must collaborate with cruise operators to optimize facilities as well as increase berth utilization on off-peak days to create additional capacity on weekends during peak season.

Based on the cruise assessment, for Port Everglades to maintain its current market share and expand beyond the steady state experienced over the last decade, developing new strategies for growth is essential.

### 3.3.2 Liquid Bulk/Energy

Since 2018, the U.S. energy sector has experienced significant changes, including a surge in domestic crude oil production, primarily from shale formations, making the U.S. one of the largest global producers. This shift has influenced global oil prices and logistics, providing U.S. Gulf Coast refiners with a competitive edge due to lower operating costs. However, these changes have had limited impact on Port Everglades, which historically relies on domestic petroleum sources.

Key dynamics affecting the market include geopolitical events like the instability in Venezuela, the closure of Caribbean refineries, and Florida Power and Light's (FPL) shift from fuel oil to natural gas, which reduced foreign petroleum imports. These trends align with a broader movement towards energy self-sufficiency in the U.S.

The COVID-19 pandemic caused substantial fluctuations in liquid bulk demand, particularly jet fuel, due to reduced aviation activity. Recovery trends are tied to the global economy, tourism, and air freight industries, with demand projected to rise significantly over the next two decades.

The key findings and projections for liquid bulk business at Port Everglades are:

- **Domestic Supply Dominance:** Port Everglades has adapted to a shift from international to domestic petroleum sources, reflecting national trends.
- **Jet Fuel Demand Growth:** FAA forecasts indicate substantial increases in jet fuel demand due to rising flight volumes at South Florida airports, growing from 96,000 barrels per day in 2022 to 153,000 by 2043.
- **Fuel Efficiency and Declining Gasoline Demand:** Gasoline consumption per capita is expected to decrease due to advancements in vehicle technology and alternative energy adoption.
- **Infrastructure Needs:** Increased jet fuel demand necessitates expanded storage and improved logistics, while declining demand for other petrochemicals may allow optimization of existing facilities. It is important to note that petroleum storage and logistics are owned, operated, and managed by the private terminals within the Port and are therefore not directly controlled by the Port.

The strategic priorities for Port Everglades, based on the results of the market assessment, are:

- **Optimize Infrastructure:** Enhance jet fuel storage and logistics while repurposing underutilized facilities for commodities with stable demand.
- **Adapt to Market Trends:** Monitor shifts in energy consumption and leverage emerging opportunities in renewable energy and liquefied natural gas (LNG) transitions.
- **Maintain Market Position:** Address challenges from global energy transitions while ensuring operational efficiency and cost management.

Port Everglades competes with other Florida ports like Tampa Bay, Jacksonville, and Canaveral, as Florida's petroleum needs are served almost exclusively via waterborne shipping. While demand fluctuated during the pandemic, the liquid bulk market is recovering. Although competitors are expanding their capabilities, Port Everglades is strategically positioned due to its established domestic supply networks and remains well-positioned to maintain its liquid bulk market leadership, provided it invests strategically in infrastructure and aligns with evolving energy market trends.

### 3.3.3 Containerized Cargo

The future market potential for containerized cargo will be driven by several key factors.

- Import trade will be driven by:
  - Organic growth in local consumption, driven by population, and
  - The development of new services.
- Export trade, which has been dominated by exports to Central America, South America and the Caribbean, will depend primarily upon the projected growth in the trade partner countries' economies within those markets. Any addition of new import services at Port Everglades will also play a role by increasing export capacity and foreign port coverage.

It is to be emphasized that the cargo projections are unconstrained projections, in that they are demand driven. These unconstrained projections represent the markets in which Port Everglades can participate, and the degree of success in the capture of the markets will depend upon market efforts, current and future terminal operations, and future facility investments such as those detailed in Section 3.10.

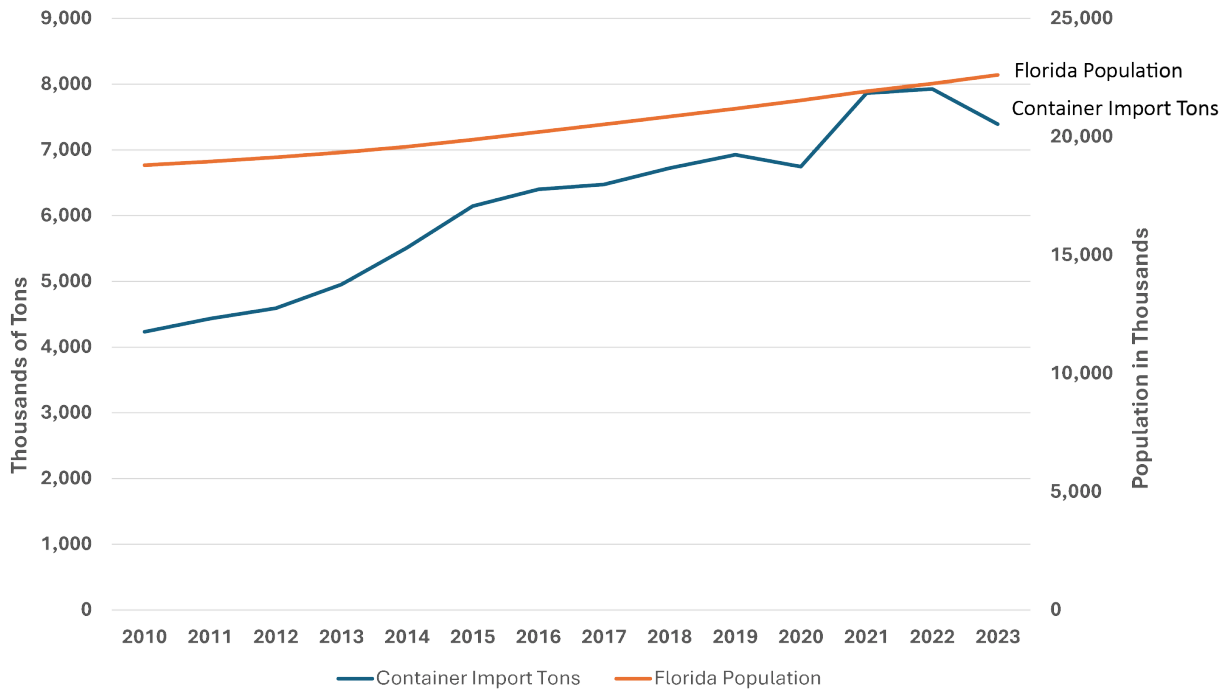
The future projection methodology for containerized cargo consists of a three-step process. First, projections were developed for the current container market served by Port Everglades. For the baseline import projections, the projection methodology assumed that no new market penetration would occur, meaning all future import trade flows are based on organic growth of the regional consumption market only as represented by population growth within the State of Florida, under a medium and high population forecast. For the baseline export container projections, the gross domestic products (GDP) of current trade partner countries was used to project containerized export volume.

Secondly, the addition of a Mexican service plus a new Northern Europe/Mediterranean Service was added to the baseline and high population and GDP projections. It is to be emphasized that the Port must complete the deepening and widening project to participate in future markets that will be served by the 12,000 TEU vessel class and greater. Furthermore, without continued improvement in the internal traffic flows and better access to Interstate 595 (I-595), it will be difficult for Port Everglades to grow its container business.

To develop the baseline, or organic projection for containerized imports, a regression model between historical combined imported containerized tonnage handled at Port Everglades and PortMiami and annual population in Florida was developed. The decision to combine container import volumes of PortMiami and Port Everglades to be used in the regression is based on input received from the key international container lines calling at both Ports. Feedback from these carrier interviews indicated that the carriers view both ports as serving the South Florida markets and are often used together in establishing vessel services. For example, CMA-CGM, Mediterranean Shipping Company, S.A. (MSC), and Maersk call at both ports, and therefore when total cargo volumes grow at Port Everglades it often reflects a relocation of a service from PortMiami, and vice-versa.

The regression model against the import tonnage levels at the two ports were then used to establish annual growth rate projections to be applied to 2023 import TEUs at Port Everglades. **Figure 3.3.1** shows imported containerized tonnage at Port Everglades and PortMiami and population levels in Florida between 2010 and 2023. This period was chosen to include volume levels after the 2009-2010 recession. The regression was also developed with and without the years 2019 and 2020 to control for the COVID-19 pandemic. The elimination of these two years did not impact the overall statistical relationship and validity of the regression model but reduced the degrees of freedom in the analysis.

**Figure 3.3.1: Combined Port Everglades and PortMiami Containerized Import Tonnage vs. Florida Population<sup>4</sup>**



The data presented in **Figure 3.3.1** were used to develop a regression model between Florida population and imported containerized cargo tonnage at Port Everglades and PortMiami, assuming no additional capture of imported containerized cargo now moving into Florida from other ports. Overall, the regression model explains 90 percent of the growth in containerized import tonnage handled at Port Everglades and PortMiami since 2010. Projected population data for the State of Florida was obtained from the Florida Demographic Estimating Conference, March 22, 2024, and the University of Florida Economic and Business Research, January 2024, medium county projections. High population projections were also obtained from the University of Florida, Bureau of Economic and Business Research, 2024 and used to develop a high baseline import TEU projection, excluding any capture of potential market.

Using the regression model and the State of Florida medium and high population projections, the baseline organic import container tonnage projections were developed. The projected baseline import TEUs for the 20-year planning horizon covered by this Port Everglades M/VP Update are shown by calendar year in **Table 3.3.2**, with calendar year 2023 serving as the baseline year. These population projections represent a 2.01 percent CAGR under the medium population forecast and a 2.9 percent CAGR under the high Florida population forecast. This compares to an actual CAGR in total TEU imported container of 0.18 percent per year between 2013 and 2014.

<sup>4</sup> Source: Martin Associates; USA Trade OnLine; Population and Projections from Office of Economic and Demographic Research, March 22, 2024.

**Table 3.3.2: Baseline Import Projections (TEUs) (2023–2044)<sup>5</sup>**

Scenario	2023	2024	2025	2030	2035	2040	2041	2042	2043	2044	CAGR 2023- 2044
Medium Population Inbound	481,738	499,592	517,703	594,651	655,735	703,175	711,050	718,966	726,926	734,928	2.03%
High Population Inbound	481,738	512,092	543,190	648,707	740,485	819,970	834,301	848,763	863,357	878,083	2.90%

To project the baseline export TEUs, the distribution of exports by trade lane/country was first developed and then applied to projected growth rates of the receiving countries' GDPs, as developed from country-specific GDP projections from the International Monetary Fund (IMF), World Economic Outlook, 2023. The GDP projections by country (and associated trade lane) were used to project loaded exports from 2023 to 2028. Due to uncertainty as to long-term country-specific performances, from 2028 to 2043, GDP growth for the specific countries projected by the IMF for 2028 to 2029 were used for the balance of the project.

**Table 3.3.3** presents the projected baseline export TEUs for Port Everglades for the same 20-year period (2024–2044). Overall, total export TEUs are projected to grow at an annual rate of 2.3 percent over the period, which compares to about 1.17 percent annual growth in total export TEUs from Port Everglades between 2013 and 2023.

**Table 3.3.3: Baseline Export Projections (TEUs) (2023–2044)<sup>6</sup>**

Scenario	2023	2024	2025	2030	2035	2040	2041	2042	2043	2044	CAGR 2023- 2044
Outbound	524,624	548,277	555,905	627,852	697,425	774,783	791,264	808,099	825,295	842,860	2.28%

**Table 3.3.4** presents the total baseline container projections (total import TEUs plus total export TEUs) for Port Everglades through calendar year 2044. The combined baseline projections result in a 2.2 percent to a 2.6 percent average annual growth, under the medium population growth forecast for imports and the high population growth for imports respectively, as described previously. This compares to a 0.7 percent overall annual growth rate between 2013 and 2023.

<sup>5</sup> Source: Martin Associates

<sup>6</sup> Source: Martin Associates

**Table 3.3.4: Total (Import + Export) Baseline Projections (TEUs) (2023–2044)<sup>7</sup>**

Scenario	2023	2024	2025	2030	2035	2040	2041	2042	2043	2044	CAGR 2023- 2044
Medium Population	1,006,362	1,047,869	1,073,609	1,222,503	1,353,161	1,477,958	1,502,314	1,527,066	1,552,221	1,577,789	2.16%
High Population	1,006,362	1,060,389	1,099,095	1,276,559	1,437,911	1,594,753	1,625,565	1,656,862	1,688,652	1,720,943	2.59%

As previously stated, this combined containerized cargo projection assumes that Port Everglades does not capture any additional market share. The baseline projections also assume that Port Everglades will not lose any existing ocean carrier services due to known challenges related to inter-terminal traffic flows, berth availability, and channel depth and width restrictions.

Beyond the baseline projections, two potential markets or new services were identified: the potential Mexican service, which is estimated at 83,000 TEUs currently, and a new Northern European/Mediterranean Service, estimated at 94,000 TEUs. It is assumed that these services will develop over the next three years, and that the initial third of the business will begin to appear in 2024, the second third in 2025, and fully operational by 2026. It is also assumed that the potential market grows at the same annual rate as baseline container import and export TEUs throughput at Port Everglades.

After the three-year incremental addition of this potential market, the total TEUs at Port Everglades will grow at the same average annual rate developed for the total TEU baseline projections under the high population forecast for imported TEUs. Based on these assumptions of potential markets, a 3.33 percent annual growth rate is projected for the 20-year period, with TEUs reaching about 2 million TEUs by 2044.

**Table 3.3.4: Baseline + Medium New Market Capture Projections (TEUs), 2018-2038<sup>8</sup>**

Scenario	2023	2024	2025	2026	2030	2035	2040	2041	2042	2043	2044	CAGR 2023- 2044
Total High Population	1,006,362	1,060,389	1,099,095	1,144,455	1,276,559	1,437,911	1,594,753	1,625,565	1,656,862	1,688,652	1,720,943	2.59%
New Potential	-	59,000	121,583	186,522	-	-	-	-	-	-	-	-
<b>Total With Potential</b>	<b>1,006,362</b>	<b>1,129,389</b>	<b>1,220,678</b>	<b>1,330,977</b>	<b>1,484,611</b>	<b>1,672,260</b>	<b>1,854,663</b>	<b>1,890,498</b>	<b>1,926,896</b>	<b>1,963,866</b>	<b>2,001,420</b>	<b>3.33%</b>

This projection level represents the target for planning capacity investment and improving terminal operations, synergies and internal traffic flows. This projected level of 2 million TEUs can be compared to the container projections developed by the USACE in its Final Feasibility Report and Environmental Impact Statement, Port Everglades Harbor Navigation Study, Broward

<sup>7</sup> Source: Martin Associates

<sup>8</sup> Source: Martin Associates

County. In this report, the USACE projected 10.5 million metric tons of containerized cargo by 2040. Converting the 10.5 million tons to TEUs, using an average of 6.7 tons per TEU as reported by Port Everglades in 2017, this compares to about 1.6 million TEUs projected by the USACE in 2040. Without the potential Mexican and Northern European services, the current total TEU projection developed in this assessment shows a projected TEU level of about 1.6 million TEUs in 2040 under a high Florida population forecast for total import TEUs and no capture of additional markets.

### **3.3.4 Non-Containerized Cargo (Dry Bulk Operations)**

Overall, the demand for cement, slag, and aggregates is expected to continue to grow in response to highway and other residential and commercial developments in Florida. The upper limit on cement and aggregates imports will likely be the defined capacity of the cement operations (CEMEX and Lehigh) at the Port, which is about 2.6 million tons based on the berth capacities of Berths 14 and 15, as well as silo storage capacities.

However, there is a berth issue at Berths 14 and 15 in that if a cement vessel is berthed at Berth 14, and a cement vessel calls at Berth 15, the vessel docked at Berth 15 extends into the channel. When a cruise ship enters the Port, the cement vessel must leave the berth and then return, increasing the costs of using Port Everglades for cement operations. As the cement vessels are growing in size to handle 35,000 to 40,000 tons per call, the length of the vessels also increases, exacerbating the Berths 14 and 15 length conflict when two cement vessels are berthed at the same time. This issue will need to be addressed to support continuing growth of cement at the Port.

### **3.3.5 Non-Containerized Cargo (Other Cargo)**

#### **Break Bulk (Steel)**

Steel imports are driven by the growth in construction activity in South Florida, but due to limited storage area and berth availability in Port Everglades, break bulk activity is constrained and growth is not anticipated. Steel imports have been relatively stable at the Florida ports, with the exception of Port Manatee. Overall, there has been little growth in steel imports over the past 20 years. For future planning purposes, throughput of steel products will not likely exceed 200,000 tons annually at Port Everglades.

#### **Automobile**

Prior to 2020, Port Everglades maintained records on auto units handled on pure car carriers, which typically exclude used vehicles or privately owned vehicles (POV) that move to the islands for personal use and resale or that are used for parts. Since 2020, the volume of autos and RORO cargo have been on a declining trajectory. Interviews with the auto processor indicated that the capacity of the auto terminal is about 60,000 auto units, but currently only about 20 percent of the terminal is utilized. It is unlikely that capacity will be reached at the terminal, as the import market, which had focused on Mexican imports has not materialized, and the export market to

the Caribbean islands is projected at about 1,000 to 2,000 units per month for a total of about 24,000 auto units annually. With respect to Port Everglades' projected new automobile imports and exports, even with the addition of a new account, future throughput will not likely exceed 50,000 units annually. The most likely scenario is that auto throughput will fluctuate between 15,000 and 30,000 units annually.

### **Yachts**

Port Everglades is a key port for the transport and repositioning of yachts. The yacht volume peaked in 2018 and declined during the COVID-19 pandemic but has rebounded since. Interviews with the key carrier handling yacht transport in South Florida indicated that yacht activity at Port Everglades could more than double in the near term, although this business is a small component of the Port's overall cargo volumes. The carrier currently serves the market via Port Everglades and the Port of Palm Beach, with an annual number of combined vessel calls. Historically, the carrier had berthing issues at the Port, primarily due to conflicts with the cruise operations. The operator has grown significantly over the past 25 years and is hoping to consolidate its Florida operations at Port Everglades. This consolidation would result in about 100 annual calls within the next five years and would require about 15,000 square feet (SF) of fenced area.

## 3.4 Status of Projects Included in the 2020 Master/ Vision Plan Update

Summaries of the current status of projects included in the 2020 M/VP Update, as discussed in Element 1, are presented in **Table 3.4.1**, **Table 3.4.2** and **Table 3.4.3** and list the projects included in the 5-Year Master Plan, 10-Year Vision Plan and 20-Year Vision Plan, respectively. Those projects that have been included in the 2024 M/VP Update are discussed in greater detail in Section 3.10. Additional details on projects that have been put on hold, canceled (and removed), or have been included in the 2024 M/VP Update with scope, schedule, and/or budget revisions are provided in Section 3.11.

**Table 3.4.1: Port Everglades 5-Year Projects as Proposed in 2020 M/VP Update<sup>9</sup>**

Location	Project	Design Start Year	Construction Start Year	Completion Year	Current Status
To Be Determined (TBD)	Maintenance Facility Consolidation	2019	TBD	TBD	Ongoing; Included in 2024 M/VP Update (2026-2030)
Northport	CT-2/CT-4 Parking Garage	2018	-	2020	Completed
Northport	Port Access Road	2024	2024	2026	Ongoing
Northport	Slip 1 - Phase 1 (Berths 9/10 Bulkheads)	2019	2028	2031	Ongoing; Included in 2024 M/VP Update (2026-2030)
Midport	CT-21 Redevelopment	-	-	-	Not Started; Included in 2024 M/VP Update (2031-2045)
Midport	RORO Yard Relocation/Expansion (Phase 1)	2020	-	-	Canceled
Southport	6 SPP Ship-to-Shore (STS) Cranes	2017	2021	2024	Completed
Southport	PEV ILC	2018	-	2021	Completed
Southport	Phase 9A	2018	-	2025	Completed
Southport	STNE	2015	2016	2025	Completed
Southport	Southport Crane Rail	2015	-	2022	Completed
Port-Wide/ Other	USACE Channel Deepening and Widening (USCG Reconfiguration)	2019	TBD	TBD	Ongoing; Included in 2024 M/VP Update (2026-2045)
Port-Wide/ Other	USACE Channel Deepening and Widening	2019	2028	TBD	Ongoing; Included in 2024 M/VP Update (2026-2045)
Port-Wide/ Other	Former Dynegy Logistics Development	TBD	TBD	TBD	On Hold
Port-Wide/ Other	Auto Terminal West	-	-	-	Canceled
Port-Wide/ Other	I-595 Flyover	-	-	-	Canceled
Port-Wide/ Other	Entrance Channel North Wall	2023	2025	2026	Ongoing
Northport	Berths 1A, 1B, 2 and 3 Bulkheads	2023	2024	2026	Ongoing
Midport	Berths 16-18 Bulkheads	2024	2028	2030	Ongoing; Included in 2024 M/VP Update (2026-2035)

<sup>9</sup> Source: Port Everglades

**Table 3.4.2: Port Everglades 10-Year Projects as Proposed in 2020 M/VP Update<sup>10</sup>**

Location	Project	Design Start Year	Construction Start Year	Completion Year	Current Status
Northport	Break Bulk Yard	-	-	-	Canceled
Midport	Tracor Basin Fill	TBD	TBD	TBD	Canceled
Midport	RORO Yard Expansion (Phase 2)	-	-	-	Canceled
Midport	CT-29 Redevelopment	2026	2027	2028	Ongoing; Included in 2024 M/VP Update (2026-2030)
Midport	CT-26 Redevelopment	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045+)
Midport	CT-29 Parking Structure	2026	2027	2029	Not Started; Included in 2024 M/VP Update (2026-2030)
Southport	Griffin Road Extension/NE 7 <sup>th</sup> Avenue Improvements	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2026-2030)
Southport	McIntosh Road Realignment	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2031-2035)
Southport	Container Terminal Reconfiguration	2024	TBD	TBD	Not Started; Included in 2024 M/VP Update (2026-2035)
Port-Wide/ Other	Airport-to-Seaport Connector	2024	TBD	TBD	Ongoing
Midport	Berths 21 and 22 Bulkheads	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2031-2045)
Northport	Berths 7, 8, 8A and 32 Bulkheads (USACE Design)	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2031-2035)
Midport	Berth 29 Bulkheads	2026	2027	2029	Ongoing; Included in 2024 M/VP Update (2026-2030)
Midport	Berths 14 and 15 Bulkheads	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045)
Northport	Berths 4-6 Bulkheads	TBD	TBD	TBD	Not Started

<sup>10</sup> Source: Port Everglades

**Table 3.4.3: Port Everglades 20-Year Projects as Proposed in 2020 M/VP Update<sup>11</sup>**

Location	Project	Design Start Year	Construction Start Year	Completion Year	Current Status
Northport	Slip 3 Expansion (Berths 11-13 Bulkheads)	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045)
Midport	Berth 19 Finger Pier	-	-	-	Canceled
Midport	CT-19/CT-20 Redevelopment	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045)
Midport	T19/T20 Parking Structure	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2026-2030)
Midport	RORO Yard Expansion (Phase 3)	-	-	-	Canceled
Southport	Phase 9C-2	-	-	-	Canceled
Southport	1 Small STS Crane	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045)
Port-Wide/ Other	Container Terminal Reconfiguration	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2026-2035)
Midport	Berth 14 and 15 Bulkheads (Construction)	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045)
Midport	Berths 19 and 20 Bulkheads	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045)
Midport	Berth 23 Bulkhead	TBD	TBD	TBD	Not Started
Midport	Berths 24 and 25 Bulkheads	TBD	TBD	TBD	Not Started
Midport	Berths 26 and 27 Bulkheads	TBD	TBD	TBD	Not Started; Included in 2024 M/VP Update (2036-2045+)

<sup>11</sup> Source: Port Everglades

## 3.5 Terminal Design Trends

### 3.5.1 Cruise Terminal Trends

As discussed in Element 2, there are more than 60 new cruise vessels (this estimate has since increased) scheduled for delivery over the next five years. The average passenger capacity of these vessels is 2,900; however, 18 of these new builds have a capacity of over 4,000 lower berths. Most of these ultra-large vessels are being built by cruise lines that currently call Port Everglades home, namely Carnival Corporation, Princess Cruises, and Royal Caribbean International. This trend toward larger average passenger capacity cruise vessels, particularly in Port Everglades' core service region—the Caribbean/Bahamas—is discussed at length in the Element 2 cruise market assessment and is not replicated here. However, larger average passenger capacity vessels are one of the most important trends impacting current as well as future cruise terminal trends.

Port Everglades is the third busiest cruise homeport in Florida and the world. As such, it should strive to have cruise facilities that not only meet today's best-in-class industry standards but set the bar for what constitutes best-in-class into the future. To achieve this, the Port's cruise terminals must be designed to allow for flexibility in terms of cruise line operations, passenger loads, and other variables while emphasizing operating and cost efficiency and guest/user convenience and satisfaction.

Increasingly, new cruise terminals should be highly functional facilities designed to achieve performance targets through coordinated operations, limiting passenger queuing times, and minimizing the overall time required to complete key embarkation and disembarkation processes. Efficiency of operations and passenger throughput rates become even more important as average vessel sizes increase, and as average and peak passenger volumes at the Port continue to grow. As a rule, the cruise vessel and the brand it represents should be the experience, with the terminal serving as the platform to initiate and complete this experience. Therefore, convenience and passenger comfort are the defining considerations. Terminal design should also work to minimize or reduce labor and operational costs.

#### **Homeport Facility Components**

Homeport Facility Components, such as those at Port Everglades, generally consist of the following components and should be designed with the following questions/considerations in mind:

- **Ground Transportation Area (GTA)**
  - The best configuration to meet the needs of the homeport at peak volume.
- **Terminals**
  - The optimal passenger flow between the GTA and vessel.
  - The key performance indicators (KPI) the design will be based upon, such as overall time in facility, queuing and waiting times.

- The extent that technology will define the design.
- Defining check-in, security, USCBP, waiting, and ancillary areas (restrooms, office, storage, secondary uses) based on user needs, performance standards, and design standards.
- Management of interior circulation (embarkation, disembarkation, and back-of-house operations) to optimize hardware and manpower assets.
- **Passenger boarding bridges/gangways**
  - Type, number, and range of service that are required.
- **Baggage Claim**
  - Definition of laydown space and circulation pattern based on the design load.
- **USCBP Unit (Primary and Secondary Inspection, Offices)**
  - Design of the unit based on current Cruise Terminal Design Standards (CTDS), annex, peak throughput calculations, and technologies used.
- **Operations**
  - Management of storing routing and inspection areas for vessel servicing.
  - Security requirements for truck clearance, baggage, passengers, terminal, and surroundings.
  - Handling of baggage scanning/movement for embarkation and disembarkation.
  - Requirements for office, restroom, storage, etc., based on stakeholder needs and site requirements.
- **Secondary Use Issues**
  - Management of facility ingress and egress for event space needs.
  - Safety and security considerations for access to the apron on the water side, and how this can be a positive attribute for secondary uses.
  - Storage requirements for different event types (long term, short term, etc.).
  - Amount of space needed for warming kitchen(s) to provide the required capacity.
  - Use of for multiple event spaces, considering access to water, balcony, high ceilings, lighting, ambience, etc.

### **Key Design Issues**

User convenience and satisfaction should be the key drivers in the cruise terminal design process. While certain “bells and whistles” or next-level amenities (including functional as well as aesthetic amenities) may be desirable on the part of cruise lines to reinforce their branding and the overall passenger experience within the terminal, the core design should focus on efficiency and be intuitive while allowing for maximum flexibility and easy maintenance. The future can be anticipated, but never predicted, so flexibility and design that addresses short-term issues within a long-term strategy are vital as this will minimize or avoid future costs associated with unexpected market or operating changes and allow the Port to adapt to new opportunities more dynamically. Key considerations that influence facility design concepts are summarized below.

- Segregation of passengers/traffic.
- Segregation of transportation modes:
  - Buses/tour vehicles,
  - Private vehicles/staff, and
  - For-hire vehicles.
- The latest security:
  - Entry/exit, pier, GTA,
  - Check of passengers, bags, provisioning (if required), and
  - Provide for operational flexibility:
    - All facility security cordon,
    - Partial facility security cordon, and
    - Berth security cordon.
- Improvements in functionality:
  - Reduce queuing,
  - Linkages of passenger metering processes – slow to fast, and
  - Integrate facility into the waterfront.
- Technology implementation:
  - Facial recognition,
  - Touchless check-in options including App use, and
  - Baggage automation.
- Secondary uses:
  - Commercial, and
  - Other, such as private functions.

Typically, today's cruise homeport facilities provide for two levels of operations to allow for simultaneous embarkation and disembarkation. Multiple (two) passenger boarding bridges (PBBs, gangways) are also typically used for each vessel call to allow for safe and efficient movement of passengers on and off the vessel. Design elements should be as flexible as possible to accommodate multiple vessel types and sizes as well as different operations. Flexibility is also important to allow for potential future reconfiguration of the facility based on changing operational preferences as well as changes in security practices and/or protocols over time.

The following cruise terminal trends are among the most salient in terms of positioning Port Everglades to handle projected future cruise traffic while achieving best-in-class operational efficiency, convenience and passenger comfort:

- Multi-level terminals,
- KPIs,
- Type, number and service range of PBBs (gangways),
- Parking and GTAs,

- Baggage handling,
- USCBP/Security,
- Technology innovations, and
- Alternative/secondary use.

Each of these trends is discussed below.

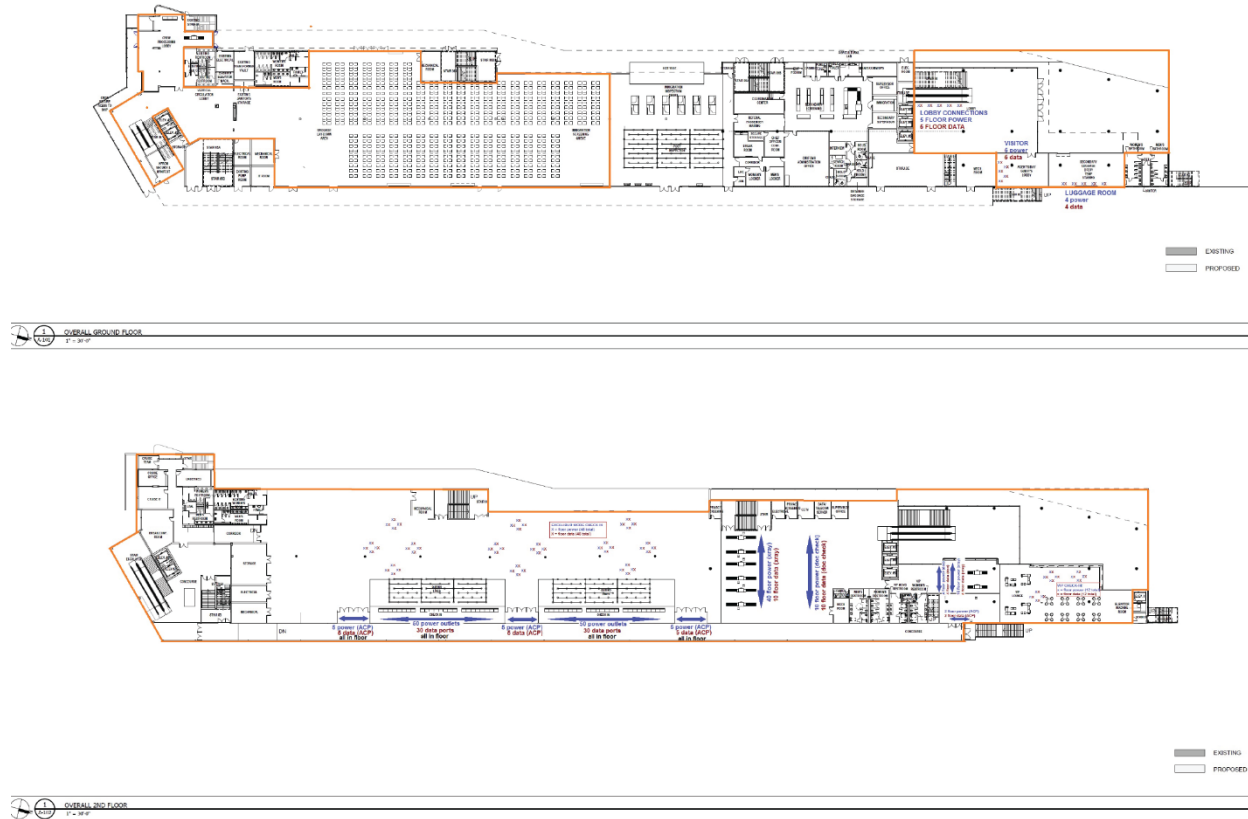
### **Multi-level Terminal Design**

Multi-level cruise terminals – which primarily comprise a ground floor and upper floor but often include additional levels as well – have become the industry standard for several reasons. First and foremost, the height provided by multiple levels allows for the maximum amount of flexibility when it comes to positioning gangways to access the preferred decks of most of today’s cruise vessels while ensuring safe and manageable vertical grades for passengers. One recent trend that underscores this is the emerging preference by some cruise lines for embarkation to occur directly onto the promenade deck of the vessel. This not only requires a substantial vertical service range for PBBs but also requires a higher point of terminal connection to ensure acceptable gangway grades.

Separate terminal levels also facilitate segregation of passenger embarkation and disembarkation flows, thereby ensuring separation of passengers while also allowing for overlap of two-way operations. Multi-level terminals may also minimize the distance a passenger must travel between the GTA and the vessel during embarkation and between the vessel and GTA during disembarkation. Each of these factors contributes to operational efficiency, enhances the cruise passenger experience and increases the overall level of service provided.

An additional benefit of multi-level cruise terminals is a substantial reduction in the structural footprint of the terminal itself since the overall square area of the terminal can typically be distributed relatively evenly between the two primary levels, thereby reducing the footprint by 40 percent or more versus a single-level facility. This is strategically very advantageous for ports like Port Everglades that have extremely limited berth-adjacent land on which to accommodate cruise activity. **Figure 3.5.1** presents an example of a best-in-class multi-level terminal: Port Everglades’ own CT-25.

**Figure 3.5.1: Example Multi-Level Terminal Program – Port Everglades CT-25<sup>12</sup>**



**Table 3.5.1** illustrates the primary elements of a standard U.S. homeport terminal program in terms of gross floor area by function and by target service level. As shown, service level ratings of A, B, and C have been assumed using a 5,400-passenger vessel for simulation purposes. There is a degree of flexibility for many program elements within these guidelines, but as a rule of thumb they effectively capture the space required to meet the target service level for the target vessel capacity. Given the very large total square areas involved, distributing the program elements across multiple levels becomes advantageous. A recent trend with the introduction of more technology and faster embarkation processing times is the reduction in space requirements for check-in and passenger waiting areas. This trend has shifted more space requirements to the ground floor, allowing for potential reduction in upper level(s) size if site and program conditions permit.

<sup>12</sup> Source: BA

**Table 3.5.1: Example Terminal Program/Space Requirements – 5,400 Passenger Vessel<sup>13</sup>**

Component	Case 1 (SF)	Case 2 (SF)	Case 3 (SF)
Service Level	A	B	C
Entrance Lobby	17,618	15,593	13,587
Embarkation	56,586	47,998	40,023
Disembarkation	64,676	49,013	39,412
Customs and Immigration	28,583	28,583	28,583
Security and Screening	31,772	23,715	19,849
Port Operations	1,765	1,765	1,765
<b>Subtotal</b>	<b>201,000</b>	<b>166,666</b>	<b>143,219</b>
Building Mechanical Systems	5,748	5,748	5,748
Elevated Concourse	24,750	21,038	17,325
Building Envelope, Structure, Shafts, etc.	4,630	3,869	3,326
<b>Total</b>	<b>236,127</b>	<b>197,320</b>	<b>169,617</b>
<b>Summary by Floor</b>			
Ground Floor	110,571	89,689	77,537
Second Floor	88,550	75,413	63,012
Either Floor	36,664	31,877	28,726
<b>Total</b>	<b>235,785</b>	<b>196,978</b>	<b>169,275</b>

As cruise vessels continue to increase in size and capacity over time, terminal verticality will become increasingly attractive to free up additional acreage for GTA and related logistics that occur outside the terminal shell. Next-level design characteristics would consider additional space for any holding scenario resulting from a late or quarantined vessel as well as redundancies for the vertical circulation elements, including elevators, escalators, and stairways. Unlike airports, since cruise vessel ticket prices are inclusive of a wide array of food and beverage services, in-terminal food and beverage service is not required, common, or even desired in most cases.

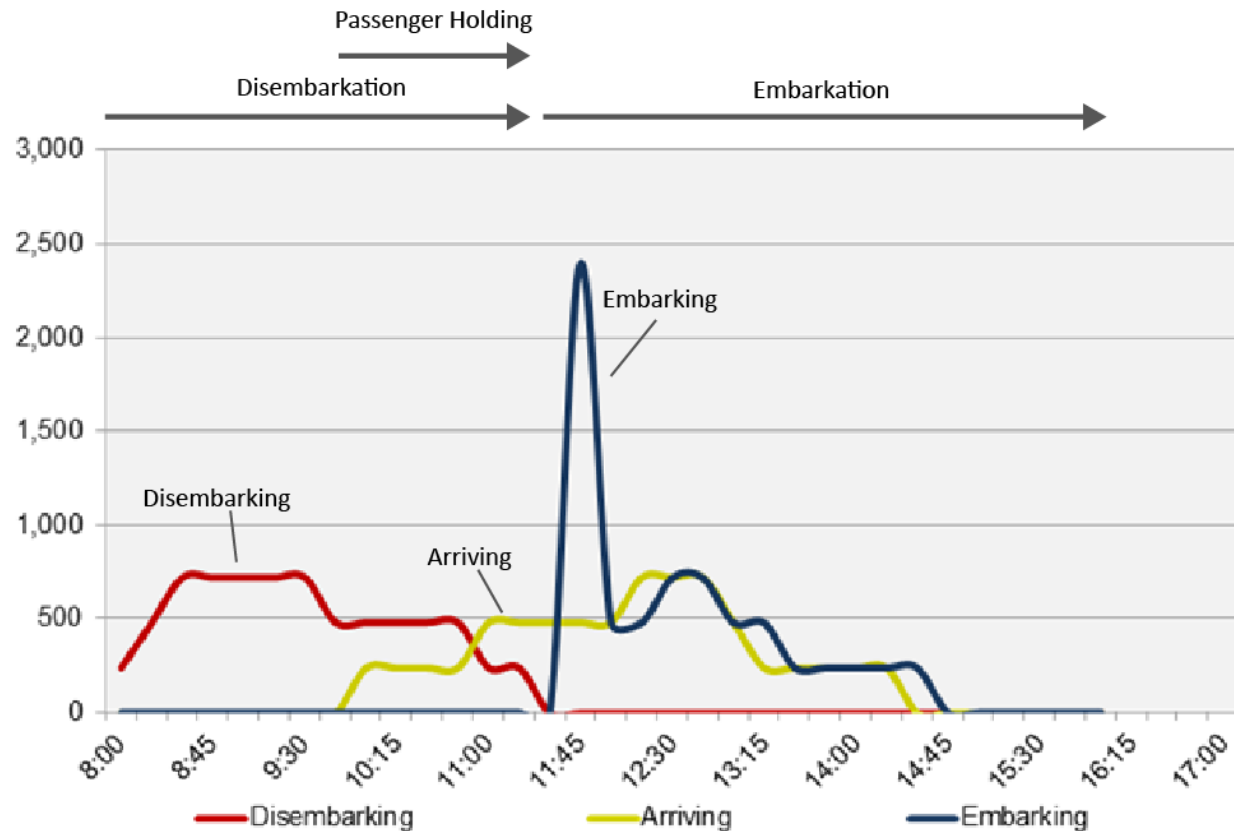
Other amenities and services can enhance the cruise passenger experience within the terminal, even if only for a short period (ideally 15 minutes or less). Such amenities include limited retail, baby changing stations in restrooms, entertainment zones for families, exhibits or galleries specific to the city or region in which the terminal is located, drinking fountains, and robust audio/video and information technology systems for both communication/information purposes and entertainment purposes. Perhaps the most important next-level amenity in today's industry is free and easy access to high-capacity, high-speed wireless internet service so that passengers can use their own handheld devices to access online information and entertainment options. All of these things help to create a terminal that is more integrated into the overall cruise experience.

<sup>13</sup> Source: BA

### **Key Performance Indicators (KPIs)**

Passenger flows are critical components of terminal design. Time is of the essence, meaning the speed and efficiency with which passengers can comfortably be processed through embarkation and disembarkation is an important component of the passenger experience. Similarly, maintaining a rigid time schedule is crucial to the cruise industry since in-port delays result in higher operating costs due to the need to deviate from optimal sailing speeds to make up for any time lost at the homeport. In this sense, the efficiency of a given homeport terminal is a competitive advantage.

As the average capacity of cruise vessels continues to increase it will be necessary to process significantly higher passenger volumes within roughly the same amount of time, meaning cruise terminals must not only have sufficient physical space to handle a wide range of embarking and disembarking passengers, but – just as importantly – they must be designed in such a way that passenger processing can be done as efficiently as possible both during embarkation and disembarkation. **Figure 3.5.2** illustrates typical homeport passenger activity and flow distribution during a turnaround operation.

**Figure 3.5.2: Typical Passenger Flow Distribution – 3,200 Passenger Vessel<sup>14</sup>**

To mitigate the impacts of increased passenger loads resulting from larger average vessels, cruise terminals must not only allow for simultaneous embarkation and disembarkation but also be designed in such a way that all steps included in the embarkation and disembarkation processes, respectively, can be managed within strict time limits. The following elements should be considered when assessing and determining the KPIs for a cruise terminal:

- Total embarkation/disembarkation time,
- GTA waiting time (loading/unloading),
- Walking distances (curb to vessel),
- Baggage drop-off/pick-up time,
- Security screening (queueing and processing time),
- Check-in (queueing and waiting time),
- Gangway access (time to disembark),
- Baggage delivery (time from curb to cabin), and
- USCBP (disembarkation; this is dependent on number of agents, use of facial recognition, flow, baggage laydown area, etc.).

<sup>14</sup> Source: BA

Other significant KPIs include financial (cost per passenger, for example); safety/security; cleanliness; passenger satisfaction (meet and greet, friendliness, etc.); and cruise line back-of-house operations (efficiency of baggage handling, provisioning, bunkering/water/waste removal, etc.). However, design is only part of the impact on KPIs. Outside forces influence the operations, such as multiple coaches arriving together, large groups and other surges or “mini peaks” that can occur during the disembarkation and/or embarkation processes. KPIs should be the baseline for measuring performance. The total time from curbside to vessel should not exceed 30 minutes.

The success of a cruise terminal in the eyes of the passenger is primarily related to the amount of time spent waiting in the terminal, specifically queuing at check-in or at circulation bottlenecks, such as security (embarkation) and USCBP (disembarkation). A maximum of 30 minutes from vessel to terminal exit, or from baggage drop-off to vessel boarding, with passenger waiting times being no more than five minutes per process (security, check-in, etc.) is the lowest acceptable performance standard based upon 90 percent of passengers being processed within these durations. As the third-busiest cruise homeport in the world, Port Everglades should strive to exceed this standard whenever possible.

**Table 3.5.2** provides KPI recommendations for Port Everglades’ homeport operations covering the primary passenger processing, USCBP and back-of-house areas for vessel calls during which 3,200 to 5,400 passengers are handled during disembarkation and an additional 3,200 to 5,400 passengers are handled during embarkation (6,400-10,800 total passengers).

**Table 3.5.2: Example KPIs for Port Everglades<sup>15</sup>**

Process	Time per Passenger (seconds)	3,200 Passengers	5,400 Passengers	Comments
<b>Disembarkation</b>		<b>3.75 hours</b>	<b>3.75 hours</b>	
Gangway(s)	3-5	2	2	
USCBP Primary (U.S., visa, non-residents)	U.S. = 30 Other = 60	10	14	Inspection stations
Baggage Claim	120-600	1	1	Ground level
Exit Podium (10% to USCBP secondary)	5-15	4	4	2 double podiums
USCBP Secondary (30% to inspection)	5-15	2	2	1 double podium
Admissibility Waiting Area	180-7,200	9	9	Seats - expandable
Secondary Baggage Inspection	720-1,200	5	5	4 tables, 1 X-ray
<b>Embarkation</b>		<b>5 hours</b>	<b>5 hours</b>	
GTA Arrival	Varies			
Security Screening	10	5	7	X-ray machines
Ticketing/Check-In	120	25	50	Movable desks
Baggage Screening (Back of House)	Varies	4-6	6-8	X-ray machines
Provisioning (Back of House)	Varies	16	32	Trucks

### Passenger Boarding Bridges

The window of accessibility of a PBB (gangway) is defined by both a vertical and a horizontal dimension. The broader the window of accessibility, meaning the greater the vertical and horizontal range, the greater the number of cruise vessels in the global fleet that can be served. This effectively maximizes flexibility for today and into the future. It is not possible to know exactly which vessels will need to be served at Port Everglades beyond two or three years into the future. Terminals must therefore be sufficiently flexible to accommodate the highest possible percentage of the global fleet from a gangway service range perspective. At Port Everglades, all automated gangways are of the pivot type (see example, **Figure 3.5.3**), except for the PBBs at CT-18, which have mobile elevated gangways.

The window of accessibility is also determined by the gangway grade, which must comply with Americans with Disabilities Act requirements. The ramp grade must not exceed 1 vertical unit for every 12 horizontal units. The window of accessibility is also impacted by the tidal range, which

<sup>15</sup> Source: BA

determines the vertical height of the vessel's shell doors above the apron. The gangway connects passengers to the ship and must accommodate both horizontal and vertical ship movements. It should also include safety equipment such as a safety net and warning devices for vessel movement. As previously mentioned, given the emerging preference by some cruise lines for embarkation to occur on the promenade deck of the vessel, flexibility in gangway service range will become even more important. Another important best practice related to gangways is to ensure sufficient available apron width and clearance under gangways to allow provisioning trucks and other service vessels dockside access to vessels.

Cruise terminals at Port Everglades must therefore maximize the window of accessibility to service the largest range of existing and potential new vessels in the global fleet. Given that different vessel classes have different shell door locations, which also differ from port side to starboard side on the same vessel, and because different vessels vary greatly in length overall (LOA), it is vital to design service aprons such that automated gangways connecting a given terminal to a given vessel can be easily repositioned without disrupting provisioning and other activities that must occur simultaneously on the apron underneath and around each gangway.

**Figure 3.5.3: Example of Large-Vessel Gangway Service Range Needs<sup>16</sup>**



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<sup>16</sup> Source: BA

## **Parking and Ground Transportation Areas**

A cruise passenger's first and last experience at the cruise terminal is the GTA, or intermodal zone as it is sometimes called, where buses, taxis, app-based ride shares, shuttles, and private automobiles load and unload cruise passengers and baggage. For larger vessels, the capacity of the GTA must be sufficient to efficiently handle both average and peak periods of pick-up and drop-off activity. Clear, prominent and effective wayfinding and other signage within and on approach to the GTA is critical to minimize traffic congestion caused by confusion, indecision and/or other driver delays resulting from unclear vehicular flow patterns.

The preferred minimum GTA (not including staging, dispatch areas or pier operations [i.e., vessel provisioning/servicing]) for a typical homeport operation for a single cruise vessel of 5,000 passengers or more is roughly five acres, with approximately 2.5 acres being allocated to motorcoaches, shuttles and other high occupancy vehicle (HOV) pick-up and drop-off activities and another approximately 2.5 acres being allocated to taxis, app-based ride shares, and POV pick-up and drop-off activities.

A minimum of 800 parking spaces is also typically recommended for a large-vessel homeport operation in South Florida given the historical and assumed future drive-in population. The specific modal requirements and configuration of a given GTA vary considerably from port to port and from terminal to terminal, depending on the overall available space and, just as importantly, on the physical and commercial context.

