FINAL PLAN

5.1 Introduction

The 20-Year Vision Plan discussed in Phase I, Element 3: Plan Development was the Vision Plan presented to the Broward County Board of County Commissioners (Board) in February 2007. This Vision Plan identified the infrastructure needs to achieve the projected market demand determined by the 20-year planning horizon for the Port's four core commodities; containerized cargo, non-containerized cargo, cruise, and liquid bulk. It also identified the infrastructure needs, the benefits from the improvements, and specific impacts to existing land uses.

Subsequently, in Phase II, through a series of interactive workshops with Port tenants, users, and other stakeholders and meetings with the Port's Focus Group,[1] specific impacts to existing land uses were discussed and alternative solutions were identified. The tenants, users, and stakeholders also identified additional areas of concern that required further evaluation. This element discusses these areas of concern and presents the Final Master Plan that emerged from this iterative planning process.

5.2 Evaluation of the Phase I, 20-Year Vision Plan

Figure 5.2-1 shows the major areas of impact and/or concern that were identified by the Port's tenants and stakeholders during the Phase II planning process. These included:

- The Phase I Vision Plan did not locate a berth/terminal for the day cruises that currently call at Cruise Terminal 1. Cruise Terminal 1 is envisioned to be removed due to the expansion program of the Broward County Convention Center.
- The extension of Slip 3 to the west impacted an existing petroleum operator, required major changes to the FPL Intake Canal, and berthed all petroleum vessels in one slip, without providing redundancy for petroleum vessel berthing in the event of an incident within that slip.
- The proposed wharf structure on the eastern boundary of the Conservation Easement introduced obstacles to navigation in the Intracoastal Waterway (ICW) and also provided an obstacle to manatees having access to the warm water of the FPL Discharge Canal and the mangroves in the Conservation Easement.
- The Phase I Vision Plan, by extending the Turning Notch to the west and locating a wharf on the south side of the Notch, introduced ship-to-shore cranes that further penetrated the flight protection surfaces of the Fort Lauderdale-Hollywood International Airport (FLL), thus requiring additional permitting approvals.
- Further mitigation of traffic congestion with additional truck queuing on McIntosh Road was needed.
- The Dania Cut-Off Canal represented an opportunity for berth development that was not in the Phase I Vision Plan.

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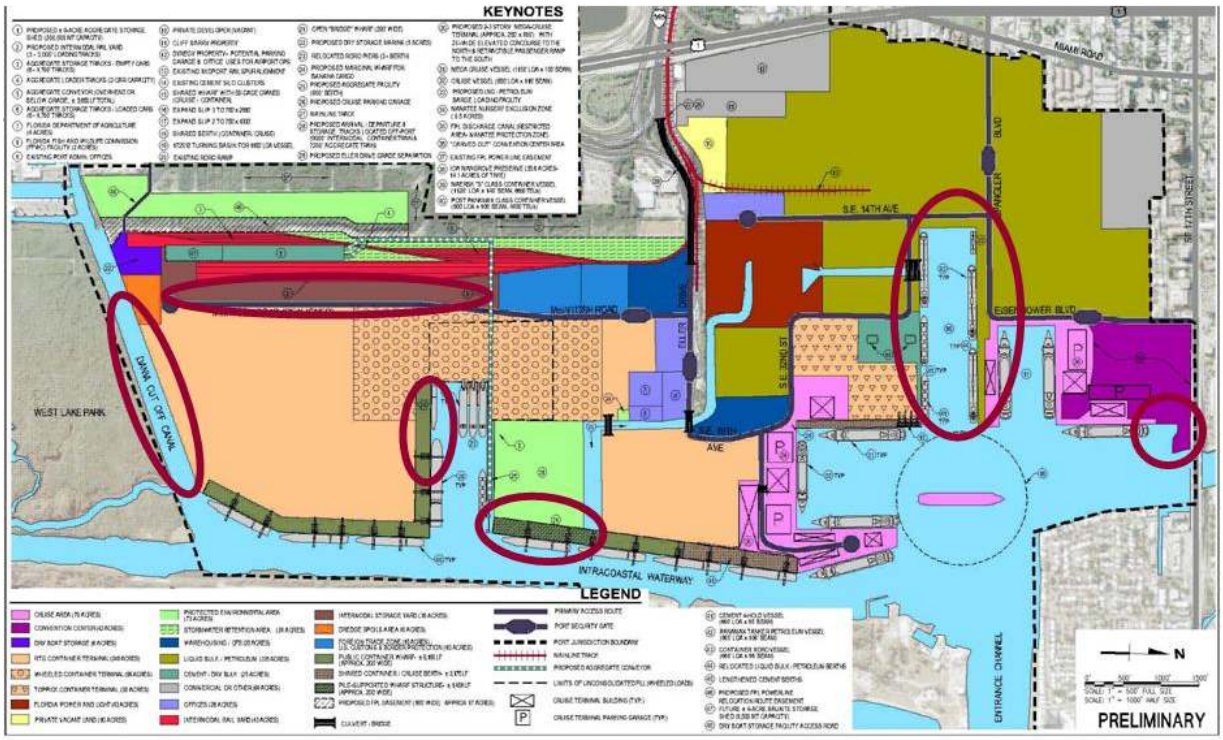
[1] The Focus Group was composed of individuals from the Port's core businesses who were tasked with providing input on the Master Plan during Phase II of the planning process.

Figure 5.2-1



From the meetings with the Port's senior staff, tenants and other stakeholders, suggestions from the Port's Focus Group, and input received from the Phase I Workshop in February 2007 with the Board, a series of alternative 20-Year Vision Plans were prepared to address the identified impacts and concerns.

Figure 5.2-2 illustrates the revised 20-Year Vision Plan discussed at the Phase II Workshop in August 2007 with the Board. This revised 20-Year Vision Plan presented alternative concepts to respond to the identified impacts and concerns. The concepts are discussed below:

