Fiscal Year 2016 Letter of Interest Form

All projects wishing to apply for Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance must first submit a Letter of Interest using this revised form. Pursuant to the recently enacted Fixing America's Surface Transportation (FAST) Act, the application process, which includes the submission of Letters of Interest, will be conducted on a rolling basis by the Department of Transportation (DOT). Applicants for Federal credit assistance must complete an acceptable Letter of Interest and meet all eligibility criteria to be permitted to submit a formal application. In the context of a public-private partnership, where multiple bidders may be competing for a concession such that the obligor has not yet been identified, the procuring agency must submit the project's Letter of Interest on behalf of the eventual obligor. DOT will not consider Letters of Interest from entities that have not obtained the legal rights to develop the project.

This revised Letter of Interest form reflects initial changes made to the TIFIA program by the FAST Act. Additional changes may be forthcoming as DOT considers public comments it may receive while continuing to implement the program. To be considered for TIFIA assistance, projects must submit a Letter of Interest that: (i) describes the project and the location, purpose, and cost of the project, (ii) outlines the proposed financial plan, including the requested credit assistance and the proposed obligor, (iii) provides a status of environmental review, and (iv) provides information regarding satisfaction of other eligibility requirements of the TIFIA credit program. Please reference the Notice of Funding Availability posted on March 11, 2016 in the Federal Register. At this time, the TIFIA Program Guide is being updated. Please check the TIFIA website regularly to identify updated program guidance, Letter of Interest, and application materials. Applicants should refer to the TIFIA website often to ensure that the most up-to-date Letter of Interest form is used (file date is included in the footer).

DOT will review each Letter of Interest and may contact project sponsors for clarification of specific information included in the Letter of Interest. DOT will notify project sponsors if DOT determines that their projects are not eligible, or if DOT will not be able to continue reviewing their Letter of Interest until eligibility requirements are addressed. If DOT does not determine a project to be ineligible based on its initial review, DOT will request additional information to supplement the Letter of Interest and complete its eligibility determination. This information may include, among other things, more detailed descriptions of the project, applicant and its organizational structure, the project's readiness to proceed, the project's financial plan (including a financial model), revenue feasibility studies, and financial commitments to the project from sources other than TIFIA. DOT will also request that the applicant provide a preliminary rating opinion letter at this time and the project sponsor will be required to submit a fee to continue the evaluation process. Once the fees have been received, DOT will engage an independent financial advisor to prepare a report and recommendation acceptable in form and substance to DOT. DOT may also engage an independent legal advisor to help complete its evaluation of a project's eligibility.

Except under limited circumstances as described further, the increased demand on TIFIA's resources has led to the discontinuation of the practice of advancing the entire cost of financial and legal advisors engaged to assist DOT in determining a project's creditworthiness and overall eligibility and having those costs reimbursed to DOT after execution of a credit agreement. As such, upon request, project sponsors must pay fees in the amount of $250,000 before DOT hires financial and/or legal advisors as part of the Letter of Interest review process. These fees are due upon request. Additional fees will be charged after the credit instrument is executed, including additional amounts required to fully cover TIFIA's financial and legal advisory services costs in connection with the evaluation and negotiation of the terms of TIFIA credit assistance for the project. By submitting this Letter of Interest, the applicant certifies that it will pay all required fees. However, for projects having eligible project costs that are reasonably anticipated to be $75 million or less, the FAST Act provides for the reservation of not less than $2 million of the TIFIA program's annual funding authority to be used in lieu of the third-party costs charged by DOT. Project sponsors wishing to be considered for this available funding should indicate such in their Letters of Interest.

After concluding its review of each Letter of Interest and related information submitted by the project, along with the independent financial analysis report from DOT's independent financial advisor, DOT will permit sponsors of eligible projects to submit complete applications. DOT will conduct a rolling application process where project sponsors may submit Letters of Interest at any time and DOT will permit project sponsors to apply once a favorable eligibility determination is made.

The boxes below expand as needed to facilitate provision of a sufficient amount of detail to demonstrate to DOT the project's satisfaction of all eligibility criteria. If you have questions regarding completing this form, please contact the TIFIA program office at (202) 366-1059. Please complete all applicable information using this Letter of Interest form and attach this request via email to TIFIACredit@dot.gov.

A) Describe the Project, Location, Purpose, and Cost of the Project.

1. Describe the project:

PROJECT OVERVIEW

Broward County's Port Everglades Department—a deepwater cargo, petroleum, and cruise port, and Florida's leader for containerized cargo volumes— is berth constrained. Additional dock space and low profile super post-Panamax gantry cranes are critically needed to transfer cargo intermodally from ship to shore for distribution throughout the United States by truck and rail. To meet the Port's current and future needs, an investment of hundreds of millions of dollars will be expended on construction and acquisition activities over the next four years

The Port Everglades **Intermodal Freight Connector Project**, shown in Figure 1, is a critical component of this investment, calling for the extension of an existing turning notch – *an area used to turn vessels* – to add up to five additional berths at the Port, purchase of super post-Panamax cranes to unload the container ships, renovation of dock infrastructure including additional crane rails and a switchgear building – *a two-story concrete block building of approximately 11,500 square feet to house new electrical switchgear for the cranes* – and state-of-the-art environmentally friendly bulkheads. These activities will complement the recent Florida East Coast Railway investment in an on-port Intermodal Container Transfer Facility (ICTF) – *which supports the loading of containers onto rail* – Florida Department of Transportation's (FDOT's) AASHIO award-winning Eller Drive Grade Separation Project, which separates truck and rail traffic serving Port Everglades' Southport container complex and allows for direct access to the Interstate system, and the Port Everglades Navigation Improvements Project to deepen and widen the port's channel, which will help the port continue to accommodate post-Panamax cargo vessels, which call at the port today. These improvements are critically needed to transfer cargo intermodally from ship to shore for distribution throughout the United States by truck and rail.

Growth and Master/Vision Plan

Florida's 2015 population of 19.8 million is expected to increase by 7.4 million, or 37 percent, by 2045. It is imperative that Florida's seaports are positioned and equipped to handle a growing volume of trade to ensure our nation's surface transportation system is used most efficiently. The **Intermodal Freight Connector Project** will ensure that Port Everglades is able to provide state-of-industry infrastructure and capacity necessary to fulfill its role as a nationally significant global gateway. Port Everglades is expected to continue as Florida's leading containerized cargo port, exceeding 1.7 million TEUs (the industry standard measurement of 20-foot equivalent units) in 2033 compared to the 1,037,226 TEUs handled in FY 2016.

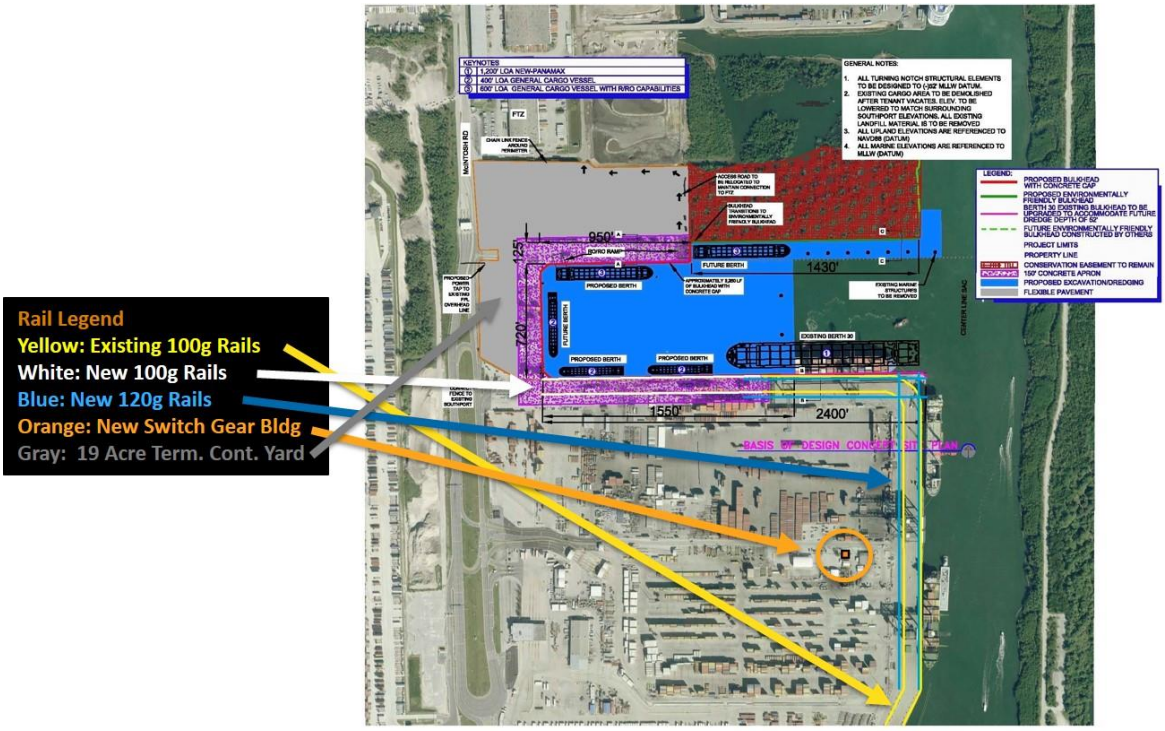
To support freight mobility and regional economic development initiatives, Port Everglades is committed to on-going capital improvements that benefit its customers in the cruise, cargo and petroleum industries, as outlined in its comprehensive 20-Year Master/Vision Plan. The Broward County Board of County Commissioners, which governs the Port as a self-funded enterprise fund, approved the Port Everglades 2014 Master/Vision Plan on June 24, 2014. To develop the Plan, more than 20 meetings with customers, stakeholders and the general public were held to ensure that their input was incorporated into the planning process. As defined in this Plan, Port Everglades is embarking on critical expansion projects

that are projected to create 7,000 new jobs regionally and support 135,000 jobs statewide over the next 15 years for a total 143,000 jobs. Currently, all business sectors at Port Everglades supports 12,963 direct jobs locally along with 8,065 induced jobs, 9,344 indirect jobs, and 192,543 related user jobs – jobs held throughout the state with manufacturing and wholesale and retail distribution firms using the seaport terminals for the shipment and receipt of cargo – for a total of 226,553 jobs statewide (See Appendix A). The **Intermodal Freight Connector Project** is projected to provide a $10.7 billion annual increase in economic activity related to the Port, and create 2,227 construction jobs in the near term and 5,529 regional jobs by the year 2031 when it is expected to be fully utilized at its maximum capacity.

The following components make up the **Intermodal Freight Connector Project:**

Southport Improvements Component – A portion of an existing upland cargo container terminal yard, which will be removed, was built over an existing landfill. This material will be excavated, sorted and disposed. The construction will consist of a new approximately 19 acre cargo container terminal yard which will be surrounded by a 125' wharf area on two sides of the new berthing area (west and north). With the south side already have been developed. Concrete will be limited to areas adjacent to the docks with the majority of the cargo area being asphalt pavement. In addition, approximately 3,250 linear feet of new bulkhead, along with the construction of approximately 1,600 linear feet of new environmentally friendly bulkhead, and a toe-wall – *a low retaining wall* – for existing Berth 30. The project will also add approximately 1,420 linear feet of wharf to the west along Berth 30. This will result in up to five (5) additional vessel berths to support the Southport container terminal complex (See Figure 1).

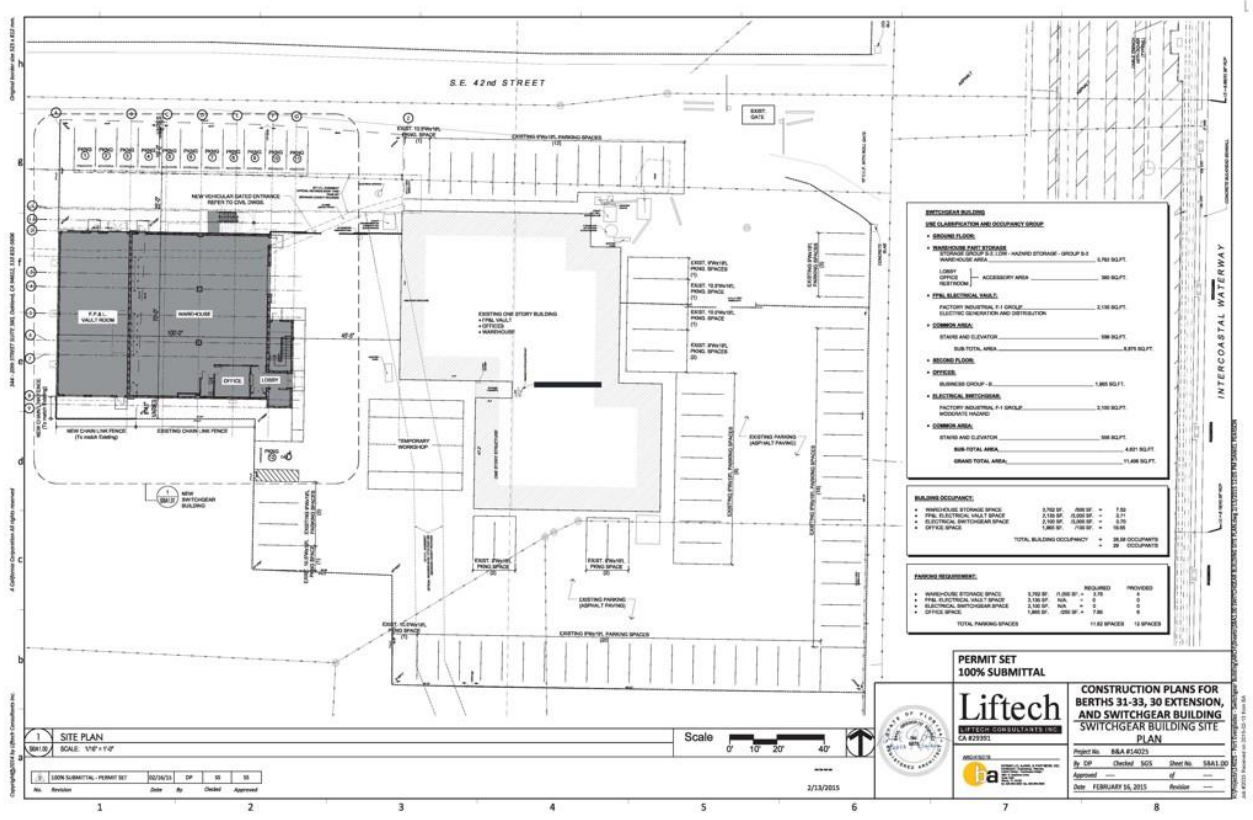
Figure 1: Southport Improvements Component Concept Plan



Crane Rail Infrastructure Component - Upgrades to the landside infrastructure necessary to accommodate new Super Post Panamax container gantry cranes and the existing container cranes. The electric utility company furnishing the power for the cranes requires a standalone, two-story concrete block building of approximately 11,500 square feet to house new electrical switchgear for the cranes. A power vault will be on the first floor. The electrical switchgear will be housed on the second level. See Figure 2 for the Switchgear building site plan. Other key elements are:

- 1,900' of new crane rail girders at Berths 31-32 for new container cranes with 120' gauge – *gauge refers to the spacing between the inner faces of the load-bearing rails of a railway track (*See Figure 1).
- 1,100' of new crane rail girders at Berth 30 for new container cranes with 120' gauge (see Figure 1).
- 1,500' of new crane rail girders at Berth 30 Extension for upgraded cranes with 100' gauge (See Figure 1).
- Crane tie-downs and stowage sockets for Berths 31-32, and 30 extension
- New electrical cable trench and vaults at Berths 31-32 for new cranes and Berth 30 extension for existing cranes
- 13.2 kV, 12,600 kVA of electrical supply for new cranes
- Electrical cabling network and power duct (new and rerouted)

Figure 2: Switchgear Building Site Plan

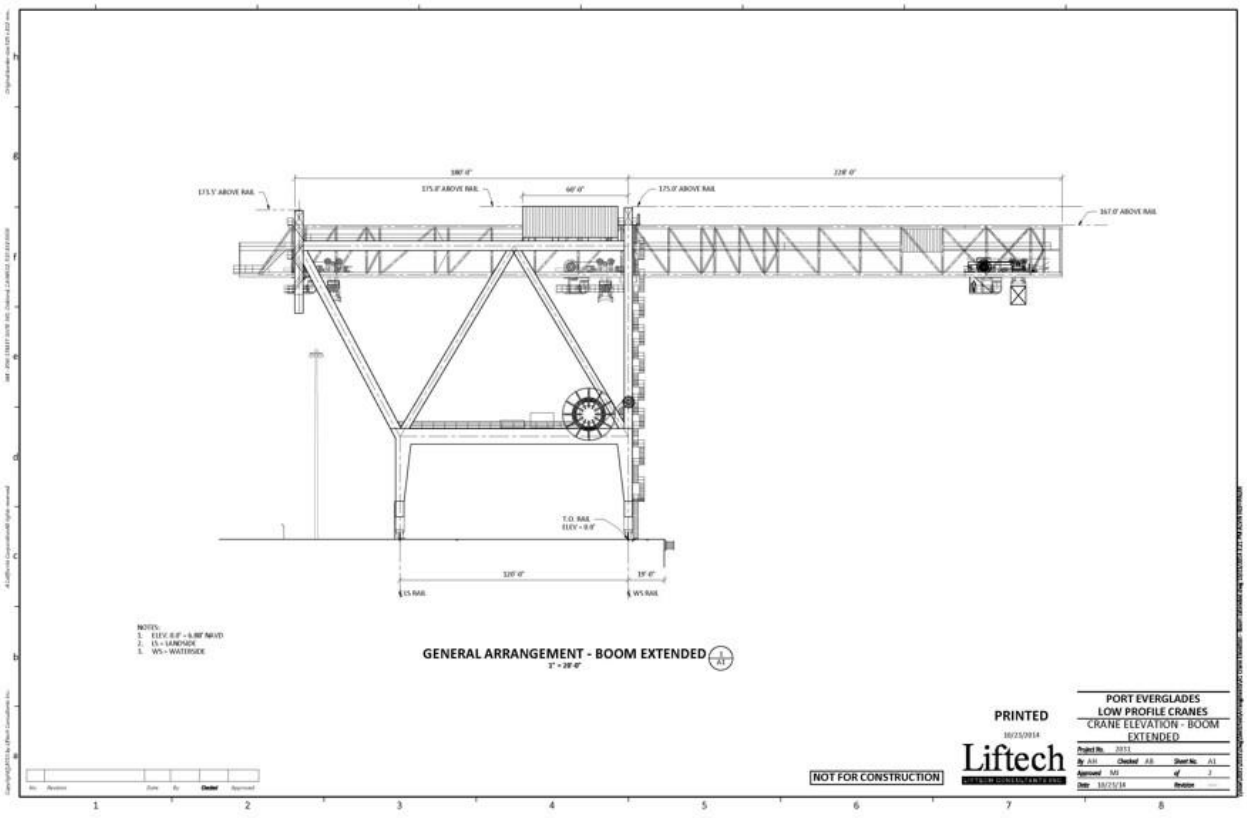


Super Post-Panamax Low Profile Container Gantry Cranes Component – Purchase of three newly designed and constructed rail-mounted container gantry cranes. Each will be capable of reaching across ships carrying containers 22 units wide and lifting a container above a height of seven containers stowed on the deck of a Post-Panamax container ship (See Figure 3). These cranes are necessary to service these larger ships as some existing cranes cannot reach across the full deck of the larger ships. The cranes will be fully powered in all functions by electric power furnished by the local utility company. The cranes will be equipped with up-to-date systems including anti-sway, semi-automated operation, gantry equalizer system, collision avoidance, and will be constructed to meet the stringent Florida Building Code standards. The key elements are:

Port Everglades has worked with the Federal Aviation Administration to ensure that the low-profile cranes do not impact operations at Broward County's Fort Lauderdale-Hollywood International Airport adjacent to the port.

- Each crane will stand 175' tall above the dock surface
- Cranes will move laterally along the dock at a rail gauge of 120 feet
- Lifting capacity of 65 long tons (2240 pounds)

Figure 3: Super Post-Panamax Cranes Component



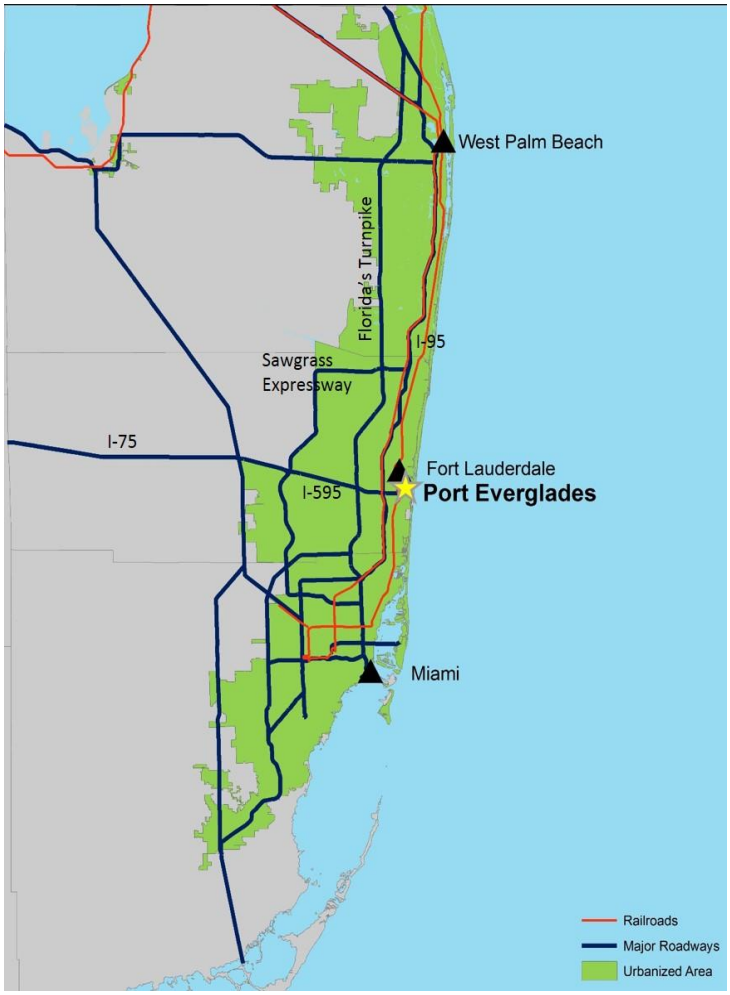
2. Describe the project location:

Project Location

With a population in South Florida of over 6 million[1] and almost 20 million in the state, it is vital that Florida's seaports are positioned and equipped to handle a growing volume of trade to ensure our nation's surface transportation system is used most efficiently. Port Everglades is located in the center of the Miami urbanized area of South Florida, with the three major cities of Miami, Fort Lauderdale and West Palm Beach. The **Intermodal Freight Connector Project will ensure that Port Everglades is able to provide state-of-industry infrastructure and capacity necessary to fulfill its role as a nationally significant global gateway.**

Figure 4 shows the location of Port Everglades in Florida. The Port's jurisdictional area consists of approximately 2,190 acres, inclusive of land and water, designated for shipping, warehousing, and all other non-residential uses. The Port owns approximately 1,277 acres. Port Everglades is located in Broward County within the Cities of Fort Lauderdale, Dania Beach, and Hollywood.

Figure 4: Location of Port Everglades



In 2014, the FDOT Eller Drive Overpass opened to connect the east end of I-595 directly to the Port's main entrance. **The Overpass allows vehicles entering Port Everglades to travel unimpeded over two at-grade rail tracks that lead into the Florida East Coast Railway's (FECR) new ICTF. Port Everglades has the shortest entrance channel of Florida's ports and I-595 connects directly to I-95, I-75 and Florida's Turnpike.**

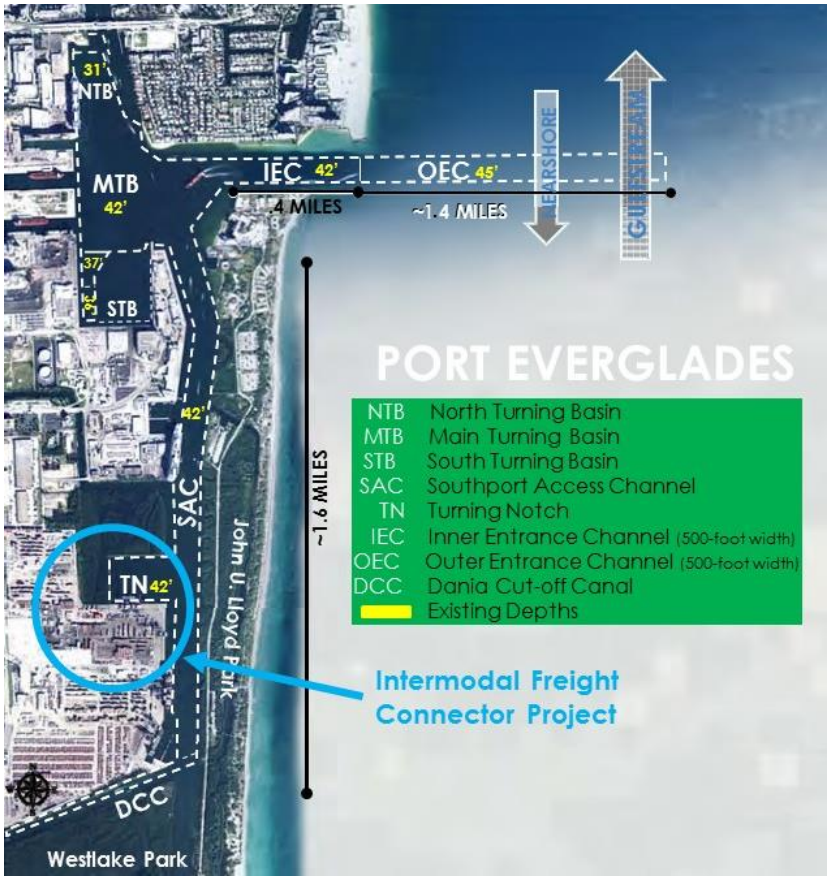
[1] The 2010 U.S. Census states this area had a population of 5,502,379 but current estimates as of 2015 put the population of the Miami Metropolitan area at 6,012,331.

3. Describe the project's purpose, including quantitative and qualitative details on public benefits the project will achieve:

Project Purpose

Port Everglades already handles cargo ships from Europe and South America that are too large to fit through today's Panama Canal, but the ships must be lightly loaded due to depth constraints. Timing for this project is essential as older fleets are being replaced with much larger ships that have deeper drafts and the Panama Canal is being expanded to accommodate these larger ships. The current size of ships traversing the Panama Canal can hold up to 5,000 TEUs. It is anticipated that the new Panamax ships utilizing the expanded Panama Canal will hold up to 13,000 TEUs, resulting in ships nearly three times the previous size visiting the East Coast via this shipping route. The U.S. Army Corps of Engineers' (USACE) Harbor Navigation Study goals are to deepen the main navigational channels at Port Everglades from 42 feet to 48 feet, and to deepen and widen the Entrance Channel and parts of the Intracoastal Waterway so that cargo ships can safely navigate to the Southport Container complex. Figure 5 shows the port configuration.

Figure 5: Illustration of Port Configuration



The **Intermodal Freight Connector Project** will create the necessary berth and upland capacity to handle a greater number of the larger ships which will arrive fully laden once the navigation channels have been deepened/widened as well as provide berthing space for additional, smaller ships. The **Intermodal Freight Connector Project** is "shovel-ready" with 70 percent design plans in place and scheduled to begin pre-construction in 2017.

This is a **nationally and regionally significant freight transportation and logistics project**. It allows international shippers and receivers to move their products to defined U.S. markets with the least impact on the national surface transportation system. The ability of Port Everglades to attract and handle waterborne trade for Florida's regional and state markets will significantly reduce future truck vehicle miles traveled (VMT) on the nation's highways and reduce rail VMT by providing the shortest landside route. The project is forecast to generate 730,000 TEUs destined for markets in Southeast Florida, Central Florida, and the Southeastern U.S., which is nearly double what the Port handles today.

Port Everglades' Intermodal Freight Connector Project will bring cargo through a global gateway closer to the actual point of consumption.

With the expansion of the Panama Canal, increased use of the Suez Canal resulting from shifting international manufacturing centers, and growing north/south trade with South America, it is critical for U.S. seaports to invest in the infrastructure capacity necessary to handle larger ships at locations with efficient access to markets. Port Everglades' capital improvement program will provide a competitive global trade gateway in the Southeastern U.S. and the **Intermodal Freight Connector Project** is the foundation of this program. **With commitments already in place with terminal operators and steamship lines, the completion of this project is critical to the success of the Port, the region, and the nation.**

Southeast and Central Florida together are home to over 8.8 million residents and hosts to over 80 million tourists. The demand for goods and services is significant and continuing to grow. Today, both of these market areas, particularly Central Florida, are served by non-Florida ports for varying portions of their trade. This results in significant truck and rail traffic moving through multiple states to serve these markets. This truck and rail vehicle miles traveled (VMT) has a major impact on our overall quality of life and economic prosperity. **Port Everglades' Intermodal Freight Connector Project will result in a significant reduction in truck VMT by bringing cargo through a global gateway closer to the actual point of consumption.**

Additional Background

The Record of Decision (ROD) for the Port Everglades Harbor Navigation Study cleared the way for the Port to begin the next phase of the deepening and widening of its channels, and allowed the project to be part of the Water Infrastructure Improvements for the Nation (WIIN) Act including the Water Resources Development Act (WRDA) of 2016. For the **Intermodal Freight Connector Project**, the USACE prepared an Environmental Assessment (EA) and Statement of Findings on September 9, 2016 in conjunction with the permit request for the Southport Improvements Component. In addition, the U.S. Maritime Administration (MARAD) issued a record of categorical exclusion for the Southport Improvements, Crane Rail Infrastructure and Super Post Panamax Low Profile Gantry Crane components of the **Intermodal Freight Connector Project** on January 3, 2017 (See Appendix B). There are two additional precursor projects supporting construction of the **Intermodal Freight Connector Project**: container yard expansion/relocation which provides additional terminal capacity, and environmental mitigation-related enhancements to replace an existing mangrove area. The container yard project is underway and the environmental mitigation project recently achieved the required trending for success criteria. However, these precursor projects are not part of the TIFIA credit assistance request.

The **Intermodal Freight Connector Project** is one in a long list of improvements Port Everglades and its transportation partners have undertaken to promote national and regional freight movement through the port via rail and truck. FDOT's Eller Drive Intermodal Container Transfer Facility (ICTF) Overpass was the ***2016 AASHTO People's Choice Award winner***. This $42.5 million grade separation project at the main access point to the port improved safety and traffic flow to the Port Everglades cruise and container terminals through upgraded intersections, a new bridge, railroad crossing signals,

and other major improvements. The ICTF itself was an innovative public-private partnership between Port Everglades, FDOT, and Florida East Coast Railway. The near-dock rail facility has increased intermodal capacity in Fort Lauderdale from 100,000 to 450,000 lifts per year and improved transfer of domestic and international containers that were previously drayed to rail terminals off-port.

All TIFIA funds borrowed will be spent on Port Everglades for a project that promotes intermodal freight. The desired outcome of the **Intermodal Freight Connector Project** is to provide more berth capacity to support increased trade to address population increases, particularly in South and Central Florida. The project is geared to provide more opportunities and transportation choices to move goods throughout Florida and the U.S. while reducing the net impact of truck and rail miles traveled.

Project promotes intermodal freight through the addition of berth capacity.

Cost Effectiveness

The cost effectiveness of the **Intermodal Freight Connector Project** has been estimated using the Benefit/Cost Analysis (B/CA) methodology guidelines provided by U.S. DOT. The full technical analysis are provided in Appendix C. The calculations for this analysis can be provided if needed. A summary of the analysis and results are summarized below.

The successful construction of the **Intermodal Freight Connector Project** will help to increase the capacity at Port Everglades in order to better serve both the local market as well as other nearby markets in Central Florida and the Southeastern United States. Due to recent investments by the Port, particularly through the development of the ICTF and the Eller Drive Overpass, goods brought into Port Everglades are able to easily be transported by either truck or rail. The **Intermodal Freight Connector Project** is key to better serving the growing population within Port Everglades' market reach. The largest populations anticipated to be served are concentrated in South Florida and Central Florida (greater Orlando area). These two major markets are anticipated to see large population growth in the coming years. **As shown in Table 1, both regions expect to add another 1.7 million persons by 2045. This amounts to a total growth of 29 percent in South Florida and 57 percent in Central Florida.**

Table 1: Florida Regional and Statewide Population Projections

Region	2015	2045	Difference	Total Growth
South Florida	5,859,718	7,539,500	1,679,782	29%
Central Florida	2,953,247	4,643,100	1,689,853	57%
Florida	19,815,183	27,217,600	7,402,417	37%

Source: Bureau of Economics and Business Research.

This population growth does not include the impacts of increased visitors to the state in the coming years. Nearly 100 million visitors travel to Florida each year, consuming a large amount of goods and services themselves. Broward County alone saw 14 million visitors in 2014 who spent a total of $11.4 billion. Similarly, Palm Beach County saw roughly 6.2 million visitors in this same year. Far and away from this, however, was the Central Florida region with Orlando receiving more than 62 million visitors, a testament to the diversity of activities available in this region. Between 2013 and 2014 tourism increased 3.9 percent, resulting in an increased need for products.

The other major market expected to be served by Port Everglades with the completion of this project is the Southeastern United States. Analysis based on U.S. Census data from 2010 suggests that this market is growing at a faster rate than the United States as a whole. As shown in Table 2, the population of the four southeastern states is anticipated to grow by 38 percent, or nearly 14.5 million people. Conversely, the entire United States is expected to grow by 24 percent. Efficiently serving these markets and establishing competitive trade routes is a key factor in reducing congestion on the nation's highways as this population base continues to grow.

Table 2: Southeastern United States Population Projections

State	2010	2040	Difference	Total Growth
Florida	18,801,310	27,229,758	8,428,448	45%
Georgia	9,687,653	13,599,292	3,911,639	40%
Alabama	4,779,736	5,538,155	758,419	16%
South Carolina	4,625,364	5,991,060	1,365,696	30%
Southeastern US	37,894,063	52,358,265	14,464,202	38%
United States	308,745,538	382,152,234	73,406,696	24%

Source: Weldon Cooper Center for Public Service.

To determine the benefits of this project, an analysis was conducted to determine what mode the estimated 730,000 additional TEUs generated by the **Intermodal Freight Connector Project** will be transported by and to which markets. In contrast, without this project, a modal split was also determined for these TEUs to reach the same destinations, but with originations from other competitor ports seeking the same cargo.

Previous analysis conducted by Port Everglades as part of their recent Master/Vision Plan was consulted to determine where these goods are destined. Based on the most likely scenario, it was determined that 12.4 percent of the new cargo would be transported by rail to the Southeastern United States. The remaining 87.6 percent of cargo would be trucked to its final destination, with 70 percent destined for the South Florida market, 25 percent to Central Florida, and 5 percent to the Southeastern United States. The resulting split of this cargo by mode and by destination is shown in Table 3.

Table 3: TEU Split by Mode and Location with Project

	South Florida	Central Florida	Southeastern US	Total
Truck	61.3%	21.9%	4.4%	87.6%
Rail	0.0%	0.0%	12.4%	12.4%
Total	61.3%	21.9%	16.8%	100%

Source: Port Everglades and Cambridge Systematics, Inc.

Without this project, these TEUs would be transported from different locations and possibly by different modes. To determine these factors, the Federal Highway Administration's (FHWA) Freight Analysis Framework (FAF) 4.2 was utilized. Based on this data source and investments made at other ports competing for the larger post-Panamax ships, the mode split and ports were determined. For South Florida, it is anticipated that 95 percent of the TEUs would still be transported by truck, with 5 percent transported by rail from other ports. For Central Florida, 90 percent would be trucked and 10 percent would be railed. For the Southeastern United States, 75 percent would be trucked and 25 percent would be railed. The resulting split by mode and location is shown in Table 4. These assumptions result in an overall increase in the number of TEUs trucked and a decrease in the number of TEUs railed.

Table 4: TEU Split by Mode and Location without Project

	South Florida	Central Florida	Southeastern US	Total
Truck	58.2%	18.6%	12.6%	90.5%
Rail	3.1%	3.3%	4.2%	9.5%
Total	61.3%	21.9%	16.8%	100%

Source: FAF 4.2, Cambridge Systematics.

Table 5 shows the ports which would be used to import these TEUs in the event that Port Everglades cannot handle the cargo due to the Intermodal Freight Connector Project not being built. The majority of these are East Coast ports which have been preparing to handle the larger ships, in addition to the Port of Los Angeles/Long Beach which handles many of these ships today. The use of these ports instead of Port Everglades would, on average, result in longer truck trips on the nation's highway and longer transit times for the identified markets. Rail movements also would be longer, resulting in increased delays at grade crossings and longer transit times. Port Everglades has already shown that serving the local market with local ports yields benefits to the consumers. The successful participation in a pilot program established through the cooperation between the Florida Perishables Trade Coalition and the U.S. Department of Agriculture has allowed imports of fresh fruits and vegetables directly into South Florida instead of Philadelphia, where they were previously trucked down to the Florida market. This change in trade routes reduces travel time by sea and truck by six days and saves roughly $4,000 per container, or about 10 percent of the total cost to deliver to South Florida. Without the Intermodal Freight

Without the Intermodal Freight Connector Project, longer truck trips on the nation's highway and longer transit times for identified markets can be expected.

Connector Project, other goods which would not be able to use Port Everglades would continue to see the increased costs and transit times.

Table 5. Ports Used Without Project by Market

	South Florida		Central Florida		Southeastern US	
	Truck	Rail	Truck	Rail	Truck	Rail
Jaxport	5%	35%	25%	10%	0%	0%
Port of Los Angeles/Long Beach	10%	40%	15%	55%	15%	10%
PortMiami	70%	10%	35%	5%	0%	0%
Port of New York/New Jersey	5%	0%	10%	5%	5%	0%
Port of Savannah	5%	10%	10%	15%	75%	90%
Port of Virginia	5%	5%	5%	10%	5%	0%

Source: FAF 4.2, Cambridge Systematics.

Long Term Outcomes

State of Good Repair

The state of good repair is comprised of the value of avoided pavement damage due to changes in truck vehicle-miles traveled (VMT) as well as train miles traveled. The majority of these cost savings are a result of the reduction in truck VMT. On average, trucks will have shorter haul movements with this project. For South Florida, the average distance with this project is anticipated to be 40 miles, whereas without this project it would be 256 miles for a total reduction of 216 per movement. For Central Florida the distance is 225 miles with the project versus 545 without, for a reduction of 320. The Southeastern United States will see a slightly longer haul movement of 645 miles from Port Everglades versus 539 without this project for a total increase of 106 miles. However, as this is the smaller of the three markets anticipated to be served by Port Everglades, these longer truck hauls are negated by the VMT savings in the other markets.

The calculation for the state of good repair measures the total avoided truck VMT and rail VMT by moving cargo through Port Everglades versus the other ports. **The total state of good repair benefit over the 30 year analysis period is $1.82 billion (non-discounted), or $60.5 million per year.**

Economic Competitiveness

The Economic Competitiveness measure is based on two components: travel time savings for truck drivers and locomotive engineers; and savings on truck and rail operating costs such as maintenance and fuel. The savings is based on the net change in VMT and train miles when comparing the with and without project scenarios. **Total truck VMT is anticipated to be reduced by over 5.6 billion miles over the 30 year analysis period** whereas train miles will decrease by nearly 17 million miles. This results in an estimated monetized benefit of $4.86 billion (non-discounted) over the 30 year period, or $162 million per year.

These benefits are of particular importance to the trucking industry which continues to experience a growing driver shortage. The latest Truck Driver Shortage Analysis by the American Trucking Associations reported a shortage of 38,000 drivers in 2014. By 2024, this number is anticipated to grow to 175,000. By completing the **Intermodal Freight Connector Project**, overall truck and rail VMT is anticipated to decrease. The end result of this is a decrease in the travel time per delivery, allowing a driver to make more turns within their allowable hours of service. This will help to ease the truck driver shortage without negatively impacting the quality of life of truck drivers.

Environmental Sustainability

The environmental sustainability criteria is focused on environmental benefits from reduced emissions. This project promotes environmentally sustainable transportation by decreasing truck VMT which reduces emissions and fuel consumption. While rail miles traveled are increased due to this project, rail is typically considered a more environmentally friendly mode due to lower emissions per ton-mile. **This project will reduce the total fuel consumption by 1.4 billion gallons over the 30 year project life.**

The Intermodal Freight Connector Project will reduce the total fuel consumption by 1.4 billion gallons over the 30 year project life.

With this in mind, the monetized benefits related to environmental sustainability are tied to the net reduction in the following emission types: NOx, PM, VOCs, SOx, and CO_2. Emission rates for trucks were estimated using the California Life-Cycle Benefit Cost/Analysis Model (Version 5.0) and applied to truck VMT estimates. Due to rail operations being owned by private companies, emission rates for this mode are not as forthcoming. However, the SmartWay Transport Partnership from the U.S. Environmental Protection Agency (EPA) does provide average rates per ton-mile for NOx, PM, and CO_2. While the addition of rates for VOCs and SOx for this mode would increase the overall benefits, these two factors have the smallest impact of the five emission types. Based on guidance from the BCA Resource Guide 2016, VOCs have the lowest monetized value per metric ton. SOx, for its part, based on available truck values, is the least emitted type of the five. Therefore, while the benefits should see a slight reduction, it does not have a significant impact on the overall environmental sustainability of this project.

Table 6 details the overall change in emissions as a result of this project. CO2 is reduced by over 3.4 million tons, VOCs are reduced by 8,061 tons, NOx is reduced by 469 tons, particulate matter is reduced by 33 tons and SOx is reduced by 631 tons. The project is anticipated to have a positive impact on environmental sustainability. The largest impact on the monetized benefits of this is driven by CO_2 at $228.2 million (at a 3 percent discount rate), followed by particulate matter at $171.8 million.

Table 6. Metric Tons of Emissions Avoided Over 30 Year Analysis Period

Avoided Emissions	Metric Tons	$/metric ton (2015)	Monetized Value
CO_2	3,489,971	(varies)	$228.2 M
NOx	469	$8,010	$171.8 M
PM	33	$366,414	$1.5 M
SOx	631	$47,341	$1.3 M
VOCs	8,061	$2,032	$64.6 M

Source: California Life-Cycle Benefit/Cost Analysis Model (Version 5.0), U.S. Environmental Protection Agency, BCA Resource Guide (2015), and Cambridge Systematics.

Safety

The safety criteria is focused on prevented accidents (property damage), injuries, and fatalities. The reduction in truck and rail VMT helps to decrease the likelihood and overall cost of accidents. However, the increase in rail VMT will result in a slight increase in these factors. Changes in accident rates were determined based on national statistics provided by the Federal Motor Carrier Safety Administration's (FMSCA) Large Truck and Bus Crash Facts and the Bureau of Transportation Statistics' (BTS) Railroad System Safety and Property Damage Data. Cost estimates by type of incident from the BCA Resource Guide 2016 were then applied to these rates. **The result is a reduction in fatalities of 80, a reduction in injuries by 2,300, and a reduction in property damage only incidents (truck only) by 6,918.** The monetized benefits of these safety improvements over the 30 year life of the project is nearly $1.8 billion, or roughly $61 million per year.

With the Intermodal Freight Connector Project, a reduction in truck and rail VMT helps to decrease the likelihood and overall cost of accidents.

Summary of Benefits Resulting from the Construction of the Intermodal Freight Connector Project

Overall the construction of the **Intermodal Freight Connector Project** will have a positive benefit on both the local community and the nation. The majority of these benefits, as detailed in Table 7, are driven by economic competitiveness, state of good repair, and safety. The significant reduction in truck vehicle miles traveled is the direct cause of the majority of these benefits. For Port Everglades to be able to serve local markets instead of other ports further away, there is less damage to pavement on roadways, fewer accidents, and lower operating costs.

Serving Florida markets through Port Everglades results in less damage to pavement on roadways, fewer accidents, and lower operating costs.

Total project costs here include more than what is being asked for as part of this TIFIA loan. Additional project costs were added based on previously funded and/or completed projects. Specifically, these relate to environmental mitigation and the development of a container yard. These projects have not been included in the TIFIA loan request amount as they are funded through state and local efforts and are moving forward as precursor components. Annual maintenance costs were also added here in the amount of 0.5 percent of the total construction cost.

At a 3 percent discount, the benefit cost ratio of this project is estimated at 9.3:1. At a 7 percent discount (with the exception of carbon emissions that are held at a 3 percent discount per U.S. DOT FASTLANE guidance), the benefit cost ratio of this project is reduced to 5.3:1.

Table 7: Summary of Benefits Resulting from the Construction of the Intermodal Freight Connector Project

	Benefits
State of Good Repair	$1.82 B
Economic Competitiveness	$4.86 B
Sustainability (Less Carbon Emissions)	$239 M
Carbon Emissions (Discounted at 3%)[2]	$228 M
Safety	$1.83 B
Total in Non-Discounted Dollars (Less Carbon Emissions)	$8.75 B
Total Discounted at 3%	$4.76 B
Total Discounted at 7% (with Carbon held at 3%)	$2.31 B
Total Project Costs	$597.6 M
Discounted at 3%	$514.0 M
Discounted at 7%	$436.7 M
Benefit Cost Ratio	
3% Discount	9.3:1
7% Discount	5.3:1

[2] Carbon Emissions are held to a constant discount of 3 percent based on guidance from the *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*.