Factors that affect GTA and must be considered when evaluating overall GTA space requirements include:

- Single vessel operation vs. multiple vessel operation,
- Shared vs. dedicated GTA,
- Type of call (homeport vs. port of call),
- Vessel size (passenger capacity),
- Cruise brand and itinerary type:
  - Demographics,
  - Length of cruise,
  - Time of year (seasonal dynamics and weather),
  - Drive-in vs. fly-in market dynamics,
- Modal split (motorcoaches vs. taxis vs. app-based ride shares vs. POVs), and
- Site characteristics:
  - Availability and cost of parking,
  - Ease of approach and surrounding traffic patterns,
  - Proximity to accommodations.

Detailed passenger traffic data by mode was not made available specific to Port Everglades. However, homeport operational needs and GTA requirements for a typical 5,000-passenger

vessel are assumed to include the elements listed below, based on observed operations at other homeports.

- **HOVs**
  - Motorcoaches: 24-36 total per vessel.
  - Shuttles: 8-10 per vessel.
- **Taxis/App-Based Ride Shares**
  - For pick-up (disembarkation), average vehicle counts are unknown, but the taxi share is declining due to increased use of app-based ride shares; this is a global trend across the industry and will likely continue indefinitely.
  - The best practice for app rides, as at most airports, is to designate an app ride pick-up area that is separate from the taxi and POV pick-up area; in some cases, a separate area is also designated for app ride passenger drop-off, but app ride drop-off is also often treated the same as taxi and POV drop-off since the process is effectively identical.
- **POVs/Parking**
  - The relative share of POVs at Port Everglades is lower than at some other ports due to the large supply of off-Port parking (see Element 4).
  - Generally, POV traffic is allowed to access the curb of a given terminal to offload baggage and passengers with the vehicle then either leaving the premises or returning to the parking area.
  - If the Port is successful in increasing its future capture rate of drive-and-park passenger traffic then additional POV trips should be expected; while this may add to curbside congestion, it will also result in additional revenue to the Port.
- **Trucks**
  - Full-size 53-foot tractor/trailers:
    - Hotel: 7 per vessel (dry), and
    - Provisioning: 11 per vessel (reefer).
  - 10 box trucks per vessel (mix of dry and reefer).
  - Two 53-foot tanker trucks per vessel (oily waste removal):
    - Requires approximately 2.5 hours total.
  - Each tractor/trailer typically has double-stacked pallets averaging 30 pallets per trailer = 540 total pallets per vessel.
  - Box trucks = 600 pallets (minimum) per vessel.
  - Vessel offloads (excluding garbage) = 50 pallets.
  - Heavy garbage = ~12 containers.
  - Total provisioning time varies by vessel, depending on vessel design factors such as provisioning hatch size and loading capacity.

## **Baggage Handling**

The baggage-handling area is typically the largest single component of a cruise terminal program, and it must be on the ground floor in most cases. As a rule of thumb, one square meter (10 SF) per passenger is the minimum space required. Circulation elements are then added to this basic area requirement, which can result in a total baggage laydown area of 65,000 SF or more per terminal, thus occupying most of the ground floor of most terminals, with USCBP absorbing most of the remaining ground floor area.

Increasingly, in land-constrained contexts where large vessels must be accommodated on a limited physical footprint, additional levels (i.e., a third floor) may be introduced to reduce the ground floor and overall building footprint. In such contexts carousel-style baggage conveyers and/or vertical sorting systems can be used and may be preferred, despite their higher cost versus a standard single ground floor baggage laydown area. As elsewhere in the cruise industry, technology is also being introduced into the baggage handling process via the introduction of smart baggage tagging, with current implementation at the Port's CT-25. This involves tagging bags with precision geo-locating devices that reduce the amount of time it takes the average passenger to locate their baggage and exit the terminal.

A next-level approach to baggage handling is baggage valet, or concierge service, which allows a passenger to separate from their baggage immediately upon arrival (disembarkation) so that they can enjoy the greater Fort Lauderdale area without the need to carry their baggage with them. This is a particularly attractive option for fly-in cruise passengers who may exit the cruise terminal as early as 9:00 in the morning but who may not have a flight out of the area until the late afternoon or evening. Such a service would almost certainly increase the already significant economic impact of cruise passengers for Broward County by giving them an additional opportunity to enjoy the destination prior to returning home. This same valet service could also be used for embarking same-day fly-in passengers who arrive early in the morning at FLL and would like to explore the destination for a few hours prior to boarding the vessel.

Ultimately, the design of a given terminal, including the approach to baggage handling facilities and technology, is the product of multiple considerations, not the least of which being the budget for the facility, so not all terminals are likely to adopt the same approach.

## **USCBP/Security**

All Port Everglades cruise terminals are required to incorporate space for USCBP and Immigration personnel. This is because all foreign-flag cruise vessels, which constitute 100 percent of the fleet homeporting at Port Everglades, must visit a foreign port as part of their itinerary in order to be compliant with U.S. cabotage laws (i.e., the Passenger Vessel Services Act of 1886). USCBP processing areas are located at the end of the passenger disembarkation route. After disembarking the vessel, passengers are directed to the baggage laydown area where they retrieve their luggage. With their luggage and personal belongings in their possession they then proceed to USCBP. USCBP facilities include a primary and a secondary inspection area.

In the past, all cruise passengers were required to undergo some level of screening/processing by USCBP officers at Port Everglades prior to leaving the terminal to ensure that contraband, agricultural materials and other disallowed or otherwise suspect goods and/or people are not allowed to enter the country. The newer terminals at the Port, including CT-2, CT-18, CT-25 and CT-26 at the Port, have been developed with facial recognition technology in place to pre-screen passengers upon arrival. All passengers pass through a corridor where facial scanning occurs; for most passengers, this facial recognition scan results in a “green light” that allows them to bypass the primary USCBP area altogether and simply exit the terminal after claiming their baggage. Only those passengers that do not “pass” facial recognition require additional USCBP processing. This technology has dramatically shortened the post-cruise disembarkation process for most passengers in terminals where it has been deployed.

While this is a very positive outcome, it also results in more intense post-baggage disembarkation peaking since a higher percentage of passengers are now exiting the terminal in a more compressed time. Future terminal designs that incorporate facial recognition will need to account for this process change in their space and flow planning to ensure there are adequate interior areas, or at minimum weather-protected post-baggage disembarkation holding areas located adjacent to GTAs, so that passengers are not forced out of the terminal, onto the street, and/or into the elements prior to their ground transportation being available.

For terminals that do not include facial recognition, all passengers must still be processed by USCBP officers. Most passengers are screened at the primary inspection station and then cleared to exit the terminal. Some passengers are also required to pay duty on items acquired during their cruise. The overall process is similar to what occurs at U.S. international airports upon arrival. The secondary inspection facility is set apart and enclosed in a secured zone. If there is a question about a passenger’s belongings or a passenger him/herself, then that passenger is directed to the secondary inspection area where a more detailed screening is conducted. The area consists of screening tables, interview rooms, a holding room, and several staff offices as well as the duty collection office. The duty collection cashier is positioned to allow passengers to pay duty from the general queuing area without having to enter the secondary inspection area.

Other support facilities include a computer room, restrooms for passengers and staff, a staff break room, and an agriculture inspection lab. An observation office is positioned to permit an officer to view all activities in the passenger queuing area. The total space will vary depending on the size of the terminal and other factors, but it is generally determined by the CTDS, which are set centrally by USCBP and apply to all new cruise terminals built within the U.S. The CTDS and associated annexes are updated approximately every five years, with the most recent update being released in the spring of 2021.

As with previous CTDS, the 2021 CTDS and its annexes provide for numerous process and spacing allocation changes compared to the previous standard, most of which require more rather than less physical space than prior CTDS. These changes normally take effect when a facility is designed

or renovated and there is no reason to believe that Port Everglades will be exempted from this for planned cruise terminal renovations and replacements.

Apart from USCBP, other landside and waterside security protocols exist and remain a high priority. The primary maritime security units under the U.S. Department of Homeland Security are the USCG, Immigration and Customs Enforcement, and USCBP. Seaports are outside the jurisdiction of the Transportation Security Administration. Additionally, a local security force used strictly for the port or a component of the local police force, such as the Broward County Sheriff's Office at Port Everglades, are typically also present.

The Maritime Security System is the primary standard used by the USCG to advise all security forces and the maritime community about the level of threat that may exist regarding potential terrorist attacks. A three-level system defines the level of security that should be engaged. Level one is the minimal and level three is the highest.

On-site security begins at the entry gate where officers identify the individual(s) and their purpose for entry. Security is maintained throughout the port by officers monitoring various areas and with monitoring equipment. Port identification cards and/or Transportation Workers Credentials are required to access secured zones such as wharves and other restricted areas.

### **Alternative/Secondary Terminal Uses**

Many ports within the U.S. and around the world allow their cruise terminals to be used as venues for various types of special events. By virtue of their size and waterfront locations, cruise terminals offer premium event and meeting space, and for some ports these secondary uses serve as a substantial source of additional non-cruise revenue. Options for secondary uses include conventions, meetings, exhibitions, weddings, fundraising events, dinners, food and beverage festivals and other corporate, non-profit and private functions.

Port Everglades has traditionally only allowed secondary use of its eight cruise terminals for a limited and very specific number of events, such as public meetings associated with the Master/Vision Plan update process. Going forward, this policy should be reviewed. Conducting a market study is recommended to determine if there is sufficient potential demand for secondary uses at the Port's cruise terminals to merit a policy shift.

If such a market study were to determine that there is a market for regular on-Port events then additional amenities could be considered for inclusion in future terminal renovations, such as movable walls to help with space scaling, adjustable lighting controls to provide customizable ambiances for different uses (e.g., cruise, exhibition, dinner, auction, etc.) and enhanced kitchen facilities.

A summary of the key trends currently impacting cruise terminal design is presented below.

- Technology:
  - Mobile check-in (embarkation),

- Facial recognition (disembarkation), and
- Smart baggage tagging (precision geo-locating).
- Industry preferences:
  - Larger vessels,
  - Embarkation shift to promenade deck,
  - Faster check-in and smaller waiting areas,
  - Weather-protected post-baggage disembarkation areas, and
  - Updated USCBP standards and requirements (2018).
- Consumer preferences:
  - Higher percentage of early walk-off (self-assist) passengers, and
  - Higher percentage of app ride use.
- Emerging practices at some other ports:
  - Baggage conveyors and vertical sorting, and
  - Baggage valet service.

### **Technologies**

Facial recognition technologies recently employed by USCBP are greatly progressing this inspection process. Facilities employing facial recognition technologies require quickly progressing queues ultimately leading to a kiosk-style machine that performs the identity check and communicates the clearance decision. It is believed that advanced analytics and processor speed will eventually allow for mass implementation via cameras along the debarkation concourse and may eliminate the queue and static confirmation process completely. In the interim, this has allowed for a reduction of a portion of the required primary inspection desks which take up considerable space and are expensive to construct. These desks may be eliminated in the near future and would then only require a problem-resolution desk that can be located outside of the main volume of passenger movements.

Over the past 20 years most terminal technology improvements have focused on information and reservations systems and shipboard passenger services. Recent technology advances now include seamless integration of cruise facilities and destination processes into smarter, globalized solutions that bookend the entire process. Most cruise lines have apps that interact with passengers from ticketing to post-cruise – such as online check-in, keyless cabin entry, shore excursion or food & beverage ordering, onboard services bookings amongst others – all meant to boost the passenger experience.

There is an expectation that these Apps and in-terminal processes will continue to elevate the use of facial recognition in markets where this technology is deemed appropriate for both the embarkation process and debarking through customs and immigration. Terminals must be designed to adapt to that next technological leap which will change the pace of passenger flow through key touchpoints and impact downstream queues and vertical and horizontal circulation

components. Rebalancing these areas is a key to optimizing passenger throughput pace and maximizing the resultant passenger satisfaction metrics and operational efficiency gains.

By example, Carnival Cruise Line uses Facial Recognition Technology to make the embarkation and debarkation processes faster and more efficient for guests. At check-in, a picture will be taken of each guest and stored for the duration of the cruise. That picture is used as part of the identification process as guests move on and off the ship. The biometric data collected during the voyage is then purged following the cruise. Many cruise lines, such as Royal Caribbean, are also beginning to offer digital luggage tracking to allow passengers to follow the location of their bags from the curb to their cabin on their smartphones.

All cruise vessels use a visual identification security access system to enable only authorized individuals to access the vessels. This system records the movement of guests and crew who enter and exit the ship and requires the capture of a security photo prior to the first entry onto the vessel at the terminal concourse or gangway. Each guest (including infants/children) is issued a cruise card used as a stateroom key, for making purchases, and for security scanning each time a passenger enters or exits the ship.

The "Mobile Passport" introduced by USCBP can save time at immigration control at most cruise homeports. U.S. passengers can fill out the passport information ahead of time and can transition through without waiting in long lines when disembarking from a cruise.

New technologies and streamlined passenger flows are much easier to implement at terminals dedicated to one specific operator than in facilities used by a variety of cruise lines. A top priority for terminal design is to use a combination of intuitive design and technology to keep passengers moving and avoid slowing down the flow of guests. Terminals must continue to be flexible to adapt to new technologies and trends as well as changing patterns of behavior, keeping in mind a terminal constitutes an asset to be used over several decades.

Although there has been significant interest and research and development into the automation of debarkation baggage laydown methods, none have yet proven to be able to replace the method of bulk forklift delivery of baggage and manual laydown that has existed since the industry's infancy. Think tank research by the cruise lines evaluated automated baggage storage and retrieval systems, which would allow cameras to identify that a passenger has started their debarkation process and automate a retrieval of their baggage from a mass storage system. However, the rate at which baggage must be delivered to clear a ship in less than 4 hours, the space required to house a centralized system, lack of conformity across cruise line brands, and system costs are all current impediments to this strategy.

### 3.5.2 Container Terminal Trends/Cold Storage Recommendations

This section details the trends shaping modern container terminals globally, with a specific focus on the emerging importance of cold storage as a driver of new and expanded market opportunity for Port Everglades. These themes provide a critical component of the foundation upon which the recommended project list for the 2024 M/VP Update was developed.

#### Container Terminal Trends

Similar to cruise terminals, container terminal designs and operations have been influenced by a number of trends in recent years. Key trends shaping container terminals today are summarized below.

- **Increased Automation and Digitalization**
  - **Automation:** U.S. ports have been increasingly evaluating automation technologies to improve efficiency, improve safety, and handle larger volumes of containers. This includes the use of automated yard cranes, self-driving trucks, and automated guided vehicles to move containers within port terminals. Ports like the Port of Los Angeles and Port of Long Beach have been at the forefront of integrating automated systems.
  - **Digitalization:** The adoption of digital platforms, data analytics, and artificial intelligence has become more prevalent to optimize port operations. Real-time tracking of containers, predictive maintenance for equipment, and the use of AI for logistics planning are helping ports improve turnaround times and reduce congestion. Blockchain technology is also being explored to streamline documentation and improve the transparency of supply chains.
- **Expansion and Modernization to Accommodate Larger Vessels (Post-Panamax)**
  - **Infrastructure Upgrades:** The expansion of the Panama Canal in 2016 allowed for the passage of larger “Post-Panamax” ships, which has led U.S. ports to invest in deeper channels, larger cranes, and expanded berths to accommodate these mega-ships. Ports such as the Port of Savannah, the Port of New York and New Jersey, and the Port of Houston have been undergoing significant upgrades to handle increased container volumes.
  - **Intermodal Connectivity:** Ports are also focusing on improving their connectivity to rail and trucking networks to enhance the flow of containers to inland destinations. This includes investments in intermodal terminals and expanded logistics facilities to handle increased container throughput and reduce bottlenecks.

These trends are driven by the need to increase efficiency, reduce costs, and remain competitive in the face of growing global trade volumes and shifting supply chain dynamics.

In addition to automation/digitalization and infrastructure expansion, a number of other key trends have shaped U.S. port container operations since 2018, as summarized below.

- **Sustainability and Decarbonization Initiatives**
  - **Green Port Strategies:** U.S. ports are increasingly focusing on reducing their carbon footprint. This includes investments in electrification of port equipment, transitioning to electric vehicles (EV), and implementing shore power systems to allow vessels to plug into the grid while docked, reducing emissions from idling engines.
  - **Environmental Regulations:** Ports are under pressure to meet stricter environmental regulations aimed at reducing air and water pollution. For example, the California Air Resources Board has set aggressive targets for reducing emissions at ports, which has prompted investments in cleaner technologies.
  - **Sustainable Fuels:** Ports and shipping companies are exploring the use of alternative fuels like LNG, hydrogen, and biofuels to meet decarbonization goals.
- **Supply Chain Resilience and Diversification**
  - **Response to Supply Chain Disruptions:** The COVID-19 pandemic and subsequent global supply chain disruptions have highlighted the need for greater resilience. Ports have been working on diversifying their supply chains, optimizing inventory management, and adopting more flexible logistics strategies.
  - **Nearshoring and Regionalization:** There is a shift towards nearshoring (moving production closer to the U.S.) to reduce dependency on distant suppliers and minimize the impact of disruptions. This trend is increasing container traffic from Mexico and Central America, which affects port operations along the Gulf Coast and Southern border.
  - **Agility in Operations:** Ports are investing in technology to improve real-time data sharing among stakeholders, enabling more agile responses to sudden changes in demand or disruptions in the supply chain.
- **E-commerce and Last-Mile Logistics**
  - **E-commerce Boom:** The surge in e-commerce has significantly increased the demand for port capacity, especially for handling smaller, high-frequency shipments. Ports are adjusting their operations to accommodate a shift toward containerized consumer goods with faster turnaround times.
  - **Distribution Centers:** Ports are partnering with logistics companies to expand warehousing and distribution centers closer to port terminals, enabling faster last-mile delivery.
- **Labor Relations and Workforce Modernization**
  - **Labor Shortages:** The push towards automation has raised tensions between port operators and labor unions, especially in major ports like Los Angeles and Long Beach. At the same time, ports are experiencing workforce shortages, prompting efforts to attract and train new talent.

- **Skill Development:** Ports are investing in training programs to upskill workers for more technologically advanced roles, such as operating automated equipment and utilizing digital tools.
- **Data Analytics and Artificial Intelligence (AI) for Predictive Management**
  - **Predictive Analytics:** Ports are increasingly using AI and machine learning for predictive maintenance, congestion management, and optimizing container movements. Predictive analytics can reduce downtime by forecasting equipment failures and improve the efficiency of cargo handling.
  - **Digital Twins:** The use of digital twin technology (virtual replicas of physical assets) allows ports to optimize operations, simulate scenarios, and enhance decision-making in real-time.
- **Cybersecurity and Risk Management**
  - **Cybersecurity Investments:** As ports become more digital, the risk of cyberattacks has grown. U.S. ports are investing in cybersecurity measures to protect critical infrastructure and ensure the smooth flow of goods. The Port of Los Angeles, for instance, has partnered with IBM to develop a cyber resilience center.
  - **Resilience Planning:** Ports are also focusing on risk management to safeguard against disruptions caused by natural disasters, geopolitical tensions, or pandemics.
- **Growth in Inland and Regional Ports**
  - **Inland Ports Development:** To alleviate congestion at major coastal ports, there's been a push to develop inland ports and improve rail connections. For example, the Georgia Ports Authority has expanded its inland port network to ease pressure on Savannah.
  - **Diversification of Trade Routes:** Ports in the Gulf Coast (Houston, New Orleans) and East Coast (Savannah, Charleston) are gaining more traffic as shippers look for alternatives to congested West Coast ports, especially during the recent supply chain crises.
- **Emergence of Smart Ports**
  - **Smart Technologies:** Ports are embracing Internet of Things sensors, 5G networks, and cloud-based platforms to improve real-time data collection, enhance cargo visibility, and optimize operations.
  - **Port Community Systems:** Ports are implementing integrated systems that connect all stakeholders—shipping lines, trucking companies, customs, and terminal operators—to streamline communication and reduce delays.

These trends reflect the evolving landscape of port operations as U.S. ports adapt to technological advancements, environmental concerns, and changes in global trade dynamics.

## **Cold Storage Trends and Recommendations**

As identified in previous M/VP Updates, the expansion of on-port or near-port cold storage capacity represents a significant opportunity for Port Everglades to capture a larger share of the growing perishables market. In Element 2 of the 2024 M/VP Update, multiple trends were highlighted that are impacting demand for cold storage warehouse space, as summarized below.

- **Growing Perishables Import Market:** In 2023, Florida ports handled approximately 4 million tons of containerized perishable imports, an increase of 52 percent over 10 years.<sup>17</sup> This trend has been driven by regional population growth in Florida and by regulatory changes allowing for the import of South American fruits that have previously been restricted from entering Florida ports directly.
- **Growing Perishables Export Market:** Exports of perishables from Florida ports to Central America and the Caribbean, key markets served by Port Everglades, grew by an average of 7 percent annually from 2014 to 2023.
- **Port Everglades' Dwindling Import Market Share:** Since 2018, Port Everglades has seen a decrease in its share of perishables imported into Florida ports, with Port Manatee seeing steady growth in market share over this time and PortMiami taking over the lead from Port Everglades in perishable imports market share among Florida ports (see **Figure 3.5.4**).
- **Competition for Cold Storage Space:** E-commerce's share of total U.S. grocery sales is expected to rise from 13 percent in 2021 to 21.5 percent in 2025.<sup>18</sup> This growth of e-commerce grocery sales is pushing existing cold storage supply chains to the limit, spurring new cold storage development while also increasing competition for existing cold storage space and potential cold storage development sites with prospective import/export users.
- **Limited Availability of Industrial Space:** In the first quarter of 2023, the overall industrial real estate vacancy rate in the Tri-County region is just 3.7 percent and the cold storage vacancy rate is usually estimated to be even less than that given robust tenant demand.<sup>19</sup>
- **Tight Construction Pipeline:** Construction activity for new warehouse space has slowed significantly in recent years in Broward County, from a high of more than 3.1 million SF of warehouse space under construction in the first half of 2020 to less than 400,000 SF of warehouse space under development quarterly in late 2023 and into 2024. This is driven by macroeconomic factors, such as elevated interest rates, as well as the limited availability of developable land in Broward County. Additionally, the development that is

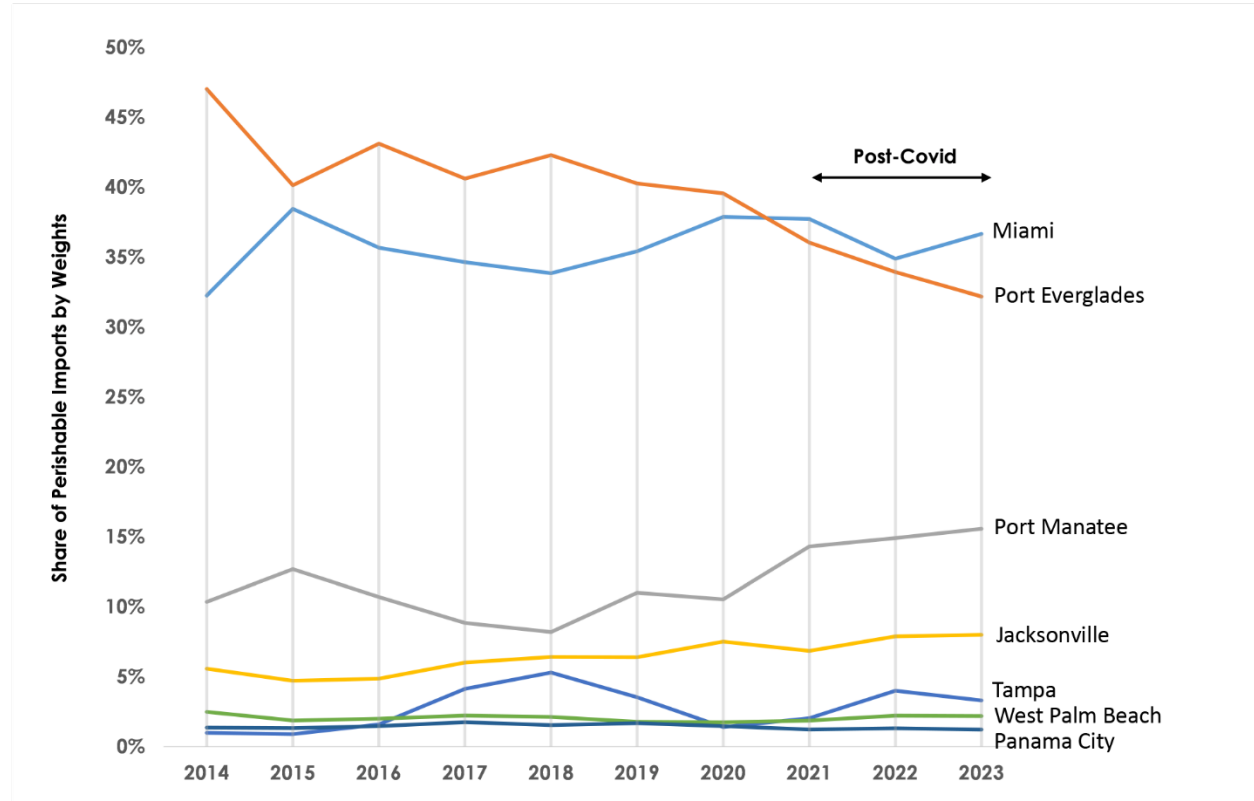
<sup>17</sup> Note: When using USA Trade Online port-level imports data, the analyst selected commodities named as "02 Meat And Edible Meat Offal," "03 Fish, Crustaceans & Aquatic Invertebrates," "04 Dairy Prods; Birds Eggs; Honey; Ed Animal Pr Nesoi," "07 Edible Vegetables & Certain Roots & Tubers," "08 Edible Fruit & Nuts; Citrus Fruit Or Melon Peel," "16 Prep Of Meat, of Fish, of Crustaceans Etc. of Insects," "20 Prep Vegetables, Fruit, Nuts Or Other Plant Parts," and "22 Beverages, Spirits And Vinegar" to define perishable products.

<sup>18</sup> Source: CBRE Research

<sup>19</sup> Source: South Florida Industrial Market Report – Q1 2023, Newmark

taking place in Broward County is largely happening in West Broward, limiting the potential of this space to directly serve Port Everglades.

**Figure 3.5.4: Florida Perishable Imports Weights (in tons) by Port, 2014-2023<sup>20</sup>**



By definition, perishables have a limited shelf life and lose value every day that they are not in markets or otherwise available for purchase by consumers. The potential for Port Everglades to increase speed-to-market for perishable products by transloading them on-Port (or near-Port) into either refrigerated 53-foot domestic trailers or refrigerated railcars so that they reach their final point of consumption more quickly adds real value for shippers. Given this, there is a clear trend for both dry and especially cold storage capacity to be developed near container ports that handle high volumes of certain types of products as a means to increase transloading capabilities since this allows for less-costly inland movement, increases distribution options, adds flexibility, and avoids the need to reposition ISO containers back to ports.

In addition, there is a growing interest in the synergies between air cargo perishables, particularly seafood, and cold storage facilities within the Port’s hinterland. In most cases, the demand for cold storage/temperature-controlled warehouses is specific to facilities that can provide transload/cross dock operations, where the imported perishable cargo moving via container is stripped at the port, then transferred to domestic truck or rail for distribution. Similarly,

<sup>20</sup> Source: USA Trade Online

perishables for export, such as meat and fish, are reloaded from over the road truck or rail into marine containers at the temperature controlled/refrigerated warehouse.

There are multiple potential options for Port Everglades to consider expansion of its on-Port or near-Port cold storage capacity. The 2020 M/VP Update included the redevelopment of the former Dynegey property within the Port Jurisdictional Area (PJA) into a cutting-edge logistics center, incorporating the development of cold storage facilities and a direct-to-rail transfer facility to support the transshipment of refrigerated cargo on-Port. In the 2020 M/VP Update 5-Year Master Plan, this project was anticipated to be completed in 2023 at a cost of \$50 million using private (i.e., non-Port) funding sources. This project has not yet advanced and is still pending negotiations with Florida East Coast Railway (FECR).

Additionally, Port Everglades may consider redeveloping other sites within or adjacent to the Port to accommodate an increase in warehousing and cold storage capacity. The SE 10<sup>th</sup> Avenue Site (former Shaw Property, outside of the PJA) presents an opportunity to create a modern logistics development (for cold storage and/or other general cargo use) near the Port and initial site preparation is included in the 2024 5-Year Master Plan, although private investment is anticipated for full development. The potential for this project is discussed further in Section 3.10.3 of this report. Beyond the Dynegey and Shaw sites, the future redevelopment of 1800 and 1850 Eller Drive properties may also present opportunities to reconsider the allocation of space within the Port and expand cold storage capacity. Regardless of the site selected, any future development of on-Port or near-Port cold storage facilities would need to be funded by a third-party developer who would own and manage the facility on land leased by the Port.

In today's industrial market, there is currently a notable demand for cold storage facilities, as delivery companies need more space to address orders for fresh and frozen food and the import and export markets for perishables continue to grow. Given the scarcity of available developable land and slow construction activity in Broward County, Port Everglades should consider partnering with private stakeholders to redevelop on-Port or near-Port sites with cold storage space to meet the needs of the expanding perishable market.

### **3.5.3 Ship-to-Shore Crane Operational Needs/Capabilities**

Port Everglades facilities currently have the following STS cranes:

- One Paceco STS crane and one Gottwald mobile harbor crane (MHC) in Midport at Berths 16-17 (about 1,000 feet long continuous segment), and
- 13 STS cranes in Southport, specifically:
  - Seven cranes along the continuous berth segment labeled Berths 30A/B/C (about 2400 ft long). Cranes on these berths cannot move to other berth segments in Southport, and
  - Six cranes along Berths 31-32, and 32A, which are 2000 feet and 800 feet long, respectively. Cranes can move between these two berth segments.

Six of the STS cranes in Southport were added recently. There are no cranes in Northport; the small volumes of containers moved via Northport berths use ship-board cranes.

### **Midport**

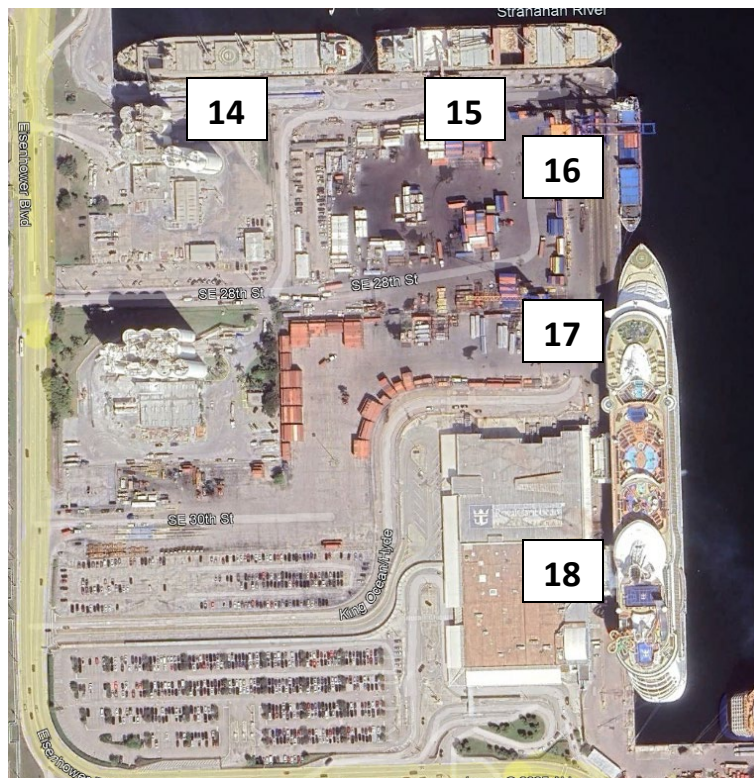
Ships can only be served in Midport by one STS crane and a MHC at Berth 16-17. Container ships are also served occasionally at Berths 11, 14, and 15.

At 480 feet long, Berth 11 is primarily a petroleum berth and can handle only small containerships with ship-board cranes. Given the small size of Berth 11, and its primary use as a petroleum berth, it is not recommended to add cranes at this location.

Berth 14-15 is located within Slip 3 and is about 1,220 feet long. While it rarely handles container ships when available, it is primarily a bulk cargo berth and cannot easily accommodate additional container activities. See **Figure 3.5.5** for an aerial image showing this berth's primary use as a bulk cargo berth.

The 1,000-foot-long Berths 16-17 segment handles the majority of container activities in Midport and has the only cranes in the area. This berth is sometimes blocked by large cruise ships docked at Berth 18 (see **Figure 3.5.5**). Many ships calling at Berths 16-17 use shipboard cranes in addition to the STS crane and MHC available at this location.

**Figure 3.5.5: Aerial Image of Berths 14 through 18 (March 2025)<sup>21</sup>**



<sup>21</sup> Source: Google Earth

Some key operating metrics for Berths 16-17 in fiscal year (FY) 2023 are:

- 7,826 total hours of occupancy by container ships, which at two berths equates to 45 percent annual utilization. Given that some additional occupancy is taken by cruise vessels at Berth 18 and a typical industry rule of thumb that berth capacity is reached at about 60 percent utilization, this berth segment appears to be close to its capacity for container ship activities.
- 67,303 container moves handled in FY 2023, which at the occupancy rate above equates to a gross productivity rate of 8.6 moves/hour. This rate includes the use of the STS crane and MHC, as well as ship-board cranes.

Given the two factors above, it appears that Berths 16-17 are both close to capacity and could benefit from increased productivity. Therefore, it may be beneficial to investigate adding a new STS crane and/or MHC to these berths in the short term. However, in the long term, container capacity is expected to be concentrated in Southport, as projects included in the 2024 M/VP Update propose shifting these activities out of Midport to Southport and focus on adding STS cranes and capacity in Southport, where conflicts with other cargo types and cruise activities are not a concern.

### **Southport**

Southport currently has 13 total STS cranes. Six of these are along Berths 31-32, three of which are new since 2020. Berths 30A/B/C in the Turning Notch currently has seven cranes, three of which are new since 2023; the FY 2023 operating data used for analysis in this M/VP Update does not include these last three added cranes. The following paragraphs consider each berth segment of Southport individually, moving north to south.

Berths 30E/F is about 900 feet long and located on the north side of the Turning Notch. It currently has no cranes and shares space with other uses such as RORO and break-bulk cargo. Adding 1-2 cranes here could be useful for giving the Port more flexibility in berth assignments, as it would provide additional space for small container ships to berth and be served without requiring ship-board cranes. For instance, a small call could be served at Berths 30E/F with cranes instead of at Berth 30A/B/C or Berths 31-32, freeing up those berth lengths to handle larger vessels. This would be an especially advantageous place to add cranes if Berths 30 E-F were lengthened enough to accommodate larger container ships, as it could provide a third high-capacity container berth segment in addition to Berths 30A/B/C and 31-32, adding a significant amount of flexibility and capacity.

Berths 30A/B/C along the south edge of the Turning Notch is about 2,400 feet long and has seven STS cranes, including three Post-Panamax (PP) and three Super Post-Panamax (SPP) cranes. As the three SPP cranes were newly added in 2023, currently 30A/B/C has sufficient STS cranes to accommodate current vessel call sizes and throughputs. As volumes and vessel sizes grow over time, 30A/B/C can accommodate additional STS cranes to meet these needs. Some of the densest STS crane configurations in North American ports have cranes spaced at about every 230 to 250

feet of berth. Based on this density, 30A/B/C could accommodate 10 total cranes, three more than are currently present.

Berths 31-32 provides 2,000 feet of continuous berth space, plus an additional 800 feet at a slight angle at Berths 33A/B. These berths have six total cranes: three SPP cranes at Berths 31-32 and three PP cranes at Berths 33A/B. The three PP cranes can move along the crane rail to Berths 31-32 as needed. Berth 32A typically handles smaller calls than Berths 31-32 due to its length and configuration, which limit total vessel size. As Berths 33A/B effectively have three cranes on 800 feet of berth length, it has sufficient cranes for the types of vessels it serves.

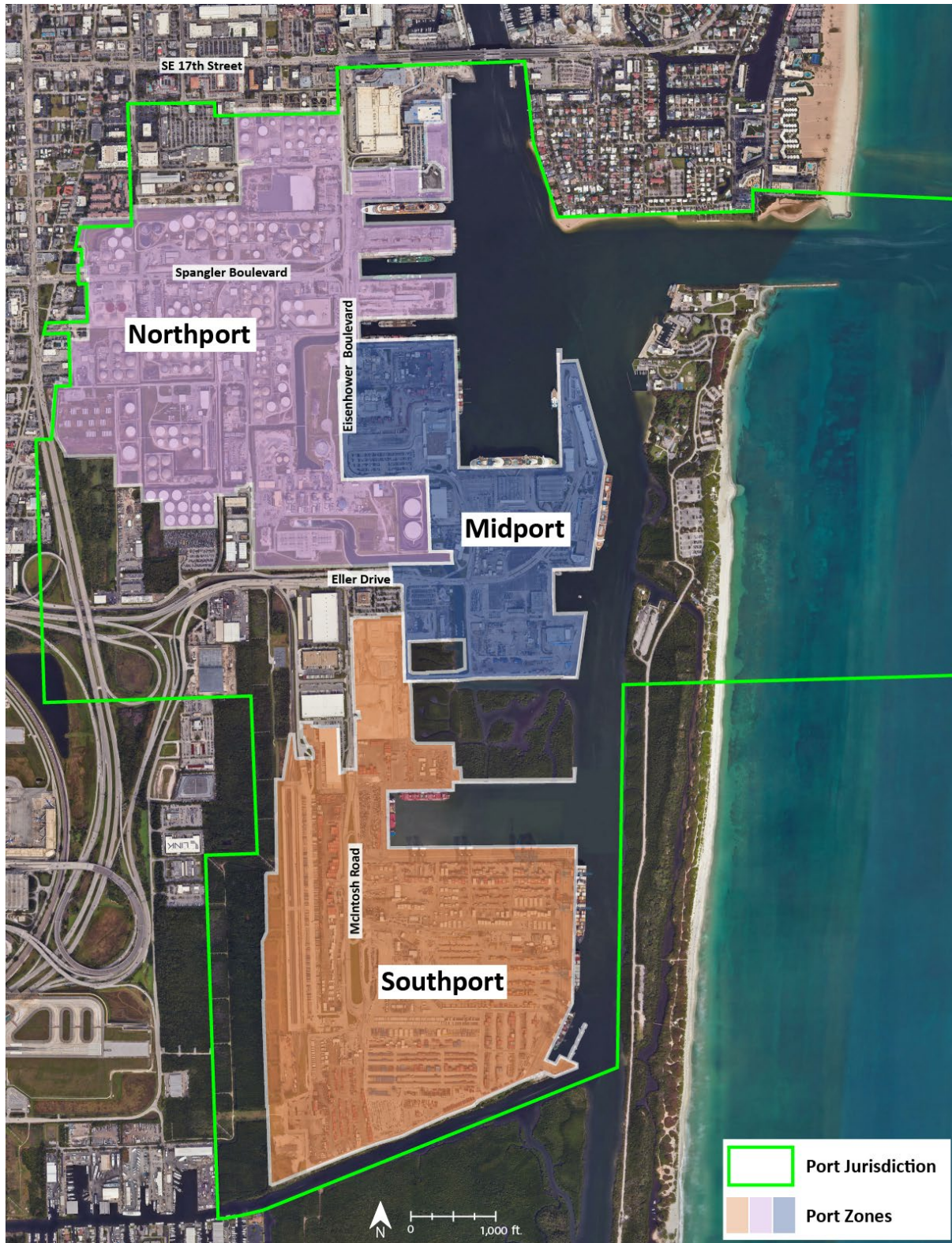
Berths 31-32 could accommodate up to about eight large capacity (SPP) cranes based on North American port maximum crane densities. As it currently has three SPP cranes, it could accommodate up to five more as needed to serve Port capacity and vessel call needs. In FY 2023, combined activities at Berths 31-32 included about 9,030 hours of vessel calls, or about 52 percent annual utilization. This indicates that they could benefit from additional SPP cranes in the near future in order to augment capacity, reduce vessel call durations, and enhance the Port's ability to handle growing container ship sizes.

## 3.6 Operational Enhancement Opportunities

In order to continue to grow in step with the broader market and tap into the substantial economic growth occurring across the Atlantic Rim (and from the Pacific region via the Panama Canal, among other regions), Port Everglades must identify competitive logistics channels and remove constraints to growth. This includes ensuring that Port infrastructure can adequately and efficiently handle the vessel types and increasing sizes that are expected to be deployed in the major trade lanes, relevant to the South Atlantic port range during the coming 20 years. It also means that Port Everglades must actively engage in addressing the numerous challenges that its terminal operators face. Beyond these measures, Port Everglades must assess ways to serve both its core and extended hinterland markets more cost-effectively than competing ports, such as the Ports of Savannah, Jacksonville, and Miami.

This section discussed potential operational enhancement opportunities for Port Everglades, with opportunities presented for each of the Port's three zones – Northport, Midport, and Southport. These zones are defined as shown in **Figure 3.6.1** below.

Figure 3.6.1: Port Everglades – Port Zones<sup>22</sup>



<sup>22</sup> Source: Port Everglades; AECOM; Google Earth. Note: For planning purposes only.

### 3.6.1 Southport

The Southport area currently handles most of Port Everglades' containerized cargo and is expected to manage nearly all such activity once the 5-year Master Plan and 10- and 20-year Vision Plan projects are completed. Key issues in Southport include insufficient berth and STS crane capacity, as well as traffic congestion within and around the Southport facilities. Some STS crane capacity issues have been alleviated with the addition of six new STS cranes since 2020, but further improvements are possible, and congestion issues remain a concern.

The other major constraint to growth of containerized cargo, particularly with the increasing size of container ships, is the proposed USACE Channel Deepening and Widening project, which is now moving forward.

The primary operational enhancement opportunities related to containerized cargo operations in Port Everglades' Southport area are summarized as follows:

- Cranes,
- Shore power and alternative fuels,
- Terminal operating practices,
- Navigational constraints,
- Berth availability, and
- Traffic congestion in and around the Port, especially on McIntosh Road and at the Eller Drive gate complex.

#### Cranes

One of the major challenges at all of the Port's container berths is crane density and availability. Crane and berth capacities are typically mentioned in tandem because both are required to service containerized cargo vessels, with the exception of smaller vessels that serve the Caribbean islands and use ship-mounted cranes. The Port Everglades terminal operators interviewed as part of Element 2 indicated the need for additional STS cranes per berth in order to turn vessels more efficiently, which reduces vessel dwell time and effectively increases overall berth capacity. The limited height of the existing cranes in Southport, due to the need to comply with the air space constraints imposed by the FAA (as a result of proximity to FLL flight paths), is a known issue and limits the reach of the cranes to one over six containers on deck. The outreach of the current cranes is also limited to 16 containers across.

These restrictions have limited the Port's ability to handle larger vessels in its existing trade lanes and have effectively removed Port Everglades from consideration for direct calls in the Asia trade lane, where vessel sizes are growing at an increasing rate (i.e., up to 16,000 TEUs on the Atlantic seaboard, with 20,000 TEU vessels and larger being proposed for the Pacific seaboard ports). Larger vessels require larger STS cranes, and more than two cranes per berth, in order to turn the vessel efficiently and guarantee service integrity.

The 5-year Master Plan component of the 2020 M/VP Update included six new low-profile SPP STS cranes, all of which would reach one over eight containers on deck and 22 containers across. Three of these cranes were placed (in 2020) on Berth 31, with the other three placed at Berths 30A/B/C (in 2023). The addition of these cranes significantly benefits Southport container operations not only by virtue of increasing crane density but also by giving the Port two “big ship” berths (i.e., berths that can theoretically service neo-Panamax vessels with carrying capacities up to 14,000 TEUs). With delivery of all six new STS cranes, the Port now has at least two cranes available to service the following Southport berths:

- Berth 33A (2 Panamax)
- Berth 32 (2 Panamax)
- Berth 31 (3 SPP)
- Berth 30 (3 SPP)
- Berths 30A/B/C (3 Panamax)

The sole complication with the crane placement outlined above is that the new STS cranes at Berths 30A/B/C were intended to serve mostly as two separate small ship berths rather than as a single big ship berth. As such, Berth 30A (the farthest west within the Turning Notch) still features just one STS crane. While this berth is intended to service smaller vessels, it is still inefficient in most cases to use only one STS crane on a vessel, meaning Berth 30A will likely see lower productivity than other berths in Southport for similar calls due to lack of crane density/availability.

The Southport terminal operators have advocated for purchasing additional STS cranes to continue to improve berth operational efficiencies. Given the previously mentioned FAA air space issues, any additional STS cranes placed would need to be similar in profile to the Port’s existing STS cranes. The 2024 M/VP Update does call for additional STS cranes to be placed at Berths 30A/B/C (one), Berth 30E (one) and Berths 31-32 (one).

As discussed in Section 3.5.3, one major area of improvement potential for Southport would be to add STS cranes (preferably at least two) to Berth 30E on the north side of the Turning Notch (see **Figure 3.6.2** for reference). This would provide an additional berth where container ships could be served, freeing up capacity and berth availability for other berthing locations in Southport. New STS cranes at this berth will also require construction of new crane rails.

**Figure 3.6.2: Potential STS Crane Location at Berth 30E<sup>23</sup>**

One issue in Southport, especially after recently completed projects and crane additions, is the berthing conflicts at the corner of Berth 30A/Berth 31 that affect STS cranes being able to work ships at both berths simultaneously (see **Figure 3.6.3** for reference). This can be addressed operationally by assigning vessels to a berth with sufficient space from the edge of the facility to prevent conflicts. Making Berth 30E a crane-served berth would increase flexibility to reduce the need to operate cranes or ships close enough together to cause conflicts during times of high berth and crane utilization.

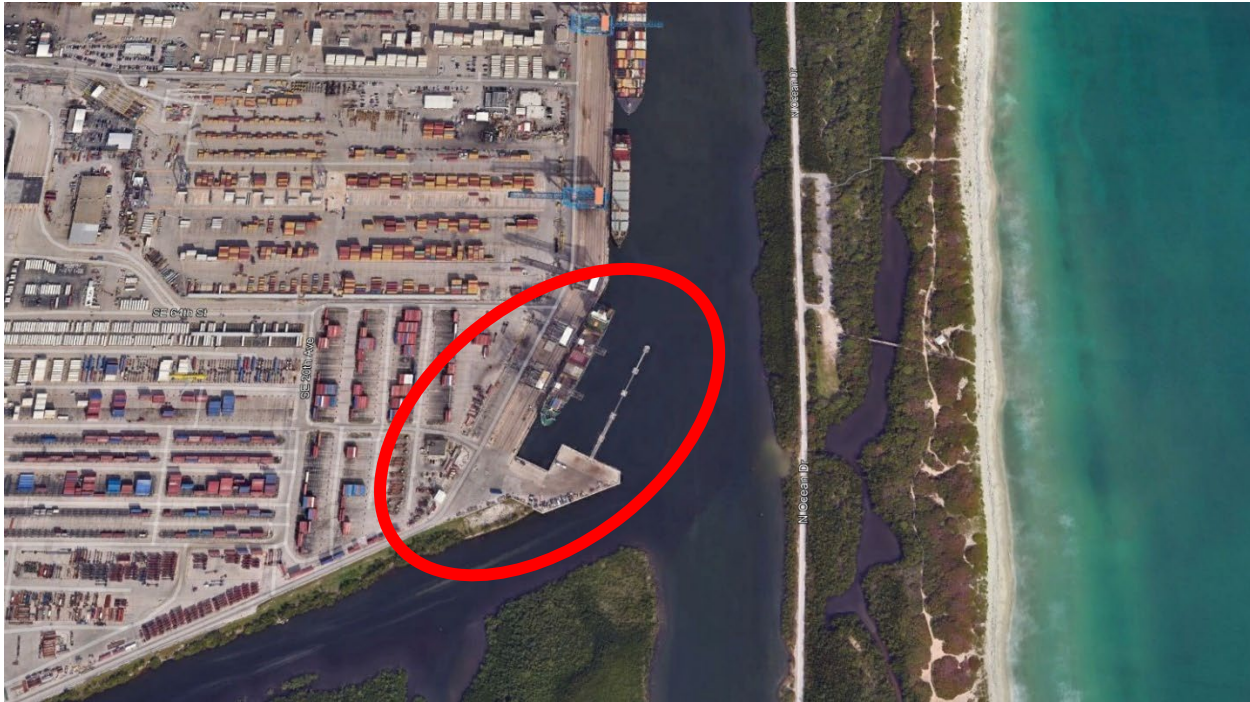
<sup>23</sup> Source: AECOM

**Figure 3.6.3: Berth 30A/31 Crane Conflict<sup>24</sup>**

There are also several areas of potential improvement at Berths 33A/B (see **Figure 3.6.4**). The proximity of the Berth 33C RORO pier limits the size of vessels which can be served there. Removing it would improve the flexibility and capacity of Berths 33A/B. Straightening Berth 33A/B could also be beneficial, as it would result in a continuous berth segment of at least 2,800 feet including Berths 31 and 32. This could add a significant amount of capacity and flexibility for the Port to handle large container ships and accommodate a mix of vessel sizes simultaneously; however, when considering the STS crane height restrictions at these berths, a study should be performed to confirm the benefits and the return on investment from purchase of these STS cranes.