Figure 5.2-2

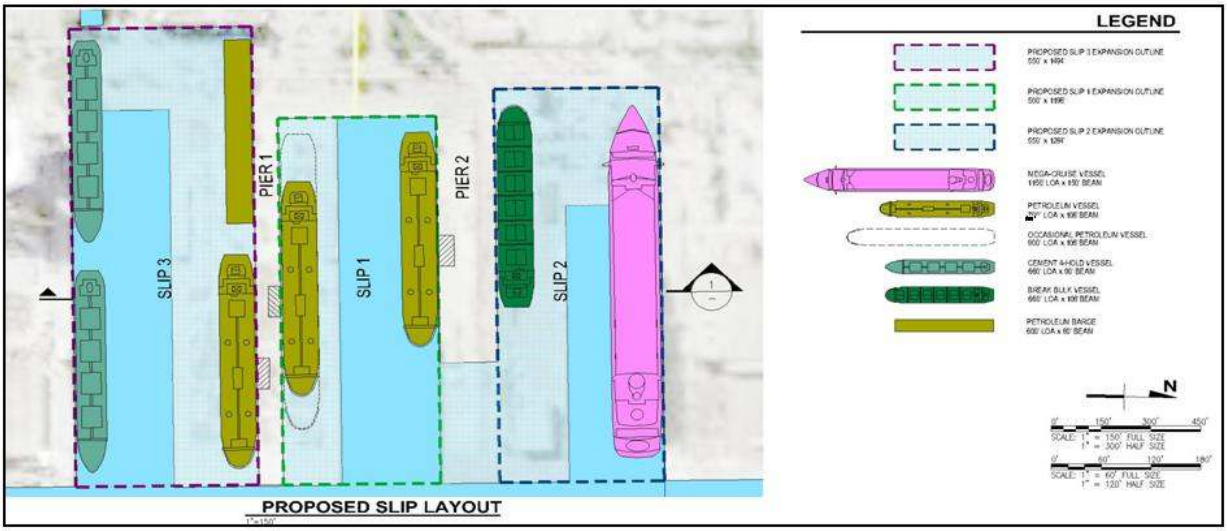
Revised 20-Year Vision Plan

Day Cruises. A possible location for the day cruises was identified by adding a 200-foot pier extension to Berth 24, along with a 4,000-square foot terminal addition. During the Phase II workshops, however, concern was expressed about the viability of a dedicated day-cruise berth and it was determined that the Port would accommodate the day cruises at available berths, rather than at a new dedicated berth.

Northport Slips. The Northport Slips 1, 2 and 3, along with Piers 1 and 2, as discussed in Sections 3.4.5 through 3.5.1 in Phase I, were re-evaluated and, through a series of studies, a preferred option was determined. The preferred option is to widen all three existing slips and lengthen Slips 2 and 3. Figure 5.2-3 shows this option.

Figure 5.2-3

Northport Slip Study: Plan View



When queried about these piers, the pilots recommended not to shorten the length of Pier 2 at all, or not shorten it by more than 100 feet. The ultimate length of Pier 2 is recommended to be determined through a navigational simulation.

The Consultant Team reviewed slip widths utilizing the following three industry-recognized guidelines, which were derived in Phase I:

- MIL-HDBK-1025/1 Waterfront Facilities Criteria Manuals – Piers and Wharves Military Handbook (10/30/1987).
- PIANC, Joint PIANC-IAPH Report on Approach Channels – A Guide for Design (Volume 2) PTC2 report of WG 30 – Final Report, Supplement to Bulletin No. 95 (June 1997 issue).
- Unified Facilities Criteria (UFC) Military Harbors and Coastal Facilities Military Handbook UFC 4-150-06 (12/12/2001) (supersedes Design Manual 26.1, 26.2 and 26.3).

Utilizing these standards, the Consultant Team identified alternative slip widths through the analysis summarized in Table 5.2-1.

Table 5.2-1

Northport Slip Width Analysis

Slip	MIL-HDBK	UFC	PIANC	Internal/ Pilots	Consultant Team Recommendation
Slip 1 - center	636	488	604	462	500
Slip 2 - north	768	532	606	506	550
Slip 3 - south	686	520	619	536	550

During Phase II, the Consultant Team reviewed Northport slip widths using the above standards and offered the Port's senior staff and the Focus Group options to the standards that had been discussed in Phase I. The options discussed are shown in Table 5.2-2.

Table 5.2-2

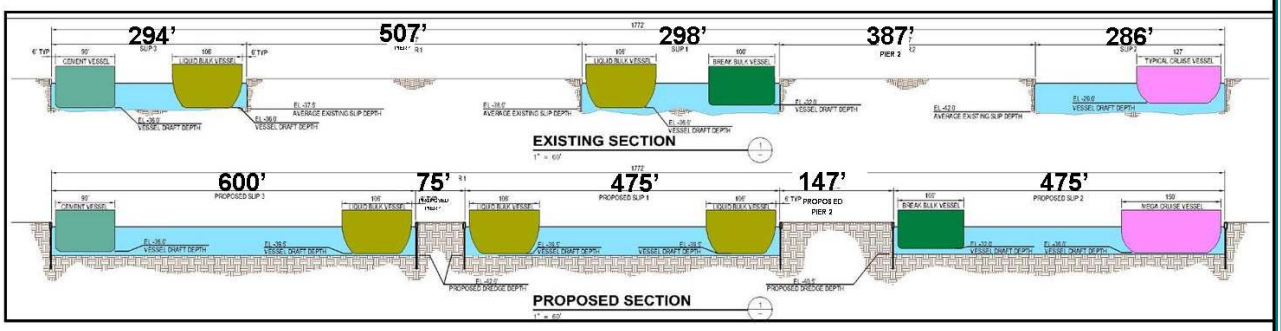
Northport Slip Width Analysis

Slip	Option 1 Sr. Staff	Option 2 Focus Group	Change
Slip 1 - center	475'	450'	-25 FT
Pier 1	75'	75'	No change
Slip 2 - north	500'	500'	No change
Pier 2	172'	147'	-25 FT
Slip 3 - south	550'	600'	+50 FT

The dimensions of the three Northport slips further evolved by working with the Port's senior staff and pilot representatives during a meeting in which the recommended dimensions were modified. The final concept, illustrated as the Proposed Section in Figure 5.2-4, will require navigation simulation and further investigation prior to design implementation