4. Provide the estimated capital cost of the project:

As previously indicated, the **Intermodal Freight Connector Project** is comprised of three components which are Southport Improvements, Crane Rail Infrastructure and Super Post-Panamax cranes. Broward County's Port Everglades has worked diligently over the last year with the USDOT/MARAD to identify the portions of the Southport Improvements component that would be considered eligible costs under the TIFIA program. All costs for the Crane Rail Infrastructure and Super Post-Panamax cranes components are eligible under the TIFIA program with the understanding that a Buy America Waiver Request for the Super Post-Panamax cranes component will need to be submitted and approved. Table 8 provides the total estimated project cost of the **Intermodal Freight Connector Project** by component along with the total TIFIA estimated eligible project costs at this time as well as an estimated TIFIA loan amount. All of these cost estimates are subject to change. Appendix D provides the total estimated cost of the **Intermodal Freight Connector Project** in roll-up form and detail.

Table 8: Total Estimated Project Cost: $485,628,398

TIFIA Estimated Eligible Project Costs: $402,289,218 (See Appendix D)

Component	Consultant	Cost Estimate Line No.	Item	Estimated Cost
1. Southport Improvements	DeRose	1	Container Yard Debris Removal	$84,681,088 [1]
	DeRose	5	Development of Container Yard	$24,953,888 [1]
	DeRose	6, 7, 8	Bulkheads (Berth30 Toe Wall, berth 30 Ext., Env. Friendly)	$58,808,849 [1]
	DeRose	9, 10, 11	Cathodic Protection, Electrical, Lighting	$6,681,250 [1]
	DeRose	13	Maintenance of Traffic	$400,000 [1]
	DeRose		Berth 30 Toe Wall	$10,925,000 [1]
	Moss-Kiewit		Construction Manager	$42,875,040 [2]
	DeRose	14, 15, 16	Mobilization, Contingency, Other	$52,892,002 [1]
			Component Subtotal	$282,217,116
2. Crane Rail Infrastructure	Liftech	-----	Crane Rails at berths 31 and 32 /30 Switch Gear Bldg. (Phase I and II)	$36,036,550 [3]
	Liftech	-----	Crane Rail at Berth 30 Ext. - Phase III	$11,528,154 [3]
	FPL		Ductbank From Substation	$5,000,000 [4]
	Moss-Kiewit	-----	Construction Manager	$7,693,962 [5]
	Liftech	-----	Lay Days Delay Allowance, Contingency	$11,678,662 [6]
			Component Subtotal	$71,937,328
3. Super Post-Panamax Crane	ZPMC	-----	3 Super Post-Panamax Cranes ($13.8 M each)	$41,400,000 [7]
	Liftech		Inspection / Commissioning	$6,734,774 [8]
			Component Subtotal	$48,134,774

1. Based on 60% design plans and subject to change. See pages 1-4 & 10 of Appendix D
2. Based on final negotiations with selected vendor Moss-Kiewit. See pages 1 & 10-11 of Appendix D
3. See pages 1 & 5-8 of Appendix D
4. Preliminary cost estimate and subject to change. See page 1 and 9 of Appendix D
5. See pages 1 & 10 of Appendix D
6. See pages 1, 8 & 10 of Appendix D
7. See pages 1 & 12 of Appendix D
8. See pages 1 & 13 of Appendix D

Total Estimated Eligible Project Costs	**$402,289,218**
TIFIA Loan @ 33%	**$132,755,442**
State Grant Participation To-date	**$86,817,542**
Additional State Grants in Future Years	**$6,000,000**

5. Provide the design features, development schedule, and other relevant descriptions of the project:

Project Readiness

The **Intermodal Freight Connector Project** has three (3) components and following is a description of their project readiness.

The **Southport Improvements Component** will lengthen the existing deep water turn-around area for cargo ships from 900 feet to approximately 2,400 feet which will allow for up to five new cargo berths as well as a new container yard. The design and permitting contract for this component was awarded on March 27, 2012 and is 60%-75% complete at this time. All necessary regulatory permits are in place and building permit processing is on-going. Preconstruction services are expected to begin in the second quarter of 2017 and continue through the second quarter of 2018. The Construction Manager at Risk delivery method is being utilized. Plans completion will continue during the preconstruction service period with construction expected to begin in the third quarter of 2018. The schedule section provides more detail.

The **Landside Crane Rail Infrastructure Component** will provide upgrades to the landside infrastructure necessary (crane rails, crane tie-downs and stowage sockets, electrical cable trench, electrical cabling network and power duct) to accommodate new super post panamax container gantry cranes and the existing container gantry cranes. The electric utility company will furnish the power for the cranes and requires a standalone, two-story concrete block building of approximately 11,500 feet to house new electrical switchgear for the new cranes. A power vault will be on the first floor. The electrical switchgear will be housed on the second floor. The design and permitting contract for this component was awarded on March 19, 2013 and design is 100% complete at this time. All necessary regulatory permits are in place and building permit processing is on-going. Preconstruction services are expected to begin in the second quarter of 2017 and be complete by the end of the fourth quarter of 2017. Construction Manager at Risk is the delivery method being utilized. Construction is expected to begin in the fourth quarter of 2017. The schedule section provides more detail.

The **Super Post Panamax Low Profile Gantry Crane Component** is the purchase of three (3) designed and manufactured rail-mounted super post panamax low profile container gantry cranes. Each will be capable of reaching across ships carrying containers 22 units wide and lifting a container above a height of seven (7) containers stowed on the deck of a Post-Panamax container ship. The cranes will be fully powered in all functions by electric power. They also will be equipped with up-to-date systems including anti-sway, semi-automated operation, gantry equalizer system, collision avoidance, and will be constructed to meet stringent Florida Building Code standards. Procurement of the vendor which is ZPMC is complete at this time. Fabrication of the cranes is expected to begin in the first quarter of 2018 with delivery and final commissioning expected to be complete by the first quarter of 2020. The schedule section provides more detail.

Westward extension of the existing turning notch is essential to increasing berthing capacity at the Port (see Figure 1). This will require excavating approximately 8.7 acres of mangrove habitat that was included in a Conservation Easement granted to the Florida Department of Environmental Protection (FDEP) in 1988. To offset this loss, the Port developed the Upland Mangrove Enhancement Project

which converts 16.5 acres of Port land into mangrove habitat. The construction of the Upland Mangrove Enhancement project was completed in July of 2015 and achieved the FDEP trending towards success criteria in July 2016. Construction of the **Intermodal Freight Connector Project** is expected to begin in FY 2017. Port officials worked closely with Port users, the environmental community, and FDEP to develop the plan for the new mangrove habitat.

Figure 1 Southport Turning Notch

Schedule

An abbreviated schedule of time frames for each component of the **Intermodal Freight Connector Project** are shown in Table 9. Appendix E provides the complete and detailed schedule for all three components in the form of Gantt charts.

Construction to begin in 2017.

A portion of the **Intermodal Freight Connector Project** is scheduled to start construction in 2017 with the remainder in the first and third quarters of 2018.

Table 9: Intermodal Freight Connector Project Time Line

	Project Name	Phase	Year 1	Year 2	Year 3	Year 4	Year 5
			2017	2018	2019	2020	2021
1	Southport Improvement Component	Preconstruction Services					
		Construction					
2	Crane Rail Infrastructure Component	Preconstruction Services					
		Construction					
3	Super-Post Panamax Cranes Component	Procurement					
		Fabrication, Delivery & Commissioning					

Note: All Regulartoty Permits are in place, Building Permit Processing is on-going.

B) Outline the Proposed Financial Plan, including the Requested Credit Assistance.

1. Detail the plan of finance in sufficient detail to assist the DOT in its creditworthiness assessment:

The funding sources for the project include a total of $86,817,542 in State grants awarded to date, with an additional $6,000,000 expected to be awarded by the end of this calendar year, internal Port funds spent to satisfy grant local match requirements, with the remaining project costs expected to be funded with a combination of TIFIA loan and municipal bond proceeds.

A detailed breakout of the expected project cash flow for the above sources is included below in item #2.

2. Detail the sources and uses of funds:
(Insert Details Here)

Based on estimated project cash flows as of May 24, 2017, the anticipated funding sources for the project by fiscal year are as follows:

Project Funding Source*	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	Total
FDOT Grant (Exp. Dec of 2017)	$ 1,590,350	$ 2,266,232	$ -	$ -	$ -	$ -	$ 3,856,582
FDOT Grant (Exp. Dec of 2019)	$ 251,258	$ 49,672,040	$ -	$ -	$ -	$ -	$ 49,923,298
FDOT Grant - Crane	$ -	$ 6,000,000	$ -				$ 6,000,000
Grant - Local Match	$ 83,753	$ 22,557,346	$ -	$ -	$ -	$ -	$ 22,641,099
TIFIA Loan Proceeds	$ -	$ 15,340,591	$ 117,414,851				$ 132,755,442
Muncipal Bond Proceeds	$ -	$ -	$ 15,763,944	$ 111,129,367	$ 54,668,149	$ 5,551,337	$ 187,112,797
Total	**$ 1,925,361**	**$ 95,836,208**	**$ 133,178,795**	**$ 111,129,367**	**$ 54,668,149**	**$ 5,551,337**	**$ 402,289,218**

*****In addition to the State Grants reflected above, the Port has recently applied for a U.S. DOT FASTLANE Grant in the amount of $50,000,000 through the County's Metropolitan Planning Organization. If awarded, this grant would further reduce the total required for the project from internal Port Funds and/or bond proceeds.

3. Type of credit assistance:

Direct Loan

4. Amount of credit assistance sought from DOT:

As indicated in Table 8, the total costs for TIFIA-eligible components of the project are $402,289,118. This equates to a total project funding request for this loan of $132,755,442 @ 33% of this total.

5. Provide a rationale for the amount of TIFIA credit assistance requested, as a percentage of reasonably anticipated eligible project costs (e.g., a project sponsor can demonstrate that traditional sources of financing are not available at feasible rates without the TIFIA assistance, or that the costs of traditional financing options would constrain the sponsor's ability to deliver the project, or that delivery of the project through traditional financing approaches would constrain the sponsor's ability to deliver a group of related projects, or a full capital program):

The total project funding request of $132,755,442 is based on 33% of the reasonably anticipated eligible projects of $402,289,218. As the cost of traditional financing options are appreciably higher than TIFIA credit assistance, the Port's ability to deliver other critical capital improvement projects as included in the 20-Year Master/Vision Plan would be constrained without access to this type of lower-cost financing.

6. Explain the flexibility in the financial plan to finance the project with a reduced percentage of TIFIA credit assistance:

The Port would fund the balance of the project with higher cost, traditional financing methods if a reduced percentage of TIFIA credit assistance is offered. However, this would constrain the Port's financing capacity and potentially limit the full and timely buildout of planned capital investments to meet anticipated growth.

7. Description of revenue source(s) pledged to repayment:

As of the fiscal year ending September 30, 2016, the Port has $166,630,000 in senior lien debt obligations that are secured by a pledge of net port operating revenues. Pursuant to the Bond Resolution, "Net Revenue" means, for any period, Gross Revenue for such period less Operating Expenses for such period. The term "Gross Revenue" is defined generally as all fees, rentals, chargers and other income, including any investment income from moneys held on deposit in any of the Funds and Accounts less certain other revenue sources as defined in the Resolution. "Operating Expenses" are defined as the reasonable and necessary expenses of administration, maintenance, repair and operation of the Port excluding certain other expenses as defined by the Resolution.

As of the fiscal year ending September 30, 2016, the Port also has $29,515,000 in subordinate lien debt obligations that are secured by the same net port operating revenues as described above, but are in all respects junior and subordinate to the pledge of Net Revenue by the County under the Senior Bond Resolution to secure the repayment of the Senior Bonds, other Senior Bonds, any Senior Credit Provider, any provider of a Senior Reserve Account Credit Facility and any provider of a Senior Hedge Agreement. The County is prohibited from issuing additional debt on parity with these obligations, therefore, the revenues pledged for repayment of the TIFIA loan would be subordinate to the above (i.e., third lien).

8. Address the status of any revenue feasibility studies:

The Port's last Additional Bonds Certificate as required by Bond Resolution and certified by a Rate Consultant was completed in 2009 in conjunction with the issuance of the Series 2009 Bonds. Since that time, the Port has updated similar revenue feasibility studies/affordability analyses to correspond with the adoption of the 20-Year Master/Vision Plan as well as the annual five-year Capital Improvement Program (CIP). The most recent analysis associated with the Preliminary Operating and Capital Budgets for FY2018 which includes five-year operating revenue, expenditure, and debt service coverage impacts for estimated bond issuances and TIFIA loan is included as Appendix F.

C) Status of Environmental Review.

1. Summarize the status of the project's environmental review:

Environmental Permits and Reviews

The Record of Decision (ROD) for the Port Everglades Harbor Navigation Study cleared the way for the Port to begin the next phase of the deepening and widening of its channels, and allowed the project to be part of the Water Infrastructure Improvements for the Nation (WIIN) Act including the Water Resources Development Act (WRDA) of 2016. For the **Intermodal Freight Connector Project**, the U.S. Army Corps of Engineers prepared an Environmental Assessment (EA) and Statement of Findings on September 9, 2016 in conjunction with the permit request for the Southport Improvement Component. In addition, the U.S. Maritime Administration (MARAD) issued a record of categorical exclusion for the Southport Improvements, Crane Rail Infrastructure and Super Post Panamax Low Profile Gantry Crane components of the **Intermodal Freight Connector Project** on January 3, 2017 (See Appendix B). There are two additional precursor projects supporting construction of the **Intermodal Freight Connector Project**: container yard expansion/relocation which provides additional terminal capacity, and environmental mitigation-related enhancements to replace an existing mangrove area. The container yard project is underway and the environmental mitigation project recently achieved the required trending for success criteria. However, these precursor projects are not part of the TIFIA credit assistance request.

Environmental: In July of 2015, the Port completed planting of more than 70,000 nursery-grown mangroves and native Florida plants on 16-plus acres of Port property that has been transformed from dry uplands to wetlands. As a precursor component of the **Intermodal Freight Connector Project**, the mangrove enhancement project replaces 8.7 acres of existing mangroves so that the Port can add much-needed cargo berths in Southport. The new plants achieved the FDEP trending towards success criteria in July 2016.

2. Discuss whether the project has received a Categorical Exclusion, Finding of No Significant Impact, or Record of Decision or whether a draft Environmental Impact Statement has been circulated:

As stated previously all components of the **Intermodal Freight Connector Project** received a categorical exclusion from U.S. DOT MARAD on January 3, 2017 (see Appendix B).

D) Information Regarding Satisfaction of TIFIA Eligibility Requirements.

Please demonstrate the following:

1. *Creditworthiness:*

a. Ability to satisfy applicable creditworthiness standards:

The Port believes that it meets and exceeds the applicable creditworthiness standards for this loan. In addition to meeting the minimum credit rating requirements, the Port demonstrates historically strong financial performance with steady growth in revenues over at least the last five year period, and strong debt service coverage levels which have exceeded 2.47 x during the same timeframe. Please refer to Appendix G for a summary of these operating results.

b. Rate covenant, if applicable:.

For Senior Lien debt, the Port is required to maintain rates and charges sufficient to ensure annual gross revenues equate to at least the sum of:

(i) 100% of the Current Expenses for the current Fiscal Year;
(ii) 125% of the Principal and Interest Requirements for the current Fiscal Year;
(iii) 100% of Reserve Account Deposit Requirement for the current Fiscal Year, and
(iv) 100% of the amount required by the Bond Resolution to be deposited to the Renewal and Replacement Fund in the current Fiscal Year.

For Subordinate Lien debt, the Port is required to maintain rates and charges sufficient to ensure annual gross revenues equate to at least the sum of:

(i) 100% of the aggregate of Current Expenses, the Reserve Account Deposit Requirement and the amount required to be deposited in the Renewal and Replacement Fund (as each of such terms as defined in the Senior Bond Resolution) for the current Fiscal Year;

(ii) 100% of the Administrative Expenses for the current Fiscal Year;
(iii) 110% of the Composite Principal and Interest Requirements for the current Fiscal Year; and
(iv) 100% of the Debt Service Reserve Fund Deposit Requirement for the current Fiscal Year.

c. Adequate coverage requirements to ensure repayment:

The Port's debt service coverage ratios for the fiscal year ending September 30, 2016 were 2.75 x and 2.46 x which exceeds the minimum requirements of 1.25 x and 1.10 x for the Senior and Subordinate debt respectively. Please see Appendix F for the five-year operating revenue, expenditure and debt service coverage forecasted amounts for borrowing assumptions associated with the FY2018-FY2022 preliminary Capital Budget. This forecast shows the Port exceeding the minimum coverage requirements in each year of the forecast period

d. Ability to obtain two investment grade ratings on senior debt: two ratings on the TIFIA debt (investment grade if senior); if project costs are less than $75 million only one rating on the senior debt and the TIFIA debt are needed):

The Port's $166,630,000 outstanding Senior Lien debt is currently rated A/positive (affirmed/outlook revised in April of 2017), A1/stable (affirmed in September of 2015), and A-/stable (affirmed in April

of 2016) by Fitch, Moody's, and Standard & Poor's respectively. The Port's $29,515,000 outstanding Subordinate Lien debt is currently rated A2/stable by Moody's (affirmed in September of 2015). See Appendix H for these affirmations.

2. Foster partnerships that attract public and private investment for the project:

We will align incentives for potential users in order to provide an attractive investment environment. Opportunities exist to finance, build, operate, and maintain portions of this transportation infrastructure project. Private investments may be used to develop essential infrastructure, control costs, accelerate project implementation and increase operational innovations.

3. Enable the project to proceed at an earlier date or reduced lifecycle costs (including debt service costs):

Based on internal analyses (see Appendix I), the Port is estimating annual debt service cost savings for this loan of approximately $1,000,000 when compared to a municipal bond financing. These cost savings can be used to cash fund portions of the project reducing the Port's overall debt burden.

4. Reduce the Contribution of Federal Grant Assistance for the Project:

Broward County's Port Everglades, through the Broward County MPO, submitted a 2017 FASTLANE Grant application for some project costs. A TIFIA loan would complete the financing package regardless of whether or not the project receives federal grant assistance, thereby providing a lowest cost financing alternative to grant funding.

5. Construction contracting process can commence no more than 90 days from execution of a TIFIA credit instrument:

Yes, and may commence before execution of a TIFIA credit instrument.

E) <u>Project Participants.</u>

1. Name of Applicant/Borrower:

Broward County's Port Everglades Department

2. Overall Organizational Structure:

Port Everglades (the Port), a department of Broward County, Florida (the County), operates as a major enterprise fund of the County. The County, which is operated by the Board of County Commissioners (the County Commission), owns the Port. The Port was originally created in 1927 by a special act of the Florida Legislature to create and promote commerce and industry through the operation of a deep-water seaport. The Port's jurisdictional area consists of approximately 2,190 acres, inclusive of land and water, designated for shipping, warehousing and all other non-residential uses, as approved. The Port owns approximately 1,277 acres. The County Commission is responsible for legislative and fiscal control of the County. A County Administrator is appointed by the County Commission and is responsible for administrative and fiscal control for all County departments through the administration of directives and policies established by the County Commission. The Port is managed by a Chief Executive/Port Director appointed by the County Administrator and confirmed by the County Commission.

3. If applicable, detail how the project meets the FAST Act's definition of a rural infrastructure project (a surface transportation infrastructure project with eligible project costs greater than $10,000,000, but not to exceed $100,000,000, and located in an area that is outside of an urbanized area with a population greater than 150,000 individuals, as determined by the Bureau of the Census.):

N/A

4. What entity (i.e., public-sector agency/authority or private-sector company) will serve as the applicant?

Public sector agency- Broward County's Port Everglades Department

5. Will the applicant and the borrower be the same entity? Who are the members of the project team?

Port Everglades – borrower; project primary team members include:

Steven M. Cernak, P.E., PPM, Chief Executive/Port Director
J. David Anderton II, AICP, PPM, Assistant Director of Port Everglades
Leah Brasso, Director of Finance
John Foglesong, P.E., Director of Seaport Engineering & Construction
DeRose Design Consultants – Engineering consultant for Southport Component
Moss-Kewitt – Construction Manager for Southport Component and
Crane Rail Infrastructure Component
Liftech Consultants – Engineering consultant for cranes and crane rail infrastructure
Financial advisor – TBD*
Bond counsel – TBD*

*****Brought onboard for the preliminary plan of financing

6. Project Website or Applicant/Borrower Website:
http://www.porteverglades.net/

F) Other Information.

Briefly discuss any other issues that may affect the development and financing of the project, such as community support, pending legislation or litigation:

Community Support:

Port Everglades Association is an independent membership organization consisting of port cruise, cargo and petroleum tenants; contractors, vendors and other members of the Port Everglades business community.

The Port Everglades Pilots Association operates with a cohesive team of pilots, pilot boat captains, and maintenance workers who make sure that the ships coming into and out of Port Everglades do so safely.

The Florida Ports Caucus is a bipartisan team from the Florida congressional delegation banded together to represent the interests of the state's seaports in the nation's Capital.

The Port Everglades Advocacy Team lead by an alliance of more than thirty leading CEOs and other leaders in the local business community organized by the Greater Fort Lauderdale Alliance dedicated to advancing Port Everglades political agenda in Tallahassee and in Washington D.C.

Broward Workshop members seek to advance Port Everglades investments, outreach and environmental goals in Broward.

G) Inclusion in Transportation Plans and Programs.

Is the project consistent with the State Transportation Plan and, if applicable, the metropolitan plan and is the requested TIFIA amount reflected in such plan?

☐ ***No*** ☒ ***X Yes*** ☐ *Not applicable*

Please briefly elaborate:

State/Local Planning

The project is located on Port Everglades in the City of Hollywood. Local planning rests with the Broward County Commission, City of Hollywood, FDOT and the Broward MPO, all of which are vested in ensuring the Intermodal Freight Connector Project succeeds.

The project is incorporated in or supports implementation of the following plans:

Broward MPO Transportation Improvement Program
FDOT Work Program (State Transportation Improvement Program)
Broward MPO Long Range Transportation Plan
Florida Transportation Plan – State Long Range Transportation Plan
Florida Freight Mobility and Trade Plan
Southeast Florida Regional Freight Plan
Port Everglades Master/Vision Plan
Seven50: Southeast Florida Regional Prosperity Plan

H) Readiness to Apply.

Is the project prepared to submit an application within a short timeframe after receiving an invitation from DOT?

☐ *No* ☒ ***X Yes*** ☐ *Unsure*

What factors could impact this timetable or the applicant's ability to provide all required information?

Port Evergaldes is not aware of any currently known factors that might impact the timetable of the application materials.

I) Additional Information.

Please provide any other additional information necessary:

N/A

J) Key Contact Person.

Identify a key contact person with whom all communication should flow:
Name: David Anderton, AICP, PPM
Title: Assistant Director of Port Everglades
Street Address: 1850 Eller Drive
City/State: Fort Lauderdale, FL 33316
Phone: 954-468-0144
Fax: 954-523-8713
E-mail: danderton@broward.org

K) Additional information requested.

DUNS: Port Everglades
DUNS #: 835959792
Employer ID: 596000561
Project Location:
State: Florida *County:* Broward *City:* Hollywood

Congressional Districts Impacted by the Project: FL-23 Rep. Debbie Wasserman Schultz [D]
Type of Jurisdiction (e.g., rural, urban): Urban

Fees. Except under limited circumstances as described further, the increased demand on TIFIA's resources has led to the discontinuation of the practice of advancing the entire cost of financial and legal advisors engaged to assist DOT in determining a projects creditworthiness and overall eligibility and having those costs reimbursed to DOT after execution of a credit agreement. As such, upon request, project sponsors must pay fees in the amount of $250,000 before DOT hires financial and/or legal advisors as part of the Letter of Interest review process. These fees are due upon request. Additional fees will be charged after the credit instrument is executed, including additional amounts required to fully cover TIFIA's financial and legal advisory services costs in connection with the evaluation and negotiation of the terms of TIFIA credit assistance for the project. For projects that enter credit negotiations, the undersigned further certifies a transaction fee will be paid at closing or, in the event no final credit agreement is reached, upon invoicing by the DOT, in the amount equal to the actual costs incurred by the DOT in procuring the assistance of outside financial advisors and legal counsel. This fee is due whether or not the loan closes.

Note: For projects having eligible project costs that are reasonably anticipated to be $75 million or less, the FAST Act provides for the reservation of not less than $2 million of the TIFIA program's annual funding authority to be used in lieu of the third-party costs charged by DOT. Project sponsors wishing to be considered for this available funding should indicate this in their Letters of Interest, ***though the undersigned further certifies its acknowledgment that DOT cannot guarantee that funds will be available to satisfy such a request.***

Debarment. The undersigned certifies that it is not currently, nor has it been in the preceding three years: 1) debarred, suspended or declared ineligible from participating in any Federal program; 2) formally proposed for debarment, with a final determination still pending; 3) voluntarily excluded from participation in a Federal transaction; or 4) indicted, convicted, or had a civil judgment rendered against it for any of the offenses listed in the Regulations Governing Debarment and Suspension (Governmentwide Nonprocurement Debarment & Suspension Regulations: 49 C.F.R. Part 29).

Default/Delinquency. The undersigned further certifies that neither it nor any of its subsidiaries or affiliates are currently in default or delinquent on any debt or loans provided or guaranteed by the Federal Government.

Signature: By submitting this Letter of Interest, the undersigned certifies that the facts stated herein are true, to the best of the applicant's knowledge and belief after due inquiry, and that the applicant has not omitted any material facts. The undersigned is an authorized representative of the applicant.

Submitted by:

Applicant/Borrower Name: Bertha Henry

Title: Broward County Administrator

Organization: Broward County, Florida

Date: June 6, 2017

Please attach any relevant documents (e.g., maps, organization charts, etc.).

APPENDIX A

THE LOCAL AND REGIONAL ECONOMIC IMPACTS OF PORT EVERGLADES

FISCAL YEAR 2016
FINAL REPORT

PREPARED FOR:
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March 24, 2017

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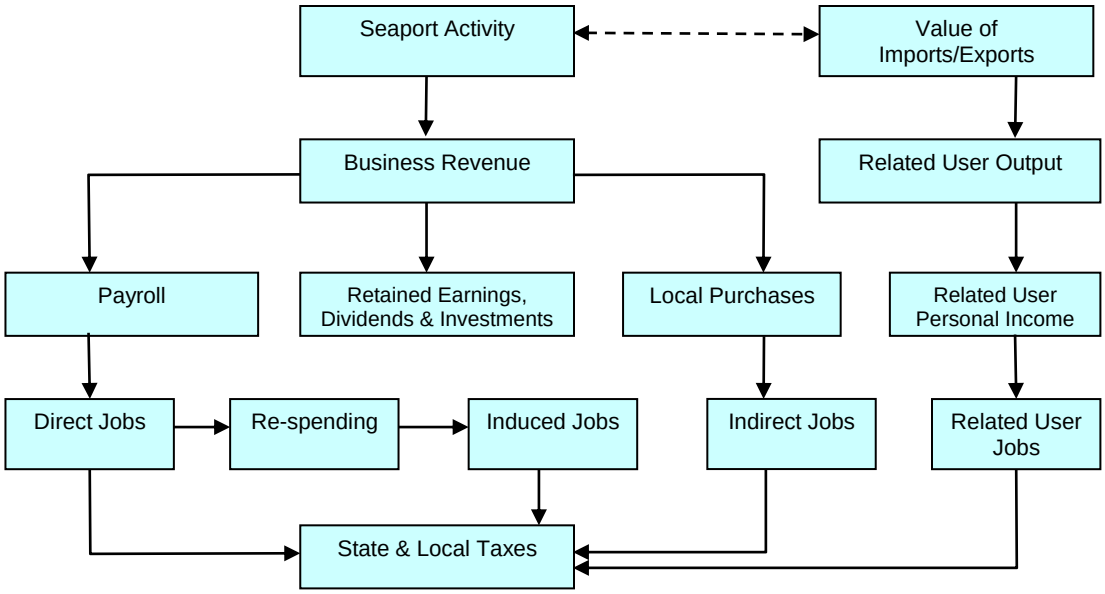
EXECUTIVE SUMMARY

Martin Associates was retained by Broward County's Port Everglades Department to measure the local, regional and state economic impacts generated by maritime activity at the maritime container, break bulk, liquid bulk and dry bulk cargo terminals as well as cruise terminals at Port Everglades. Economic impacts generated at the cargo facilities include the impacts generated by containerized cargo (both dry and reefer), petroleum, steel products, cement, RO/RO-FLO/FLO cargo such as privately owned vehicles (POV's) and yachts, and other dry bulk cargo such as aggregates. In addition to the economic impacts generated by the cargo activity at the seaport terminals, Martin Associates has also quantified the economic impacts of the cruise industry at Port Everglades.

This study focuses on impacts generated in the Port Everglades Department's Fiscal Year (FY) 2016 – October 1, 2015 through September 30, 2016. Impacts are estimated in terms of jobs, personal earnings, business revenue, and state and local taxes. In addition to the baseline impact estimates, computer models specific to each terminal operation have been prepared that can be used in evaluating the sensitivity of impacts to changes in tonnage, labor productivity, labor work rules, commodity mix, inland origins/destinations of commodities and vessel size.

Exhibit E-1 on the following page graphically demonstrates how seaport activity impacts the local and regional economies. As this exhibit indicates, the ocean cargo and vessel activity initially generate business revenue to the firms supplying services to the cargo and cruise industry. This revenue is used to purchase employment (employ direct jobs) to provide these services, to pay stockholders and for retained earnings, and to purchase goods and services from local, national and international firms (creating indirect jobs with these firms). Also, these businesses pay taxes from the business revenue generated from marine cargo and cruise activity.

Exhibit E-1: Flow of Economic Impacts of Seaport Activity through the Economy



The employees hired by the firms receive wages and salaries (personal income), a portion of which is saved, while another portion is used to buy goods and services such as food, housing, clothing, health care, etc. These purchases create a re-spending impact throughout the economy, known as the personal income multiplier. As a result of these local purchases, additional jobs (known as induced jobs) are created in the local economy. Finally, taxes are paid by individuals employed with the firms providing the services to the seaport terminals.

As demonstrated by this chart, four categories of impacts are measured:

- Jobs;
- Employee earnings;
- Business revenue; and
- State and local taxes.

With respect to jobs, four types of job impacts are measured. These are direct, induced, indirect and related jobs. The job impacts are defined as follows:

- Direct jobs are those jobs with local firms providing support services to the seaport. These jobs are dependent upon 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' maritime terminals, members of the International

Longshoremen's Association (ILA) and Teamster's Union, other non-union dockworkers, steamship agents, Broward County Sheriff's Office (BSO), freight forwarders, ship chandlers, warehouse operators, bankers, lawyers, terminal operators, stevedores, etc. Direct employees created by the cruise operations include the jobs with the firms providing the 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 Fort Lauderdale-Hollywood International Airport due to the cruise passengers arriving via air.

- Induced jobs 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, etc., and would also be discontinued if seaport activity were to cease.

- Indirect jobs are those jobs generated in the local economy as the result of local purchases by the firms directly dependent upon seaport activity. These jobs include jobs in local office supply firms, equipment and parts suppliers, maintenance and repair services, etc.

- Related user jobs are held throughout the state with manufacturing and wholesale and retail distribution firms using the seaport terminals for the shipment and receipt of cargo. Related jobs are not dependent upon the seaport marine terminals to the same extent as are the direct, induced and indirect jobs. It is the demand for the final products, which creates the demand for the employment with these shippers/consignees, not the use of a particular seaport or maritime terminal, and therefore these firms can and do use other ports.

The employee earnings consist of wages and salaries and include a re-spending effect (local purchases of goods and services by those directly employed), while business revenue consists of total business receipts by firms providing services in support of the seaport activity. State and local taxes include taxes paid by individuals dependent upon the seaport activity.

This report is based on interviews conducted in 2016 with 296 firms providing services to the cargo and vessels handled at Port Everglades' cargo and cruise terminals. These 296 firms were interviewed as part of the FY2015 baseline report and represent 98+ percent of the firms in the Port Everglades seaport community, underscoring the defensibility of the study. Furthermore, the impacts can be traced back to the individual firm. The data collected from the FY2015 interviews was then used to develop operational models of the terminals located at Port Everglades. With respect to cruise passenger impacts, Martin Associates used data obtained from an updated cruise passenger survey that was completed in March, 2015 by AECOM.

For this update, the baseline model has been updated to include FY2016 tonnage, vessel calls,

cruise passengers, Port Everglades Department employment, revenue and expenditure statistics in order to estimate the FY2016 impacts. The economic impacts generated by the cargo and cruise terminals are summarized in Exhibit E-2.

Exhibit E-2: FY2016 Local and Regional Economic Impacts Generated by Port Everglades

CATEGORY	CARGO	CRUISE	TOTAL
JOBS			
DIRECT	7,036	5,927	12,963
INDUCED	5,153	2,912	8,065
INDIRECT	5,127	4,217	9,344
RELATED USER JOBS	192,543	NA	192,543
TOTAL JOBS	**209,858**	**13,056**	**222,914**
PERSONAL INCOME (1,000)			
DIRECT	$327,843	$174,829	$502,673
INDUCED	$644,606	$296,732	$941,338
INDIRECT	$218,857	$134,482	$353,340
RELATED USER INCOME	$6,996,399	NA	$6,996,399
TOTAL PERSONAL INCOME	**$8,187,705**	**$606,044**	**$8,793,748**
VALUE OF ECONOMIC ACTIVITY (1,000)			
BUSINESS SERVICES REVENUE	$1,388,271	$1,935,447	$3,323,717
RELATED USER OUTPUT	$26,051,507	NA	$26,051,507
TOTAL VALUE OF ECONOMIC ACTIVITY	**$27,439,777**	**$1,935,447**	**$29,375,224**
LOCAL PURCHASES (1,000)	**$468,086**	**$186,483**	**$654,569**
STATE & LOCAL TAXES (1,000)			
DIRECT, INDUCED AND INDIRECT	$117,979	$67,473	$185,452
RELATED USER TAXES	$889,759	NA	$889,759
TOTAL STATE AND LOCAL TAXES	**$1,007,739**	**$67,473**	**$1,075,212**

Totals may be rounded.

The vessel and cargo activity at the cargo and cruise facilities at Port Everglades generated the following estimated impacts in the regional economy in FY2016:

- **222,914 jobs in Florida are in some way related to the cargo and cruise activity at Port Everglades. Of the 222,914 total jobs:**
  - **12,963 direct jobs** are generated by the ocean cargo and cruise activity.
  - As the result of local and regional purchases by those 12,963 individuals holding the direct jobs, an additional **8,065 induced jobs** are supported in the regional economy.

- **9,344 indirect jobs** were supported by $654.6 million of local purchases by businesses supplying services at the cargo and cruise terminals and by businesses dependent upon Port Everglades for the shipment and receipt of cargo.

- The import and export cargo moving via Port Everglades supports **192,543 related user jobs** with the state's manufacturing and retail and wholesale and distribution industries and the in-state industries supporting the movement and distribution of all commodities, primarily concentrated with containerized cargo imports and exports using the seaport terminals for shipment and receipt of cargo.

- **Approximately $8.8 billion of wages and salaries were generated by Port Everglades' cargo and cruise activity in FY2016.**

  - **$502.7 million of direct wages and salaries** were received by those 12,963 directly employed.

  - As a result of re-spending this direct job holder income, an **additional $941.3 million of income and consumption expenditures were created** and supported the 8,065 induced jobs.

  - The 9,344 indirect job holders received **$353.3 million of indirect wages and salaries**.

  - The 192,543 related user job holders generated **$7 billion in wages and salaries**.

- **The FY2016 cargo and cruise activity at Port Everglades generated $29.4 billion in economic value to the state of Florida.**

  - Businesses providing services to the cargo and cruise terminals received **$3.3 billion of revenue.**

  - In addition, the cargo activity at the Port created an additional **$26.1 billion of related user economic output** in the state, the vast majority of which is created by the movement of containers, and the in-state industries supporting these industries.

- Local businesses and suppliers to the cargo and cruise industries at Port Everglades made **$654.6 million of local purchases**.

- **$1.1 billion of state and local taxes** were generated by activity at the cargo and cruise terminals, including **$889.8 million generated by the related users** throughout the state.

I. INTRODUCTION AND OVERVIEW

Martin Associates was retained by the Broward County Port Everglades Department to measure the local, regional and state economic impacts generated by maritime activity at the container, break bulk, liquid bulk and dry bulk cargo terminals as well as cruise terminals at Port Everglades. Economic impacts generated at the cargo facilities include the impacts generated by containerized cargo (both dry and reefer), petroleum, steel products, cement, lumber and plywood, roll on/roll off and float on/float off (RO/RO and FLO/FLO) cargo such as privately owned vehicles (POV's) and yachts, and other dry bulk cargo such as aggregates. In addition to the economic impacts generated by the cargo activity at the seaport terminals, Martin Associates has also quantified the economic impacts of the cruise industry at Port Everglades.

The study employs methodology and definitions that have been used by Martin Associates to measure the economic impacts of seaport activity at more than 250 ports in the United States and Canada, and at the leading airports in the United States. It is to be emphasized that only measurable impacts are included in this study. In order to ensure defensibility, the Martin Associates' approach to economic impact analysis is based on data developed through an extensive interview and telephone survey program of the Port's tenants and the firms providing cargo and cruise services at Port Everglades. Specific re-spending models have been developed for the Greater Fort Lauderdale area to reflect the unique economic and consumer profiles of the regional economy. To further underscore the defensibility of the study, standardized impact models are not used. Instead, the resulting impacts reflect the uniqueness of the individual Port operations, as well as the surrounding regional economy.

At the outset, it is important to note that this study uses a different methodology than previous studies prior to the 2006 Martin Associates' baseline report and cannot be compared directly to results of economic impact studies previously completed for Port Everglades by other consultants. However, since the initial FY2006 baseline report, Martin Associates has updated the results annually, including a complete re-survey of members of the maritime cargo and cruise community serving Port Everglades' terminals and tenants in FY2009, FY2011 and FY2015. Therefore, direct comparisons can be made beginning with the FY2006 study.

1. IMPACT DEFINITIONS

The impacts are measured separately for the Port's cargo activity and cruise activity.

The impacts are measured in terms of:

- Jobs [direct, induced, indirect and related shipper/consignee (related users)];
- Personal income;
- Business revenue; and

- State and local taxes.

Each impact measurement is described below:

- **Direct, Induced and Indirect jobs - *Direct jobs*** are those that would not exist if activity at the Port's cargo and cruise facilities were to cease. Direct jobs created by maritime cargo activity at the Port's terminals are those jobs with the firms directly providing cargo handling and vessel services, including trucking companies, terminal operators and stevedores, members of the International Longshoremen's Association (ILA), Teamsters Union and non-union dockworkers, freight forwarders and customshouse brokers, vessel agents, pilots and tug assist companies. Direct employees created by the cruise operations include the jobs with the firms providing the 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 Fort Lauderdale-Hollywood International Airport due to the cruise passengers arriving via air.

  Induced jobs are jobs created in the Greater Fort Lauderdale area by the purchases of goods and services by those *individuals* directly employed by each of the Port's lines of business. These jobs are based on the local purchase patterns of Greater Fort Lauderdale area residents. The induced jobs are jobs with grocery stores, restaurants, health care providers, retail stores, local housing/construction industry, and transportation services, as well as with wholesalers providing the goods to the retailers.

  Indirect jobs are created throughout the Greater Fort Lauderdale area as the result of purchases for goods and services by the *firms* directly impacted by Port Everglades activity, including the tenants, terminal operators and the firms providing services to cargo – which includes containerized cargo, petroleum, general cargo, RO/RO-FLO/FLO and dry bulks and cruise passenger operations. The indirect jobs are measured based on actual local purchase patterns of the directly dependent firms, and occur with such industries as utilities, office supplies, contract service providers, maintenance and repair, and construction.

- ***Related shipper/consignee (related user) jobs*** are jobs with shippers and consignees (exporters and importers) including the state's retail and wholesale and distribution industries and the in-state industries supporting the movement and distribution of cargo imports and exports using the seaport terminals for shipment and receipt of cargo. While these impacts occur for all commodities, the majority of Port Everglades shippers and consignees' impacts involve the import and export of ocean containerized cargo. Port Everglades and other South Florida ports, including Port*MIAMI*, are unique in the fact that a more balanced (inbound/outbound) trade exists. These jobs, while difficult to isolate to a specific county, are

held throughout the state including Broward and Miami-Dade counties. Related jobs are not dependent upon the seaport marine terminals to the same extent as are the direct, induced and indirect jobs since it is the demand for the final products, which creates the demand for the employment with these shippers/consignees, not the use of a particular seaport or maritime terminal, and therefore these firms can and do use other ports. For example, when hurricane devastation renders a port's container and breakbulk terminals inoperable, essentially suspending operations at the port, the direct, induced and indirect jobholders are immediately affected with similar consequence. However, the jobs held with related users such as manufacturing as well as wholesale and retail distribution throughout the unaffected areas of state will continue to operate. These firms are required to find alternative ports to ship and receive cargo in order to maintain given levels of operation. Therefore, viable port operations are essential to long-term retention of import and export related jobs throughout the state.

- **Personal income impact** consists of wages and salaries received by those directly employed by Port activity, and includes a re-spending impact which measures the personal consumption activity in the Greater Fort Lauderdale area of those directly employed as the result of Port Everglades cargo and cruise activity. Indirect personal income measures the wages and salaries received by those indirectly employed.

- **Business revenue** consists of total business receipts by firms providing services in support of the ocean cargo and cruise activity. **Local purchases for goods and services** made by the directly impacted firms are also measured. These local purchases by the dependent firms create the indirect impacts.

- **State and local taxes** include taxes paid by individuals as well as firms dependent upon Port Everglades cargo, cruise, and ship repair activity.

2. METHODOLOGY

The impacts of Port Everglades presented in this FY2016 report were estimated based on telephone and personal interviews with 296 firms in the Greater Fort Lauderdale area conducted between January and March 2016. This represents the universe of ocean cargo, and cruise related businesses (with the exception of trucking and freight forwarding firms) in the Greater Fort Lauderdale area, as defined in the "Port Everglades Facilities Guide & Directory 2015-2016", "Port Everglades Department FTZ Tenant Directory", supplemental lists supplied by the Port Everglades Department as well as Martin Associates' in-house databases. It is to be emphasized that a 98+% response rate was achieved from these firms located in the Port directory and Port tenant listings. The direct impacts are measured at the firm level of detail, and aggregated to develop the impacts for each of the Port's lines of business (cargo and cruise). Each firm was surveyed to provide Martin Associates with detailed employment levels (both full time and part time), annual payroll, local purchases and the residence of

the employees. Data collected from Broward County Port Everglades Department includes: Port Everglades Department employment, tonnage, cruise passenger activity, vessel (both cargo and cruise) calls, Port revenues and expenditures to estimate the FY2016 impacts.

The induced impacts are based on the expenditure profile of residents in the Miami-Fort Lauderdale/Miami area, as estimated by the U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey 2012-2013" (latest data available at the time of this report). This survey indicates the distribution of consumer expenditures over key consumption categories for Fort Lauderdale/Miami area residents. The consumption categories are:

- Housing;
- Food at Restaurants;
- Food at Home;
- Entertainment;
- Health Care;
- Home Furnishings; and
- Transportation Equipment and Services.

The estimated consumption expenditure generated as a result of the re-spending impact is distributed across these consumption categories. Associated with each consumption category is the relevant retail and wholesale industry. Jobs to sales ratios in each industry are then computed for the Greater Fort Lauderdale area, and induced jobs are estimated for the relevant consumption categories. It is to be emphasized that induced jobs are only estimated at the retail and wholesale level, since these jobs are most likely generated in the Greater Fort Lauderdale area. Further levels of induced jobs are not estimated since it is not possible to defensibly identify geographically where the subsequent rounds of purchasing occur.

The "Consumer Expenditure Survey" does not include information to estimate the job impact with supporting business services, legal, social services, state and local governments, and educational services. To estimate this induced impact, a ratio of state of Florida employment in these key service industries to total state of Florida employment is developed. This ratio is then used with the direct and induced consumption jobs to estimate induced jobs with business/financial services, legal, educational, governmental and other social services.

The indirect impacts are estimated based on the local purchases by the directly dependent firms, combined with indirect job, income and revenue coefficients for the supplying industries in the state of Florida as developed for Martin Associates by the U.S. Bureau of Economic Analysis, Regional Input/Output Modeling System - RIMS II 2007/2013 (latest data available at the time of this report).

Cruise passenger characteristics are based on an updated passenger survey conducted by AECOM in March, 2015.

3. ECONOMIC IMPACT MODELS

The impacts presented in this report are measured for FY2016, and computer models for both cargo and cruise operations have been developed to test the sensitivity of the impacts to changes in economic conditions and facility utilization. It is to be emphasized that this study is designed to provide a framework which Port Everglades can use in formulating and guiding the future development of Port facilities.

3.1. Maritime Cargo Sensitivity

The cargo impact model is designed to test the sensitivity of impacts to changes in such factors as maritime tonnage levels, seaport productivity and work rules, new seaport facilities development, inland distribution patterns of ocean cargo, number of vessel calls and the introduction of new ocean carrier service. The cargo impact model can also be used to assess the impact of developing a parcel of land as a maritime terminal versus other non-cargo land uses. Finally, the maritime cargo impact model can be used to assess the economic benefits of increased maritime activity due to infrastructure development and the opportunity cost of not undertaking specific maritime investments such as dredging, new terminal development or warehouse development.

3.2. Cruise Activity

The cruise service impact model provides a tool by which the Port can evaluate changes in the types of cruises being offered, the size of vessels deployed, the number of passengers per cruise, the share of passengers staying overnight in Greater Fort Lauderdale area hotels prior to or after the cruise, and the number of one day, overnight and multi-day (conventional) cruises. The cruise model can also be used to quantify the potential impact of new services, by size of vessel and type of cruise.

Finally, the cruise impact model along with the maritime cargo model can be used to evaluate the economic impact of a maritime terminal for use as a cruise terminal versus a cargo terminal.

4. SUMMARY OF RESULTS

Exhibit I-1 provides a breakdown by cargo and cruise results for the economic impact analysis of Port Everglades.