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<sup>24</sup> Source: AECOM

**Figure 3.6.4: Berth 33A/B Container Berth and 33C RORO Pier<sup>25</sup>**

### **Shore Power & Alternative Fuels**

Adding shore power capabilities is of interest in Southport. An increasing number of containerships are shore-power capable, so having this capacity in Southport would improve the Port's ability to attract major shipping lines while also reducing emissions and potentially also operating costs. Shore power installation would require upgrade of the existing electrical distribution system within Southport to be able to convey power from the in-port FPL power facility to the container berths, which would also require new shore power substations within the terminals.

In addition to shore power, cargo lines are increasingly looking to use alternative fuels to diesel. LNG and methanol are the primary alternative fuels being used by cargo ships today, as well as biofuels and even ammonia. There may be a need to provide these alternative fuels at the Port in the future, especially once the channel deepening and widening project is completed, allowing for such ships to call at the Port. In fact, the Port will already receive such vessels, with new Crowley vessels using LNG to begin services at the Port. Therefore, one of the projects included in the 5-year Master Plan is the addition of a mobile LNG manifold to facilitate fueling of these Crowley vessels, which would be placed at Berth 32.

### **Terminal Operations**

One of the principal issues with existing operations at Port Everglades is low container yard density. This can be improved through densification, which is the process of increasing the

<sup>25</sup> Source: AECOM

number of containers that can be stored per gross terminal acre. When cargo throughput increases, but the terminal remains in the same configuration, boxes must be stacked on the terminal to increase storage capabilities. The majority of the stacking layouts at the Port's container terminals were designed to suit low-density top-pick operations; therefore, significant additional densification will be necessary to meet future demands.

This will require a change in terminal operations, including the use of different types of equipment, such as widespread or even universal implementation of rubber tire gantries (RTG). Everglades Company Terminal (ECT, formerly Port Everglades Terminal [PET]) moved to a partial RTG operation several years ago (see Section 3.7) and Florida International Terminal (FIT) has proposed implementation of new RTGs. However, additional implementation will be required to increase the effective capacity of all Southport terminals. Further studies will be needed to determine the exact type of equipment that is most suitable at Port Everglades, the extent and timing of implementation required, the terminal configurations that are optimal to accommodate high-density handling equipment, and other facilities and infrastructure required to support densification of the terminals. One consideration is the use of full-electric vs hybrid RTGs.

Apart from densification, improvement and optimization of operating practices can also enhance on-terminal efficiencies by reducing dwell times and thereby increasing effective capacity. The introduction of economic measures such as incentives (or more likely fees in most cases) can help to increase the velocity of cargo through terminals and also reduce empty storage factors. The Port currently allows unlimited free time for storage of loaded and empty containers within the terminals. Most other ports within the U.S. and many international ports have adopted strict free-storage limits on all container types to promote higher throughput rates and avoid congestion. This policy-based solution, which can easily be enacted and modified via the Port's tariff, effectively incentivizes owners of containers to move them off-port as quickly as possible in order to avoid incurring monetary penalties for on-port storage. Enacting this type of tariff, when combined with other cost-sharing incentives or minimum cargo-threshold limits, can also be used as an incentive to move more cargo through the facility.

Combined, these changes to operating practices can be used to enhance terminal operations and increase effective capacity. Typically, most ports use a tiered approach where empty containers can remain on site for longer periods of time (i.e., 15 days) whereas loaded containers are allowed free storage for only a week (i.e., 7 days), or in some cases less. On the U.S. West Coast, for example, free-time storage is less than 5 days. Given the Port's known land constraints now, but especially going forward, policy solutions that incent minimal dwell times for both loaded and empty containers should be prioritized.

Typically, tariff changes of this magnitude require close coordination with the shipping community and terminal operators to develop an equitable, phased approach to resolving the underlying issues and encouraging higher rates of cargo turnover without unduly penalizing Port users. Any new tariff for the free-storage limits would need to be implemented port-wide after

an acceptable agreement has been reached with tenants. An alternative method would be to implement the free storage limits on a tiered basis to gradually ease the practice into operation. As an example of a tiered application, the initial tariff would be fairly easy to accommodate, based on existing practices, and the time frame would be reduced over a period of several years to achieve the more aggressive practice. This would allow for a gradual change with minimal operational disruptions.

Another operational practice that is already being used in Southport, but could be implemented more broadly, is the adoption of an appointment system. The value of appointment systems is primarily related to terminal gate congestion, which itself is a major contributor to truck traffic in and around Southport, and the wider Port area. By successfully implementing trucker appointment systems, particularly in combination with a working lunch period, Southport terminal operators would change the distribution of truck traffic over time such that peak periods associated with terminal operating hours (currently 8:00am-noon and 1:00pm-4:30pm) are smoothed out into a more even distribution pattern throughout the entire day.

As of now, truck traffic is unevenly distributed during one- or even two-hour blocks of time prior to the terminal opening in the morning, during the lunch break and prior to the terminal closing at night. This pattern, which is common at other container terminals who observe similar schedules, is driven by the desire for truckers to make as many “turns” as possible in a given day, which under the current practice incentivizes them to queue outside terminal gates during non-operating hours so as to have a forward spot in the queue and so to a better chance of getting into the terminal sooner (and more often). Appointment systems that prohibit trucks without an appointment from entering a terminal but efficiently process trucks that do have an appointment within a tight appointment window will eliminate the inactive to queue and so greatly reduce the congestion created by queueing trucks.

### **Navigational Constraints**

As already mentioned, navigational issues at Port Everglades are prevalent. Plans for deepening and widening have been developed by the USACE, with the Record of Decision on project approval anticipated in December 2026. Construction for this project is anticipated to potentially begin in 2028. The USACE project will alleviate the restrictive depths and widths of the port channels that impact the deployment of larger vessels to Port Everglades by carriers involved in the Asia trade lane. On days when a large cruise vessel is berthed at CT-25, CT-26 and/or CT-29, a post-Panamax vessel may not be able to pass the cruise vessel to access the Southport terminals, subject to the pilots’ discretion. For Port Everglades to compete for direct calls in trade lanes where larger post-Panamax vessels are deployed, it is necessary to complete this project.

### **Berth Availability**

Berth availability and proximity to relevant container yard (CY) areas were identified as one of the major constraints preventing higher throughput at Port Everglades. Currently, berths are assigned by the Port’s harbormaster but with each terminal operator in Southport having some

claim to preferential berthing. As a result, some vessels are shifted from the berth to anchorage in the middle of a call to allow for another vessel to berth, consistent with preferential berth claims. This severely disrupts the production of the vessel load/discharge operations, increases costs as the vessel incurs shifting charges such as pilotage, towing and line handling, and causes disruptions in schedule integrity for the vessel operator.

As thoroughly discussed in Element 2, Port Everglades currently has three different categories of labor related to containerized cargo operations: International Longshoremen's Association (ILA), Teamsters and nonunion. This diversity of labor options has allowed the Port to service multiple niche container lines that it would not otherwise be able to service, but it also creates unique jurisdictional challenges on the Southport waterfront. Certain terminals have indicated that other terminal operators spend an excessive amount of time at berth waiting for "live gate moves," thus increasing berth dwell times and negatively impacting crane and berth productivity as well as overall terminal throughput rates.

In some cases, vessels are required to leave a specific berth, be replaced by a gang for ship-to-shore operations, and then return to the berth after that vessel operation is completed. In other situations, a specific vessel may be involved in a vessel sharing agreement (VSA) with another container line. In this instance, when the VSA is between a nonunion and union-served carrier (either ILA or Teamsters), a union gang will unload/load the containers for the carrier affiliated with union labor. Then they will remain at the same berth on standby while a nonunion gang is deployed to the vessel to complete its loading/unloading. This is inefficient and costly due to the amount of downtime involved for different labor groups.

During the peak cruise season, the berth situation is exacerbated, particularly for the smaller container lines operating in Midport, but also for Southport container operators who may need to schedule vessel calls around cruise operations at CT-25, CT-26 and/or CT-29, depending on the beam of the cruise vessels at those terminals and whether or not a given container vessel can safely "pass" the vessel to access or exit Southport. Cruise operations exacerbate many of the issues noted above and have a particular impact on the smaller container operations in the Midport area of Port Everglades. The sharing of berths between cruise and cargo at Midport was cited as a hindrance to growing the smaller island services, as the cost of moving vessels off a berth to accommodate cruise operations (and the further assignment of berths farther from the container yards) adds significant costs to Port operations. Several carriers expressed the potential to deploy services elsewhere if berthing, crane, and traffic circulation issues are not remedied in the near-term.

Completion of the STNE, one of the 2020 M/VP Update projects, significantly enhanced Southport container operations by adding up to five additional berths in Southport. This project increased the Port's ability to consistently assign preferential berths to the corresponding terminal operator and avoid conflicts that result in repositioning vessels mid-call away from berths.

A second project that will greatly enhance Southport operations is the proposed Channel Deepening and Widening project, as previously discussed. This project, which is now being advanced by the USACE, will not only allow larger vessels to call Southport, thereby better meeting the needs of the global container industry, but also allow container vessels to access and exit Southport while cruise vessels are berthed at CT-25, CT-26 and/or CT-29. Both of these are huge competitive factors for Port Everglades, so resolving them represents a major advancement in terms of operational efficiency and productivity, as well as growth of the containerized cargo business.

No similar expansion projects are proposed for Midport. However, the 2024 M/VP Update envisions that sufficient new land will be made available, along with operational enhancements made by both the Port and its terminal operators, that all future containerized cargo operations can and will be handled in Southport.

### **Traffic**

Traffic at Port Everglades is a significant challenge during peak periods for both passenger vehicles associated with Northport and Midport cruise activity and trucks associated with containerized cargo activity in Midport and especially Southport. Currently most of the container traffic for Southport terminals must go through McIntosh gate and then through the respective Port Operator terminal gate which results in a redundancy that could be eliminated. Additionally, because most of the tracks must traverse a large portion of the port footprint from Midport to Southport, the traffic intensity significantly increases.

This situation could be alleviated by establishing a dedicated South access point through the extension of Griffin Road towards the East and moving the VACIS area near this new access. The new access should be approached with a simplified layout of McIntosh Road that could bring the additional benefit of yard optimization for commercial activities. All three projects are identified in the 5-year Master Plan of the 2024 M/VP Update.

The intersections of Eller Drive at McIntosh Road and Eller Drive at SE 19th Avenue are particularly problematic. The Port's geometry and relationship with the surrounding road and highway network make some of these traffic conditions more difficult to improve than others, but cruise and cargo operations will continue to suffer unless or until overall traffic conditions are improved. The 2020 M/VP Update included several roadway enhancement projects that would improve overall traffic conditions within the Port; some of these projects have been carried forward into the 2024 M/VP Update. The County's proposed Airport-Seaport-Convention Center Connector (previously known as the Automated People Mover [APM]) project is also expected to reduce cruise-related traffic. As part of the 2020 M/VP Update, a detailed traffic study was conducted to both document existing conditions and model the impacts of the proposed M/VP projects on future traffic conditions. The results of this study are still relevant and have been summarized and presented in Element 4.

### 3.6.2 Midport

Midport currently comprises a patchwork of mixed land uses and multiple operations in a relatively confined area. This area services all of the cargo types found at the Port, with the exception of petroleum products; it includes a mix of cruise, container, break-bulk, RORO, and cement terminals. Midport is home to six of the Port's eight multi-day cruise berths/terminals and three separate cruise-related parking areas, meaning there is continuous and ongoing competition both for berths and for adjacent land areas. In some cases, this diversity of uses is advantageous to the Port since it results in higher berth utilization rates. In other cases, however, this mixed-use approach hinders operational efficiencies and creates conflicts.

As cruise activity continues to increase at Port Everglades it will be critical for the Port to reduce the overlapping uses in Midport in order to be able to offer a more efficient space in which to concentrate growing cruise activity and operations. This is already evident when a Royal Caribbean Oasis class vessel berths at CT-18, which impacts the containerized cargo operations at Berths 16-17.

The principal operational enhancement opportunities in Port Everglades' Midport area are summarized as follows:

- Improvement of berth-terminal adjacencies, and
- Reducing conflicts between cruise and cargo operations.

#### **Berth-Terminal Adjacency and Traffic**

Adjacencies between cargo berths and terminals is an issue at Port Everglades, particularly in Midport. Since berths are not associated with a specific terminal/container yard, and since the berth associated with a container yard operation can vary based on berth assignments made by the Port Everglades harbormaster, there is often a need to dray (i.e., move via truck) containers from an initial point of rest to a given container yard. The time and cost to dray a container from one part of the Port to another (e.g., from Midport to Southport) is a cost impact to the terminal operators. The competitive disadvantage imposed by this type of operation can be substantial.

The overall practice of intra-Port drays is not only costly and inefficient, but also contributes to both Southport and Midport truck traffic by adding an additional truck trip and gate transaction simply to reposition a container from one terminal to another. Since the overall congestion that occurs on McIntosh Road is becoming a paramount issue for Southport terminal operators, minimizing or eliminating altogether these types of operational inefficiencies should be a priority. The 2024 M/VP Update includes several traffic-related projects to address this concern, as was discussed in the previous section.

#### **Conflicts between Cruise and Cargo**

The mix of operations in Midport creates competing traffic patterns of trucks and passenger cars, especially during the peak cruise season. In addition to landside access issues on the roadways

connecting these activities, the berthing areas are shared among the various users, with cruise vessels receiving the highest berthing priorities. Many of these conflicts are mitigated by the fact that cargo activity is heavily concentrated during the weekdays of Monday-Friday while cruise activity is more concentrated during weekend days of Saturday and Sunday.

However, in the future – and already to some extent – the Port will see growth of cruise activity during the week. This growth in weekday activity will be triggered by several factors as discussed in detail in Element 2, but the result will be additional conflicts between cruise- and cargo-related traffic. The consolidation of most (if not all) containerized cargo operations within Southport will alleviate many of these conflicts, although not all.

### **Cruise Traffic**

Issues identified regarding cruise traffic include:

- Insufficient parking capacity for passengers and employees
- Ground Transportation Area (GTA) with insufficient space for debarking passengers on curbs, as well as curbside space being occupied by POVs and rideshares
- Need for additional staging areas for limos, rideshares, cabs, and POVs

Several potential areas of improvement to cruise traffic flows, parking, safety and other issues have been identified to address the above and improve the experience of both employees and passengers. These include:

- Parking Improvements: construct additional parking for both employees and passengers, including 1-2 new parking structures for passengers and new employee parking in Midport. New structures should include EV charging stations.
- Develop an Airport-Seaport-Convention Center Connector: This could include a Midport station combined with one of the new parking structures and would result in reduced shuttle needs.
- Staging Improvements:
  - Relocate taxi staging to Midport in a new ground transportation facility
  - Relocate rideshare staging to either the ground floor of the Palm garage or to a new parking facility
  - Add signage and wayfaring improvements

### **3.6.3 Northport**

The primary inefficiencies within the Port’s Northport area relate to liquid bulk operations within and around Slips 1 and 3 (Berths 6-13) and challenges with adjacent cruise operations in Slip 2 (Berths 4 and 5). These inefficiencies relate almost entirely to the width of the slips themselves, and the age and condition of the finger piers. These piers were designed to service the smaller liquid bulk and break-bulk vessels that currently call the Port, but they may be unsuitable for the

next generation of larger liquid bulk vessels. Additionally, current Port operations do not allow petroleum offloading to occur adjacent to a berthed cruise ship within the same slip (e.g., Slip 2).

Vessels are not only getting larger, but the amount of product transferred per vessel call is also increasing, which will place constraints on both the slip widths and the land area and liquid bulk transfer infrastructure within the piers. Slip drafts are also a limitation, as the entrance channel and turning basin both currently support deeper drafts than the petroleum berths. Furthermore, as vessels increase in size, it is anticipated that an adjacent berth within the same slip will be unable to be used simultaneously due to navigational constraints and general safety concerns. This may become an issue for Slips 1 and 3. Slip 1, with focused liquid bulk operations and an anticipated increase in the size of the vessels, was identified as the priority. The Slip-1 widening project was identified in the previous 2020 M/VP Update and is currently in progress. Elements of this project have already been completed, such as a new manifold system to allow higher transfer of cargo and more efficient distribution of the flows and placed to facilitate widening of both Slip 1 and Slip 3.

Another operational enhancement opportunity is addressing the current berthing practices at Slip 3 that require cement vessels at Berth 15 to turn around to be able to work in all hatches of the vessels, with mooring and tugboats operations in between that slow down the production rate, thus increasing the time at berth and reducing the berth capacity. The 2024 M/VP Update includes several projects to address this issue, including adding a mooring structure east of Berth 15. Additionally, there is the potential of increasing sizes of cement vessels by widening and deepening Slip 3, which will be critical once the projected growth of cement at Berths 14 and 15 has surpassed the current capacity.

Cemex is in the process of adding a new ship unloader that will increase the current unloading capacity by 50 percent while also avoiding air pollution associated with these types of operations when handled with outdated equipment.

The challenges associated with Slip 2 are far less urgent given the critical nature and berth-specific requirements of liquid bulk operations vs. those of break-bulk operations. Bulk operations currently taking place at Berth 5 are being accommodated around Berth 4 cruise vessels. However, this challenge will continue to worsen over time, especially with proposed increased cruise activities at Berth 4. As such, the 2024 M/VP Update includes a Slip 2 widening project.

### **Traffic**

The primary areas for traffic improvements are the relocation and consolidation of existing perimeter gate operations, coupled with re-routing petroleum trucks to new proposed entrance and exit points. This requires consideration of both exterior security gates and individual cargo terminal gates, and how these functions are coordinated.

Recommended changes to petroleum gate operations include a proposed dedicated petroleum access gate on SE 28<sup>th</sup> Street at US-1, south of Spangler Boulevard, with a secondary gate on SE 14<sup>th</sup> Avenue to exit onto Eller Drive, as well as additional recommended perimeter gate changes.

To complement these physical improvements, changes are also recommended as to how petroleum truck transactions are processed at the Eller Drive gate complex. Currently, the security gate performs many functions typical of on-terminal gates, resulting in long transaction times. This differs from industry standards, where external security gates focus primarily on security screening, while operational functions are handled within the terminal (as is the case for Port Everglades container terminals).

By shifting certain gate functions from the exterior security gates to the individual petroleum terminals, transaction times can be significantly reduced. This would allow petroleum truck traffic to move more efficiently through security, minimize queuing, and improve overall traffic distribution across the Port.

### **3.6.4 Port-Wide Operational Improvements**

#### **Berth Improvements**

One ongoing area of consideration for the Port is whether or not to continue the practice of having cargo operations share berth space with cruise vessels. This practice increases flexibility but can lead to conflicts and result in poorer service to cargo operations, which must relocate to a less ideal berth location or wait for space when cruise vessels are not present. Separating cruise and cargo operations to distinct berthing locations would reduce these conflicts. Some of these conflict separations are underway with recent and planned improvements at Southport, which has seen significant improvements to container capacity in recent years.

Some general areas of improvement for Midport and Northport berths include additional replacements and/or upgrades of bollards and fenders due to their age and in order to accommodate large cruise vessels, building on work that has been done already to upgrade these facilities. Additionally, the Port is looking at adding shore power to cruise berths, which has several benefits, including: increased ability to attract cruise lines, potentially reduced operating costs, and reduced hoteling air emissions while at berth.

Port Everglades must also contend with the trend and popularity of increasing larger cruise vessels, such as the Royal Caribbean Oasis and Icon classes, both of which require more than the typical minimum berth space of about 1,200 feet. The Port (and Royal Caribbean) would like the ability to berth two vessels of these classes simultaneously. The 2020 M/VP Update included adding a finger pier to Berth 19; however, although this could provide another large-ship berth, it does not add an additional berth overall and is a costly project. Alternatively, some shifting of cruise lines could be considered and potentially beneficial, such as moving Royal Caribbean to CT-25 and Celebrity to CT-29; however, these relocations would be challenging and potentially expensive.

## **Backland Improvements**

There are several improvements which can be made to Port backlands to improve their efficiency and density. Due to the nature of how terminal operations and leases have been structured over time, many container terminal operations are fractured into small, inefficient spaces with redundant operations at each, such as internal gate operations. Some solutions to improve this situation and augment capacity to accommodate growing volumes include densifying and/or optimizing each terminal individually, or alternatively, consolidating all container operations into a single unified terminal with dedicated space assigned to each operator. The latter would provide more flexibility and capacity but would require waiting until existing leases expire over the next 5-10 years. The benefits of a single unified operation include:

- Optimization between berths and yard,
- Optimization between yard and gate, and
- Optimization of entry/exit gates.

This consolidation would include relocating Midport container operations into a unified and densified Southport. Even if the Southport terminals are not unified, relocation of the Midport container terminals to Southport would provide significant improvements and increased flexibility to the Port.

Other general backland improvement needs for container operations include:

- Expanded VACIS inspection area (location to be identified), and
- Upgrade, replacement, and/or expansion of existing utilities and lighting.

For cruise operations, there are several terminal redevelopment areas that could improve their operation, capacity, and aesthetics, including the following summarized by container terminal:

- CT-29:
  - Lengthen Berth 29 north into Tracor Basin and address mooring issues, including removal of the existing mid-basin mooring dolphin, and
  - Add fueling capabilities, and
  - Add parking.
- CT-21
  - Widening and improvement of the apron area, as well as bulkhead improvements, to accommodate new larger cruise ships
  - Improve/expand the GTA
- CT-19:
  - Improve building aesthetics, such as adding more light and windows
  - Add mobile kiosks to improve the passenger experience
  - Add VIP and CBP processing facilities,
  - Bulkhead improvements,
  - Improve/expand the GTA, and

- Add parking
- CT-18
  - Improve/modernize power distribution (currently two different power supplies.
  - Bulkhead improvements,
  - Improve/expand the GTA, and
  - Add parking

Additionally, from a holistic perspective, it may be beneficial to modernize all terminals and replace them with smaller footprints that will consolidate operations and free up backland for other uses, such as additional parking and improvement/expansion of the GTAs.

Petroleum operations would also benefit from increased rail capacity at the Global terminal. Existing rail could also be extended to Targa for propane along with the FECR warehouse project.

### **Cruise Operational Strategies**

In addition to the cruise-related improvements listed above, several other operational improvements could be made to enhance the Port's cruise business and the cruise customer experience:

- Maintain and nurture existing relationships with major cruise brands.
- Regain traffic from Carnival, previously accounting for 14 percent of the Port's traffic in 2017, targeting this as a short- to mid-term opportunity.
- Continue marketing to attract smaller ships for weekday berth filling, acknowledging its minor annual impact due to deployment characteristics.
- Add seasonal summer deployments.
- Continue to work towards capturing more of the short cruise market. Cruise lines prioritize Friday through Monday for homeporting; however, mid-week could be filled for port of call traffic or itinerary patterns that are longer than 7 days that require more scattered homeport days.
- Expand the booking window beyond the current 18-month limit.
- Evaluate Port security gates access to facilitate easier passenger movements in and out of the Port.
- Work with cruise operators to shift mid- and long-term deployments to increase utilization for existing infrastructure and extend the need for an additional berth.
- Partner with key cruise operator(s)/other investors or terminal operators on these projects.

## 3.7 Facility Needs Assessment

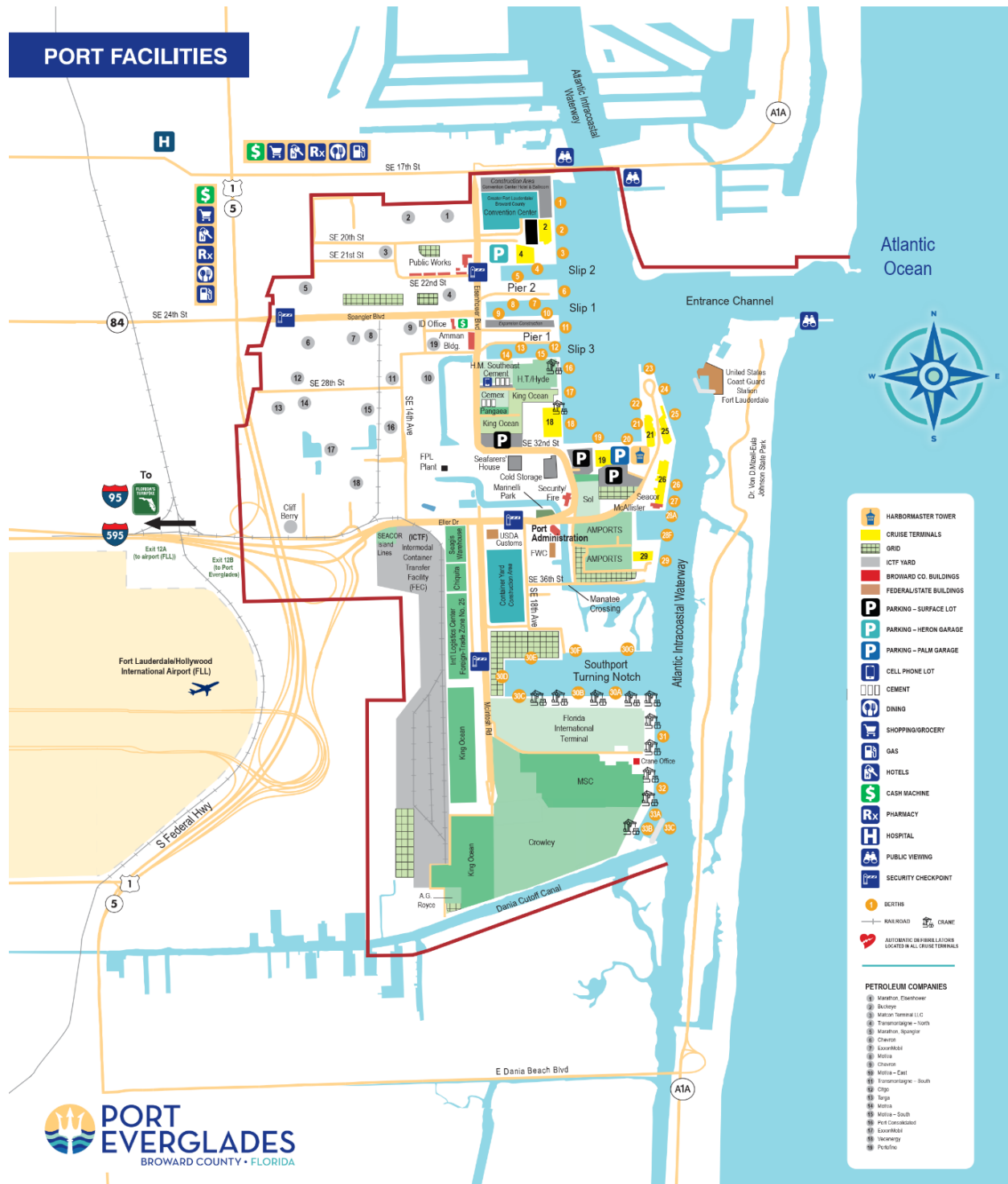
This section assesses the Port's facility needs based on an evaluation of the current capacities of the facilities serving each of the Port's major business lines (cruise, liquid bulk, containerized cargo, and non-containerized cargo). This assessment also considers the anticipated future capacity needs for the Port's facilities based on the expected growth in passenger and cargo volumes over the 20-year planning horizon.

### 3.7.1 Capacity Measurement and Evaluation

There are numerous accepted practices and metrics in the maritime industry for evaluation of capacity. However, both the methods used to determine capacity and the metrics used to measure it differ substantially by line of business. For cruise, several KPIs are used to evaluate level of service, but the most meaningful measures of basic capacity for a homeport like Port Everglades are peak berth utilization and annual revenue passengers per berth. For cargo, there are also numerous KPIs for different types of cargo operations, many of which directly impact capacity. Cargo KPIs can include gate processing times, crane productivity, and yard dwell time, among other metrics.

However, from an overall perspective the two most meaningful port-wide measures of cargo capacity are berth capacity and yard capacity. Provided below is a summary of the capacity analysis performed as part of Elements 1 and 2 of the 2024 M/VP Update. Detailed descriptions of the methodologies used to determine capacity and the Port's overall capacity for each line of business are found in those elements and are not restated here. **Figure 3.7.1** provides an overview of the Port's existing facilities for reference throughout this section.

Figure 3.7.1: Map of Port Everglades Berths<sup>26</sup>



<sup>26</sup> Source: Port Everglades

### 3.7.2 Cruise Capacity

Growth of the cruise business at Port Everglades is expected to follow a consistent seasonal pattern for regional traffic on sailings of less than eight days, with long-term passenger growth reflecting increased cruise vessel capacity. **Table 3.7.1** shows the daily call patterns during the peak season for Port Everglades from 2012-2024 (excluding the COVID-19 pandemic years for 2020-2021). The peak season runs from November to April.

As with most U.S. homeports, Saturday and Sunday have consistently shown the highest amount of traffic over the period. As illustrated, just under 60 percent of all traffic on average moves on the peak weekend days with some 24 percent on Friday and Monday for an average of 81 percent of the traffic over the period. Moving more traffic to weekdays to enhance berth utilization would be preferable, but this is not always easy or even possible. Therefore, Friday-Monday will likely continue to be the busiest days for Port Everglades due to the vacation patterns of North American consumers.

**Table 3.7.1: Distribution of Vessel Calls by Day, Peak Season Only<sup>27</sup>**

Day	2012	2013	2014	2015	2016	2017	2018	2019	2022	2023	2024	AVG
<b>Sunday</b>	26%	30%	31%	30%	32%	32%	31%	32%	30%	25%	25%	<b>29%</b>
<b>Monday</b>	12%	11%	16%	16%	18%	12%	10%	12%	10%	14%	14%	<b>12%</b>
<b>Tuesday</b>	7%	3%	3%	3%	4%	5%	4%	4%	3%	5%	3%	<b>4%</b>
<b>Wednesday</b>	4%	4%	2%	3%	2%	7%	12%	6%	9%	6%	8%	<b>8%</b>
<b>Thursday</b>	6%	6%	9%	9%	8%	8%	7%	9%	8%	7%	7%	<b>7%</b>
<b>Friday</b>	13%	13%	9%	10%	9%	10%	10%	10%	9%	16%	15%	<b>12%</b>
<b>Saturday</b>	32%	33%	29%	28%	26%	26%	26%	26%	31%	27%	28%	<b>28%</b>

**Figure 3.7.2** illustrates anticipated berth utilization specific to cruise during the 20-year planning horizon of the 2024 Update, under the mid-point deployment scenario, assuming no additional berths are built. Optimal berth utilization for cruise is 80-90 percent during peak periods. Once this is achieved, an additional berth is typically recommended to be able to meet additional demand and allow for peak use on key weekend days during the core season. However, the total volume of revenue passengers handled at a given berth also factors prominently into the capacity calculation for a cruise port since cruise lines can and do adjust cruise sailing lengths and seasonal deployment strategies dynamically as needed to match consumer demand and maximize market capture.

Generally, one million revenue passengers per berth per year is a reasonable upper limit assumption for total passenger throughput. Based on today's eight berths, Port Everglades could

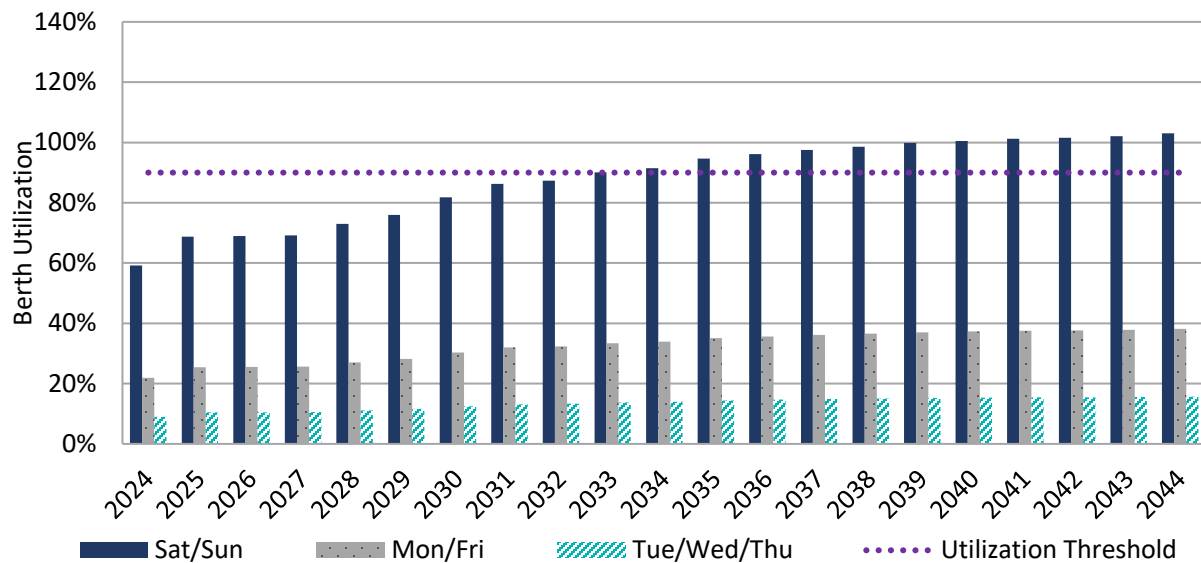
<sup>27</sup> Source: BA

theoretically have a maximum total capacity of 8 million revenue passengers, although certain operational constraints will make this upper limit difficult to achieve.

Since Port Everglades saw approximately 4 million revenue passengers in 2024, and based on the deployment projection range is expected to see anywhere from 4.2 million to 6.9 million revenue passengers by the end of the planning horizon (2044), any additional cruise berths added would be to support Port Everglades in adding calls during its key weekend and seasonal peaks while simultaneously increasing overall berth utilization.

The results of the berth utilization and the associated berths suggested to meet each of these projections are also shown below **Figure 3.7.2** and **Table 3.3.1** in Section 3.3.

**Figure 3.7.2: Peak Season Berth Utilization (Mid-Point Deployment Scenario)<sup>28</sup>**



The strategies for development of new infrastructure and facilities to support cruise growth are summarized below.

- Current and future berths, terminals, and upland support areas will need to be better equipped to accommodate the largest cruise vessels and allow for increased passenger satisfaction through technology and design improvements.
  - New or enhanced berths should be designed to be 1,300 feet in length, with a working apron of 60 to 70 feet wide, to support future vessel operations.
  - Vessels capable of carrying more than 7,000 passengers and 2,300 crew will necessitate new infrastructure designed to accommodate larger vessels and more passengers and specifically provide a platform for technological applications and

<sup>28</sup> Source: BA

operations focused on passenger satisfaction, lower operational costs, and reduced terminal size.

- Not all cruise facilities need to meet these demands, and understanding the balance is critical to the investments and growth of the Port.
- Redevelop cruise facilities at CT-29 (ideally in the short term, i.e., first 5 years), at CT-21 (starting in the medium term, i.e., 5 to 10 years) and at CT-18, CT-19 and CT-26 (starting in the long term, i.e., 10 to 20 years), fostering new cruise operator growth and accommodating more large vessels.
  - Aim to create more operationally efficient and cost-effective facilities while enhancing passenger satisfaction.
  - Facilitate the accommodation of larger vessels and brands, increasing throughput, short cruises, and berth utilization organically.
- Link upgrades to throughput agreements to generate higher revenue passenger volumes in the medium to long term.
- Develop a permanent home for Baleária at CT-28.

These targeted operational and infrastructural strategies are critical for Port Everglades to overcome its current challenges and realize its growth potential within the competitive Caribbean cruise market.

### 3.7.3 Liquid Bulk Capacity

As is discussed in Element 2, all liquid bulk vessel calls to Port Everglades are for the delivery of petroleum products. In addition to this waterborne tanker and barge traffic, a significant percentage of inbound ethanol is received by truck and rail. Relative to current volumes, the projected ethanol throughput is expected to remain steady for products received both by land and sea throughout the forecast horizon. Therefore, Port infrastructure related to receiving liquid bulk by truck and rail is anticipated to provide sufficient capacity over the next 20 years.

For waterborne petroleum products, capacity is a function of three basic factors:

- Berth capacity,
- Product ship-to shore transfer capacity, and
- Storage capacity.

Of these three factors, berth capacity falls within the Port's control, while private industry carries out product offloading, transfer, and storage. Over the 20-year planning horizon, projections for waterborne petroleum products remain largely unchanged overall, with jet fuel projected to significantly increase and other products to hold steady or slightly decline. The ongoing and proposed improvements to Berths 7-13, coupled with the widening and deepening of Slip 1 (in progress) and Slip 3 (proposed), and industry-led improvements to manifolds and product transfer infrastructure will promote an expected transition to larger vessels and more efficient overall receipt and transfer of product across docks. These improvements should accommodate

the projected net throughput total increase of 12.5 percent (in comparison to 2022) expected by 2043.

The berth and navigation improvements that are associated with the expansion of Slips 1 and 3 present the potential for disrupting petroleum capacity during the construction of these major projects. Both projects will require the temporary removal from service of dedicated petroleum Berths 9-10 and 12-13 for a significant period of time (on the order of three or more years for each project). For the Slip 1 widening, Port engineering and operations staff are currently collaborating with the petroleum terminal operator and with industry to assess the implications for vessel calls and product throughput while these berths are made unavailable. Stakeholders are also exploring the available capacity for receiving new or increased petroleum vessel calls on other berths in Northport.

Potential solutions being entertained include receiving petroleum vessels on Berth 5 or Berth 15 and accepting dual concurrent occupancy on Berths 12 and 13; dual occupancy on Berths 12 and 13 would be limited to tankers and barges of 610 feet or less LOA. Depending on these findings, additional investment by all stakeholders might be necessary to prepare additional berths for petroleum offload and conveyance and to enhance product transfer capabilities. If necessary, the Port may also wish to consider exploring commercial dealings with other Northport operations to preserve or free future petroleum capacity for these timelines.

### 3.7.4 Cargo Capacity

The cargo capacity analysis assesses the Port's existing capacity to handle containerized cargo and non-containerized cargo, including dry bulk, break bulk, RORO, and auto cargo. The key takeaways from the cargo capacity analysis are summarized below, with additional information on each analysis in the subsequent sections.

#### 1. Cargo Berth Capacity

- **Containers:** Southport berths are well-balanced, with room for throughput growth, indicated by Port Everglades' FY 2023 container throughput of just over 1 million TEUs, against a capacity of 1.67 million TEUs annually. Northport and Midport show more berth availability than storage capacity, suggesting underutilization or space constraints for yard storage.
- **Cement, Dry-Bulk, and Break-Bulk: Adequate** berth and upland storage capacities exist for current volumes. However, popular berths (e.g., Berth 5 for dry bulk at 97 percent capacity) are nearing operational limits, highlighting potential inefficiencies during peak periods.

## 2. Cargo Yard Capacity

- **Containers:**
  - Crowley Terminal has the largest acreage but the lowest density (5,625 TEU/acre/year) due to its operating modes. ECT (MSC) is the most efficient, with a density of 9,931 TEU/acre/year. FIT and King Ocean have densities of 5,962 and 8,207 TEU/acre/year, respectively.
  - Operational improvements (e.g., transitioning to higher-density RTG stacking) could enhance Southport's efficiency, though Northport and Midport capacities remain static due to current operational methods.
- **Break-Bulk:** Current storage capacity supports up to 475,000 tons annually, with peak throughput historically reaching 470,000 tons, leaving little room for growth.

## 3. Challenges and Opportunities

- **Seasonality:** Cruise operations significantly impact berth availability during peak seasons (mid-October to mid-May), reducing cargo handling capacity and requiring more flexible scheduling or increased off-peak utilization.
- **Non-Cement Dry-Bulk:** These commodities, relying on direct vessel-to-truck operations without upland storage, could face logistical inefficiencies as volumes increase.
- **Infrastructure Adaptability:** The shared berth model and temporary grid assignments allow some flexibility but may require better alignment of operations to reduce bottlenecks.

## 4. Recommendations for Optimization

- **Enhance Yard Densification:** Focus on high-density stacking methods and optimizing space allocation at Crowley and other terminals.
- **Infrastructure Investments:** Address berth-specific bottlenecks and plan expansions for high-demand cargo types like cement and dry bulk.
- **Balance Seasonal Fluctuations:** Increase off-season utilization of berths affected by cruise activities or diversify cargo handling during peak cruise periods.

### Berth Capacity

Port Everglades supports a wide range of vessel types—cruise, liquid bulk, container, break-bulk, dry bulk, and RORO—across shared berths and yards located in Northport, Midport, and Southport.

To evaluate the capacity of each cargo berth, the "berth-foot-hour" metric is employed, which quantifies the amount of berth resources (time and length) necessary to transfer cargo across the berth. A similar methodology is applied to assess berth capacity for dry bulk and break-bulk vessels, measured in berth-foot-hours per ton. **Table 3.7.2** provides a summary of the annual

availability percentages for container, cement, dry bulk, and break-bulk cargo, as well as other berth uses (such as cruise and liquid bulk) and the effects of cruise seasonality.

**Table 3.7.2: Average Annual Percent Availability by Cargo Type and Berth**

Berth ID	Containers	Cement	Other Dry Bulk	Break Bulk	Other Uses/Notes	Cargo Operations Impacted by Cruise Seasonality?
5	-	10%	30%	20%	Used for a variety of dry- and break-bulk cargo	To be used for petroleum offloading while Berths 9 and 10 will be out of service for the Slip 1 widening project and during the bulkhead replacement for Berths 7 and 8; limited availability when Berth 4 in use for cruise operations
6	20%	5%	70%	5%	None	No cruise activity
11	25%	-	-	-	Petroleum	No cruise activity
14-15	5%	95%	-	-	Primarily cement and related products (e.g., slag)	No cruise activity
16-17	75%	-	-	-	Used only for containers since 2020	Yes; can be blocked by long ship at Berth 18
18	30%	-	-	10%	Primarily cruise, some autos	Yes
19-20	40%	-	5%	5%	Primarily cruise, some autos	Yes
26-27	25%	-	-	-	Primarily cruise	No; used as available by small containerships only
29	10%	10%	-	30%	Autos and rarely cement/other bulk	No cruise activity
30A-C	100%	-	-	-	Primarily containerships	No cruise activity
30D-F	50%	10%	15%	25%	Autos, break bulk, yachts	No cruise activity
31	100%	-	-	-	Primarily large containerships	No cruise activity
32	100%	-	-	-	Mix of large and small (banana) containerships	No cruise activity
33A-B	100%	-	-	-	Some autos	No cruise activity
33C	100%	-	-	-	Some autos	No cruise activity

Berth-foot-hour productivity varies depending on the use of STS cranes, onboard ship cranes, or truck-mounted cranes. Berths with STS cranes typically demonstrate higher efficiency, with lower berth-foot-hour values, indicating faster cargo movement. The existing conditions analysis in

Element 1 of the 2024 M/VP Update shows that Port Everglades has a total container berth capacity of approximately 1.48 million TEUs annually (1.07 million moves). Southport’s dedicated container terminals (Berths 30–33) contribute 1.93 million TEUs (0.57 million moves), assuming an average of 1.8 TEUs per move.

### **Container Yard Capacity**

CY capacity, or the ability to store and process containers in the yard, is influenced by:

- Yard operation type (e.g., reach stackers, RTGs, rail-mounted gantries)
- Container dwell time and inventory peaks
- Stacking height and yard layout

Terminal operators at Port Everglades use different equipment and storage strategies. For example:

- ECT (MSC) uses RTGs, offering higher density stacking.
- King Ocean and FIT use top-pick equipment and has a mix of mostly grounded with some wheeled containers.
- Crowley has transitioned from a fully wheeled system to a mostly grounded system.

Slot density, measured in twenty-foot ground slots (TGS) per acre, varies by storage method. For example, wheeled storage averages 50 TGS per acre, while RTG yards can reach 100 TGS per acre. **Table 3.7.3** summarizes key CY capacity inputs by terminal/storage area.

**Table 3.7.3: Port Everglades Container Yard Capacity – Input Parameters with Current Operating Modes<sup>29</sup>**

Parameter	Crowley	MSC	King Ocean	FIT	Grid	Southport Overall	Midport	Northport
Gross Acreage	80	39	47	36	23	<b>225</b>	<b>26</b>	-
Net-to-Gross Ratio	75%	75%	55%	75%	75%	<b>75%</b>	<b>60%</b>	-
Net Acreage	60	29	35	27	17	<b>168</b>	<b>16</b>	-
Import Load % Grounded vs. Wheeled	90%	90%	90%	90%	90%	<b>90%</b>	<b>0%</b>	-
Export load % Grounded vs. Wheeled	90%	90%	90%	90%	90%	<b>90%</b>	<b>100%</b>	-
Empty % Grounded vs. Wheeled	100%	100%	100%	100%	100%	<b>100%</b>	<b>100%</b>	-
Import Load Height (Mean Stack Height)	2.0	3.75	3.5	2.0	2.0	<b>2.5</b>	<b>2.0</b>	-
Export Load Height (Mean Stack Height)	2.0	3.25	3.0	2.5	2.5	<b>2.5</b>	<b>2.5</b>	-
Empty Height (Mean Stack Height)	3.0	4	3.5	3.5	3.5	<b>3.4</b>	<b>3.5</b>	-
Import Load Dwell Time (Days)	4.3	4.3	4.3	4.3	4.3	<b>4.3</b>	<b>4.3</b>	-
Export Load Dwell Time (Days)	4.3	4.3	4.3	4.3	4.3	<b>4.3</b>	<b>4.3</b>	-
Empty Dwell Time (Days)	8.0	8.0	8.0	8.0	8.0	<b>8.0</b>	<b>8.0</b>	-
Peak/Mean Import Inventory	125%	125%	125%	125%	125%	<b>125%</b>	<b>125%</b>	-
Peak/Mean Export Inventory	115%	115%	115%	115%	115%	<b>115%</b>	<b>115%</b>	-
Peak/Mean Empty Inventory	110%	110%	110%	110%	110%	<b>110%</b>	<b>110%</b>	-

The layout of a CY can also yield different densities, depending on the configuration of the ground slots within the yard. The density of a container yard is captured as the number of TGS per acre of net container yard. **Table 3.7.4** presents typical average slot-density assumptions for different storage modes that have been used to estimate TGS values for Port Everglades.

<sup>29</sup> Source: AECOM

**Table 3.7.4: Container Yard Capacity – Slot Density Assumptions<sup>30</sup>**

Storage Mode	TGS per Net Acre
Wheeled	50
Pick – Imports	60
Pick – Exports and Empties	115
RTG	100

**Table 3.7.5** summarizes overall container storage capacity. A vast majority of storage capacity is within Southport, with about 103,000 TEU of capacity in Midport.