Figure 5.2-4

Northport Slip Study – Section View



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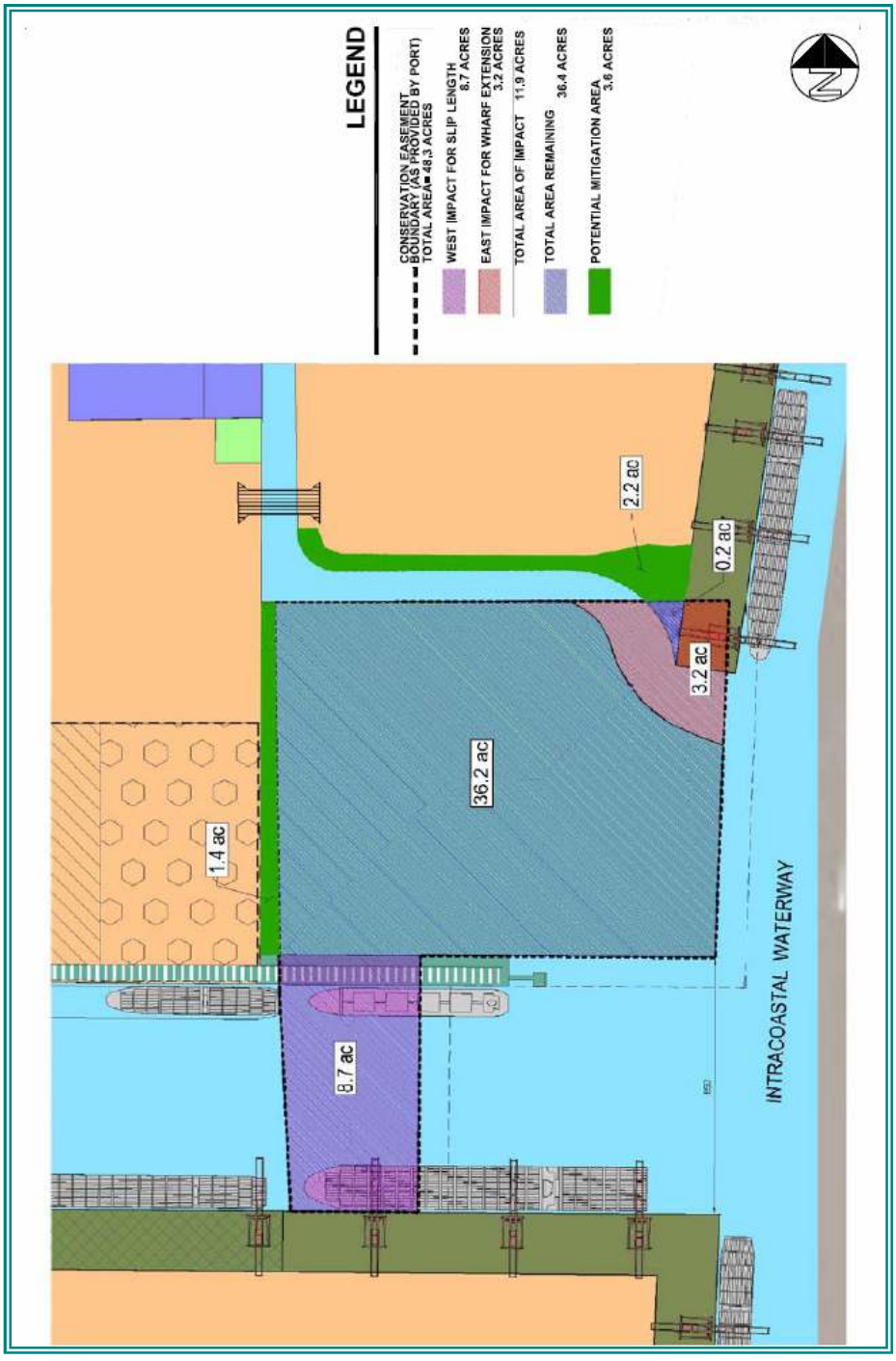
Berth 29/Conservation Easement. The proposed wharf structure on the eastern boundary of the Conservation Easement was deleted; however, the wharf at Berth 29 was extended to the south to allow three ships to berth at Berths 26 through 29. Figures 5.2-5 and 5.2-6 show the potential impacts to the Conservation Easement.

Figure 5.2-5
Conservation Easement Impact Map



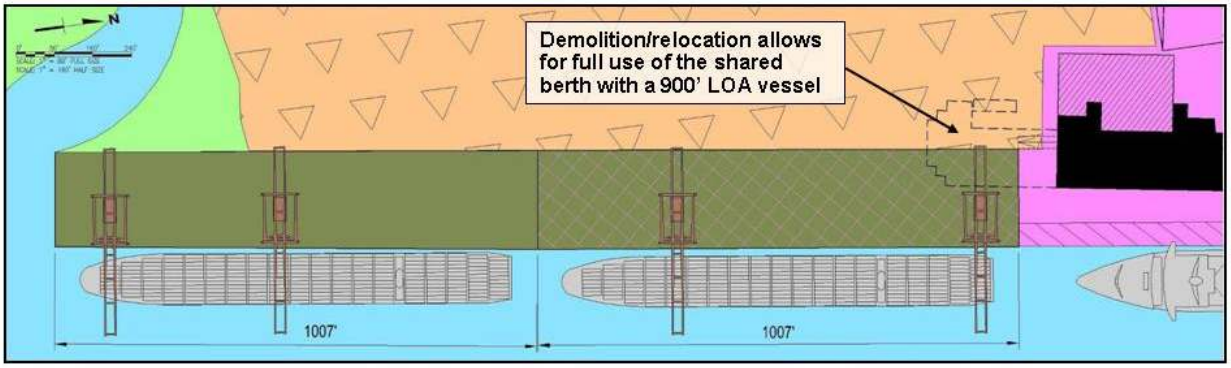
This extension of the wharf to the south will require realignment of the FPL Discharge Canal at the junction of the Canal and the ICW (see Figure 5.2-5.). The realignment and widening of the Canal at its junction with the ICW will require relocation of existing mangroves and the entrance to the manatee habitat area. The wharf extension and the Canal realignment impact 3.2 acres of the Conservation Easement. An area for adjoining mangrove mitigation has been identified: 2.2 acres along the north side of the Canal and 1.4 acres along the western boundary of the Conservation Easement.

Figure 5.2-6
Conservation Easement Impact Map on Aerial

Figure 5.2-7 illustrates the need to extend the wharf at Berth 29 southward. This wharf was extended to the south to allow three ships to berth at Berths 26 through 29. Berth 28 would be a cruise berth that would also serve as a cargo berth during non-cruise periods. The existing office and Cruise Terminal 27 structure would be removed to permit the operation of 100-foot gauge ship-to-shore (STS) cranes at Berth 28.

Figure 5.2-7

ICW-Midport Berth Expansion



Turning Notch Extension. Extension of the Turning Notch is deemed an important infrastructure improvement to increase the number of cargo berths; however, moving both ship and STS low-profile cranes further west in the Notch, moves them closer to the FLL runways.

Figure 5.2-8 overlays the location of the STS low-profile cranes at an extended Berth 30 on a drawing, prepared by Jacobs Consultancy, which identifies the "Critical TERPS Departure Surfaces over Study Area." The study area is Midport and Southport from Berths 27 to 32. The runway in blue is the existing north runway; the runway in yellow is the proposed south runway extension. The height of the STS low-profile cranes is approximately 160 feet above mean sea level (MSL). The air draft of the Susan Maersk cargo vessel, under light cargo load, is approximately 180 feet above the waterline. The red marker, a distance of 2,454 feet from the bulkhead along the ICW, identifies the most western location of the STS low-profile cranes when the Susan Maersk, at 1,120-foot length overall (LOA), is at berth with a 900-foot LOA Panamax-class container ship in tandem berthing. The blue marker, a distance of 2,212 feet from the bulkhead along the ICW, identifies the most western location of the STS low-profile cranes when two 900-foot LOA Panamax-class container ships are in tandem berthing. Figure 5.2-8 shows this impact.