Exhibit I-1: FY2016 Economic Impact of Port Everglades Cargo and Cruise Activity

CATEGORY	CARGO	CRUISE	TOTAL
JOBS			
DIRECT	7,036	5,927	12,963
INDUCED	5,153	2,912	8,065
INDIRECT	5,127	4,217	9,344
RELATED USER JOBS	192,543	NA	192,543
TOTAL JOBS	**209,858**	**13,056**	**222,914**
PERSONAL INCOME (1,000)			
DIRECT	$327,843	$174,829	$502,673
INDUCED	$644,606	$296,732	$941,338
INDIRECT	$218,857	$134,482	$353,340
RELATED USER INCOME	$6,996,399	NA	$6,996,399
TOTAL PERSONAL INCOME	**$8,187,705**	**$606,044**	**$8,793,748**
VALUE OF ECONOMIC ACTIVITY (1,000)			
BUSINESS SERVICES REVENUE	$1,388,271	$1,935,447	$3,323,717
RELATED USER OUTPUT	$26,051,507	NA	$26,051,507
TOTAL VALUE OF ECONOMIC ACTIVITY	**$27,439,777**	**$1,935,447**	**$29,375,224**
LOCAL PURCHASES (1,000)	**$468,086**	**$186,483**	**$654,569**
STATE & LOCAL TAXES (1,000)			
DIRECT, INDUCED AND INDIRECT	$117,979	$67,473	$185,452
RELATED USER TAXES	$889,759	NA	$889,759
TOTAL STATE AND LOCAL TAXES	**$1,007,739**	**$67,473**	**$1,075,212**

Totals may be rounded.

In FY2016, Port Everglades supported 222,914 jobs in the state of Florida. Of these jobs, 12,963 jobs are directly created by port activities, while another 8,065 induced jobs are generated in the Greater Fort Lauderdale area as a result of local purchases made by those directly employed due to Port Everglades activity. In addition, there are 9,344 indirect jobs supported in the Greater Fort Lauderdale area as the result of $654.6 million of local purchases. In addition, the cargo moving via Port Everglades

supports 192,543 jobs throughout the state of Florida. The vast majority of these jobs are associated with the movement of containerized cargo at Port Everglades.

The 12,963-direct cargo and cruise jobholders received $502.7 million of direct wage and salary income, for port-wide (cargo and cruise) average earnings of $38,778 per direct employee. As a result of local purchases with this $502.7 million of direct wages and salaries, an additional $941.3 million of income and local consumption expenditures were created in the Greater Fort Lauderdale area. It is this re-spending impact that supported the 8,065 induced jobs.[1] The indirect jobs holders received $353.3 million in personal income. In total, $8.8 billion of personal income was created as the result of Port Everglades operations, including the $7 billion received by those employed with the related users of the Port.

Local businesses received $3.3 billion of sales revenue from providing services to the cargo activity and cruise activity. This does not include the value of the cargo moving via the Port. The cargo activity at the Port created an additional $26.1 billion of total economic output in the state, the majority of which is created in the state's retail and wholesale and distribution industries and the in-state industries supporting the movement and distribution of containerized cargo imports and exports. It is to be emphasized that only the economic activity associated with the raw materials and finished products that move via the Port is included. Port Everglades and other South Florida ports including Port*MIAMI* are unique in the fact that a more balanced trade, that is inbound and outbound, has historically existed; and Port Everglades is one of only a few ports in the U.S. that has maintained a net container export surplus. These jobs, while difficult to isolate, occur throughout the state including Broward and Miami-Dade counties.

As a result of the cargo and cruise activity at Port Everglades, a total of nearly $1.1 billion of state and local tax revenue was generated (see page 29 for detailed discussion).

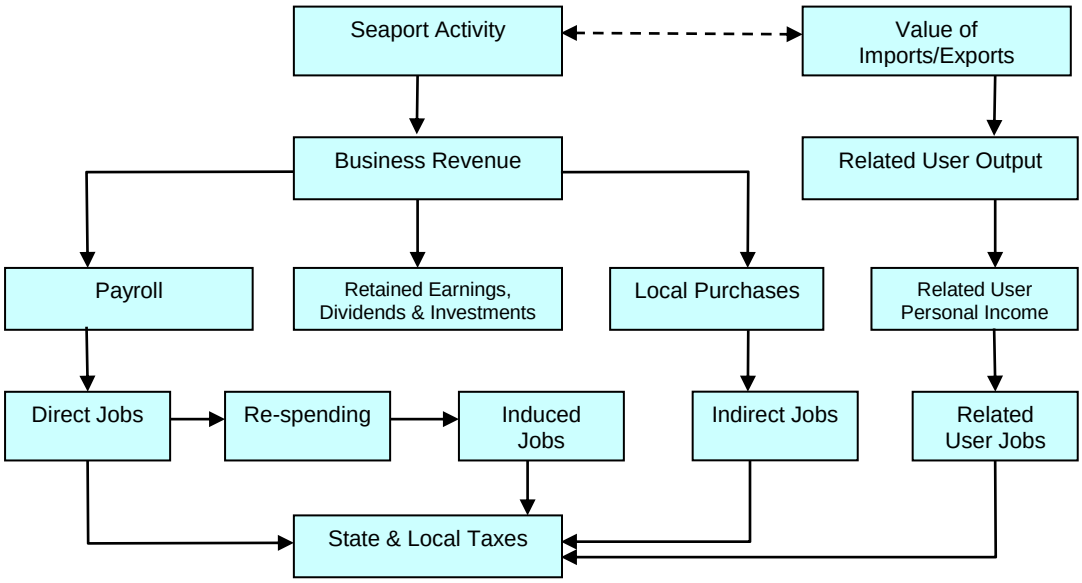
The balance of the report describes the impacts created by maritime cargo and cruise service at Port Everglades.

[1]The induced income impact also includes local consumption expenditures and should not be divided by induced jobs to estimate the average salary per induced job. This re-spending throughout the region is estimated using a regional personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within the Greater Fort Lauderdale area. Hence, the average salary would be overestimated.

II. ECONOMIC IMPACTS OF MARITIME CARGO ACTIVITY

Waterborne cargo activity at a seaport contributes to the local and regional economy by generating business revenue to local and national firms providing vessel and cargo handling services at the seaport terminals. These firms, in turn, provide employment and income to individuals, and pay taxes to state and local governments. Exhibit II-1 shows how activity at seaport terminals generates impacts throughout the local, state and national economies. As this exhibit indicates, the impact of a seaport on a local, state or national economy cannot be reduced to a single number, but instead, the seaport activity creates several impacts. These are the revenue impact, employment impact, personal income impact, and tax impact. These impacts are non-additive. For example, the income impact is a part of the revenue impact, and adding these impacts together would result in double counting. Exhibit II-1 shows graphically how activity at Port Everglades' maritime terminals generates the four impacts.

Exhibit II-1: Flow of Economic Impacts Generated by Maritime Activity



At the outset, activity at the port generates business revenue for firms that provide cargo and cruise-related services. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire people to provide the services, to purchase goods and services, and to make Federal, state and local tax payments. The remainder is used to pay stock-holders, retire debt, make investments, or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the local/regional economy are those portions paid out in salaries to local employees, for local purchases by individuals and businesses directly dependent on the seaport, in contributions to state and local taxes, in lease payments to Port Everglades by tenants, and wharfage and dockage fees paid to the Port.

The employment impact of seaport activity consists of four levels of job impacts:

- ***Direct employment impact*** -- jobs directly generated by seaport activity. Direct jobs generated by ocean cargo include jobs with railroads and trucking companies moving cargo between inland origins and destinations and the seaport terminals, longshoremen and dockworkers, steamship agents, freight forwarders, stevedores, etc. It is to be emphasized that these are classified as directly generated in the sense that these jobs would experience near term dislocation if the activity at Port Everglades maritime terminals were to be discontinued.

- ***Induced employment impact*** -- jobs created throughout the local economy because individuals directly employed due to seaport activity spend their wages locally on goods and services such as food, housing and clothing. These jobs are held by residents located throughout the region, since they are estimated based on local and regional purchases.

- ***Indirect Jobs*** -- are jobs created locally due to purchases of goods and services by firms, not individuals. These jobs are estimated directly from local purchases data supplied to Martin Associates by the companies interviewed as part of this study, and include jobs with local office supply firms, maintenance and repair firms, parts and equipment suppliers, etc.

- ***Related shipper/consignee (related user) jobs*** -- jobs with shippers and consignees (exporters and importers) supported in the state's manufacturing and retail and wholesale distribution industries and the in-state industries supporting the movement and distribution of all commodities, primarily containerized cargo imports and exports using the seaport terminals for shipment and receipt of cargo.

The personal earnings impact is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to seaport activity. Re-spending of these earnings throughout the regional economy for purchases of goods and services is also estimated. This, in turn, generates additional jobs -- the induced employment impact. This re-spending throughout the region is estimated using a regional personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within the Greater Fort Lauderdale area. The re-spending effect varies by region - a larger re-spending effect occurs in regions that produce a relatively large proportion of the goods and services consumed by residents, while lower re-spending effects are associated with regions that import a relatively large share of consumer goods and services (since personal earnings "leak out" of the region for these out-of-regional purchases). The direct personal earnings are a measure of the local impact since they are received by those directly employed by seaport activity.

Tax impacts are payments to the state and local governments by firms and by individuals whose jobs are directly dependent upon and supported (induced jobs) by activity at the seaport terminals.

1. IMPACT STRUCTURE

Economic impacts are created throughout various business sectors of the state and local economies. Specifically, four distinct economic sectors are impacted as a result of activity at the seaport terminals. These are the:

- Surface Transportation Sector;
- Maritime Services Sector;
- Related Shippers/Consignees Sector; and
- Port Everglades Department.

Within each sector, various participants are involved. Separate impacts are estimated for each of the participants. A discussion of each of the economic impact sectors is provided below, including a description of the major participants in each sector.

1.1. The Surface Transportation Sector

The surface transportation sector consists of both the railroad and trucking industries. The trucking firms and railroads are responsible for moving the various cargoes between the seaport terminals and the inland origins and destinations. Also included is the pipeline transportation of petroleum products received at the Port and destined for airports and end users within the region.

1.2. The Maritime Services Sector

This sector consists of numerous firms and participants performing functions related to the following maritime services:

- Maritime Cargo Transportation;
- Vessel Operations;
- Cargo Handling; and
- Federal, State and Local Government Agencies.

A brief description of the major participants in each of these four categories is provided below:

- Maritime Cargo Transportation

  Participants in this category are involved in arranging for inland and water transportation for export or import freight. The freight forwarder/customs broker is the major participant in this category. The freight forwarder/customs broker arranges for the freight to be delivered between the terminals and inland destinations, as well as the ocean transportation. This function performed by freight forwarders and customshouse brokers is most prevalent for containerized and general cargo commodities.

- Vessel Operations

  This category consists of several participants. The steamship agents provide a number of services for the vessel as soon as it enters the port. The agents arrange for medical and dental care of the crew, for ship supplies as well as payment of various expenses including Port Everglades Department charges. The agents are also responsible for vessel documentation. In addition to the steamship agents arranging for vessel services, those providing the services include:

  - Chandlers - supply the vessels with ship supplies (food, clothing, nautical equipment, etc.);
  - Towing firms - provide the tug service to guide the vessel to and from port;
  - Pilots - assist in navigating the vessels to and from Port Everglades' maritime terminals;
  - Bunkering firms - provide fuel to the vessels;
  - Marine surveyors - inspect the vessels and the cargo; and
  - Shipyards/marine construction firms - provide repairs (either emergency or scheduled) as well as marine pier construction and dredging.

- Cargo Handling

  This category involves the physical handling of the cargo at the terminals between the land and the vessel. Included in this category are the following participants:

- Longshoremen & dockworkers - include members of the International Longshoremen's Association (ILA), as well as the Teamsters Union and those dockworkers with no union affiliation that are involved in the loading/unloading of cargo from the vessels, as well as handling the cargo prior to loading and after unloading;

- Stevedoring firms - manage the longshoremen and cargo-handling activities. Stevedoring services at Port Everglades are provided by private stevedoring companies franchised by Broward County;

- Cargo terminal operators - provide services to operate the maritime terminals, track cargo movement and provide security where cargo is loaded and off-loaded, as well as the petroleum terminal and pipeline operators which includes petroleum tank farm operations;

- Warehouse operators - store cargo after discharge or prior to loading and consolidate cargo units into shipment lots. In many cases the freight forwarders and consolidators are also involved in warehousing activity.

- Foreign Trade Zone (FTZ) tenants - operate facilities in the Port Everglades Foreign Trade Zone and in non-contiguous FTZ's in Broward County established under Port Everglades' FTZ.

- Government Agencies

  This service sector involves federal, state and local government agencies that perform services related to cargo handling and vessel operations at the Port. Department of Homeland Security (DHS), which includes U.S. Customs and Border Protection (CBP), U.S. Immigration and Customs Enforcement (ICE) and U.S. Coast Guard, U.S. Department of Labor, U.S. Department of Agriculture and the U.S. Army Corps of Engineers, are involved. These services are provided by the government offices located in the Greater Fort Lauderdale area. The Broward Sheriff's Office (BSO), including fire/rescue department and Florida Department of Law Enforcement (FDLE) are also included in this group.

1.3. Related Shipper/Consignees of Port Everglades Sector

Related jobs consist of jobs with related shippers/consignees shipping and receiving cargo through the public cargo terminals at Port Everglades. While these impacts are generated by all commodities, the majority of these users are attributed to containerized import and export cargo

through the Port. Only the user industry activity that can be linked to the movement of cargo (either raw materials or finished products) through Port Everglades is considered in this related user impact.

1.4. Port Everglades Department

The Port Everglades Department includes those individuals employed by Broward County whose purpose is to oversee port activity at the port's cargo and cruise terminals. The seaport department provides basic infrastructure, establishes usage rules and tariff rates, markets the seaport facilities, and negotiates long-term agreements and leases. The Port's Operations Division controls berthing and provides Harbormaster and line handling services. The Port Everglades Department is an enterprise fund which operates from user fees and not taxes.

2. COMMODITIES INCLUDED IN THE ANALYSIS

A major use of an economic impact analysis is to provide a tool for port development planning. As a port grows, available land and other resources for port facilities become scarce, and decisions must be made as to how to develop the land and utilize the resources in the most efficient manner. Various types of facility configurations are associated with different commodities. For example, containers, automobiles and RO/RO require a large amount of paved, open storage space, while certain types of break bulk cargoes such as steel coil requires covered storage. Perishable commodities require temperature-controlled warehouses and some dry bulk cargo requires covered storage and special dust removing equipment, while tank farms are needed to store liquid bulk cargo.

An understanding of the commodity's relative economic value in terms of employment and income to the local community, the cost of providing the facilities, and the relative demand for the different commodities is essential in making future port development plans. Because of this need for understanding relative commodity impacts, economic impacts are estimated for the following commodities handled at the public and private cargo terminals:

- Containers (dry and refrigerated) – Containerized cargo moved to/from vessel via crane or driven onto/off vessels while container is still on a truck chassis;
- Steel (Coils and Rebar – breakbulk (non-containerized) steel products handled at the terminal by various lifting methods;
- RO/RO and FLO/FLO – breakbulk cargo that is defined as Roll-on/Roll-off Float-on/Float-off indicating which is driven or floated onto/off vessels including automobiles, buses, tractors, trucks and yachts (yachts may be lifted or also designated as Float-on/Float-off (FLO/FLO);
- Gypsum – bulk cargo discharged from vessel by conveyor or pneumatic discharge system;
- Cement – bulk cargo discharged from vessel by conveyor or pneumatic discharge system;
- Other Dry Bulk – other dry bulk cargoes not specified; and

- Petroleum Products – liquid bulk cargoes including jet fuel, gasoline, and oils discharged from vessels by pumps attached to vessel and ethanol arriving by rail for blending.

It should be emphasized that commodity-specific impacts are not estimated for each of the economic sectors described in Section II.1. Specific impacts could not be allocated by individual commodities with any degree of accuracy for maritime construction, ship repair, or the state and Federal government due to the fact that it is difficult to estimate the percentage of resources that are dedicated to one commodity over another. For example, maritime construction may occur at a terminal that is multi-use and cannot be attributed to a specific commodity. Similarly, law enforcement and security operations at the port cannot be attributed to a single commodity.

3. MARITIME CARGO EMPLOYMENT IMPACTS

The employment generated by maritime cargo activity at Port Everglades is estimated.

- First, the total employment that is in some way related to the activities at cargo terminals is estimated from the interview process of 296 tenants and service providers and tenants and FY2016 data provided by the Port Everglades Department as described in the methodology;

- Second, the subset of total employment that is judged to be totally dependent (i.e., direct jobs) on port activity is analyzed as follows:

    - The direct job impact is estimated by detailed job category, i.e., trucking, ILA/dockworkers, freight forwarders/customshouse brokers/warehouse and consolidators, steamship agents, chandlers, surveyors, etc;

    - The direct job impact is estimated for each of the key commodities/commodity groups;

    - The direct job impact is estimated based on the residency of those directly employed;

- Induced and indirect jobs are estimated;

- Finally, jobs related to the maritime activity at the cargo terminals are described.

It is estimated that 209,858 jobs are directly or indirectly generated by port activities at the cargo terminals within Port Everglades Jurisdictional Area (PJA). Of the 209,858 jobs:

- 7,036 jobs are directly generated by activities at the cargo terminals and if such activities should cease, these jobs would be discontinued over the short term.

- 5,153 jobs (induced jobs) are supported by the local purchases of the 7,036 individuals directly generated by port activity at the cargo terminals. An additional 5,127 indirect jobs were supported by $468.1 million of purchases in the local and regional economy by firms providing direct cargo handling and vessel services.

- 192,543 jobs related to cargo imported and exported over the docks at Port Everglades. These jobs are supported in the state's manufacturing and retail and wholesale and distribution industries and the in-state industries supporting the movement and distribution of all commodities, primarily concentrated with containerized cargo imports and exports using the seaport terminals for shipment and receipt of cargo.

3.1. Direct Maritime Cargo Job Impacts

In FY2016, nearly 25.6 million tons of cargo (including 872,484 tons of railed petroleum products) moved via Port Everglades. Of this, containerized activity accounted for 1,037,226 TEUs, recording the third consecutive year the Port has surpassed the 1 million TEU plateau. As a result of this activity, 7,036 full-time jobs were directly created.[2] In this section the jobs are analyzed in terms of:

- Distribution by job category;
- Distribution by commodity group; and
- Distribution by county and state of residency.

These distributions are developed in more detail below.

3.1.1. Job Impacts by Category

Exhibit II-2 presents the distribution of the 7,036 direct cargo jobs by type of job. The exhibit indicates that the majority of direct jobs are with trucking jobs (3,063) moving cargo to and from the terminals, followed by ILA/dockworkers (694), warehouses/consolidators/freight forwarders (612), maritime service providers (526), then terminal operators/stevedores (479).

[2] Jobs are measured in terms of full-time worker equivalents. If a worker is employed only 50 percent of the time by activity at Port Everglades cargo terminals, then this worker is counted as .5 jobs.

Exhibit II-2: FY2016 Cargo Employment Impacts by Sector and Job Category

SECTOR	DIRECT JOBS
SURFACE TRANSPORTATION	
RAIL	202
TRUCK	3,063
MARITIME SERVICES	
TERMINAL EMPLOYEES	479
ILA/DOCKWORKERS	694
TOWING/BARGE	76
PILOTS	28
AGENTS	164
MARITIME SERVICES	526
WAREHOUSING/CONSOLIDATORS/FORWARDERS	612
GOVERNMENT	385
MARINE CONSTRUCTION/DREDGING	84
FTZ	470
BANKING/INSURANCE/LAW	26
PORT EVERGLADES DEPARTMENT	227
TOTAL	**7,036**

Totals may be rounded.

3.1.2. Direct Job Impacts by Commodity

Most of the 7,036 jobs considered to be generated by port activity can be associated with the handling of specific commodities or commodity groups. Certain employment categories such as government employees and employees with maritime construction and ship repair cannot be identified with a specific commodity. As a result, employment in these groups (which totaled 1,310) was not allocated to commodity groups. Exhibit II-3 presents the relative employment impacts in terms of commodity groups.

Exhibit II-3: FY2016 Distribution of Direct Cargo Job Impact by Commodity

COMMODITY	DIRECT JOBS
CONTAINERS	3,172
REEFER	286
STEEL COILS	46
STEEL REBAR	66
RO/RO, FLO/FLO, OTHER BREAKBULK	62
GYPSUM	18
CEMENT	106
OTHER DRY BULK	95
PETROLEUM PRODUCTS	1,875
NOT ALLOCATED	1,310
TOTAL	**7,036**

Totals may be rounded.

The movement of containerized cargo (including reefer containers) creates the largest number of direct jobs, 3,172 as well as 286 reefer containerized jobs, followed by the movement and distribution of finished petroleum products (1,875 jobs). The majority of the remaining direct jobs are supported by the movement of cement and steel.

3.1.3. Distribution of Direct Cargo Jobs by Place of Residency

To underscore the geographic scope of the impacts generated by the cargo terminals, Exhibit II-4 presents the distribution of the 7,036 direct jobs by place of residency. The geographic employment analysis is estimated based on the results of the interviews conducted in FY2015 with the maritime community. As this exhibit indicates, 73.1% of the direct job holders reside in Broward County, followed by about 22.6% residing in Miami-Dade County.

Exhibit II-4: FY2016 Distribution of Direct Cargo Jobs by Place of Employment

JURISDICTION	SHARE	DIRECT JOBS
Broward County	73.1%	5,146
Miami-Dade County	22.6%	1,591
Palm Beach County	2.5%	176
Collier County	0.1%	8
Hendry County	0.1%	6
Other FL	0.5%	35
Other US	1.0%	73
TOTAL	**100.0%**	**7,036**

Totals may be rounded.

Exhibit II-5 illustrates the distribution of the residency of the direct jobs within Broward County. Of those residing in Broward County, about 51% reside in Fort Lauderdale, followed by 15.8% residing in Hollywood and 9.3% in Pompano Beach.

Exhibit II-5: FY2016 Distribution of Direct Jobs by Jurisdiction within Broward County

BROWARD COUNTY JURISDICTION	SHARE	DIRECT JOBS
Fort Lauderdale	51.0%	2,627
Hollywood	15.8%	816
Pompano Beach	9.3%	477
Sunrise	5.4%	275
Pembroke Pines	3.6%	185
Davie	2.1%	106
Coral Springs	1.9%	97
Miramar	1.7%	89
Hallandale Beach	1.6%	80
Weston	1.3%	69
Lauderhill	1.3%	65
Margate	1.0%	53
Dania Beach	1.0%	52
Deerfield Beach	0.9%	45
Plantation	0.9%	44
Cooper City	0.4%	21
Oakland Park	0.3%	15
Tamarac	0.2%	12
Coconut Creek	0.2%	10
North Lauderdale	0.1%	4
Other	0.1%	3
Total	**100%**	**5,146**

Totals may be rounded.

3.2. Induced Jobs

The 7,036 directly employed individuals due to activity at the cargo terminals received wages and salaries, a part of which was used to purchase local goods and services such as food, housing, clothing, transportation services, etc. As a result of these local purchases, 5,153 jobs in the regional economy were supported. The majority of the induced jobs are with local and regional private sector social services, business services, educational services and state and local government agencies, followed by jobs in the food and restaurant sector, and then jobs in the construction and home furnishings sector.

3.3. Indirect Jobs

In addition to the induced jobs generated by the purchases by directly employed individuals, the firms providing the direct services and employing the 7,036 direct jobs make local purchases for goods and services. These local purchases by the firms dependent upon the cargo facilities generate additional local jobs - indirect jobs. Based on the interviews with the 296 firms, these firms made an estimated $468.1 million of local and in-state purchases in FY2016. These direct local purchases created an additional 5,127 indirect jobs in the local economy.

3.4. Related User (Shipper/Consignee) Jobs

It is estimated that about 192,543 jobs are supported in Florida with shippers/consignees that use Port Everglades. It is important to emphasize that the user jobs are supported by the cargo moving only via Port Everglades in FY2016, and do not include jobs supported by cargo moving via other ports that are consumed or produced by in-state shippers/consignees and manufacturers.

To estimate the related user impact for containerized cargo, the average value per ton of each containerized imports and exports was estimated using U.S. Maritime Administration, Foreign Trade Statistics and Port Everglades Department data (through queries of PIERS data). The employment to value of output coefficient for the retail sector related to the exported and imported containerized cargoes was then computed from Bureau of Economic Analysis, Regional Input-Output Model (RIMS II) for the state of Florida. To estimate the related containerized cargo jobs, the average value per ton of containerized cargo was multiplied by the tons handled at the Port. The job coefficient was next multiplied by the value of the containerized cargo moving via the Port to estimate the related jobs with exported and imported containerized cargo. The value was adjusted to reflect retail margins.

For breakbulk cargoes, the associated consuming and producing industries were identified with each commodity. For example, for imported iron and steel products, lumber and plywood, relationships were developed to convert the dollar value of these imported materials into a dollar value of output in the key consuming industries, which include construction and metal fabrication industries. Relationships between the values of inputs to the value of outputs in these industries were estimated using latest data available (2012 Series) from the U.S. Bureau of Census, including Census of

Manufacturing and Census of Construction. These ratios were then used to convert the dollar value of the imported breakbulk and bulk cargoes, including petroleum into a dollar value of output in the consuming industries in the state. Using the respective jobs to value of output multipliers for these industries from the Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMS II 2007/2013) model, the value of the breakbulk and bulk cargoes (i.e., steel products, cement, gypsum and petroleum) moving via the Port and remaining in (or produced in) the state of Florida was converted into related shipper/consignee jobs with these users and associated supporting industries within the state.

Finally, the direct, induced and indirect port sector job impacts associated with each of the cargoes for which related shipper/consignee jobs were estimated were subtracted from the total related jobs (by commodity and cargo type) to avoid double counting, as the related shipper/consignee jobs include job impacts at each stage of handling the imported and exported cargo, such as the port activity and the trucking and rail activity to move the cargo to and from the Port and the induced and indirect jobs associated with the direct port activity.

4. TOTAL ECONOMIC OUTPUT, BUSINESS REVENUE, INCOME AND TAX IMPACTS

The 25.6 million tons of containerized, bulk (dry and liquid) and neo-bulk cargo handled at the cargo terminals (including the nearly 875,000 tons of railed petroleum products) included in the study generated revenue for firms in each of the economic sectors. For example, revenue is received by the railroads, the trucking companies and pipelines within the surface transportation sector as a result of moving export cargo to the seaport terminals and distributing the imported commodities inland after receipt at the cargo terminals. The firms in the maritime services sector receive revenue from arranging for transportation services, cargo handling, providing services to vessels in port and repairs to vessels calling the port facilities. The Port Everglades Department receives revenue from terminal leases and port charges such as wharfage and dockage assessed on cargo and vessels. In addition, revenue is received by shippers/consignees from the sales of cargo shipped or received via the seaport cargo terminals and from the sales of products made with raw materials received through the terminals. Since this chapter is concerned with the revenue generated from providing maritime services, the shipper/consignee revenue (i.e., the value of the cargo shipped or received through the seaport terminals, as well as the value of the products produced by the port-dependent shippers/consignees) will be excluded from the remaining discussion.

The revenue generated by port activity consists of many components. For example, gross revenue is used to pay employee salaries and taxes, it is distributed to stockholders of the companies providing the vessel and cargo handling services, and it is used for the purchases of equipment and maintenance services. Of these components, only three can be isolated geographically with any degree of accuracy. These are the personal income component of revenue, which can be traced to geographic locations based on the residence of those receiving the income, the payment of state and local taxes, and the local purchases made by firms dependent upon the maritime activity. The balance of the revenue is

distributed in the form of payments to firms located outside the Greater Fort Lauderdale area providing goods and services to the economic sectors and for the distribution of company profits to shareholders. Many of these firms and owners are located outside of the state of Florida and, thus, it is difficult to trace the ultimate location of the distributed revenue (other than personal income, taxes and local purchases). The value of output created by in-state related shippers/consignees of the Port is attributed to the state of Florida, and the local purchases from other firms within the state are also included in this user output measure, as defined by the in-state output coefficients (for the user industries) developed from the U.S. Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMS II).

4.1. Revenue Impact – Total Economic Activity

The revenue impact is a measure of the ***total economic activity*** in the state that is generated by the cargo moving via Port Everglades. In FY2016, maritime cargo activity at the Port generated a total of $27.4 billion of total economic activity in the state. Of the $27.4 billion, $1.4 billion is the direct business revenue received by the firms directly dependent upon the Port and providing maritime services and inland transportation services to the cargo handled at the maritime terminals and the vessels calling the port. The remaining $26 billion represents the value of the output to the state of Florida that is created due to the cargo moving via Port Everglades. This includes the value added at each stage of producing an export cargo, as well as the value added at each stage of production for the firms using imported raw materials and intermediate products that flow via Port Everglades and are consumed by industries within the state of Florida. The balance of the discussion focuses on the $1.4 billion of direct business revenue generated from the provision of services to the cargo and vessels handled at Port Everglades.

4.1.1. Revenue Impacts by Economic Sector/Category

Exhibit II-6 presents the total revenue estimated to have been generated by port activity in FY2016. This revenue includes the revenue received by firms providing services to the commodity and vessel activity at the cargo terminals, and includes revenue received by trucking firms, stevedores, Port Everglades Department, chandlers, agents, pilots, towing companies, etc. Not included is the revenue from the use/value of the cargo moving via the maritime terminals, as this is included in the related shipper/consignee output.

The trucking industry receives the largest revenue impact, followed by Foreign Trade Zone (FTZ) activity, terminal operations and then warehousing/freight forwarding. It should be noted that the marine construction figure is tied to the level of capital construction during the period and not tied to a specific commodity.

Exhibit II-6: FY2016 Direct Revenue Generated by Port Cargo Activity

SECTOR	REVENUE (1,000)
SURFACE TRANSPORTATION	
RAIL	$60,507
TRUCK	$551,641
PIPELINE	$1,136
MARITIME SERVICES	
TERMINAL EMPLOYEES	$171,088
TOWING	$24,519
PILOTS	$4,959
AGENTS	$4,545
MARITIME SERVICES	$89,230
WAREHOUSING/CONSOLIDATORS/FORWARDERS	$156,681
GOVERNMENT	NA
MARINE CONSTRUCTION/DREDGING	$16,958
FTZ	$203,566
BANKING/INSURANCE	$3,666
PORT EVERGLADES DEPARTMENT	$99,774
TOTAL	**$1,388,271**

Totals may be rounded.

4.1.2. Revenue Impacts by Commodity

Exhibit II-7 shows the direct revenue impact by commodity. It is to be emphasized that the revenue received by shippers/consignees from the sales of the products (value of the commodities) moving via the seaport terminals is not included, since product value is determined by the demand for the product, not the use of the cargo terminals. Certain revenue categories such as government employees and employees with maritime construction and ship repair cannot be identified with a specific commodity. As a result, revenue in these groups (which totaled $342.6 million) was not allocated to commodity groups.

Exhibit II-7: FY2016 Cargo Revenue Impacts by Commodity

COMMODITY	REVENUE (1000)
CONTAINERS	$702,513
REEFER	$131,328
STEEL COILS	$3,396
STEEL REBAR	$5,504
RO/RO, FLO/FLO, OTHER BREAKBULK	$2,700
GYPSUM	$2,328
CEMENT	$11,056
OTHER DRY BULK	$7,155
PETROLEUM PRODUCTS	$179,670
NOT ALLOCATED	$342,619
TOTAL	**$1,388,271**

Totals may be rounded.

As this exhibit indicates containerized cargo (dry and refrigerated) generate the largest direct revenue impacts, followed by petroleum products.

5. PERSONAL EARNINGS IMPACT

The income impact is estimated by multiplying the average annual earnings (excluding benefits) of each port participant, i.e., truckers, steamship agents, pilots, towing firm employees, longshoremen, warehousemen, etc., by the corresponding number of direct jobs in each category. The individual annual earnings in each category multiplied by the corresponding job impact resulted in $327.8 million in personal wage and salary earnings. It is important to emphasize that the average annual salary of a ***cargo port-dependent job is approximately $46,600***. These relatively high paying jobs will have a much greater economic impact in the local economy through stimulating induced jobs than will a job paying lower wages.

The impact of the re-spending of this direct income for local purchases is estimated using a personal earnings multiplier. The personal earnings multiplier is based on data supplied by the Bureau of Economic Analysis (BEA), Regional Input-Output Modeling System (RIMS II 2007/2013). The BEA estimates that for every one dollar earned by direct employees generated by activity at the cargo terminals, an additional $1.97 of personal income and consumption expenditures would be created as a result of re-spending the income for purchases of goods and services produced locally. Hence, a personal earnings multiplier of 2.97 was used to estimate the total income and consumption impact of $644.6 million, inclusive of the re-spending effect. This additional re-spending of the direct income generates the 5,153 induced job impacts.

The 5,127 indirect job holders earned $28.9 million in indirect wages and salaries. The 192,543 related shipper/consignees of the cargo moving via the Port received about $7 billion of personal income.

Therefore, in FY2016, the total personal income impact and consumption impact created by Port Everglades ocean cargo activity is estimated at $8.2 billion.

6. TAX IMPACTS

State and local tax impacts are based on per employee tax burdens which are developed at the county, local and state jurisdictional levels. The tax per employee burdens are essentially tax indices that are used to allocate total taxes at each level of government to economic activity generated by the cargo terminals. To estimate the per employee tax indices, total taxes received at each governmental level in Florida was developed from the Tax Foundation, which reports total state and local taxes from all sources as a percent of total personal income. In addition, the figures include a proportional estimate of corporate taxes paid by firms.

Direct cargo activity generated $118 million of state, county and local taxes. As a result of the economic activity created by the related shipper/consignees an additional $889.8 million of state and local taxes were generated for a total cargo tax impact of $1 billion. The state of Florida receives approximately 53% of the tax revenues, while the local governments received 47% of the tax impact as illustrated in Exhibit II-8.

Exhibit II-8: FY2016 Distribution of State and Local Tax Revenue

TAXES BY CATEGORY (millions)	STATE	LOCAL	TOTAL
DIRECT, INDUCED & INDIRECT	$55.5	$62.5	$118.0
RELATED USER	$418.2	$471.6	$889.8
TOTAL	**$473.6**	**$534.1**	**$1,007.7**

Totals may be rounded.

7. COMPARISON OF CARGO IMPACTS FY2015 TO FY2016

The purpose of this section is to provide a comparison of the economic impacts generated by Port Everglades cargo activity between FY2015 and FY2016. The methodology used by Martin Associates to estimate the economic impacts generated by seaport activity is essentially identical to the methodology used to initially estimate the economic impacts of the seaport in FY2006, and therefore, direct comparisons can be made.

Exhibit II-9: Comparison of Cargo Impacts FY2015-FY2016

CATEGORY	FY2016 CARGO	FY2015 CARGO	FY15-16 CHANGE
JOBS			
DIRECT	7,036	7,028	8
INDUCED	5,153	5,141	11
INDIRECT	5,127	5,194	(67)
RELATED USER JOBS	192,543	196,382	(3,839)
TOTAL JOBS	**209,858**	**213,745**	**(3,887)**
PERSONAL INCOME (1,000)			
DIRECT	$327,843	$326,968	$875
INDUCED	$644,606	$642,884	$1,721
INDIRECT	$218,857	$221,724	($2,867)
RELATED USER INCOME	$6,996,399	$7,134,336	($137,938)
TOTAL PERSONAL INCOME	**$8,187,705**	**$8,325,913**	**($138,208)**
VALUE OF ECONOMIC ACTIVITY (1,000)			
BUSINESS SERVICES REVENUE	$1,388,271	$1,406,457	($18,187)
RELATED USER OUTPUT	$26,051,507	$26,576,891	($525,384)
TOTAL VALUE OF ECONOMIC ACTIVITY	**$27,439,777**	**$27,983,348**	**($543,571)**
LOCAL PURCHASES (1,000)	**$468,086**	**$474,218**	**($6,132)**
STATE & LOCAL TAXES (1,000)			
DIRECT, INDUCED AND INDIRECT	$117,979	$110,817	$7,163
RELATED USER TAXES	$889,759	$663,493	$226,266
TOTAL STATE AND LOCAL TAXES	**$1,007,739**	**$774,310**	**$233,429**

Totals may be rounded.

Total tonnage at Port Everglades increased from 24.8 to 25.6 million short tons (3.2%), primarily due to a 3.0% increase in waterborne petroleum products tonnage from 15.7 million tons to 16.2 million tons as well as bulk tonnage that increased by 15.8% (1.2 million to 1.4 million tons). Conversely,

however, containerized tonnage decreased slightly by .01% (from 6,693,446 to 6,692,690 tons) and TEUs were off 2.2% (1,060,507 TEUs to 1,037,226 TEUs).

Total jobs decreased by 3,887 primarily due to a decline in related user jobs throughout the state due to fewer containers handled at the Port. It should be noted that direct jobs and induced jobs increased by 8 and 11 respectively due to offsetting petroleum and dry bulk tonnage increases. The decrease in indirect jobs (67), can be attributed primarily to reduced business revenue, again due to the 23,281 TEU decline as well as fewer capital dollars spent by Port Everglades in the fiscal year.

Despite increases in direct and induced income due to direct and induced job increases, total personal income fell by $138.2 million, the majority of which is attributed the decrease of related user jobs throughout the state.

Business services revenue decreased slightly by $18.2 million over the period, while related user output decreased by $137.9 million, again primarily corresponding to the decrease in containerized traffic.

In addition, state and local tax revenue increased by $233.4 million over the one-year period due to related user tax increases which now include an updated methodology to provide a more representative depiction of corporate taxes paid by firms in Florida.

III. ECONOMIC IMPACTS OF CRUISE SERVICES AT PORT EVERGLADES

In FY2016, 876 cruise vessel calls were recorded at Port Everglades, carrying 3.8 million passengers. It is important to note that the vast majority of these are all cruise calls by homeported vessels in contrast to in-transit calls. The key difference between an in-transit call and a homeport call is the fact that a vessel homeporting will take on passengers and supplies at Port Everglades, while a vessel making an intermediate in-transit call typically does not take on or discharge new passengers and neither does the vessel take on supplies from local chandlers and caterers, as well as use local services such as advertising, maintenance and repair, linen services, etc. Hence, a call by a homeported vessel will generate a greater economic impact than an in-transit call. Also included in the passenger and vessel call counts are ferry service to the Bahamas.

To measure the economic impact of the cruise service, Martin Associates developed a cruise impact model for Port Everglades. The model can be used to test the sensitivity of the impacts to changes in the percent of passengers flying into the Fort Lauderdale-Hollywood International Airport versus the percent of passengers driving to the Port, the share of passengers staying in hotels prior to and after the cruise, the local expenditures by passengers while in hotels either before or after the cruise, and the local purchases by the cruise lines for food, liquor, and other supplies and services. The impact of changes in the mix of the size of vessels and the number of cruises by size of vessel and itinerary can also be evaluated using the model.

1. ECONOMIC IMPACT STRUCTURE

Cruise service related to the homeporting of a vessel contributes to the local and regional economies by providing employment and income to individuals, tax revenues to local and state governments, and revenue to businesses engaged in providing operational services and supplies to the vessels and passengers. The flow of cruise industry-generated economic impacts throughout an economy creates four separate and non-additive types of impacts. These four types of impacts are:

- ***Employment Impact*** – represents the number of full-time equivalent jobs generated by cruise activity at Port Everglades. This consists of jobs directly generated by the homeporting of cruise vessels as well as induced jobs, or jobs created in the Greater Fort Lauderdale area due to the purchase of goods and services by those individuals directly dependent upon cruise activity.

- ***Income Impact*** - the level of earnings associated with the jobs created by cruise activity, and adjusted to reflect re-spending throughout the economy.

- ***Revenue Impact*** - the sales generated by firms engaged in supplying services and materials to the vessels while in port, as well as firms in the Greater Fort Lauderdale area visitor industry that supply services to cruise passengers staying in hotels before and after the cruise. The value of

the cruise ticket is not included as a revenue impact except for the cruise service based in Fort Lauderdale that provides ferry service to the Bahamas.

- ***Tax Impacts*** – includes the state and local tax revenues generated by cruise activity. These are taxes paid by individuals directly dependent upon the cruise activity.

The methodology used to estimate these impacts is described in the following section.

2. ECONOMIC IMPACT OF HOMEPORT CALLS

Homeport activity at Port Everglades affects two sectors of the local and regional economy:

- Maritime Service Sector; and
- Visitor Industry Sector.

Separate impacts are estimated for each of the various economic categories supplying goods and services to the cruise ships and passengers. A discussion of each of the impact categories is provided below.

The typical expenditure profile of a cruise line while in port provides an understanding of the types of firms involved in providing goods and services to the vessel and its passengers. These expenditure categories are:

- Food and Beverage - This category includes wholesale food and liquor distributors. It is to be emphasized that in some cases the non-perishable food brought on board at the beginning of a cruise is not necessarily purchased locally, but based on contractual relationships and is trucked in from out of the area. Similarly, in some cases, liquor is purchased from in-bond warehouses, and not from local distributors. Interviews with the cruise operators identified the amount spent locally.

- Logo Items - These items are typically purchased under contract and are trucked into the port of embarkation. Therefore, no local impact is estimated.

- Flowers - Local wholesale flower distributors supply flowers for each cruise.

- Public Relations and Advertising - Contracts are usually developed with local advertising firms to promote the cruise. This is especially the case for the local cruises providing daily ferry services.

- Parking – The Port parking management companies provide parking services for the cruise passengers.

- Taxis/buses - Local taxis and buses provide transportation between the airport and the ship or between the hotel and the ship for air/sea passengers.

- Security - Security services are hired while the ship is in port.

- Linen services - Contracts are developed with local laundries for linen and laundry services.

- Pilots – State licensed and locally based operators guide the cruise ships into the terminal.

- Tugs - Tug services are required for certain cruise ships to assist in docking and undocking. However, most cruise vessels require minimal, if any, tug assists.

- Stevedoring - Required in loading and unloading baggage and ship stores.

- Linehandling – (Provided by the Port Everglades Department) securing and unsecuring the vessel to the dock

- Local and Regional Travel Agencies - Local travel agencies will receive a commission from ticket sales to area residents.

- Waste Disposal - Solid waste and other refuse that cannot be discharged at sea will be disposed by local refuse collectors.

- Bunkers - Fuel will be purchased from local bunkering companies.

- Water- Some potable water purchased locally prior to departure.

- Visitor Industry - In addition to the impacts generated by direct vessel purchases, 51.4% of cruise passengers stay in hotels either before or after the cruise. These individuals will typically purchase incidental retail items before or after the cruise and eat in local hotel restaurants while in the Greater Fort Lauderdale area. Also, these air/sea passengers will take commercial transportation from the airport to the hotel or ship, as well as between the hotel and the ship and throughout the city. In addition to passengers impacting the local visitor industry, the ship's crew will also impact the local industry. For example, the crew will likely purchase personal incidentals while in port. Also, a portion of the crew could be rotated on each sailing. The new crew may stay in a local hotel upon arrival, while the departing crew may also stay in a hotel prior to leaving the area. The crews of the daily sails are treated as based in Fort Lauderdale.

In addition, the passengers arriving via the Fort Lauderdale-Hollywood International Airport also generate impacts on site at the airport, including jobs with airlines (ticket agents, baggage, concessions, taxis, security, etc.). To estimate the impact on the Airport, Martin Associates used average impact ratios developed from our numerous airport impact studies conducted for such airports as Miami International Airport, Atlanta Hartsfield International Airport, Washington Dulles and Reagan National Airports, Baltimore-Washington International Airport, San Francisco International Airport, and Seattle-Tacoma International Airport.

The economic impact analysis of cruise service at Port Everglades is based on a survey of cruise lines serving Port Everglades in 2015. Data was also collected from the Port Everglades Department as well as Martin Associates' in-house databases developed from previous Port Everglades impact analyses.

The interviews of cruise lines focused on typical expenditure profiles of a vessel while in port as well as the percent of crew that are rotated on/off during each sailing. Incidental expenses by crew while in port were also estimated from the interviews as well as in-house data.

Passenger characteristics such as the percent of passengers that are air/sea versus drive-in, the percent of visitor versus local passengers, and the share of passengers spending a pre/post night in Fort Lauderdale and key landside expenses (e.g. hotel, food and retail) were developed from a passenger survey conducted by AECOM which entailed a survey of nearly 1,850 Port Everglades passengers conducted in March, 2015.

The induced impacts are based on the expenditure profile of residents in the Miami-Fort Lauderdale area, as estimated by the U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey 2012-2013" (the latest available at the time of this report). This survey indicates the distribution of consumer expenditures over key consumption categories for Greater Fort Lauderdale area residents. The consumption categories are:

- Housing;
- Food at Restaurants;
- Food at Home;
- Entertainment;
- Health Care;
- Home Furnishings; and
- Transportation Equipment and Services.

The estimated consumption expenditure generated as a result of the re-spending impact is distributed across these consumption categories. Associated with each consumption category is the relevant retail and wholesale industry. Jobs to sales ratios in each industry are then computed for the

Greater Fort Lauderdale area, and induced jobs are estimated for the relevant consumption categories. It is to be emphasized that induced jobs are only estimated at the retail and wholesale level, since these jobs are most likely generated in the Greater Fort Lauderdale area. Further levels of induced jobs are not estimated since it is not possible to defensibly identify geographically where the subsequent rounds of purchasing occur.

The "Consumer Expenditure Survey" does not include information to estimate the job impact with supporting business services, legal, social services, state and local governments, and educational services. To estimate this induced impact, a ratio of state of Florida employment in these key service industries to total state of Florida employment is developed. This ratio is then used with the direct and induced consumption jobs to estimate induced jobs with business/financial services, legal, educational, governmental and other social services.

The indirect impacts are estimated based on the local purchases by the directly dependent firms, combined with indirect job, income and revenue coefficients for the supplying industries in the state of Florida as developed for Martin Associates by the U.S. Bureau of Economic Analysis, Regional Input/Output Modeling System.