**Table 3.7.5: Container Yard Capacity – Status Quo<sup>31</sup>**

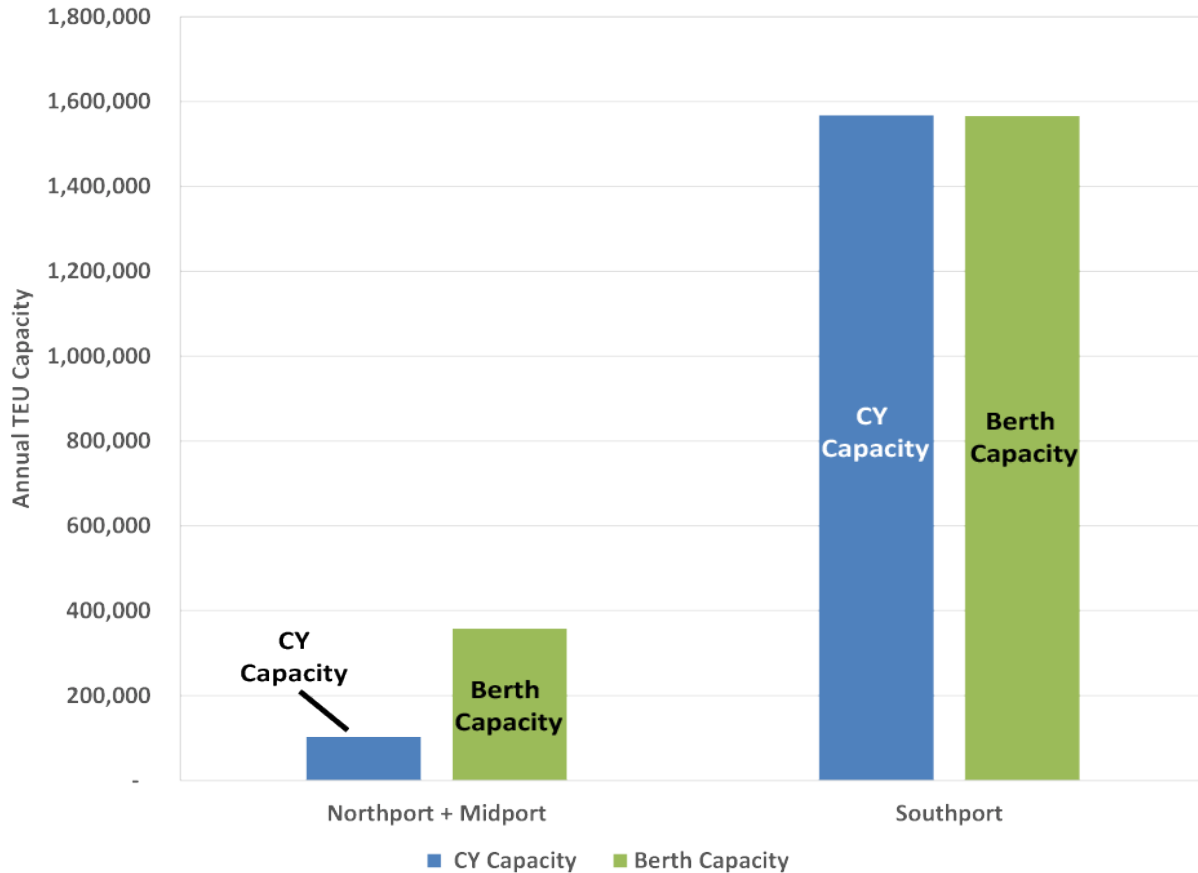
	Yard Throughput Capacity (Annual Moves)	Yard Throughput Capacity (Annual TEUs)	TEU/Gross Acre/Year at Yard Capacity
<b>Midport Total</b>	<b>57,100</b>	<b>103,000</b>	<b>3,962</b>
<b>Northport Total</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>Southport</b>			
Crowley	250,200	450,000	5,625
ECT (MSC)	213,100	384,000	9,931
King Ocean	212,600	383,000	8,207
FIT	140,000	215,000	5,962
Grid	119,700	136,000	6,000
<b>Southport Total</b>	<b>870,900</b>	<b>1,568,000</b>	<b>-</b>
<b>Port Total</b>	<b>928,000</b>	<b>1,671,000</b>	<b>-</b>

**Figure 3.7.3** below shows berth versus CY capacity for Port Everglades overall.

<sup>30</sup> Source: AECOM

<sup>31</sup> Source: AECOM

**Figure 3.7.3: Container Berth Capacity vs. Container Yard Storage Capacity<sup>32</sup>**



**Figure 3.7.3** shows that, overall, Southport is well balanced in terms of CY and berth capacity, whereas the Northport and Midport facilities have more berth capacity than storage capacity for containers. Overall, Port Everglades’ throughput was just over 1 million TEUs in FY 2023, so **Figure 3.7.3** indicates the Port has room to grow container throughput with existing berth and CY capacities.

**Dry Bulk, Break-Bulk, and RORO Capacity**

Capacity for non-containerized cargo is a function of both berth availability and land availability. For the primary bulk and break-bulk cargos, an overall port-wide berth-foot-hour factor was used to determine berth capacity, rather than a berth-specific factor, due to the much smaller overall number of vessel calls for each cargo type compared to the large number of vessel calls at the cruise and container berths. For example, the total number of cement vessel calls during the baseline year (FY 2017) was approximately 50, with some berths handling only one or two total cement vessel calls annually. As illustrated in **Table 3.7.6**, the annual berth capacity for cement products was assessed at each berth used for significant volumes of cement unloading. The berth

<sup>32</sup> Source: AECOM

capacity assessment indicated that the port operated at just under 40 percent of its capacity for bulk cement during the baseline year.

**Table 3.7.6: Cement Berth Capacity<sup>33</sup>**

Berth ID	Length (Feet)	% Available for Cement	Annual Available Berth Hours (Cement)	Annual Available Berth Foot Hours (Cement)	Maximum Utilization of Available Berth Foot Hours
a	b	c	$d = 12 * 365 * c$	$e = b * d$	f
5	900	10%	438	394,200	70%
6	380	5%	219	83,220	70%
14-15	1,226	95%	4,161	5,101,386	70%
29	800	10%	438	350,400	70%
30E-F	900	20%	876	788,400	70%
<b>Total</b>	<b>4,206</b>	<b>28%</b>	<b>6,123</b>	<b>6,717,606</b>	<b>70%</b>

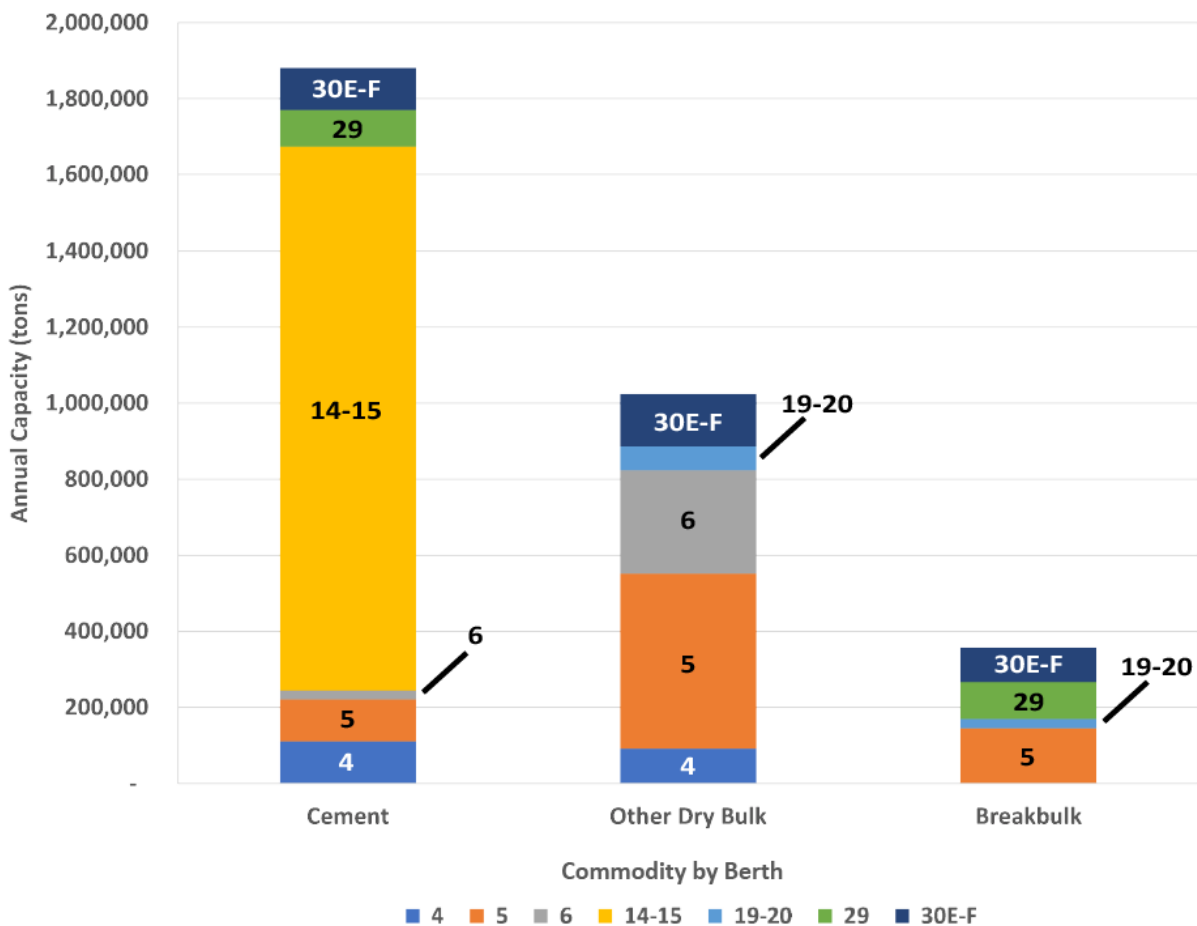
Berth ID	Maximum Cement Berth Foot Hours per Year	FY 2023 Mean Berth Foot Hours/Ton	Annual Capacity (Tons)	FY 2023 Tons at Berth	% Capacity
a	$g = e * f$	h	$i = g / h$	j	$k = j / i$
5	275,940	2.5	110,376	0	0%
6	58,254	2.5	23,302	0	0%
14-15	3,570,970	2.5	1,428,388	1,170,000	82%
29	245,280	2.5	98,112	12,200	12%
30E-F	551,800	2.5	220,752	34,900	16%
<b>Total</b>	<b>4,702,324</b>	<b>2.5</b>	<b>1,880,930</b>	<b>1,217,100</b>	<b>65%</b>

The principal non-cement dry bulk cargos handled at Port Everglades include aggregate, coal, gypsum, and sand, primarily moved across Berths 4, 5, 6, 14, and 15. Based on FY 2017 operating conditions, the Port is operating at more than 80 percent of its non-cement dry bulk capacity. Break-bulk cargo at Port Everglades<sup>33</sup> consists primarily of steel products, including rebar and steel coil, handled primarily at Berths 5 and 29. Additional cargos considered in the break-bulk capacity analysis include yachts, used RORO products, and project cargo. These commodities are moved

<sup>33</sup> Source: AECOM

across numerous berths on an opportunistic basis, and the overall volumes during the baseline year were quite minimal compared to the overall volume of steel break-bulk. As shown in **Figure 3.7.4**, cement has the highest berth capacity of any bulk cargo at Port Everglades (at around 1.8 million annual tons), followed by other dry-bulk products at 740,000 annual tons and break-bulk cargos at approximately 400,000 annual tons. It should be noted that the existing berth sharing arrangements result in a highly dynamic bulk and break-bulk cargo handling operation at the Port, which is capable of shifting capacity among the cargo types and between different berths and yards based on market demand and vessel frequency.

**Figure 3.7.4: Dry-Bulk and Break-Bulk Berth Capacity by Cargo Type and Berth<sup>34</sup>**



In addition to berth capacity, storage yard capacity was also estimated for cement, other dry bulk products, and break-bulk cargo. Storage yard capacity depends primarily on static storage capacity and average cargo dwell time. The average dwell time is the typical amount of time that cargo remains on the terminal waiting to be retrieved for inland delivery or placed upon a vessel for export.

<sup>34</sup> Source: AECOM

Port Everglades has two sets of cement silos, located at Berths 14 and 15. The silos at Berth 14 were reported to have 44,000 tons of static capacity, while the Berth 15 silos were given as 65,000 tons of static capacity. A dwell time of 15 days was used to estimate maximum annual storage throughput. **Table 3.7.7** presents the overall cement storage yard capacity calculations.

**Table 3.7.7: Cement Yard Capacity<sup>35</sup>**

	Bulk Cement	Berth 14	Berth 15	Total
a	Storage type	Silos	Silos	Silos
b	Total static storage capacity (tons)	44,000	65,000	109,000
c	Dwell time (days)	15.0	15.0	15.0
d=365/c	Annual storage turnovers	24.3	24.3	24.3
<b>e=b*d</b>	<b>Annual cement storage capacity (tons)</b>	<b>1,071,000</b>	<b>1,582,000</b>	<b>2,653,000</b>

Dry bulk cargos other than cement include gypsum, sand, coal, bauxite, ash, and slag, all of which are live loaded directly from vessels to trucks to be moved out of the Port in real time, meaning berth capacity is the sole determinant of Port-wide capacity for these cargo types.

**Table 3.7.8** presents overall annual break-bulk storage capacity. Previous interviews with Port staff and tenants indicated about 35,000 tons of static storage capacity are available over 15 acres on Berth 5; this metric was similarly applied to the upland acreage in use at Berth 29.

**Table 3.7.8: Break-Bulk Yard Capacity<sup>36</sup>**

	Break Bulk	Berth 5	Berth 29	Total
a	Type of cargo	Rebar, Coils	Rebar, Coils	Rebar, Coils
b	Terminal acres (acres)	7	6	13
c	Storage type	Outdoor/Decked	Outdoor	Outdoor
d	Total static storage capacity (tons)	21,000	18,000	39,000
e	Dwell time (days)	30.0	30.0	30.0
f=365/e	Annual storage turnovers	12.2	12.2	12.2
<b>g=d*f</b>	<b>Annual steel storage capacity (tons)</b>	<b>256,000</b>	<b>219,000</b>	<b>475,000</b>
<b>h=g/b</b>	<b>Unit throughput capacity (tons/acre)</b>	<b>36,571</b>	<b>36,500</b>	<b>36,538</b>

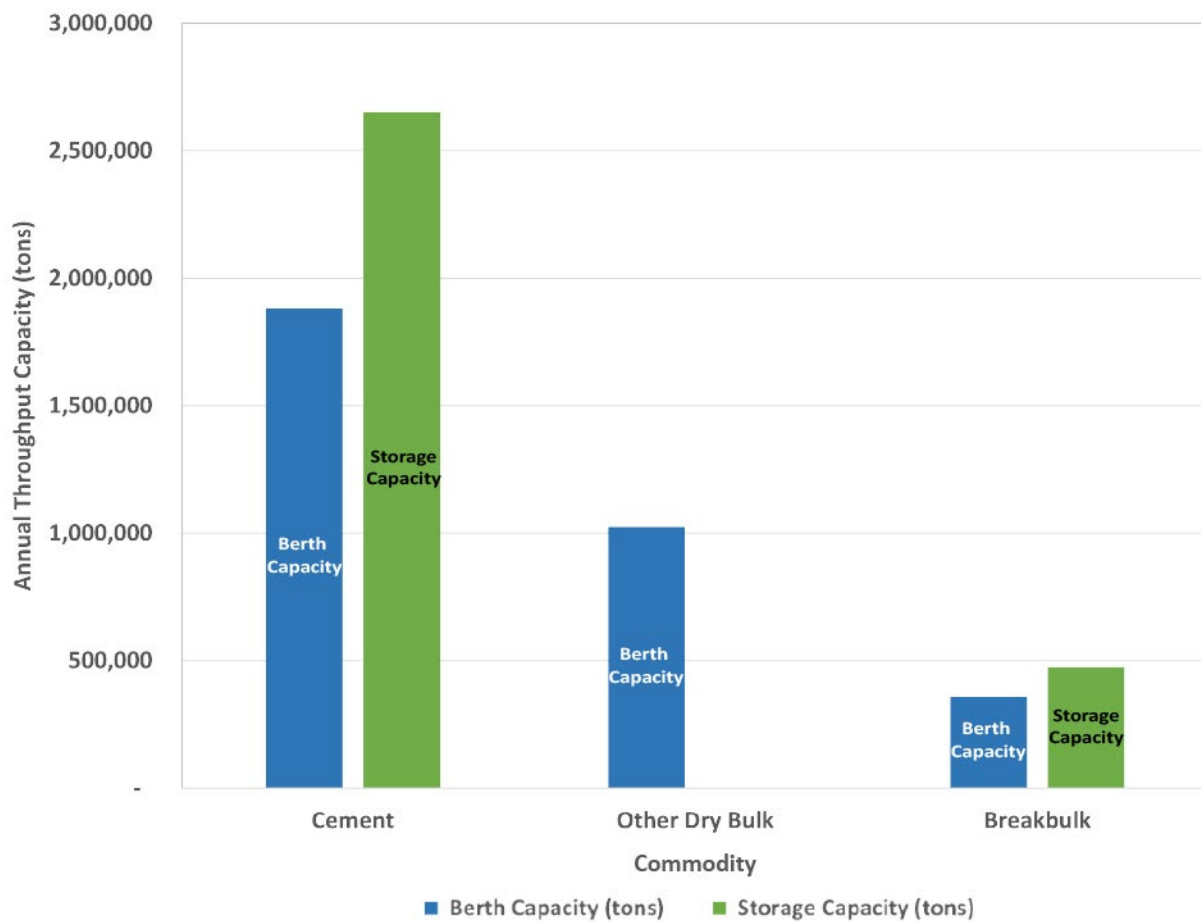
<sup>35</sup> Source: AECOM

<sup>36</sup> Source: AECOM

As shown in **Table 3.7.8**, Port Everglades has upland storage yard capacity to handle approximately 475,000 annual tons of break-bulk products (primarily rebar and steel coil). The peak break-bulk throughput at Port Everglades over the past 10 years was just over 470,000 tons, including yachts, RORO products, and project cargo. This means that even if berth constraints are removed, break-bulk throughput is already effectively at capacity from an available upland storage perspective. The 2020 M/VP Update recommended developing seven additional acres of break-bulk storage yard in Northport, but this additional acreage will be offset by the loss of a comparable amount of break-bulk laydown area in Midport, so total capacity for break-bulk cargo at Port Everglades is expected to remain unchanged, consistent with expected future demand.

**Figure 3.7.5** compares annual storage capacity to annual berth capacity for cement, other dry bulk, and break-bulk product types. The lower of the two values shown for each cargo type is the controlling capacity. Volumes and vessel calls for yachts, used RORO products, and project cargo have been accounted for in the overall capacity analysis to provide a complete assessment of all current cargos at the Port. New automobile imports and exports are discussed separately below.

**Figure 3.7.5: Bulk/Break-Bulk Berth Capacity vs. Storage Capacity<sup>37</sup>**



<sup>37</sup> Source: AECOM

In summary, the Port has a total capacity for cement of about 1.9 million tons per year. Other dry bulk cargo is limited to a maximum of about one million tons per year. Break-bulk cargo, including used RORO products and yachts, is likely limited to about 500,000 tons per year, though the Port has some ability to increase the effective capacity for break-bulk cargo by reassigning berths and/or multi-purpose storage areas (i.e., grid space) to periodic, short-term break-bulk operations on an as-needed basis.

### **Automobile Imports/Exports**

The only other cargo type not covered by the capacity discussions above is automobile cargo. New automobile import/export activity is currently handled primarily at Berth 29. Because auto cargos represent a recent and opportunistic market, limited data are available to accurately capture Port Everglades' technical capacity to handle this cargo. However, the anticipate auto cargo growth included in the 2020 M/VP Update has not been realized and, in fact, volumes have decreased as autos have been diverted to other ports with significantly more capacity for auto cargo.

Discussions with the Port's principal automobile import/export tenant indicate that a single berth made available approximately 15 percent of the time (i.e., one day per week) is sufficient to handle envisioned future RORO vessel traffic. Following a general assumption that 1,700 car equivalent units per acre per year is an optimal throughput rate for a standard automobile terminal, a total of 25 acres are required long-term to accommodate projected future volumes. The 2024 M/VP Update provides for significant but highly flexible land area to accommodate future automobile import/export activity in order to allow scaling up over time to meet market demand without precluding interim uses unrelated to autos.

### 3.8 Affordability Analysis

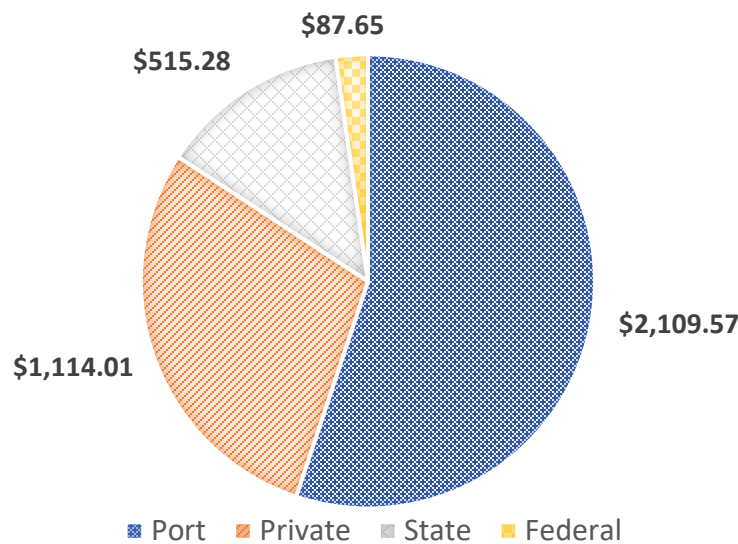
Port Everglades has been successful in the past in securing private, state, and federal funding in the form of public/private co-investment, grants and loans that have helped to develop several critical projects, including among others:

- CT-4, CT-18, and CT-25 (public/private co-investment)
- Intermodal Container Transfer Facility (ICTF) (public/state/private)
- Southport Turning Notch Expansion (federal)
- Eller Drive-I-595 Overpass (state)

The 2024 M/VP Update assumes that Port Everglades will continue to be successful not only in securing state and federal grant dollars but in achieving a greater degree of public/private co-investment in its facilities in partnership with its tenants and other users. These third-party partnerships are vital to the feasibility of the overall M/VP. The Port cannot afford to develop all projects included in the 2024 M/VP Update using only Port funds, and it is a reasonable expectation that the Port can share the costs of these projects with other parties given the number of public/private co-investment precedents that exist for both cruise and cargo projects at other ports across the U.S.

The 2024 M/VP Update assumes that Port Everglades will be responsible for roughly 55 percent (almost \$2.11 billion) of the over \$3.83 billion (2025 dollars) overall capital improvement program included in the 2024 M/VP Update. **Figure 3.8.1** presents the assumed distribution of 20-year capital contributions associated with the 34 projects included in the 5-year Master Plan and 10- and 20-year Vision Plans, as well as the 20+-year horizon, of the 2024 M/VP Update by funding source.

**Figure 3.8.1: 20+-Year Distribution of Capital Contributions to 2024 M/VP Update (Millions)**



### 3.8.1 Financial Model

In partnership with Port Everglades, a dynamic planning and financial “affordability” model was developed to determine potential mechanisms to finance the proposed 5-year Master Plan and 10- and 20-year Vision Plan projects between 2026 and 2045. The Port intends to incorporate the financial model into the annual budget development and planning process, and thus the model will need to be calibrated on an ongoing basis to ensure that actual revenues and costs are properly accounted for and projected as accurately into the future as possible based on changing market and operating conditions, among other factors, but the overall structure of the model gives the Port the capability to simulate virtually unlimited future financing scenarios in essentially real time.

The purpose of utilizing this model as part of the 2024 M/VP Update process was to provide an informed estimate of the potential financial impact of implementing all 42 projects proposed in the 2024 M/VP Update according to the proposed 5-, 10-, and 20-year milestone periods, and to assess the Port’s ability to pay for the overall 20-year development program. Such understanding is vital in order to demonstrate that the Port can:

- Meet the requirements of existing bond covenants from past investments that were financed in part through debt; and
- Maintain existing operations and continue to meet bond covenants while undertaking these new investments

To calculate the estimated financial impact, which depends on data inputs, as well as future assumptions, the model was used to project potential future revenues and expenses through the end of the 20-year planning horizon. Estimated net income was also calculated and compared with the level of debt the Port would have to carry forward to finance all 34 projects. Based on the financial modeling results, select projects were pushed to beyond the 20-year planning horizon based on funding availability within the 20-year horizon.

#### **Future Revenue Calculations**

Future Port revenue will be generated by three sources:

1. Existing/ongoing operations carried forward with assumed escalation factors and achieving certain cruise and cargo forecasts
2. Incremental new revenue generated from new projects based on assumptions consistent with the proposed 5-, 10-, and 20-year development programs
3. Alternative funding sources, including State and Federal capital grants as well as other third-party capital contributions (e.g., Port users)

#### **Future Expense Calculations**

To calculate future expenses the model looked at historical expense growth and applied growth in line with historical averages. The calculated revenues minus the assumed expenses provide

the net operating income necessary to meet minimum requirements of existing debt service as well as additional future bond tests.

### **Existing Debt Service**

The Port's existing debt service was also incorporated into the financial model.

### **3.8.2 Alternative Future Scenarios/Estimate Costs**

The 2024 M/VP Update confirms that the majority of projects are achievable within the planned schedules, contingent on assumptions about estimated costs, anticipated revenues, availability of state and federal grants, and the distribution of funding sources, as shown in **Figure 3.8.1**. As previously noted, select projects have been pushed beyond the 20-year planning horizon. While this assessment supports affordability, the guiding principles of the 2024 Update stress the need for flexibility, ensuring decisions are based on the most accurate information available at the time. Consequently, project implementation must remain adaptable, as many initiatives outlined in Section 3.10 are expected to evolve over time.

As the 2024 Update shifts from planning to execution, the Port will likely revise certain initial assumptions and update the model's inputs. Bond covenants require the Port to maintain minimum debt-service-coverage ratios of 1.25 for senior debt and 1.10 for subordinate debt—both calculated by dividing annual operating income by annual debt-service obligations. Because roughly \$ 2.1 billion of the 2024 M/VP Update's estimated \$3.8 billion capital program is expected to be financed through Port-issued bonds, sustaining coverage ratios above these thresholds will remain one of the plan's key affordability indicators throughout its duration.

Should the Port determine at some point that the assumptions included in the initial affordability analysis for the 2024 M/VP Update have changed to the extent that certain aspects of the overall plan are deemed to be unaffordable, options for addressing any affordability gaps include:

- Advance or otherwise modify planned bond issuance(s),
- Secure additional third-party funding to support one or more of the projects included in the 5-year Master Plan and/or 10- and 20-year Vision Plans, particularly for the proposed cruise projects,
- Modify the proposed implementation schedule of one or more project(s) such that the capital demand in years where there is a projected deficit or other financial challenge is reduced or eliminated, with some or all of that capital demand being shifted to a year in which there is a projected surplus (delay the start of the projects not directly related to revenue like the maintenance facility), and
- Bridge the deficit years using a short-term, one-time loan specific to each respective annual deficit.

It is highly likely that some combination of the above identified strategies and realities will play out over the 20-year life of the 2024 M/VP Update. The preferred way to cover any funding gaps

for new projects remains securing additional third-party funding, so the Port should continue to actively pursue state, federal, and private-sector investments. When such third-party funds are unavailable, however, the simplest solution for future pay-as-you-go shortfalls will likely be to issue additional debt, provided the Port stays within the minimum coverage-ratio thresholds already established.

Whatever mix of financing Port Everglades ultimately selects, past experiences shows that not every project will proceed exactly on the timetable set out in the M/VP, including some items in the 5-year Master Plan. For example, the USACE deepening and widening project, although essential to the Port's long-term success, is not fully under the Port's control; therefore, the target dates in the 2024 M/VP Update may slip. Likewise, the Seaport-Airport Connector could also encounter delays, and any postponement would ripple through other projects that depend on it. If either, or both, of these projects are deferred, the timing of bond issuances and other funding efforts will also have to shift. Such adjustments are largely unavoidable and should be anticipated, which is why the Port must continuously reassess affordability and revisit alternative funding scenarios on an ongoing basis.

### **3.8.3 Affordability Conclusions**

For the 5-year Master Plan, with several exceptions, the Port mostly controls its destiny in terms of which projects it will implement and the timeline on which these projects will move forward. The exceptions include: the USACE Channel Deepening and Widening project, Balearia Ferry Facilities at Berth 28A, and Container Terminal Redevelopment (with the specific container terminal(s) to be redeveloped to be confirmed) that includes densification. As detailed in Section 3.10, all of the projects included in the 5-year Master Plan have been evaluated and are considered affordable for the Port with the identified resources with minimal or no modifications to the proposed project schedules expected or required.

Based on current projections of future Port revenues, the Port can also afford to implement the projects proposed in the 10- and 20-year Vision Plans. However, since many of these projects have been identified as priorities in response to market projections prepared in 2024, it is in the Port's best interest to use the financial model developed as part of the 2024 M/VP Update to continue to revisit 10- and 20-year projects regularly to ensure that they are still aligned with ever-changing market realities. Past Port Everglades M/VPs have proven that many of the projects that emerge from the planning process stand the test of time while others are deprioritized in favor of new ideas that respond to different and as-yet-unknown future challenges and opportunities. The projects and analyses included in the 2024 Update, particularly those in the 10- and 20-year Vision Plans, should therefore be viewed not as a blueprint for future development that must be followed to the letter according to a precise implementation schedule, but rather as an outline for future development that should be revisited as the conditions on the ground evolve.

Furthermore, several long-term projects selected for the 2024 M/VP Update were not able to be included in the 20-year Vision Plan based on the results of the affordability analyses. These projects were identified for the 20-year planning horizon in response to market projections and/or Port tenant needs. As such, they have been identified as 20+ year projects in the 2024 M/VP Update and should be considered for earlier implementation if opportunities arise to do so. These include:

- Container Terminal Shore Power,
- New STS Cranes at Berth 30A/B/C,
- Slip 2 Widening,
- Consolidate cruise GTA (in Midport),
- CT-18 replacement, and
- CT-26 upgrades.

The Port's ability to secure additional state, federal and private funding beyond those estimated in the 5-year Master Plan and 10- and 20-year Vision Plans could alter the timeline for these projects. Delays, changes and/or elimination of any other project(s) could also allow for inclusion of any of these projects, based on need, within the 20-year horizon of the 2024 M/VP Update.

### 3.9 Project Decision Matrix

Consistent with previous M/VP Updates, the 2024 Update utilizes a decision matrix to evaluate the projects proposed for inclusion in the revised M/VP. Also, like previous M/VP Updates, the 2024 Update developed evaluation criteria that advance the themes that have governed the M/VP planning process and that tie directly back to the Port’s mission statement, which is as follows:

*“Port Everglades works creatively and competitively to expand the revenue positions of our trade, cruise and energy customers which in turn creates economic social and environmental value for our community.”*

**Table 3.9.1** shows the scoring categories and evaluation criteria used to assess the projects proposed in the 2024 M/VP Update. Some of these criteria can be measured quantitatively while others are qualitative in nature. Similarly, some of the measures shown in **Table 3.9.1** are more applicable when applied to the Port’s overall 20-year development program than to individual projects.

**Table 3.9.1: Decision Matrix Criteria**

Category	Criterion 1	Criterion 2	Criterion 3	Criterion 4
<b>Competitiveness</b>	Capacity	Efficiency	Market Positioning	Cargo/Market Diversification
<b>Economics</b>	Return on Investment (ROI)	Economic Impact	Future Adaptability	Funding Leverage
<b>Sustainability</b>	Asset Preservation	Environmental Compliance	Resiliency	Energy and Resource Efficiency

Before applying the decision matrix above to the Port Everglades M/VP, it is important to understand that while all projects included in the 2024 M/VP Update address at least one of the dimensions identified in **Table 3.9.1**, not all projects in the Plan meet all of the evaluation criteria. For example, not all projects in the 5-year Master Plan and/or 10- and 20-year Vision Plans result in increased capacity or direct revenue to the Port or can be linked directly to regional economic benefits. However, many projects proposed in the 2024 M/VP Update are necessary to improve overall Port operations by:

- Mitigating existing traffic congestion and gate access issues,
- Accommodating changing mobility needs,
- Repurposing or consolidating land uses to increase productivity,
- Maintaining existing assets in a state of good repair, and
- Addressing other critical needs.

Without these operational improvements, however, the future needs of Port tenants, users, regulatory agency partners, and the general public cannot be fully met. These investments contribute to the success of separate but related revenue-generating projects that are essential to maintaining Port competitiveness, ensuring Port tenant and user satisfaction, meeting regulatory requirements, and ultimately providing local and regional economic benefits.

Each of the three categories are discussed in more detail in the sections below.

### **3.9.1 Competitiveness**

The criteria that are included within the competitiveness category evaluate how well a project enhances the Port's ability to compete and grow within global trade networks, which include:

- Capacity,
- Efficiency,
- Market Positioning, and
- Cargo/Market Diversification.

Competitiveness is the most important (and first) category of evaluation criteria listed in **Table 3.9.1**. Maintaining industry competitiveness is at the heart of the Port's mission since only by remaining competitive can Port Everglades provide the regional economic and other benefits associated with maritime trade and commerce. For this reason, projects included in the 2024 Update have been evaluated in terms of their ability to provide the additional capacity the Port needs to meet projected future growth. Projects have also been evaluated on their ability to enhance operational efficiency, strategically position the Port in trade routes, and diversify the Port's cargo and customer mix. Descriptions of each criterion used to assess the competitiveness of projects included in the 2024 M/VP Update are provided below.

#### **Capacity**

Capacity refers to the potential for a project to directly or indirectly increase berth throughput, yard throughput, road capacity, or parking capacity. This criterion measures the ability of the Port to meet projected future demand, both in terms of infrastructure (e.g., berths, terminals, upland acreage, cranes, etc.) and operational practices (reduced traffic congestion, reduced dwell times, productivity improvements, etc.).

#### **Efficiency**

Efficiency refers to the potential for a project to generate improvements in the Port's operational speed, costs, cargo flow, or productivity. This criterion includes both a quantitative and qualitative evaluation of operational processes and practices as reflected in key performance indicators such as gate/terminal processing times, crane productivity, yard dwell times, and, ultimately, cost per unit (i.e., total handling cost per box for containers).

## **Market Positioning**

Market positioning refers to the ability of a project to reinforce the Port's strategic role in trade routes.

## **Cargo/Market Diversification**

Cargo/market diversification refers to the potential for a project to support the Port's ability to expand into new cargo types or client sectors. Diversification allows the Port to reduce dependency on a narrow client base or cargo mix and can support the Port's growth.

### **3.9.2 Economics**

The criteria that are included within the economics category evaluate the financial and economic value that a project can generate for the Port, which include:

- ROI,
- Economic Impact,
- Future Adaptability, and
- Funding Leverage.

Just as important as increasing the Port's competitiveness is assessing whether or not a project is economically feasible and valuable, as this assessment helps to define the extent to which a project should be prioritized using the limited funding available over the 20-year planning horizon. Descriptions of each criterion used to assess the economics of the projects included in the 2024 M/VP Update are provided below.

## **Return on Investment**

ROI refers to the potential for a project to generate financial returns to the Port. ROI as it relates to the 2024 M/VP Update includes two separate components.

The first component of ROI consists of the proposed capital expenses themselves. These include actual construction costs as well as professional design and inspection services (i.e., soft costs). Depending on the nature of a given project, a contingency allowance may also be included in the total estimated capital expense. Initial capital costs must be evaluated as well as long-term maintenance and repair costs. Port operating expenses are also applicable to some projects, though as a landlord, Port project-specific operating expenses tend to be limited since the cost of operations is typically borne by tenants/users rather than the Port itself. All projects included in the 2024 Update use 2025 dollars as the basis for order-of-magnitude cost estimates to avoid discrepancies in projected escalation factors. Capital expenses are estimated on a project-by-project basis and aggregated to determine the cost of the overall development program.

The second component of ROI is revenue. As previously discussed, many of the 42 projects included in the 2024 M/VP Update result in direct revenue to the Port, but others do not, despite being critical to the Port's competitiveness. In addition, revenue can often be attributed to

multiple projects that work together to enhance the Port's competitiveness rather than individual projects in isolation, making project-specific allocation of incremental revenue more of an art than a science in most cases. Because of this, it is difficult to accurately quantify the ROI for every individual project included in the 2024 M/VP Update. The better approach is to instead evaluate the Port's overall development program by individual line of business across the entire 20-year planning horizon in order to demonstrate the ROI that results from overall plan implementation. Rather than focus on the value of an individual project, this big-picture approach highlights the value and feasibility of the overall multi-year strategy for each line of business and provides a long-term programmatic basis for future investment rather than a short-term incremental approach.

**Table 3.9.2** through **Table 3.9.6** present expected levels of ROI for each Port line of business at the 5-, 10-, and 20-year milestone years as well as cumulatively across the full 20-year planning horizon. As shown, the cash flow for each line of business varies dramatically with cruise, containerized cargo, non-containerized cargo, and real estate all expected to result in a positive cash flow over 20 years, while parking is expected to generate a negative cash flow during the same period.

Evaluating Port return on investment in this more holistic, programmatic way makes the cumulative impact of investment clearer than a project-by-project approach and avoids the potential risk of eliminating transportation and other similar projects that are critical to efficient Port operations but do not generate positive ROI as standalone projects.

It is also important to understand that a negative programmatic ROI does not mean the Port should not invest in a given set of projects, especially if they score relatively high against other evaluation criteria. Having a negative long-term internal rate of return (IRR) does imply that the level of investment being made may merit reconsideration of the Port's current revenue strategy. In the case of parking, while the level of investment is wholly commensurate with expected future demand, the fact that the expected IRR for parking over 20 years is negative implies that the Port has an opportunity to implement strategies to increase parking revenue. Strategies for increasing Port revenue in these and other areas are presented in Element 4.

**Table 3.9.2: Cruise ROI by Milestone Year<sup>38</sup>**

Value	2026 2030	2031 2035	2036 2045	2026 2045
<b>Cumulative Net Revenue</b>	\$168,618,574	\$214,945,995	\$613,796,453	<b>\$997,361,022</b>
<b>Future Incremental Revenue</b>	\$11,655,025	\$57,982,447	\$299,869,356	<b>\$369,506,828</b>
<b>Total Investment</b>	<b>-\$211,796,518</b>	<b>-\$58,755,426</b>	<b>-\$471,199,028</b>	<b>-\$741,750,971</b>
<b>New Cash Flow</b>	<b>-\$200,141,493</b>	\$772,979	\$171,329,672	-
<b>Total Cash Flow</b>	<b>-\$43,177,944</b>	\$156,190,570	\$142,597,425	-

**Table 3.9.3: Containerized Cargo ROI by Milestone Year<sup>39</sup>**

Value	2026 2030	2031 2035	2036 2045	2026 2045
<b>Cumulative Net Revenue</b>	\$93,846,063	\$121,326,564	\$343,286,545	<b>\$558,459,172</b>
<b>Future Incremental Revenue</b>	\$8,882,216	\$36,362,718	\$173,358,853	<b>\$218,603,788</b>
<b>Total Investment</b>	<b>-\$77,396,404</b>	<b>-\$25,972,311</b>	\$0	<b>-\$103,368,715</b>
<b>New Cash Flow</b>	<b>-\$68,514,187</b>	\$10,390,407	\$173,358,853	-
<b>Total Cash Flow</b>	\$25,331,875	\$131,716,971	\$516,645,398	-

**Table 3.9.4: Non-Containerized Cargo ROI by Milestone Year<sup>40</sup>**

Value	2026 2030	2031 2035	2036 2045	2026 2045
<b>Cumulative Net Revenue</b>	\$25,084,596	\$30,842,971	\$83,133,679	<b>\$139,061,246</b>
<b>Future Incremental Revenue</b>	\$1,801,921	\$7,560,295	\$36,568,327	<b>\$45,930,543</b>
<b>Total Investment</b>	<b>-\$18,485,511</b>	<b>-\$14,897,756</b>	\$0	<b>-\$33,383,267</b>
<b>New Cash Flow</b>	<b>-\$16,683,590</b>	<b>-\$7,337,461</b>	\$36,568,327	-
<b>Total Cash Flow</b>	\$6,599,085	\$15,945,215	\$83,133,679	-

<sup>38</sup> Source: BA<sup>39</sup> Source: BA<sup>40</sup> Source: BA

**Table 3.9.5: Parking ROI by Milestone Year<sup>41</sup>**

Value	2026 2030	2031 2035	2036 2045	2026 2045
<b>Cumulative Net Revenue</b>	\$33,127,335	\$41,232,887	\$113,663,450	<b>\$188,023,672</b>
<b>Future Incremental Revenue</b>	\$1,973,411	\$10,078,963	\$51,355,601	<b>\$63,407,975</b>
<b>Total Investment</b>	<b>-\$31,922,560</b>	<b>-\$9,267,840</b>	<b>-\$149,143,456</b>	<b>-\$190,333,856</b>
<b>New Cash Flow</b>	<b>-\$29,949,149</b>	\$811,123	<b>-\$97,787,855</b>	-
<b>Total Cash Flow</b>	\$1,204,775	\$31,965,047	<b>-\$35,480,006</b>	-

**Table 3.9.6: Real Estate ROI by Milestone Year<sup>42</sup>**

Value	2026 2030	2031 2035	2036 2045	2026 2045
<b>Cumulative Net Revenue</b>	\$40,229,822	\$46,559,797	\$114,435,255	<b>\$201,224,875</b>
<b>Future Incremental Revenue</b>	\$1,948,729	\$8,278,704	\$37,873,069	<b>\$48,100,502</b>
<b>Total Investment</b>	\$0	<b>-\$106,560,765</b>	<b>-\$30,936,996</b>	<b>-\$137,497,761</b>
<b>New Cash Flow</b>	\$1,948,729	<b>-\$98,282,061</b>	\$6,936,073	-
<b>Total Cash Flow</b>	\$40,229,822	<b>-\$60,000,967</b>	\$83,498,259	-

### **Economic Impact**

Economic impact refers to the potential for a project to contribute to job creation and economic activity, both locally and regionally.

The economic impact assessment completed for the 2024 M/VP Update focuses on the stream of benefits generated by all activity at Port Everglades during the 20-year planning horizon. Consistent with the methodology used by to produce the FY 2018 Local and Regional Economic Impacts of Port Everglades final report, annual impacts in year five (2030), year 10 (2035) and year 20 (2045) of the M/VP were estimated in terms of jobs (including direct, indirect and induced jobs), personal income, business revenue, local purchases and State and local taxes. Impacts were estimated for each line of business at each milestone year, but not for each project.

<sup>41</sup> Source: BA

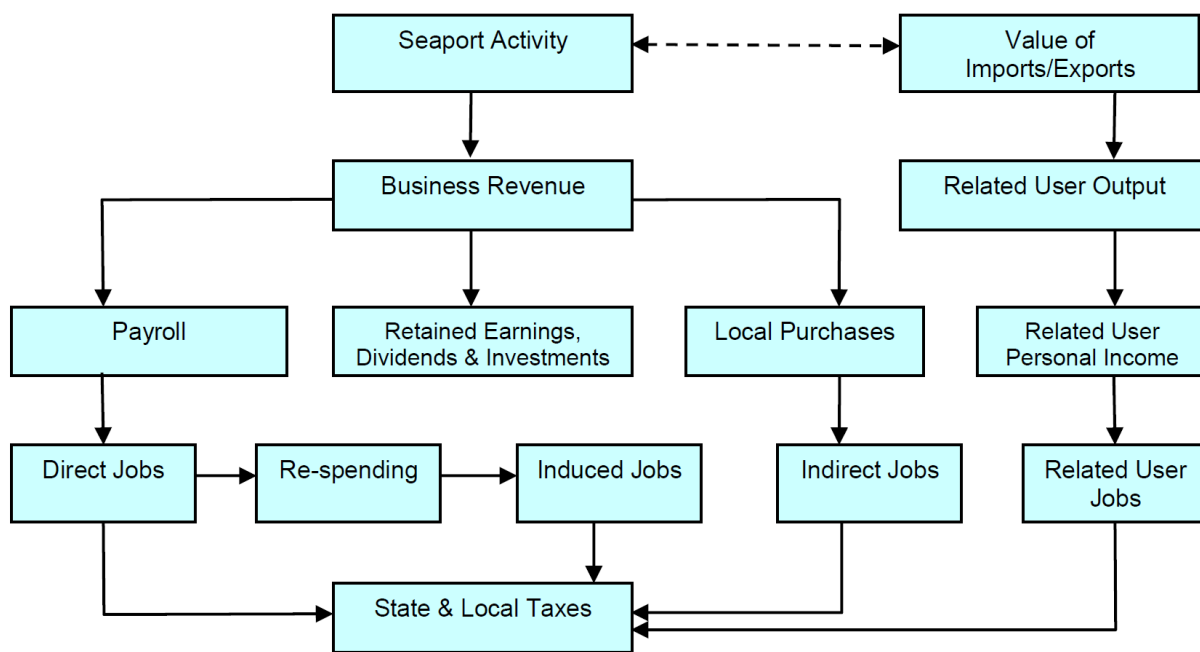
<sup>42</sup> Source: BA

**Figure 3.9.1** illustrates how seaport activity at Port Everglades impacts the local and regional economies. As shown, Port activity initially generates business revenue to the firms supplying services to the cargo and cruise industries. This revenue is then used to:

- Hire/employ people to provide these services (direct jobs), and
- Purchase other goods and services from local, national and international firms (indirect jobs).

Induced jobs are also created locally and throughout the regional economy due to purchases of goods and services by people directly employed as a result of Port activity. State and local taxes are generated at all levels by businesses and individuals alike.

**Figure 3.9.1: Flow of Economic Impacts of Seaport Activity Through the Economy<sup>43</sup>**



Descriptions of the economic impacts factored into this evaluation, including the three types of jobs created or supported by Port Everglades activity, are presented below:

• **Direct Jobs**

These are jobs with local firms providing support services to the seaport. These jobs are dependent on this activity and would suffer immediate dislocation if the seaport activity were to cease. Seaport direct jobs include jobs with railroads and trucking companies moving cargo to and from Port Everglades’ marine terminals, members of the ILA and Teamster’s Union, other non-union dockworkers, steamship agents, Broward County Sheriff’s Office, freight forwarders, ship chandlers, warehouse operators, bankers,

<sup>43</sup> Source: Martin Associates

lawyers, terminal operators, stevedores, etc. Direct employees created by cruise operations include jobs with firms providing direct vessel services – chandlers, pilots, longshoremen, line handlers, local advertising firms, caterers, liquor wholesalers, linen companies, security firms, waste disposal firms, parking, local transportation – as well as the firms providing services to the passengers on the vessels – hotels, taxi cabs, restaurants and tour packages. Also included are impacts generated at FLL due to cruise passengers arriving via air.

- **Indirect Jobs**

These include jobs generated in the local economy as a result of local purchases by firms directly dependent on seaport activity. These jobs include jobs in local office supply firms, equipment and parts suppliers, maintenance and repair services, and other similar jobs.

- **Induced Jobs**

These are jobs created locally and throughout the regional economy due to purchases of goods and services by those directly employed. These jobs are with grocery stores, the local construction industry, retail stores, health care providers, local transportation services, and other similar jobs that would be discontinued if seaport activity were to cease.

- **Employee Earnings**

These consist of wages and salaries and include a re-spending effect (local purchases of goods and services by those directly employed).

- **Business Revenue**

This consists of total business receipts by firms providing services in support of seaport activity.

- **State and Local Taxes**

These include taxes paid by individuals dependent upon seaport activity.

**Table 3.9.7** and **Table 3.9.8** show the anticipated economic impacts from the implementation of the projects included in the 2024 M/VP Update.