The Federal Aviation Administration (FAA) in 1997 permitted the low-profile cranes at the coordinates shown in Figure 5.2-9 and determined that the cranes penetrate Part 77 Approach Surface three feet and that the cranes do not exceed 500 feet above ground level per visual flight rules. The cranes would be considered an obstacle under the TERPS Departure Surface and Part 77 Approach Surface of the Airport's existing north runway, 27R. Further investigation and permitting through the FAA is, however, required to determine if such obstacles would be deemed a hazard. Determination by the FAA as to a hazard condition will determine if the STS low-profile cranes and higher air draft ships could be used at an extended Berth 30.

Figure 5.2-8

Aviation Flight Surfaces Impact

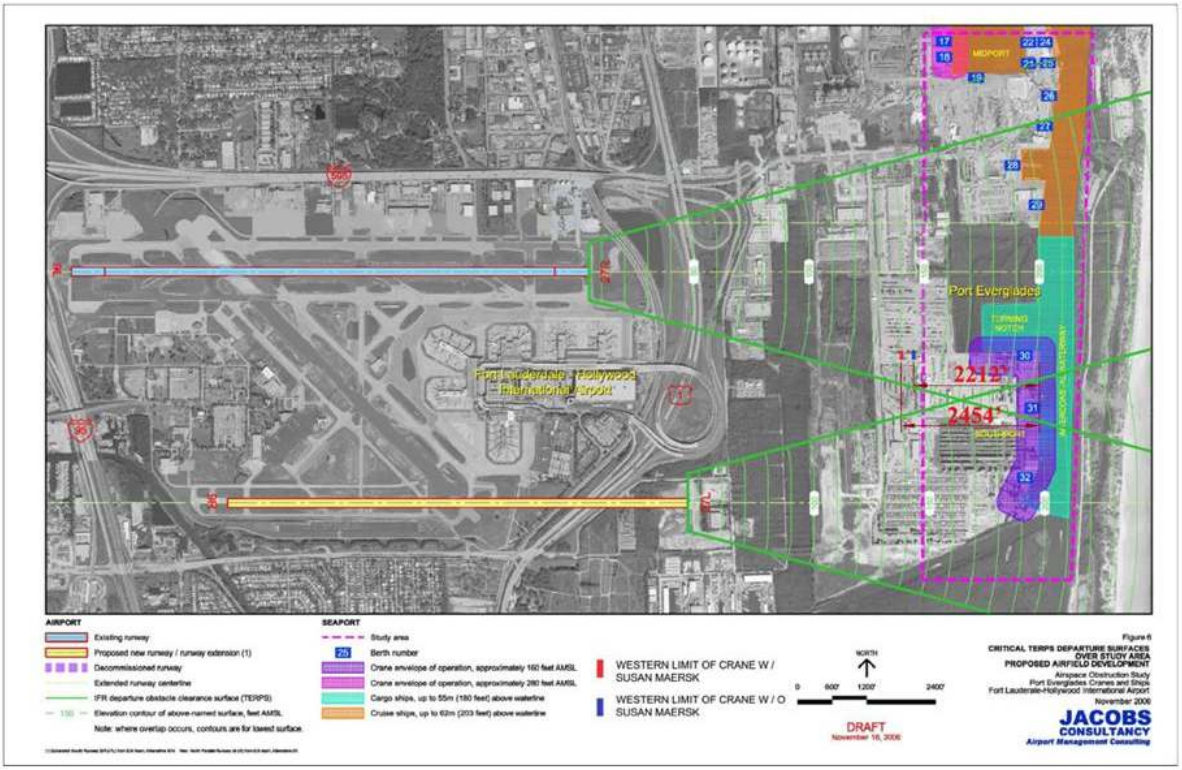


Figure 5.2-9

Impact of FLL Flight Surfaces

PORT EVERGLADES BROWARD COUNTY FLORIDA

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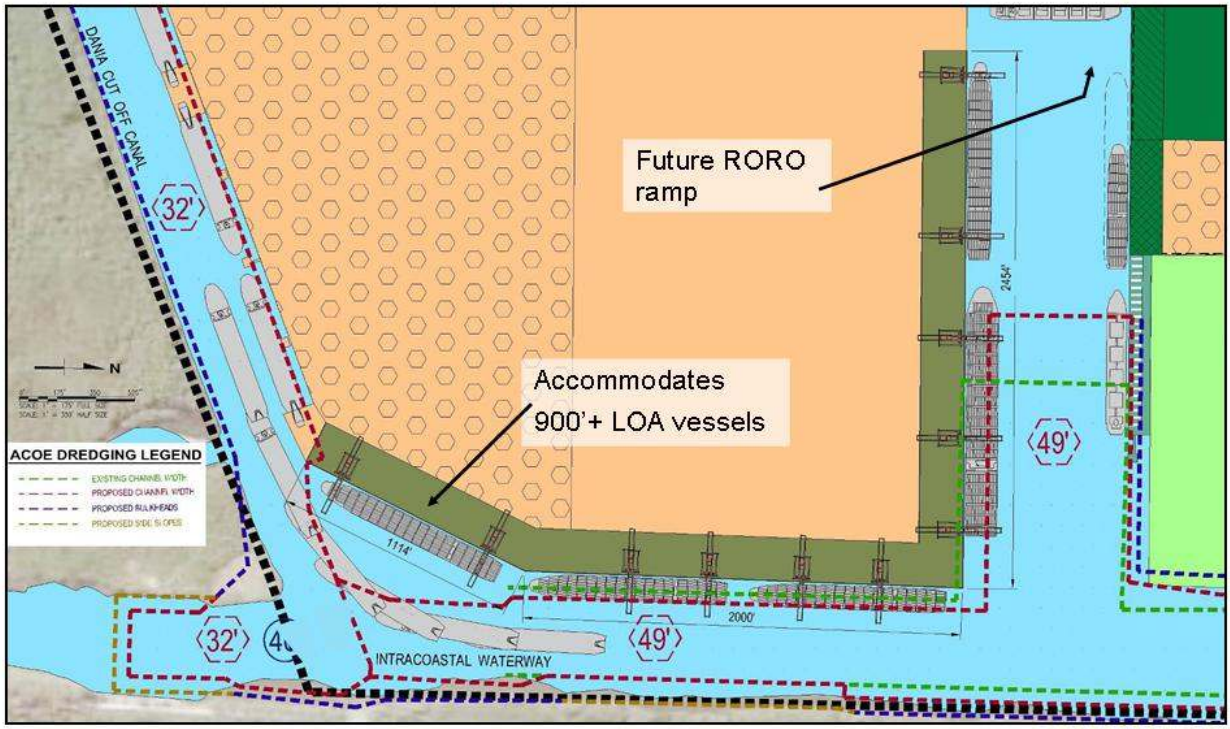
McIntosh Road. The Vision Plan recommends reconstruction of McIntosh Road, so that all truck turns into the container terminals would be right-hand turns. The Vision Plan was revised to show a loop road with through lanes and lanes for de-acceleration, queuing, and acceleration in a new alignment to maximize turning radii and mandate right-hand turns.