The cruise service impact model provides a tool by which the Port can evaluate changes in the types of cruises being offered, the size of vessels deployed, the number of passengers per cruise, the share of passengers staying overnight in the Greater Fort Lauderdale area hotels prior to or after the cruise, and the number of one day cruises and multi-day cruises. The cruise model can also be used to quantify the potential impact of new services, by size of vessel and type of cruise. Finally, the cruise impact model along with the maritime cargo model can be used to evaluate the economic impact of a seaport terminal for use as a cruise terminal versus a cargo terminal.

3. CRUISE SERVICE IMPACT MODEL

In order to assess the economic impacts of potential cruise business at Port Everglades, Martin Associates developed a spreadsheet framework, which can be used to assess the impacts of changes in such factors as:

- Number of cruise vessel calls;
- Number of passengers;
- Passenger characteristics:
  - Local expenditures;
  - Local residents versus tourists;
  - Length of pre/post night stay in the Greater Fort Lauderdale area;
- Size of crew; and
- Size of vessel.

This model will estimate the impacts of current cruise operations at Port Everglades.

4. PORT EVERGLADES CRUISE OPERATIONS FY2016

During the FY2016 cruise season, 876 cruises called the Port carrying nearly 3.8 million total embarking and debarking passengers, or about 1.9 million actual unique embarking passengers (not including transit passengers). The cruise operations at Port Everglades are divided into conventional multi-day cruises as well as daily ferry operations. Exhibit III-1 illustrates the FY2016 cruise season by type of cruise and cruise line.

Exhibit III-1: FY2016 Cruise Calls and Passengers by Cruise Line

CRUISE LINE	CALLS	PASSENGERS
MULTI-DAY		
ROYAL CARIBBEAN	194	1,869,935
PRINCESS	109	607,914
HOLLAND AMERICA	123	409,911
CARNIVAL	57	377,382
CELEBRITY	70	348,523
COSTA	9	41,276
CUNARD/SEABOURN	25	21,900
OCCASIONAL/OTHER	2	3,708
MULTI-DAY SUBTOTAL	*589*	*3,680,549*
DAILY		
BALEARIA	288	145,866
DAILY SUBTOTAL	*288*	*145,866*
TOTAL	**877**	**3,826,415**

Source: Port Everglades Department; Totals may be rounded.

Based on the results of the March, 2015 passenger survey conducted by AECOM, approximately 51.4% of the Port Everglades cruise passengers arrived to the port from a hotel. Over 23% of passengers arrived to the cruise terminal from an airport (FLL, MIA or PBI), while 17.5% originated from a private residence as depicted in Exhibit III-2.

Exhibit III-2: Origin of Port Everglades Cruise Passengers

ORIGIN	PERCENT
HOTEL	51.4%
FLL	21.4%
OWN HOME	17.5%
ANOTHER'S HOME	4.5%
OTHER	2.7%
MIA	1.6%
NOT SPECIFIED	0.7%
WORK/OFFICE	0.2%
PBI	0.1%
TOTAL	**100.0%**

Source: AECOM 2015 Passenger Survey Data; Totals may be rounded.

As illustrated in Exhibit III-3, approximately 29.5% of the cruise passengers arrived to the cruise terminal by taxi, while 27.9% and 17.9% arrived by hotel shuttle and personal vehicle respectively.

Exhibit III-3: Mode of Access by Cruise Passengers

MODE OF ACCESS	PERCENT
TAXI	29.5%
HOTEL SHUTTLE	27.9%
OWN PERSONAL VEHICLE	17.9%
CRUISE BUS	5.4%
OTHER	4.8%
PRE-ARRANGED VAN	4.2%
RENTAL CAR	3.8%
DROPPED OFF	3.6%
PARKING SHUTTLE	2.8%
PUBLIC BUS	0.1%
TOTAL	**100.0%**

Source: AECOM 2015 Passenger Survey Data; Totals may be rounded.

5. ECONOMIC IMPACTS OF CRUISE SERVICE AT PORT EVERGLADES

The economic impact of the 876 cruise vessel calls in FY2016 at Port Everglades is presented in Exhibit III-4 and described in the subsequent sections.

Exhibit III-4: FY2016 Economic Impact of Cruise Operations at Port Everglades

CATEGORY	CRUISE	AIRPORT	TOTAL
JOBS			
DIRECT	5,361	566	5,927
INDUCED	2,747	165	2,912
INDIRECT	2,814	1,403	4,217
TOTAL	**10,922**	**2,134**	**13,056**
PERSONAL INCOME (1,000)			
DIRECT	$162,512	$12,318	$174,829
INDUCED	$284,295	$12,437	$296,732
INDIRECT	$92,869	$41,613	$134,482
TOTAL	**$539,676**	**$66,368**	**$606,044**
BUSINESS REVENUE (1,000)	**$1,343,002**	**$592,445**	**$1,935,447**
LOCAL PURCHASES (1,000)	**$110,043**	**$76,440**	**$186,483**
STATE/LOCAL TAXES (1,000)	**$61,301**	**$6,172**	**$67,473**

Totals may be rounded.

6. JOB IMPACTS

The cruise activity at Port Everglades created 13,056 total jobs for Greater Fort Lauderdale area residents in FY2016. Of these 13,056 jobs, 5,927 were direct jobs, 2,912 induced jobs were supported in the Greater Fort Lauderdale area as the result of the purchases of the 5,927 direct jobs holders, while another 4,217 indirect jobs were supported in local industries that supply services and goods to the tourism industry catering to the passengers as well as to the chandlers and other firms supplying services and goods to the vessels while in Port.

7. PERSONAL INCOME IMPACT

The 5,927 direct job holders received $171.8 million of direct wages and salaries, for an annual salary of cruise-related port dependent job of about $29,500. As the result of the purchases made locally with this income, (which supported the 2,912 induced jobs in the Greater Fort Lauderdale area) an additional $296.7 million of local income and consumption expenditures were created in the Greater Fort Lauderdale area. The 4,217 indirectly employed workers were paid $134.5 million, for a total wage and salary income impact of $606 million, including the consumption impact.

8. BUSINESS REVENUE

Local businesses supplying food, beverages, and services to the cruise lines and the services supplied at the Fort Lauderdale-Hollywood International Airport received $1.9 billion of business revenue. In addition, in order to support the services and goods supplied to the cruise lines by these firms, another $186.5 million of local purchases in the Greater Fort Lauderdale area were made by those firms providing direct services to the cruise lines. These local purchases supported the 4,217 indirect jobs in the local economy.

9. TAX REVENUE

Finally, as the result of cruise activity at Port Everglades during the FY2016 cruise season, $67.5 million of state and local tax revenue was collected. Exhibit III-5 presents the breakdown of state and local taxes.

Exhibit III-5: FY2016 Distribution of State and Local Tax Revenue

TAXES BY CATEGORY (millions)	STATE	LOCAL	TOTAL
CRUISE	$28.8	$32.5	$61.3
AIRPORT	$2.9	$3.3	$6.2
TOTAL	**$31.7**	**$35.8**	**$67.5**

Totals may be rounded.

10. COMPARISON OF CRUISE IMPACTS FY2015 TO FY2016

This section will provide a comparison of the economic impacts generated by cruise activity between FY2015 and FY2016. An essentially identical methodology was used by Martin Associates to estimate the economic impacts generated by cruise activity for both the FY2015 and FY2016 studies, and therefore, direct comparisons over the period can be made.

Exhibit III-6: Comparison of Cruise Impacts FY2015-FY2016

CATEGORY	FY2016 CRUISE	FY2015 CRUISE	FY15-16 CHANGE
JOBS			
DIRECT	5,927	5,813	114
INDUCED	2,912	2,857	54
INDIRECT	4,217	4,138	80
RELATED USER JOBS	NA	NA	NA
TOTAL JOBS	**13,056**	**12,808**	**248**
PERSONAL INCOME (1,000)			
DIRECT	$174,829	$171,629	$3,200
INDUCED	$296,732	$291,325	$5,407
INDIRECT	$134,482	$131,957	$2,525
RELATED USER INCOME	NA	NA	NA
TOTAL PERSONAL INCOME	**$606,044**	**$594,911**	**$11,133**
VALUE OF ECONOMIC ACTIVITY (1,000)			
BUSINESS SERVICES REVENUE	$1,935,447	$1,901,765	$33,682
RELATED USER OUTPUT	NA	NA	NA
TOTAL VALUE OF ECONOMIC ACTIVITY	**$1,935,447**	**$1,901,765**	**$33,682**
LOCAL PURCHASES (1,000)	**$186,483**	**$183,553**	**$2,930**
STATE & LOCAL TAXES (1,000)			
DIRECT, INDUCED AND INDIRECT	$67,473	$55,327	$12,147
RELATED USER TAXES	NA	NA	NA
TOTAL STATE AND LOCAL TAXES	**$67,473**	**$55,327**	**$12,147**

Totals may be rounded.

Over the FY2015 to FY2016 period, Port Everglades total cruise passengers increased by 1.4% from 3,73,386 to 3,826,415. Specifically, multi-day passenger activity increased by 58,320 (1.6%) passengers, while daily ferry passenger activity decreased by 5,291 (-3.5%) due to fewer passengers per call.

Due to the overall increase in passenger activity, direct jobs increased by 114 contributing to an overall increase of 248 total (direct, induced and indirect) jobs. Personal income increased by $11.1 million, while business services revenue increased by $33.7 million. Local purchases by firms supplying the cruise passenger and vessels experienced an increase of $2.9 million and state and local tax revenue grew by $12.1 million.

APPENDIX A – SAMPLE SURVEY QUESTIONNAIRE

ECONOMIC IMPACT STUDY OF PORT EVERGLADES – 2015

Maritime Service Questionnaire

Company Name:_____
Respondent Name_____
Telephone Number:_____
Line of Business:_____

All information requested below will be kept confidential.

Please indicate which questions are not applicable to your business.

1. How many NON-ILA persons are employed in your Port Everglades operation?

   Full-time _____, Part-time _____ (hrs/wk for part-time employees _____)

2. What is the average wage or salary (excluding benefits) of these employees?

   Full-time _____, Part-time _____, or Combined _____

3. Please list how many (or what percentage) of these employees live in:

Cities of:

_____Coconut Creek	_____Cooper City	_____Coral Springs
_____Dania Beach	_____Davie	_____Deerfield Beach
_____Fort Lauderdale	_____Hallandale Beach	_____Hillsboro Beach
_____Hollywood	_____Lauderdale-by-the-Sea	_____Lauderdale Lakes
_____Lauderhill	_____Lazy Lake	_____Lighthouse Beach
_____Margate	_____Miramar	_____North Lauderdale
_____Oakland Park	_____Parkland	_____Pembroke Park
_____Pembroke Pines	_____Plantation	_____Pompano Beach
_____Sea Ranch Lakes	_____Southwest Ranches	_____Sunrise
_____Tamarac	_____Weston	_____West Park
_____Wilton Manors		

Counties of:

_____ Broward County	_____ Miami-Dade County	
_____ Palm Beach County	_____ Collier County	_____ Hendry County
_____ Other Florida	_____ Other U.S.	

In lieu of this data, please provide a blind zip code listing of your employees' places of residence. We will then allocate your employee counts and zip codes to the specified cities and counties.

4. Please indicate the percentage of your PEV-related business by type of commodity or type of vessel.

container_____	steel_____	other
breakbulk_____	cement_____	other bulk_____
petroleum_____	cruise_____	other_____

5. Please provide estimated average monthly expenditures paid to local vendors

Office Supplies:	_____	Fuel:	_____
Communications:	_____	Transportation:	_____
Cost of Goods/Parts:	_____	Maintenance/Repair:	_____
Rent/Utilities:	_____	Insurance:	_____
Contracted Services:	_____	Others (specify):	_____

APPENDIX B

U.S. MARITIME ADMINISTRATION
RECORD OF CATEGORICAL EXCLUSION

SUBJECT:

Port Everglades Intermodal Freight Connector Project

REFERENCE:

(a) Department of Transportation Order DOT 5610.1C; September 18, 1979
(b) Maritime Administrative Order (MAO) 600-1; July 23, 1985
(c) Environmental Compliance Checklist
(d) Transportation and Infrastructure Finance and Innovation Act (TIFIA) of 1998
(e) TIFIA Letter of Interest June 29, 2016

Action:

The Broward County Port Everglades Department has applied for TIFIA credit assistance using the Agency's Letter of Interest (LOI) form. The Intermodal Freight Connector Project has been developed to ensure that Port Everglades is able to provide state-of-industry infrastructure and capacity necessary to fulfill its role as a nationally significant global gateway. The Port Everglades' Southport container complex allows for direct access to the Interstate system and the Port Everglades Navigation Improvement Project to deepen and widen the port's channel, which will help the port continue to accommodate post-Panamax cargo vessels, which call at the port today. These improvements are critically needed to transfer cargo intermodally from ship to shore for distribution throughout the United States by truck and rail. The planned project for renovation and upgrade at the port as outlined in the LOI has three individual phases as identified below:

Southport Improvements Component – includes the redevelopment of a portion of an existing upland cargo container terminal yard that was built over an existing landfill. The landfill material will be excavated, sorted, and disposed and the area will be revitalized into an approximately 19 acre cargo container terminal yard.

In addition, the turning notch component includes dredging and construction of approximately 3,250 linear feet of new bulkhead, along with the construction of approximately 1,600 linear feet of new environmentally friendly bulkhead, and a toe-wall – *a low retaining wall* – for existing Berth 30. The project will also add approximately 1,420 linear feet of wharf to the west along Berth 30.

Crane Rail Infrastructure Component – includes upgrades to the landside infrastructure necessary to accommodate new container cranes and to upgrade existing container cranes. The electric utility company furnishing the power for the cranes requires a standalone, two-story concrete block building of approximately 11,500 square feet to house new electrical switchgear for the cranes. A power vault will be on the first

floor. The electrical switchgear will be housed on the second level. Other key elements are:

- 1,900' of new crane rail girders at Berths 31-32 for new container cranes
- 1,100' of new crane rail girders at Berth 30 for new container cranes
- 1,500' of new crane rail girders at Berth 30 Extension for upgraded cranes
- Crane tie-downs and stowage sockets
- New electrical cable trench and vaults
- Electrical supply for new cranes.
- Electrical cabling network and power duct (new and rerouted)

Super Post-Panamax Low Profile Container Gantry Cranes Component – includes the purchase of three newly designed and constructed rail-mounted container gantry cranes. Each will be capable of reaching across ships carrying containers 22 units wide and lifting a container above a height of seven containers stowed on the deck of a Post-Panamax container ship. These cranes are necessary to service these larger ships as some existing cranes cannot reach across the full deck of the larger ships.

Analysis:

The projects are located in an existing industrial area at an established port facility.

With regard to the old landfill in which the project proponent plans to excavate, the Florida Department of Environmental Protection (FL DEP) has guidance regarding disturbing old closed landfills or waste disposal areas in which the owner is required to consult with the FL DEP before disturbing an old landfill. No permits are required, although monitoring may be required by the FL DEP.

The Army Corp of Engineers (ACOE) issued an Environmental Assessment (EA) and Statement of Findings on September 9, 2016 in conjunction with the permit request for the Port Everglades project. This included the in-water work, dredging, and the construction of the new elements to the port facility. It also includes the mitigation measures of impacted mangroves, which has already been completed outside of the scope of this project.

The ACOE EA indicated that in 2015, an Environmental Impact Statement (EIS) was completed for the much larger channel dredging project. Initially, the turning notch component was intended to be included in the EIS, but the EA recognizes the independent utility of the turning notch project and was analyzed separately. Specifically, the EA concludes that the purpose of the turning notch expansion is to increase the number of New Panamax vessels that berth at the Port, which could happen without the federal project being completed.

The proposed use is for the same purpose and includes redevelopment of the existing facility in order to improve operations. Because of prior ground disturbing activities, the proposed project is not expected to have significant environmental impacts. The areas of

new construction including in water work has been fully evaluated by the ACOE in the attached EA. All construction activities will be conducted in accordance with applicable Federal, state and local environmental regulations and permit conditions. No additional investigations are necessary at this time.

Conclusion:

Based upon our review, the proposed actions are not expected to have a significant effect on the human and natural environment, individually or cumulatively, under normal conditions, and are categorically excluded from further documentation requirements under the National Environmental Policy Act (NEPA) and the Maritime Administrative Order 600-1 Categorical Exclusion. The applicable MARAD Categorical Exclusions are:

Categorical Exclusion No. 4: Reconstruction, modification, modernization, replacement, repair, and maintenance (including emergency replacement, repair, or maintenance) of equipment, facilities, or structures which do not change substantially the existing character of the equipment/facility/structure.

Categorical Exclusion No. 7: Project or program actions for which applicable environmental documentation has been prepared previously and environmental circumstances have not subsequently changed.

Environmental Reviewer:

12-30-16

Kristine Gilson — Date
Environmental Protection Specialist
Office of Environment

Approval:

John Quinn 1/3/17

John P. Quinn — Date
Associate Administrator for Environment and Compliance

U.S. Department of Transportation
Maritime Administration

CONCURRENCE RECORD

ORIGINATING OFFICE	SUBJECT
MAR-410	NEPA Categorical Exclusion Port Everglades TIFIA loan

SEQUENCE	CODE NO.	ORGANIZATIONAL UNIT	INITIALS		DATE
			WITHIN OFFICE	OFFICE HEAD	
	100	MARITIME ADMINISTRATOR			
	110	DEPUTY MARITIME ADMINISTRATOR			
	130	OFFICE OF CIVIL RIGHTS			
	220	OFFICE OF CHIEF COUNSEL			
	221	DIVISION OF LITIGATION AND GENERAL LAW			
	222	DIVISION OF MARITIME PROGRAMS			
	223	DIVISION OF LEGISLATION AND REGULATIONS			
	230	ASSISTANT ADMINISTRATOR			
	231	OFFICE OF INTERNATIONAL ACTIVITIES			
	232	OFFICE OF POLICY AND PLANS			
	240	OFFICE OF CONGRESSIONAL AND PUBLIC AFFAIRS			
	250	OFFICE OF CHIEF FINANCIAL OFFICER			
	300	ASSOCIATE ADMINISTRATOR FOR ADMINISTRATION			
	340	OFFICE OF CHIEF INFORMATION OFFICER			
	360	OFFICE OF HUMAN RESOURCES			
	380	OFFICE OF ACQUISITION			
	390	OFFICE OF MANAGEMENT AND ADMINISTRATIVE SERVICES			
2	400	ASSOCIATE ADMINISTRATOR FOR ENVIRONMENT AND COMPLIANCE		JRQ	1/8/17
1	410	OFFICE OF ENVIRONMENT	12-30-16		
	420	OFFICE OF SECURITY			
	430	OFFICE OF SAFETY			
	500	ASSOCIATE ADMINISTRATOR FOR INTERMODAL SYSTEM DEVELOPMENT			
	510	OFFICE OF INFRASTRUCTURE DEVELOPMENT AND CONGESTION MITIGATION			
	520	OFFICE OF MARINE HIGHWAYS AND PASSENGER SERVICES			
	530	OFFICE OF DEEPWATER PORTS AND OFFSHORE ACTIVITIES			
	540	OFFICE OF SHIPPER AND CARRIER OUTREACH			
	550	OFFICE OF GATEWAYS			
	600	ASSOCIATE ADMINISTRATOR FOR NATIONAL SECURITY			
	610	OFFICE OF SHIP OPERATIONS			
	620	OFFICE OF EMERGENCY PREPAREDNESS			
	630	OFFICE OF SEALIFT SUPPORT			
	640	OFFICE OF SHIP DISPOSAL			
	700	ASSOCIATE ADMINISTRATOR FOR BUSINESS AND WORKFORCE DEVELOPMENT			
	710	OFFICE OF FINANCIAL APPROVALS AND MARINE INSURANCE			
	720	OFFICE OF SHIPYARDS AND MARINE FINANCE			
	730	OFFICE OF CARGO PREFERENCE AND DOMESTIC TRADE			
	740	OFFICE OF MARITIME WORKFORCE DEVELOPMENT			
	5100	U.S. MERCHANT MARINE ACADEMY			

SUMMARY

Categorical Exclusion document for Broward County Port Everglades Intermodal Freight Connector Project

FORM MA-71 (REV 01-2008)

APPENDIX C

Broward County's Port Everglades Intermodal Freight Connector Project

Benefit/Cost Analysis Documentation

Overview

The below technical documentation describes the Benefit/Cost Analysis completed in support of Broward County's Port Everglades Intermodal Freight Connector Project. The documentation is organized around the worksheets provided in the attached MS Excel spreadsheet.

Monetized Values and Factors

The "Monetized Values and Factors" tab contains many of the main factors used in the overall analysis. The majority of these, particularly those related to safety, quality of life, and sustainability came directly from the Benefit Cost Analysis (BCA) Resource Guide provided as part of the 2016 FASTLANE application process. These factors include: the value of a statistical life, value of injuries, value of property damage only crashes, value of time by user type, and the value of emissions for five emission types.. In addition, these factors were supplemented by the following values:

- Pavement Damage as defined by the *Pricing Freight Transport to Account for External Costs, Congressional Budget Office Working Paper 2015-03* for measuring the impacts on the State of Good Repair.

- Truck Operating Costs as defined by *An Analysis of the Operational Costs of Trucking: A 2015 Update* published by the American Transportation Research Institute (ATRI) for measuring the impacts on Economic Competitiveness.

- Rail Operating Costs based on *Total Annual Spending 2013 Data* from the Association of American Railroads (AAR) for measuring the impacts on Economic Competitiveness.

- Truck Fuel Consumption based on the *2014 Vehicle Technologies Market Report* from the Oak Ridge National Laboratory and the U.S. Department of Energy for measuring impacts on Sustainability.

- Rail Fuel Consumption based on the Bureau of Transportation Statistics' Class I Rail Freight Fuel Consumption and Travel table for measuring impacts on Sustainability.

Consumer Price Index (CPI)

The "CPI" tab contains factors used to adjust dollars from one year to the next. Since not all measures are given in same year values, particularly for multi- year projects with benefits accruing over multiple decades, it is necessary to adjust the values to a consistent year to ensure

a fair comparison. These factors were provided from the Bureau of Labor Statistics' *CPI Detailed Report Data for December 2015*.

Emissions – Truck

Truck emissions were determined based off the California Life-Cycle Benefit/Cost Analysis Model (Version 5.0) from Caltrans as part of the 2016 TIGER Applications. This model provides emissions factors for 2011 and 2031 for varying rates of speed for six emissions types: CO, CO_2, NOx, PM_{10}, SOx, and VOC. Given the available values are only for 2011 and 2031, the interim years were estimated based on an average annual rate of change.

This range did not provide values for the entire life of the project. For environmental impacts beyond 2031, values for each emissions type were held constant at the 2031 value. This is a conservative estimate for CO, NOx, and VOC as each of these had a negative rate of change, suggesting that impacts in later years are less than those in earlier years for the same mileage. CO_2, PM_{10}, and SOx had a rate of change of effectively zero so these values are relatively unchanged over time.

Since emission rates are impacted by the truck speed, values for each average speed were applied to the average speeds calculated for the individual markets with and without the project. More details on the calculation of speed are found in the "Without Market Assumptions" sheet.

Emissions – Rail

Rail emission rates were not provided through the FASTLANE guidance and with the privatized nature of railroads, these rates are more difficult to find. However, the U.S. Environmental Protection Agency (EPA) developed a *Logistics Company Partner 2.0.14 Tool: Technical Documentation 2014 Data Year – United States Version* which does contain some of these emission rates. Values were found for CO_2, NOx, and $PM_{2.5}$. A note here is that $PM_{2.5}$ is not the same as PM_{10}. $PM_{2.5}$ is more associated with fuel burning, industrial combustion processes, and vehicle emissions. PM_{10}, on the other hand, includes these same things but also other contributions such as road dust and construction activities and includes particulates of larger sizes (10 μm vs 2.5 μm). In this case, the particulate matter for railroads is less encompassing but the $PM_{2.5}$ value is used in lieu of better available data. With the railroad share of traffic being several orders of magnitude less than the truck share, this has a minimal impact on the benefits.

In addition to the discrepancies in particulate matter, values were not found for VOCs or SOx for railroads. However, these too have little impact on the overall benefits of the project. Including these two emission types would reduce the overall benefits slightly but these have the smallest impact of the five emission types included as part of this analysis. Based on guidance from the BCA Resource Guide 2016, VOCs have the lowest monetized value per metric ton (compare $2,032/metric ton versus $366,414/metric ton for particulate matter). SOx, for its part, is the least emitted type of the five based on available truck values. As mentioned, excluding these values does exclude some negative benefits associated with increased rail use with the completion of this project however the change in rail usage is significantly smaller than shifts in truck usage and has minimal impact on the final benefit ratio.

Crash Rates

The "Crash Rates" sheet supplements the information given by the BCA Guidance. These values allow for a calculation of the rate of accident occurrence to determine the quantity of fatalities, injuries, and property damage only crashes. The quantity is then used with the monetized values provided by the BCA Guidance to determine the cost to human life of truck and rail travel.

The truck travel values were determined by the latest *Large Truck and Bus Crash Facts 2013* provided by the Federal Motor Carrier Safety Administration (FMCSA). As incident rates were reported for both single-unit trucks and combination trucks, an average incident rate was computed based on the vehicle miles traveled (VMT) share of these modes. The VMT values are the latest available from the Federal Highway Administration's (FHWA) *Freight Facts and Figures.*

Rail crash rates were determined from the Bureau of Transportation Statistics' *Railroad System Safety and Property Damage Data*. These crash rates were used to determine fatalities and injuries per train mile. Property damage only accident rates were not used here as the railroads report total property damage which can then be divided by the total train miles to determine the average property damage per train mile.

Project Costs

The "Project Costs" sheet details at a high level overall project costs. Note that the total costs here include more than what is being asked for as part of this grant. Additional project costs were based on previously funded and/or completed projects. Specifically, these relate to environmental mitigation and the development of a container yard. These projects have not been included in the grant request amount as they are funded through state and local efforts and are moving forward as precursor components. Annual maintenance costs were also added here in the amount of 0.5 percent of the total construction cost.

Other Factors

The "Other Factors" sheet encompasses all other factors which must be utilized in order to calculate the benefits. Namely, this focuses on the conversion of TEUs to trucks and trains, the weight of a truck or railcar, and the mode split, distance, travel time, and travel speeds to serve each market with and without the project.

The conversion of TEUs to trucks was assumed to be a 2:1 ratio due to current industry practice to predominately use FEU (forty equivalent units) which is equivalent to 2 TEUs for intermodal shipments. The conversion of TEUs to railcars was assumed to be a 3:1 ratio to account for some double-stacking of containers on the railcars. Lastly, it was assumed that there are 151 railcars per train coming out of Port Everglades. This is based on the fact that the Intermodal Container Transfer Facility (ICTF) operated at Port Everglades is capable of processing 8,000' trains. With an average railcar length assumed to be 53', this then works out to 151 railcars per train.

The average weight of a truck was based on the maximum allowable loaded weight in the state of Florida, 80,000 pounds. A discount of 5 percent was applied to this to account for some trucks

being lightly loaded. This is often not the case as shippers want to make the best utilization of a truck trip and may even at times go over the legal weight if they do not believe they will be caught. This is a conservative estimate as a higher assumed truck tonnage will result in higher benefit in the final calculation. The average loaded railcar was assumed to be 60.9 tons based on current statistics from the Class I railroads.

The three main markets expected to be served by this project are South Florida, Central Florida, and the Southeastern United States. Of these, the only one anticipated to be served by rail with this project is the Southeastern United States. Based on the Port Everglades Master/Vision Plan, the anticipated rail share of this project is 12.4 percent. The remaining 87.6 percent of cargo is anticipated to be trucked to these markets based on the following market share:

- South Florida – 70%
- Central Florida – 25%
- Southeastern United States – 5%

To determine the mode split of cargo without this project being completed the Freight Analysis Framework (FAF) version 4.1 developed by the Federal Highway Administration (FHWA) was utilized. This data source shows existing commodity flows by mode for imports and exports and the origin or final destination for these goods. The mode splits used, based on input from FAF, are defined in Table 1.

Table 1 Mode Split by Market without Project Construction

	South Florida	Central Florida	Southeastern US
Truck	95%	90%	75%
Rail	5%	10%	25%

For the average truck distance and average travel speed with this project Google and Google Maps were utilized to determine the distance and travel time between Port Everglades and the target markets by truck. These two values were then used to determine the travel speed between locations. Note that travel times have been increased 10 percent over the suggested Google time based on estimates by FHWA that trucks travel 10 percent slower than passenger cars.

As only one market is served by rail with this project, these factors were only computed for the Southeastern United States. Due to the lack of readily available data, the train distance between Port Everglades and the Southeastern United States was assumed to be the same as the truck distance. Based on reports from the Class I railroads in the JOC, the average intermodal train was assumed to move at 31 miles per hour. Using the rail transit distance and average speed, the average rail travel time was calculated.

For the without project travel distances, speed, and time, refer to the "Without Project Port Usage" sheet explanation.

Without Project Port Usage

The benefits for this project were determined based on the differences between the scenario of this project being built and the scenario where this project is not built. In order to determine this, an important piece of information is what other ports can handle this cargo in the event that Port Everglades is not able to. To develop this information, FAF 4.1 was once again utilized. This was supplemented with information on investments being made at other ports competing for the larger post-Panamax ships that this project will attract. The following locations were determined to be the main competitors for this market:

- Jacksonville, Florida (Jaxport)
- Los Angeles/Long Beach, California (Port of Los Angeles/Long Beach)
- Miami, Florida (PortMiami)
- New York City, New York/New Jersey (Port of New York and New Jersey)
- Savannah, Georgia (Port of Savannah)
- Hampton Roads, Virginia (Port of Virginia)

Similar to the method used for the with project scenario, Google and Google Maps were then utilized to determine the distance and travel time between these port locations and the target markets by truck. These two values were then used to determine the travel speed between locations. Note that travel times have been increased 10 percent over the suggested Google time based on estimates by FHWA that trucks travel 10 percent slower than passenger cars.

As rail transit distances are not readily available, the determined truck distance between the ports and markets were used. The exception to this is the Port of Los Angeles/Long Beach which was increased to account for a transfer in Kansas City, Missouri based on current rail patterns. Based on reports from the Class I railroads in the JOC, the average intermodal train was assumed to move at 31 miles per hour. Using the rail transit distance and average speed, the average rail travel time was calculated.

For each of the target markets, South Florida, Central Florida, and the Southeastern United States, the market share was split among the determined competitor ports to simulate where the cargo will be processed if the project was not built. This was done for both rail and truck movements. Using these market shares, average trip distances, average travel time, and average speed were determined for each market by both rail and truck.

Trip Calculation

The prior discussion of the worksheets within this workbook focused on the factors used as inputs into the calculation process. The remaining discussion focuses on the actual calculations used to determine the benefits. The first necessary step is to determine how many truck and rail trips will

be generated by this project based on the estimated throughput. This is the primary factor impacting the remaining calculations.

Estimated throughput was provided by Port Everglades and assumed to reach a maximum of 730,000 TEUs per year. However, this volume is not anticipated to be achieved within the first year. A 10 year ramp up for cargo volumes was applied to this estimate with an assumed design life of 30 years. Multiplying this volume by the determined mode split in the "Other Factors" sheet calculates how many TEUs are moved by truck and rail with or without the project completion.

From here, the number of trips by mode was determined based on the average number of TEUs per movement per mode. For trucks, this involves dividing the truck TEUs by the TEU/truck ratio. For rail, this entailed dividing the rail TEUs by the TEU/railcar ratio and the railcar/train ratio to determine the total number of trains per year. The results of this are seen in Table 2. As a reality check, the maximum truck trips of 319,740 per year equates to roughly 1,230 truck trips per day assuming a five day work week, 52 weeks per year. The maximum train volumes of 200 per year equates to just under one train per day. This is realistic given the current operating conditions at Port Everglades and the supporting infrastructure which has been enhanced over the past few years. Further details on the split of these trips by market is shown in the Excel document. This additional calculation is based on the market share determined in the "Other Factors" sheet and is necessary due to the differing distances vehicles must travel to serve these markets.

Table 2 Change in Trips by Mode With and Without Project Construction

	With Project	Without Project	**Net Change**	**Annual Average**
Truck Trips	7,831,440	8,095,081	**263,641**	**8,788**
Rail Trips	4,896	3,732	**(1,164)**	**(3)**

As Table 2 details, with the completion of this project, there are fewer total truck trips over the life of the project but a greater use in rail. The net impact of this modal difference results in positive benefits for this project in regards to truck movements but negative benefits for rail movements. However, the large change in truck use, as well as significant changes in average trip lengths results in overall positive benefits.

VMT Ton-Mile Driver Time

The truck trips previously computed were then utilized to determine vehicle miles traveled (VMT), ton-miles, and the travel time by mode for users.

Vehicles miles traveled were calculated by multiplying the number of trips by mode and by market by the average modal distances determined for that mode/market as part of the "Other Factors" sheet. This was done for each of the three markets for each mode, with and without the project. The significant changes in truck travel distances for the South Florida and Central Florida markets, at 216 miles and 320 miles respectively, result in an overall reduction in vehicle miles traveled by truck of nearly 3.9 billion over the life of this project. On average, this is about 129

million miles per year. For rail, there is an increase in miles traveled due to this project of just over half a million. This is approximately 19,338 additional rail miles per year. The overall summary of vehicles miles traveled by mode with and without project is summarized in Table 3.

Table 3 Change in Vehicle Miles Traveled by Mode With and Without Project Construction

	With Project	Without Project	**Net Change**	**Annual Average**
Truck VMT (in millions)	912	4,774	**3,862**	**129**
Rail VMT (in thousands)	3,158	2,578	**(580)**	**(19)**

The next step was to determine the ton-miles associated with each mode. This was done by taking the total VMT by each mode and multiplying it by the average loaded truck weight for truck calculations and the average loaded railcar weight for rail calculations. These factors can be found in the "Other Factors" sheet. As with the other calculations in the change between the with and without project scenarios, truck ton-miles show a positive impact with a total reduction of nearly 147 billion ton-miles over the life of the project, or about 4.9 billion ton-miles per year on average. Rail saw an overall increase in ton-miles with construction of this project in the amount of over 5 billion ton-miles over the 30 year life of the project, or about 178 million ton-miles per year. The results of this calculation are summarized in Table 4.

Table 4 Change in Ton-Miles by Mode With and Without Project Construction

	With Project	Without Project	**Net Change**	**Annual Average**
Truck Ton-Miles (in millions)	34,670	181,410	**146,740**	**4,891**
Rail Ton-Miles (in millions)	29,029	23,697	**(5,333)**	**(178)**

The change in travel time is a factor of the total trips traveled. As each market has a different average travel time by mode with and without the project, this was determined on a per market basis. For instance, the total driver time associated with truck trips to South Florida with this project was calculated by multiplying the truck trips for South Florida with the project in "Trip Calculation" sheet by the average truck travel time for South Florida with project found in the "Other Factors" sheet. This was done for each market by mode with and without the project completion. A summary of these calculations is shown in Table 5. In total, this project will result in a net savings of almost 31 million truck driver hours and an increase in locomotive engineer travel time of 30,520 hours. While this is a significant reduction in truck driver hours of over 1 million per year on average, it would not impact the ability of truck drivers to find work due to the significant truck driver shortage in the U.S. Rather, this provides drivers an opportunity to make more turns per day within their allowable hours of service.

Table 5 Change in Travel Time by Mode With and Without Project Construction

	With Project	Without Project	**Net Change**	**Annual Average**
Truck Driver Travel Time (hours in thousands)	14,176	44,988	**30,813**	**1,027**
Locomotive Engineer Travel Time (hours in thousands)	102	71	**(31)**	**(1)**

State of Good Repair

The State of Good Repair benefits are determined based on the anticipated pavement damage caused with and without this project. As each truck travels, it causes a certain amount of wear on the roadway. The heavier the truck is, the more damage it may cause. While each truck may only cause a negligible amount of damage itself, the overall impact of thousands of trucks can add up to significant wear and tear.

Based on this, the overall impacts on pavement damage are based on the total ton-miles calculated previously. The value of pavement damage is computed by multiplying this ton-mileage by the pavement factors included in the "Monetized Values and Factors" sheet. The summary of these calculations is shown in Table 6. With the completion of this project, there will still be wear and tear on the roadways as the cargo is delivered. However, since there is an average reduction in ton-miles, the damage is not as significant. With this project, total pavement damage is estimated at $311 million ($2014). Without it, pavement damage will be nearly $1.6 billion ($2014). This net change of nearly $1.2 billion is equivalent to roughly $41 million per year on average.

Table 6 Pavement Damage Caused With and Without Project Construction

	Pavement Damage	Annual Average
With Project ($2014, in millions)	$311	$10.4
Without Project ($2014, in millions)	$1,555	$51.8
Net Change ($2014, in millions)	$1,244	$41.5
Net Change ($2015, in millions)	**$1,246**	**$41.5**

Economic Competitiveness

Economic Competitiveness is based on two factors: Operating Costs and the Value of User Time.

Truck operating costs are calculated by multiplying the vehicle miles traveled previously computed by the "Truck Operating Costs" factors found in the "Monetized Values and Factors" sheet. Similarly, rail operating costs are calculated by multiplying the "Rail Operating Costs" factor found in this same sheet by the rail ton-mileage previously computed. The value of operating costs are summarized in Table 7. The net change between the with and without project

scenarios is almost $3 billion, or almost $100 million per year. Based on the final analysis, this is the greatest factor impacting the total benefits associated with this project.

Table 7 Operating Costs With and Without Project Construction

	Operating Costs	Annual Average
With Project ($2015, in millions)	$1,098	$36.6
Without Project ($2015, in millions)	$4,063	$135.4
Net Change ($2015, in millions)	**$2,965**	**$98.8**

The cost of travel time associated with this project is based on the change in user travel time previously computed in the "VMT Ton-Mile Driver Time" sheet. The truck driver time (in hours) was multiplied by the hourly value of time for truck drivers provided by the BCA Resource Guide found in the "Monetized Values and Factors" sheet. Similarly, the rail user time was multiplied by the hourly value of time for a locomotive engineer. The total cost associated with user travel time with this project is estimates at $383 million compared to $1.2 billion without this project. The net impact is a total benefit of $822 million in travel time cost savings, or about $27 million per year. The results from this calculation are shown in Table 8.

Table 8 Travel Time Cost With and Without Project Construction

	Driver Travel Time Costs	Annual Average
With Project ($2015, in millions)	$383	$12.8
Without Project ($2015, in millions)	$1,205	$40.2
Net Change ($2015, in millions)	**$822**	**$27.4**

The total Economic Competitiveness benefits are the summation of benefits from operating costs and travel time costs (Tables 7 and 8). Table 9 shows this summation. The construction of the Intermodal Fright Connector project will result in a positive benefit of almost $3.8 billion over the life of the project, or about $126 million per year.

Table 9 Total Economic Competitiveness With and Without Project Construction

	Economic Competitiveness	Annual Average
With Project ($2015, in millions)	$1,480	$49.3
Without Project ($2015, in millions)	$5,267	$175.6
Net Change ($2015, in millions)	**$3,787**	**$126.2**

Sustainability

The impact on Sustainability is a result of five emission types: Carbon Dioxide (CO2), Nitrogen Oxides (NOx), Particulate Matter (PM), Sulfur Dioxide (SOx), and Volatile Organic Compounds (VOCs). The change in diesel consumption is also calculated here for illustrative purposes but is

not included in the overall benefits as fuel costs are a portion of vehicle operating costs included as part of the Economic Competitiveness benefits.

Diesel consumption is based on ton-mileage previously calculated and the number of ton-miles used per gallon. Ton-mileage by mode was divide by the ton-miles/gallon factor included in the "Monetized Values and Factors" sheet. The net benefits of this project are a decrease in fuel consumption by nearly 1 billion gallons over the life of the project.

The remaining sustainability impacts for the five emission types were calculated the same way for each. For truck emissions, this goes back to the discussion of the "Emissions – Truck" sheet. The emission rates for each type vary by both year and by speed so the calculations were done on a market basis with and without the project. In short, the calculation is the vehicle miles traveled multiplied by the emission rate found in the "Emissions – Truck" sheet based on the interpolated values for the specific speed determined for that market found in the "Other Factors" sheet. For instance, for South Florida, the average speed with project was determined to be 54 miles per hour (mph). Therefore, the VMT associated with South Florida with this project construction was multiplied by the emissions rates for trucks traveling at 54 mph. Doing this for each market and each emissions type with and without project results in the final sustainability impacts shown in Table 10. Note this table also includes rail emissions for CO_2, NOx, and PM but not SOx and VOCs as previously discussed in the "Emissions – Rail" sheet. Rail emissions are computed on a per ton-mile basis. Therefore the rail factors found in "Emissions – Rail" are multiplied by the computed ton-mileage found in "VMT Ton-Mile Driver Time" to determine the environmental impacts associated with rail movements. Note that the majority of these emission types see a net decrease over the life of the project. The exception to this is NOx. This is due to the increase in rail usage associated with this project. While rail is typically considered a more sustainable mode of transportation, this mode emits this pollutant at a greater rate than trucks, resulting in the negative benefits for this emission type.

Table 10 Sustainability With and Without Project Construction

	With Project	Without Project	**Net Change**
Diesel Consumption (million gallons)	286	1,229	**943**
Carbon Dioxide (CO_2) (metric tons)	1,172,316	3,291,056	**2,118,740**
Nitrogen Oxides (NOx) (metric tons)	12,718	11,654	**(1,064)**
Particulate Matter (PM) (metric tons)	396	533	**137**
Sulfur Dioxide (SOx) (metric tons)	6	29	**23**
Volatile Organic Compounds (VOCs) (metric tons)	104	540	**436**

These calculated metric tonnages were then multiplied by the Value of Emissions provided by the BCA Resource Guide 2016 (FASTLANE) which can be found in the "Monetized Values and Factors" sheet. Table 11 shows the total value of emissions in non-discounted dollars with the exception of CO_2. This values for this emission type were provided with a 3 percent discount already applied based on guidance from the BCA Resource Guide.

Table 11 Value of Sustainability With and Without Project Construction

	With Project	Without Project	**Net Change**
CO_2 ($2015, in thousands) (discounted at 3%)	$76,492	$214,741	**$138,249**
NOx ($2015, in thousands)	$101,872	$93,349	**($8,523)**
PM ($2015, in thousands)	$145,070	$195,239	**$50,169**
SOx ($2015, in thousands)	$279	$1,361	**$1,082**
VOCs ($2015, in thousands)	$211	$1,098	**$886**

Safety

Impacts to Safety include the value associated with fatalities, injuries, and property damage only incidents.

The loss of life is a factor of the vehicle miles traveled previously determined. The VMT is multiplied by the fatality rate per truck-mile (for trucks) and per train-mile (for rail) found in the "Crash Rates" sheet. With project construction, it estimated that there will be 14 fatalities over the 30 year life of this project associated with the delivery of goods. However, without the project, as the vehicle miles traveled is significantly higher, fatalities are estimated at 71. The construction of the Intermodal Freight Connector project will result in a reduction of 57 fatalities total, or almost 2 per year. The value of this impact is determined by multiplying the number of fatalities by the value of a statistical life which results in a savings of over $545 million.

Table 12 Loss of Life With and Without Project Construction

	Fatalities	Average Annual
Fatalities With Project	14	0.5
Fatalities Without Project	71	2.4
Net Change in Fatalities	**57**	**1.9**
Value of Net Change in Safety ($2015, in thousands)	**$545,963**	**$18,199**

Injuries are calculated in the same manner as fatalities, but instead of using the fatalities per mile factor found in the "Crash Rates" sheet, the injuries per mile factor is used. The construction of this project will result in 1,358 fewer injuries related to the transportation of goods over the life of the project, or about 45 per year. A summary of these benefits is shown in Table 13. To calculate the value of this impact, the net change in injuries was multiplied by the value associated with a "Moderate" injury crash as provided by the BCA Resource Guide. This is a conservative estimate versus using a more severe crash type as the higher values associated with more severe crashes would increase the overall net benefits associated with safety for this project.

Table 13 Injuries With and Without Project Construction

	Injuries	Average Annual
Injuries With Project	324	10.8
Injuries Without Project	1,682	56.1
Net Change in Injuries	**1,358**	**45.3**
Value of Net Change ($2015, in thousands)	**$612,505**	**$20,417**

The property damage due to truck crashes was also calculated similar to the fatality and injury rates. The truck miles traveled was multiplied by the Property Damage Only Crashes per Truck VMT factor found in the "Crash Rates" sheet. The net change in incidents is approximately 3,719 fewer property damage only incidents total, or about 124 per year. This total was then multiplied by the per vehicle value for property damage only crashes. The value of this change is over $15 million as shown in Table 14. This is a conservative estimate as it assumes only one vehicle per crash. Assuming more than one vehicle per crash would increase the overall benefits associated with this project.

Table 14 Property Damage Due to Truck Crashes With and Without Project Construction

	Property Damage	Average Annual
Incidents With Project	879	29.3
Incidents Without Project	4,598	153.3
Net Change in Incidents	**3,719**	**124.0**
Value of Net Change ($2015, in thousands)	**$15,614**	**$521**

The value factor for property damage due to rail crashes is based on rail mileage and computes the value directly, rather than calculating an interim step of how many rail crashes are caused each year with or without this project. As this is a different methodology from the property damage only crashes associated with trucks, these calculations are shown separately in Table 15. The actual calculation involves taking the rail mileage previously calculated and multiplying it by the Property Damage/Train Mile found in the "Crash Rates" sheet. The property damage to rail associated with this project construction is estimated at a total of $1.3 million. Without this project, the value of damage is estimated at just over $1 million for a total net change of $240,600. Due to the increased use of rail associated with these project, rail property damage reduces the overall benefits associated with construction completion.