**Table 3.9.7: Economic Impact of 2024 M/VP Update<sup>44</sup>**

Impact Category	Containers (additional 600,000 TEU)	Bulk Cement (additional 650,000 tons)	Other Bulk (additional 140,000 tons and retain FLO/FLO)	Cruise (additional 1.2 million passengers)
<b>Jobs</b>				
<b>Direct</b>	1,714	69	27	1,538
<b>Induced</b>	1,555	64	26	864
<b>Indirect</b>	1,881	46	21	1,068
<b>Total Jobs</b>	<b>5,150</b>	<b>179</b>	<b>74</b>	<b>3,471</b>
<b>Personal Income (1,000)</b>				
<b>Direct</b>	\$90,690	\$3,716	\$1,585	\$52,531
<b>Induced</b>	\$218,373	\$8,948	\$3,817	\$108,107
<b>Indirect</b>	\$101,670	\$2,482	\$1,147	\$34,033
<b>Total Income</b>	<b>\$410,733</b>	<b>\$15,146</b>	<b>\$6,549</b>	<b>\$194,671</b>
<b>Business Services Revenue (1,000)</b>	<b>\$650,187</b>	<b>\$15,871</b>	<b>\$7,338</b>	<b>\$501,337</b>
<b>Local Purchases (1,000)</b>	<b>\$200,832</b>	<b>\$4,902</b>	<b>\$2,267</b>	<b>\$51,339</b>
<b>State and Local Taxes (1,000)</b>	<b>\$42,563</b>	<b>\$1,480</b>	<b>\$645</b>	<b>\$20,714</b>

**Table 3.9.8: Construction Impact of 2024 M/VP Update (One-Time Only, During Construction)<sup>45</sup>**

Impact Category	Containers	Bulk Cement	Other Bulk	Cruise
<b>Cost Estimate (1,000)</b>	\$341,000	\$224,000	\$194,000	\$1,598,000
<b>Total Person Hours</b>	10,434,821	6,854,545	5,936,526	48,899,835
<b>Personal Income (1,000)</b>	\$269,424	\$176,982	\$153,279	\$1,262,580
<b>State and Local Taxes (1,000)</b>	\$23,979	\$15,751	\$13,642	\$112,370

<sup>44</sup> Source: Martin Associates

<sup>45</sup> Source: Martin Associates

### **Future Adaptability**

Future adaptability refers to the potential for a project to help the Port remain relevant amid evolving trade flows and regulations.

### **Funding Leverage**

Funding leverage refers to the potential for a project to attract federal or state grants or private investment.

## **3.9.3 Sustainability**

The criteria that are included within the sustainability category assess how a project supports the Port's long-term operational and environmental goals, which include:

- Asset Preservation,
- Environmental Compliance,
- Resiliency, and
- Energy and Resource Efficiency.

Sustainability is an essential element of the Port's mission. Beyond environmental stewardship and compliance, sustainability also includes criteria related to preserving the Port's assets in a state of good repair, enhancing the resiliency of the Port, and reducing the use of the Port's resources over time. Descriptions of each criterion used to assess the sustainability of the projects included in the 2024 M/VP Update are provided below.

### **Asset Preservation**

Asset preservation refers to the potential for a project to extend or protect the life of the existing Port infrastructure.

### **Environmental Compliance**

Environmental compliance refers to the potential for a project to support the Port's regulatory compliance and environmental mitigation efforts.

### **Resiliency**

Resiliency refers to the potential for a project to enhance the Port's ability to withstand extreme events (such as extreme precipitation/storms and hurricanes) or disruptions.

### **Energy and Resource Efficiency**

Energy and resource efficiency refers to the potential for a project to reduce the Port's emissions and use of resources over time.

### 3.9.4 Project Selection Process

#### Development of Project Ideas

An iterative process was used to identify, evaluate and refine project ideas for potential inclusion in the 2024 M/VP Update. This process began with the AECOM team developing a range of project ideas based on the results of the Existing Conditions Assessment (Element 1) and Market Assessment (Element 2), as well as soliciting project ideas from Port staff, tenants, customers, users, and stakeholders through a series of interviews and meetings. These project ideas were presented, discussed, and reviewed with Port senior staff, as well as tenants and select stakeholders, through a series of meetings, presentations, workshops, and charettes to solicit feedback and develop the ideas into a list of potential projects that could be evaluated and scored.

#### Project Scoring

The projects identified and developed for potential inclusion in the 2024 M/VP Update were each scored for each criterion, i.e. the four criteria for each of the three categories (12 total criteria). Each criterion was scored from 1 to 6, where higher scores indicate greater alignment with strategic goals. The scoring system was color-coded to visualize priority and risk levels:

- Scores 1–2: Red Scale – Low alignment or potential,
- Scores 3–4: Yellow Scale – Moderate alignment, and
- Scores 5–6: Green Scale – Strong alignment.

A scoring graphic was created for every project to show the results of the scoring. An example of this graphic is shown in **Figure 3.9.2**.

**Figure 3.9.2: Example Project Scoring Graphic<sup>46</sup>**

A number of additional factors were considered when prioritizing (scoring) the individual projects, including:

- How the project is tied to the USACE Channel Deepening and Widening program,
- Does the project address immediate safety issues,
- Is the project already approved or funded,
- Is the project tied to other projects that would be implemented, and
- Is the project critical for immediate competitiveness.

### **Project Selection & Plan Development**

The scored projects were further evaluated and refined, then ranked to select the best-value projects. Scoring and ranking were initially performed by the AECOM team, with the results presented to senior Port staff, who were then asked to also perform individual scoring and ranking of the projects. The results (scores) of the Port assessments were averaged, reviewed by the Port executive team, and then used to further refine projects for a final ranking. This ranking was performed per business line, namely: Container, Cruise, Energy, Non-Container and Port-

<sup>46</sup> Source: AECOM

Wide/Other. The final rankings were again reviewed by the Port executive team and projects were selected for inclusion into the draft M/VP program.

Cost estimates were prepared for each project. The costs were prepared by the AECOM team and vetted with the Port for comparison with recent project cost and estimates developed for the Port's adopted 2025 and draft 2026 CIPs. The results of the financial modeling and affordability analyses were used to identify funding availability for the 5-, 10- and 20-year timeframes. The results from the market forecasts, capacity analyses, and needs assessments were used to scale the Port's future investments in line with projected growth by business line and a preliminary program was developed within anticipated budget constraints. The preliminary plan was reviewed with the Port executive team to ultimately develop the final list of projects for the 5-year Master Plan and 10- and 20-year Visions Plans for the 2024 M/VP Update.

## 3.10 Projects Included in the 2024 M/VP Update (Final Plan)

The 2024 Update of the Port Everglades M/VP, which encompasses the 20-year period from 2025-2044, comprises a total of 34 projects, with five of these projects anticipated to continue to be implemented in the 20+ year time horizon (i.e., beyond 2045). The projects selected for inclusion in the 2024 M/VP Update are distributed across the Plan milestone periods as follows:

- **0-5 Years (2026-2030)**            15 new projects (\$1,161.3 million)
- **5-10 Years (2031-2035):**        7 new projects, 6 continuing projects (\$833.8 million)
- **10-20 Years (2036-2045):**    12 new projects, 5 continuing projects (\$1,432.8 million)
- **20+ Years (2046+):**            0 new projects, 5 continuing projects (\$398.7 million)

Of these 34 projects, six are located in Northport, 13 in Midport, 10 in Southport, three are Port-wide projects (i.e., projects that impact multiple Port areas or business units), one is to be determined (i.e., the location for the project has not yet been identified), and one is located off-port (near-port). It is expected that over 20+ years, a total of \$3.83 billion (2025 dollars) will be required to implement all 34 projects. Of this total, it is anticipated that Port Everglades will be responsible for approximately 55 percent (\$2.11 billion) of the costs, with various private, State, and Federal entities contributing the remaining approximately 45 percent (\$1.72 billion). Element 4 of the 2024 M/VP includes additional details on third-party funding sources and strategies. The 34 projects proposed in the 2024 M/VP Update are listed in **Tables 3.10.1** through **3.10.4** by Plan milestone period.

**Table 3.10.1: 2024 Master/Vision Plan Projects (0-5 Years, 2026-2030)**

Project	Business Line	Location	Anticipated Cost in Period (millions)	Anticipated Total Cost (millions)
Griffin Road Access	Container	Southport	\$38.0	\$38.0
New VACIS Area in Southport	Container	Southport	\$3.5	\$3.5
Container Terminal Redevelopments*	Container	Southport	\$150.0	\$450.0
Container Terminal Utilities and Shore Power*	Container	Southport	\$3.0	\$100.0
Cruise Terminal 29 Development	Cruise	Midport	\$253.0	\$253.0
Cruise Terminal 29 Parking Structure	Cruise	Midport	\$68.0	\$68.0
Berths 16, 17 & 18 Bulkhead Improvements*	Cruise	Midport	\$60.4	\$103.0
Shore Power Systems for Cruise Terminals*	Cruise	Northport/ Midport	\$56.0	\$217.0
New Midport Parking Structures*	Cruise	Midport	\$84.0	\$168.0
Slip 1 Widening (Berths 9 & 10)	Energy	Northport	\$224.0	\$224.0
Port Maintenance Facility	Port-Wide/ Other	TBD**	\$60.0	\$60.0
Fire Station Upgrades	Port-Wide/ Other	Midport	\$10.0	\$10.0
Balearia Facilities at Berth 28A	Port-Wide/ Other	Midport	\$25.0	\$25.0
SE 10 <sup>th</sup> Avenue Property Redevelopment	Port-Wide/ Other	Off-Port	\$12.0	\$12.0
Channel Deepening and Widening*	Port-Wide/ Other	Port-Wide	\$114.3	\$494.0
<b>Total 5-Year Project Costs</b>			<b>\$1,161.3</b>	

\*Project appears in multiple 2024 M/VP planning periods.

\*\*Location for the Port Maintenance Facility has not yet been determined.

**Table 3.10.2: 2024 Master/Vision Plan Projects (5-10 Years, 2031-2035)**

Project	Business Line	Location	Anticipated Cost in Period (millions)	Anticipated Total Cost (millions)
Realignment of McIntosh Road	Container	Southport	\$27.0	\$27.0
Container Terminal Redevelopments*	Container	Southport	\$300.0	\$450.0
Container Terminal Utilities and Shore Power*	Container	Southport	\$3.0	\$100.0
Container Terminal Relocations from Midport	Container	Midport/ Southport	\$27.0	\$27.0
Add STS Cranes at Berth 30E*	Container	Southport	\$30.0	\$50.0
Berths 16, 17 & 18 Bulkhead Improvements*	Cruise	Midport	\$42.6	\$103.0
Shore Power Systems for Cruise Terminals*	Cruise	Northport/ Midport	\$60.0	\$217.0
Ground Transportation Facilities	Cruise	Midport	\$13.0	\$13.0
New Midport Parking Structures*	Cruise	Midport	\$84.0	\$168.0
Cruise Terminal 21*	Cruise	Midport	\$70.5	\$307.0
Berths 7 & 8 Bulkhead Improvements	Energy	Northport	\$73.0	\$73.0
Eller Drive Gate Reconfiguration	Port-Wide/ Other	Midport	\$14.0	\$14.0
Channel Deepening and Widening*	Port-Wide/ Other	Port-Wide	\$89.7	\$494.0
<b>Total 10-Year Project Costs</b>			<b>\$833.8</b>	

\*Project appears in multiple 2024 M/VP planning periods.

**Table 3.10.3: 2024 Master/Vision Plan Projects (10-20 Years, 2036-2045)**

Project	Business Line	Location	Anticipated Cost in Period (millions)	Anticipated Total Cost (millions)
Container Terminal Utilities and Shore Power*	Container	Southport	\$35.0	\$100.0
Add STS Cranes at Berth 30E*	Container	Southport	\$20.0	\$50.0
Add STS Crane at Berth 31-32	Container	Southport	\$20.0	\$20.0
Add STS Crane at Berth 30A/B/C	Container	Southport	\$20.0	\$20.0
East Extension of Berths 14-15	Non-Container	Midport	\$5.0	\$5.0
Berth 30E East Extension and RORO Ramp	Non-Container	Southport	\$30.0	\$30.0
Slip 3 Widening	Non-Container	Northport	\$224.0	\$224.0
Slip 2 Widening*	Non-Container	Northport	\$14.5	\$224.0
Shore Power Systems for Cruise Terminals*	Cruise	Northport/ Midport	\$51.0	\$217.0
Cruise Terminal 21*	Cruise	Midport	\$236.5	\$307.0
Additional Parking for Cruise Terminals 2 & 4	Cruise	Northport	\$32.0	\$32.0
Cruise Terminal 19	Cruise	Midport	\$177.0	\$177.0
Consolidated GTA	Cruise	Midport	\$52.0	\$52.0
Cruise Terminal 18*	Cruise	Midport	\$128.0	\$154.0
Cruise Terminal 26*	Cruise	Midport	\$61.8	\$116.0
New Petroleum Entrance South of Spangler	Energy	Northport	\$10.0	\$10.0
Channel Deepening and Widening*	Port-Wide/ Other	Port-Wide	\$290.0	\$494.0
<b>Total 20-Year Project Costs</b>			<b>\$1,432.8</b>	

\*Project appears in multiple 2024 M/VP planning periods.

**Table 3.10.4: 2024 Master/Vision Plan Projects (20+ Years, 2046+)**

Project	Business Line	Location	Anticipated Cost in Period (millions)	Anticipated Total Cost (millions)
Container Terminal Utilities and Shore Power*	Container	Southport	\$59.0	\$100.0
Slip 2 Widening*	Non-Container	Northport	\$209.5	\$224.0
Shore Power Systems for Cruise Terminals*	Cruise	Northport/ Midport	\$50.0	\$217.0
Cruise Terminal 18*	Cruise	Midport	\$26.0	\$154.0
Cruise Terminal 26*	Cruise	Midport	\$54.2	\$116.0
<b>Total 20+-Year Project Costs</b>			<b>\$398.7</b>	

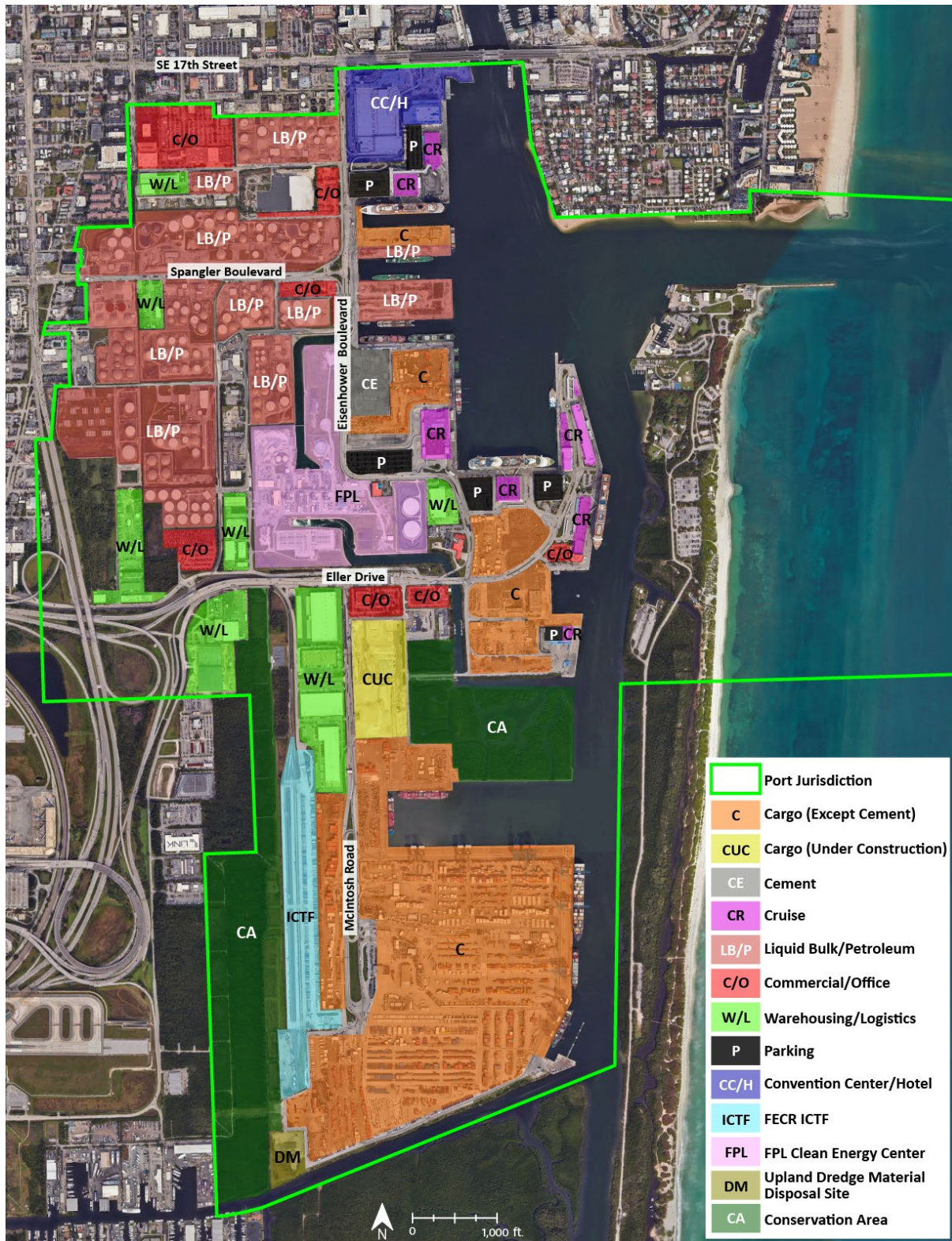
\*Project appears in multiple 2024 M/VP planning periods.

The following sections include summaries of each project presented in **Tables 3.10.1** through **3.10.4**. These projects represent the final list that was refined throughout development of the 2024 M/VP through stakeholder charrettes, workshops and meetings, and numerous meetings with Port management and staff (as discussed in Section 3.2). The various project alternatives were developed and then evaluated, discussed, and revised with the Port. Only those alternatives that were ultimately deemed sufficiently viable to be recommended for inclusion in the final 2024 Update of the Port Everglades M/VP are shown here. The projects that were deemed not to be viable are also presented at the end of this section, along with an explanation of why each project was not included in the final 2024 M/VP.

**3.10.1 Project Planning/Phasing**

Port Everglades’ existing land uses, along with projects proposed by previous M/VP Updates to alter these land uses, provided the foundation upon which the 2024 M/VP Update was developed. **Figure 3.10.1** shows existing land use at Port Everglades for the baseline year (2023).

Figure 3.10.1: Port Everglades Land Uses (December 2023)<sup>47</sup>



<sup>47</sup> Source: Port Everglades; Cordova Rodriguez & Associates. Note: For planning purposes only.

As previously stated in Section 3.2, an iterative planning process was used to define the projects necessary to allow Port Everglades to meet the highest possible percentage of future demand while maintaining a balanced portfolio of business lines and minimizing capital and operating costs. Three categories, each with four criteria, were considered throughout the process, which are also further discussed in Section 3.9:

- **Competitiveness:** Does the project enhance the Port’s ability to compete and grow within global trade networks?
- **Economics:** Does the project generate financial and economic value for the Port?
- **Sustainability:** Does the project support the Port’s long-term operational and environmental goals?

In addition to the projects themselves, the implementation and phasing of projects was considered throughout the M/VP development process. The five principal criteria used to evaluate project prioritization during the planning process included:

- Is the project tied to the USACE channel deepening/widening project in a way that would impact project sequencing?
- Is there an immediate safety or security issue that the project helps to address, improve, or resolve?
- Is the project already approved or funded?
- Is the project tied to other projects that would be implemented in a way that would impact project sequencing?
- Is the project critical for both near-term and long-term Port competitiveness?

Generally speaking, those projects that were deemed critical and are also already approved are all included in the 5-year Master Plan, which is why the costs associated with the 5-year Master Plan are higher than those of the other two milestone periods (10-year and 20-year). The differentiation between 10-year and 20-year projects is primarily a result of market forecast results, meeting the needs of Port tenants, the timing of the channel deepening and widening project, and financial constraints that necessarily make earlier implementation of the projects unlikely or impossible.

As time goes on, it is fully expected that both the currently recommended order of implementation and the actual start and completion years for many of the projects, and especially those identified as 10-year and 20-year-plus projects, will continue to evolve in line with market conditions, Port tenant and customer needs, funding availability, emerging Port priorities, and other internal and external factors, such as regional population growth and port industry and goods movement trends. However, it is the intent of the Port that the 5-year Master Plan be implemented to the extent possible as currently recommended, with the understanding that even some of the 5-year projects may change due to the factors listed above.

Each of the projects identified in Tables 3.10.1 through 3.10.4 were assessed using the different evaluation criteria, as discussed in Section 3.9 and presented in **Table 3.9.1**. The scoring is color-coded to visualize alignment with the Port’s strategic goals, as well as priority and risk levels, where:

- Red (L) represents low alignment or potential,
- Yellow (M) represents moderate alignment, and
- Green (S) represents strong alignment.

The results of that evaluation, shown by business line, are summarized in **Table 3.10.5**. Inclusion of projects in the 2024 M/VP Update were based on this assessment, as well as prioritization criteria discussed above and the needs of the Port and Port stakeholders.

**Table 3.10.5: Summary of Project Assessments by Business Line<sup>48</sup>**

Project	Competitiveness				Economics				Sustainability			
	Capacity	Efficiency	Market Positioning	Cargo/Market Diversification	ROI	Economic Impact	Future Adaptability	Funding Leverage	Asset Preservation	Environmental Compliance	Resiliency	Energy and Resource Efficiency
<b>Business Category: Container</b>												
Griffin Road Access	S	S	M	L	L	S	S	M	L	L	M	M
New VACIS Area in Southport	M	S	M	M	L	L	M	M	M	M	M	M
Container Terminal Redevelopments	S	S	S	S	S	S	S	M	S	M	M	S
Container Terminal Utilities and Shore Power	L	L	S	M	L	L	M	S	M	S	M	S
Realignment of McIntosh	S	S	M	L	L	S	S	L	L	M	L	S
Container Terminal Relocations from Midport	M	S	S	S	M	S	S	L	M	M	M	M
Add STS Cranes at Berth 30E	S	S	S	M	S	S	M	M	L	M	M	M
Add STS Cranes at Berths 31-32	S	S	S	M	S	S	M	M	L	M	M	M
Add STS Cranes at Berth 30A/B/C	M	M	S	M	M	S	M	M	L	M	M	M
<b>Business Category: Non-Container</b>												
East Extension of Berths 14-15	S	S	S	S	S	M	S	M	M	M	M	M

<sup>48</sup> Source: Port Everglades.

Project	Competitiveness				Economics				Sustainability			
	Capacity	Efficiency	Market Positioning	Cargo/Market Diversification	ROI	Economic Impact	Future Adaptability	Funding Leverage	Asset Preservation	Environmental Compliance	Resiliency	Energy and Resource Efficiency
Berth 30E East Extension and RORO Ramp	S	M	M	S	M	S	M	M	M	L	M	M
Slip 3 Widening	S	S	M	S	M	L	S	M	M	M	M	M
Slip 2 Widening	S	S	M	M	L	L	S	M	M	M	M	M
<b>Business Category: Cruise</b>												
Cruise Terminal 29 & Parking Structure	S	S	S	M	M	M	M	L	L	M	M	M
Berths 16,17 & 18 Bulkhead Improvements	L	L	L	L	L	M	S	M	S	S	S	M
Shore Power Systems for Cruise Terminals	M	M	S	M	M	L	M	S	M	S	S	S
Midport Parking Structures	S	S	M	M	S	L	M	M	M	M	M	M
Ground Transportation Facilities	M	S	M	M	M	M	M	M	S	M	M	S
Cruise Terminal 21	S	S	S	M	S	M	M	M	L	M	M	M
Additional Parking for Cruise Terminals 2 and 4	S	S	M	M	S	L	M	M	M	M	M	M
Cruise Terminal 19	L	S	S	S	M	M	M	L	M	M	M	M
Consolidated GTA	M	S	M	M	M	M	M	L	M	L	L	S
Cruise Terminal 18	M	S	S	M	M	M	M	L	M	M	M	M
Cruise Terminal 26	S	S	S	M	S	M	M	L	L	M	M	M
<b>Business Category: Energy</b>												
Slip 1 Widening (Berths 9 & 10)	S	S	M	M	S	L	S	M	M	M	M	M
Berths 7 & 8 Bulkhead Improvements	L	L	L	L	L	M	S	M	S	S	S	M
New Petroleum Entrance South of Spangler	S	S	M	L	L	L	S	M	L	L	M	M
<b>Business Category: Port-Wide/Other</b>												
Eller Drive Gate Reconfiguration	S	S	M	L	L	S	S	M	L	M	L	S
SE 10th Avenue Property Redevelopment	M	M	M	S	L	L	S	M	L	L	L	M

### 3.10.2 Identify Potential Funding Sources

Port Everglades has been successful in the past in securing private, State, and Federal funding in the form of public/private co-investment, grants and loans that have helped to develop several critical projects.

The 2024 Update assumes that Port Everglades will continue to be successful not only in securing State and Federal grant dollars but in achieving a greater degree of public/private co-investment in its facilities in partnership with its tenants and other users. These third-party partnerships are vital to the feasibility of the overall Plan. Not only can the Port not afford to develop all projects included in the 2024 Update using only Port funds, but it is no longer a reasonable expectation that the Port should have to do so given the number of public/private co-investment precedents that exist for both cruise and cargo projects at other ports across the U.S.

The possible public funding opportunities discussed below present a mix of potential State and Federal grant (general transportation and port-specific) and loan-related opportunities. All grant funding opportunities presented herein are both uncertain and possibly temporary and remain contingent upon their continued alignment with evolving federal and state policy agendas.

#### **State and Local Support**

State and local sources could continue to be solutions for funding. In Florida, FDOT and FDEP have and continue to provide funding for port development projects. Funding from these agencies could potentially be used for infrastructure needs and upgrades. FDEP continues to provide funding for resilience improvements, particularly bulkhead upgrades projected in several terminals across the Port.

#### **Recent Trends in Federal Funding**

Historically, federal administration transitions bring significant shifts in policy priorities, which in turn influence how federal funding is allocated and awarded. The transition in January 2025 is no exception and is even amplified due to the ending of the Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA), two of the most substantial infrastructure investments in U.S. history. There have been several key policy shifts that have been made public thus far. These early signals can be used to help guide the funding strategy and help reprioritize and scope projects to be better aligned with federal priorities.

#### **Justice40 Recession**

The Justice40 initiative was a federal funding requirement that 40 percent of the overall funding from specific federal programs were to benefit disadvantaged communities, defined by the Climate and Economic Justice Screening Tool. The current administration is instead prioritizing areas of persistent poverty, which are defined by the United States Department of Agriculture's (USDA) Economic Research Service, as "an area that's maintained a poverty rate of 20 percent or

higher for 4 consecutive measurement periods spanning approximately 30 years.”<sup>49</sup> In the most recent release by the USDA, none of Florida’s port counties have been classified as a Persistent Poverty County.

### Transportation Infrastructure

The United States Department of Transportation (USDOT) has released initiatives, memos, letters, and statements indicating that it will begin prioritizing highway, freight, and safety projects, while deprioritizing active transportation and transit projects. Notably, there has been specific language around prioritizing funding for truck parking and freight-related projects. This shift is favorable for projects that are pursuing federal funding.

### Program Consolidation and Cuts

While few changes have occurred so far, the current U.S. administration has recommended the consolidation of federal funding programs. The administration’s “skinny budget” recommended increases in funding to Nationally Significant Multimodal Freight and Highway Projects grants program (INFRA), Consolidated Rail Infrastructure and Safety Improvements program, Better Utilizing Investments to Leverage Development (BUILD) program, and Port Infrastructure Development Program (PIDP). A potential decrease in overall discretionary funding is expected, with some of those funds being redirected towards specific programs like INFRA. Separately, these discretionary funds could be reallocated towards formula programs, allowing the states to more directly control their spending, such as with previous Republican administrations.

### Private Investment and TIFIA

USDOT has made several moves this year which indicate a focus on expanding private investments and the use of the Transportation Infrastructure Finance and Innovation Act (TIFIA) in transportation projects. USDOT has expanded TIFIA to allow loan coverage to support 49 percent of the total cost of a project, a 13 percent increase. Separately, USDOT is continuing to support and fund programs and projects which promote private investment, public-private partnerships, and other innovative and non-traditional financing methods.

### Competitive Grants

Ports can (and do) apply for competitive federal grants to fund portions of their projects or initiatives. Ports are also increasingly partnering with their tenants for these grant applications, which show contributions from private industry, thereby improving the competitiveness of the applications. This has become more important as multiple ports across the U.S. are competing for funding from the same programs, which have funding caps.

Competitive grants are merit-based programs where the awarding agency reviews the submitted applications and awards the project that is deemed to best meet the program goals. With some competitive federal grants, a port would need to submit through an eligible partner. Some of

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<sup>49</sup> Source: USDA Economic Research Service.

these programs are funded through federal fiscal year (FFY) 2026 from the IJA and IRA, while others need reauthorization before awarding funding.

### Port-Specific and Clean Energy Grant Funding

The following six programs identified for port-specific and/or clean energy funding are detailed in this section:

- PIDP
- Diesel Emissions Reductions Act (DERA)
- Reduction of Truck Emissions at Port Facilities
- United States Marine Highway Program (USMHP)
- Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)
- Advanced Transportation Technologies and Innovation (ATTAIN)

#### *Port Infrastructure Development Program*

PIDP assists in funding eligible projects for the purpose of improving the safety, efficiency, or reliability of the movement of goods through ports and intermodal connections to ports. This program is detailed in **Table 3.10.6**.

**Table 3.10.6: Port Infrastructure Development Program<sup>50</sup>**

<b>Issuing Agency</b>	Maritime Administration, USDOT
<b>Port Relevant Applicant Eligibility Criteria</b>	<ul style="list-style-type: none"> <li>• A State;</li> <li>• A political subdivision of a State, or a local government;</li> <li>• A public agency or publicly chartered authority established by 1 or more States;</li> <li>• A special purpose district with a transportation function;</li> <li>• A multistate or multijurisdictional group of entities described above;</li> <li>• A lead entity described above jointly with a private entity or group of private entities, including the owners or operators of a facility, or collection of facilities at a port.</li> </ul>
<b>Funding Cycle</b>	Yearly (through FFY 2026). Applications for the latest round were due September 10, 2025.
<b>Project Eligibility</b>	<p>Eligible projects for FFY 2025 PIDP shall be located either within the boundary of a port, or outside the boundary of a port and directly related to port operations or to an intermodal connection to a port. Grants may be made for capital projects that will be used to improve the safety, efficiency, or reliability of:</p> <ul style="list-style-type: none"> <li>• The loading and unloading of goods at the port, such as for marine terminal equipment;</li> <li>• The movement of goods into, out of, around, or within a port, such as for highway or rail infrastructure, intermodal facilities, freight intelligent transportation systems, and digital infrastructure systems;</li> <li>• Operational improvements, including projects to improve port resilience;</li> <li>• Resiliency in response to environmental factors; or</li> <li>• Infrastructure that supports seafood and seafood-related businesses.</li> </ul>
<b>Cost Share</b>	Maximum 80 percent federal but may increase for projects in a rural area or for a small project at a small port.
<b>Estimated Program Funding</b>	Total funding available (FFY 2025): \$500 million
<b>Average Past Award</b>	FFY 2023: \$653 million awarded to 41 port projects (average \$16 million per port). Of the total, 26 small port grant awards and 15 for large ports.

*Diesel Emissions Reductions Act*

The DERA program funds projects that achieve significant reductions in diesel emissions and exposure, particularly from fleets operating in areas designated by the United States

<sup>50</sup> Source: USDOT.

Environmental Protection Agency (USEPA) Administrator as poor air quality areas. This program is detailed in **Table 3.10.7**.

**Table 3.10.7: Diesel Emissions Reductions Act<sup>51</sup>**

<b>Issuing Agency</b>	USEPA
<b>Port Relevant Applicant Eligibility Criteria</b>	<ul style="list-style-type: none"> <li>• A regional, state, or local agency</li> <li>• Port authorities which have jurisdiction over transportation or air quality</li> </ul>
<b>Deadline/Funding Cycle</b>	<p>Last advertised deadline date posted by FDEP (a State Pass-Through Entity) was March 16, 2021.</p> <p>Last competitive grant at the national level via USEPA was offered in FFY 2022–2023 and closed in December 2023.</p>
<b>Project Eligibility</b>	<p>Eligible diesel vehicles, engines and equipment may include buses, Class 5 – Class 8 heavy-duty highway vehicles, marine engines, locomotives and nonroad engines, equipment or vehicles such as those used in construction, handling of cargo, agriculture, mining or energy production.</p> <p>Eligible diesel emissions reduction solutions include verified retrofit technologies such as exhaust after-treatment technologies, engine upgrades, and cleaner fuels and additives, verified idle reduction technologies, verified aerodynamic technologies, verified low rolling resistance tires, certified engine replacements and conversions, and certified vehicle or equipment replacement.</p>
<b>Match Requirement</b>	<p>Mandatory non-federal cost share varies based on the eligible technologies, ranging between zero percent to 75 percent. Examples include:</p> <ul style="list-style-type: none"> <li>• For USEPA-verified marine shore connection systems, the local mandatory cost share is 75 percent;</li> <li>• Drayage truck replacement (50 percent);</li> <li>• Vehicle or equipment replacement with zero-tailpipe-emission power Source (55 percent).</li> </ul>
<b>Estimated Program Funding</b>	Total Funding: Approximately \$50-\$60 million (\$46 million in discretionary awards in 2021)
<b>Average Past Award</b>	2022-2023: awards ranged from \$34,000 to \$6.2 million

<sup>51</sup> Source: USEPA.

*Reduction of Truck Emissions at Port Facilities*

The Reduction of Truck Emissions at Port Facilities program awards competitive grants to coordinate and provide funding to test, evaluate, and deploy projects that reduce port-related emissions from idling trucks, including through the advancement of port electrification and improvements in efficiency, focusing on port operations, including heavy-duty commercial vehicles, and other related projects. This program is detailed in **Table 3.10.8**.

**Table 3.10.8: Reduction of Truck Emissions at Port Facilities Program<sup>52</sup>**

<b>Issuing Agency</b>	Federal Highway Administration, USDOT
<b>Port Relevant Applicant Eligibility Criteria</b>	<ul style="list-style-type: none"> <li>• State Governments;</li> <li>• Local Governments;</li> <li>• Planning and Project Organizations;</li> <li>• Transportation Providers and Operators;</li> <li>• Private-Sector Applicants</li> <li>• Including entities that 1) have authority over, operate, or utilize port facilities and/or intermodal port transfer facilities, 2) have authority over areas within or adjacent to ports and intermodal port transfer facilities, or 3) will test and/or evaluate technologies that reduce truck emissions at port facilities and/or intermodal port transfer facilities.</li> </ul>
<b>Deadline/Funding Cycle</b>	Applications for the most recent round (FFY 2023) were due July 26, 2023. Funding is available until FFY 2026.
<b>Project Eligibility</b>	This program aims to reduce port-related emissions from idling trucks, including through the advancement of port electrification and improvements in efficiency. Eligible project locations for deployment projects include areas within or adjacent to ports and intermodal port transfer facilities. Testing and evaluation projects can be conducted anywhere but must be focused on reducing truck emissions within or adjacent to ports and/or intermodal port transfer facilities.
<b>Cost Match</b>	80 percent federal match
<b>Estimated Program Funding and</b>	Total Funding: \$160 million
<b>Average Past Award</b>	Past awards ranged from \$642,258 to \$34.8 million.

<sup>52</sup> Source: USDOT.

### *U.S. Marine Highway Program*

The USMHP provides funding support to Marine Highway Transportation Projects or components of projects that: 1) provide a coordinated and capable alternative to landside transportation; mitigate or relieve landside congestion; promote Marine Highway Transportation; or use vessels documented under 46 United States Code chapter 121; and 2) develop, expand, or promote Marine Highway Transportation or shipper use of Marine Highway Transportation. This program is detailed in **Table 3.10.9**.

**Table 3.10.9: U.S. Marine Highway Program<sup>53</sup>**

<b>Issuing Agency</b>	Maritime Administration, USDOT
<b>Port Relevant Applicant Eligibility Criteria</b>	<ul style="list-style-type: none"> <li>• State</li> <li>• Political subdivision of a State or a local government</li> <li>• United States MPO</li> <li>• United States port authority</li> <li>• United States private sector operator of Marine Highway Projects or private sector owners of facilities</li> </ul>
<b>Deadline/Funding Cycle</b>	Applications for the most recent round (FFY 2025) were due July 15, 2025. Funding is available until FFY 2026.
<b>Project Eligibility</b>	Eligible projects may be either capital projects, development phase, or Marine Highway Transportation Planning Activities. Eligible project activities include projects or components of projects that 1) provide a coordinated and capable alternative to landside transportation; mitigate or relieve landside congestion; promote Marine Highway Transportation; or use vessels documented under 46 United States Code chapter 121; and 2) develop, expand, or promote Marine Highway Transportation or shipper use of Marine Highway Transportation.
<b>Cost Match</b>	80 percent federal match
<b>Estimated Program Funding</b>	Total program funding in 2025 was \$14 million
<b>Average Past Award</b>	Awards ranged from \$277,766 to \$3.3 million in FFYs 2023 and 2024.

### *Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation*

The PROTECT program funds eligible activities that will improve the ability of an existing surface transportation asset to withstand one or more elements of a weather event or natural disaster, or to increase the resilience of surface transportation infrastructure from the impacts of changing

<sup>53</sup> Source: USDOT.

conditions such as sea level rise, flooding, wildfires, extreme weather events, and other natural disasters. This program is detailed in **Table 3.10.10**.

**Table 3.10.10: Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Program<sup>54</sup>**

<b>Issuing Agency</b>	Federal Highway Administration, USDOT
<b>Port Relevant Applicant Eligibility Criteria</b>	The PROTECT Discretionary Grant Program provides broad applicant eligibility for all levels of government, including port authorities, to be direct recipients of funds.
<b>Deadline/Funding Cycle</b>	Applications for the most recent round (FFY 2025) were due in February 2025. Funding is available until FFY 2026.
<b>Project Eligibility</b>	There are several PROTECT sub-programs: <ul style="list-style-type: none"> <li>• Resilience Improvement Grants – for standard resilience projects,</li> <li>• Community Resilience and Evacuation Routes – for the resilience of evacuation routes,</li> <li>• Planning Grants – for the planning of resilience projects, and</li> <li>• Coastal Projects.</li> </ul>
<b>Cost Match</b>	80 percent federal match
<b>Estimated Program Funding</b>	Total FFY 2025 program funding and award ceiling: \$876 million Award floor: \$100,000

*Advanced Transportation Technologies and Innovation*

The ATTAIN program provides competitive grants to deploy, install, and operate advanced transportation technologies to improve safety, mobility, efficiency, system performance, intermodal connectivity, and infrastructure return on investment. This program is detailed in **Table 3.10.11**.

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<sup>54</sup> Source: USDOT.

**Table 3.10.11: Advanced Transportation Technologies and Innovation Program<sup>55</sup>**

<b>Issuing Agency</b>	Federal Highway Administration, USDOT
<b>Port Relevant Applicant Eligibility Criteria</b>	Eligible applicants are State or local governments, transit agencies, MPOs, or other political subdivisions of a State or local government (such as publicly owned toll or port authorities), or a multijurisdictional group or consortia of research institutions or academic institutions.
<b>Deadline/Funding Cycle</b>	The FFYs 2025-2026 Notice of Funding Opportunity (NOFO) is scheduled to be released by the first quarter of calendar year 2026.
<b>Project Eligibility</b>	<p>Grant recipients may use funds under this program to deploy the following advanced transportation and congestion management technologies:</p> <ul style="list-style-type: none"> <li>• Advanced traveler information systems;</li> <li>• Advanced transportation management technologies;</li> <li>• Advanced transportation technologies to improve emergency evacuation and responses by federal, state, and local authorities;</li> <li>• Infrastructure maintenance, monitoring, and condition assessment;</li> <li>• Advanced public transportation systems;</li> <li>• Transportation system performance data collection, analysis, and dissemination systems;</li> <li>• Advanced safety systems, including vehicle-to-vehicle and vehicle-to-infrastructure communications, technologies associated with automated vehicles, and other collision avoidance technologies, including systems using cellular technology;</li> <li>• Integration of intelligent transportation systems with the smart grid and other energy distribution and charging systems;</li> <li>• Integrated corridor management systems;</li> <li>• Advanced parking reservation or variable pricing systems or systems to assist trucks in locating available truck parking;</li> <li>• Electronic pricing, toll collection, and payment systems;</li> <li>• Technology that enhances high-occupancy-vehicle toll lanes, cordon pricing, or congestion pricing;</li> <li>• Integration of transportation service payment systems;</li> <li>• Advanced mobility access and on-demand transportation service technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals;</li> <li>• Retrofitting dedicated short-range communications technology deployed as part of an existing pilot program to cellular vehicle-to-everything</li> </ul>

<sup>55</sup> Source: USDOT.

	<p>technology, subject to the condition that the retrofitted technology operates only within the existing spectrum allocations for connected vehicle systems; or</p> <ul style="list-style-type: none"> <li>Advanced transportation technologies, in accordance with the research areas described in section 6503 of Title 491.</li> </ul>
<b>Cost Match</b>	80 percent federal match
<b>Estimated Program Funding</b>	<p>Total FFYs 2023-2024 program funding: \$120 million</p> <p>Award ceiling: \$12 million</p>
<b>Average Past Award</b>	FFYs 2023-2024 award range: \$551,732 to \$10.6 million

General Infrastructure Grant Opportunities

The following two grant opportunities described here are awarded on a competitive basis to surface transportation infrastructure projects and are detailed in this section:

- Multimodal Project Discretionary Grant (MPDG)
- BUILD

*Multimodal Project Discretionary Grant*

The MPDG opportunity contains three grant programs: the National Infrastructure Project Assistance grants program (MEGA), the Nationally Significant Multimodal Freight and Highway Projects grants program (INFRA), and the Rural Surface Transportation Grant program (Rural).<sup>56</sup> The funding opportunities are awarded on a competitive basis for surface transportation infrastructure projects – including highway and bridge, marine highway, and freight projects, or groups of such projects – with significant national or regional impact. This program is detailed in **Table 3.10.12**.

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<sup>56</sup> Note: Most ports would not be eligible to apply to the Rural program, as they must reside outside of urbanized areas with a population of over 200,000. Populations above 200,000 will not be considered rural.

**Table 3.10.12: Multimodal Project Discretionary Grant Program<sup>57</sup>**

<b>Issuing Agency</b>	Office of the Secretary, USDOT
<b>Port-Relevant Applicant Eligibility Criteria</b>	<ul style="list-style-type: none"> <li>• A State or a group of States;</li> <li>• A unit of local government or a political subdivision of a State;</li> <li>• A special purpose district or public authority with a transportation function, including a port authority;</li> <li>• A partnership between Amtrak and 1 or more entities described above;</li> <li>• A group of entities described above;</li> </ul>
<b>Deadline/Funding Cycle</b>	<p>For the latest round of funding, applications were due on May 6, 2024.</p> <p>Yearly (through FFY 2026); additional funding cycles are uncertain as all awards under IIJA have been made. The program will need reauthorization to continue.</p>
<b>Port-Related Project Eligibility</b>	<ul style="list-style-type: none"> <li>• A freight intermodal (including public ports) or freight rail project that provides public benefit;</li> <li>• A surface transportation project within the boundaries or functionally connected to an international border crossing that improves a facility owned by federal/state/local government and increases throughput efficiency</li> <li>• A project for a marine highway corridor that is functionally connected to the National Highway Freight Network and is likely to reduce road mobile source emissions</li> <li>• A highway, bridge, or freight project on the National Multimodal Freight Network</li> <li>• A project on a publicly owned highway or bridge that provides or increases access to an agricultural, commercial, energy, or intermodal facility that supports the economy of a rural area</li> </ul>
<b>Cost Share</b>	Maximum 80 percent federal for MEGA and INFRA
<b>Estimated Program Funding</b>	<p>INFRA: \$2.7 billion total funding; \$2.27 billion award ceiling; \$5 million award floor</p> <p>MEGA: \$1.7 billion total funding; \$1 billion award ceiling</p>

### *Better Utilizing Investments to Leverage Development*

The BUILD grant program provides grants for surface transportation infrastructure projects with significant local or regional impact. The eligibility requirements of BUILD allow project sponsors to pursue multi-modal and multi-jurisdictional projects that are more difficult to fund through other grant programs. This program is detailed in **Table 3.10.13**.

<sup>57</sup> Source: USDOT.

**Table 3.10.13: Better Utilizing Investments to Leverage Development Program<sup>58</sup>**

<b>Issuing Agency</b>	USDOT
<b>Port-Relevant Applicant Eligibility Criteria</b>	<ul style="list-style-type: none"> <li>• States and the District of Columbia</li> <li>• Any territory or possession of the United States</li> <li>• A unit of local government</li> <li>• A public agency or publicly chartered authority established by one or more States</li> <li>• A special purpose district or public authority with a transportation function, including a port authority</li> <li>• A multi-State or multijurisdictional group of entities that are separately eligible</li> </ul>
<b>Deadline/Funding Cycle</b>	Applications for the most recent round (FFY 2025) were due January 30, 2025; Yearly through FFY 2026. The BUILD program is expected to open again in fall 2025.
<b>Project Eligibility</b>	Planning and/or constructing surface transportation infrastructure
<b>Cost Share</b>	Maximum 80 percent Urban/Rural (based on FFY 2025 NOFO)
<b>Estimated Program Funding</b>	USDOT considered 195 Projects of Merit in FFY 2024 requesting nearly \$2.4 billion under Round 1.
<b>Average Past Award</b>	<ul style="list-style-type: none"> <li>• 109 projects were awarded a total of \$1.32 billion</li> <li>• Awards were made to projects in 37 states</li> <li>• Awards ranged from \$160,000 to \$25 million</li> </ul>

### **Federal Non-Grant Financing Mechanisms**

Federal non-grant financing mechanisms provide useful tools to complement traditional grant funding. These financing mechanisms extend the impact of limited federal and state grant dollars while enabling larger and more complex projects to move forward. Unlike grants, which provide one-time funding, tools like Private Activity Bonds (PABs) and Transportation Infrastructure Finance and Innovation Act (TIFIA) loans lower borrowing costs, improve creditworthiness, and attract private capital into public infrastructure. This not only leverages additional investment but also spreads financial risk, provides flexibility in structuring project delivery, and allows agencies to align repayment with long-term revenue streams (such as tolls, fees, or dedicated taxes).

The eligibility of ports varies with the type of instrument. In the case of PABs, these are issued by a public entity on behalf of a private developer/operator who then benefits from tax-exempt financing costs. However, in the case of TIFIA funding, ports can fall under the category of special

<sup>58</sup> Source: USDOT.

authorities that own or operate transportation facilities but are not general-purpose state or local governments.

Private Activity Bonds

PABs are tax-exempt debt instruments which offer a financing option at a lower cost than comparable taxable bonds for a range of transportation projects that are privately developed, built, financed, operated, and/or maintained utilizing public-private partnership project delivery methods. This program is detailed in **Table 3.10.14**.

**Table 3.10.14: Private Activity Bonds<sup>59</sup>**

<b>Issuing Agency</b>	USDOT, Build America Bureau
<b>Qualified Facilities for which PABs can be issued</b>	States administer PAB allocations for all listed facilities except for one category of facilities: qualified surface transportation projects, international bridge or tunnel projects, and rail-truck/truck-rail freight transfer facilities. USDOT administers PAB allocations for this category of qualified facilities.  States administer their PABs allocation programs, subject to state volume caps set up by the Internal Revenue Service. Congress determines USDOT's administered PAB allocation authority cap.
<b>Deadline/Funding Cycle</b>	Rolling
<b>Estimated Program Funding</b>	Allocations (as of August 15, 2025): <ul style="list-style-type: none"> <li>• Total authorized (USDOT): \$30 billion</li> <li>• Total allocated and issued: \$23.9 billion</li> <li>• Total allocated and yet-to-be issued: \$5.0 billion</li> <li>• Total currently available to be allocated: \$1.1 billion</li> </ul>

Transportation Infrastructure Finance and Innovation Act

The goal of the TIFIA program is to leverage limited federal resources and stimulate capital market investment in transportation infrastructure by providing credit assistance in the form of direct loans, loan guarantees, and standby lines of credit (rather than grants) to projects of national or regional significance. This program is detailed in **Table 3.10.15**.

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<sup>59</sup> Source: USDOT.