Dania Cut-Off Canal. The revised Vision Plan develops the Dania Cut-Off Canal for the berthing of three container roll-on/roll-off (RO/RO) vessels with a 660-foot LOA. The Vision Plan deletes the existing structured pier and ramp that support Berths 33B and 33C. Lengthening of Berth 33A to 1,114 feet allows an additional 900-foot LOA Panamax class container ship to be berthed at Southport. Figure 5.2-10 illustrates this concept.

Figure 5.2-10

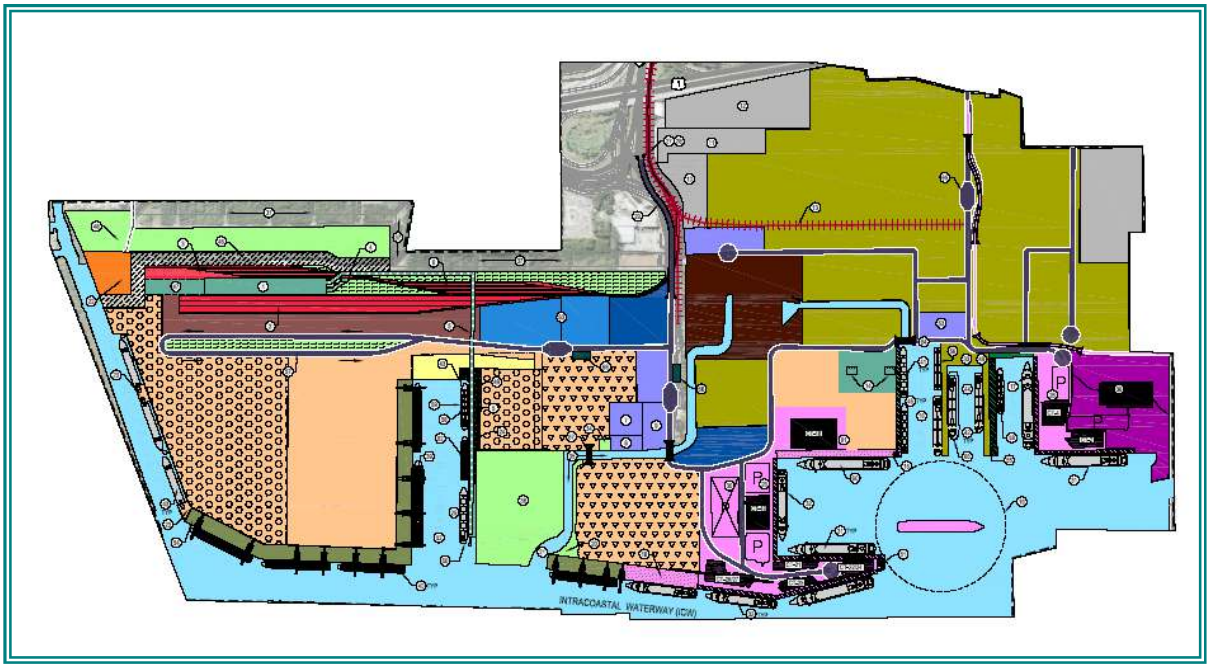
Berth 33 A and Dania Cut-Off Canal Development



5.3 The Final 20-Year Vision Plan

The Final 20-Year Vision Plan, illustrated in Figure 5.3-1, reflects input received at the Phase II Workshop in August 2007 with the Board of County Commissioners (Board). This Plan became the "road map" for identifying infrastructure improvements at Port Everglades to meet the projected market demand in the Port's four core commodities; containerized cargo, non-containerized cargo, cruise, and liquid bulk. The 10-Year and 5-Year Vision Plans are derived from this 20-Year Vision Plan; each is also based on identifying the infrastructure improvements needed to meet the projected market demand in the Port's four core commodities at each milestone.

Figure 5.3-1
Final 20-Year Vision Plan



Once the Final 20-Year Vision Plan was established, berth capacity was re-evaluated from the existing condition through the 5-, 10-, and 20-year milestones. The Master Plan reinforces the Port's diversified use of berths when possible. Therefore, berth capacity estimates were established for both dedicated berths and shared berths to estimate the infrastructure needs. Tables 5.3-1 and 5.3-2 show these estimates.

Table 5.3-1

Dedicated Berth – Capacity Estimate

Variable	Existing	5 - Year	10 - Year	20 - Year
Berth Throughput				
Number of Berths Available	1.00	1.00	1.00	1.00
Ship work rate (hours per day)	21.0	21.0	21.0	21.0
Ship work schedule (days per week)	7	7	7	7
Max overall berth occupancy (demand/capacity)	**22%**	**35%**	**40%**	**50%**
Effective hrs per berth/week (berth-hrs/week)	32.3	51.5	58.8	73.5
Mean lifts per call - peak week (ship lifts/ship call)	**650**	**715**	**787**	**865**
Gross dock crane productivity (ship lifts/crane hour)	**29**	**30**	**31**	**32**
Mean cranes per Ship (cranes per ship)	2.00	2.00	2.00	2.00
Mean ship work time (hours / ship call)	11.2	11.9	12.7	13.5
Ship tie-up & untie time (hour / ship call)	2.0	2.0	2.0	2.0
Mean berth occ time per ship (hours / ship call)	13.2	13.9	14.7	15.5
Potential ship calls per peak week	2.4	3.7	4.0	4.7
Throughput capacity during a peak week (lifts per peak week	1,592	2,643	3,149	4,098
Seasonal peak (peak week / mean week)	112%	112%	112%	112%
Berth capacity (ship lifts / year)	**74,000**	**123,000**	**146,000**	**190,000**
TEU per container (TEU/Container)	1.66	1.66	1.66	1.66
Berth capacity (ship TEU / year)	**123,000**	**204,000**	**242,000**	**315,000**