Table 15 Property Damage Due to Rail Crashes With and Without Project Construction

	Property Damage	Average Annual
Value of Incidents With Project ($2015, in thousands)	$1,310	$43.6
Value of Incidents Without Project ($2015, in thousands)	$1,069	$35.6
Value of Net Change ($2015, in thousands)	**($241)**	**($8.0)**

Summary of Benefits

The "Summary of Benefits" sheet summarizes the total benefits associated with this project by type of benefit. The total non-discounted benefits (excluding any impacts of carbon emissions) is estimated at over $6 billion over the total 30 year project life. As shown in Table 16, the largest impacts of this comes from Economic Competitiveness, specifically the changes in vehicle operating costs. The second greatest impact is from the State of Good Repair which is based on reductions in future pavement damage. These benefits were reduced at both 3 and 7 percent for the later analysis of the Benefit Cost Ratio. The exception to the 7 percent discount is the impact of Carbon Emissions which is held at 3 percent per BCA Resource Guide.

Table 16 Summary of Net Change in Benefits

	Net Impacts
State of Good Repair ($2015, in millions)	$1,246
Economic Competitiveness ($2015, in millions)	$3,787
Sustainability, Less Carbon Emission ($2015, in millions)	$44
Safety ($2015, in millions)	$1,174
Total, Non-Discounted, Excluding Carbon ($2015, in millions)	$6,250
CO_2 ($2015, in millions) (discounted at 3%)	$138
Total, Discounted 3%	$3,374
Total, Discounted 7% (with Carbon held at 3%)	$1,623

Summary of Costs

Project costs were previously shown in more detail for various stages of construction in the "Project Costs" sheet. The "Summary of Costs" shows, at a higher level, spending per year and those expenditures discounted at 3 and 7 percent. Table 17 summarizes this information.

Table 17 Summary of Projects Costs

	Non-Discounted Costs	Discounted 3%	Discounted 7%
2015	$22,589,493	$2,589,493	$22,589,493
2016	$14,266,666	$13,851,132	$13,333,333
2017	$114,932,359	$108,334,771	$100,386,373
2018	$112,474,689	$102,930,273	$91,812,850
2019	$103,187,380	$91,680,650	$78,721,158
2020	$41,540,000	$35,832,769	$29,617,446
2021-2050	$2,044,953	(varies)	(varies)
Total	$470,339,174	$409,794,157	$354,553,322

Final Benefit Cost Ratio

The final Benefit Cost Ratio (BCR) was determined by comparing the discounted benefits and discounted costs at both a 3 percent and 7 percent ratio. At 3 percent, the BCR is 8.2:1. At 7 percent the BCR is 4.6:1. A summary of these values is shown in Table 18. Regardless of the discount applied, this project is anticipated to produce a significant benefit to the local and national transportation network.

Table 18 Benefit Cost Ratio

	Discounted 3%	Discounted 7%
Total Benefits (in millions)	$3,374	$1,623
Total Costs (in millions)	$410	$355
Benefit Cost Ratio	**8.2:1**	**4.6:1**

Appendix 'D'

Ineligible for TIFIA Funding

Clean Dredge Excavation	$ 82,089,180
Coral Relocation	$ 1,250,000
	$ 83,339,180

Eligible for TIFIA Funding

SOUTHPORT IMPROVEMENT COMPONENT

Container Yard Debris Removal	**$**	**84,681,088**
Soil Tracking / Erosion Control	$	8,835,479
Debris Removal 845,876 C.Y.	$	75,845,609
Development of Container Yard	**$**	**24,953,888**
Civil Upland Work	$	20,439,130
Drainage Work	$	3,514,757
Water Distribution	$	1,000,000
Bulkheads Wall, Berth 30 Ext., EFB	**$**	**58,808,849**
Demo Dolphins	$	525,000
West & North Bulkhead	$	20,887,500
Coping Beams	$	8,560,000
EFB & Cap	$	26,525,000
Rubble Rip Rap	$	107,849
East Side Container Wall	$	82,500
Moorings	$	2,121,000
Cathodic Protection, Electrical	**$**	**6,681,250**
Cathodic Protection	$	1,781,250
Electrical	$	4,900,000
Maintenance of Traffic	**$**	**400,000**
Berth 30 Toe-Wall	**$**	**10,925,000**
Berth 30 Toe-Wall	$	10,925,000
Construction Manager	**$**	**42,875,040**
Pre-Construction	$	3,649,150
Other Preconstruction Services	$	2,663,706
General Conditions	$	22,873,785
Fee	$	13,688,399
Mobilization, Contingency, Other	**$**	**52,892,002**
Mobilization	$	2,718,741
Contingency	$	47,681,256
Security	$	2,100,000
Fencing	$	392,005
Eligible Total	**$**	**282,217,116**
Ineligible Total	**$**	**83,339,180**
Grand Total -Southport Improvement Component	$	365,556,296

CRANE RAIL INFRASTRUCTURE COMPONENT

Crane Rails at berths 31 and 32	**$**	**36,036,550**
Phase I - Berth 31 & 32	$	24,503,243
Phase II - Berth 30	$	11,533,307
Crane Rail at Berth 30	**$**	**11,528,154**
Phase III - Berth 30 Ext.	$	11,528,154
FPL Ductbank	**$**	**5,000,000**
Construction Manager	**$**	**7,693,962**
Pre-Construction	$	464,615
General Conditions	$	4,535,626
Fee	$	2,693,721
Mobilization / Contingency	**$**	**11,678,662**
Eligible Total	**$**	**71,937,32**
Overall Grand Total Construction	$	437,493,624

SUPER POST-PANAMAX CRANE COMPONENT

Cost of Super Post-Panamax Cranes Component	$	41,400,000
Commissioning Super Post Panamax Cranes	$	6,734,774
Overall Grand Total - All Components	$	485,628,398
Less Ineligible Costs	$	(83,339,180)
TIFIA ESTIMATED ELIGBLE COSTS	$	402,289,218

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SOUTHPORT IMPROVEMENT COMPONENT

ROLL-UP of ESTIMATE OF PROBABLE CONSTRUCTION COST Based on 60% Plans
OPTION A - PARTIAL DEBRIS REMOVAL AND OFFSITE TRUCK DISPOSAL

EROSION CONTROL, CLEARING AND GRUBBING	EROSION CONTROL, CLEARING AND GRUBBING =	$	8,835,479.25
EARTHWORK	Sub-Total - Debris Removal	$	75,845,608.95
	Sub-Total - Dredging	$	82,089,179.77
	EARTHWORK =	$	157,934,788.71
CIVIL UPLAND WORK	CIVIL UPLAND WORK =	$	20,439,130.20
DRAINAGE WORK	DRAINAGE WORK =	$	3,514,757.34
WATER AND FIRE DISTRIBUTION SYSTEM	WATER AND FIRE DISTRIBUTION SYSTEM =	$	1,000,000.00
FENCING AND GUARDRAIL	FENCING AND GUARDRAIL =	$	392,005.00
STRUCTURAL	STRUCTURAL =	$	69,394,099.00
MOORINGS	MOORINGS =	$	2,121,000.00
SECURITY	SECURITY =	$	2,100,000.00
ELECTRICAL	ELECTRICAL =	$	4,900,000.00
CORAL RELOCATION	CORAL RELOCATION =	$	1,250,000.00
	Improvement Amount =	$	271,881,259.50
	Maintenance of Traffic =	$	400,000.00
	Mobilization (1%) =	$	2,718,740.55
TIFIA ELIGBLE COSTS EXCLUDE DREDGING & CORAL RELOC. $ 191,660,820	Total Direct Work	$	275,000,000

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SOUTHPORT IMPROVEMENT COMPONENT

DeRose/CPM ESTIMATE OF PROBABLE CONSTRUCTION COST Based on 60% Plans
OPTION A - PARTIAL DEBRIS REMOVAL AND OFFSITE TRUCK DISPOSAL

EROSION CONTROL, CLEARING AND GRUBBING

NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
	TRACKING CONTROL				$ -
1	Soil Tracking Prevention Device	60	EA	$ 2,500.00	$ 150,000.00
2	3 sweepers for 24 hour trucking	2 years 24/7	LS	$ 3,854,400.00	$ 3,854,400.00
3	1 sweeper 24 hours for 3 years	1 year stnd +20%	LS	$ 137,280.00	$ 137,280.00
	TEMPORARY SEDIMENT CONTROL				
4	Type III Silt Fence	5775	LF	$ 1.25	$ 7,218.75
5	Synthetic Flow Control Barrier	7000	LF	$ 5.00	$ 35,000.00
6	Inlet Protection System	294	LS	$ 85.00	$ 24,990.00
7	2 man crew replacing and maintaining NPDES	3 year stnd +20%	LS	$ 186,368.00	$ 186,368.00
	MARINE SEDIMENT CONTROL				
8	Floating Turbidity Barrier	6000	LF	$ 70.00	$ 420,000.00
	DEBRIS EROSION CONTROL				
9	40 CFR Parts 136 and 445 Compliant*	37	AC	$ 65,000.00	$ 2,405,000.00
	NPDES MONITORING				
10	Standard NPDES monitoring	3 year Stnd	LS	$ 218,040.00	$ 218,040.00
11	Open Landfill monitoring	3 year Stnd	LS	$ 483,000.00	$ 483,000.00
	Dust EROSION CONTROL				
12	Water truck with Labor	3 year Low	LS	$ 764,400.00	$ 764,400.00
	CLEARING AND GRUBBING				
13	Exotic Vegetation Removal	1.51	AC	$ 6,500.00	$ 9,782.50
14	Clearing and Grubbing	10.00	AC	$ 6,500.00	$ 65,000.00
15	Access Costs	1.00	LS	$ 75,000.00	$ 75,000.00
				EROSION CONTROL, CLEARING AND GRUBBING =	**$ 8,835,479.25**

EARTHWORK

NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
	Debris Removal	**843876**	CY		
16	FIT Debris - Excavation (Partial Removal Proposed grade - less 5.5')	362979	CY	$ 7.50	$ 2,722,338.89
17	FIT Debris - Proposed Turning Notch Full Removal	480897	CY	$ 9.00	$ 4,328,073.29
18	FIT Debris - Loading of Debris onto Truck (Twice)	1687751	CY	$ 1.75	$ 2,953,564.43
19	FIT Debris - Haul to Conditioning Site	53465	Load	$ 33.00	$ 1,764,345.00
20	FIT Debris - Haul offsite to Class I Landfill	53465	Load	$ 100.00	$ 5,346,500.00
21	FIT Debris - Disposal Fee	1149496	TN	$ 50.00	$ 57,474,787.34
22	Dewatering/Drying Debris from Notch	314000	CY	$ 4.00	$ 1,256,000.00
				Sub-Total - Debris Removal	**$ 75,845,608.95**
	Clean Dredging/Excavation	**1913758**	CY		
23	Common Excavation 78%	1492731	CY	$ 25.00	$ 37,318,280.81
24	Limestone/Cementous material over 50 blow counts 22%	421027	CY	$ 45.00	$ 18,946,204.10
25	Dredged Materials for Re-Use In-Site	36800	CY	$ 32.00	$ 1,177,600.00
26	Dredged Materials Surplus - Loading onto truck (Twice)	4902171	CY	$ 1.75	$ 8,578,798.85
27	Dredged Material Surplus - Haul by Truck to Conditioning Site	136172	Load	$ 33.00	$ 4,493,676.00
28	Dredged Material Surplus - Haul by Truck to within 20 Miles	136172	Load	$ 85.00	$ 11,574,620.00
				Sub-Total - Dredging	**$ 82,089,179.77**
				EARTHWORK =	**$ 157,934,788.71**

CIVIL UPLAND WORK

NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
	DEMOLITION (QUNATITIES ARE ESTIMATED BASED ON BEST AVAILABLE INFORMATION)				
29	Pavement Structure Removal	220290	SY	$ 12.79	$ 2,817,509.10
30	Fire Hydrant Assembly Removal	31	EA	$ 2,500.00	$ 77,500.00
31	Light pole Assembly Removal	27	EA	$ 2,150.00	$ 58,050.00
32	Concrete Pole Removal	2	EA	$ 3,000.00	$ 6,000.00
33	Underground Wire Removal	5452	LF	$ 10.00	$ 54,520.00
34	Concrete Removal	1350	SY	$ 45.00	$ 60,750.00
35	Drainage Pipe Removal	14170	LF	$ 13.00	$ 184,206.10
36	Drainfield Removal, 4' x 8'	1518	LF	$ 20.00	$ 30,360.00
37	Stormwater Injection Well Abandon	8	EA	$ 1,000.00	$ 8,000.00
38	Catch Basin Removal	63	EA	$ 500.00	$ 31,500.00
39	Utility Pipe Removal	7839	LF	$ 10.00	$ 78,390.00
50	Sanitary Lift Station Removal	1	EA	$ 5,000.00	$ 5,000.00
41	Sanitary Manhole Removal	3	EA	$ 1,500.00	$ 4,500.00
42	Air Vent and Piping Removal	3615	LF	$ 15.00	$ 54,225.00
43	Chain Link Fence Removal	10312	LF	$ 15.00	$ 154,680.00
44	Removal of Existing Retaining Wall	30840	SY	$ 7.50	$ 231,300.00
45	Bollard Removal	170	EA	$ 250.00	$ 42,500.00
46	Removal of Existing W Riprap	18100	CY	$ 25.00	$ 452,500.00
47	Removal of Existing N Riprap	24560	CY	$ 35.00	$ 859,600.00
47A	Removal of Existing earth slope W	38000	BCY	$ 25.00	$ 950,000.00
47B	Removal of Existing earth slope N	50000	BCY	$ 25.00	$ 1,250,000.00
48	Guardrail Removal	1325	LF	$ 2.00	$ 2,650.00
	CONSTRUCTION				$ -

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SOUTHPORT IMPROVEMENT COMPONENT

DeRose/CPM ESTIMATE OF PROBABLE CONSTRUCTION COST Based on 60% Plans
OPTION A - PARTIAL DEBRIS REMOVAL AND OFFSITE TRUCK DISPOSAL

49	Barrier Wall Temporary	3300	LF	$	25.00	$	82,500.00
50	Stabilized Type B Subgrade	103540	CY	$	21.00	$	2,174,340.00
25	36" Base, LBR=100, Group 11	177376	TN	$	25.00	$	4,434,400.00
52	Reinforcement Grid for Soil Stabilization	230220	SY	$	7.50	$	1,726,650.00
53	Asphalt, 2 1/2" SP-12.5 base, str course 1 1/2" SP-9.5	131000	SY	$	35.00	$	4,585,000.00
54	Type D	1000	LF	$	17.00	$	17,000.00
55	Traffic Markings	1	LS	$	5,500.00	$	5,500.00
					CIVIL UPLAND WORK =	**$**	**20,439,130.20**

DRAINAGE WORK

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
56	15"-24" Collection Pipe	5195	LF	$	65.00	$	337,675.00
57	30"-42" Collection Pipe	3888	LF	$	125.00	$	486,000.00
58	PVC Pipe	6000	LF	$	95.00	$	570,000.00
59	Catch Basin	68	EA	$	7,500.00	$	510,000.00
60	Debris Removal	25408	CY	$	45.00	$	1,143,382.34
61	Manhole	27	EA	$	7,500.00	$	202,500.00
62	Control Structure	9	EA	$	10,000.00	$	90,000.00
63	Clean out	24	EA	$	550.00	$	13,200.00
64	Exfiltration Trench	1080	LF	$	150.00	$	162,000.00
					DRAINAGE WORK =	**$**	**3,514,757.34**

WATER AND FIRE DISTRIBUTION SYSTEM

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
65	Water and Fire Distribution System	1	LS	$	1,000,000.00	$	1,000,000.00
					WATER AND FIRE DISTRIBUTION SYSTEM =	**$**	**1,000,000.00**

FENCING AND GUARDRAIL

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
66	10' Chain Link Fence	8243	LF	$	35.00	$	288,505.00
67	10' Tall CLF Gate	12	EA	$	4,500.00	$	54,000.00
68	Guardrail, 'W' beam	600	LF	$	30.00	$	18,000.00
69	Guardrail, rounded end section	14	EA	$	2,250.00	$	31,500.00
					FENCING AND GUARDRAIL =	**$**	**392,005.00**

STRUCTURAL

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
	DEMO					$	-
70	Remove Existing Dolphins	7	EA	$	75,000.00	$	525,000.00
	INSTALL					$	-
71	Berth-30 Toe Wall Option and Grout	950	LF	$	11,500.00	$	10,925,000.00
72	West and North Bulkhead (Excluding EFB)	1671	LF	$	12,500.00	$	20,887,500.00
73	South Bulkhead coping beam	5000	CY	$	800.00	$	4,000,000.00
74	West and North coping beam (Excluding EFB)	5700	CY	$	800.00	$	4,560,000.00
75	Environmentally Friendly Bulkhead (Tied-back Option)	1750	LF	$	12,500.00	$	21,875,000.00
76	EFB Coping Beam	6000	CY	$	775.00	$	4,650,000.00
77	Rubble Riprap (for short haul and place)	2921	CY	$	10.00	$	29,210.00
78	Rubble Riprap (for restack)	7149	CY	$	11.00	$	78,639.00
79	Cathodic Protection System (aluminum Anode Assembly)	4750	LF	$	375.00	$	1,781,250.00
80	East Side of North container yard retaining wall 9' masonry	300	LF	$	275.00	$	82,500.00
					STRUCTURAL =	**$**	**69,394,099.00**

MOORINGS

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
81	Fenders	93	EA	$	15,500.00	$	1,441,500.00
82	RO/RO Fenders	17	EA	$	6,000.00	$	102,000.00
83	Double Bitt Bollards	77	EA	$	7,500.00	$	577,500.00
					MOORINGS =	**$**	**2,121,000.00**

SECURITY

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
84	Guard, Temporary Gate and Transportation	1	LS	$	2,100,000.00	$	2,100,000.00
					SECURITY =	**$**	**2,100,000.00**

ELECTRICAL

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
85	Overall Electrical	1	LS	$	4,900,000.00	$	4,900,000.00
					ELECTRICAL =	**$**	**4,900,000.00**

CORAL RELOCATION

NO.	ITEM	QUANTITY	UNIT		UNIT PRICE		COST
86	Coral Relocation	1	LS	$	1,250,000.00	$	1,250,000.00
					CORAL RELOCATION =	**$**	**1,250,000.00**

Improvement Amount =	**$**	**271,881,259.50**
Maintenance of Traffic =	**$**	**400,000.00**
Mobilization (1%) =	**$**	**2,718,740.55**

TIFIA ELIGBLE COSTS EXCLUDE DREDGING & CORAL RELOC. **$ 191,660,820**

Total Direct Work **$ 275,000,000**

Printed on 5/12/2017
Page 2 of 3

Liftech
LIFTECH CONSULTANTS INC.

Probable Direct Construction Cost Estimate Based on
100% Complete Submittal

1/9/2017

CRANE RAIL INFRASTRUCTURE COMPONENT

Complete Auger Piles at All Segments Prior to Rail Girder Construction

By: SL BP Chkd: TMF Appd: AB

	Escalation
2017-2018	0%
2018-2019	6%
2019-2020	9%

Phase I - Berths 31-33 and Switchgear Building
Phase II - Berth 30 Extension and Pavement Overlay on Berth 30
Phase III - Package B, Berth 30 & Part of 30 Ext.

Division	Descriptions	Q'ty	Unit	2016 Unit costs	Subtotal based on 2016 unit costs	Construction Period		
						Phase I, B31-32 2017-2018	Phase II, B30 Ext 2018-2019	Phase III, Package B, Berth 30 & Part of 30 Ext 2019-2020
1.0	General Requirements - See Summary Page							
	Subtotal							
2.0	Existing Conditions							
	Demolition							
	Demolition of existing rail girder to 4'-0 below grade	60	CY	$850	$51,000	$51,000		
	Demolition of existing rail girder to 4'-0 below grade - Ph III	111	CY	$850	$94,350			$102,842
	Demolition of crane stops at B31 and B-30 Ext	4	EA	$6,650	$26,600	$13,300	$14,098	
	Girder excavation - haul and stockpile material within Port's property							
	Berth 31-32 waterside	4,633	CY	$19	$88,027	$88,027		
	Berth 31-32 landside	5,174	CY	$19	$98,306	$98,306		
	Berth 30 waterside	3,504	CY	$19	$66,570			$72,562
	Berth 30 landside	3,585	CY	$19	$68,119			$74,249
	Demolition of 18" dia pile x 4'-0 deep to expose rebars - 596 piles	596	EA	$415	$247,340	$247,340		
	Demolition of 18" dia pile x 4'-0 deep to expose rebars - Ph III	367	EA	$415	$152,305			$166,012
	Demolition of 24" dia. Pile x 4'-0 deep to expose rebars - 172 piles	172	EA	$535	$92,020	$92,020		
	Demolition of 24" dia. Pile x 4'-0 deep to expose rebars - Ph III	97	EA	$535	$51,895			$56,566
	Subtotal				**$1,036,532**	**$589,993**	$14,098	**$472,231**
3.0	Concrete							
	Crane Girder							
	Mobilization and demobilization of work area set-up and equipment	1	EACH	$214,000	$214,000	$144,664	$75,538	
	Mobilization /demobilization of work area set-up & equipment - Ph III	1	EACH	$214,000	$214,000			$233,260
	Crane girder construction including excavation, forming and backfill							
	Berth 31-32 waterside	1,937	LF	$1,211	$2,345,707	$2,345,707		
	Berth 31-32 landside	1,937	LF	$941	$1,822,717	$1,822,717		
	Berth 30 extension waterside	1,492	LF	$841	$1,254,772		$1,330,058	
	Berth 30 extension landside	1,492	LF	$841	$1,254,772		$1,330,058	
	Berth 30 waterside	1,100	LF	$841	$925,100			$1,008,359
	Berth 30 landside	1,100	LF	$841	$925,100			$1,008,359
	Panzerbelt and Channel Frame							
	Panzerbelt and channel installation							
	Berth 31-32 waterside	1,858	LF	$350	$650,300	$650,300		
	Berth 30 extension waterside	1,540	LF	$350	$539,000		$571,340	
	Berth 30 waterside	1,162	LF	$350	$406,700			$443,303
	Anchor Bolts for Crane Rail							
	Berths 31-32 WS & LS anchor bolts - two 3/4"Ø x 14" at 24"oc	4,000	EACH	$31	$124,000	$124,000		
	Berth 30 extension WS & LS anchor bolts - two 3/4"Ø x 14" at 30"oc	2,500	EACH	$31	$77,500		$82,150	
	Berth 30 WS & LS anchor bolts - two 3/4" dia x 14" at 24" oc	2,000	EACH	$31	$62,000			$67,580
	Electrical Concrete Vault							
	Concrete vault installation including turnover anchor, cavotec cover, and stainless steel framing							
	Berth 31-32 waterside, Sta 51+83	1	EACH	$115,000	$115,000	$115,000		
	Berth 31-32 waterside, Sta 53 + 82	1	EACH	$100,000	$100,000	$100,000		
	Berth 30 extension waterside	2	EACH	$90,000	$180,000		$190,800	
	Berth 30 waterside	2	EACH	$15,000	$30,000			$32,700
	Cavotec turnover anchors	6	EACH	$6,460	$38,760	$12,907	$13,558	$13,942
	Subtotal				**$11,279,428**	**$5,315,295**	**$3,593,502**	**$2,807,503**
5.0	Metal							
	Crane Rail							
	Crane rail, sole plate, clips, pad, and epoxy grout							
	Berth 31-32 waterside and landside - D150 rail	3,835	LF	$575	$2,205,125	$2,205,125		
	Berth 30 extension waterside and landside - 171# rail	3,000	LF	$509	$1,527,000		$1,618,620	
	Berth 30 waterside	1,162	LF	$500	$581,000			$633,290
	Berth 30 landside	1,162	LF	$500	$581,000			$633,290
	Crane Wharf Hardware							
	Crane stowage including anchor bolts							
	Berth 31-32 WS & LS wharf tiedown hardware	16	EACH	$32,700	$523,200	$523,200		
	Berth 31-32 WS & LS stowage pin sockets	10	EACH	$8,175	$81,750	$81,750		
	Berth 31-32 WS & LS crane stops	4	EACH	$65,400	$261,600	$261,600		
	Berth 30 extension WS & LS wharf tiedown hardware	20	EACH	$32,700	$654,000		$693,240	
	Berth 30 extension WS & LS stowage pin sockets	16	EACH	$8,175	$130,800		$138,648	
	Berth 30 extension WS & LS crane stops	2	EACH	$65,400	$130,800		$138,648	
	Berth 30 WS & LS wharf tiedown hardware	12	EACH	$32,700	$392,400			$427,716
	Berth 30 WS & LS stowage pin sockets	8	EACH	$8,175	$65,400			$71,286
	Berth 30 WS & LS crane stops	4	EACH	$65,400	$261,600			$285,144
	Subtotal				**$7,395,675**	**$3,071,675**	**$2,589,156**	**$2,050,726**

Liftech
LIFTECH CONSULTANTS INC.

Probable Direct Construction Cost Estimate Based on
100% Complete Submittal

1/9/2017

CRANE RAIL INFRASTRUCTURE COMPONENT

Complete Auger Piles at All Segments Prior to Rail Girder Construction

By: SL BP Chkd: TMF Appd: AB

	Escalation
2017-2018	0%
2018-2019	6%
2019-2020	9%

Phase I - Berths 31-33 and Switchgear Building
Phase II - Berth 30 Extension and Pavement Overlay on Berth 30
Phase III - Package B, Berth 30 & Part of 30 Ext.

Division	Descriptions	Q'ty	Unit	2016 Unit costs	Subtotal based on 2016 unit costs	Construction Period		
						Phase I, B31-32 2017-2018	Phase II, B30 Ext 2018-2019	Phase III, Package B, Berth 30 & Part of 30 Ext 2019-2020
26.0	Electrical							
	Furnish, install, commish 13.2 kV sgear and batt in Swgear bldg - Ph I	1	LS	$1,100,000	$1,100,000	$1,100,000		
	Furnish and install 13.2 kV duct bank - Ph I	1	LS	$715,000	$715,000	$715,000		
	Furnish and install 13.2 kV cables, feeder tag #504 - Ph I	1,070	LF	$48	$50,825	$50,825		
	Furnish and install 13.2 kV cables, feeder tag #505 - Ph I	1,080	LF	$48	$51,840	$51,840		
	Furnish and install 13.2 kV cables, feeder tag #506 - Ph I	1,417	LF	$48	$68,016	$68,016		
	Furnish and install 13.2 kV cables, feeder tag #508 - Ph I	1,340	LF	$48	$64,320	$64,320		
	Furnish and install 4160V cables, feeder tag #500 - Ph I	1,411	LF	$52	$73,372	$73,372		
	Furnish and install 4160V cables, feeder tag #501 - Ph I	1,411	LF	$52	$73,372	$73,372		
	Furnish and install 4160V cables, feeder tag #502 - Ph I	929	LF	$52	$48,308	$48,308		
	Furnish and install 4160V cables, feeder tag #503 - Ph I	929	LF	$52	$48,308	$48,308		
	Furnish and install 4160V cables, feeder tag #540 - Ph I	150	LF	$52	$7,800	$7,800		
	Furnish and install 4160V cables, feeder tag #541 - Ph I	150	LF	$52	$7,800	$7,800		
	Furnish and install new 13.2 kV duct bank for FPL cables - Ph I	145	LF	$245	$35,525	$35,525		
	Remove cables/conductors in ex duct banks and term. Clean conduits -Ph I	1	LS	$90,700	$90,700	$90,700		
	Furnish and install electrical manholes - Ph I	4	EA	$35,000	$140,000	$140,000		
	Furnish and install vault grounding, clean EV1 and EV2 - Ph I	1	LS	$20,000	$20,000	$20,000		
	Furnish and install crane electrical connectors at vaults - Ph I	1	LS	$51,200	$51,200	$51,200		
	Remove existing fiber optic cables from crane vaults - Ph I	1	LS	$24,200	$24,200	$24,200		
	Install new fiber optic cables to crane vaults including connectors - Ph I	9,887	LF	$10	$98,870	$98,870		
	Furnish and install rail grounding - Ph I	1	LS	$185,600	$185,600	$185,600		
	Furnish and install red warning beacon light circuits - Ph I	1	LS	$46,100	$46,100	$46,100		
	13.2 kV Cables from switchgear to FPL - PH1	1	LS	$30,000	$30,000	$30,000		
	Furnish and install directional bore conduits - Ph II	1	LS	$825,000	$825,000		$874,500	
	Furnish and install 4160 V ductbank - Ph II	1	LS	$44,000	$44,000		$46,640	
	Furnish and install new manholes - Ph II	4	EA	$45,000	$180,000		$190,800	
	Furnish and install 4160 V cable, feeder tag #513 - Ph II	1752	LF	$68	$119,136		$126,284	
	Furnish and install 4160 V cable, feeder tag #514 - Ph II	1752	LF	$68	$119,136		$126,284	
	Furnish and install 4160 V cable, feeder tag #520 - Ph II	1735	LF	$68	$117,980		$125,059	
	Furnish and install 4160 V cable, feeder tag #521 - Ph II	1735	LF	$68	$117,980		$125,059	
	Furnish and install 13.2 kV duct bank - Ph II	1	LS	$73,125	$73,125		$77,513	
	Furnish and install vault grounding - Ph II	1	LS	$20,000	$20,000		$21,200	
	Furnish and install crane electrical connectors at vaults - Ph II	1	LS	$51,200	$51,200		$54,272	
	Install new fiber optic cables to crane vaults including terminations - Ph II	6974	LF	$10	$69,740		$73,924	
	Furnish and install rail grounding - Ph II	1	LS	$125,000	$125,000		$132,500	
	Remove cables/condtors to EV6, remove equipment EV6 - Ph II	1	LS	$15,000	$15,000		$15,900	
	Furnish and install 13.2 kV Cables, feeder tag #530 - Ph III	1470	LF	$48	$70,560			$76,910
	Furnish and install 13.2 kV Cables, feeder tag #531 - Ph III	1482	LF	$48	$71,136			$77,538
	Furnish and install 13.2 kV Cables, feeder tag #532 - Ph III	1470	LF	$48	$70,560			$76,910
	Furnish and install 13.2 kV Cables, feeder tag #533 - Ph III	1482	LF	$48	$71,136			$77,538
	Furnish and Install Vault Ground - Ph III	1	LS	$10,000	$10,000			$10,900
	Furnish and Install Crane Connectors at Vaults - Ph III	1	LS	$51,200	$51,200			$55,808
	Furnish and Install FO cable to vaults including terminations - Ph III	2994	LF	$10	$29,940			$32,635
	Rail Grounding	1	LS	$100,000	$100,000			$109,000
	Subtotal				**$5,382,985**	**$3,031,156**	**$1,989,935**	**$517,239**
31.0	Earthwork							
	Auger Pile Installation							
	Mobilization/Demobilization - Auger pile equipment	1	EACH	$106,000	$106,000	$71,020	$37,079	
	Mobilization/Demobilization - Auger pile equipment Ph III	1	EACH	$106,000	$106,000			$115,540
	Four Test piles- 16"Ø, 18"Ø, and two 24"Ø piles	4	EA	$19,080	$76,320	$76,320		
	Remove 4" asphalt x 30" diameter for 18" auger pile - 596 piles	2,926	SF	$15	$43,884	$43,884		
	Remove 4" asphalt x 36" diameter for 24" auger pile -172 piles	1,216	SF	$15	$18,237	$18,237		
	Remove 4" asphalt x 30" diameter for 18" auger pile - Ph III	1,802	SF	$15	$27,023			$29,455
	Remove 4" asphalt x 36" diameter for 24" auger pile - Ph III	686	SF	$15	$10,285			$11,210
	Furnish & install 18" Ø x 78' long pile							
	Berth 31-32 waterside and landside - 598 piles, Ph I	46,644	LF	$74	$3,451,656	$3,451,656		
	Berth 30 extension waterside and landside - 464 piles, Ph II	36,300	LF	$74	$2,686,200		$2,847,372	
	Furnish & install 18" Ø x 85' long piles - Ph III							
	Berth 30 waterside - 210 piles	17,850	LF	$74	$1,320,900			$1,439,781
	Berth 30 landside - 157 piles	13,345	LF	$74	$987,530			$1,076,408
	Furnish & install 24" Ø x 78' to 88' long							
	Berth 31-32 waterside and landside - 172 piles	13,573	LF	$122	$1,655,966	$1,655,966		
	Furnish & install 24" Ø x 85' long piles - Ph III							
	Berth 30 waterside - 19 piles	1,615	LF	$115	$185,725			$202,440
	Berth 30 landside - 78 piles	6,630	LF	$115	$762,450			$831,071
	Assume redo 10% of the 18" diameter piles due to hitting obstruction-Ph I & II	8,294	LF	$74	$613,786	$411,236	$143,850	
	Assume redo 10% of the 18" diameter piles due to hitting obstruction - Ph III	3,120	LF	$74	$230,843			$251,619
	Assume redo 10% of the 24" diameter piles due to hitting obstruction - Ph I	1,357	LF	$122	$165,597	$165,597		
	Assume redo 10% of the 24" diameter piles due to hitting obstruction - Ph III	825	LF	$122	$100,589			$109,642
	Jersey barrier	1,200	LF	$100	$120,000	$120,000		
	Jersey barrier - Ph III	1,200	LF	$100	$120,000			$130,800
	Subtotal				**$12,788,990**	**$6,013,916**	**$3,028,301**	**$4,197,966**
32 / 33	Civil Work / Demolition							

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Probable Direct Construction Cost Estimate Based on 100% Complete Submittal

1/9/2017

CRANE RAIL INFRASTRUCTURE COMPONENT

Complete Auger Piles at All Segments Prior to Rail Girder Construction

By: SL BP Chkd: TMF Appd: AB

	Escalation
2017-2018	0%
2018-2019	6%
2019-2020	9%

Phase I - Berths 31-33 and Switchgear Building
Phase II - Berth 30 Extension and Pavement Overlay on Berth 30
Phase III - Package B, Berth 30 & Part of 30 Ext.

Division	Descriptions	Q'ty	Unit	2016 Unit costs	Subtotal based on 2016 unit costs	Construction Period: Phase I, B31-32 2017-2018	Phase II, B30 Ext 2018-2019	Phase III, Package B, Berth 30 & Part of 30 Ext 2019-2020
	Erosion Control							
	Berth 30 Prevention, control & abatement of erosion & water pollution into drainage	1	EA	$10,000	$10,000			$10,900
	Berth 31-33 Prevention, control & abatement of erosion & water pollution into drainage	1	EA	$20,000	$20,000	$20,000		
	Drainage							
	Berth 30 Furnish & Install 15" RCP Class V Pipe	630	LF	$70	$44,100			$48,069
	Berth 31-33 Furnish & Install 15" RCP Class V Pipe	1,005	LF	$70	$70,350	$70,350		
	Berth 30 Furnish & Install 18" RCP Class V Pipe	88	LF	$75	$6,600			$7,194
	Berth 31-33 Furnish & Install 18" RCP Class V Pipe	410	LF	$75	$30,750	$30,750		
	Berth 30 Externsion Furnish & Install 24" RCP Class V Pipe	53	LF	$80	$4,240			$4,622
	Berth 31-33 Furnish & Install 24" RCP Class V Pipe	26	LF	$80	$2,080	$2,080		
	Berth 31-33 Furnish & Install 12" x 18" RCP Class V Pipe	35	LF	$90	$3,150	$3,150		
	Berth 30 Furnish & Install 4" PVC Pipe	300	LF	$15	$4,500			$4,905
	Berth 31-33 Furnish & Install 4" PVC Pipe	610	LF	$15	$9,150	$9,150		
	Berth 30 Furnish & Install 12" PVC Pipe	900	LF	$35	$31,500			$34,335
	Berth 31-33 Furnish & Install 12" PVC Pipe	1,364	LF	$35	$47,740	$47,740		
	Berth 30 Furnish & Install 12" Slotted Drain	800	LF	$160	$128,000	$128,000		$139,520
	Berth 31-33 Furnish & Install 12" Slotted Drain	1,644	LF	$160	$263,040	$263,040		
	Berth 30 Furnish & Install Slot Drain Junction Box	16	EA	$2,500	$40,000			$43,600
	Berth 31-33 Furnish & Install Slot Drain Junction Box	23	EA	$2,500	$57,500	$57,500		
	Berth 30 Furnish & Install 4' Diameter Drainage M.A.S. w/Heavy Duty Lid	2	EA	$15,000	$30,000			$32,700
	Berth 31-33 Furnish & Install 4' Diameter Drainage M.A.S. w/Heavy Duty Lid	7	EA	$15,000	$105,000	$105,000		
	Berth 30 Furnish & Install 4' Diameter Drainage Inlet w/Heavy Duty Lid	13	EA	$15,000	$195,000			$212,550
	Berth 30 Extension Furnish & Install 4' Diameter Drainage Inlet w/Heavy Duty Lid	2	EA	$15,000	$30,000			$32,700
	Berth 31-33 Furnish & Install 4' Diameter Drainage Inlet w/Heavy Duty Lid	19	EA	$15,000	$285,000	$285,000		
	Berth 31-33 Furnish & Install 5' Diameter Drainage Inlet w/Heavy Duty Lid	1	EA	$16,000	$16,000	$16,000		
	Berth 31-33 Core Existing Structure	4	EA	$1,200	$4,800	$4,800		
	Berth 31-33 Connect to Existing Pipe	10	EA	$1,500	$15,000	$15,000		
	Berth 31-33 Adjust Existing Drainage Inlet Grate	1	EA	$500	$500	$500		
	Berth 30 Pavement Restoration	2,400	SY	$78	$186,000			$202,740
	Berth 31-33 Pavement Restoration	7,200	SY	$78	$558,000	$558,000		
	Water							
	Berth 31-33 Remove Existing 4"-6" Water Main Crossing Landside Rail	13	EA	$500	$6,500	$6,500		
	Berth 30 Remove Existing 4"-6" Water Main at Crossing Landside Rail	6	EA	$500	$3,000	$3,000		
	Berth 31-33 Remove Existing 12" Water Main Crossing Landside Rail	20	LF	$25	$500	$500		
	Berth 30 Remove Existing 12" Water Main Crossing Landside Rail	20	LF	$25	$500	$500		
	Berth 30 Remove Existing 12" Water Main	700	LF	$25	$17,500	$17,500		
	Berth 30 Extension Remove Existing 12" Water Main Xing Landside Rail	1	EA	$500	$500	$500		
	Berth 30 Connect to Existing Water Main	8	EA	$900	$7,200			$7,848
	Berth 31-33 Connect to Existing Water Main	28	EA	$900	$25,200	$25,200		
	Berth 30 Extension Connect to Existing Water Main	2	EA	$900	$1,800	$1,800		
	Berth 30 Furnish & Install 12" DIP Water Main	1,200	LF	$80	$96,000			$104,640
	Berth 30 Etension Furnish & Install 12" DIP Water Main Xing Landside Rail	1	EA	$15,000	$15,000	$15,000		
	Berth 30 Furnish & Install 4" PVC Water Main Crossing Landside Rail	6	EA	$10,000	$60,000			$65,400
	Berth 31-33 Furnish & Install 4" PVC Water Main Crossing Landside Rail	13	EA	$10,000	$130,000	$130,000		
	Berth 30 Furnish & Install DIP Fittings	1.0	TON	$7,500	$7,500			$8,175
	Berth 31-33 Furnish & Install DIP Fittings	1.5	TON	$7,500	$11,250	$11,250		
	Berth 30 Furnish& Install 4" Gate Valve and Box	1	EA	$1,900	$1,900			$2,071
	Berth 30 Furnish& Install 6" Gate Valve and Box	2	EA	$2,900	$5,800			$6,322
	Berth 30 Furnish& Install 12" Gate Valve and Box	4	EA	$3,900	$15,600			$17,004
	Berth 30 Furnish & Install Sample Point	18	EA	$500	$9,000			$9,810
	Berth 31-33 Furnish & Install Sample Point	14	EA	$500	$7,000	$7,000		
	Berth 30 Pavement Restoration	800	SY	$78	$62,000			$67,580
	Berth 31-33 Pavement Restoration	467	SY	$78	$36,193	$36,193		
	Sanitary/Oil Waste Sewer							
	Berth 31-33 Furnish & Install 8" PVC (SDR 26) Gravity Sewer Pipe 6'-8' Deep	35	LF	$80	$2,800	$2,800		
	Berth 31-33 Furnish & Install Sanitary Sewer M.A.S. Structure 6'-8' Deep	3	EA	$6,000	$18,000	$18,000		
	Berth 31-33 Connect to Existing 8" Pipe	2	EA	$1,000	$2,000	$2,000		
	Berth 31-33 Remove Existing Sanitary Main	50	LF	$20	$1,000	$1,000		
	Berth 31-33 Remove Existing San. Lateral through New Crane Rail	80	LF	$10	$800	$800		
	Berth 31-33 Remove Existing Sanitary Manhole	1	EA	$1,725	$1,725	$1,725		
	Berth 31-33 Remove Existing Oil Waste Lateral	80	LF	$10	$800	$800		
	Berth 31-33 Grout and Fill Existing Oil Waste Lateral	105	LF	$50	$5,250	$5,250		
	Berth 31-33 Grout and Fill Existing Sanitary Lateral	52	LF	$50	$2,600	$2,600		
	Berth 31-33 Grout and Fill Existing Oil Waste Manhole	1	EA	$1,125	$1,125	$1,125		
	Berth 31-33 Remove Existing Oil Waste Manhole	16	EA	$1,725	$27,600	$27,600		
	Berth 30 Remove Existing Oil Waste Main	703	LF	$20	$14,060			$15,325
	Berth 31-33 Remove Existing Oil Waste Main	3,264	LF	$20	$65,280	$65,280		
	Berth 31-33 Plug Existing Oil Waste Main	9	EA	$500	$4,500	$4,500		
	Berth 31-33 Plug Existing Sanitary Lateral	5	EA	$500	$2,500	$2,500		
	Berth 31-33 Adjust Existing Sanitary Manhole Rim	15	EA	$500	$7,500	$7,500		
	Berth 31-33 Adjust Existing Electric Manhole Rim	2	EA	$500	$1,000	$1,000		
	Berth 31-33 Pavement Restoration	4,134	SY	$78	$320,385	$320,385		
	Paving							
	Berth 30 Extension 1.5" Mill and 1.5" - 2.5" Overlay	52,502	SY	$19	$971,287	$738,178	$247,095	
	Berth 30 New Pavement (4" Asphalt, 12" Limerock Base, 12" Stabilized Subgrd)	3,406	SY	$47	$160,082	$160,082		$174,489
	Berth 31-33 New Pavement (4" Asphalt, 12" Limerock Base, 12" Stabilized Subgrd)	6,443	SY	$47	$302,821	$302,821		
	Berth 31-33 Temp Pavement (4" Asphalt, 12" Limerock Base, 12" Stabilized Subgrd)	600	SY	$47	$28,200	$28,200		
	Berth 30 Temporary Pavement Section Removal	600	SY	$10	$6,000	$6,000		$6,540
	Berth 30 Replace Pavement Markings (Thermoplastic)	1	LS	$46,000	$46,000	$34,960	$11,702	
	Berth 31-33 Replace Pavement Markings (Thermoplastic)	1	LS	$104,700	$104,700	$79,572	$26,636	
	Berth 31-33 Temporary Pavement Markings (Paint)	1	LS	$45,920	$45,920	$34,899	$11,682	
	Berth 30 Adjust Existing Utility Lids and Tops of All Types to Finished Grade	11	EA	$700	$7,700	$7,700		
	Berth 31-33 Adjust Existing Utility Lids and Tops of All Types to Finished Grade	29	EA	$700	$20,300	$20,300		

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Probable Direct Construction Cost Estimate Based on 100% Complete Submittal

1/9/2017

CRANE RAIL INFRASTRUCTURE COMPONENT

Complete Auger Piles at All Segments Prior to Rail Girder Construction

By: SL BP Chkd: TMF Appd: AB

	Escalation
2017-2018	0%
2018-2019	6%
2019-2020	9%

Phase I - Berths 31-33 and Switchgear Building
Phase II - Berth 30 Extension and Pavement Overlay on Berth 30
Phase III - Package B, Berth 30 & Part of 30 Ext.