**Table 3.10.15: Transportation Infrastructure Finance and Innovation Act Program<sup>60</sup>**

<b>Issuing Agency</b>	USDOT, Build America Bureau
<b>Eligible Sponsors</b>	State governments, state infrastructure banks, private firms, special authorities, local governments, transportation improvement districts
<b>Deadline/Funding Cycle</b>	Rolling
<b>Port-Related Eligible Projects</b>	<ul style="list-style-type: none"> <li>• Intelligent Transportation Systems</li> <li>• Intermodal Connectors</li> <li>• Freight Transfer Facilities</li> <li>• Surface Transportation Elements of Port Projects</li> </ul>
<b>Minimum Anticipated Project Cost</b>	<p>Minimum Anticipated Project Costs:</p> <ul style="list-style-type: none"> <li>• \$15 million for intelligent transportation system projects</li> <li>• \$50 million for all other eligible non-transit-oriented surface transportation projects</li> </ul>
<b>Other Requirements</b>	<p><b>TIFIA Credit Assistance Limit:</b> Credit assistance limited to up to 49 percent of reasonably anticipated eligible project costs. Revenue-backed public-private partnership projects' funding plans are required to include at least 25 percent in private co-investment to be eligible. Additionally, some projects may require further analysis to be eligible for financing.</p> <p><b>Investment Grade Rating:</b> Senior debt and TIFIA loan must receive investment-grade ratings from at least two nationally recognized credit rating agencies (only one rating required if less than \$75 million).</p> <p><b>Dedicated Repayment Source:</b> The project must have a dedicated revenue source pledged to secure both the TIFIA and senior debt financing.</p>

### Updated Benefit-Cost Analysis Criteria

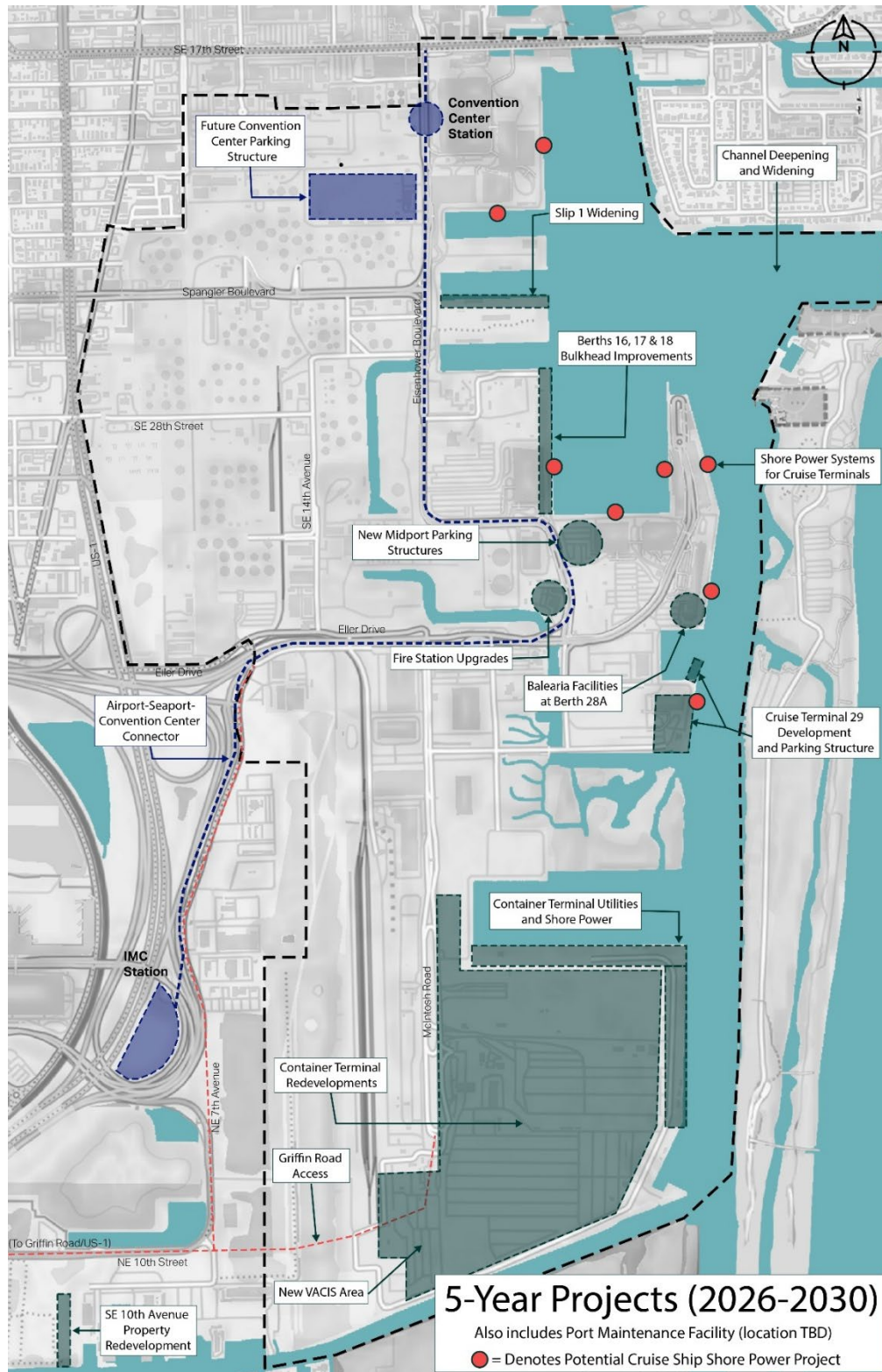
Benefit-cost analysis (BCA) is an economic framework used to evaluate competitive projects by assessing and comparing their positive and negative outcomes. BCAs quantify a project's benefit-cost ratio, which is a key factor in funding decisions for many of the larger competitive USDOT grant programs. USDOT's BCA guidance was updated in May 2025 to adjust values and assumptions from the prior administration. Fully understanding, defining, and strategically presenting the components of a project using the updated guidance can have meaningful impacts on a project's competitiveness when pursuing federal funding.

<sup>60</sup> Source: USDOT.

### 3.10.3 5-Year Master Plan/CIP Redevelopment

**Figure 3.10.2** illustrates all 15 projects proposed to begin construction during the initial 5-year Master Plan, which will be the basis for the CIP. The 5-Year Master Plan covers the years 2026 through 2030.

Figure 3.10.2: Proposed 5-Year Projects at Port Everglades<sup>61</sup>



<sup>61</sup> Source: AECOM. Notes: For planning purposes only.

These 15 projects are distributed across three of the Port's four main business lines, including 4 container projects, 5 cruise projects, and 1 energy project, as well as 5 projects that have impacts port-wide across business lines. These projects are anticipated to be funded with a mix of Port and non-Port funds as shown in **Table 3.10.16**.

**Table 3.10.16: 2024 Master/Vision Plan Projects and Funding Sources (0-5 Years, 2026-2030)**

Project	Port Funds	Private Funds	State Funds	Federal Funds	Total Period Cost
Griffin Road Access	\$34.8	-	\$3.2	-	\$38.0
New VACIS Area in Southport	\$3.5	-	-	-	\$3.5
Container Terminal Redevelopments*	-	\$150.0	-	-	\$150.0
Container Terminal Utilities and Shore Power*	\$3.0	-	-	-	\$3.0
<b>Container Subtotal</b>	<b>\$41.3</b>	<b>\$150.0</b>	<b>\$3.2</b>	<b>-</b>	<b>\$194.5</b>
Cruise Terminal 29 Development	\$76.2	\$151.8	\$25.0	-	\$253.0
Cruise Terminal 29 Parking Structure	\$61.6	-	\$6.4	-	\$68.0
Berths 16, 17 & 18 Bulkhead Improvements*	\$9.3	-	\$31.8	\$19.3	\$60.4
Shore Power Systems for Cruise Terminals*	\$52.7	-	-	\$3.3	\$56.0
New Midport Parking Structures*	\$80.8	-	\$3.2	-	\$84.0
<b>Cruise Subtotal</b>	<b>\$280.6</b>	<b>\$151.8</b>	<b>\$66.4</b>	<b>\$22.6</b>	<b>\$521.4</b>
Slip 1 Widening (Berths 9 & 10)	\$146.3	-	\$77.7	-	\$224.0
<b>Energy Subtotal</b>	<b>\$146.3</b>	<b>-</b>	<b>\$77.7</b>	<b>-</b>	<b>\$224.0</b>
Port Maintenance Facility	\$53.2	-	\$6.8	-	\$60.0
Fire Station Upgrades	\$6.8	-	\$3.2	-	\$10.0
Balearia Facilities at Berth 28A	-	\$25.0	-	-	\$25.0
SE 10 <sup>th</sup> Avenue Property Redevelopment (Former Shaw Property)	\$12.0	-	-	-	\$12.0
Channel Deepening and Widening*	\$44.3	-	\$70.0	-	\$114.3
<b>Port-Wide/Other Subtotal</b>	<b>\$116.3</b>	<b>\$25.0</b>	<b>\$80.0</b>	<b>\$0.0</b>	<b>\$221.3</b>
<b>Total 5-Year Project Costs</b>	<b>\$584.5</b>	<b>\$326.8</b>	<b>\$227.3</b>	<b>\$22.7</b>	<b>\$1,161.3</b>

\*Project appears in multiple 2024 M/VP planning periods.

A discussion of projects proposed in the 5-year Master Plan by business line is provided below.

## **Container Business Line**

A total of four container business line projects are included in the 5-year Master Plan:

- Griffin Road Access,
- New VACIS Area in Southport,
- Container Terminal Redevelopments, and
- Container Terminal Utilities and Shore Power.

Each container business line project is discussed further in the sections below.

### **Griffin Road Access**

**Total Estimated Project Cost:** \$38.0 million

**Project Location:** Southport

**Port Business Line:** Container

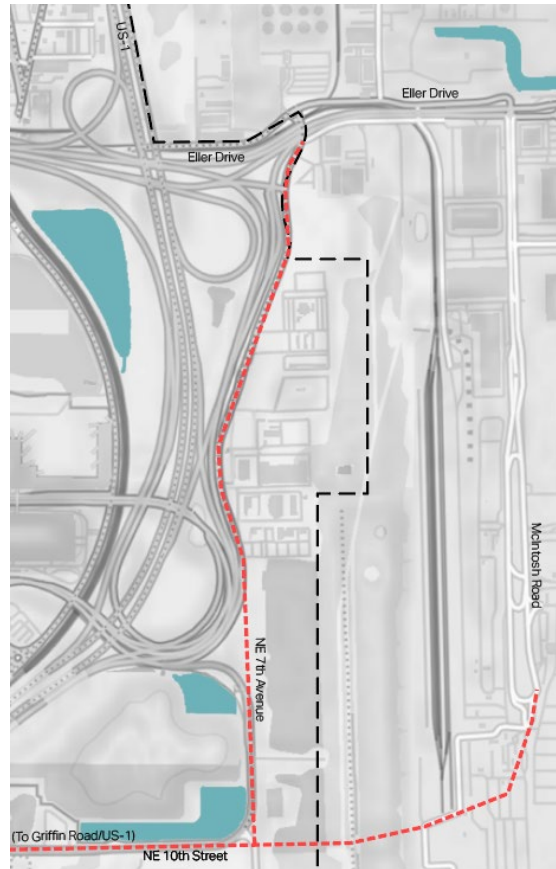
**Plan Period(s):** 0-5 years

The Griffin Road Access project is potentially one of the most impactful container business line projects proposed in the 5-year Master Plan. Currently, access to Southport is via McIntosh Road from Eller Drive, which is a one-way in, one-way out road network. All trucks that handle container pick-ups and drop-offs traverse this network and enter/exit at the McIntosh Road/ Eller Drive intersection. The existing security gates on McIntosh Road and Eller Drive both, at various times, contribute to traffic congestion on these roads and at the gates.

The proposed project includes a new Port access gate at the southwest corner of the Port Jurisdictional Area that would connect to an eastward extension of Griffin Road. This new access route would allow for a direct connection to the south end of McIntosh Road in Southport. The focus of this project is to provide a new entry/exit point for trucks to move containers to and from the Southport container terminals, as shown in **Figure 3.10.3**.

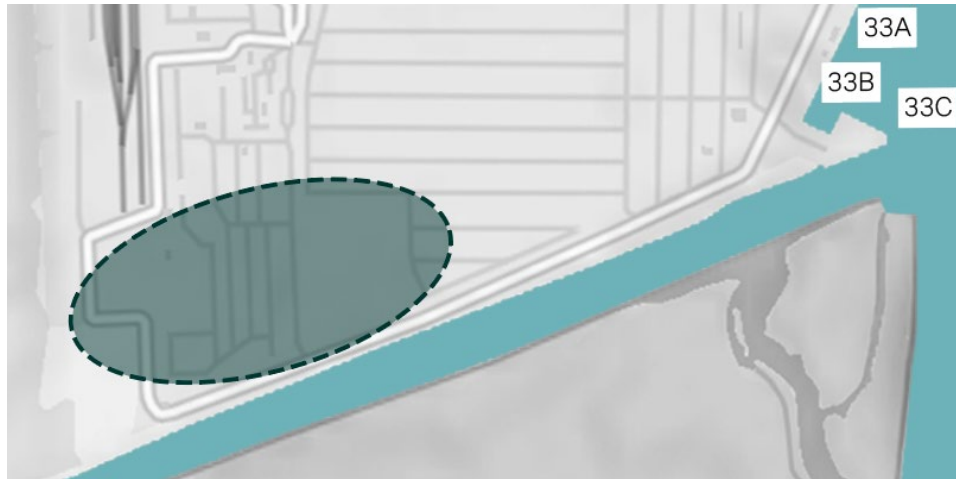
Studies will be necessary to determine the appropriate flow of traffic between the new gate and the McIntosh Road intersection with Eller Drive and specific improvements required. Realignment of McIntosh Road is a related (but separate) project, discussed in the 10-year plan, that is necessary to support this project. Once completed, these projects will provide a more efficient transportation network for the Southport area that will support operational improvements at the Southport container terminals.

The estimated cost for this project does not include potential improvements along 7<sup>th</sup> Avenue to I-595 or the connection of 10<sup>th</sup> Street to Griffin Road/US-1, as the extent of the work for these improvements is unknown. The extent of such improvements will need to be evaluated in conjunction with FDOT.

**Figure 3.10.3: Griffin Road Access**<sup>62</sup>**New VACIS Area in Southport****Total Estimated Project Cost:** \$3.5 million**Project Location:** Southport**Port Business Line:** Container**Plan Period(s):** 0-5 years

The New VACIS Area project includes the creation of a new area for USCBP to inspect containers. The current inspection areas will constrain future container terminal redevelopments and need to be relocated to minimize impacts to USCBP operations. The proposed project scope includes site grading, paving, lighting, signage, and striping and assumes that utilities would need to be provided for a USCBP booth. The precise location of this project within Southport is to be determined; however, the likely area within Southport for this facility is shown in **Figure 3.10.4**.

<sup>62</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.4: New VACIS Area in Southport<sup>63</sup>**

### Container Terminal Redevelopments

**Total Estimated Project Cost:** \$450.0 million

**Project Location:** Southport

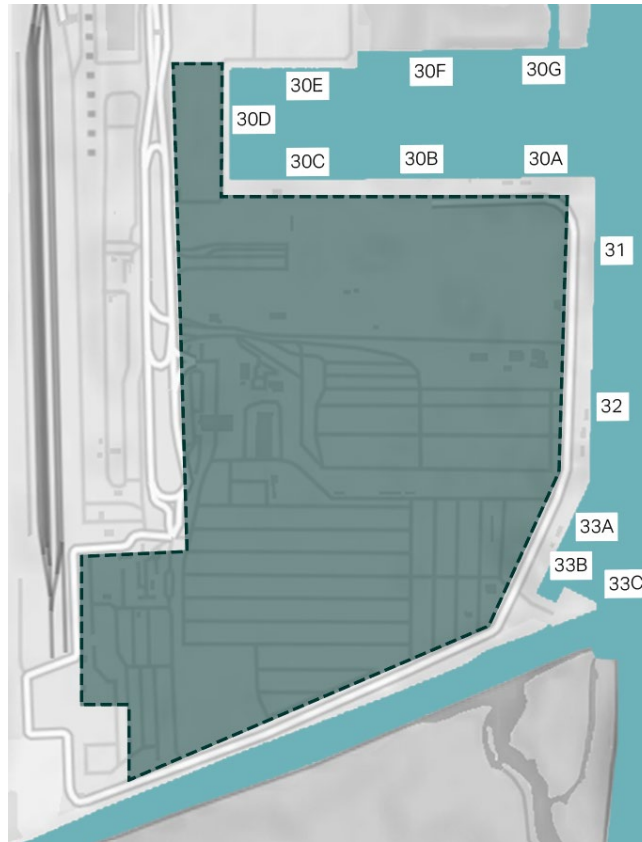
**Port Business Line:** Container

**Plan Period(s):** 0-5 years and 5-10 years

This project includes the modernization, upgrading, and electrification of Southport’s container terminals. This project aims to increase container terminal capacity and throughput via optimization and densification, which includes the conversion of container terminals to hybrid and/or electrified equipment to support more efficient terminal layouts and stacking operations. While the primary goal is to improve and increase productivity within Southport, redevelopment of these terminals (via densification), will also facilitate relocation of the container terminals operations from Midport to Southport, which is included as a separate project in the 10-Year Plan and will also facilitate port operational improvements within the Midport area.

This project assumes several phases during the 5-year and 10-year periods, which includes redevelopments of the Crowley, FIT, and ECT terminals. Phase 1 is assumed to primarily involve improvements to FIT in the 5-Year Plan, with Phase 2 assumed to primarily involve improvements to Crowley and ECT in the 10-Year Plan. However, it should be noted that improvements could be made to all terminals during these time periods. The general area for the container terminal developments in Southport is shown in **Figure 3.10.5**.

<sup>63</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.5: Container Terminal Redevelopments<sup>64</sup>****Container Terminal Utilities and Shore Power****Total Estimated Project Cost:** \$100.0 million**Project Location:** Southport**Port Business Line:** Container**Plan Period(s):** 0-5 years, 5-10 years, 10-20 years, and 20+ years

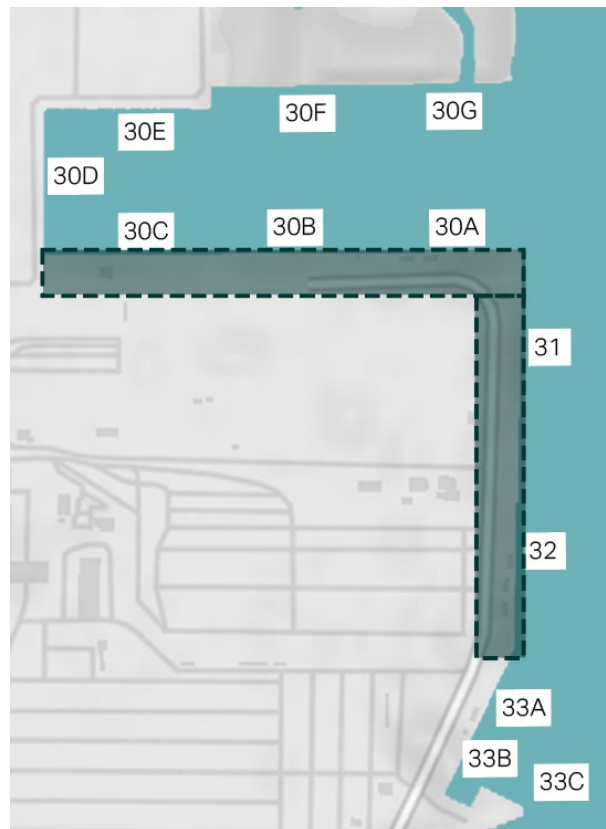
This project encompasses many different elements within Southport, including utility upgrades, infrastructure improvements and installation of shore power for the container berths. The proposed works are to be performed in four phases across the 5-year, 10-year, 20-year and 20+-year Plans.

The Phase 1 project, to be performed in the 5-Year Plan, includes new berth restroom facilities and utility/power upgrades to support the first phase of container terminal redevelopments, as noted in the project above. The locations of the new berth restroom facilities and utility/power upgrades are to be determined.

<sup>64</sup> Source: AECOM. Note: For planning purposes only.

Phase 2, in the 10-Year Plan includes similar new facilities and upgrades to support the second phase of container terminal redevelopments also included in the 10-Year Plan, Phases 3 and 4, to be performed in the 20-Year and 20+-Year Plans, includes installation of the at-berth shore systems at the Southport container berths, as well as the supporting infrastructure and facilities along the berths and within the container terminals. **Figure 3.10.6** represents the container berths that are anticipated to be upgraded with shore power systems.

**Figure 3.10.6: Container Terminal Utilities and Shore Power<sup>65</sup>**



### **Cruise Business Line**

A total of five cruise business line projects are included in the 5-Year Master Plan:

- Cruise Terminal 29 Development,
- CT-29 Parking Structure,
- Berths 16,17 & 18 Bulkhead Improvements,
- Shore Power Systems for Cruise Terminals, and
- New Midport Parking Structures.

Each project is discussed further below.

<sup>65</sup> Source: AECOM. Note: For planning purposes only.

### Cruise Terminal 29 Development

**Total Estimated Project Cost:** \$253.0 million

**Project Location:** Midport

**Port Business Line:** Cruise

**Plan Period(s):** 0-5 years

The project involves development of a new cruise terminal, replacing existing facilities, to provide a right-sized terminal building, as shown in **Figure 3.10.7**. The existing terminal is generally in poor condition and does not adequately support larger cruise vessels. As such, this will be the first cruise terminal redevelopment project to move forward. The new development will substantially improve operational efficiency, passenger throughput capacity, berthing capacity (by accommodating larger vessel classes), and the guest experience, which makes this project vital to the Port's future competitiveness. The development includes a new multi-level parking structure, which is addressed as the next project below. The project will include the following:

- VIP facilities,
- New and improved GTA
- Berth 29 bulkhead improvements,
- Northern pier extension of Berth 29, replacing the existing mooring dolphin in the middle of Tracor Basin, to accommodate larger vessel classes, and
- Fueling connection.

**Figure 3.10.7: Cruise Terminal 29<sup>66</sup>****Cruise Terminal 29 Parking Structure****Total Estimated Project Cost:** \$68.0 million**Project Location:** Midport**Port Business Line:** Cruise**Plan Period(s):** 0-5 years

As part of the Cruise Terminal 29 development, a new multi-level parking structure will be built adjacent to the terminal. This has been identified as a separate project as a result of different funding sources for development (i.e., no private investment). The parking structure is part of the same Cruise Terminal 29 development area, with the general location identified in **Figure 3.10.8**. The proposed parking structure will improve the guest experience by providing convenient parking for drive-in passengers adjacent to Cruise Terminal 29.

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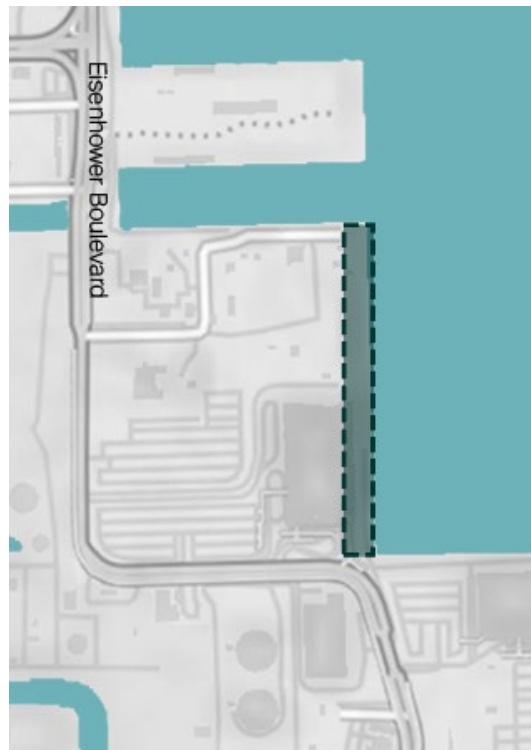
<sup>66</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.8: Cruise Terminal 29 Parking Structure<sup>67</sup>****Berths 16, 17 & 18 Bulkhead Improvements****Total Estimated Project Cost:** \$103.0 million**Project Location:** Midport**Port Business Line:** Cruise**Plan Period(s):** 0-5 years and 5-10 years

The project involves improvement of the bulkheads for Berths 16, 17, and 18, which includes preservation of the existing assets and upgrades for improvement resiliency. The project starts in the 5-year Plan and is completed in the 10-year Plan. The locations of Berths 16, 17, and 18 are shown in **Figure 3.10.9**.

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<sup>67</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.9: Berths 16, 17 & 18 Bulkhead Improvements<sup>68</sup>**

#### Shore Power Systems for Cruise Terminals

**Total Estimated Project Cost:** \$217.0 million

**Project Location:** Northport/Midport

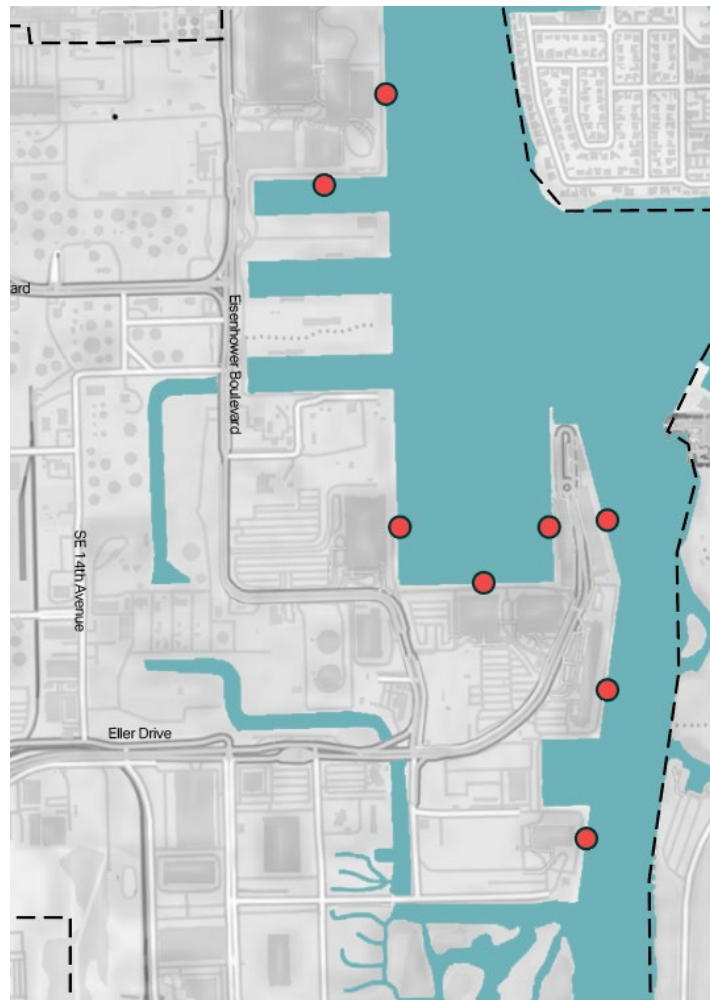
**Port Business Line:** Cruise

**Plan Period(s):** 0-5 years, 5-10 years, 10-20 years, 20+ years

Installation of shore power systems is to be performed for all eight cruise berths within the Port, which are located at Cruise Terminals 2 and 4 in Northport and Cruise Terminals 18, 19, 21, 25, 26, and 29 in Midport. The proposed works are to be performed in four phases across the 5-year, 10-year, 20-year and 20+-year Plans. Phase 1, to be performed in the 5-year Master Plan, will include installation of shore power systems at two cruise terminals; the specific cruise terminals are not yet identified. Shore power installation will include associated electrical distribution systems and berth upgrades.

It is intended that shore power systems will be installed at two additional cruise terminals during each of the following time period (i.e., Phase 2 in the 10-year plan, Phase 3 in the 20-year plan and Phase 4 in the 20+ year plan). The locations of the cruise berths to be upgraded with shore power systems are shown in **Figure 3.10.10** (represented by the red dots).

<sup>68</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.10: Shore Power Systems for Cruise Terminals<sup>69</sup>**

### New Midport Parking Structures

**Total Estimated Project Cost:** \$168.0 million

**Project Location:** Midport

**Port Business Line:** Cruise

**Plan Period(s):** 0-5 years and 5-10 years

Two new multi-level parking structures are proposed for the Midport area of the Port to increase parking capacities within the Port and particularly within Midport. Each parking structure is assumed to have 2,500 spaces and the ground floors could be used for rideshares.

The first multi-level parking structure, assumed to be located in Lot C near Cruise Terminal 19, is Phase 1. Phase 2, the second multi-level parking structure, is in the 10-year Plan and is assumed

<sup>69</sup> Source: AECOM. Note: For planning purposes only.

to be located in Lot B near Cruise Terminal 18, although consideration could be given for an alternative location in the Midport area. The locations of the Lot C and Lot B parking structures are shown in **Figure 3.10.11**.

**Figure 3.10.11: New Midport Parking Structures<sup>70</sup>**



### **Energy Business Line**

Only one energy business line project is included in the 5-Year Master Plan – Slip 1 Widening (Berths 9 & 10). This project is discussed further below.

#### **Slip 1 Widening (Berths 9 & 10)**

**Total Estimated Project Cost:** \$224.0 million

**Project Location:** Midport

**Port Business Line:** Energy

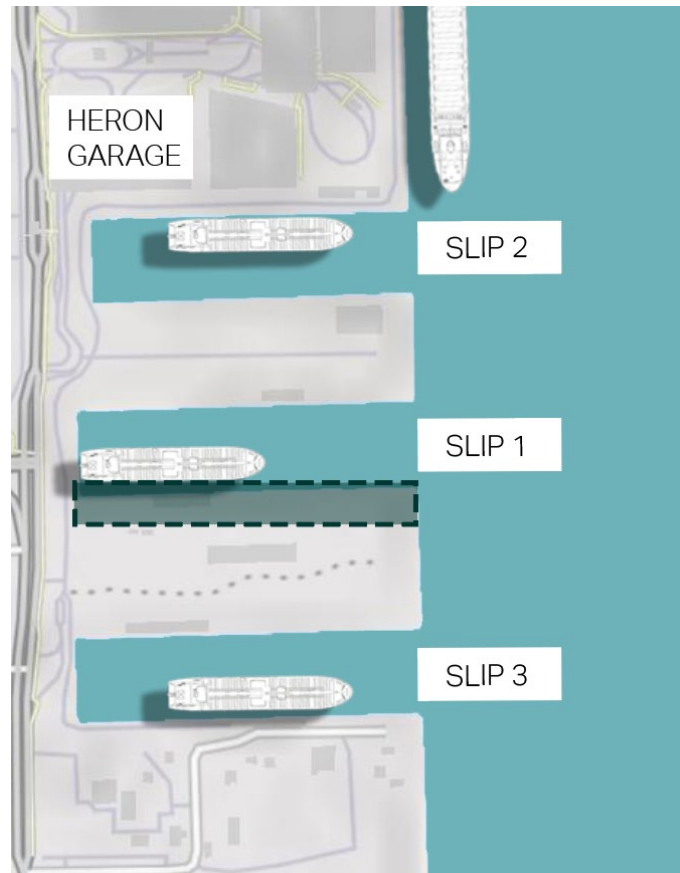
**Plan Period(s):** 0-5 years

The Slip 1 Widening project will widen the slip from 300 feet to 450 feet to accommodate larger vessels such as the Aframax class. The project involves excavation of the backland areas behind

<sup>70</sup> Source: AECOM. Note: For planning purposes only.

Berths 9 and 10 by about 150 feet to the south, which requires a new bulkhead for Berths 9 and 10 that will be constructed to provide improved resilience. As part of this project, new liquid bulk transfer facilities are to be added to Berths 14-15 to facilitate relocation of liquid bulk operations to these berths to provide continuity of operations during construction of the Slip 1 Widening. New manifold and pump systems have been constructed between Berth 5 (to the north) and Berths 7-8 (to the south) to support continuing operations and facilitate excavation of the Berths 9-10 backland area. **Figure 3.10.12** shows the proposed widening of Slip 1.

**Figure 3.10.12: Slip 1 Widening (Berths 9 & 10)<sup>71</sup>**



### **Port-Wide/Other Improvements**

A total of five port-wide or other projects are included in the 5-Year Master Plan. These projects are categorized as such, as they are not specific to the Port's business lines (i.e., container, cruise, non-container, and energy). These projects include:

- Port Maintenance Facility
- Fire Station Upgrades
- Balearia Facilities at Berth 28A
- SE 10<sup>th</sup> Avenue Property Redevelopment, and

<sup>71</sup> Source: AECOM. Note: For planning purposes only.

- Channel Deepening and Widening.

Each project is discussed further below.

#### Port Maintenance Facility

**Total Estimated Project Cost:** \$60.0 million

**Project Location:** TBD

**Port Business Line:** Port-Wide/Other

**Plan Period(s):** 0-5 years

Development of an on-port consolidated maintenance facility is necessary to improve operations, increase efficiency and lower maintenance costs for the Port. This project allows for the repurposing of existing maintenance facilities at other locations around the Port for higher value (and revenue generating) uses, which includes various locations across the Northport, Midport, and Southport areas. The estimated cost includes the necessary building and supporting facilities, but does not include site preparation costs, which would vary depending on the selected final location for this facility within the Port. At this time, the location for this facility is undetermined.

#### Fire Station Upgrades

**Total Estimated Project Cost:** \$10.0 million

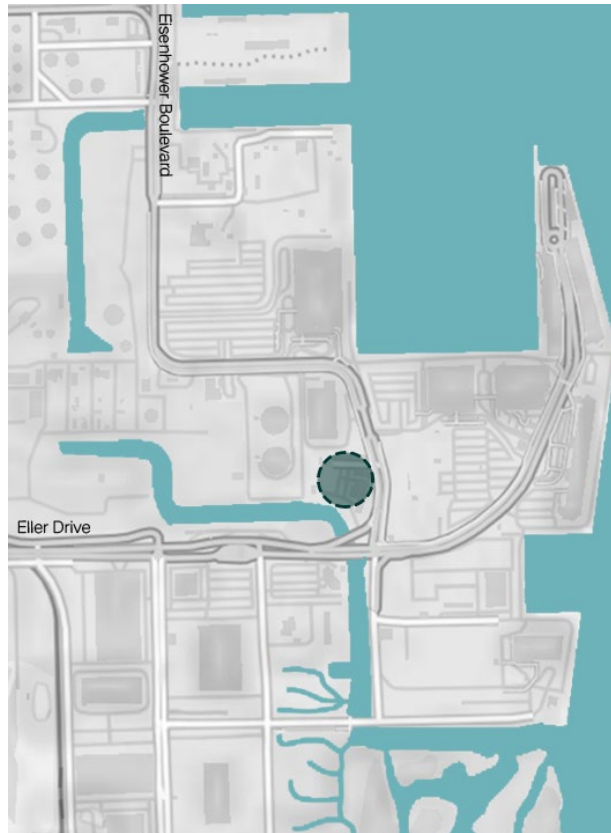
**Project Location:** Midport

**Port Business Line:** Port-Wide/Other

**Plan Period(s):** 0-5 years

The project involves upgrading the existing fire station building to address age-related deficiencies and improve the Fire Department's ability to meet current operational needs. The location of the Fire Station within the Port is shown in **Figure 3.10.13**. The project includes:

- Expansion of facility bay door clearances to accommodate larger modern equipment,
- Providing larger indoor storage areas to avoid off-site storage of critical fire-fighting equipment,
- Improvement of the resilience of the building to extreme weather conditions to avoid needing to have personnel and equipment relocated during storms/hurricanes, and
- Addressing issues with old sewer systems and other utilities.

**Figure 3.10.13: Fire Station Upgrades<sup>72</sup>****Balearia Facilities at Berth 28A****Total Estimated Project Cost:** \$25.0 million**Project Location:** Midport**Port Business Line:** Port-Wide/Other**Plan Period(s):** 0-5 years

The intent of this project is to provide a permanent berth for the Balearia ferry operations. The proposed site in proximity to Berth 28A is currently occupied by the former Seacor headquarters building, which is now vacant. The project includes demolition of this building and redevelopment of the site to include a new terminal building and associated facilities for processing passengers and loading/unloading cargo. The location of the project is shown in **Figure 3.10.14**.

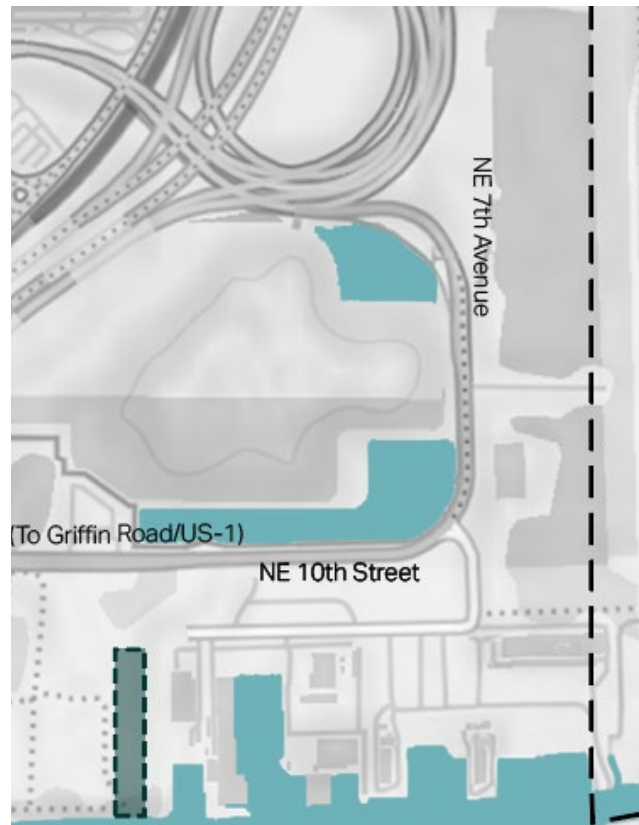
<sup>72</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.14: Balearia Facilities at Berth 28A<sup>73</sup>****SE 10<sup>th</sup> Avenue Property Redevelopment****Total Estimated Project Cost:** \$12.0 million**Project Location:** Off-Port**Port Business Line:** Port-Wide/Other**Plan Period(s):** 0-5 years

The project involves repurposing and redevelopment of Phase 1 of the SE 10<sup>th</sup> Avenue property, (formerly known as the Shaw property) to accommodate new port uses. The development involves only a small portion of the parcel, located along the eastern side of the property. The project cost includes site preparation, grading, paving, drainage systems, utilities, lighting, and perimeter controls to accommodate potential site uses that could include: storage of empty containers and chassis; container truck staging area for Southport; and storage of non-containerized cargo, including cars (and other RORO), steel products, wood products, etc. The project site is shown in **Figure 3.10.15**.

The remainder (and majority) of the property could be considered for further development to accommodate other potential port uses, such as a warehouse or labor training facility.

<sup>73</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.15: SE 10<sup>th</sup> Avenue Property Redevelopment<sup>74</sup>**Channel Deepening and Widening**Total Estimated Project Cost:** \$494.0 million**Project Location:** Port-Wide**Port Business Line:** Port-Wide/Other**Plan Period(s):** 0-5 years, 5-10 years, and 10-20 years

The Channel Deepening and Widening project to be performed by the USACE is one of the most important projects currently planned for the Port. This project has been planned for a significant period of time (about 20 years) and is essential to the Port's competitiveness and ability to grow and attract new cargo. The project involves:

- Deepening the Port's navigation channels from 42 feet to 48 feet,
- Widening a portion of the Intracoastal Waterway (ICW) (along the northeast side of the channel), which also includes the Southport Access Channel, that requires reconfiguration of the USCG Station on the east side of the channel,

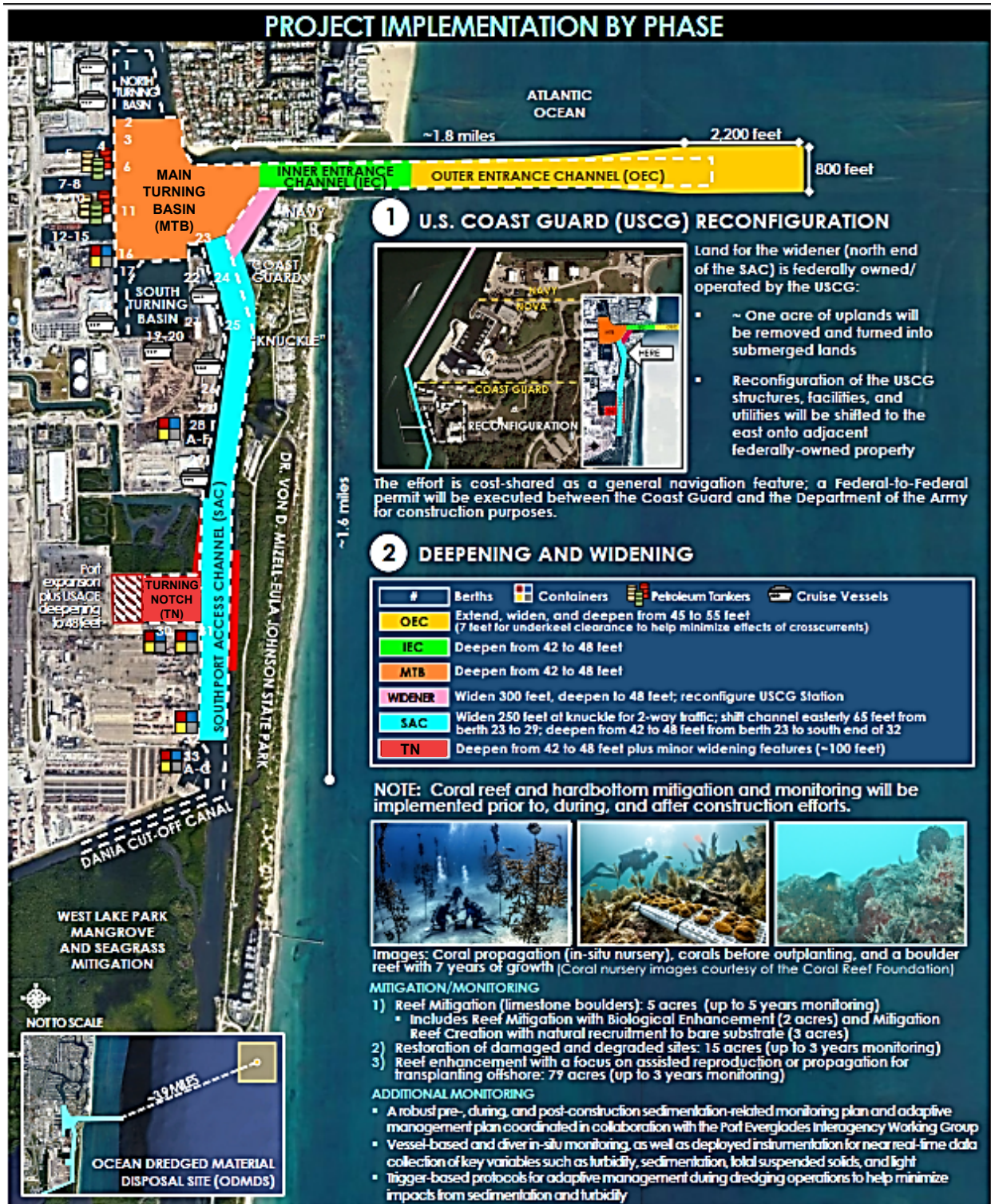
<sup>74</sup> Source: AECOM. Note: For planning purposes only.

- Deepening of the Main Turning Basin and Inner Entrance Channel from 42 feet to 48 feet, and
- Deepening and widening the Outer Entrance Channel from 45 feet deep and 500 feet wide to 55 feet deep and 800 feet wide.

These deepening and widening improvements will allow larger vessels to access the Port, which include container vessels in Southport and liquid bulk vessels in Northport. Furthermore, the improvements also allow for berthing of larger cruise vessels along the ICW at Cruise Terminals 25, 26, and 29 without impeding container vessel traffic to Southport. Other elements of the project include offshore disposal of dredged materials, coral relocation and propagation, coral reef and hard-bottom mitigation and monitoring, and sensitive species (such as manatees) monitoring programs.

This is a significant project that is being funded by the USACE and the Port; the Port's funding contribution is \$494 million, which will be distributed over the life of the project that spans across the 5-Year, 10-Year, and 20-Year Plans. The project is summarized graphically in **Figure 3.10.16**.

Figure 3.10.16: USACE Channel Deepening and Widening Project<sup>75</sup>

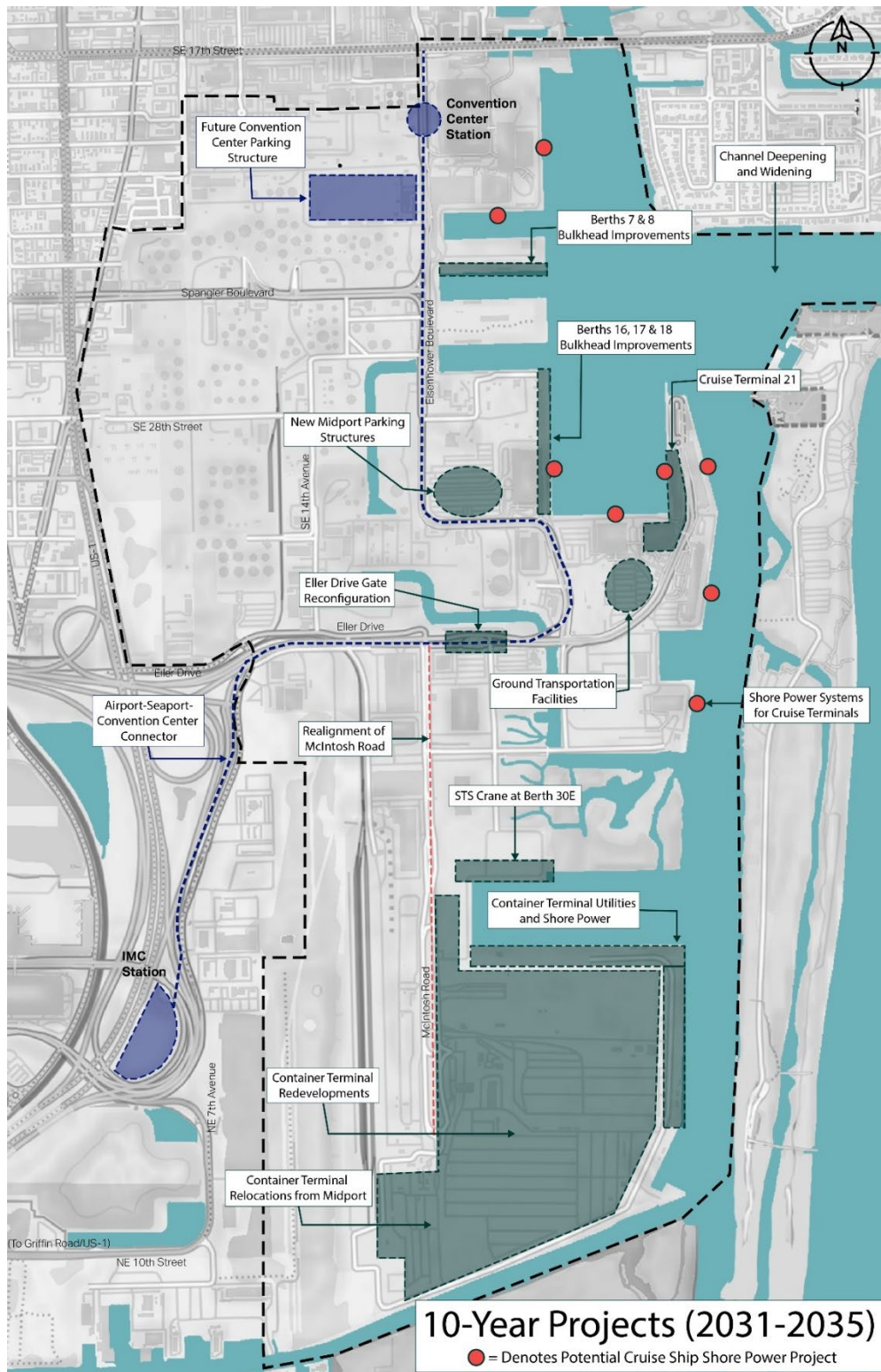


<sup>75</sup> Source: AECOM. Note: For planning purposes only.