Table 5.3-2

Shared Berth – Capacity Estimate

Variable	Existing	5 - Year	10 - Year	20 - Year
Berth Throughput				
Number of Berths Available	1.00	1.00	1.00	1.00
Ship work rate (hours per day)	21.0	21.0	21.0	21.0
Ship work schedule (days per week)	4	4	4	4
Max overall berth occupancy (demand/capacity)	**35%**	**40%**	**50%**	**60%**
Effective hrs per berth/week (berth-hrs/week)	29.4	33.6	42.0	50.4
Mean lifts per call - peak week (ship lifts/ship call)	**650**	**715**	**787**	**865**
Gross dock crane productivity (ship lifts/crane hour)	**20**	**25**	**25**	**25**
Mean cranes per Ship (cranes per ship)	2.00	2.00	2.00	2.00
Mean ship work time (hours / ship call)	16.3	14.3	15.7	17.3
Ship tie-up & untie time (hour / ship call)	2.0	2.0	2.0	2.0
Mean berth occ time per ship (hours / ship call)	18.3	16.3	17.7	19.3
Potential ship calls per peak week	1.6	2.1	2.4	2.6
Throughput capacity during a peak week (lifts per peak week	1,047	1,474	1,863	2,259
Seasonal peak (peak week / mean week)	112%	112%	112%	112%
Berth capacity (ship lifts / year)	**49,000**	**68,000**	**87,000**	**105,000**
TEU per container (TEU/Container)	1.66	1.66	1.66	1.66
Berth capacity (ship TEU / year)	**81,000**	**113,000**	**144,000**	**174,000**

Shared Berth Availability (Mon. – Thurs. +)

% Time occupied during available berth time

(The conversion factor in Tables 5.3-1 and 5.3-2 between lifts and TEUs per container is conservative; the Port's container growth is increasing this factor to 1.75 TEUs per container.)

5.4 The 5-Year Plan

5.4.1 Goals of the 5-Year Plan

The 5-Year Plan goals were established by identifying the needed infrastructure to meet the projected market demand by 2012. The resulting infrastructure goals are shown in Table 5.4-

Figure 5.4-1
Berth Location Map

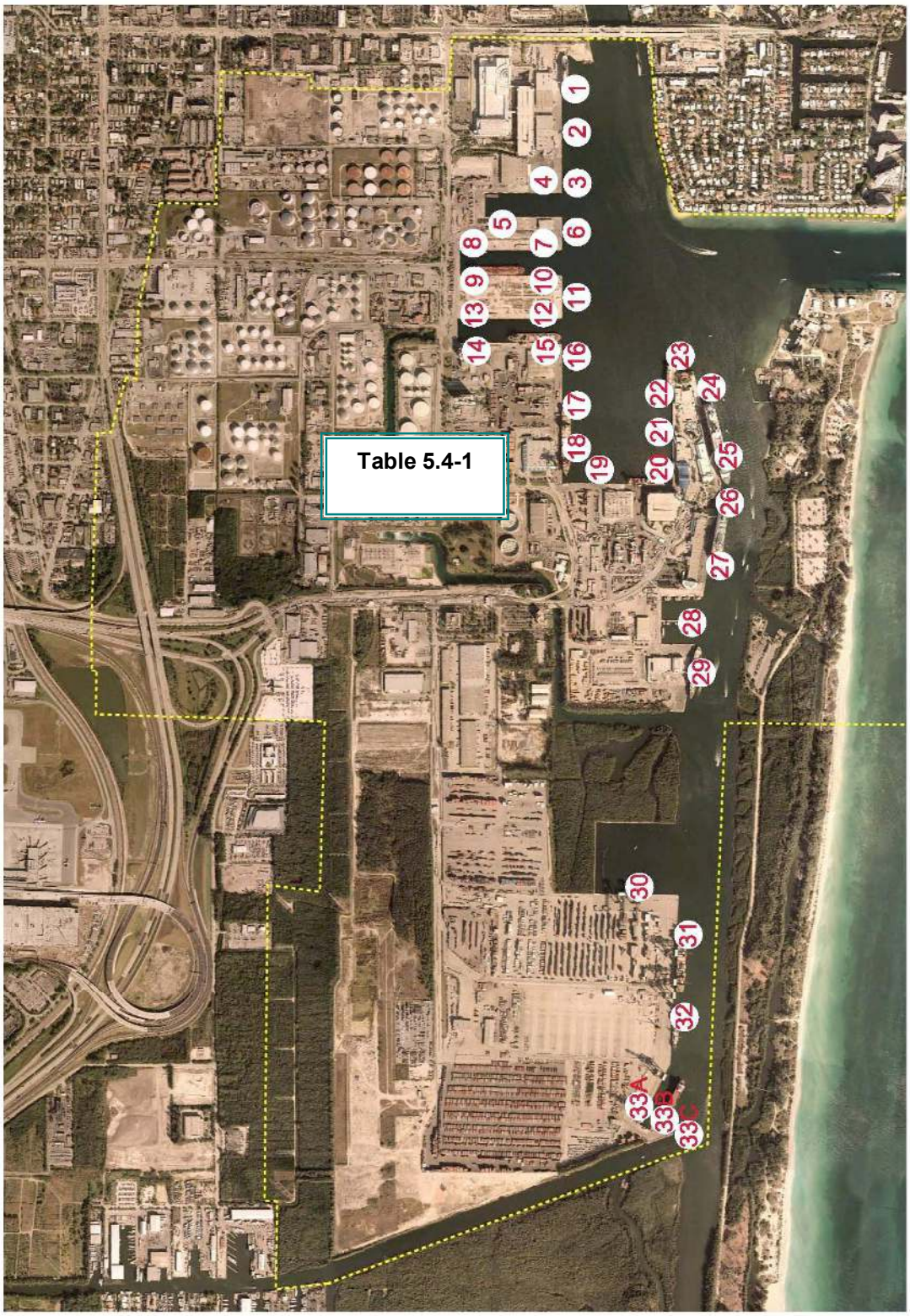
5-Year Plan Goals

	Berth Length (FT)	Berths Required (rounded)	Terminal Area (gross acres)
Container Terminals			
RTG Operations	1000	6.1 (6)	89
RORO (wheeled)	700	1.7 (2)	50
Bananas (wheeled)	650	0.8 (1)	4.4
Non-Container Cargo Terminals			
General Cargo	700-900	1.1 (1)	7.1
Cement	750	1.4 (2)	6.7
Aggregate	900	0.6 (1)	1.8
Cruise Terminals	1000-1200	8	64
Petroleum Terminals	3 vessel/1 barge		357

5.4.2 Projects in the 5-Year Plan

The projects in the 5-Year Master Plan were derived to meet the goals of the 5-Year Plan. The projects proposed for implementation in the 5-Year Plan are discussed below, starting with three key Plan initiatives. For reference in this discussion, Figure 5.4-1, an aerial photograph of Port Everglades shows the numbers of the respective berths at the Port

By-Pass Road. Within the 5-year Plan, a roadway is proposed to be constructed parallel to Eisenhower Boulevard and Spangler Boulevard. This roadway will permit the public to travel



between the intersection at Eisenhower Boulevard and 17th Street to Spangler Boulevard and U.S. 1 without passing through a Port security gate. The conceptual "By Pass Road," discussed in Phase I of the Master Plan, has been modified to have less impact upon the Port's users and other stakeholders. To maintain existing traffic movements for Port users to access their properties and move between their terminals and the docks, a second overpass has been added to the Phase I concept. This modified concept, illustrated in Figures 5.4-2 and 5.4-3, will allow most of the existing Port user traffic movements to remain unchanged.