Division	Descriptions	Q'ty	Unit	2016 Unit costs	Subtotal based on 2016 unit costs	Construction Period: Phase I, B31-32 2017-2018	Phase II, B30 Ext 2018-2019	Phase III, Package B, Berth 30 & Part of 30 Ext 2019-2020
	Civil General							
	Berth 30 Civil Maintenance of Traffic and Testing	1	LS	$91,960	$91,960			$100,236
	Berth 31-33 Extension Civil Maintenance of Traffic and Testing	1	LS	$121,000	$121,000	$121,000		
	Berth 30 Extension Civil Maintenance of Traffic and Testing	1	LS	$29,040	$29,040			$31,654
	Berth 30 Civil Mobilization	1	LS	$68,000	$68,000	$68,000		
	Berth 31-33 Civil Mobilization	1	LS	$84,000	$84,000			$91,560
	Berth 30 Extension Civil Mobilization	1	LS	$20,000	$20,000		$21,200	
	Note: Bonds Insurance and Permits are accounted for the project as a whole							
	Subtotal				**$5,303,878**	**$3,937,580**	**$318,315**	**$1,482,489**
Switchgear Building								
Div 1	General Conditions and Requirements -	1	LS	$156,553.15	$156,553	$156,553		
Div 2	Demolition - site clearing, footing, slab excavation, and grading	1	LS	$38,955	$38,955	$38,955		
	New site work - waterline, backlow preventer, utility connections, sanitary sewer, fencing, gates, grading, paving, testing and traffic management	1	LS	$149,380	$160,000	$160,000		
Div 3	Concrete-Auger cast piles, fting, slabs, columns, beams, pre-cast joists, canopy, & stair	1	LS	$775,000	$775,000	$775,000		
Div 4	Masonry - 8" and 12" CMU walls	1	LS	$208,000	$208,000	$208,000		
Div 5	Metals -Aluminum stairs and misc angles, plates, and anchor bolts	1	LS	$100,000	$100,000	$100,000		
Div 6	Wood - Rough carpentry	1	LS	$20,935	$20,935	$20,935		
Div 7	Thermal and Moisture - Roof and wall insulation system	1	LS	$124,020	$124,020	$124,020		
Div 8	Doors and Windows - impacr resistant windows and doors at exterior	1	LS	$83,740	$83,740	$83,740		
Div 9	Finishes - Acoutstic tile ceiling, carpet, stucco and painting	1	LS	$189,100	$189,100	$189,100		
Div 10	Specialties - Blinds, sunshades, and signage	1	LS	$25,865	$25,865	$25,865		
Div 14	Conveying Systems - 3500 lbs capacity	1	LS	$127,200	$127,200	$127,200		
Div 23	Plumbing, HVAC, and clean agent fire protection system	1	LS	$340,580	$321,300	$321,300		
Div 26	Electrical - power and lighting	1	LS	$225,735	$212,960	$212,960		
	Subtotal				**$2,543,628**	**$2,543,628**		
	Cost before overhead, markup, permits, profit, and contingency				$45,731,115	$24,503,243	$11,533,307	$11,528,154
	GC overhead - On Summary Page							
	GC Profit - On Summary Page							
	Permits - On Summary Page							
	Performance and payment bonds - On Summary Page							
	Allowance for Port Delay 21 days (4.2 wk in 105 wk) broken down approximately as follow:							
	Auger pile installation - 8 out of 135 days of pile installation				$757,866			
	Girder and civil construction - 15 out of 295 days of const				$1,271,975			
	Electricial - 4 out of 95 days of electrcial				$265,691			
						Phase I	**Phase II**	**Phase III**

						Sub-Total
Berths 31-33 + 30 Ext. + B-30	**Sub-Total**	$24,503,243	$11,533,307	$11,528,154	$47,564,704
	Total	**$24,503,243**	**$11,533,307**	**$11,528,154**	**$47,564,704**
	Phase I & II	**$36,036,550**			
	Phase III	**$11,528,154**			

Notes
The above costs exclude the following items:
Wharf improvements to berth and moor larger vessels

Phase I, B31-32 2017-2018	Phase II, B30 Ext 2018-2019	Phase III, Package B, Berth 30 & Part of 30 Ext 2019-2020

1
2 Reinforcing of bulkhead toe for -50' dredge depth
3 Berth 30 extension infrastructure costs except the crane girders
4 Soft costs including Port's costs and consultant fees for construction administration
5 Any cost dealing with hazardous materials

Lay Days Delay **$2,295,532**

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CRANE RAIL INFRASTRUCTURE COMPONENT

BROWARD COUNTY - PORT EVERGLADES
FPL DUCT BANK

PRELIMINARY 9/1/2016

DUCT BANK

Estimate of Probable Construction Costs

February 16, 2016

DIV	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
2	**Demolition and Existing Conditions**				
	Mobilization	1	LS	$153,500.00	$153,500
	Material furnished by FPL (Shipping and Handling)	1	LS	$12,000.00	$12,000
	Clearing	1	ACR	$500.00	$500
	Breakup and Remove Paving 4" thick averg.	5,000	SY	$12.00	$60,000
	Asphalt Dump Fees	750	TON	$70.00	$52,500
	Excavation, backfilling and compaction of trenches	8,815	CY	$18.00	$158,667
	Disposal of Surplus Soil	5,313	CY	$20.00	$106,250
	Rentals/Shoring/Dewatering	3	MO	$6,279.31	$18,838
	Maintenance of Traffic	3	MO	$5,500.00	$16,500
	Fencing Allowance/Security Allowance	1	LS	$30,000.00	$30,000
		Subtotal Demolition			**$608,755**
26	**Electrical**				
	Ductbank 9 - 6" CONDUITS	7,800	LF	$251.00	$1,957,800
	Ducbank 1 to 2 - 6" CONDUITS	730	LF	$70.00	$51,100
	Utility Vault Installation	15	EA	$4,000.00	$60,000
	Conduit & Accessories (Allowance)	1	LS	$3,500.00	$3,500
		Subtotal Electrical			**$2,072,400**
32	**Exterior Improvements**				
	Roadway and Base Reconstruction	5,000	SY	$51.05	$255,250
	Seeding or Sodding Swales	57,000	SF	$0.50	$28,500
	Miscellaneous Concrete Allowance	1	LS	$1,500.00	$1,500
	Allowance for Utility Conflict Resolution	1	LS	$100,000.00	$100,000
		Subtotal Ext. Improvements			**$385,250**
		Subtotal Direct Costs			**$3,066,405**
		GC General Conditions @ 15%			$459,961
		SUBTOTAL			**$3,526,365**
		Bonds & Insurances @ 3%			$105,791
		SUBTOTAL			**$3,632,156**
		GC Profit @ 10%			$363,216
		SUBTOTAL			**$3,995,372**
		Estimate Contingency @ 25%			$998,843
		ESTIMATED TOTAL			**$4,994,215**
		ESTIMATE (Rounded)			**$5,000,000**

Exhibit A-2, Attachment 1: Schedule of Values Construction Services during Preconstruction Phase

Project Name: Southport Turning Notch Expansion and Southport Crane Rail Infrastructure Improvements
Project Number: RFP No. X1349802P1

#	DESCRIPTION	Turning Notch	Crane Infrastructure	Estimated Total Value
1	**B-1E: Direct Construction Cost (Preconstruction)**			
2	B-1E.1 3rd Party Consultant Support (Para. 3)	$ 300,000		$ 300,000
3	B-1E.2 Support Operations; Upland Testing, Waste Characterization, Permits	$ 766,084		$ 766,084
4	B-1E.3 Test Pits	$ 1,271,845		$ 1,271,845
5	B-1E.4 Access Road for Additional EFB Combi-Wall Borings	$ 119,318		$ 119,318
6	B-1E.5 Inspection of Existing Storm Sewer	$ 6,459		$ 6,459
7	B-1E.6 Patching of Sonic Boring Holes	$ 30,000		$ 30,000
8	B-1E.7 Soft Dig - Class 'A' Locates			$ -
9	SUBTOTAL NOT-TO-EXCEED	$ 2,493,706	$ -	$ 2,493,706
10	B-1E.8 Travel Allowance	$ 170,000		$ 170,000
	SUBTOTAL	$ 2,663,706	$ -	$ 2,663,706
	B-1E TOTAL NOT-TO-EXCEED INCLUDING ALLOWANCE			**$ 2,663,706**

Notes:

SOUTHPORT IMPROVEMENTS AND CRANE RAIL INFRASTRUCTURE COMPONENTS
CONSTRUCTION MANAGER

Project Name: Southport Turning Notch Expansion and Southport Crane Rail Infrastructure Improvements
Project Number: RFP No. X1349802P1

Exhibit B-E
Construction Estimated GMP

The Following Contract Price Elements and Total Estimated GMP is as follows:

	Southport Turning Notch	Crane Rail Infrastructure	TOTAL PRICE COMBINED
Contract Price Element			
A. Preconstruction Services (Exhibit A-1)	$ 3,649,150	$ 464,615	$ 4,113,765
B. Direct Construction Cost (includes Exhibits E-1 + E-2)	$ 277,663,706	$ 54,810,236	$ 332,473,942
C. Direct General Conditions Cost (includes Exhibits E-1 +E-2)	$ 22,873,785	$ 4,535,626	$ 27,409,411
D. Fixed Fee (4.5% of Items A,B & C above)	$ 13,688,399	$ 2,691,471	$ 16,379,870
E. Owner's Allowance Account (15% of A,B, C & D)	$ 47,681,256	$ 9,375,292	$ 57,056,548
Total Estimated GMP	**$ 365,556,296**	**$ 71,877,240**	**$ 437,433,536**

Notes:

1 Builders Risk is not included, and it will be determined during preconstruction services who provides it.
2 Bonds and Insurance for Construction are included in Estimated Direct Construction Cost.
3 Per Article 7 of the Contract, Items B,C,D & E are to be reconciled after the bidding process set forth in Exhibit A-1.

36	Lubricants	Mobil
37	Master Switches	Brieda Dynamic
38	Operator's cabin and consoles	Brieda Dynamic
39	Paint	Hempel, International
40	Service cranes, powered	ZPMC
41	Spreader cable plugs and sockets	Pyle-National
42	Spreader	Bromma STS45 with SCS and Height Indication System
43	Spreader over-height adaptor (e)	BROMMA
44	Spreader cable shock-absorbing device	Cavotec S06-S1227-500 bollard type damper with 2 springs
45	Trolley rail pads and clips	Gantrex North America, WeldLok series
46	Welding machine	Miller XMT 450 CC/CV 230/460V W/O AUX POWER Stock # 907481
47	Welding machine	Miller XMT 450 CC/CV 230/460V W/O AUX POWER Stock # 907481
48	Wire rope	Kiswire, HYFIL K8, galvanized and pre-lubricated

(1) Other products are made in China of high quality.
(2) Included i) five (5) Bromma spreaders, ii) three (3) spreader over-height adaptor, iii) three (3) cargo beam, for the base bid.

4. **Quoted Prices**

Please see below details:

Items	Prices		
	Unit Price	Base bid of Three QC Cranes	Option Bid of Three QC Cranes
Crane: With TMEIC Controls	USD 13,800,000	USD41,400,000	USD41,400,000
Crane: With EZ (ABB) Controls	USD 13,300,000	USD39,900,000	USD39,900,000
*Spare Parts *Special Tools	✧ *Above prices do not include the price for any spare parts or any special tools.* ✧ *The spare parts will be supplied according to election of Port Everglades and Broward County. The detailed type, quantity and*		

The extension period shall not extend for greater than three months beyond the term of the Agreement. The Consultant shall be compensated for the service at the rate in effect when the extension is invoked by the County upon the same terms and conditions as contained in this Agreement as amended. The Purchasing Director shall notify Consultant of an extension authorized herein by written notice delivered prior to the end of the term of the Agreement.

ARTICLE 5. COMPENSATION AND METHOD OF PAYMENT

5.1 AMOUNT AND METHOD OF COMPENSATION

5.1.1 Maximum Amount Not-To-Exceed Compensation. Compensation to Consultant for the performance of Basic Services and attendance at meetings and site visits in the U.S. and abroad at site of crane manufacturer for Phase 2 identified in Exhibit A as payable on a "Maximum Amount Not-To-Exceed" basis, and as otherwise required by this Agreement, shall be based upon the Salary Costs as described in Section 5.2 up to a Maximum Amount Not-To-Exceed of $726,480.00. The Maximum Amount Not-To-Exceed compensation of $726,480.00 shall be paid out up to a maximum for each task in accordance with the percentage amount as follows:

Project Phase 2	**Fee%**	**Fee Amount/Task**
Task 1 – New Cranes Procurement	26.1%	$189,888.00
Task 2 – Upgrades to Existing Cranes	39.5%	$287,207.00
Task 3 – Upgrades to Landside Infrastructure	34.4%	$249,385.00
	100%	$726,480.00

Compensation to Consultant for the performance of Construction Support Services identified in Exhibit A, Phase 3 Task 1 as payable on a "Maximum Amount Not-To-Exceed" basis, and as otherwise required by this Agreement, shall be based upon the Salary Costs as described in Section 5.2 up to a Maximum Amount Not-To-Exceed of $6,734,774.00. The Maximum Amount Not-To-Exceed compensation of $6,734,774.00 shall be paid out up to a maximum for each task in accordance with the percentage amount as follows:

Project Phase 3	**Fee%**	**Fee Amount/Task**
Task 1 – Construction Support Services	100%	$6,734,774.00

Consultant shall perform all services designated as Maximum Amount Not-To-Exceed set forth herein for total compensation in the amount of or less than that stated above.

5.1.2 Lump Sum Compensation. Compensation to Consultant for the performance of all Basic Services identified in Exhibit A as payable on a "Lump Sum" basis, and as

APPENDIX E

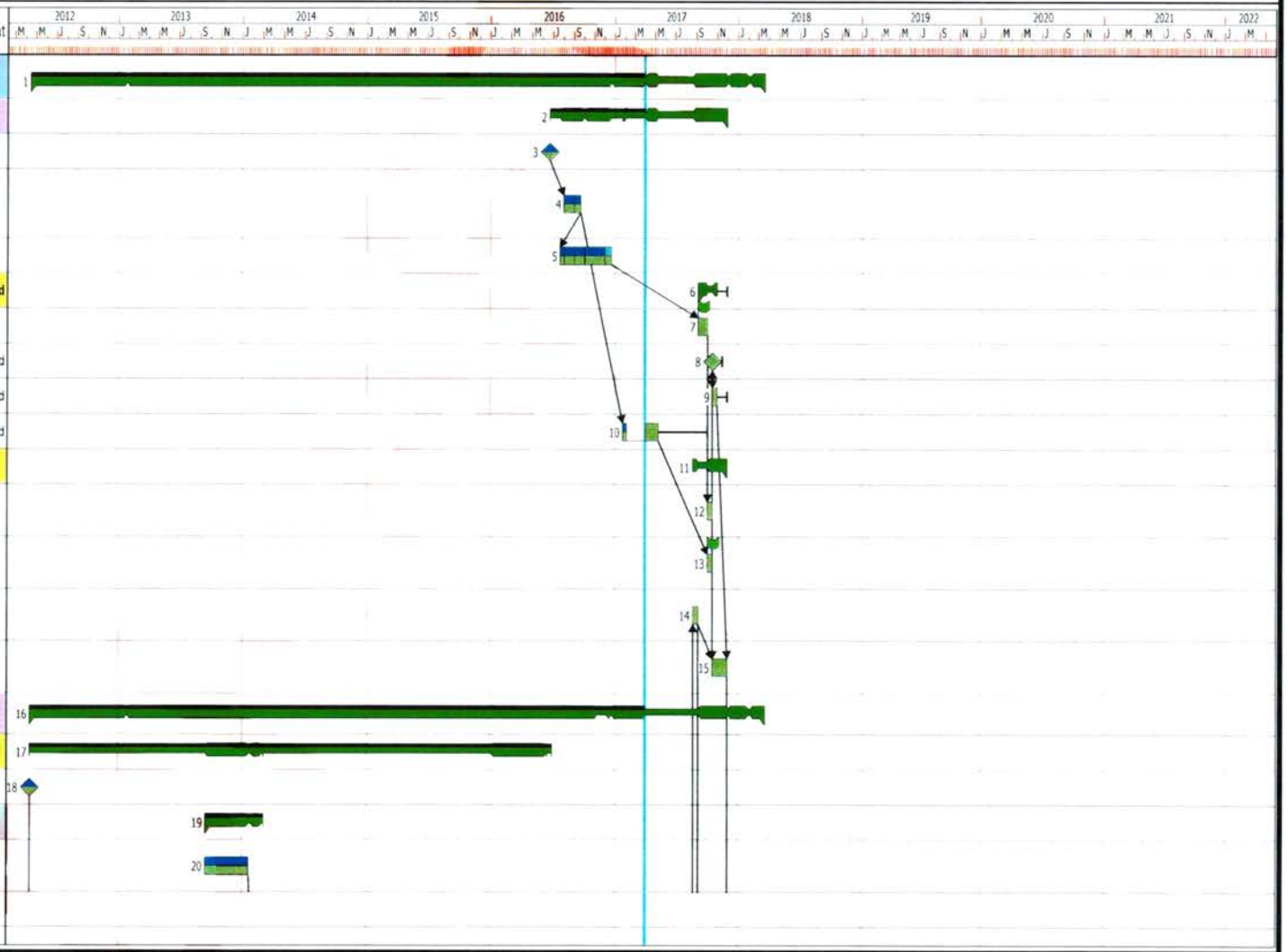
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
1	**Design Phase**	**1512d**	**4/16/2012 A**	**3/20/2018**	
2	**Design - Crane Rails**	**368d**	**6/21/2016 A**	**11/29/2017**	
3	NTP (Amendment 4)		6/21/2016 A	6/21/2016 A	
4	Conform the three 100% Design Development Packages and update per new code requirements	35d	8/1/2016 A	9/19/2016 A	
5	Design Permits	107d	7/21/2016 A	12/20/2016 A	
6	**Local Building Permit Process**	**40d**	**9/6/2017**	**10/31/2017**	**20d**
7	Local Building Permit - Plan Review and comments	20d	9/6/2017 *	10/3/2017	
8	Receive Response to RFIs		10/18/2017	10/18/2017	20d
9	Local Building Permit - Dry Run Approval	10d	10/18/2017	10/31/2017	20d
10	Port Review of conformed 100% Set	36d	1/24/2017 A	5/9/2017	102d
11	**100% Design Deliverables**	**70d**	**8/22/2017**	**11/29/2017**	
12	Responses to and Incorporation of changes due to Building Permit Review	10d	10/4/2017	10/17/2017	
13	Responses to and Incorporation of changes due to Port Review	10d	10/4/2017 *	10/17/2017	
14	Responses to and Incorporation of changes due to Bidder Review	10d	8/22/2017	9/5/2017	
15	100% Design Deliverables - Conformed Set for Construction	30d	10/18/2017	11/29/2017	
16	**Design - Southport Turning Notch**	**1512d**	**4/16/2012 A**	**3/20/2018**	
17	**A/E Selection Process**	**1072d 1s**	**4/16/2012 A**	**6/28/2016 A**	
18	PO Issued for Design		4/16/2012 A	4/16/2012 A	
19	**Amendment #1**	**115d 1s**	**9/17/2013 A**	**3/3/2014 A**	
20	Scope and Fact Finding and Negotiation of Amendment #1	85d	9/17/2013 A	1/18/2014 A	



Port Manager: Various Projects Shown - See Individual Project

Schedule by: Atkins - Nova Consulting

Drawn by: Ricardo A. Maristany, P.E.

Print Date: 3/31/2017

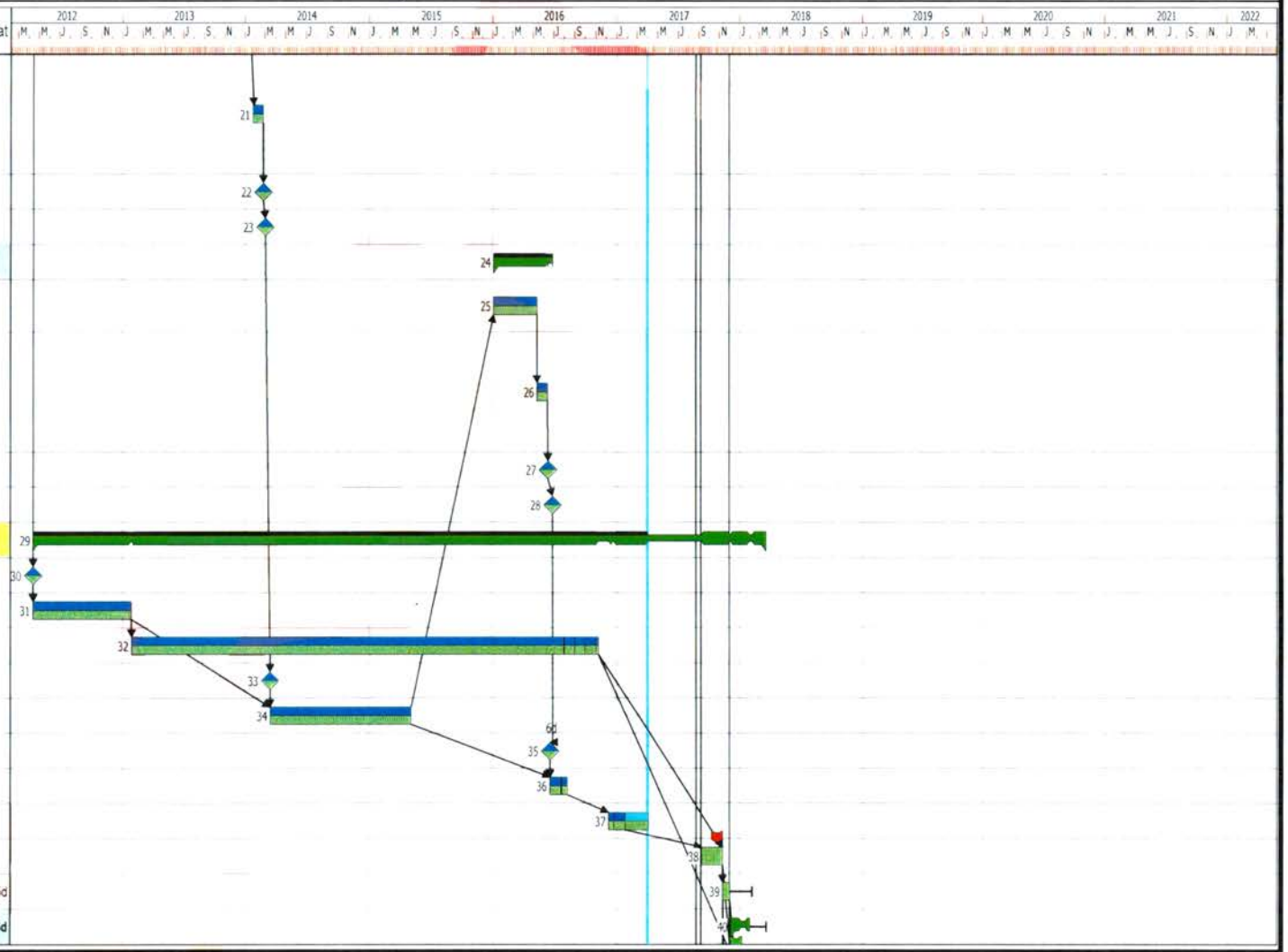
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
21	Agenda Preparation (Port Department Approvals) and Submit Amendment #1 to BC Purchasing Division for incorporation into the subsequent BOCC meeting agenda	21d	1/26/2014 A	2/24/2014 A	
22	BOCC Meeting - Approval of Amendment #1		2/25/2014 A	2/25/2014 A	
23	PO Issued for Amendment #1		3/3/2014 A	3/3/2014 A	
24	**Amendment #2**	**125d 1s**	**1/4/2016 A**	**6/28/2016 A**	
25	Scope and Fact Finding, and Negotiation of Amendment #2	94d	1/4/2016 A	5/12/2016 A	
26	Agenda Preparation (Port Department Approvals) and Submit Amendment #2 to BC Purchasing Division for incorporation into the subsequent BOCC meeting agenda	20d	5/13/2016 A	6/12/2016 A	
27	BOCC Meeting - Approval of Amendment #2		6/14/2016 A	6/14/2016 A	
28	PO Issued for Amendment #2		6/28/2016 A	6/28/2016 A	
29	**Design Activities**	**1512d**	**4/16/2012 A**	**3/20/2018**	
30	Design NTP (Original Agreement)		4/16/2012 A	4/16/2012 A	
31	Schematic Design	201d	4/16/2012 A	1/26/2013 A	
32	Design Permits	965d	1/28/2013 A	11/8/2016 A	
33	Design NTP (Amendment #1)		3/17/2014 A	3/17/2014 A	
34	Const Plans Development	289d	3/17/2014 A	5/2/2015 A	
35	Design NTP (Amendment #2)		6/20/2016 A	6/20/2016 A	
36	60% Design Deliverables	35d	6/20/2016 A	8/9/2016 A	
37	Port Review of 60% Design Deliverables	79d	12/8/2016 A	3/31/2017 A	
38	90% Design Deliverables	45d	9/8/2017	11/9/2017 *	
39	Port Review of 90% Design Deliverables	15d	11/10/2017	12/1/2017	45d
40	**Local Building Permit Process**	**40d**	**12/4/2017**	**1/30/2018**	**35d**



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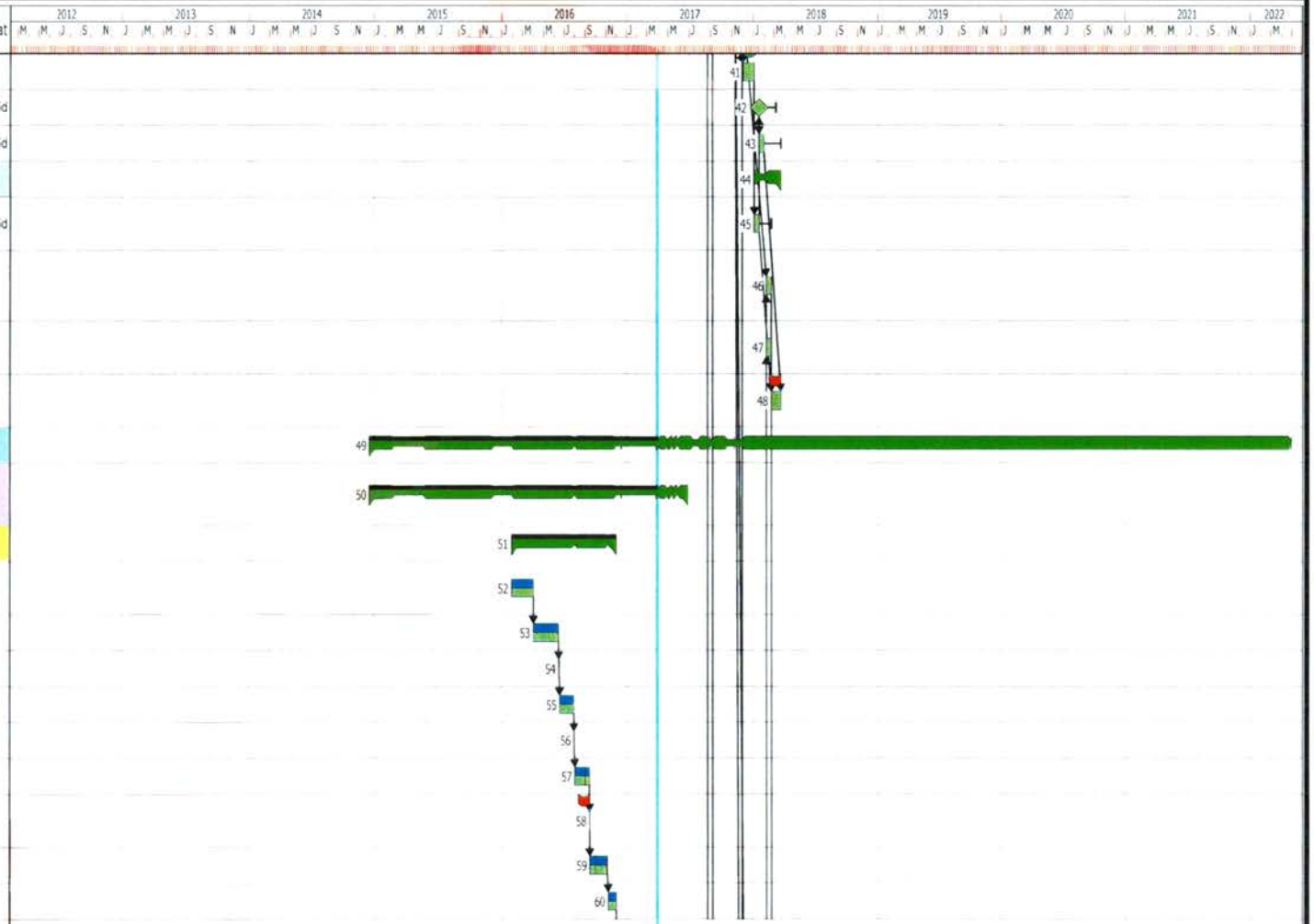
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
41	Local Building Permit - Plan Review and comments	20d	12/4/2017 *	1/2/2018	
42	Receive Response to RFIs		1/17/2018	1/17/2018	35d
43	Local Building Permit - Dry Run Approval	10d	1/17/2018	1/30/2018	35d
44	**100% Design Deliverables**	**55d**	**1/3/2018**	**3/20/2018**	
45	Responses to and Incorporation of changes due to Permit Review	10d	1/3/2018	1/16/2018	25d
46	Responses to and Incorporation of changes due to Port Review and MGC Constructibility Review	10d	2/7/2018	2/20/2018	
47	Responses to and Incorporation of changes due to Bidder Review	10d	2/7/2018	2/20/2018	
48	100% Design Deliverables - Conformed Set for Construction	20d	2/21/2018	3/20/2018 *	
49	**Contruction Phase**	**1885d**	**12/17/2014 A**	**4/28/2022**	
50	**Managing General Contractor (MGC) Bid Process**	**644d**	**12/17/2014 A**	**6/26/2017**	
51	**MGC Selection Process - Crane Rails**	**215d**	**1/29/2016 A**	**11/30/2016 A**	
52	MGC RFP Development up to BOCC Meeting - Agenda Item Prep for MGC RFP	45d	1/29/2016 A	3/31/2016 A	
53	Purchasing MGC Approval	51d	4/1/2016 A	6/13/2016 A	
54	BOCC Meeting - Approval of MGC RFP	3d	6/14/2016 A	6/16/2016 A	
55	Advertise RFP	29d	6/17/2016 A	7/28/2016 A	
56	RFP Response Deadline (Solicitations Received)	1d	7/29/2016 A	7/29/2016 A	
57	Proposal Review and Decision Matrix	30d	8/1/2016 A	9/12/2016 A	
58	Evaluation Committee Meeting - Initial Evaluation and Short List	1d	9/13/2016 A	9/13/2016 A	
59	HOLD BY PURCHASING DEPARTMENT	38d	9/14/2016 A	11/4/2016 A	
60	Preparation for MGC Presentation	17d	11/7/2016 A	11/30/2016 A	



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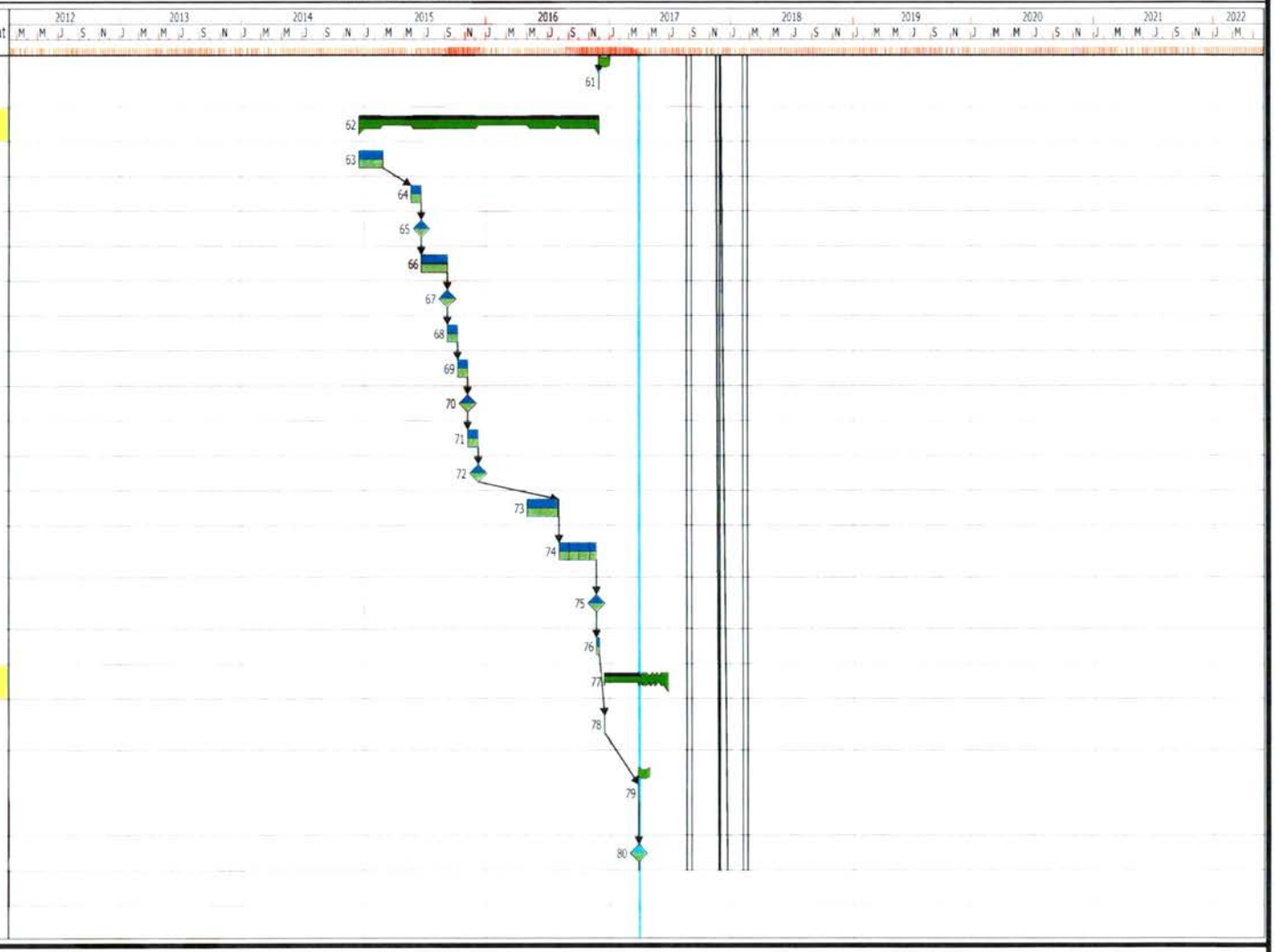
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
61	Evaluation Committee Meeting - Short List Presentations Final Evaluation	1d	11/30/2016 A	11/30/2016 A	
62	**MGC Selection Process - SPTN**	**499d**	**12/17/2014 A**	**11/30/2016 A**	
63	Preliminary RFP Activities	50d	12/17/2014 A	2/26/2015 A	
64	Agenda Item Prep	20d	5/23/2015 A	6/22/2015 A	
65	BOCC Approval		6/23/2015 A	6/23/2015 A	
66	Advertise RFP	55d	6/23/2015 A	9/9/2015 A	
67	RLI Submittals Due (Extended)		9/10/2015 A	9/10/2015 A	
68	Review Submittals Prepare Matrix	22d	9/10/2015 A	10/9/2015 A	
69	Presentations & Ranking SC Short List	20d	10/10/2015 A	11/8/2015 A	
70	SC Meeting		11/9/2015 A	11/9/2015 A	
71	Agenda Item Prep	22d	11/9/2015 A	12/9/2015 A	
72	BOCC Meeting - Approval of MGC Selection		12/10/2015 A	12/10/2015 A	
73	Scope and Fact Finding for Pre-Construction Services	64d	5/2/2016 A	8/2/2016 A	
74	Negotiation of Preconstruction Services Agreement	78d	8/3/2016 A	11/21/2016 A	
75	Negotiation of Preconstruction Services Agreement - Complete		11/22/2016 A	11/22/2016 A	
76	Agenda Preparation (Port Department Approvals)	6d	11/22/2016 A	11/30/2016 A	
77	**MGC Selection Process - SPTN and Crane Rails**	**135d**	**12/15/2016 A**	**6/26/2017**	
78	Staff Request to cancel individual solicitations and merge into one new contract	1d	12/15/2016 A	12/15/2016 A	
79	BOCC Meeting - Approval to Cancel individual solicitations and combine to one agreement with same MGC	1d	3/28/2017 A	3/28/2017 A	
80	Scope and Fact Finding for Pre-Construction Services		3/29/2017 A	3/29/2017 A	



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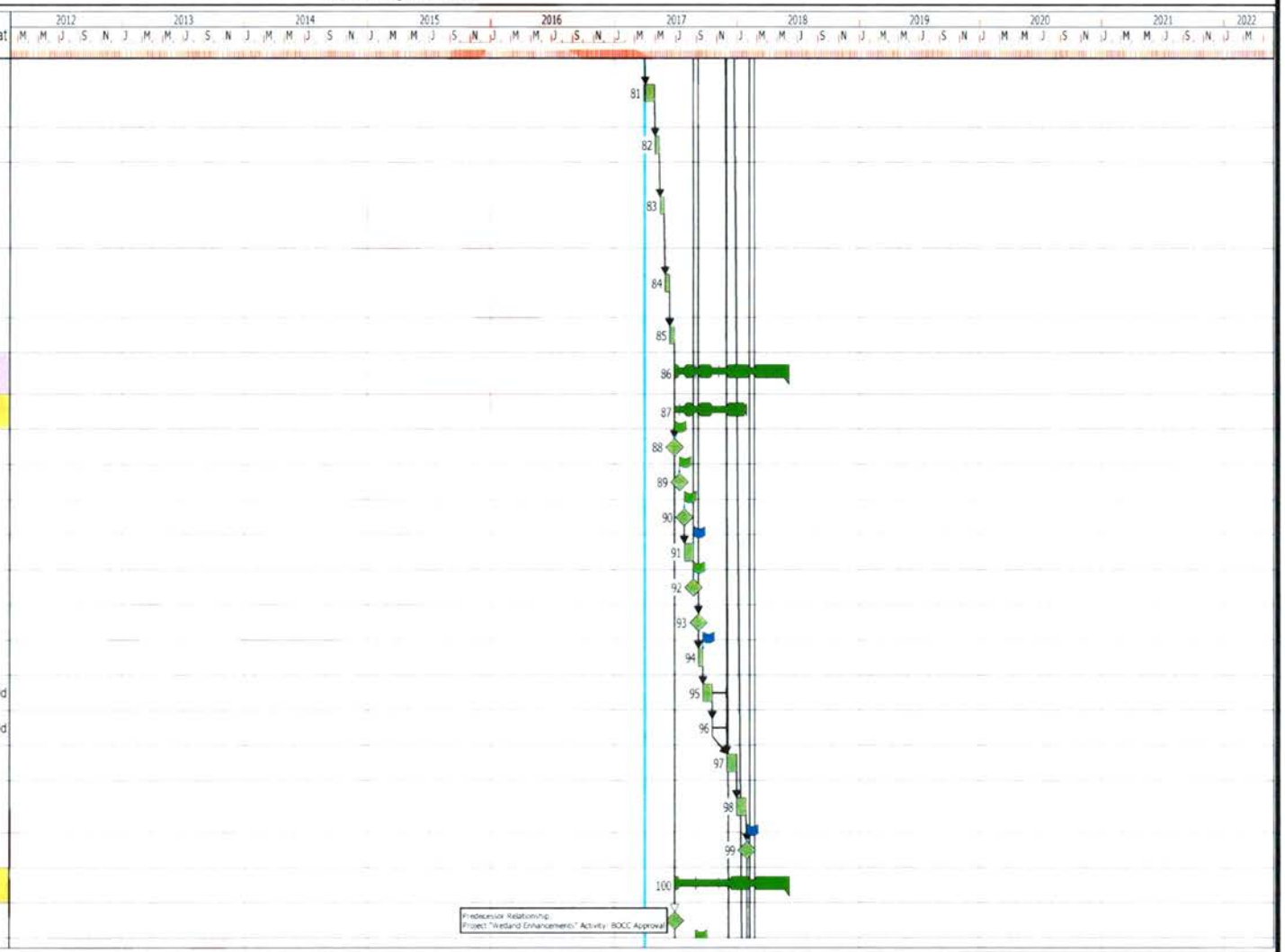
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
81	Negotiation of Preconstruction Services Agreement and Estimated GMP	23d	3/29/2017 A	4/28/2017	
82	Agenda Preparation (Port Department Approvals)	10d	5/1/2017	5/12/2017	
83	Submit Signed Agreement to BC Purchasing Division for incorporation into the subsequent BOCC meeting agenda	10d	5/15/2017	5/26/2017	
84	BOCC Meeting - Approval of MGC Preconstruction Services Agreement and Estimated GMP	10d	5/30/2017	6/12/2017	
85	PO Issued for MGC Preconstruction Services	10d	6/13/2017	6/26/2017	
86	**Preconstruction Services**	**240d**	**6/27/2017**	**6/6/2018**	
87	**Preconstruction Services - Crane Rails**	**149d**	**6/27/2017**	**1/29/2018**	
88	Begin Pre-Qualifying subcontractors		6/27/2017 *	6/27/2017	
89	Deliver Proposed "Bid Package" groups		7/12/2017 *	7/12/2017	
90	Begin Bidding Process (Pre-Bid Meeting)		7/26/2017 *	7/26/2017	
91	Plan Review by Bidders (Bidder RFIs)	20d	7/26/2017	8/22/2017 *	
92	Pre-Bid Meetings		8/22/2017 *	8/22/2017	
93	Receive Response to RFIs		9/6/2017	9/6/2017	
94	Finalize and Submit Bids	9d	9/6/2017	9/18/2017 *	
95	Pre-Subcontracting	20d	9/19/2017	10/16/2017	30d
96	Bid Presentation w/SBE/MBE Report	1d	10/17/2017	10/17/2017	30d
97	Reconcile GMP Contract	20d	11/30/2017	12/28/2017	
98	Negotiation of Reconciled Guaranteed Maximum Price (GMP) Contract	20d	12/29/2017	1/26/2018	
99	Negotiation of Reconciled GMP Contract - Complete		1/29/2018	1/29/2018 *	
100	**Preconstruction Services - SPTN**	**240d**	**6/27/2017**	**6/6/2018**	
101	NTP Preconstruction Services		6/27/2017	6/27/2017	



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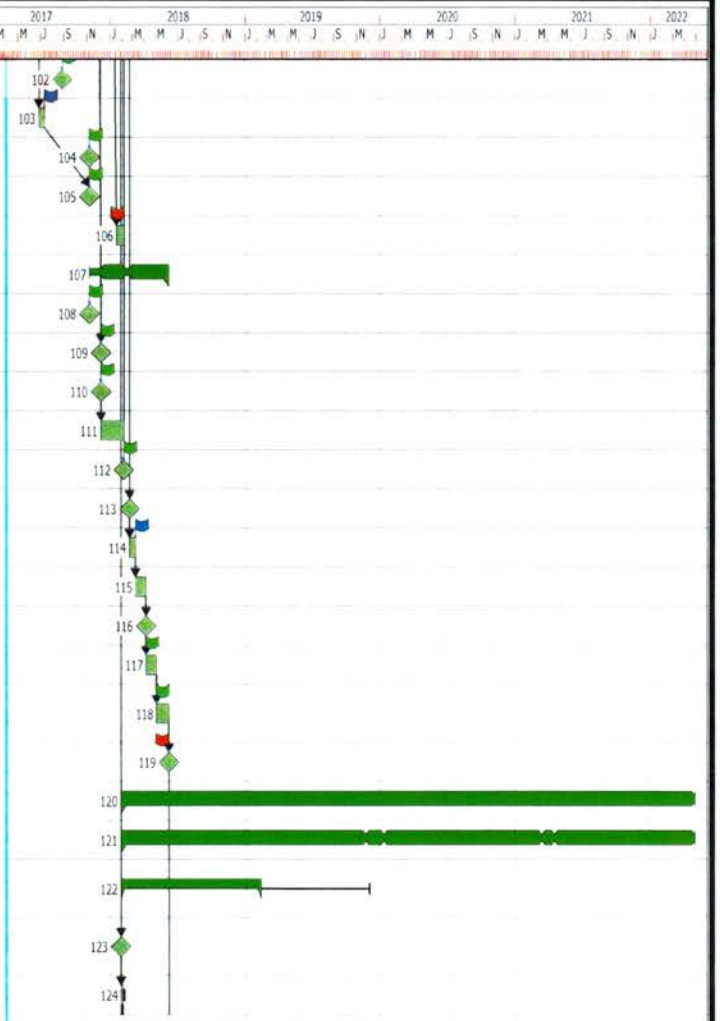
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
102	Preliminary Project Schedule		8/28/2017 *	8/28/2017	
103	60% Design Deliverables - Constructability Review	10d	6/27/2017	7/11/2017 *	
104	Deliver Soils Disposal Memorandum		11/7/2017 *	11/7/2017	
105	Deliver 60% "In-House" Estimate		11/7/2017 *	11/7/2017	
106	90% Design Deliverables - Constructability Review	15d	1/17/2018	2/6/2018 *	
107	**Bidding and Reconciled GMP Contract Process**	**147d**	**11/7/2017**	**6/6/2018**	
108	Begin Pre-Qualifying subcontractors		11/7/2017 *	11/7/2017	
109	Deliver Proposed "Bid Package" groups		12/8/2017 *	12/8/2017	
110	Begin Bidding Process		12/8/2017 *	12/8/2017	
111	Plan Review by Bidders (Bidder RFIs)	41d	12/8/2017	2/6/2018	
112	Pre-Bid Meetings		2/6/2018 *	2/6/2018	
113	Receive Response to RFIs		2/21/2018	2/21/2018	
114	Finalize and Submit Bids	12d	2/21/2018	3/8/2018 *	
115	Pre-Subcontracting	20d	3/9/2018	4/5/2018	
116	Bid Presentation w/SBE/MBE Report		4/6/2018	4/6/2018	
117	Reconcile GMP Contract	20d	4/6/2018 *	5/3/2018	
118	Negotiation of Reconciled Guaranteed Maximum Price (GMP) Contract	22d	5/4/2018 *	6/5/2018	
119	Negotiation of Reconciled GMP Contract - Complete		6/6/2018	6/6/2018 *	
120	**Construction**	**1092d**	**1/29/2018**	**4/28/2022**	
121	**Construction Activities - Crane Rails**	**1092d**	**1/29/2018**	**4/28/2022**	
122	**Subcontracts, Shop Drawings, Building Permit and Mobilization**	**265d**	**1/29/2018**	**2/11/2019**	**207d**
123	NTP #1 (Subcontracts, Shop Drawings, Building Permit and Mobilization)		1/29/2018	1/29/2018	2d
124	Execute Subcontracts	5d	1/29/2018	2/2/2018	2d



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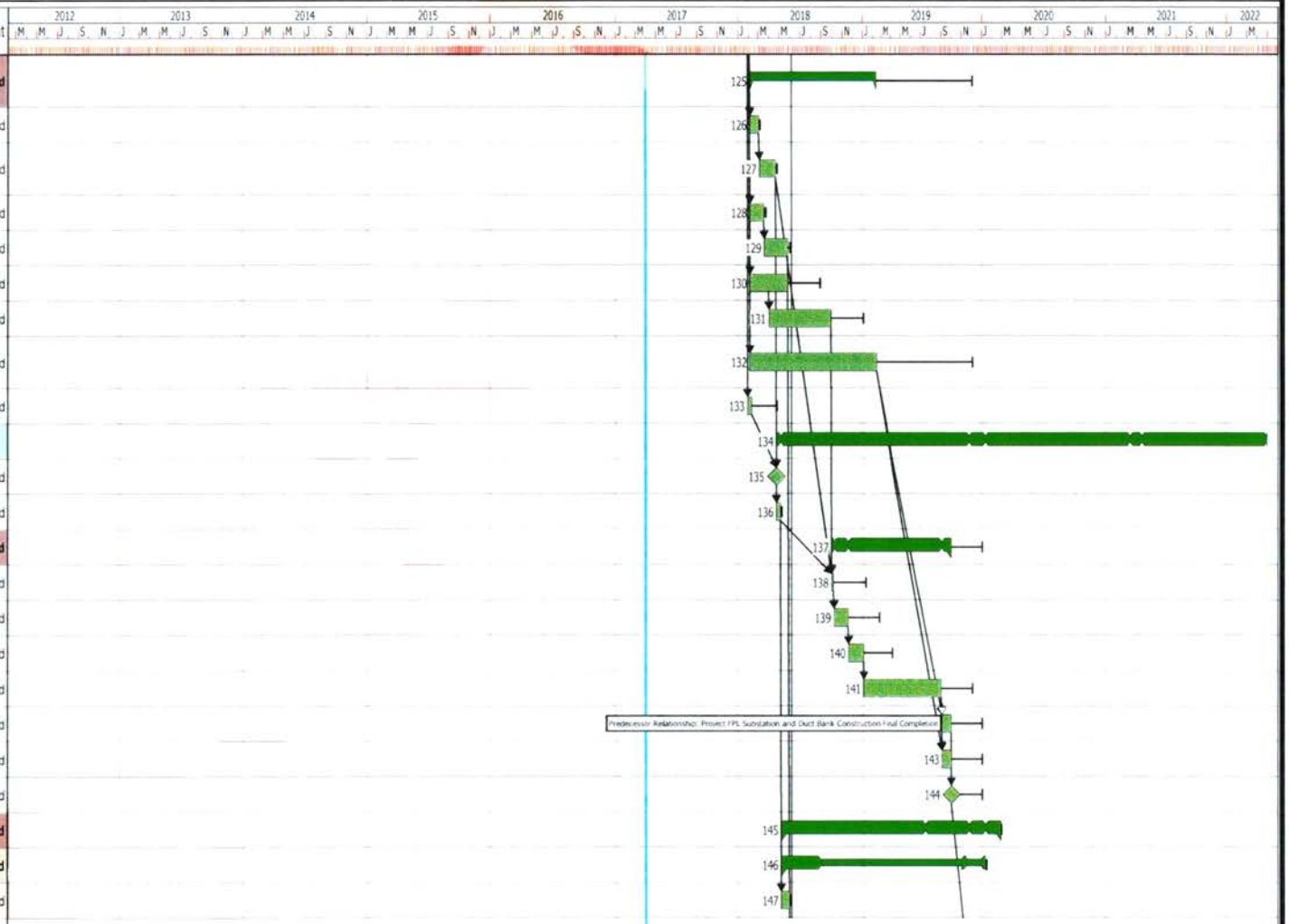
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
125	**Construction Submittals, Approvals, and Procurement**	**260d**	**2/5/2018**	**2/11/2019**	**207d**
126	Auger pile submittal approval	20d	2/5/2018	3/2/2018	2d
127	Auger pile procure & prepare (including test piles approval)	35d	3/5/2018	4/20/2018	2d
128	Girder submittal approval	30d	2/5/2018	3/16/2018	4d
129	Girder procure & prepare	50d	3/19/2018	5/25/2018	4d
130	Building submittals & approval	80d	2/5/2018	5/25/2018	65d
131	Building - procure & prepare	127d	4/2/2018	9/28/2018	65d
132	Crane switchgear submittal, approval, order, & delivery	260d	2/5/2018	2/11/2019	207d
133	Pull Local Building Permit	10d	1/29/2018	2/9/2018	52d
134	**Construction**	**1032d**	**4/23/2018**	**4/28/2022**	
135	NTP #2 (Construction)		4/23/2018	4/23/2018	2d
136	Mobilization	10d	4/23/2018	5/4/2018	2d
137	**Switch Gear Building Construction**	**255d**	**10/1/2018**	**10/1/2019**	**65d**
138	Pile installation	5d	10/1/2018	10/5/2018	65d
139	Site utility	30d	10/8/2018	11/16/2018	65d
140	Foundation	30d	11/19/2018	1/2/2019	65d
141	Building shell & interior	170d	1/3/2019	8/30/2019	65d
142	Power switchgear installation by FPL	20d	9/3/2019	9/30/2019	65d
143	Crane switchgear installation	20d	9/3/2019	9/30/2019	65d
144	Switchgear Complete		10/1/2019	10/1/2019	65d
145	**Berth 31-32 Construction**	**460d**	**5/7/2018**	**2/26/2020**	**2d**
146	**Segment 1 (400 LF)**	**428d**	**5/7/2018**	**1/10/2020**	**2d**
147	Auger Piles	17d	5/7/2018	5/30/2018	2d



Port Manager: Various Projects Shown - See Individual Project

Schedule by: Atkins - Nova Consulting

Drawn by: Ricardo A. Maristany, P.E.