### 3.10.4 10-Year Vision Plan

**Figure 3.10.17** illustrates all seven new projects proposed to begin construction during the 10-Year Vision Plan period, as well as the six projects that would continue construction during this period from the 5-Year Master Plan. The 10-Year Vision Plan covers the years 2031 through 2035.

Figure 3.10.17: Proposed 10-Year Projects at Port Everglades<sup>76</sup>



<sup>76</sup> Source: AECOM. Note: For planning purposes only.

These 13 projects are distributed across three of the Port's four main business lines (no non-container projects are proposed), including five container projects, five cruise projects, and one energy project, as well as two port-wide/other projects. These projects are anticipated to be funded with a mix of Port and non-Port funds as shown in **Table 3.10.17**.

**Table 3.10.17: 2024 Master/Vision Plan Projects and Funding Sources (5-10 Years, 2031-2035)**

Project	Port Funds	Private Funds	State Funds	Federal Funds	Total Period Cost
Container Terminal Redevelopments*	-	\$300.0	-	-	\$300.0
Container Terminal Utilities and Shore Power*	\$3.0	-	-	-	\$3.0
Realignment of McIntosh Road	\$23.8	-	\$3.2	-	\$27.0
Container Terminal Relocations from Midport	\$27.0	-	-	-	\$27.0
Add STS Crane at Berth 30E*	\$30.0	-	-	-	\$30.0
<b>Container Subtotal</b>	<b>\$83.8</b>	<b>\$300.0</b>	<b>\$3.2</b>	<b>\$0.0</b>	<b>\$387.0</b>
Berths 16, 17 & 18 Bulkhead Improvements*	\$42.6	-	-	-	\$42.6
Shore Power Systems for Cruise Terminals*	\$60.0	-	-	-	\$60.0
New Midport Parking Structures*	\$77.6	-	\$6.4	-	\$84.0
Ground Transportation Facilities	\$9.8	-	\$3.2	-	\$13.0
Cruise Terminal 21	\$13.2	\$42.3	\$15.0	-	\$70.5
<b>Cruise Subtotal</b>	<b>\$203.2</b>	<b>\$42.3</b>	<b>\$24.6</b>	<b>\$0.0</b>	<b>\$270.1</b>
Berths 7 & 8 Bulkhead Improvements	\$38.0	-	\$15.0	\$20.0	\$73.0
<b>Energy Subtotal</b>	<b>\$38.0</b>	<b>\$0.0</b>	<b>\$15.0</b>	<b>\$20.0</b>	<b>\$73.0</b>
Eller Drive Gate Reconfiguration	\$10.8	-	\$3.2	-	\$14.0
Channel Deepening and Widening*	\$19.7	-	\$70.0	-	\$89.7
<b>Port-Wide/Other Subtotal</b>	<b>\$30.5</b>	<b>\$0.0</b>	<b>\$80.0</b>	<b>\$0.0</b>	<b>\$221.3</b>
<b>Total 10-Year Project Costs</b>	<b>\$355.5</b>	<b>\$342.3</b>	<b>\$116.0</b>	<b>\$20.0</b>	<b>\$833.8</b>

\*Project appears in multiple 2024 M/VP planning periods.

A discussion of projects proposed in the 10-Year Vision Plan by business line is provided below.

## **Container Business Line**

A total of five container business line projects are included in the 10-Year Vision Plan:

- Container Terminal Redevelopments (continued from the 5-Year Plan)
- Container Terminal Utilities and Shore Power (continued from the 5-Year Plan),
- Realignment of McIntosh Road,
- Container Terminal Relocations from Midport, and
- Add STS Crane at Berth 30E.

The container projects that are to begin construction during the 10-year period are discussed further below. Projects that begin the 5-year period and will continue into the 10-year period, as noted above, were discussed as part of the 5-Year Plan and are not repeated here.

### **Realignment of McIntosh Road**

**Total Estimated Project Cost:** \$27.0 million

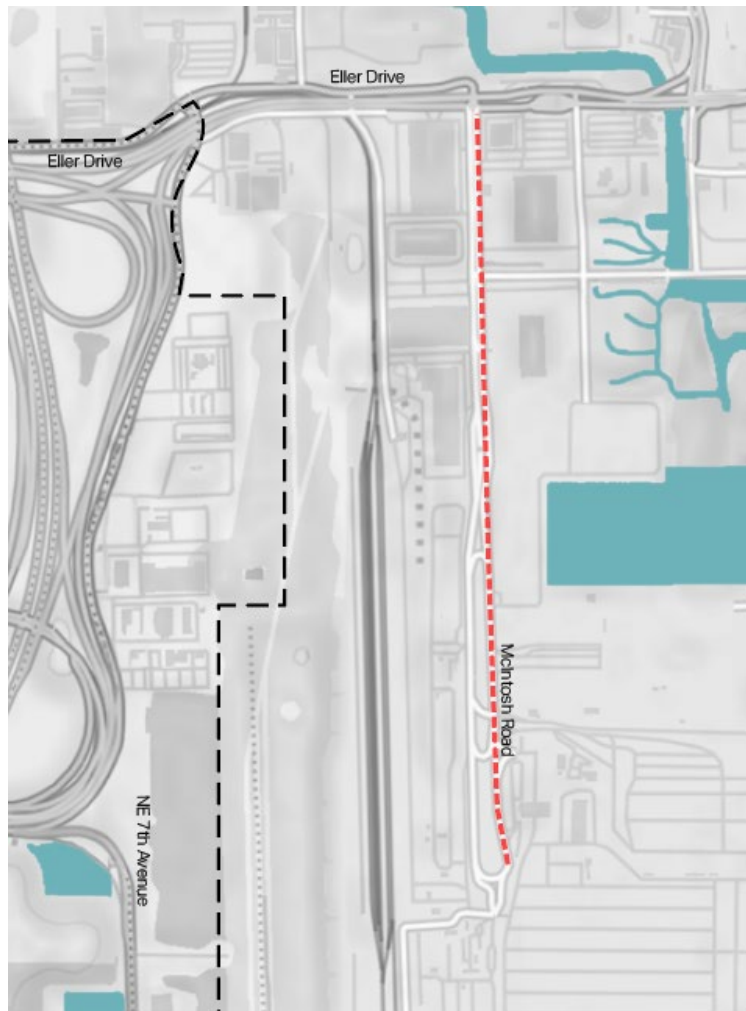
**Project Location:** Southport

**Port Business Line:** Container

**Plan Period(s):** 5-10 years

The McIntosh Road Realignment project is a continuation of the improvement of the Southport transportation network that starts with the Griffin Road Access project included in the 5-Year Plan. The Griffin Road project is intended to provide a new gate complex in the southwest corner of Southport and provide a connection to the southern end of McIntosh Road. This project will involve improvement of McIntosh Road up to Eller Drive. The current alignment of McIntosh Road is shown in **Figure 3.10.18**.

The realignment includes optimization and improvement of the current layout (alignment) of the road for more efficient traffic flow to and from the container terminals in Southport. The project is expected to replace the current bi-directional lanes with a one-way truck route; studies will need to be performed to determine the direction of traffic flow, number of required lanes and necessary improvements at the McIntosh Road/ Eller Drive intersection. Other project elements will likely include revision of traffic management systems and security protocols, relocation of the radiation portal monitoring station, and potential removal of the existing perimeter security gate complex.

**Figure 3.10.18: Realignment of McIntosh Road<sup>77</sup>**Container Terminal Relocations from Midport**Total Estimated Project Cost:** \$27.0 million**Project Location:** Midport/Southport**Port Business Line:** Container**Plan Period(s):** 5-10 years

Consolidation of containerized cargo in Southport will facilitate improved and more efficient use of the Midport area of the Port, particularly with the anticipated cruise passenger growth forecasted over the next 20 years. Additional space is required to provide the facilities and infrastructure necessary to support that cruise growth. One of the ways to do this is to relocate

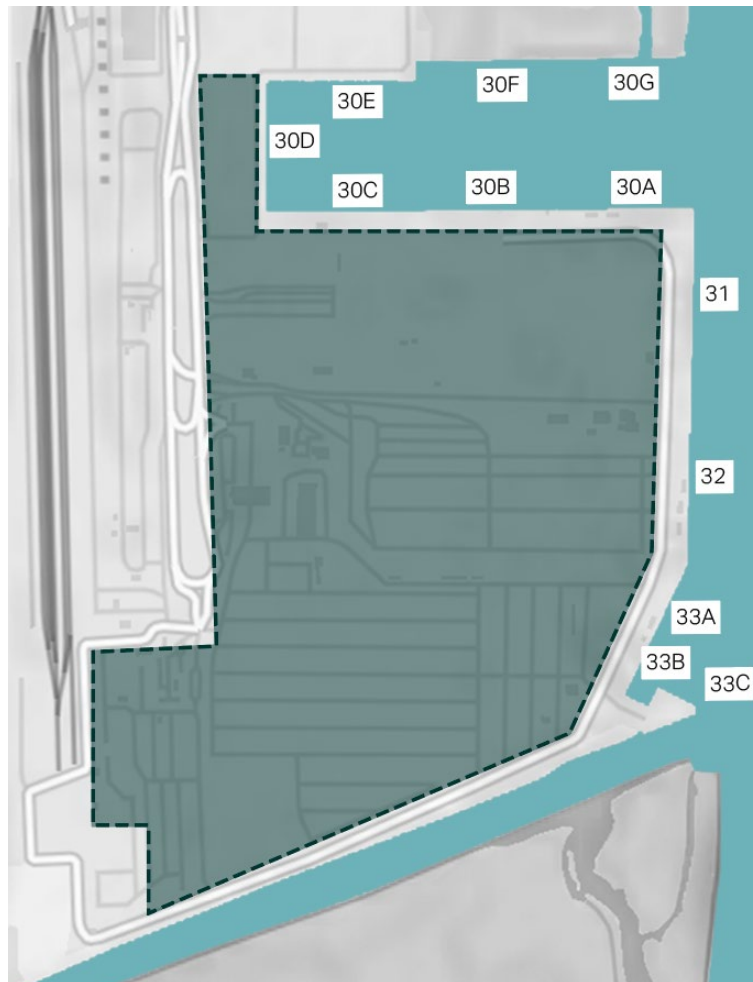
<sup>77</sup> Source: AECOM. Note: For planning purposes only.

the current containerized cargo operations in Midport to Southport. This transformation is already in process with relocation of the King Ocean operations in Midport to Southport.

Currently, there are two primary containerized cargo operations in Midport – Hyde and SOL. Hyde has an approximately 7-acre parcel located along Berth 16, between Cruise Terminal 18 to the south, the cement terminals to the west, and the Berth 15 (cement berth) to the north. SOL also has an approximately 7-acre parcel, generally located on the northeast corner of the Eller Drive and SE 19<sup>th</sup> Avenue intersection.

Relocation of the Hyde and SOL operations to Southport will require creating space from the container terminal redevelopment included in the 5-Year and 10-Year Plans. Optimization and densification of those container terminals (Crowly, FIT, and PET) can be performed to facilitate new space for the Hyde and SOL terminals. Consideration will need to be given for access to and use of the container berths in Southport, which will likely be the berths in the Turning Notch (Berths 30A/B/C, 30D and 30E); however, this will need to be confirmed. In the case of Hyde, use of the Turning Notch will be an improvement, as current operations are regularly impacted by berthing of Royal Caribbean Oasis Class cruise vessels at Cruise Terminal 18. Although Hyde has developed a work-around to reduce impacts, expected increases in Oasis class berthings at Cruise Terminal 18 in the near term and in the future will eventually result in an untenable operating scenario.

The exact locations for the new Hyde and SOL terminals in Southport are not yet known and will need to be determined in conjunction with the Southport container terminal redevelopments. Thus, **Figure 3.10.19** reflects the entire Southport area. The project cost assumes that all development work at the new terminal locations will be performed by the Port and includes grading, paving, drainage, utility/power upgrades, signage, striping, fencing/barriers, etc. It should be noted that new STS cranes will be necessary to support relocation of these operations to Southport. Two new STS cranes are proposed at Berth 30E – one in the 10-Year Plan and one in the 20-Year Plan. In addition, a new STS crane is proposed for Berths 30A/B/C in the 20-Year Plan.

**Figure 3.10.19: Container Terminal Relocations from Midport<sup>78</sup>****Add STS Cranes at Berth 30E****Total Estimated Project Cost:** \$50.0 million**Project Location:** Southport**Port Business Line:** Container**Plan Period(s):** 5-10 years and 10-20 years

As noted in the Container Terminal Relocations from Midport project above, new STS cranes are necessary at Berth 30E to support increased usage and cargo handling operations, as shown in **Figure 3.10.20**. Two new height-restricted STS cranes will be provided: the first (Phase 1) in the 10-Year Plan and second (Phase 2) in the 20-Year Plan. Phase 1 also includes installation of new crane rails to support the new STS cranes.

<sup>78</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.20: Add STS Cranes at Berth 30E<sup>79</sup>**

### **Cruise Business Line**

A total of five cruise business line projects are included in the 10-Year Vision Plan:

- Berths 16, 17 & 18 Bulkhead Improvements (continued from the 5-Year Plan),
- Shore Power Systems for Cruise Terminals (continued from the 5-Year Plan),
- New Midport Parking Structures (continued from the 5-Year Plan),
- Ground Transportation Facilities, and
- Cruise Terminal 21.

The cruise projects that are to begin construction during the 10-year period are discussed further below. Projects that begin the 5-year period and will continue into the 10-year period, as noted above, were discussed as part of the 5-Year Plan and are not repeated here.

### **Ground Transportation Facilities**

**Total Estimated Project Cost:** \$13.0 million

**Project Location:** Midport

**Port Business Line:** Cruise

<sup>79</sup> Source: AECOM. Note: For planning purposes only.

**Plan Period(s):** 5-10 years

With the increasing growth of the cruise business and the forecasted increase in cruise passengers, congestion within the Midport area may become an issue. Improved on-port staging areas for the non-private vehicles that drop off and pick up passengers may become a necessity. The purpose of this project is to provide a centralized and consolidated staging area for rideshares, taxis, and pre-arranged rides to wait for cruise passenger (and other on-port) pick-ups in a safe easily accessible area.

Currently, taxis have an on-port staging area to the south of the Port Administration building, rideshares do not have an on-port staging area and are geo-fenced such that they can only accept pick-up calls from outside the Port boundary, and pre-arranged rides (limos, shuttles, etc.) park on-port but do not have a designated location. New ground transportation facilities would consolidate all rideshares, taxis, and pre-arranged rides into a centralized staging area within Midport. A preliminary location for these facilities is shown in **Figure 3.10.21**.

The costs for these facilities include pavement rehabilitation, roadway and entrance improvements, traffic management systems, striping, signage/wayfinding, and perimeter controls. It is not intended for this facility to be accessed by cruise passengers (or any other users) for pick-ups, but rather to be a staging area for intended pick-ups. This project would need to be aligned with the Airport-Seaport-Convention Center Connector and support cohesive and efficient transportation throughout the Port complex.

**Figure 3.10.21: Ground Transportation Facilities<sup>80</sup>**Cruise Terminal 21**Total Estimated Project Cost:** \$307.0 million**Project Location:** Midport**Port Business Line:** Cruise**Plan Period(s):** 5-10 years and 10-20 years

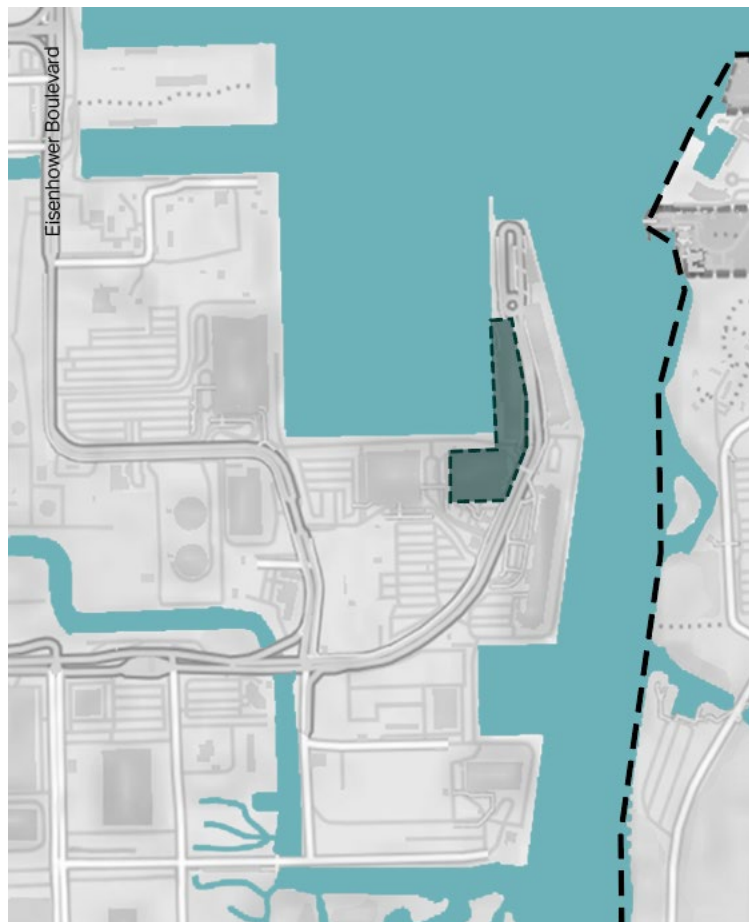
Cruise Terminal 21 is an important development to support the Port's competitiveness within the cruise industry. The current terminal requires upgrade, improvement, and optimization to support cruise operations today and into the future, especially with the increasing size and number of passengers from next-generation cruise vessels. The constricted area between Cruise Terminals 21 and 25 (to the east) hampers terminal access and GTA activities for both terminals that, on busy port days, create significant traffic congestion and safety concerns. In addition, the apron at Berth 21 is narrow and needs to be widened. Lastly, the existing bulkhead at Berth 21 requires structural upgrades and resiliency improvements.

<sup>80</sup> Source: AECOM. Note: For planning purposes only.

The new cruise terminal development will replace the existing terminal with a more efficient, right-sized building that will support widening of the Berth 21 apron and GTA and traffic improvements in front of the terminal – all within the same total footprint. This will likely result in a unique terminal building design with more compact ground floor and a second floor with a larger footprint to accommodate more passenger processing facilities. The development will also need to address baggage handling, provisioning, and other berth-wide activities and needs.

Overall, the project will include the new terminal building, improved GTA and roadway network, bulkhead improvements that include a wider apron, and potential upgrades to the adjacent Palm Garage for passenger access and to support the building design. This project is represented in **Figure 3.10.22**. The project starts in the 10-Year Plan and will be completed in the 20-Year Plan.

**Figure 3.10.22: Cruise Terminal 21<sup>81</sup>**



### **Energy Business Line**

Only one energy business line project is included in the 10-Year Vision Plan – Berths 7 & 8 Bulkhead Improvements. This project is discussed further below.

<sup>81</sup> Source: AECOM. Note: For planning purposes only.

### Berths 7 & 8 Bulkhead Improvements

**Total Estimated Project Cost:** \$73.0 million

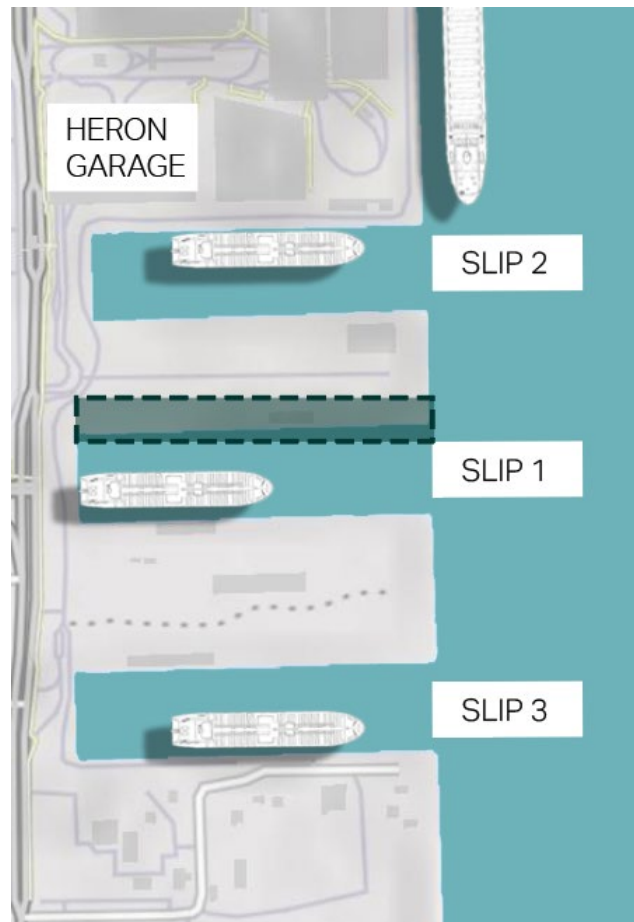
**Project Location:** Northport

**Port Business Line:** Energy

**Plan Period(s):** 5-10 years

Improvements of the bulkheads at Berths 7 and 8 is the second phase of the Slip 1 Widening project that is included in the 5-Year Plan. Slip 1 is the original and oldest slip within the Port, so the existing bulkhead structures require repair/replacement and resiliency upgrades. Berths 7 and 8 are shown in **Figure 3.10.23**.

**Figure 3.10.23: Berths 7 & 8 Bulkhead Improvements<sup>82</sup>**



### Port-Wide/Other Improvements

A total of two projects in the 10-Year Vision Plan are categorized as Port-wide/other projects. These include:

<sup>82</sup> Source: AECOM. Note: For planning purposes only.

- Channel Deepening and Widening, and
- Eller Drive Gate Reconfiguration.

The Port-wide/other projects that would begin construction during the 10-year period are discussed further in the sections below.

#### Eller Drive Gate Reconfiguration

**Total Estimated Project Cost:** \$14.0 million

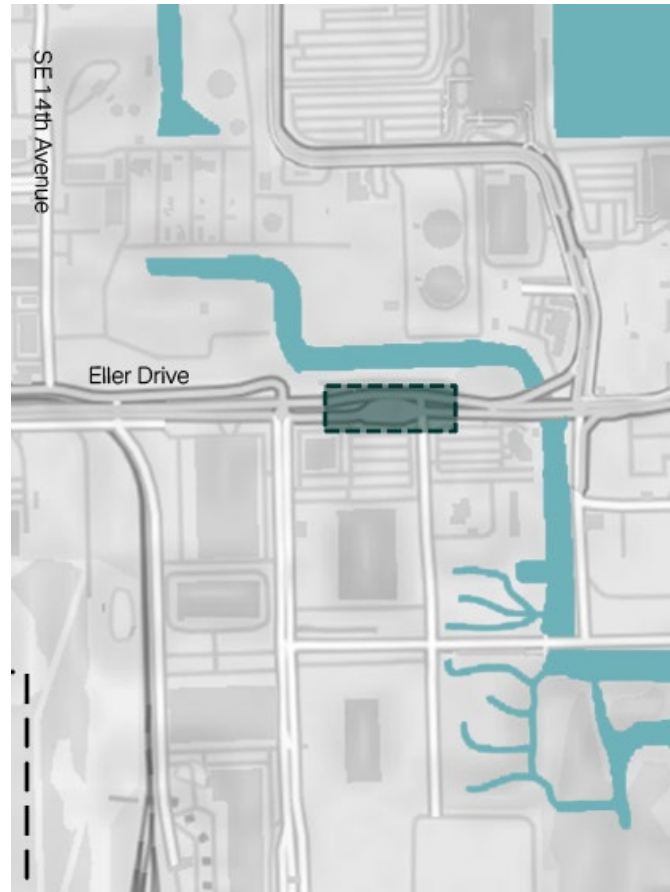
**Project Location:** Midport

**Port Business Line:** Port-Wide/Other

**Plan Period(s):** 5-10 years

The traffic in and around Port Everglades can be quite heavy during peak hours, leading to inconveniences for both Port users and the local community. This is particularly the case for the Eller Drive perimeter gate, where the current gate operations and configuration create conflicts with trucks entering and existing McIntosh Road prior to the gate.

Reconfiguration of the Eller Drive gate, which is represented in **Figure 3.10.24**, can address these issues and improve the performance of the gate and traffic processing. Potential solutions could include, but are not limited to: realignment of the entry/exit gate kiosks and lanes in both directions into a more efficient layout; improved signage/wayfinding and striping; addition of automated systems and lanes dedicated to key card access; and changes to vehicle processing procedures and security protocols.

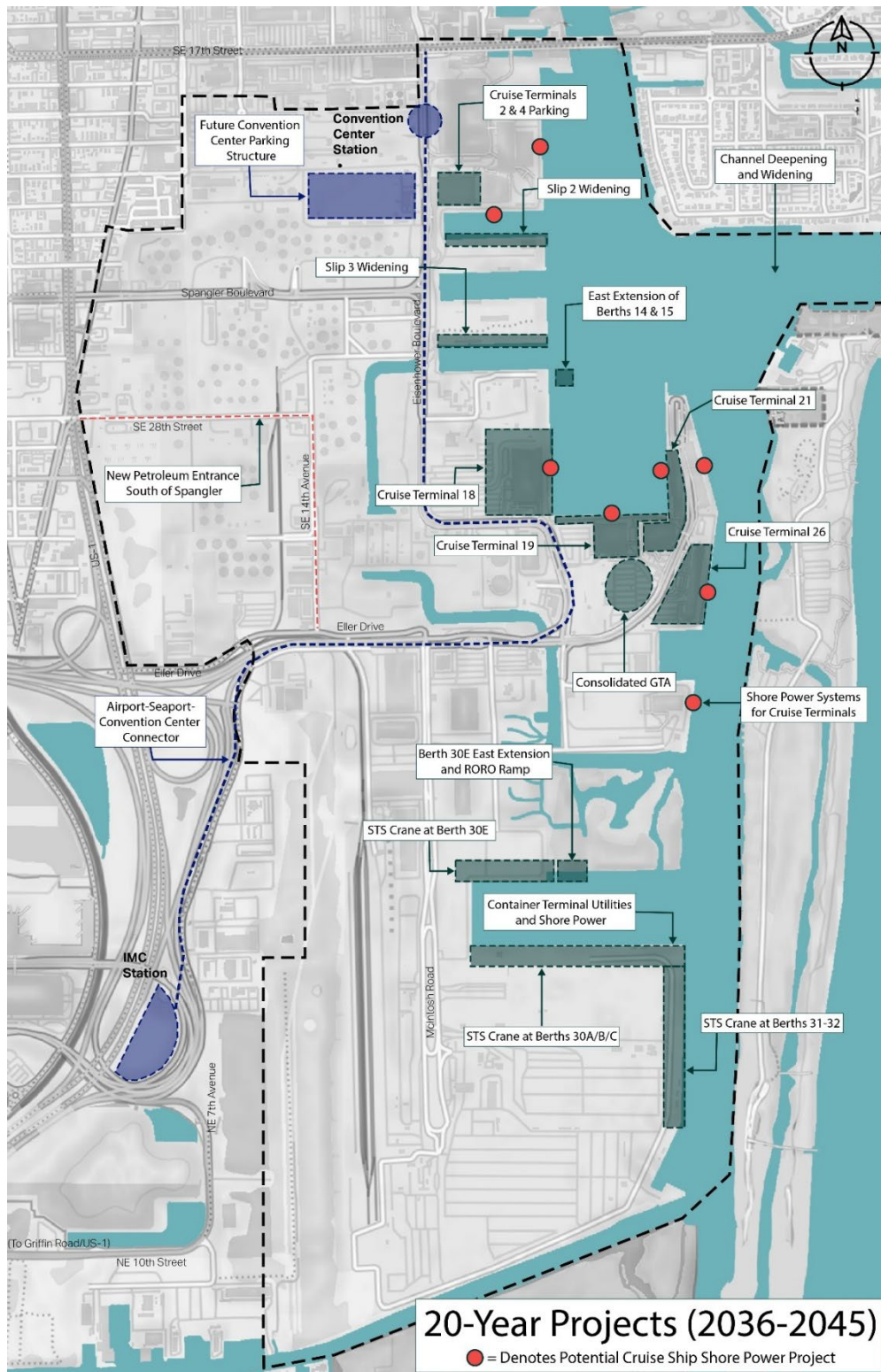
**Figure 3.10.24: Eller Drive Gate Reconfiguration**<sup>83</sup>

### 3.10.5 20-Year Vision Plan

**Figure 3.10.25** illustrates all 12 new projects proposed to begin construction during the 20-Year Vision Plan period, as well as the five projects from the 10-Year Vision Plan that would continue construction during this period. The 20-Year Vision Plan covers the years 2036 through 2045.

<sup>83</sup> Source: AECOM. Note: For planning purposes only.

Figure 3.10.25: Proposed 20-Year Projects at Port Everglades<sup>84</sup>



<sup>84</sup> Source: AECOM. Note: For planning purposes only.

These 17 projects are distributed across the Port's four main business lines, including four container projects, four non-container projects, seven cruise projects, and one energy project, as well as one port-wide/other project. These projects are anticipated to be funded with a mix of Port and non-Port funds as shown in **Table 3.10.18**.

**Table 3.10.18: 2024 Master/Vision Plan Projects and Funding Sources (10-20 Years, 2036-2045)**

Project	Port Funds	Private Funds	State Funds	Federal Funds	Total Period Cost
Container Terminal Utilities and Shore Power*	\$20.0	-	-	-	\$20.0
Add STS Crane at Berth 30E*	\$35.0	-	-	-	\$35.0
Add STS Crane at Berth 31-32	\$20.0	-	-	-	\$20.0
Add STS Crane at Berth 30A/B/C	\$20.0	-	-	-	\$20.0
<b>Container Subtotal</b>	<b>\$95.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$95.0</b>
East Extension of Berths 14-15	\$5.0	-	-	-	\$5.0
Berth 30E East Extension and RORO Ramp	\$18.6	-	\$6.4	\$5.0	\$30.0
Slip 3 Widening	\$169.0	-	\$15.0	\$40.0	\$224.0
Slip 2 Widening*	\$14.5	-	-	-	\$14.5
<b>Non-Container Subtotal</b>	<b>\$207.1</b>	<b>\$0.0</b>	<b>\$21.4</b>	<b>\$45.0</b>	<b>\$273.5</b>
Shore Power Systems for Cruise Terminals*	\$51.0	-	-	-	\$51.0
Cruise Terminal 21*	\$79.6	\$141.9	\$15.0	-	\$236.5
Additional Parking for Cruise Terminals 2 & 4	\$3.2	\$19.2	\$9.6	-	\$32.0
Cruise Terminal 19	\$66.2	\$121.8	\$15.0	-	\$203.0
Consolidated GTA	\$36.0	-	\$16.0	-	\$52.0
Cruise Terminal 18*	\$36.2	\$76.8	\$15.0	-	\$128.0
Cruise Terminal 26*	\$24.7	\$37.1	-	-	\$61.8
<b>Cruise Subtotal</b>	<b>\$226.9</b>	<b>\$396.8</b>	<b>\$70.6</b>	<b>\$0.0</b>	<b>\$764.3</b>
New Petroleum Entrance South of Spangler	\$10.0	-	-	-	\$10.0
<b>Energy Subtotal</b>	<b>\$10.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$10.0</b>
Channel Deepening and Widening*	\$210.0	-	\$80.0	-	\$290.0
<b>Port-Wide/Other Subtotal</b>	<b>\$210.0</b>	<b>\$0.0</b>	<b>\$80.0</b>	<b>\$0.0</b>	<b>\$290.0</b>
<b>Total 20-Year Project Costs</b>	<b>\$819.0</b>	<b>\$396.8</b>	<b>\$172.0</b>	<b>\$45.0</b>	<b>\$1,432.8</b>

\*Project appears in multiple 2024 M/VP planning periods.

A discussion of projects proposed in the 20-Year Vision Plan by business line is provided below.

### **Container Business Line**

A total of four container business line projects are included in the 20-Year Vision Plan:

- Container Terminal Utilities and Shore Power (continued from the 5-Year and 10-Year Plans),
- Add STS Crane at Berth 30E (continued from the 10-Year Plan),
- Add STS Crane at Berth 31-32, and
- Add STS Crane at Berth 30A/B/C.

The container projects that are to begin construction during the 20-year period are discussed further below. Projects that begin in the 5-year or 10-year period and will continue into the 20-year period, as noted above, were discussed earlier and are not repeated here.

#### **Add STS Crane at Berth 31-32**

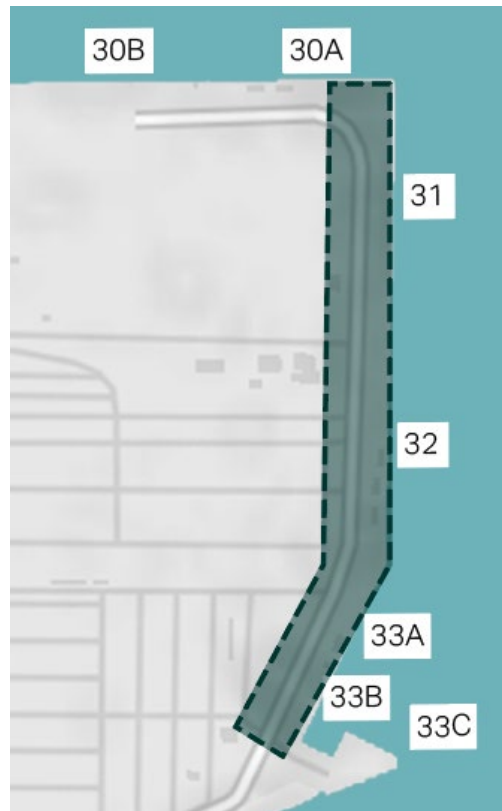
**Total Estimated Project Cost:** \$20.0 million

**Project Location:** Southport

**Port Business Line:** Container

**Plan Period(s):** 10-20 years

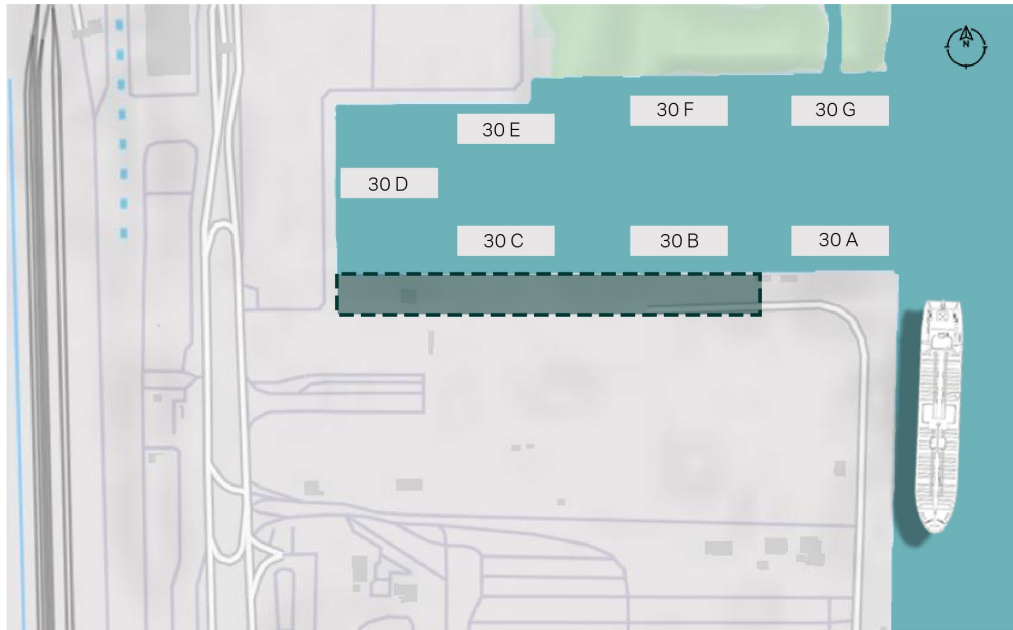
The Container Terminal Redevelopment projects included in the 5-Year Master Plan and 10-Year Vision Plan, as well as the completion of the Channel Deepening and Widening project in this time period will increase container ships calls and cargo handling operations, which is expected to include an increase in the size and container capacity of the ships that will call at the Port. As a result, and supported by the results of the berth capacity analyses performed as part of this M/VP Update, an additional STS crane will be necessary along Berths 31-32. This will be a height-restricted crane, with the exact location along Berths 31-32 to be determined, as represented in **Figure 3.10.26**.

**Figure 3.10.26: Add STS Cranes at Berth 31-32<sup>85</sup>**Add STS Crane at Berth 30A/B/C**Total Estimated Project Cost:** \$20.0 million**Project Location:** Southport**Port Business Line:** Container**Plan Period(s):** 10-20 years

As noted in the Container Terminal Relocations from Midport project included in the 10-Year Vision Plan and discussed above for the new STS crane at Berths 31-32, new STS cranes are necessary in Southport to support larger vessels and increased usage. The results of the berth capacity analyses performed as part of this M/VP Update show that an additional STS crane will be necessary along Berths 30A/B/C, represented in **Figure 3.10.27**. This project assumes the addition of a height-restricted STS crane on the existing crane rail at this location. It should be noted that the STS crane is unlikely to be placed at Berth 30A, due to cargo handling conflicts between Berths 30A and 31 if ships are at both berths. Berth 30C is the most likely location for the new STS crane, as indicated in the berth capacity analysis.

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<sup>85</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.27: Add STS Crane at Berth 30A/B/C<sup>86</sup>**

### **Non-Container Business Line**

A total of four non-container business line projects are included in the 20-Year Vision Plan:

- East Extension of Berths 14-15,
- Berth 30E East Extension and RORO Ramp,
- Slip 3 Widening, and
- Slip 2 Widening.

The non-container projects that are to begin construction during the 20-year period are discussed further below.

#### **East Extension of Berths 14-15**

**Total Estimated Project Cost:** \$5.0 million

**Project Location:** Southport

**Port Business Line:** Non-Container

**Plan Period(s):** 10-20 years

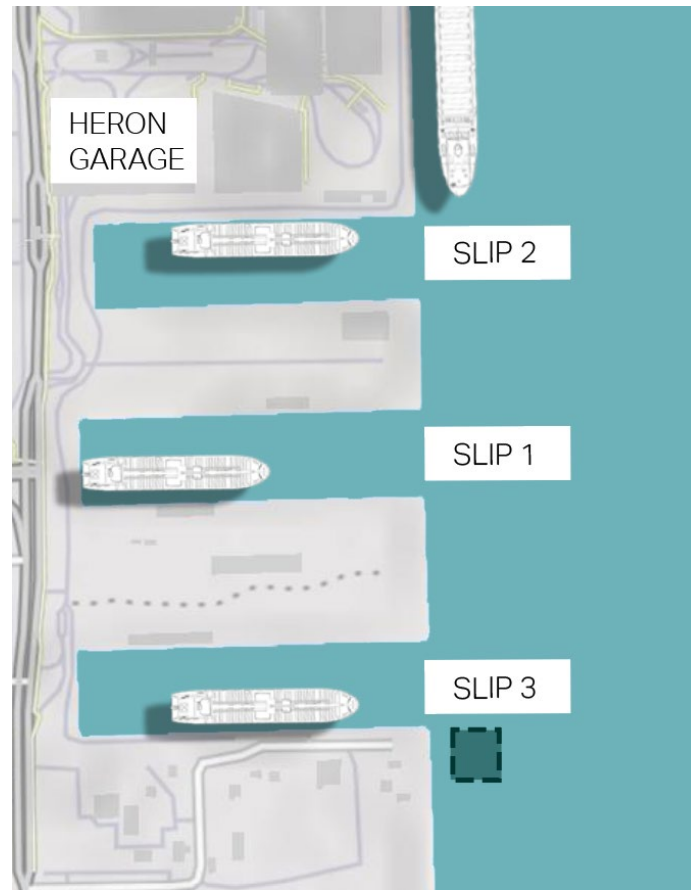
The market assessment results show significant potential growth for cement and related dry bulk commodities at the Port. There are two cement terminals currently located in Midport and operating at Berths 14 and 15 – Lehigh and Cemex. Current operations at these berths require a first-in, last-out berthing approach due to the width restrictions of Slip 3 and liquid bulk vessels that berth on the other side at Berths 12-13. In addition, current cement unloading operations

<sup>86</sup> Source: AECOM. Note: For planning purposes only.

can be impacted by inclement weather, which can sometimes cause ship unloading to take as long as two weeks to complete. Lastly, it is expected that the forecasted cement growth, which will support the anticipated amount of construction in the region (especially for highways and roads), will result in larger vessels (both wider and longer) delivering cement.

As a result, improvements within Slip 3 are necessary to support cement growth. The proposed East Extension of Berths 14-15 will allow for berthing of larger/longer cement vessels as an initial measure to support cement growth. The extension will include a new mooring dolphin placed to the east of Berth 15, and extending into the Main Turning Basin, as shown in **Figure 3.10.28**. It should be noted there is another project included in the 20-Year Plan – Slip 3 Widening – that will provide a more permanent solution to accommodate larger cement vessels and liquid bulk vessels within Slip 3, while also looking to eliminate the first-in, last-out berthing approach.

Although the new mooring dolphin provides a solution to accommodate longer cement vessels, it will extend into the Main Channel Basin. This mooring dolphin will impact berthing operations at Berth 16 (although the Hyde container terminal will have been relocated to Southport, per the 10-Year Plan) and could impact vessel maneuvering and berthing operations for cruise vessels calling at Cruise Terminal 18. This is particularly the case for the mega-ship classes that will/could call at this terminal, which include the Royal Caribbean Oasis and Icon class vessels. As such, navigation modeling and simulations are necessary to evaluate if conflicts exist and to confirm navigation clearances and obtain approval from the Port Pilots and cruise ship captains.

**Figure 3.10.28: East Extension of Berths 14-15<sup>87</sup>****Berth 30E East Extension and RORO Ramp****Total Estimated Project Cost:** \$30.0 million**Project Location:** Southport**Port Business Line:** Non-Container**Plan Period(s):** 10-20 years

The purpose of this project is to provide an additional RORO berth. Currently at the Port, there is a dedicated RORO berth at Berth 33C in Southport. Additionally, some of the cruise berths, such as Cruise Terminals 18, 19, and 21, are often used to handle RORO cargo when not in use for cruise vessels. With the expected increase in cruise volumes and the goal of spreading the increased cruise vessel berthings across more days of the week, the availability of these cruise berths for RORO vessels will decrease. As such, expansion of Berth 30E, which is also already used for RORO, was identified to accommodate additional RORO cargo, as shown in **Figure 3.10.29**.

<sup>87</sup> Source: AECOM. Note: For planning purposes only.

The east end of Berth 30E is already configured for RORO use. However, it is expected that modifications to the RORO ramp at the east end of this berth will be necessary, particularly since Berth 30E will be upgraded with new crane rails to add up to two new STS cranes (projects identified in the 10-Year and 20-Year Plans).

In addition, the new bulkhead wall that was installed at Berths 30F and 30G as part of the Southport Turning Notch Expansion project also requires modifications. Berthing and mooring systems were installed part way along Berth 30F; however, additional berthing and mooring systems are expected to be necessary to accommodate RORO vessels.

Lastly, there is a possibility that additional tug berthing facilities may be necessary, particularly on a temporary basis to facilitate relocation of the USCG Station to the southern area of Tracor Basin in Midport during the Channel Deepening and Widening project. This project can incorporate these tug facilities with the addition of an access pier and floating docks within the Berths 30F/G area.

**Figure 3.10.29: Berth 30E East Extension and RORO Ramp<sup>88</sup>**



### Slip 3 Widening

**Total Estimated Project Cost:** \$224.0 million

**Project Location:** Northport

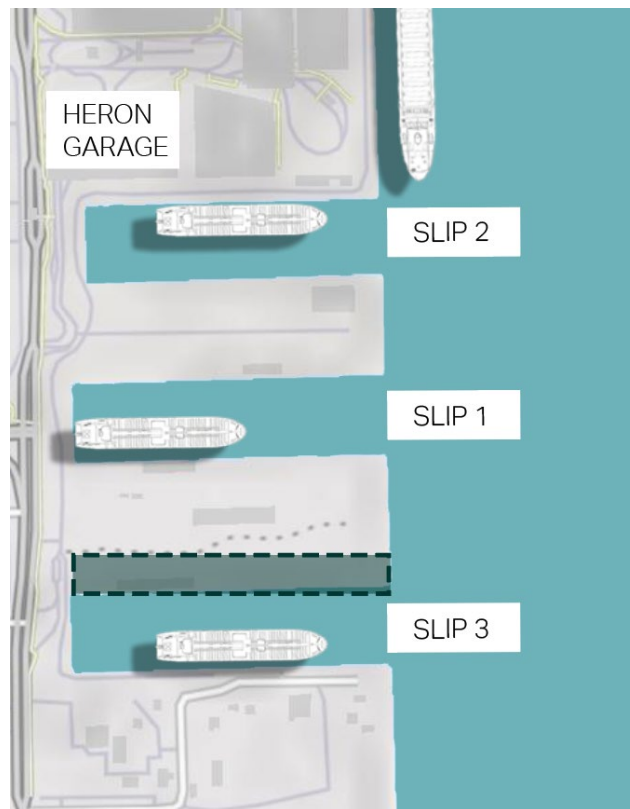
<sup>88</sup> Source: AECOM. Note: For planning purposes only.

**Port Business Line:** Non-Container**Plan Period(s):** 10-20 years

As discussed for the East Extension of Berths 14-15 project, included in this 20-Year Plan, there are currently significant limitations to vessel use of the berths in Slip 3. With the liquid bulk vessels using Berths 12-13 to the north and cement vessels using Berths 14-15 to the south, the width of the existing slip forces a first-in, last-out berthing approach that is inefficient and impacts Port operations, particularly if cement vessels get stuck at Berths 14-15 longer than anticipated due to weather impacts to cement unloading operations. Furthermore, cement vessels are expected to get bigger to meet the forecasted demand over the next 20 years and liquid bulk vessels may also increase in size.

Widening of Slip 3 will involve excavation of the Berths 12-13 backland area about 150 feet to the north, as shown in **Figure 3.10.30**. This is a similar approach to the Slip 1 Widening project in the 5-Year Plan, which involves the proposed excavation of the Berths 9-10 area 150 feet to the south. The new product manifold system that was built between Berths 9-10 to the north and Berths 12-13 to the south was positioned to support this proposed project.

The estimated cost for this project is based on the cost developed for the Slip 1 Widening project and also includes new berthing infrastructure and new liquid loading/unloading systems at both Berths 12 and 13.

**Figure 3.10.30: Slip 3 Widening<sup>89</sup>**Slip 2 Widening**Total Estimated Project Cost:** \$224.0 million**Project Location:** Northport**Port Business Line:** Non-Container**Plan Period(s):** 10-20 years and 20+ years

Increased use of Cruise Terminal 4 on the north side of Slip 2 is anticipated, with additional cruise vessel berthings by Disney Cruise Line expected as part of their growth at the Port. Use of Berth 5, on the south side of Slip 2, is already restricted and will become even more limited. Widening of Slip 2 would support simultaneous berthing of cruise vessels at Berth 4 and the use of Berth 5.