Figure 5.4-2

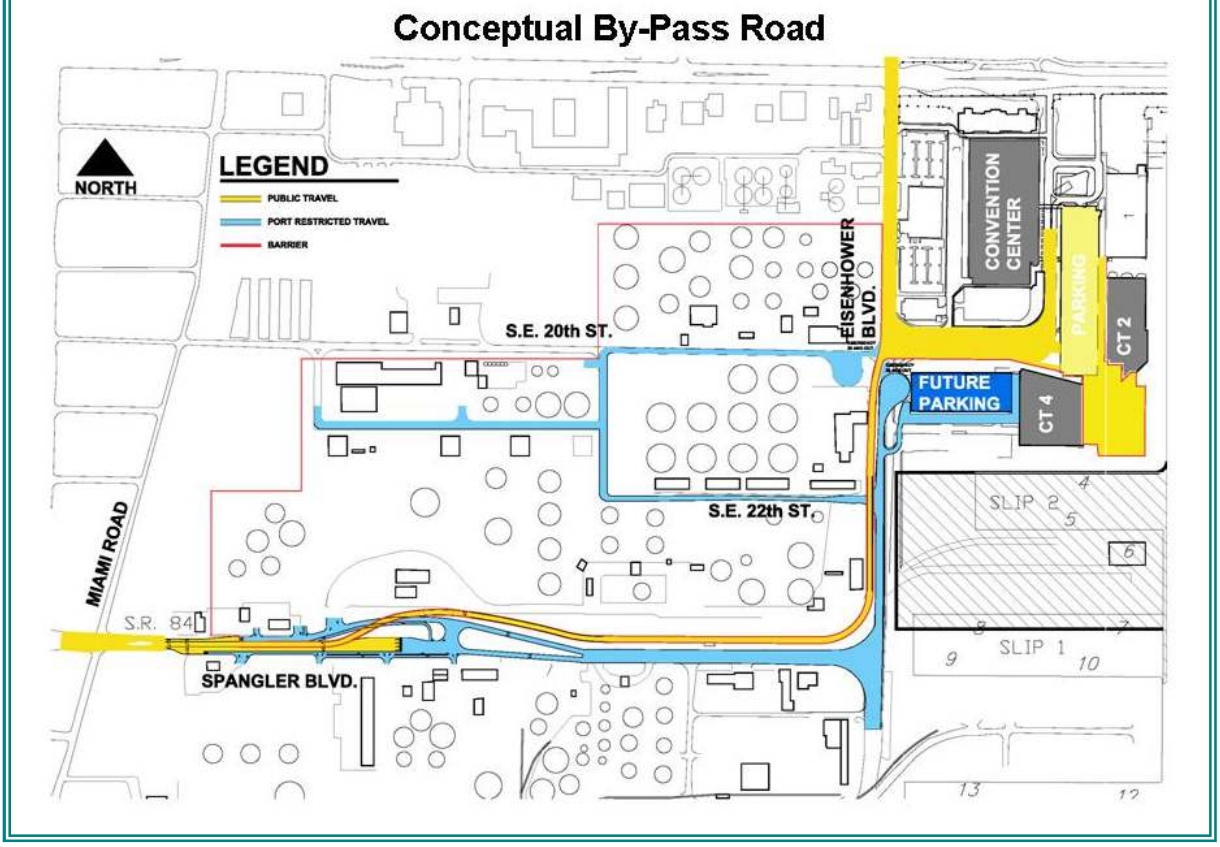
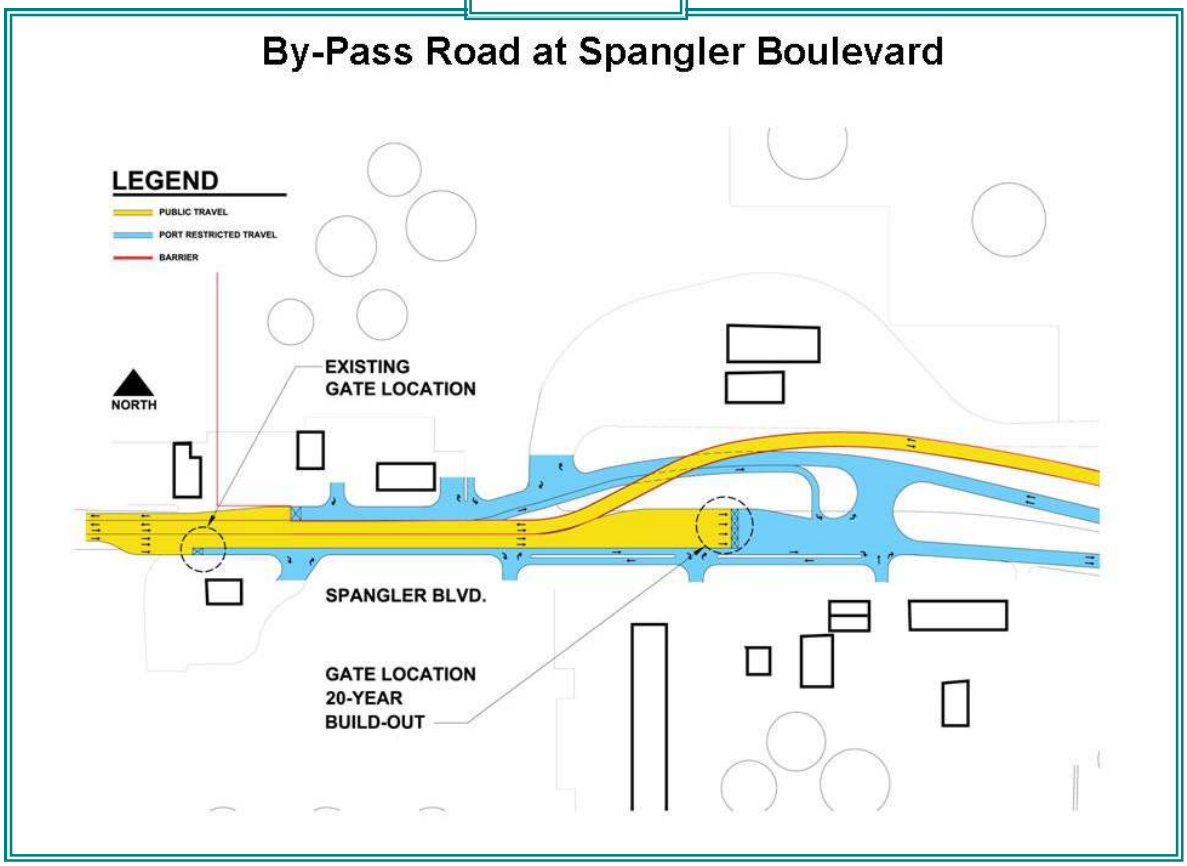