Print Date: 3/31/2017

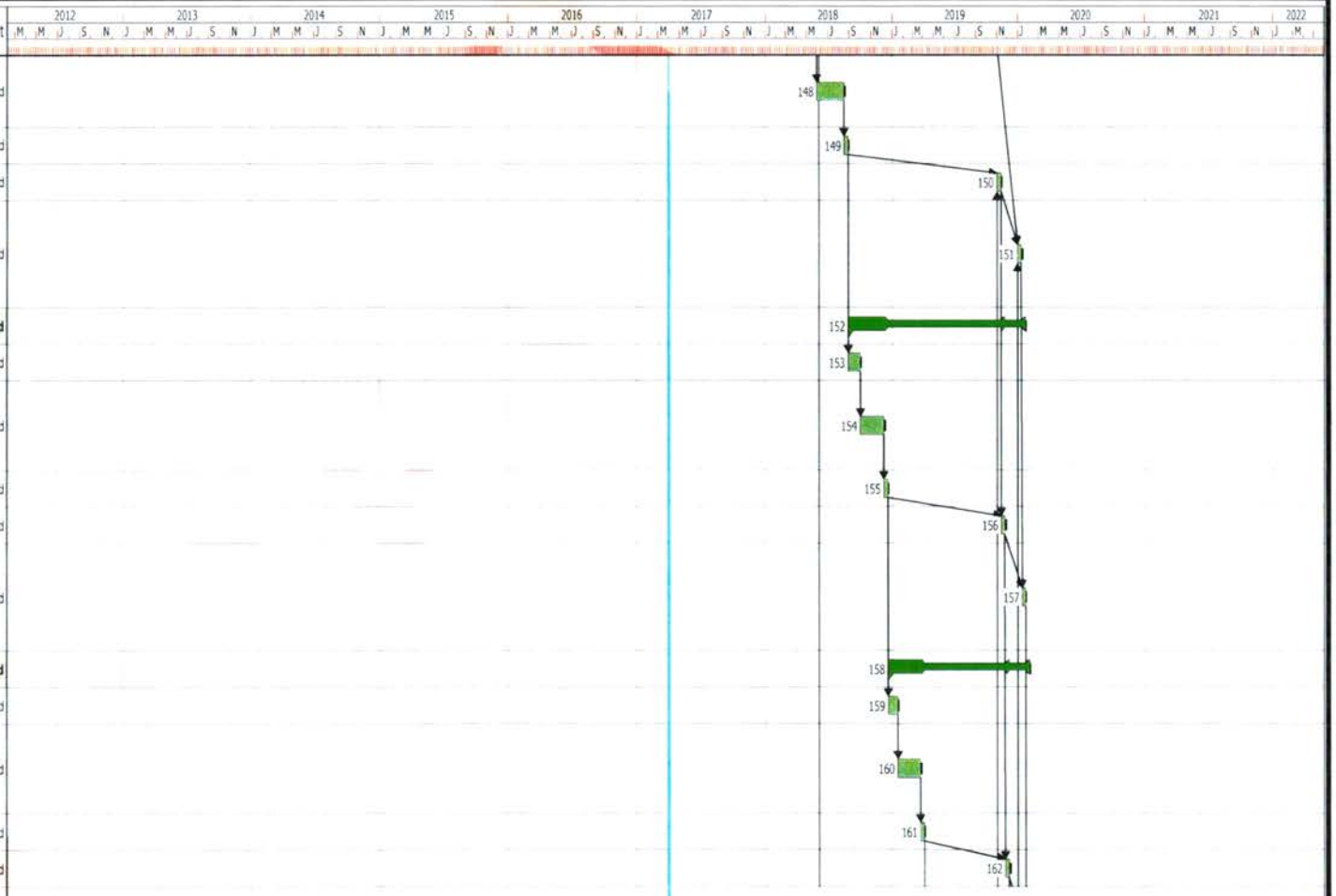
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
148	Girder/Pile Cap (including excavation, utility infrastructure, backfill, and temp paving)	55d	5/31/2018	8/16/2018	2d
149	Crane Rail	8d	8/17/2018	8/28/2018	2d
150	Repave and stripe in segments	8d	11/1/2019	11/12/2019	2d
151	Remove existing & install new cables between switchgear building and crane cable vaults Including Crane Power Changeover and Commissioning	8d	12/31/2019	1/10/2020	2d
152	**Segment 2 (400 LF)**	**356d**	**8/29/2018**	**1/22/2020**	**2d**
153	Auger Piles	23d	8/29/2018	10/1/2018	2d
154	Girder / Pile Cap Construction at WS/LS - Demolish, excavate, install utilities & girder, backfill, temporary paving	47d	10/2/2018	12/6/2018	2d
155	Crane Rail	8d	12/7/2018	12/18/2018	2d
156	Repave and stripe in segments	8d	11/13/2019	11/22/2019	2d
157	Remove existing & install new cables between switchgear building and crane cable vaults Including Crane Power Changeover and Commissioning	8d	1/13/2020	1/22/2020	2d
158	**Segment 3 (400 LF)**	**286d**	**12/19/2018**	**2/3/2020**	**2d**
159	Auger Pile	18d	12/19/2018	1/15/2019	2d
160	Girder / Pile Cap Construction at WS/LS - Demolish, excavate, install utilities & girder, backfill, temporary paving	47d	1/16/2019	3/21/2019	2d
161	Crane Rail installation in segments WS / LS	8d	3/22/2019	4/2/2019	2d
162	Repave and stripe in segments	8d	11/25/2019	12/5/2019	2d



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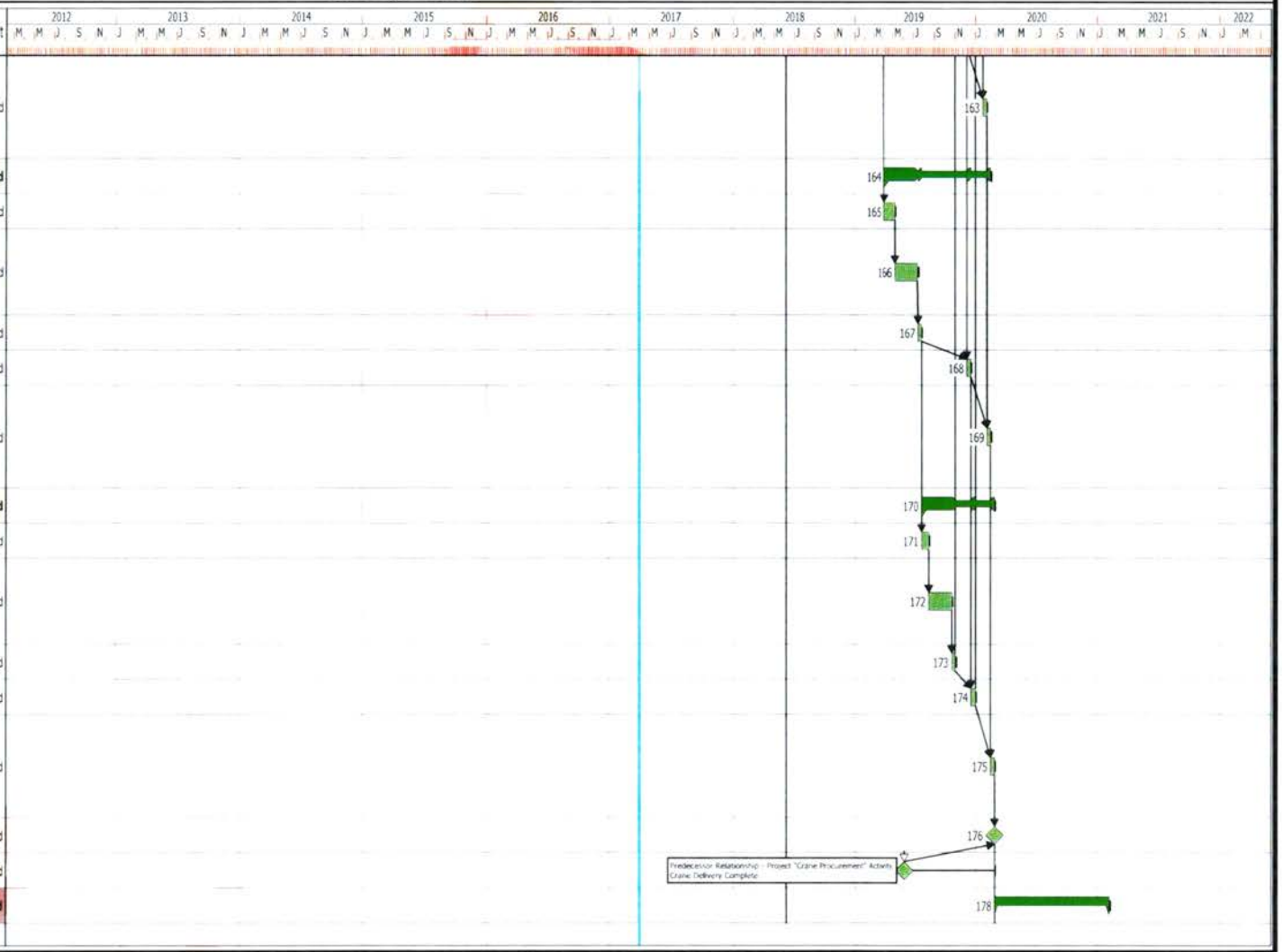
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
163	Remove existing & install new cables between switchgear building and crane cable vaults Including Crane Power Changeover and Commissioning	8d	1/23/2020	2/3/2020	2d
164	**Segment 4 (400 LF)**	**221d**	**4/3/2019**	**2/13/2020**	**2d**
165	Auger Pile	24d	4/3/2019	5/6/2019	2d
166	Girder / Pile Cap Construction at WS/LS - Demolish, excavate, install utilities & girder, backfill, temporary paving	47d	5/7/2019	7/12/2019	2d
167	Crane Rail installation in segments WS / LS	8d	7/15/2019	7/24/2019	2d
168	Repave and stripe in segments	8d	12/6/2019	12/17/2019	2d
169	Remove existing & install new cables between switchgear building and crane cable vaults Including Crane Power Changeover and Commissioning	8d	2/4/2020	2/13/2020	2d
170	**Segment 5 (400 LF)**	**150d**	**7/25/2019**	**2/26/2020**	**2d**
171	Auger Pile	15d	7/25/2019	8/14/2019	2d
172	Girder / Pile Cap Construction at WS/LS - Demolish, excavate, install utilities & girder, backfill, temporary paving	47d	8/15/2019	10/21/2019	2d
173	Crane Rail installation in segments WS / LS	8d	10/22/2019	10/31/2019	2d
174	Repave and stripe in segments	8d	12/18/2019	12/30/2019	2d
175	Remove existing & install new cables between switchgear building and crane cable vaults Including Crane Power Changeover and Commissioning	8d	2/14/2020	2/25/2020	2d
176	Segment 5 Complete		2/26/2020	2/26/2020	2d
177	Gantry Cranes Delivered (OTHER PROJECT)		6/3/2019	6/3/2019	189d
178	**Berth 30 Extension Construction**	**241d**	**2/26/2020**	**2/4/2021**	**2d**



Port Manager: Various Projects Shown - See Individual Project

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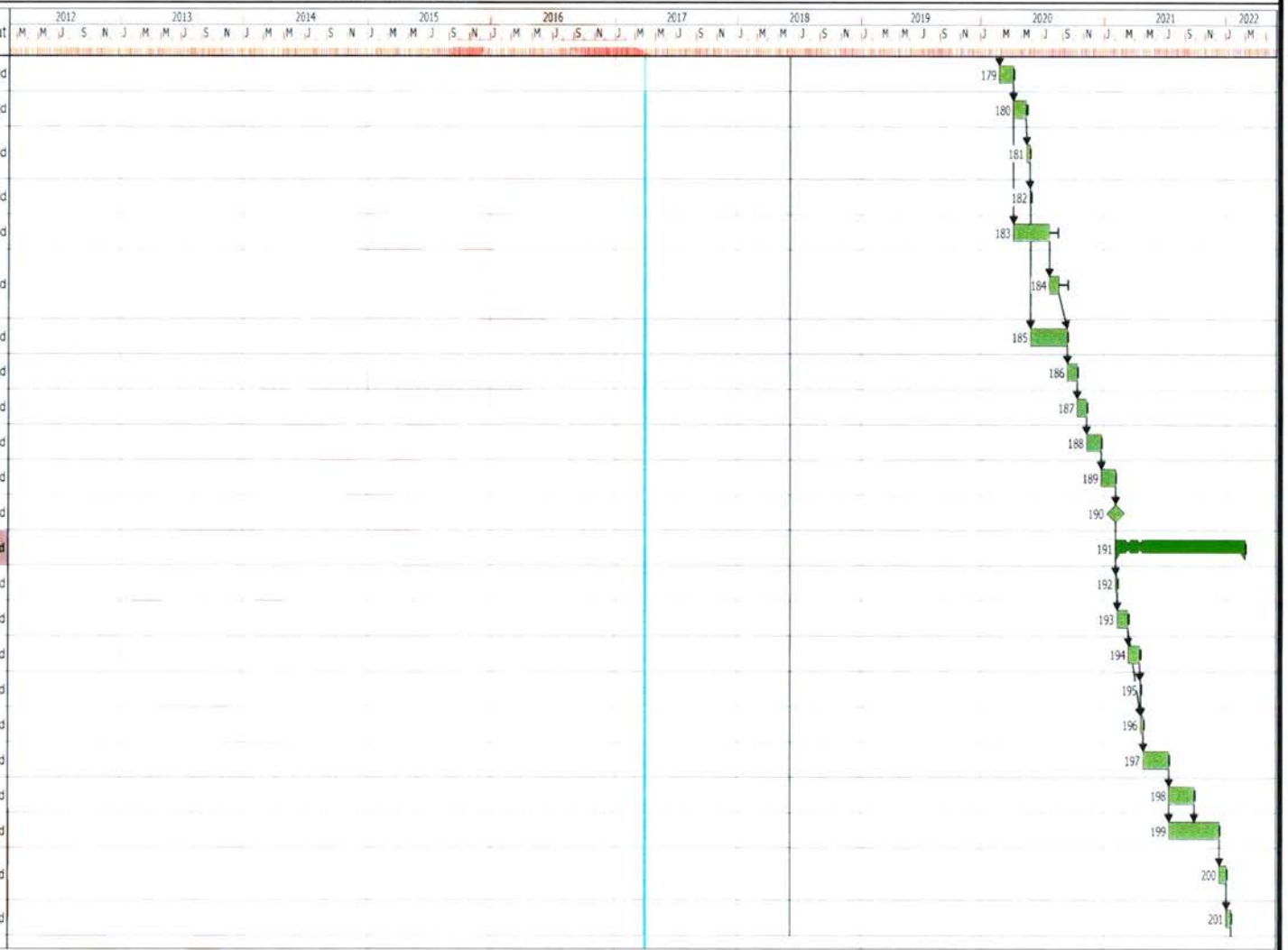
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
179	Waterside Auger Piles (8 piles / day = +/- 240)	30d	2/26/2020	4/7/2020	2d
180	Landside Auger Piles (8 piles / day = +/- 224)	28d	4/8/2020	5/15/2020	2d
181	10% downtime contingency for Berth Operations / Coordination	6d	5/18/2020	5/26/2020	2d
182	Demobilize auger pile installation	2d	5/27/2020	5/28/2020	2d
183	Waterside Crane Girder Cons't (100' / week = +/- 1500)	75d	4/8/2020	7/23/2020	18d
184	Install Duct Banks, Direct Bore Conduit between Switchgear Bldg & Berth 30 Extension	20d	7/24/2020	8/20/2020	18d
185	Landside Crane Girder Cons't (100' / week = +/- 1500)	75d	5/29/2020	9/14/2020	2d
186	Crane rail installation	20d	9/15/2020	10/12/2020	2d
187	Repave and stripe at Berth 30	20d	10/13/2020	11/9/2020	2d
188	Electrical work	30d	11/10/2020	12/22/2020	2d
189	Electrical Connections and Commission Work	30d	12/23/2020	2/3/2021	2d
190	Berth 30 Extension Complete		2/4/2021	2/4/2021	2d
191	**Berth 30 Construction**	**279d**	**2/4/2021**	**3/2/2022**	**2d**
192	Mobilization Auger pile operation	3d	2/4/2021	2/8/2021	2d
193	Waterside Auger piles (8 piles / day = +/-187)	24d	2/9/2021	3/12/2021	2d
194	Landside Auger piles (8 piles / day = +/-200)	25d	3/15/2021	4/16/2021	2d
195	Demobilize auger pile installation	2d	4/19/2021	4/20/2021	2d
196	Excavation for Crane Girder	5d	4/21/2021	4/27/2021	2d
197	Waterside Crane Girder Cons't (100' / week = +/- 1100)	55d	4/28/2021	7/13/2021	2d
198	Landside Crane Girder Cons't (100' / week = +/- 1100)	55d	7/14/2021	9/28/2021	2d
199	Civil Utility Work	110d	7/14/2021	12/14/2021	2d
200	Backfill, Compact, Rough Grade, Finish Grade, Pave and Stripe	15d	12/15/2021	1/4/2022	2d
201	Crane rail installation	10d	1/5/2022	1/18/2022	2d



Port Manager: Various Projects Shown - See Individual Project

Schedule by: Atkins - Nova Consulting

Drawn by: Ricardo A. Maristany, P.E.

Print Date: 3/31/2017

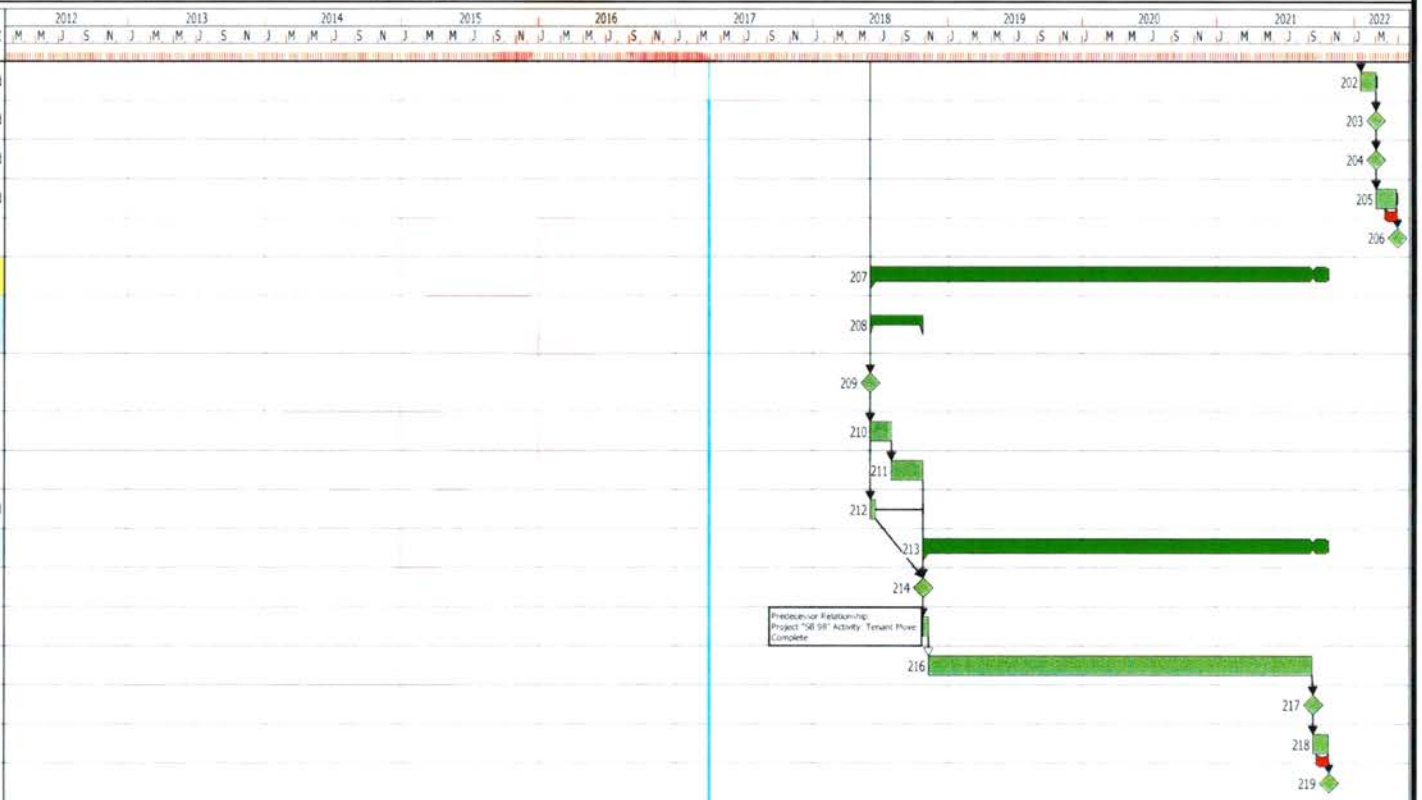
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Southport Improvements & Crane Rail Infrastructure Components

Full Project View

Line	Name	Duration	Start	End	Total float
202	Electrical Connections and Commission Work	30d	1/19/2022	3/1/2022	2d
203	Berth 30 Complete		3/2/2022	3/2/2022	2d
204	Substantial Completion		3/2/2022	3/2/2022	2d
205	Punch List	40d	3/2/2022	4/26/2022	2d
206	Final Completion		4/28/2022	4/28/2022 *	
207	**Construction Activities - SPTN**	**867d**	**6/6/2018**	**10/25/2021**	
208	**Subcontracts, Shop Drawings, and Building Permit**	**100d**	**6/6/2018**	**10/25/2018**	
209	NTP #1 (Subcontracts, Shop Drawings, and Building Permit)		6/6/2018	6/6/2018	
210	Shop Drawing Submittals and Approvals	40d	6/6/2018	8/1/2018	
211	Procurement	60d	8/2/2018	10/25/2018	
212	Pull Local Building Permit	10d	6/6/2018	6/19/2018	90d
213	**Construction**	**767d**	**10/26/2018**	**10/25/2021**	
214	NTP #2 (Construction)		10/26/2018	10/26/2018	
215	Mobilization	10d	10/26/2018	11/8/2018	
216	Construction	727d	11/9/2018	9/10/2021	
217	Substantial Completion		9/13/2021	9/13/2021	
218	Punch List and Close Out	30d	9/13/2021	10/22/2021	
219	Final Completion		10/25/2021	10/25/2021 *	



Symbols

Total float | Milestone | Start On | Finish On | Deadline

Progress Periods

Program Monthly Update - End of 03_2017 | Program Monthly Update - End of 07_2016 | Program Monthly Update - End of 08_2016 | Program Monthly Update - End of 09_2016 | Program Monthly Update - End of 10_2016

Program Monthly Update - End of 11_2016 | Program Monthly Update - End of 01_2017

Port Manager: Various Projects Shown - See Individual Project

Schedule by: Atkins - Nova Consulting

Drawn by: Ricardo A. Maristany, P.E.

Print Date: 3/31/2017

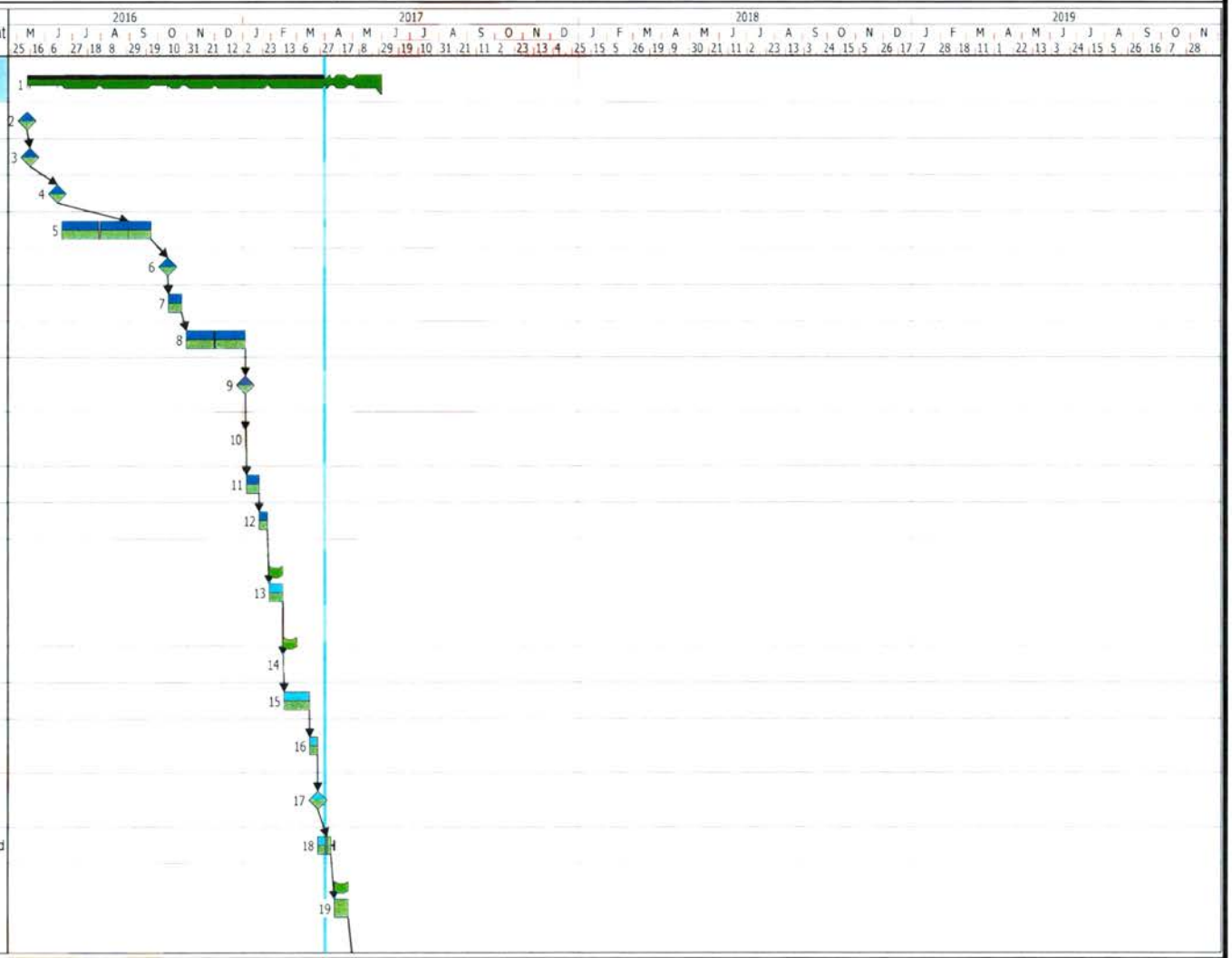
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Super Post Panamax Low Profile Gantry Crane Component

Full Project View

Line	Name	Duration	Start	End	Total float
1	**Design, F&I Selection Process**	**267d**	**5/13/2016 A**	**5/31/2017**	
2	Design, F&I RFP Scope Completion		5/13/2016 A	5/13/2016 A	
3	BOCC Meeting - Agenda Item Prep of Design, F&I RFP		5/16/2016 A	5/16/2016 A	
4	BOCC Meeting - Approval of Design, F&I RFP		6/15/2016 A	6/15/2016 A	
5	Advertise Design, F&I RFP	68d	6/20/2016 A	9/23/2016 A	
6	RFP Response Deadline (Solicitations Received)		10/12/2016 A	10/12/2016 A	
7	Proposal Review and Decision Matrix	10d	10/13/2016 A	10/26/2016 A	
8	Preparation for Presentation	42d	11/1/2016 A	1/3/2017 A	
9	Premeeting and Evaluation Committee Meeting - Initial Evaluation and Short List		1/4/2017 A	1/4/2017 A	
10	Evaluation Committee Meeting - Short List Presentations Final Evaluation	1d	1/4/2017 A	1/4/2017 A	
11	Bid Protest Period	10d	1/5/2017 A	1/18/2017 A	
12	Agenda Preparation (Port Department Approvals)	7d	1/19/2017 A	1/27/2017 A	
13	Submit Signed Prep of Design, F&I Evaluation to BC Purchasing Division for incorporation into the subsequent BOCC meeting agenda	11d	1/30/2017 A	2/13/2017 A	
14	BOCC Meeting - Approval of Design, F&I Evaluation	1d	2/14/2017 A	2/14/2017 A	
15	Scope and Fact Finding for Pre-Construction Services	20d	2/15/2017 A	3/14/2017 A	
16	Negotiation of Preconstruction Services Agreements	7d	3/15/2017 A	3/23/2017 A	
17	Negotiation of Preconstruction Services Agreements - Complete		3/24/2017 A	3/24/2017 A	
18	Agenda Preparation (Port Department Approvals)	10d	3/24/2017 A	4/6/2017	2d
19	Submit Signed Agreement to BC Purchasing Division for incorporation into the subsequent BOCC meeting agenda	11d	4/11/2017 *	4/25/2017	



Port Manager: Arnold Delacruz

Schedule by: Atkins - Nova Consulting
Drawn by: Ricardo A. Maristany, P.E.

This schedule is based on ASTA Default Calendar "5 Day Work Week, US Holidays 8hrs/day" and assumes No Delays Due To: 1. Board Agenda / Actions, 2. Competitor Protest Issues, 3. Procurement Issues, 4. Insurance Issues, 5. CBE Issues, 6. Permitting / Regulatory Issues, 7. Weather, 8. Unforeseen Condition Issues

Print Date: 3/31/2017

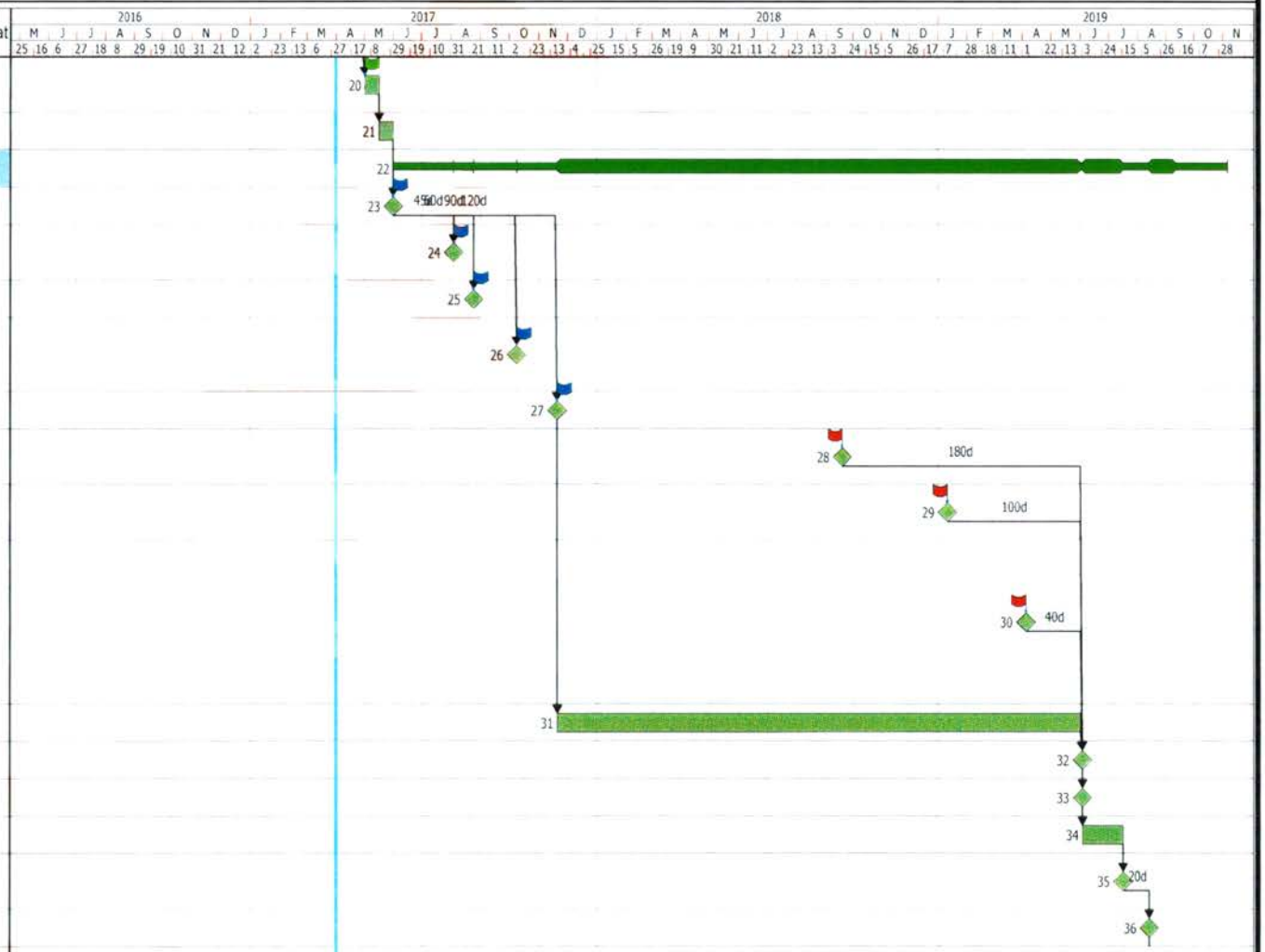
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Super Post Panamax Low Profile Gantry Crane Component

Full Project View

Line	Name	Duration	Start	End	Total float
20	BOCC Meeting - Approval of MGC Preconstruction Services Agreement	11d	5/2/2017 *	5/16/2017	
21	PO Issued	10d	5/17/2017	5/31/2017	
22	**Design, F&I**	**620d**	**6/1/2017**	**11/6/2019**	
23	NTP (Design)		6/1/2017	6/1/2017 *	
24	All information to be presented at Concept Design Approval Meeting		8/4/2017	8/4/2017 *	
25	Concept design approval meeting		8/25/2017	8/25/2017 *	
26	Wharf Interface Drawings and Calculations, Quality Control Plan, and Functional Description		10/9/2017	10/9/2017 *	
27	Presentation of Functional Description		11/20/2017	11/20/2017 *	
28	Priced bid for contract modification for any additional initial spares		9/18/2018	9/18/2018 *	
29	Erection, shop testing, shipping, roll-off, and field testing plans		1/11/2019	1/11/2019 *	
30	Operating and lubrications instructions and inspection manuals - Spare part submittal - School and course outline of drive system technical training - as built calculations - maintenance training course and outline - Lubrication check list		4/5/2019	4/5/2019 *	
31	NTP (Procure and Delivery)	390d	11/20/2017	5/31/2019	
32	Crane Delivery Complete		6/3/2019	6/3/2019	
33	Submit All Drawings		6/3/2019	6/3/2019	
34	Commissioning (Assembly, test, install) - Assume 6 month	30d	6/3/2019	7/15/2019	
35	Operating instructions for the operator's cab - Testing documentation		7/16/2019	7/16/2019	
36	Final operating instructions and manuals		8/13/2019	8/13/2019	



Port Manager: Arnold Delacruz

Schedule by: Atkins - Nova Consulting
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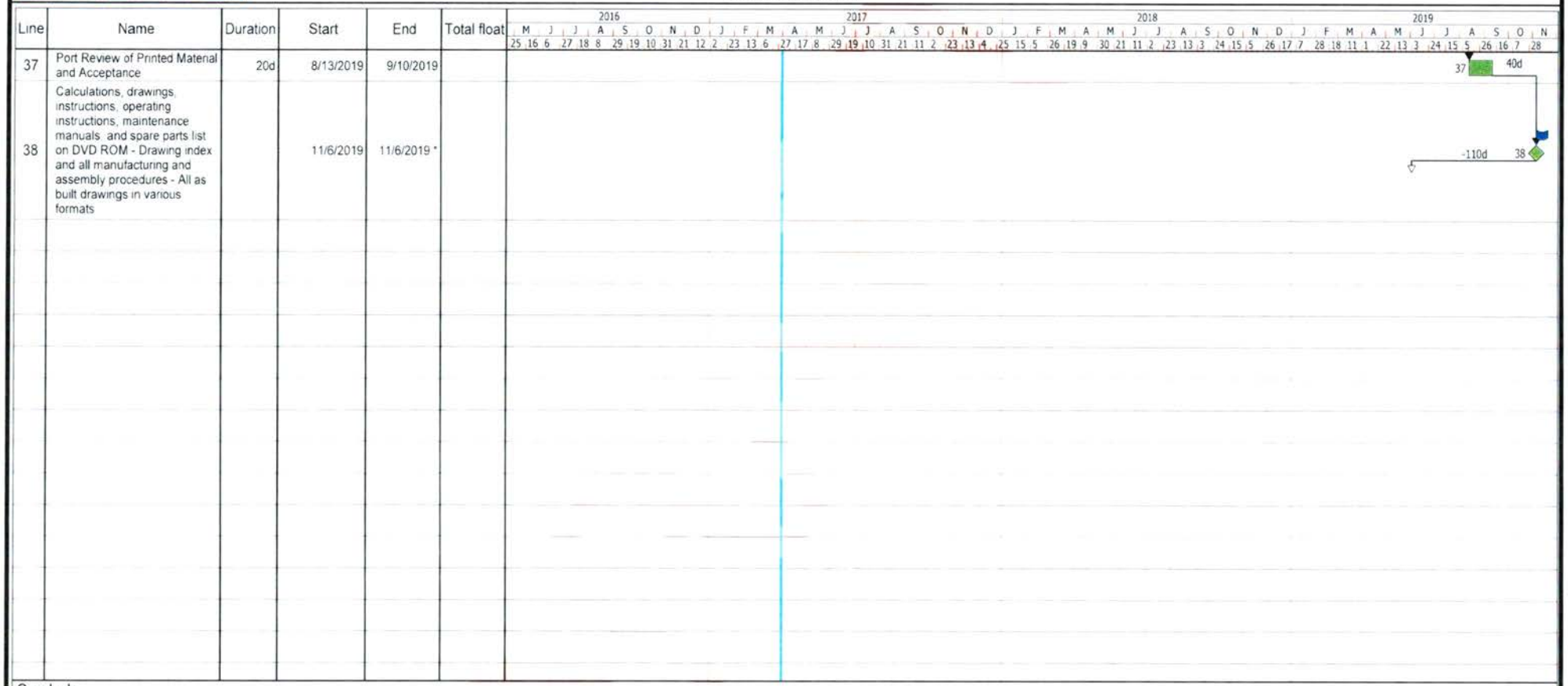
BROWARD COUNTY FLORIDA

Port Everglades Department - Seaport Engineering and Construction Division

Super Post Panamax Low Profile Gantry Crane Component

Full Project View

Line	Name	Duration	Start	End	Total float
37	Port Review of Printed Material and Acceptance	20d	8/13/2019	9/10/2019	
38	Calculations, drawings, instructions, operating instructions, maintenance manuals, and spare parts list on DVD ROM - Drawing index and all manufacturing and assembly procedures - All as built drawings in various formats		11/6/2019	11/6/2019 *	



Symbols

Total float
Milestone
Start On
Deadline
Finish On

Progress Periods

Program Monthly Update - End of 03_2017
Program Monthly Update - End of 07_2016
Program Monthly Update - End of 08_2016
Program Monthly Update - End of 09_2016
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Program Monthly Update - End of 01_2017

Port Manager: Arnold Delacruz

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Print Date: 3/31/2017

APPENDIX F

CAPITAL BUDGET FINANCING ANALYSIS - TIFIA LOAN
PORT EVERGLADES DEPARTMENT
PROJECTED REVENUES, EXPENSES AND DEBT SERVICE COVERAGE
(Dollars in Thousands)

	Projected Fiscal Year 2018	Projected Fiscal Year 2019	Projected Fiscal Year 2020	Projected Fiscal Year 2021	Projected Fiscal Year 2022
Petroleum	$ 34,695	$ 35,389	$ 36,097	$ 36,819	$ 37,555
Cruise (1)	55,376	45,300	47,400	49,500	51,900
Container	33,564	34,235	34,920	36,462	40,571
Bulk	3,484	3,553	3,625	3,697	3,771
Breakbulk/Neobulk	4,522	4,613	4,705	4,799	4,895
Rail	453	462	471	480	490
Lay-in	1,268	1,294	1,319	1,346	1,373
Real Estate	16,277	16,603	16,935	17,273	17,619
Foreign Trade Zone	676	689	703	717	731
Parking	8,490	8,490	8,490	8,490	8,490
Public Safety	200	204	208	212	216
Miscellaneous Finance	150	153	156	159	162
Sub-total Revenues	159,155	150,984	155,028	159,955	167,773
Total Operating Revenues (2)(3)	159,155	150,984	155,028	159,955	167,773
Total Operating Expenses (2)(4)	87,792	90,425	93,138	95,932	99,317
Gross Margin	71,363	60,559	61,890	64,023	68,456
Net eligible non operating revenues	1,000	1,000	1,000	1,000	1,000
Net amount available for debt service	$ 72,363	$ 61,559	$ 62,890	$ 65,023	$ 69,456

1) Decrease in cruise revenue for FY2019 due to impact of reduced passenger guarantees for Royal Caribbean and Carnival.
2) Operating revenue and expense impacts associated with Masterplan projects included in year of impact (FY2021 and FY2022).
3) Includes projected increase of 2% over the previous year for all operating revenue categories except cruise and parking.
4) Base year (2018) assumes expenditure of 95% of budget for forecasting purposes; 3% increase added in the outyears.