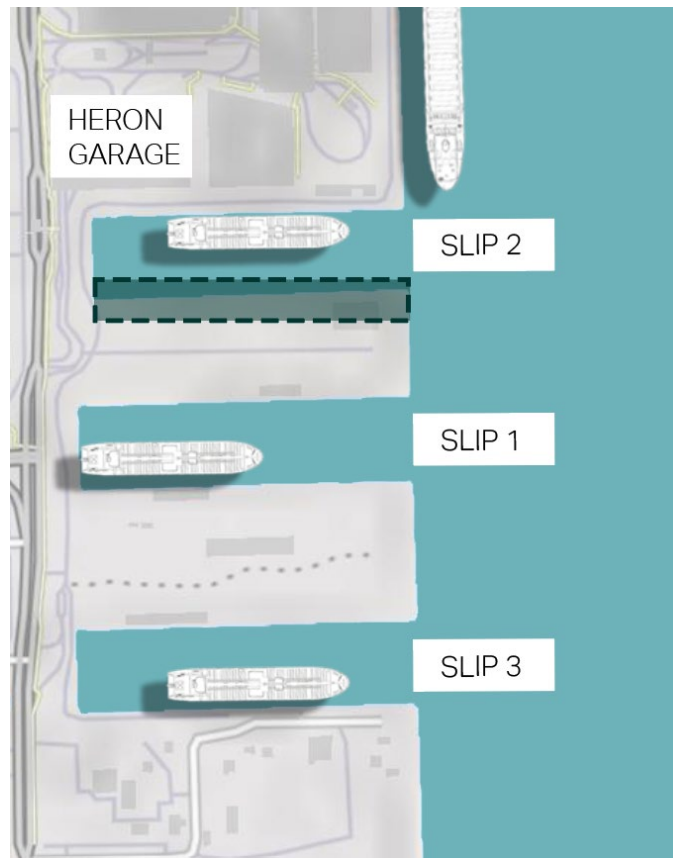
Berth 5 is currently used for unloading non-containerized cargo, which primarily consists of select dry bulk products (such as aggregates) and break-bulk cargo. In both cases, the vessels generally use ship's gear to unload cargo, with support of mobile at-berth cargo handling equipment.

The Slip 3 Widening project will involve excavation of the Berths 12-13 backland area about 150 feet to the north, as shown in **Figure 3.10.31**. This is a similar approach to the Slip 1 and Slip 3

<sup>89</sup> Source: AECOM. Note: For planning purposes only.

Widening projects. Widening of Slip 2 would allow use of Berth 5 for other types of cargo that may generate higher revenue for the Port. In addition, there is a consideration that Berth 5 could become a new (ninth) cruise berth. However, it should be noted that widening Slip 2 would significantly reduce the Berth 5 backland area and affect backland access, which could constrain potential use of the Berth 5 area. The estimated cost for this project is based on the cost developed for the Slip 1 Widening project.

**Figure 3.10.31: Slip 2 Widening<sup>90</sup>**



### **Cruise Business Line**

A total of seven cruise business line projects are included in the 20-Year Vision Plan:

- Shore Power Systems for Cruise Terminals,
- Cruise Terminal 21,
- Additional Parking for Cruise Terminals 2 & 4,
- Cruise Terminal 19,
- Consolidated GTA,
- Cruise Terminal 18, and
- Cruise Terminal 26.

<sup>90</sup> Source: AECOM. Note: For planning purposes only.

The cruise projects that are to begin construction during the 20-year period are discussed further below.

### Additional Parking for Cruise Terminals 2 & 4

**Total Estimated Project Cost:** \$32.0 million

**Project Location:** Northport

**Port Business Line:** Cruise

**Plan Period(s):** 10-20 years

As the volume of cruise passengers grows within the Port, increased parking capacity will become a necessity. Parking projects have already been included in the 2024 M/VP within the Midport area of the Port, namely multi-level parking structures at Cruise Terminal 29 (5-Year Plan), Lot C (5-Year Plan), and Lot B (10-Year Plan). However, additional parking capacity will also be required in Northport.

This project will increase parking capacity for drive-in cruise passengers to Cruise Terminals 2 and 4 in Northport. The project involves expansion of the existing Heron Garage, shown in **Figure 3.10.32**, which was completed in 2020 and added approximately 1,800 new spaces. Expansion will involve adding two additional levels to the multi-level parking structure, which will add about 875 more spaces.

**Figure 3.10.32: Additional Parking for Cruise Terminals 2 & 4<sup>91</sup>**



<sup>91</sup> Source: AECOM. Note: For planning purposes only.

### Cruise Terminal 19

**Total Estimated Project Cost:** \$203.0 million

**Project Location:** Midport

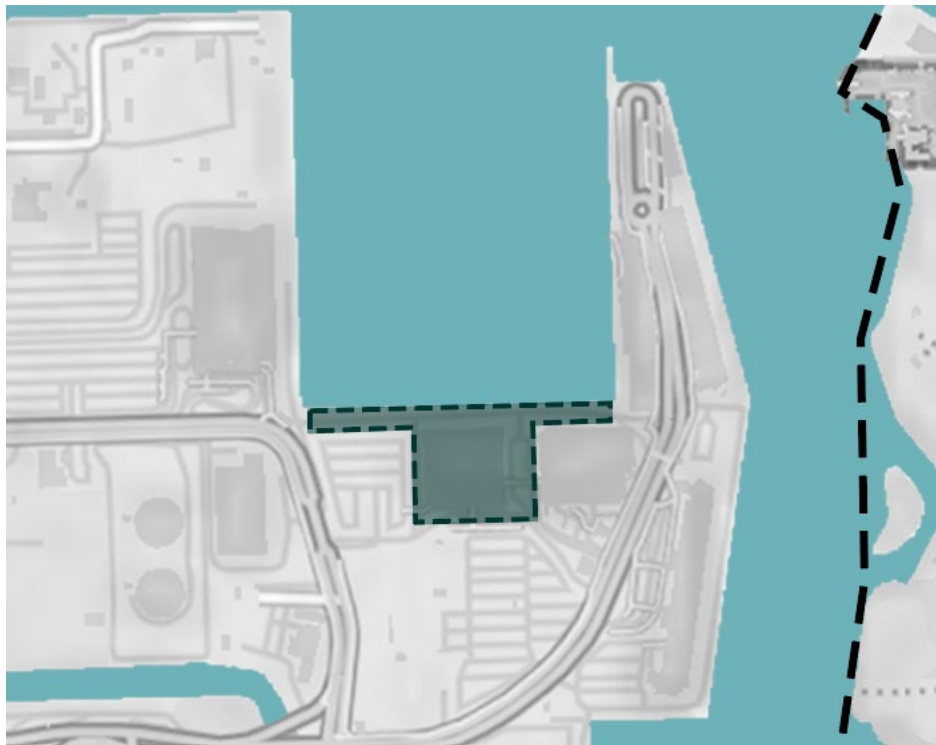
**Port Business Line:** Cruise

**Plan Period(s):** 10-20 years

The existing Cruise Terminal 19 facility needs building upgrades, aesthetic refurbishments, and improvements to add VIP facilities and USCBP processing facilities. This project involves development of a new right-sized cruise terminal, with all of the necessary passenger processing, VIP, baggage handling, and USCBP processing facilities, as well as an expanded and improved GTA – all to improve the guest experience for cruise passengers. The terminal will provide a wide apron area and improvement of the existing Berths 19 and 20 bulkheads, as shown in **Figure 3.10.33**, which include structural upgrades and resiliency improvements.

The new Cruise Terminal 19 will need to be aligned with the existing multi-level Palm Garage structure and the new Midport multi-level parking structure to be located in Lot C, adjacent to Cruise Terminal 19, included in the 10-Year Plan.

**Figure 3.10.33: Cruise Terminal 19<sup>92</sup>**



<sup>92</sup> Source: AECOM. Note: For planning purposes only.

### Consolidated GTA

**Total Estimated Project Cost:** \$52.0 million

**Project Location:** Midport

**Port Business Line:** Cruise

**Plan Period(s):** 10-20 years

Cruise passenger volumes are forecasted to grow considerably over the next 20 years. This growth will be supported by more and larger cruise vessels that will be home-ported at Port Everglades. The various cruise terminals within the Port will be replaced or upgraded through the projects included in this M/VP, which are expected to be able to accommodate the increase in passengers. However, although new parking structures are also proposed to handle the drive-in passengers, the primary element of the new cruise terminals that could be impacted the most are the GTAs.

With more passengers arriving for embarkation, particularly with the mega-ship classes such as the Royal Caribbean Oasis and Icon classes, the GTAs at these terminals could potentially be overwhelmed even with the upgrades proposed in this M/VP. This is further exacerbated by a disembarkation process that is now quicker and puts larger numbers of passengers into the GTA for pick-ups within a relatively short period of time.

One strategy to mitigate and improve these issues is to provide a Consolidated GTA facility. This facility would need to be centralized to be effective and to minimize the cost of shuttling passengers to and from the cruise terminals. The proposed location for this facility is within the Lot A area of Midport, which would be in relatively close proximity to Cruise Terminals 19, 21, 25, and 26, as shown in **Figure 3.10.34**. The Consolidated GTA would be designed to facilitate seamless transitions between transportation modes and support passenger flow and convenience for terminal connections.

The estimate cost for the Consolidated GTA Facility, which would be a paved surface area, includes passenger and baggage loading and unloading areas, roadways and access areas, signage/wayfinding and striping, permit controls, and supporting utilities, lighting, and ancillary site structures. Access between the facility and the adjacent cruise terminals would be via surface-level walkways and sidewalks, with an elevated pedestrian bridge structure over Eller Drive.

**Figure 3.10.34: Consolidated GTA<sup>93</sup>****Cruise Terminal 18****Total Estimated Project Cost:** \$154.0 million**Project Location:** Midport**Port Business Line:** Cruise**Plan Period(s):** 10-20 years and 20+ years

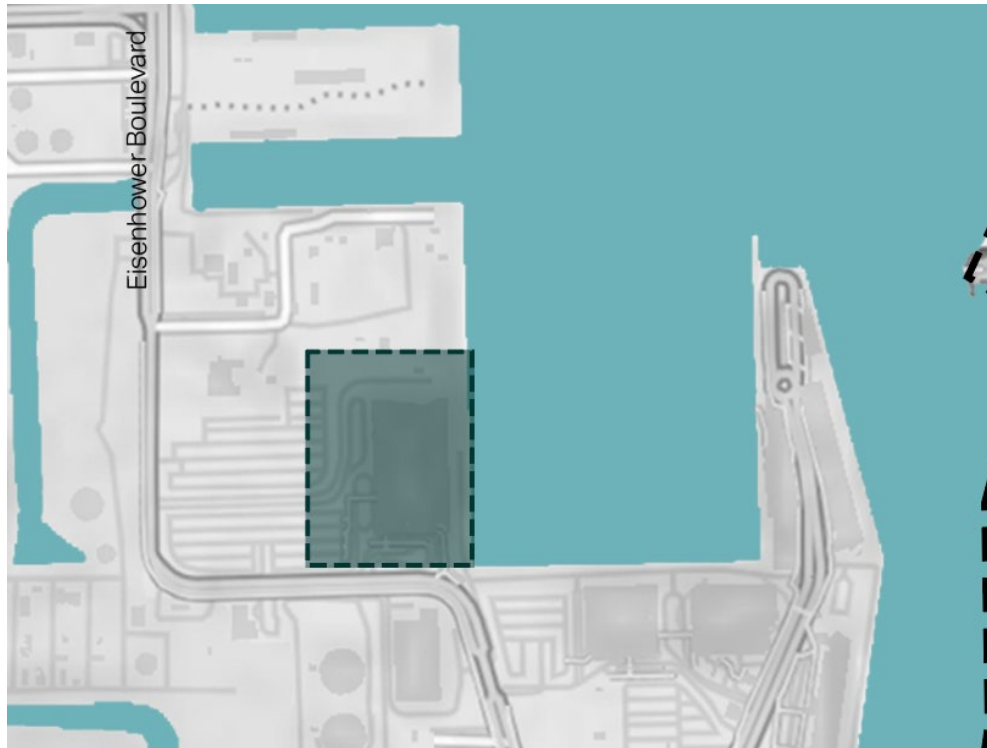
The existing Cruise Terminal 18 facility, much like some of the other Midport cruise terminals, needs significant improvements. For this specific terminal, the most efficient approach is replacement of the existing building, which is also over-sized for current usage, needs aesthetic improvements, and requires electrical/power upgrades. The Cruise Terminal 18 area is represented in **Figure 3.10.35**.

The new terminal building would be right sized to accommodate the Oasis and Icon class vessels that will berth at this terminal, including a wide apron. This project, as with the other cruise terminals, would also include a new and improved GTA and will also need to be aligned with the

<sup>93</sup> Source: AECOM. Note: For planning purposes only.

new Midport multi-level parking structure to be located in Lot B, included in the 5-Year Plan. Bulkhead improvements for Berths 16-18 are included in the current M/VP as a separate project that is include in the 5-Year and 10-Year Plans. This project starts in the 20-Year Plan and will be completed in the 20+-Year Plan.

**Figure 3.10.35: Cruise Terminal 18<sup>94</sup>**



### Cruise Terminal 26

**Total Estimated Project Cost:** \$116.0 million

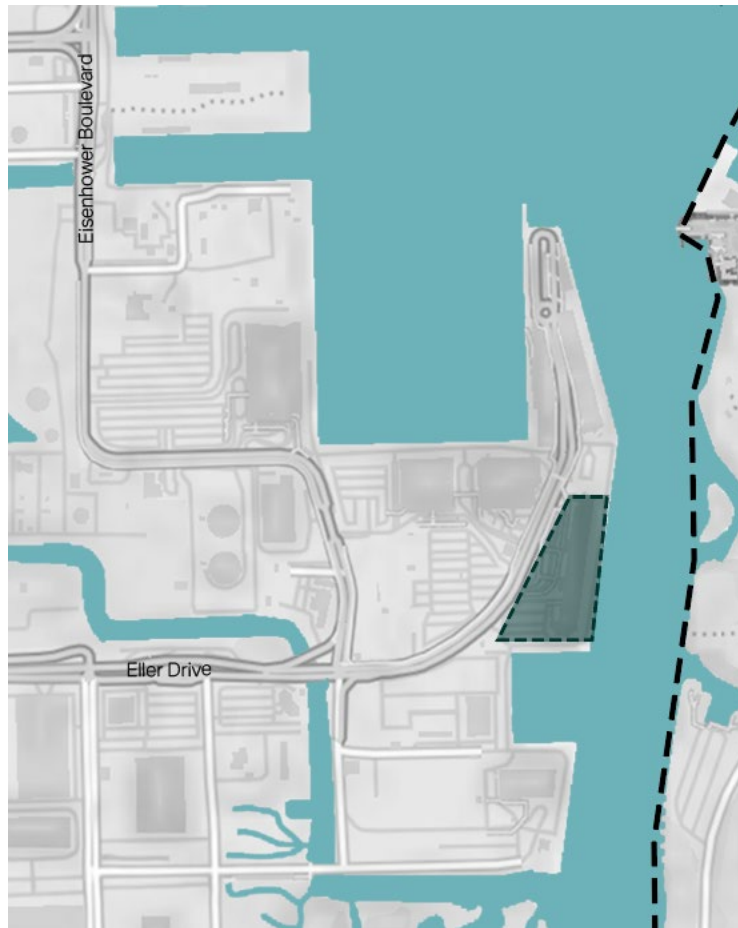
**Project Location:** Midport

**Port Business Line:** Cruise

**Plan Period(s):** 10-20 years and 20+ years

The existing Cruise Terminal 26 building is in relatively good condition compared to some of the other cruise terminals, but the terminal does require redevelopment. Upgrades proposed for this terminal include interior refurbishment and improvements, upgrade of the Berth 26 bulkhead for structural and resiliency improvements, and a larger GTA. One note is that a wider apron may be required to support berth operations for larger vessels, and this may require modifications to the terminal building. The Cruise Terminal 26 area is shown in **Figure 3.10.36**. The project starts in the 20-Year Plan and will be completed in the 20+-Year Plan.

<sup>94</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.36: Cruise Terminal 26<sup>95</sup>****Energy Business Line**

Only one energy business line project is included in the 20-Year Vision Plan – New Petroleum Entrance South of Spangler. This project is discussed further below.

**New Petroleum Entrance South of Spangler**

**Total Estimated Project Cost:** \$10.0 million

**Project Location:** Northport

**Port Business Line:** Energy

**Plan Period(s):** 10-20 years

There are several projects in the current M/VP that address improvement of Port traffic and gate operations, namely the Griffin Road Access project (in the 5-Year Plan), Realignment of McIntosh Road (in the 10-Year Plan) and Eller Drive Gate Reconfiguration (in the 10-Year Plan). Each of these projects will improve traffic flow into and out of the Port, as well as within the Port. This

<sup>95</sup> Source: AECOM. Note: For planning purposes only.

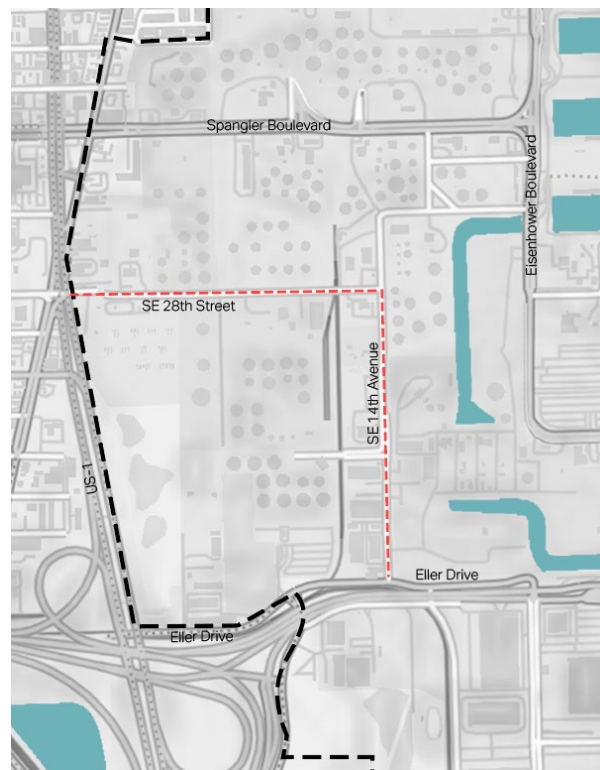
project – New Petroleum Entrance South of Spangler – will also improve traffic within the Port by removing liquid bulk truck traffic from the Northport and Midport areas of the Port.

The liquid bulk tank farms are all within the Northport area of the Port, with most located south of Spangler Boulevard and several tank farms north of Spangler Boulevard. Truck traffic to these tank farms enters the Port through the Eisenhower Boulevard, Spangler Boulevard, and Eller Drive perimeter gates. Development of a new gate dedicated to truck traffic for the tank farms south of Spangler Boulevard would remove considerable traffic from these perimeter gates and improve their operations.

The New Petroleum Entrance South of Spangler would include an entrance gate on 28<sup>th</sup> Street at Federal Highway (US-1) and exit gate on SE 14<sup>th</sup> Avenue at Eller Drive, as shown in **Figure 3.10.37**. This route between the gates would be one-way through the tank farm area. Development of this road network would require expansion and upgrade of the existing roads, which are generally one- or two-lane roads.

The new entrance gate would need manned check-in facilities and lanes, with appropriate security control measures, and potentially also an automated lane. Access into this gate facility off of Federal Highway would need to be studied to determine if additional road improvements are required. The exit gate at SE 14<sup>th</sup> Avenue and Eller Drive could be an automated exit facility.

**Figure 3.10.37: New Petroleum Entrance South of Spangler<sup>96</sup>**



<sup>96</sup> Source: AECOM. Note: For planning purposes only.

### 3.10.6 Long-Term Vision Plan

There are five total projects proposed beyond the 20-year planning horizon for the 2024 M/VP Update. All five of these projects begin construction in the 5-year, 10-year, or 20-year time periods and then would continue with implementation into the 20+-year period, extending beyond the year 2045.

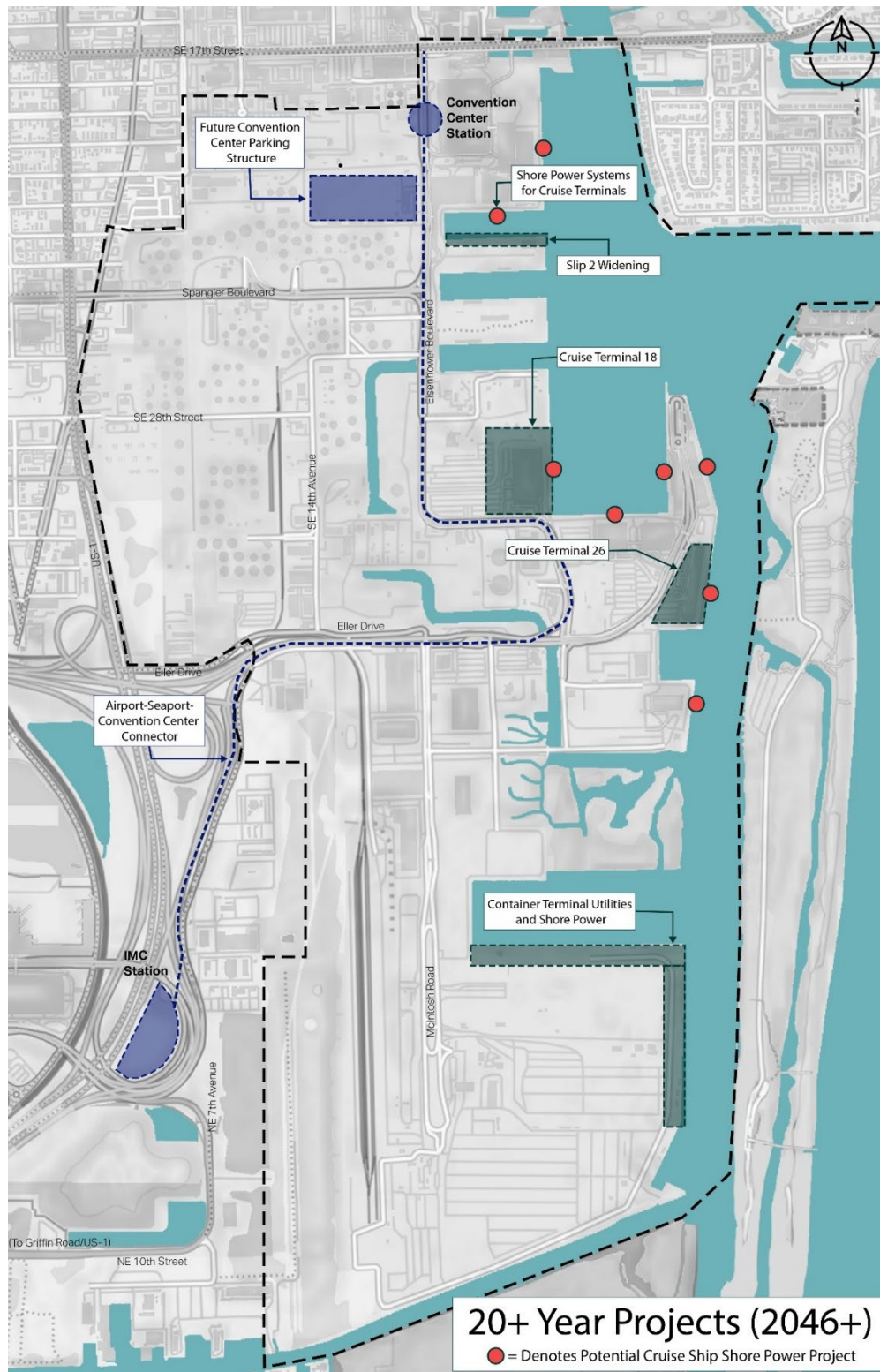
The primary reason these projects extend beyond 2045 (and the 20-Year Plan) is the ability of the Port to afford all of the projects included in the 2024 M/VP Update. If the Port obtains additional funding for projects, or the importance, sequencing, and costs of project change, these projects could be reevaluated for completion within the 20-year planning horizon. These projects are shown in **Table 3.10.19** and **Figure 3.10.38** below.

**Table 3.10.19: 2024 Master/Vision Plan Projects and Funding Sources (20+ Years, 2046+)**

Project	Port Funds	Private Funds	State Funds	Federal Funds	Total Period Cost
Container Terminal Utilities and Shore Power*	\$59.0	-	-	-	\$59.0
<b>Container Subtotal</b>	<b>\$59.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$59.0</b>
Slip 2 Widening*	\$209.5	-	-	-	\$209.5
<b>Non-Container Subtotal</b>	<b>\$209.5</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$209.5</b>
Shore Power Systems for Cruise Terminals*	\$50.0	-	-	-	\$50.0
Cruise Terminal 18*	\$10.4	\$15.6	-	-	\$26.0
Cruise Terminal 26*	\$21.7	\$32.5	-	-	\$54.2
<b>Cruise Subtotal</b>	<b>\$82.1</b>	<b>\$48.1</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$130.2</b>
<b>Total 20+-Year Project Costs</b>	<b>\$350.6</b>	<b>\$48.1</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$398.7</b>

\*Project appears in multiple 2024 M/VP planning periods.

Figure 3.10.38: Proposed 20+-Year Projects at Port Everglades<sup>97</sup>



<sup>97</sup> Source: AECOM. Note: For planning purposes only.

All five of the projects included in the 20+-year time period have been previously detailed in Sections 3.10.3 through 3.10.5 above.

### 3.10.7 Other Projects Considered

In addition to the 34 projects included in the final 2024 M/VP Update, as presented throughout Section 3.10, there were a number of other project ideas that were developed into projects and considered for final inclusion in this M/VP. Ultimately, these projects were not included in the 2024 M/VP Update for a variety of reasons that are listed below.

- The Port’s affordability and available funding for projects
- The type/nature of the project did not merit inclusion in the M/VP
- The current and/or future market conditions of the Port do not yet warrant inclusion of the project
- The anticipated return on investment for the project was determined to be low
- The project would interfere with another project that had higher value to the Port
- The project will be developed by a third-party

These projects are discussed further below and summarized in **Table 3.10.20**.

**Table 3.10.20: New Projects Considered but not Included in the 2024 M/VP Update**

Project	Business Line	Location
South Extension of Berths 31-32	Container	Southport
Relocate Break Bulk Cargo to Berth 30E	Non-Container	Midport
RORO Ramp at Tracor Basin	Non-Container	Midport
Create New Petroleum Entrance North of Spangler	Energy	Northport
Global Terminal Rail Upgrades	Energy	Northport
Dynegy Development and Rail Extension	Port-wide/Other	Northport
Upgrade Drainage Systems for Tank Farm Terminals	Port-wide/Other	Northport
General Road Safety Upgrades	Port-wide/Other	Port-wide

#### **Container Business Line**

One container business line was considered for the 2024 M/VP but was not included in the final plan – South Extension of Berths 31-32. This project is discussed further below.

#### **South Extension of Berths 31-32**

Once the Main Channel Deepening and Widening project is completed, larger container ships will be able to call at the Port, bringing more containers per vessel call. In addition, with completion

of the Container Terminal Redevelopment included in this M/VP Update, the container terminal will have capacity to handle the increase in container volumes. However, it is likely that the container berths will not have additional capacity.

The larger ships that will berth at the Port will likely be Super-Post Panamax vessels with 15,000 to 16,000 TEU capacity. These vessels are significantly longer than the vessels that currently call at the Port, on the order of 1,100 feet in length or more. When one of these vessels berths at Berths 31-32, no other vessel will be able to use these berths, which will significantly impact berthing capacities in Southport.

The solution to this is to extend Berths 31-32 to the south, which could provide an additional 800 to 900 feet of berth, as shown in **Figure 3.10.39**. This extension would allow for simultaneous berthing of two vessels. There are several considerations that will need to be addressed to facilitate this project:

- Berth depths will need to be confirmed and may require deepening to support the large vessels,
- The STS cranes will be height-restricted; these heights will need to be confirmed for loading/unloading of containers for these ships, and
- A new RORO berth will be required to replace elimination of the Berth 33C RORO berth.

An alternative to a southern extension of Berths 31-32 is to realign Berths 33A/B into a different configuration to provide a longer realigned Berth 33.

**Figure 3.10.39: South Extension of Berths 31-32<sup>98</sup>**

### **Non-Container Business Line**

Two non-container business line projects were considered for the 2024 M/VP but were not included in the final plan:

- Cruise Terminal 18, and
- Cruise Terminal 26.

These projects are discussed further below.

### **Relocate Break Bulk Cargo to Berth 30E**

The project included creation of a dedicated area for break-bulk cargo at the Turning Notch berths, focusing on Berth 30E with consideration for Berth 30D, as shown in **Figure 3.10.40**. This project would require storage capacity nearby (Berths 30 D/E), which has already been dedicated to King Ocean for their container terminal relocation and consolidation.

<sup>98</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.40: Relocate Break Bulk Cargo to Berth 30E<sup>99</sup>**

#### RORO Ramp at Tracor Basin

The purpose of this project was to add an additional RORO berth and ramp in the Tracor Basin to provide more options for handling of break-bulk cargo, as shown in **Figure 3.10.41**. It was determined this project would have a low return on investment and, more importantly, would also interfere with several other projects in Tracor Basin, which included:

- Temporary relocation of the USCG Station to the south side of the Tracor Basin during construction of the Channel Deepening and Widening,
- Extension of the Berth 29 to the north, with a pier extension that will extend to and replace the existing mooring dolphin in the Tracor Basin, and
- Development of the Balearia ferry terminal at Berth 28A on the north side of the Tracor Basin.

<sup>99</sup> Source: AECOM. Note: For planning purposes only.

**Figure 3.10.41: RORO Ramp at Tracor Basin<sup>100</sup>**

### **Energy Business Line**

Two non-container business line projects were considered for the 2024 M/VP but were not included in the final plan:

- Cruise Terminal 18, and
- Cruise Terminal 26.

These projects are discussed further below.

### **Create New Petroleum Entrance North of Spangler**

Development of a new dedicated entry and exit gate for northern tank farms located north of Spangler Blvd. This project would complement the New Petroleum Entrance South of Spangler. However, unlike the proposed southern gate, where there is already an existing road network, an entirely new road network and gate complex would need to be developed on private property. Furthermore, construction of the new Convention Center Connector (Bypass Road) has now impacted the ability to perform this project, although alternative locations could be considered if this separate dedicated gate facility is considered further.

<sup>100</sup> Source: AECOM. Note: For planning purposes only.

### Global Terminal Rail Upgrades

Expansion of the Global Terminal rail loading/unloading facility would likely require upgrade of the rail connection into this facility, shown in **Figure 3.10.42**. These upgrades would likely be the responsibility of the Port. At this time, it is unclear the extent of upgrades required and the resulting potential increase in liquid bulk business to justify the investment.

**Figure 3.10.42: Global Terminal Rail Upgrades<sup>101</sup>**



### Port-Wide/Other Improvements

Three Port-wide/other projects were considered for the 2024 M/VP but were not included in the final plan:

- Dynegy Development and Rail Extension,
- Upgrade Drainage Systems for Tank Farm Terminals, and
- General Road Safety Upgrades.

These projects are discussed further below.

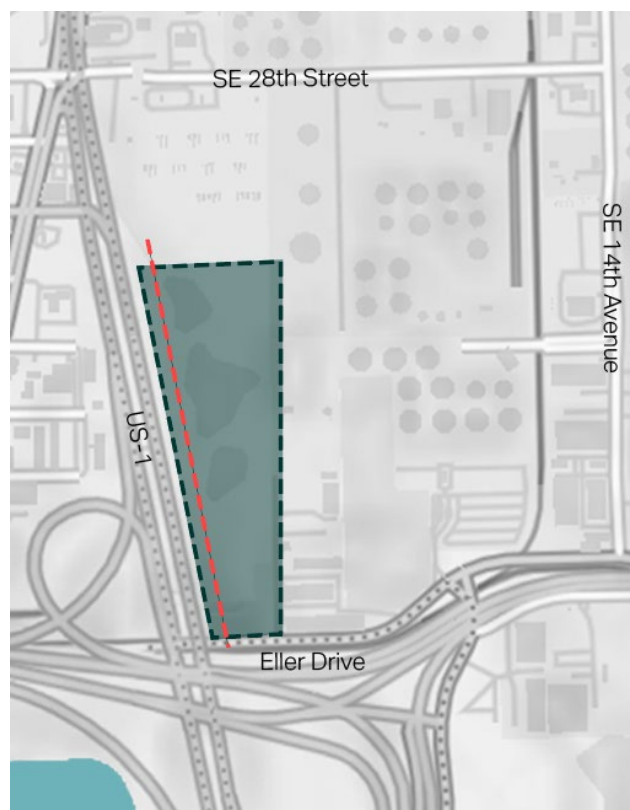
<sup>101</sup> Source: AECOM. Note: For planning purposes only.

### Dynegy Development and Rail Extension

The Dynegy property located within the Port remains undeveloped. The property could have several potential uses and its redevelopment should be advanced, although it is expected at this stage that development will likely be performed by an independent third party.

As a part of (or separate from) this project, depending on the intended use, rail access into the property and extension of the rail to the north of the property could support increased import/export of petroleum products from tank farm terminals located north of the Dynegy property (see **Figure 3.10.43**). The business case for this project does not yet exist, as it is unclear the extent of increased business and return on investment this part of the project would support.

**Figure 3.10.43: Dynegy Development and Rail Extension<sup>102</sup>**



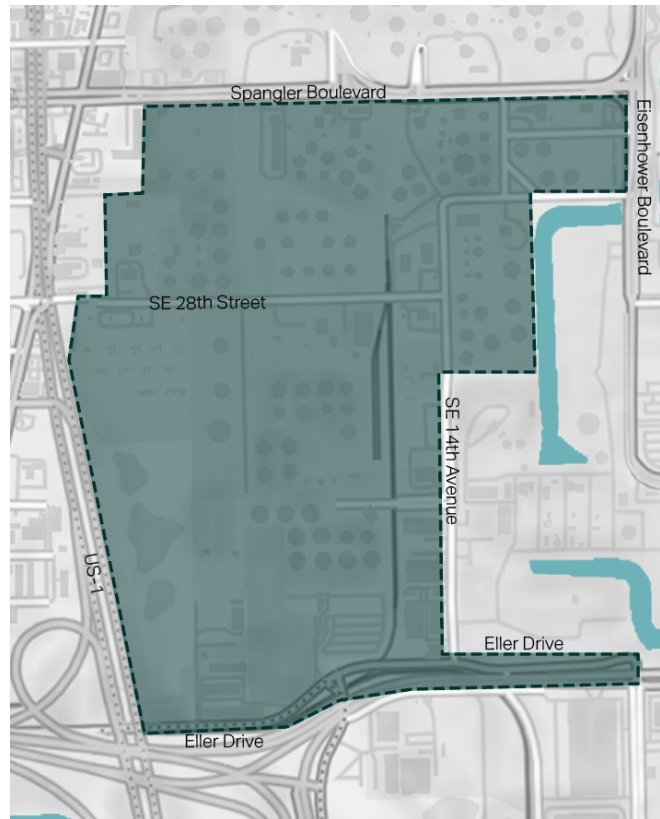
### Upgrade Drainage Systems for Tank Farm Terminals

Extreme precipitation events at the Port in 2023 and 2024, which significantly impacted Port operations and cargo delivery, particularly petroleum products, showed that improvements to the stormwater capture and conveyance systems outside the terminals within the tank farm area are necessary to reduce the probability of inundation events and increase resiliency. Although

<sup>102</sup> Source: AECOM. Note: For planning purposes only.

this project is necessary, and it will be performed by the Port as part of their CIP within the area shown in **Figure 3.10.44**, the project did not merit inclusion in the 2024 M/VP Update.

**Figure 3.10.44: Upgrade Drainage Systems for Tank Farm Terminals<sup>103</sup>**



### General Road Safety Upgrades

Installation of traffic control and safety measures throughout the Port is necessary. Currently, cruise passengers walk through the Port in areas that do not have existing or proper sidewalks, increasing safety risks. Potential road upgrades and measures that could be incorporated to improve safety throughout the Port include: installation of speed bumps and speed inhibitors; new signals and signage; sidewalk improvements; addition of barriers and crossings for pedestrian safety; and consideration for road realignments. Although this project is necessary, and it will be performed by the Port as part of their CIP, the project did not merit inclusion in the 2024 M/VP Update.

<sup>103</sup> Source: AECOM. Note: For planning purposes only.

### 3.11 Summary of Updates/Changes

As an update to previous iterations of the Port Everglades M/VP, the 2024 M/VP Update used the list of proposed projects from the previous 2020 M/VP Update as a starting point for development of the proposed 5-Year Master Plan and 10- and 20-Year Vision Plans for the Port. Given the changes experienced by the Port during the intervening years between plans, including shifting trade patterns, evolving Port needs, and particularly the COVID-19 pandemic, there are a number of projects that were included in the 2020 M/VP Update that were no longer deemed priorities or necessary for inclusion in the 2024 M/VP Update. These projects are detailed in **Table 3.11.1** below.

**Table 3.11.1: 2020 M/VP Update Projects Not Included in 2024 M/VP Update<sup>104</sup>**

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
RORO Yard Relocation/Expansion (Phases 1, 2, and 3)	Midport	Phase 1: 5-Year Plan Phase 2: 10-Year Plan Phase 3: 20-Year Plan	Canceled	This project included proposed relocation and expansion of the existing RORO facility in Midport, to be performed in three phases. Phase 1 was to expand from nine acres to 15 acres, Phase 2 to 17 acres and Phase 3 to 25 acres. This project was not carried forward into the 2024 M/VP Update as the anticipated RORO business did not materialize and no growth is forecasted.
Former Dynegy Logistics Development	Port-Wide/ Other	5-Year Plan	On Hold	This project envisioned development of a cold storage facility on the former Dynegy property at SE 9 <sup>th</sup> Avenue and Eller Drive. The project was not included in the 2024 M/VP Update because the business case for the project remains unclear with several potential uses possible for the site. If this project progresses, it is anticipated that an independent third party will redevelop this site.

<sup>104</sup> Source: Port Everglades.

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
Auto Terminal West	Port-Wide/ Other	5-Year Plan	Canceled	This project proposed development of 20 acres underneath the FPL lines, to the west of the FECR ICTF, into a satellite auto yard for the ICTF to accommodate domestic auto cargo moved by FECR. This project was expected to be fully funded and implemented by third parties; however, was not included in the 2024 M/VP Update because it is no longer a priority for FECR, the anticipated auto business has gone to other ports, and no growth is forecasted.
I-595 Flyover	Port-Wide/ Other	5-Year Plan	Canceled	An I-595 Flyover project was proposed to separate Southport truck traffic from Midport traffic and reduce traffic impacts to the Eller Drive perimeter gate by linking McIntosh Road directly to I-595. A study was performed to evaluate this project, and it was determined the project would not provide the intended benefits, As such, this project was not carried forward into the 2024 M/VP Update.
Break Bulk Yard	Northport	10-Year Plan	Canceled	The project involved development of a new seven-acre break-bulk yard on a vacant lot adjacent to the Port Maintenance Facility, which was proposed in the Northport area in the 2020 M/VP Update. The business case and potential return on investment did not warrant carrying this project forward in the 2024 M/VP Update.
Berths 4-6 Bulkheads	Northport	10-Year Plan	Not Started	The 2020 M/VP Update included the reconstruction of the Berths 4-6 bulkheads. This project was not carried forward into the 2024 M/VP Update because it was deemed not to be necessary within the 20-year time period.

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
Tracor Basin Fill	Midport	10-Year Plan	Canceled	The Tracor Basin fill project was a carry-over project from the 2014 M/VP Update. This project proposed filling of the entire Tracor Basin to create a contiguous berth between Cruise Terminals 26 and 29. This project was not carried forward into the 2024 M/VP Update because it would permanently displace the tug facilities, for which a replacement location could not be identified without impacting tug operations in the Port, and the Cruise Terminal 29 development includes a northern pier extension to provide the longer berth necessary for Berth 29.
Airport-to-Seaport-to-Convention Center Connector	Port-Wide/Other	10-Year Plan	Ongoing	In the 2020 M/VP Update, this project was included as a planned County-led expansion of transit options that would provide direct service to the Port to/from FLL and the Broward County Convention Center. As this project is County led, it has not been included as a Port project in the 2024 M/VP Update. Several proposed projects in the 2024 M/VP Update will need to be coordinated with this project.
Berth 19 Finger Pier	Midport	20-Year Plan	Canceled	This project was included in the 2020 M/VP Update as a carry-over project from the 2014 M/VP and proposed addition of two cruise berths via a finger pier extending from Berths 19-20 into the South Turning Basin, which would provide the Port with a 9 <sup>th</sup> cruise berth. The proposed project included expansion of Cruise Terminal 19 and new Cruise Terminal 20. This project was not included in the 2024 M/VP Update as the cost for this project is significant and, with the increasing size of cruise ships calling at the Port, does not provide an additional new (9 <sup>th</sup> ) berth.
Berth 23 Bulkhead	Midport	20-Year Plan	Not Started	Reconstruction of the Berth 23 bulkhead was a carry-over project from the 2014 M/VP Update. This project was not carried forward into the 2024 M/VP Update because it was deemed not to be necessary within the 20-year time period.

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
Berths 24 and 25 Bulkheads	Midport	20-Year Plan	Not Started	The 2020 M/VP Update included reconstruction of the Berths 24 and 25 bulkheads as a carry-over project from the 2014 M/VP Update. This project was not carried forward into the 2024 M/VP Update because it was deemed not to be necessary within the 20-year time period.
Phase 9C-2	Southport	20-Year Plan	Canceled	The 2020 M/VP Update included the Phase 9C-2 container yard project as a 14-acre expansion of container yard space where the current Port Administration Building is located. This project was canceled as it was determined not to be necessary.

In addition to projects that were not carried forward from the 2020 M/VP Update or were canceled between the 2020 and 2024 M/VP development cycles, a number of other projects from the 2020 M/VP Update were included in the 2024 M/VP Update but with changes to project scope, schedule, and/or budget. These projects that have been modified and carried forward into the 2024 M/VP Update are listed in **Table 3.11.2**.

**Table 3.11.2: 2020 M/VP Update Projects Modified in the 2024 M/VP Update<sup>105</sup>**

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
Maintenance Facility Consolidation	Northport	5-Year Plan	Ongoing	This project was planned for an 11-acre Northport site in the 2019-2023 timeframe at a cost of \$21M. Prior to the 2024 M/VP Update, project was proposed in a Midport location at a \$86M cost. In the 2024 M/VP Update, the project duration (between 2026-2030) and cost (\$60M) have been updated, and the location within the Port is to be determined.

<sup>105</sup> Source: Port Everglades.

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
Slip 1 - Phase 1 (Berths 9/10 Bulkheads)	Northport	5-Year Plan	Ongoing	In the 2020 M/VP Update, this project was planned for the 2019-2025 timeframe at a cost of \$138M. In the 2024 M/VP Update, this project is planned for the 2026-2030 timeframe at an adjusted cost of \$224M.
CT-21 Redevelopment	Midport	5-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2020-2023 timeframe at a cost of \$124M. In the 2024 M/VP Update, this project is planned for the 2031-2045 timeframe at an adjusted cost of \$307M, as the scope of the project has changed considerably and now includes GTA and bulkhead improvements.
Berths 16-18 Bulkheads	Midport	5-Year Plan	Ongoing	In the 2020 M/VP Update, this project was planned for the 2022-2026 timeframe at a cost of \$26M. In the 2024 M/VP Update, this project is planned for the 2026-2035 timeframe at an adjusted cost of \$103M.
Slip 1/Phase 2 (Berths 7, 8, and 8A Bulkheads)	Northport	10-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2025-2027 timeframe at a cost of \$41M. In the 2024 M/VP Update, this project is planned for the 2031-2035 timeframe at an adjusted cost of \$73M. As proposed in the 2024 M/VP, the project no longer includes Berth 8A bulkhead improvements.
CT-29 Redevelopment	Midport	10-Year Plan	Ongoing	In the 2020 M/VP Update, this project was planned for the 2024-2027 timeframe at a cost of \$124M. In the 2024 M/VP Update, this project is planned for the 2026-2030 timeframe at an adjusted cost of \$253M. In the 2024 M/VP, the project now includes a northern pier extension of Berth 29 into Tracor Basin to replace the existing mooring dolphin and accommodate larger ship classes, as well as Berth 29 bulkhead improvements.

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
CT-26 Redevelopment	Midport	10-Year Plan	Not Started	This project was planned for the 2026-2030 timeframe at a cost of \$124M. In the 2024 M/VP Update, this project is now planned for the 2036-2045+ timeframe at an adjusted cost of \$116M. The proposed project no longer includes a complete teardown of the terminal, but rather refurbishment of the existing building, among other improvements.
CT-29 Parking Structure	Midport	10-Year Plan	Not Started	This project was planned for the 2026-2030 timeframe at a cost of \$41M. In the 2024 M/VP Update, this project is planned for the same timeframe, but at an adjusted cost of \$68M. The parking structure is now proposed to be combined with the CT-29 development rather than shared between CT-26 and CT-29.
Berths 14 and 15 Bulkheads	Midport	10-Year & 20-Year Plan	Not Started	The 2020 M/VP included the reconstruction of the Berths 14 and 15 bulkheads as a carry-over project from the 2014 M/VP Update. This project is intended to move forward as part of the proposed Slip 3 Widening project included in the 2024 M/VP Update rather than as a stand-alone project.
Berths 21 and 22 Bulkheads	Midport	10-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2019-2022 timeframe; it is now proposed for the 2031-2045 timeframe. In the 2024 M/VP Update, the Berths 21-22 bulkhead improvements are now included as part of the CT-21 redevelopment project.
Berth 29 Bulkheads	Midport	10-Year Plan	Ongoing	This project was planned for the 2024-2026 timeframe but is now proposed for the 2026-2030 timeframe in the 2024 M/VP Update as part of the CT-29 development project.

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
Griffin Road Extension/NE 7 <sup>th</sup> Avenue Improvements	Southport	10-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2024-2026 timeframe at a cost of \$21M. In the 2024 M/VP Update, this project is now planned for the 2026-2030 timeframe at an adjusted cost of \$38M; however, this cost does not include the roadway improvements outside the Port (which are not yet determined) that will be necessary to support the project.
McIntosh Road Realignment	Southport	10-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2024-2027 timeframe at a cost of \$18M to create a bidirectional multi-lane truck route to connect the I-595 flyover to the proposed southern access point at the Griffin Road extension. In the 2024 M/VP Update, this project is planned for the 2031-2035 timeframe at an adjusted cost of \$27Mt to provide a one-way truck route connecting the Griffin Road extension to Eller Drive.
Container Terminal Reconfiguration	Southport	10-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2024-2028 timeframe at a cost of \$38M and was imagined as a redesign of terminal access points and gates to complement the McIntosh Road Realignment project. This project was revised in the 2024 M/VP Update as a series of new container terminal redevelopment projects that include optimization and densification of the Southport container terminals and will have a greater impact on Port capacity and efficiency. This project is now planned for the 2026-2035 timeframe at a cost of \$450M.
Slip 3 Expansion (Berths 11-13 Bulkheads)	Northport	20-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2033-2038 timeframe at a cost of \$134M. In the 2024 M/VP Update, this project is planned for the 2036-2045 timeframe at an adjusted cost of \$224M.

2020 M/VP Update Project	2020 M/VP Update Location	2020 M/VP Update Period	Current Status	2024 M/VP Update Status
CT-19/CT-20 Redevelopment	Midport	20-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2035-2038 timeframe at a cost of \$214M. In the 2024 M/VP Update, the CT-19 terminal development is planned for the 2036-2045 timeframe at an adjusted cost of \$203M. The project no longer includes development of a twin CT-20 or the associated addition of the Berth 19 finger pier.
T19/T20 Parking Structure	Midport	20-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2035-2038 timeframe at a cost of \$57M. In the 2024 M/VP Update, this project is planned for the 2026-2030 timeframe at an adjusted cost of \$84M. This project is now included as a component of the New Midport Parking Structures project (Phase 1) and is proposed for Lot B instead of Lot A.
Berths 19 and 20 Bulkheads	Midport	20-Year Plan	Not Started	This project was planned for the 2034-2038 timeframe in the 2020 M/VP Update and is now proposed for the 2036-2045 timeframe in the 2024 M/VP Update. The project is now included as a component of the CT-19 redevelopment project.
Berths 26 and 27 Bulkheads	Midport	20-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2034-2039 timeframe, and it is now proposed for the 2036-2045+ timeframe in the 2024 M/VP Update. These bulkhead improvements are now included as a component of the CT-26 redevelopment project.
1 Small STS Crane	Southport	20-Year Plan	Not Started	In the 2020 M/VP Update, this project was planned for the 2029-2032 timeframe at a cost of \$15M. In the 2024 M/VP Update, this project is planned for the 2036-2045 timeframe, at an adjusted cost of \$20M and focuses on adding the STS crane at Berth 30A/B/C.