CAPITAL BUDGET FINANCING ANALYSIS - TIFIA LOAN*
PORT EVERGLADES DEPARTMENT
PROJECTED REVENUES, EXPENSES AND DEBT SERVICE COVERAGE
(Dollars in Thousands)

	Projected Fiscal Year 2018	Projected Fiscal Year 2019	Projected Fiscal Year 2020	Projected Fiscal Year 2021	Projected Fiscal Year 2022
Existing plus new debt covenant tests:					
Eligible bond covenant revenue	$ 72,363	$ 61,559	$ 62,890	$ 65,023	$ 69,456
Debt Service - Senior Lien (125% Test)	19,230	26,884	34,528	38,346	42,167
Debt Service - Subordinate Lien (110% Test)	22,534	30,189	37,831	41,653	45,470
Debt Service - TIFIA Loan (3rd Lien)	29,779	37,434	45,073	48,895	52,715
Test (125%)	3.76	2.29	1.82	1.70	1.65
Test (110%)	3.21	2.04	1.66	1.56	1.53
TIFIA Loan (3rd Lien)	2.43	1.64	1.40	1.33	1.32
Debt service computation:					
Existing senior debt service payments	19,230	19,235	19,230	19,229	19,231
Debt service on new capital funds (2019 issuance) (1)	-	7,649	15,298	15,298	15,298
Debt service on new capital funds (2021 issuance) (2)	-	-	-	3,819	7,638
Sub-total senior lien debt service	19,230	26,884	34,528	38,346	42,167
2008 subordinate lien debt service	3,304	3,305	3,302	3,307	3,303
TIFIA Loan debt service (3)	7,245	7,245	7,243	7,243	7,245
Total debt service payments	$ 29,779	$ 37,434	$ 45,073	$ 48,895	$ 52,715

1) Series 2019 Bonds assume an estimated par amount of $305,965,000, interest rate of 5.00% (current rates + 150 basis points), bond proceeds for construction account of $276,136,686, and debt service reserve requirement of $27,531,986.

2) Series 2021 Bonds assume an estimated par amount of $138,870,000, interest rate of 5.50% (current rates + 200 basis points), bond proceeds for construction account of $123,983,580, and debt service reserve requirement of $13,844,185.

3) TIFIA loan estimated in a par amount of $141,415,000 including loan proceeds for construction account of $132,755,440, debt service reserve requirement, and costs of issuance. Analysis assumes interest rate of 3.03% based on market conditions as of May 11, 2017.

*Total FY2018-FY2022 Capital Budget base amount as of May 22,2017 is $857,181,660 which is subject to change pending adoption by the Board of County Commissioners.

APPENDIX G

PORT EVERGLADES DEPARTMENT
HISTORICAL ACTUAL REVENUES, EXPENSES AND DEBT SERVICE COVERAGE
(Dollars in Thousands)

	FY2012 Actual	FY2013 Actual	FY2014 Actual	FY2015 Actual	FY2016 Actual
Petroleum	$ 25,656	$ 27,530	$ 29,364	$ 32,749	$ 34,868
Cruise	60,160	62,153	59,422	52,315	55,323
Container	31,321	31,671	33,019	34,847	36,703
Bulk	2,003	1,701	2,815	2,827	3,419
Breakbulk/Neobulk	1,553	2,130	2,767	3,672	3,804
Real Estate	12,124	12,779	14,577	15,486	16,514
All others	10,114	8,861	11,230	11,428	11,966
Sub-total Revenues	142,931	146,825	153,194	153,324	162,597
Total Operating Revenues	142,931	146,825	153,194	153,324	162,597
Total Operating Expenses	72,145	74,938	78,804	79,844	83,270
Gross Margin	70,786	71,887	74,390	73,480	79,327
Net eligible non operating revenues/expenses	350	788	(333)	82	(291)
Net amount available for debt service	$ 71,136	$ 72,675	$ 74,057	$ 73,562	$ 79,036

PORT EVERGLADES DEPARTMENT
HISTORICAL ACTUAL REVENUES, EXPENSES AND DEBT SERVICE COVERAGE
(Dollars in Thousands)

	FY2012 Actual	FY2013 Actual	FY2014 Actual	FY2015 Actual	FY2016 Actual
Existing plus new debt covenant tests:					
Eligible bond covenant revenue	$ 71,136	$ 72,675	$ 74,057	$ 73,562	$ 79,036
Debt Service - Senior Lien (125% Test)	28,754	28,754	28,758	28,758	28,762
Debt Service - Subordinate Lien (110% Test)	32,042	32,072	32,072	32,068	32,068
Test (125%)	2.47	2.53	2.58	2.56	2.75
Test (110%)	2.22	2.27	2.31	2.29	2.46
Debt service computation:					
Existing senior debt service payments	28,754	28,754	28,758	28,758	28,762
Sub-total senior lien debt service	28,754	28,754	28,758	28,758	28,762
2008 subordinate lien debt service	3,288	3,318	3,314	3,310	3,306
Total debt service payments	$ 32,042	$ 32,072	$ 32,072	$ 32,068	$ 32,068

FITCH AFFIRMS BROWARD COUNTY, FL'S PORT FACILITY REVS AT 'A'; OUTLOOK REVISED TO POSITIVE

Fitch Ratings-New York-20 April 2017: Fitch Ratings has affirmed the 'A' rating on Broward County, Florida's outstanding $167 million port facilities senior revenue and refunding bonds. All senior bonds are secured by net revenues from Port Everglades (the port). The Rating Outlook has been revised to Positive from Stable.

The Positive Outlook reflects the expectation that the port will continue to demonstrate strong financial performance in terms of coverage and leverage, as well as anticipation that the port will maintain its diverse maritime operations and increasing revenue growth. The port is currently moving forward with a substantial capital plan that focuses on harbor deepening and additional container berths; finalization of the project budget and debt issuances in line with the current forecast will likely result in upward rating migration.

KEY RATING DRIVERS

The 'A' rating reflects the port's strong revenue streams which have become increasingly diversified in recent years and include minimum guarantees that partially mitigate operating volatility. The port remains a key gateway for global trade due to its strategic location on the Florida east coast; however, it remains exposed to competitive pressures from surrounding ports.

Revenue Risk: Volume - Midrange
Diversified Revenues, Some Cruise Exposure: The port generates diversified revenue streams from various business lines, notably cruise operations, container traffic, and petroleum distribution. The port's primarily local and regional cargo market limits its exposure to global trade volatility compared to peers. However, the port is exposed to fluctuations in the cruise business as well as competitive pressures from ports in southern Florida and on the east coast.

Revenue Risk: Price - Midrange
Market Exposure Mitigated by Contracts: Potential fluctuations in the discretionary cruise business and competition for cargo business add risk to Port Everglades' revenue profile, as with most Florida ports. The existence of guaranteed contracts with key cruise and cargo customers partially mitigates this concern, with Carnival's contract recently extended and Royal Caribbean's contract currently under negotiation. The majority of contracts have durations of less than 10 years, representing some renewal risk for the port.

Infrastructure Development & Renewal - Stronger
Manageable Capital Program: The port's sizable yet flexible FY2017-2021 capital improvement plan (CIP) totals approximately $767 million in project costs, with approximately 57% expected to be funded with new bond issuances. The port benefits from approximately $125 million in state and federal grants for several projects in the CIP, and remaining funding is expected to come from the port's substantial current cash balance and excess cash flow in forthcoming years. The port continues to aggressively pursue additional grants and other financing options and expects to reduce total borrowing costs for the upcoming CIP.

Debt Structure - Stronger
Conservative Debt Structure: Existing senior lien debt is fixed-rate and fully amortizing with final maturity in 2029. Subordinate variable-rate debt is synthetically fixed and backed by a letter of credit with a highly rated bank, serving to mitigate interest rate and basis risks. With $437

million in additional borrowings expected in 2017 and 2019, annual debt service will step up in the 2020-2027 timeframe before stabilizing to a manageable flat profile, with final maturity expected to extend to 2048.

Stable Financial Profile: The port's financial profile has historically generated robust coverage levels above 2.5x for senior bonds and above 2.2x for senior and subordinate bonds combined since FY2013. Liquidity is strong at a Fitch-calculated 1,138 days cash on hand in FY2016. While leverage is expected to increase as the port borrows a substantial amount for the upcoming CIP, Fitch's estimated all-in leverage levels of 3x-4x including expected additional debt remain consistent with the 'A' rating category.

PEER GROUP

Port Everglades compares favorably to peers in Florida, with less exposure to cruise as a share of operations than Canaveral ('A'/Stable Outlook), and similarly diverse revenue streams compared to higher-levered Jaxport ('A'/Stable Outlook). Canaveral has a similarly sized capital program with greater exposure to cruise activity, while Jacksonville has comparably diverse cargo business and a smaller CIP. Port Everglades also compares favorably to peers in terms of both coverage and leverage metrics, and surpasses both peers in terms of liquidity, though leverage will rise to match peers following borrowing for Port Everglades' CIP.

RATING SENSITIVITIES

Positive - Continued CIP progress, with costs consistent with planned levels while maintaining strong financial metrics including senior leverage at or below 4.0x.

Negative - Proceeding with the full borrowing component of the CIP in a low- to no-growth environment, resulting in senior lien coverage below 1.7x and leverage migration to levels above 5.0x.

CREDIT UPDATE

Performance Update

Port Everglades' operating revenues in FY2016 increased 6% to $163 million, continuing to build upon growth seen over the last five years at a compound annual growth rate (CAGR) of 3.2%. Revenue growth from cruise operations rebounded in FY2016, up 5.7% due to increased volume and additional service from Royal Caribbean. Cruise revenue declines previously seen in FY2015 stemmed from a combination of the expiration of capital cost-recovery charges and decreased passenger volumes. Driving growth in total operating revenues are cargo, petroleum, and real estate revenues. Cargo revenue growth of 5.3% is attributable to excess box charges for terminal operators after exceeding their contractual minimum guarantees for the year. Petroleum revenues increased 6.5% due to volume increases in gasoline, jet fuel and diesel fuel. In addition, lease renewals with terminal operators, leasehold expansions, and programmed rent increases for some port tenants contributed to an overall 6.7% increase in real estate revenues.

At the end of FY2016, Carnival Corporation's minimum annual passenger guarantee (MAG) was restructured from 1.7 million passengers to 1.4 million annually and scheduled to increase by 2% each year beginning in FY2017 before reaching a maximum of 1.8 million in FY2028. In addition, Carnival agreed to extend its agreement an additional five years to 2030, providing $173.8 million in additional revenue when compared to the terms of the original agreement. The high proportion of revenue from long-term guaranteed contracts with key cruise and cargo customers partially mitigates exposure to the discretionary nature of cruise activity and cyclical cargo markets, though the port remains vulnerable to long-term cyclicality and competition from other nearby ports.

Operating expenses increased 4.3% to $83.3 million in FY2016. The year-to-year cost fluctuation is primarily attributed to salary and wage increases, increases in costs for law enforcement and fire rescue services, as well as contractual services tied to provider increases. Overall, wage increases and additional staff have been the major contributors to operating expense growth in recent years, which has experienced a five-year CAGR of 3.1%. For FY2016, higher operating revenues from multiple business areas offset increased operating expenses. The budget indicates expenses are likely to increase in coming years, and it will be important for management to continue to control its expense profile going forward.

The FY2017-2021 CIP totals $767 million and includes major projects such as the Southport Turning Notch Expansion (STNE) and port-wide deepening and widening. An environmental component of the STNE has met the "Trending Toward Success" criteria, which allows the berth extension to continue moving ahead with planning and design, with final completion expected in 2020. The U.S. Army Corps of Engineers (USACE) has received federal authorization under the Water Infrastructure Improvements for the Nation (WIIN) Act to move forward with the ongoing pre-construction, engineering and design phase of the port's deepening and widening project. Once complete, STNE will add up to five new berths for container ships, which we expect to contribute to the port's operating margin. The CIP assumes approximately $437 million in future bond proceeds to fund the project costs net of anticipated grants and pay-as-you-go contributions from operating funds. The bond issuances are expected to occur sometime after 2017 ($305 million) and 2019 ($132 million).

Fitch notes that the port continues to pursue additional grants and alternative financing options to reduce its future debt burden, and is currently in the process of preparing the formal letter of interest (LOI) to submit for consideration by the Board of County Commissioners, which will then be submitted to begin the review process of an estimated $97 million TIFIA loan with the U.S. Department of Transportation. Should these applications be successful and funds be received, Fitch expects the total debt quantum to be reduced (either outright in the case of grant substitution, or by reducing required interest costs in the case of TIFIA).

Port Everglades' financial performance has historically been strong with debt service coverage ratios (DSCR) on the senior lien of 2.75x in FY2016. The port has maintained strong cash and investment balances in recent years, with a Fitch-calculated 1,138 days cash on hand on the balance sheet in FY2016 while paying for capital improvements. The port intends to continue using excess cash flow and liquidity for pay-go capital investments in its capital program.

Fitch Cases

Fitch's base case reflects the port's forecast through 2021, which includes additional borrowing and conservative growth assumptions for operating revenues. Revenues grow at a CAGR of 2.4% over the forecast period through 2021, and expenses grow at 4.3% over the same period. Fitch assumes the full projected borrowing amounts in 2017 and 2019 in all cases, and as a result senior annual debt service requirements grow to approximately $41.7 million from $28.8 million. In Fitch's base case, coverage reaches a minimum of 1.74x on the senior lien and 1.62x on an all-in basis including subordinate lien debt service in 2020. Leverage rises to 3x-4x upon issuance of new debt in 2017 and 2019.

Fitch's rating case considers coverage levels under a sustained drop of 0.6% annually following FY2016 actual revenue, resulting in essentially flat revenue growth levels. Expenses grow at a CAGR of 3.7% over the forecast period in comparison to 4.3% in the base case to reflect lower costs from lower activity levels. Senior coverage levels average 1.93x through 2021, with a minimum of 1.43x (all-in average is 1.76x with a minimum of 1.32x, above the 1.1x covenant). Leverage including expected borrowings increases to 4x-5x through the forecast period. A

substantial unrestricted cash balance and the ability to delay capital projects give the port ample protection in the event of a downturn.

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Applicable Criteria
Rating Criteria for Infrastructure and Project Finance (pub. 08 Jul 2016)
https://www.fitchratings.com/site/re/882594
Rating Criteria for Ports (pub. 17 Oct 2016)
https://www.fitchratings.com/site/re/889015

MOODY'S
INVESTORS SERVICE

New Issue: Moody's assigns initial A2 Rating to Broward County Seaport Enterprise (FL) Subordinate Revenue Bonds, Series 2008 and affirms A1 rating on senior port facility bonds; Outlook is stable

Global Credit Research - 22 Sep 2015

The port has $218.0 million in debt outstanding

BROWARD (COUNTY OF) FL SEAPORT ENTERPRISE
Ports
FL

Moody's Rating

ISSUE	RATING
Subordinate Port Facilities Refunding Revenue Bonds, Series 2008 (Port Everglades)	A2
Sale Amount	$31,660,000
Expected Sale Date	07/10/08
Rating Description	Revenue: Government Enterprise

Moody's Outlook STA

NEW YORK, September 22, 2015 --Moody's Investors Service has assigned an A2 rating on Broward County Seaport Enterprise (FL) Subordinate Port Facilities Refunding Revenue Bonds, Series 2008 (Port Everglades) and has affirmed the A1 rating on the outstanding revenue bonds. Outlook is stable.

SUMMARY RATING RATIONALE

The A1 rating on the senior port facility bonds reflects the port's strong fundamentals with respect to its size and region of operation, continued stable financial performance, revenue diversity with established cruise and cargo activities, a strong management team and competitive position. The rating also incorporates the port's adequate liquidity, several long-term agreements ensuring medium term financial stability and a declining debt profile which could absorb some additional debt through prudent management of the capital program. The port is also well positioned to benefit from anticipated increases in trade activity from the Panama Canal expansion. The A2 rating for the subordinate bonds reflects the subordinate pledge on port cash flows as security for the bonds.

OUTLOOK

The stable outlook reflects our expectations for continued stable revenue growth supported by cruise operations, container traffic, petroleum distribution, a large share of revenues under long-term contracts with minimum annual revenue guarantees as well as demonstrated state and federal support for the port's expansion plan.

WHAT COULD MAKE THE RATING GO UP

-Continued period of significant growth as a result of a structural and more permanent shift in competitive position is experienced

-Stronger liquidity

-Higher coverage ratios than recent levels

WHAT COULD MAKE THE RATING GO DOWN

-Sustained reduction in coverage ratios below 2.0x as a result of increased borrowing and lower revenue growth

-Declines in liquidity that could be insufficient to support satisfactory operating flexibility and capital requirements as well as to offset termination risk associated with the variable rate debt

STRENGTHS

-Diverse revenue streams, with cruise accounting for 39% of operating revenues, containerized cargo 22%, and petroleum 19% during FY 2014

-Competitive advantages including close proximity to the Fort Lauderdale-Hollywood International Airport, very short steam time to open ocean (1.7 miles), and direct access to I-595 which connects to I-95 and FL Turnpike

-Recent completion of the Intermodal Container Transfer Facility (ICTF) in July 2014 allowing loading and off-loading from rail directly at the port, increasing efficiency, reducing congestion on interstate highways and increasing intermodal capacity at the port

-Service area market is populous and relatively affluent, with steady population growth and demand for imports and petroleum

-The port's financial history has been stable, benefitting from strong management, a declining debt profile since FY 2010 and stable coverage ratios

-The port is well positioned to benefit from continued Latin American trade growth, with Caribbean, Central and South America representing 83.2% of trade market share in TEUs in FY 2014.

CHALLENGES

-Large $792.6 million 5-year capital plan is expected to be 52% debt financed and could depress coverage ratios if revenue growth does not materialize as planned in the later year

-Liquidity is expected to decline in the medium term as the port completes its capital program

-The port is close to several competing ports, including Miami, Tampa, Canaveral, and Jacksonville, which each compete with Everglades for various types of revenue sources. Cargo share has gone up, while cruise share declined compared to competing state ports

-Annual tariff increases expected to continue in the medium term as a funding source for capital projects, amid a high competitive environment

RECENT DEVELOPMENTS

The current irrevocable direct-pay letter of credit with the Royal Bank of Canada (LT Deposit Note Rating, Aa3 negative) supporting the port's Series 2008 subordinate lien variable rate bonds requires a long-term rating on the bonds.

The port experienced growth above projections for FY 2014. Cruise passengers increased 11.1% to 4.0 million passengers. Despite this increase, cruise revenues decreased in FY 2014 as a result of a decreased user charge to Royal Caribbean, following the completion of cost recovery payments associated with the 2009 renovation of Cruise Terminal 18. Royal Caribbean was responsible for making $54 million in payments across six years to the port as a part of the cost recovery. The payments were completed in CY 2013, and as a result Royal Caribbean had a decreased user charge in FY 2014. Decreases in cruise revenue were made up by growth in container and other cargo revenues. Containers reached 1.01 million TEUs, a 9.2% increase for the port versus the prior year. The port has continued to benefit from the growth in Latin America, with Caribbean, Central and South America representing 83.2% of trade market share in TEUs in FY 2014 for the port. Moody's notes that this cargo may be subject to volatility as the Latin America region's economy starts to slow down. The port also experienced a 3% increase in petroleum revenues, and nearly 40% of total petroleum fuels distributed in Florida originated at the port.

Forecasted results for FY 2015 show the port experiencing a 6.7% decline in cruise passengers. The decrease is due to the port having two fewer vessels over the summer, along with the Independence of the Seas, the replacement vessel for the Allure of the Seas which was moved to the European market, holding 2,000 fewer passengers per cruise. The port continues, however, to experience growth in containers, with 980,000 TEUs through August 2015, which would result in the TEUs in FY 2015 being 1.06 million, or a 4.0% increase.

The port also provided its 2016-2020 capital plan. The new plan is budgeted at $792.6 million, compared to the previous 5 year plan (2015-2019) of $635.6 million. The largest investment is intended for the cargo business

segment accounting for 37% of CIP, while investment in the cruise segment accounts for 11% and the deepening project accounts for 24%. The majority of the funding will come from debt issuances, with two issuances planned for $170 million in 2017 and $287 million in 2019.

DETAILED RATING RATIONALE

REVENUE GENERATING BASE

The port benefits from diverse revenue streams, with cruise accounting for 39% of total operating revenues, container for 22%, petroleum revenues 19% and the balance (bulk, real estate, and other revenues) 20% in FY 2014. Cruise passengers increased, for the first time since 2011, to 4.0 million passengers, or an increase of 11.1%. The increase is due to five cruise ships sailing out of the port during the summer versus the regular three (due to a temporary repositioning). In FY 2012, Discovery Cruise Lines discontinued the only daily cruise service at the port, and was replaced by Balearia Caribbean with a smaller, higher-speed transport service, but less frequent departures.

The port is homeport to the world's two largest cruise ships (Royal Caribbean's Oasis of the Seas & Allure of the Seas). The port currently has a long-term agreement with Carnival Corporation ("Carnival," Baa1 stable) for a 15-year term out to 2025 and Royal Caribbean Cruises, LTD ("RCL," Ba1 stable) until 2017 that provide for minimum annual guarantees representing approximately 93% of estimated FY 2015 cruise revenues of $57.7 million. During FY 2012 the port completed the renovation of four existing cruise terminals at a cost of $54 million, as part of the agreement with Carnival. The RCL agreement can be terminated with 12 months' notice and without penalty if user charges increase by more than 25% in one year. The Carnival agreement can be terminated with 12 months' notice and without penalty if user charge increases by more than 23% in one year, and constitutes its largest homeport commitment.

During FY 2014 the port ranked first in Florida for international cargo activity, and had an overall increase in cargo tonnage of 8.0% to 6.5 million versus 6.0 million tons in FY 2013. Revenue from containerized cargo increased 4.3% in FY 2014 to $33.1 million due to the volume increases from the top shipping lines operating at the port.

Minimum annual revenue guarantees for FY 2015, including cruise, cargo and rent represent approximately 55% of the port's projected FY 2015 revenues. Minimum guarantees from cruise lines make up the largest portion, comprising the majority of projected FY 2015 cruise revenues providing important stability to a fundamentally more volatile revenue stream. Overall, minimum annual guarantees and leases under long-term contracts account for 63% of the projected total operating expenses and debt service for the FY 2015-2018 period.

While the port's market position with relatively stable trade partners in the Caribbean, Central and South America will continue to support operations, the port faces active competition from nearby ports in Miami, Tampa, Canaveral, and Jacksonville. Further, the port renewed several long-term cargo agreements in FY 2012-2013, with one of the most significant being Chiquita Fresh North America. The port also extended Mediterranean Shipping Company (MSC)'s agreement through 2024 and has already been contacted regarding service to Cuba.

Petroleum revenues have continuously represented approximately 20% of total operating revenues in the past five years. Petroleum tonnage peaked in FY 2005 at 18.3 million tons and had a primarily declining trajectory until stabilizing in FY 2013. Petroleum activity at the port saw a slight increase to 15.9 million tons (including truck and rail). The port receives dockage and wharfage fees from all 12 fuel companies that own private storage and distribution facilities within the Port.

FINANCIAL OPERATIONS AND POSITION

Operating revenues have continued to increase since FY 2010 reaching $153.2 million in FY 2014 versus $147.3 million in FY 2013. The increase in FY 2014 primarily reflects lower cruise revenues combined with increases in container and petroleum revenues due to the growth in activity for these cargo types. Unaudited results for FY 2015 show revenue remaining flat compared to FY2014, due to a decrease in cruise revenues being offset by increases in container revenues. The decrease in cruise revenue is associated with the decrease in cruise passengers, which is the result of the port having fewer cruise ships during the year, along with the Allure of the Seas being removed from the port to service Europe.

In FY 2014 the debt service coverage ratio (DSCR) was 2.56x on a senior basis and 2.30x on a total basis which is in line with recent historical coverage ratios for both senior and total. Coverage was above 3.00x in FY 2012 was a result of a temporary decrease in debt service costs from $32 million to $19 million due to a deferral of principal from a refunding in FY 2011. For FY 2015 the port is estimating senior and total DSCR of 2.42x and 2.17x

respectively. Total debt service is scheduled to remain around $32 million in FY 2015 and FY 2016, before stepping down temporarily in 2017. Proforma for planned debt issuances in FY 2016-2018, debt service should increase to above $30 million in 2018, and again in 2019 and 2020 at which point debt service will be over $45 million.

The port's most recently provided projections shows senior and total coverage ratios in the 2.50x and 2.2x range respectively for the 2016 to 2019 period. Since the planned additional debt of $457 million is expected to be issued in two separate years in FY 2017 and 2019, and approximately $55 million of principal debt payments will be made by prior to the first debt issuance, the increased debt service will not start to make a significant difference until FY 2019.

Longer range projections including an additional debt issuance of $390 million in 2020 show coverages for the 2020-2024 period dropping to the low 2.0x range for senior and less than 2.0x on a combined basis, assuming average annual growth of 11.8% over the period which is higher than historical rates. This higher level of growth takes into consideration the major capital improvement plans which are expected to allow for additional cargo and cruise passenger growth at the port. In the event this growth does not materialize, coverage ratios could drop significantly.

Liquidity

The port has historically maintained strong liquidity, with cash on hand averaging 948 days over the FY 2008-2012 period. Days cash increased in FY 2014 to 987 from 794 days in FY 2013. Unaudited FY 2015 results show days cash increasing to above 1,000 days. The port expects liquidity to decline from the current levels as it implements its large capital program over the next three to five years, as it will use liquidity to fund a portion of the plan. Cash to debt improved to 89.9% in FY 2014 from 62.9% in FY 2014 due to the increase in cash and the ongoing amortization of debt outstanding. Moody's expects cash to debt ratios to decline as the port progresses through its capital plan, until new planned debt issuances starting in FY 2016.

DEBT AND OTHER LIABILITIES

Debt Structure

As of September 30, 2014 the port had $218.0 million in debt outstanding across two liens. The senior obligations are all fixed rated debt, while the subordinate bonds are variable debt supported with a direct-pay letter of credit.

RATED DEBT (as of September 1, 2015)

2008 Subordinate Port Facilities ($31.7 million): A2

2009A Port Facilities ($66.8 million): A1

2011A, B, & C Port Facilities ($119.5 million): A1

Debt-Related Derivatives

The port has a swap agreement with Goldman Sachs Capital Markets for a notional value of $33.7 million, matching the principal amount of the Series 2008 subordinate lien bonds (not rated by Moody's). Under the swap agreement, the port pays a fixed rate of 3.642% and receives SIFMA. Swap termination events include a downgrade of the counterparty below Baa1 or equivalent by any rating agency, or a downgrade of the Port below Baa2 or equivalent by any rating agency. The Port does not have collateral posting requirements. As of September 30, 2014 and 2013, the swap had a negative fair value of $3,991,000 and $4,084,000, respectively.

A direct-pay letter of credit with Bank of Nova Scotia (LT Deposit Note Rating, Aa2 negative) supporting the port's Series 2008 subordinate lien variable rate bonds expired in July 2014 and was replaced with an irrevocable direct-pay letter of credit from the Royal Bank of Canada (LT Deposit Note Rating, Aa3 negative) issued in an amount equal to the outstanding $35,735,000 of original aggregate principal (~14% of current debt outstanding). The letter of credit will terminate upon the earlier of October 2, 2019 (as extended from time to time) or by earlier dates as defined in the letter of credit reimbursement agreement. If no event of default has occurred, bank bonds must be repaid in quarterly installments over a three year period. If an event of default has occurred, bank bonds must be repaid within 15 days. Events of default include a downgrade of the port's rating (on any lien) to below Baa2 or its equivalent by any rating agency, which remains an unlikely event given the port's current A1 rating level.

Pensions and OPEB

The financial impact of unfunded and OPEB obligations of this issuer are minor and thus not currently a major factor in our assessment of its credit profile.

MANAGEMENT AND GOVERNANCE

The port has an approved, five-year (2016-2020) CIP of $792.6 million, which includes the deepening and widening of channels, improved road connectivity, adding more berth space, and cruise terminal expansions. Primary funding sources for the CIP include a combination of internal funding/port fund balances (35%), potential future bond proceeds (52%), and potential future grants (13%). The port also intends to increase tariffs as a funding source, while looking to maintain its competitive position against nearby ports.

The Southport Turning Notch project is expected to be completed in 2019, resulting in the extension of its length from 900 feet to 2,400 feet, at the existing 42ft depth, creating five new cargo berths. The eastern portion will be further deepened to 48ft to accommodate post-Panamax vessels. Project completion date is 2022. The environmental community has expressed concerns with respect to the deepening project and its potential impact on coral reefs. The port is nearing the end of the Feasibility Study/Environmental Impact Statement phase of the project. The total estimated cost of the project is $374 million with the federal Share at $190 million, and the non-federal Share at $184 million. The non-federal funding will be financed through a combination of port user fees and potential state funding. The port has already received $62 million in programmed commitments through grants and FDOT participation in the Southport Turning Notch and the Slip 2 Westward Lengthening projects.

The port plans to issue $170 million in FY 2017 and $287 million in FY 2019 to fund more than 50% of its CIP. The port also plans to issue $391 million for the FY 2020-2024 CIP, however this is still subject to revision every 2-3 years. The borrowing would be to partially fund large capital projects including completion of the deepening and widening project, and filling of the Tracor Basin to add berth length and additional cargo space in Midport. The CIP also contemplates an additional $105 million in State and Federal grant funding between FY2016 and FY2020.

The port is overseen by the Board of County Commissioners. The nine member board is the legislative body of the county government. The board appoints the county administrator, who is responsible for directing the functions of the county government through several offices, seven major divisions, and various subdivisions. All proposals, budgeting, tariff increases, and capital plans at the port are subject to approval by the Board of County Commissioners.

OTHER CONSIDERATIONS: MAPPING TO THE GRID

Note: The grid is a reference tool that can be used to approximate credit profiles in the Port Industry in most cases. However, the grid is a summary that does not include every rating consideration. Please see Public Port Revenue Bonds for more information about the limitations inherent to grids.

METHODOLOGY SCORECARD FACTORS

Market Position-Port Size: A ($153.2 million)

Market Position-Quality of Area and Competition: A

Market Position-Operational Restrictions: A

Diversity and Volatility-Financial Revenue Variation (5-year CAGR): Aaa (6.9%)

Diversity and Volatility-Customer Diversity: Baa

Capital Program-Complexity and Size of Capital Program: Caa

Key Credit Metrics-Net Revenue DSCR (3 year average): Aa (3 year average: 2.72x)

Debt to Operating Revenue (3 year average): Aa (3 year average: 1.76x)

Notching for Liquidity: +0.5 notch (89.9% cash to debt)

Scorecard Outcome: A1

KEY STATISTICS

Port Type: Landlord

Taxing Authority: None

Largest Trading Partner: South America

Largest Revenue Type: Cruise

Cruise Passengers, FY 2014: 4.0 million

Cruise Passenger Growth, FY 2014: 11.1%

Estimated Passenger Growth, FY 2015: -3%

Largest Cargo Type: Petroleum

Petroleum Barrels, FY 2014: 112,370,083

Petroleum Growth, FY 2014: 3.4%, 3.0%

TEUs, FY 2014: 1,013,344

TEU Growth, FY 2014: 9.2%

% Discretionary Cargo: Minimal, some petroleum

MAGs as % Total Revenues: FY 2015 55% of Operating Revenues

Sr Lien Debt Service Coverage FY 2014: 2.56x

Estimated Sr Lien DSC, FY 2015: 2.42x

Aggregate Debt Service Coverage, FY 2014: 2.30x

Estimated Aggregate DSC, FY2015: 2.17x

Debt Ratio, FY 2014: 23.0%

Days Cash on Hand, FY 2014: 987

OBLIGOR PROFILE

Port Everglades (the "Port") is a deep-water port located within the Cities of Fort Lauderdale, Hollywood and Dania Beach, Florida, as well as in unincorporated areas of southeastern Broward County, approximately 23 miles north of Miami and 48 miles south of West Palm Beach. It is comprised of more than 2,190 acres, of which more than 1,277 acres are owned by the county. The port serves the import and export shipping business primarily in petroleum, building materials, other bulk and break bulk cargos, and general and containerized cargo. Port Everglades is also a center for passenger cruise ships and the County operates a foreign trade zone at the port.

LEGAL SECURITY

Net revenues of port facilities. Legal provisions also include a 125% senior and a 110% subordinate rate covenant, a 125% additional senior bonds test and 110% additional combined senior and subordinate liens bonds test, and a debt service reserve requirement equal to the lesser of (i) maximum annual debt service, (ii) average annual debt service requirement, or (iii) 10% of original proceeds from outstanding bonds for both senior and subordinate liens.

The debt service reserve associated with the Series 2011 Bonds ($17.25M) is funded with a surety policy from Assured Guaranty Municipal Corp (A2, Stable) while the remaining outstanding senior and subordinate series have cash funded reserves.

USE OF PROCEEDS

Not applicable.

RATING METHODOLOGY

The principal methodology used in this rating was Public Port Revenue Bonds published in December 2013.

Please see the Credit Policy page on www.moodys.com for a copy of this methodology.

REGULATORY DISCLOSURES

For ratings issued on a program, series or category/class of debt, this announcement provides certain regulatory disclosures in relation to each rating of a subsequently issued bond or note of the same series or category/class of debt or pursuant to a program for which the ratings are derived exclusively from existing ratings in accordance with Moody's rating practices. For ratings issued on a support provider, this announcement provides certain regulatory disclosures in relation to the rating action on the support provider and in relation to each particular rating action for securities that derive their credit ratings from the support provider's credit rating. For provisional ratings, this announcement provides certain regulatory disclosures in relation to the provisional rating assigned, and in relation to a definitive rating that may be assigned subsequent to the final issuance of the debt, in each case where the transaction structure and terms have not changed prior to the assignment of the definitive rating in a manner that would have affected the rating. For further information please see the ratings tab on the issuer/entity page for the respective issuer on www.moodys.com.

Regulatory disclosures contained in this press release apply to the credit rating and, if applicable, the related rating outlook or rating review.

Please see www.moodys.com for any updates on changes to the lead rating analyst and to the Moody's legal entity that has issued the rating.

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Summary:

Broward County, Florida Port Everglades; Ports/Port Authorities

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Summary:

Broward County, Florida
Port Everglades; Ports/Port Authorities

Credit Profile		
Broward Cnty, Florida		
Port Everglades , Florida		
Broward Cnty (Port Everglades Auth) Rfdg		
Long Term Rating	A-/Stable	Affirmed
Broward Cnty (Port Everglades)		
Long Term Rating	A-/Stable	Affirmed
Broward Cnty (Port Everglades)		
Unenhanced Rating	A-(SPUR)/Stable	Affirmed

Many issues are enhanced by bond insurance.

Rationale

Standard & Poor's Ratings Services has affirmed its 'A-' rating on Broward County, Fla.'s port facilities revenue bonds, issued on behalf of Port Everglades. The outlook is stable.

In our view, key credit strengths include the following:

- The port's favorable location, which affords it excellent access to open-ocean shipping lanes, Fort Lauderdale-Hollywood International Airport, and major Latin American and Caribbean markets;
- Relatively diverse revenue sources; and
- Historically strong total debt service coverage (DSC), no lower than 1.6x in the past five fiscal years and that we expect to be near 2x, including planned tariff rate increases, in the next five.

We believe credit concerns include:

- A significant increase in leverage as a results of debt financing its capital improvement plan; and
- The port's concentration within its cruise business, with Carnival Corp. and Royal Caribbean Cruises Ltd. each accounting for approximately 42% of total cruise revenues in fiscal 2013.

Net port revenues secure the bonds, as does a debt service reserve (DSR) funded to maximum annual debt service (MADS). The debt service reserve requirement -- which equals MADS (approximately $21.8 million) -- on all bonds except for the 2009 series are satisfied with a surety policy from MBIA Insurance Corp. The bond documents do not require the port to replace a surety provider if the rating on it drops below a certain level. The port has approximately $205.2 million in senior parity debt. It also has $33.7 million in series 2008 subordinate port facilities refunding revenues bonds. All senior debt is fixed-rate, while the subordinate debt is variable-rate and 100% synthetically fixed from a floating-to-fixed rate swap with Goldman Sachs Groups Inc. As a result, the port's exposure to unhedged variable-rate debt is zero. As of Nov. 24, 2014, the swap had a mark-to-market value of negative $4.3 million, meaning

if the swap was terminated then, the port would owe approximately this to the counterparty. A termination trigger under the swap agreement occurs for the port if we lower the rating on the bonds below 'BBB'. We consider the contingent liquidity risk low given the difference between the current and trigger ratings. We believe the port has ample liquidity to manage any termination risks. It is not required to post any collateral under the swap agreement.

Port Everglades is a county-owned enterprise. It ranks as the busiest containerized cargo port in Florida. It is also the second-busiest multiday cruise port worldwide. Port Everglades' convenient access points; deep channel; proximity to Latin America and the Caribbean; and extensive, modern and expandable facility infrastructure have enabled it to remain competitive in all of its major business lines.

The port has historically maintained what we consider diverse operations, enabling solid financial performance through weaker economic conditions. It projects its revenues from cruise operations, containerized cargo, and petroleum at 38.8%, 21.%, and 19.2%, respectively, of the total in fiscal 2014 based on preliminary results.

Declining demand for construction material coupled with a generally weaker economy contributed to declines in cargo, petroleum and bulk volume through 2009 and 2010. However, container cargo and bulk cargo rebounded somewhat from 2011-2013. In fiscal 2014, cargo is up 8% compared with the same period a year earlier. Break bulk and bulk cargo has improved 46% in fiscal 2014; petroleum tons and ship calls are up 3%. Revenues from bulk and break-bulk cargo constitute 3.6% of total operating revenues.

The port's cruise operations remained solid through fiscal 2014, in our view, with passenger volume at approximately 3.97 million passengers. Historically, cruise revenues have contributed 26%-30% of total operating revenues, although this has been above 40% since 2011.

Preliminary results show that total operating revenues increased 4% to $153.2 million in fiscal 2014, while operating expenses grew by 6%. Net revenues provided 2.55x DSC on the senior lien and 2.29x on senior- and subordinate-debt service, which we view as still strong. Historically, the port has maintained what we consider relatively strong senior-lien DSC, no lower than 1.6x since fiscal 2010. Based on projected bond issuances in 2016 and 2018, and on projected net revenues, management expects total DSC to remain adequate; no lower than 2.17x through fiscal 2019. These projections assume an annual tariff increase of 2.5%. The port has maintained what we view as strong liquidity historically. As of Sept. 30, 2014, it had approximately 968 days' of unrestricted cash. We expect liquidity to remain strong.

In June 2014, the county adopted the second update to the 2007 master plan. The update identifies $1.6 billion in capital investments over 20 years, focused on increasing capacity and productivity at Port Everglades. The CIP totals $635 million through 2019, including approximately $435.6 in master plan projects. The majority of the capital improvements include expansions and improvements of its southport and northport facilitates, as well as the deepening and widening of its channel. Other projects include a new bulk storage yard, improvements to the cruise terminal, and the relocation of the foreign trade zone. Bond issuances in each year from 2016-2018 will provide an estimated $315 million to finance these projects, and management expects additional funding from state grants.

Outlook

The stable outlook reflects our expectation that the port's planned annual rate increases and diverse revenue sources will allow it to maintain strong senior-lien DSC and liquidity levels. Should DSC levels fall below forecast due to increased leverage or a drop in demand, we could lower the rating. We don't expect to raise the rating during the outlook period given the port's borrowing plans.

Related Criteria And Research

Related Criteria

- Criteria: Port Facilities Revenue Bonds In The U.S. And Canada, March 19, 2014
- USPF Criteria: Contingent Liquidity Risks, March 5, 2012

Complete ratings information is available to subscribers of RatingsDirect at www.globalcreditportal.com. All ratings affected by this rating action can be found on Standard & Poor's public Web site at www.standardandpoors.com. Use the Ratings search box located in the left column.

APPENDIX I

Broward County, Florida (Port Everglades) Debt Service Analysis Port Revenue Bonds, Series 2017A ($132,755,440 Project Fund)			
	Tax-Exempt	**AMT**	**TIFIA**
Par Amount	$124,710,000	$127,420,000	$141,415,000
Project Fund Deposit	$132,755,440	$132,755,440	$132,755,440
True Interest Cost (TIC)	3.89%	4.06%	3.03%
Total Debt Service	$242,927,950	$248,516,150	$217,282,867
Maximum Annual Debt Service	$8,100,250	$8,286,200	$7,245,187
Average Annual Debt Service	$8,097,598	$8,283,872	$7,242,762

1) The interest rate used is based on market conditions as of May 11, 2017.
The County's actual results may differ.

2) Assumes a 30-year level debt service structure.

3) Assumes total costs of issuance (including UW discount of $10 per bond).

4) Assumes a debt service reserve funded through bond proceeds.

Broward County, Florida (Port Everglades)
Debt Service Comparison Port Revenue Bonds, Series 2017A
($132,755,440 Project Fund)

	Tax-Exempt Bond Transaction		AMT Bond Transaction		TIFIA Loan		Savings Comparison	
Maturity	Principal	Debt Service	Principal	Debt Service	Principal	Debt Service	+/- TE	+/- AMT
9/1/2018	$1,985,000	$8,097,750	$1,975,000	$8,286,200	$2,960,000	$7,244,875	($852,876)	($1,041,326)
9/1/2019	$2,025,000	$8,098,050	$2,030,000	$8,281,950	$3,050,000	$7,245,187	($852,864)	($1,036,764)
9/1/2020	$2,105,000	$8,097,050	$2,115,000	$8,285,750	$3,140,000	$7,242,772	($854,279)	($1,042,979)
9/1/2021	$2,190,000	$8,097,850	$2,220,000	$8,285,000	$3,235,000	$7,242,630	($855,221)	($1,042,371)
9/1/2022	$2,280,000	$8,100,250	$2,330,000	$8,284,000	$3,335,000	$7,244,609	($855,641)	($1,039,391)
9/1/2023	$2,390,000	$8,096,250	$2,445,000	$8,282,500	$3,435,000	$7,243,559	($852,692)	($1,038,942)
9/1/2024	$2,510,000	$8,096,750	$2,570,000	$8,285,250	$3,540,000	$7,244,478	($852,272)	($1,040,772)
9/1/2025	$2,635,000	$8,096,250	$2,695,000	$8,281,750	$3,645,000	$7,242,216	($854,034)	($1,039,534)
9/1/2026	$2,770,000	$8,099,500	$2,830,000	$8,282,000	$3,755,000	$7,241,773	($857,728)	($1,040,228)
9/1/2027	$2,905,000	$8,096,000	$2,975,000	$8,285,500	$3,870,000	$7,242,996	($853,004)	($1,042,504)
9/1/2028	$3,050,000	$8,095,750	$3,120,000	$8,281,750	$3,985,000	$7,240,735	($855,015)	($1,041,015)
9/1/2029	$3,205,000	$8,098,250	$3,280,000	$8,285,750	$4,110,000	$7,244,990	($853,261)	($1,040,761)
9/1/2030	$3,365,000	$8,098,000	$3,440,000	$8,281,750	$4,230,000	$7,240,457	($857,544)	($1,041,294)
9/1/2031	$3,535,000	$8,099,750	$3,615,000	$8,284,750	$4,360,000	$7,242,288	($857,463)	($1,042,463)
9/1/2032	$3,710,000	$8,098,000	$3,795,000	$8,284,000	$4,490,000	$7,240,180	($857,821)	($1,043,821)
9/1/2033	$3,895,000	$8,097,500	$3,985,000	$8,284,250	$4,630,000	$7,244,133	($853,368)	($1,040,118)
9/1/2034	$4,090,000	$8,097,750	$4,185,000	$8,285,000	$4,770,000	$7,243,844	($853,907)	($1,041,157)
9/1/2035	$4,295,000	$8,098,250	$4,395,000	$8,285,750	$4,915,000	$7,244,313	($853,938)	($1,041,438)
9/1/2036	$4,510,000	$8,098,500	$4,615,000	$8,286,000	$5,060,000	$7,240,388	($858,112)	($1,045,612)
9/1/2037	$4,735,000	$8,098,000	$4,845,000	$8,285,250	$5,215,000	$7,242,070	($855,930)	($1,043,180)
9/1/2038	$4,970,000	$8,096,250	$5,085,000	$8,283,000	$5,375,000	$7,244,056	($852,195)	($1,038,945)
9/1/2039	$5,220,000	$8,097,750	$5,340,000	$8,283,750	$5,535,000	$7,241,193	($856,557)	($1,042,557)
9/1/2040	$5,480,000	$8,096,750	$5,605,000	$8,281,750	$5,705,000	$7,243,483	($853,268)	($1,038,268)
9/1/2041	$5,755,000	$8,097,750	$5,885,000	$8,281,500	$5,875,000	$7,240,621	($857,129)	($1,040,879)
9/1/2042	$6,045,000	$8,100,000	$6,180,000	$8,282,250	$6,055,000	$7,242,609	($857,392)	($1,039,642)
9/1/2043	$6,345,000	$8,097,750	$6,490,000	$8,283,250	$6,240,000	$7,244,142	($853,608)	($1,039,108)
9/1/2044	$6,660,000	$8,095,500	$6,815,000	$8,283,750	$6,425,000	$7,240,070	($855,430)	($1,043,680)
9/1/2045	$6,995,000	$8,097,500	$7,155,000	$8,283,000	$6,620,000	$7,240,393	($857,108)	($1,042,608)
9/1/2046	$7,345,000	$8,097,750	$7,515,000	$8,285,250	$6,825,000	$7,244,807	($852,944)	($1,040,444)
9/1/2047	$7,710,000	$8,095,500	$7,890,000	$8,284,500	$7,030,000	$7,243,009	($852,491)	($1,041,491)
Total	**$124,710,000**	**$242,927,950**	**$127,420,000**	**$248,516,150**	**$141,415,000**	**$217,282,867**	**-$25,645,083**	**-$31,233,283**