Figure 5.4-3 is an enlarged view of the proposed By-Pass Road at the Port's entry gate on Spangler Boulevard. The existing gate has two lanes with two booths. The two-lane security entry will remain in the near term, until the length of traffic queuing west of the gate requires additional lane capacity. When additional security lane capacity is needed, the Plan allows additional queuing and lanes with security booths to be constructed east of the existing gate. One security lane and booth will always remain in its existing location to provide access for the users south of Spangler Boulevard. All traffic lanes on the Port side of the gates will be

separated from the public lanes with barriers of a type that are appropriate for the level of risk at the specific roadway segment.

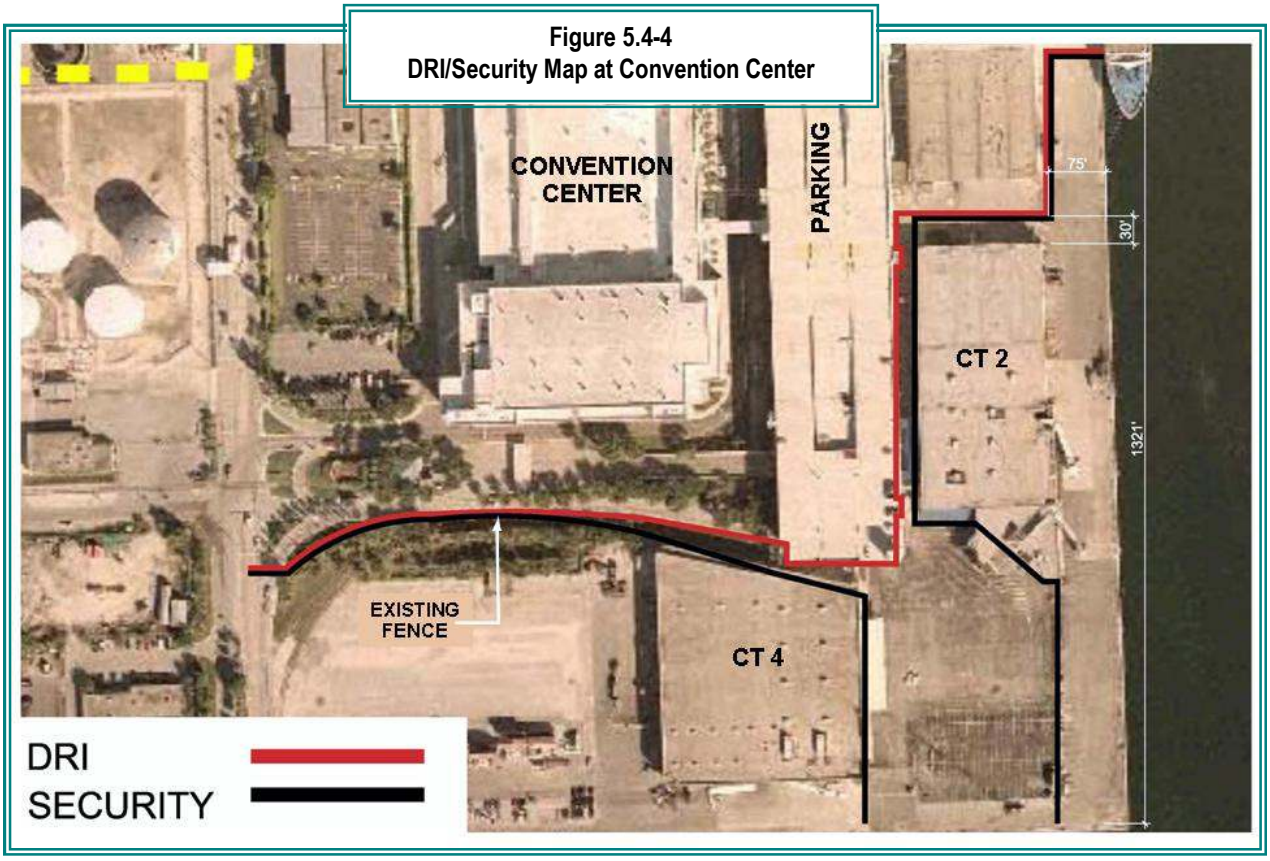
Figure 5.4-3



"Carve out" of the Broward County Convention Center. The By-Pass Road and the removal of the Port's security gate on Eisenhower Boulevard will allow the public to travel between 17th Street and Eisenhower Boulevard to U.S. 1 and Spangler Boulevard. The public will also be able to access the Convention Center and its future program developments, including a hotel, without passing through a Port security gate.

A new security perimeter, between Port-secured space and public space at the Convention Center and the existing parking structure at Northport, was established. This perimeter would be a fence between Port-secured property and the public space and would be the exterior wall at Terminals 2 and 4 in the 5-Year Plan. In other words, passengers accessing Terminals 2 and 4 would pass through the Port's security gate at the entrances to these two terminals. When the proposed parking structure is constructed west of Cruise Terminal 4, in the 10-Year Vision Plan, Cruise Terminal 4 and the new parking structure will be in the Port-secured area. Therefore, access to Cruise Terminal 4 will require screening at the Port's roadway gates. The proposed security perimeter between public space and Port-secured space is shown in Figure 5.4.4.

Figure 5.4-4
DRI/Security Map at Convention Center



To meet its cruise infrastructure assessment, the Port needs to provide a mega cruise ship berth at Cruise Terminal 2. The length of berth needed to service the cruise ship is 1,321 feet, with a minimum of 75-foot dock apron width.

When the Broward County Convention Center was constructed, the project required a Development of Regional Impact Statement (DRI). The boundary of the DRI needs modification to allow the Port and the Convention Center to pursue their respective master plans. The proposed DRI line between the Convention Center and Port-secured space is also shown in Figure 5.4.4.

Turning Notch Expansion. Expansion of the Turning Notch adds several vital assets to the Port's infrastructure, which then have a domino effect of initiating future projects of added value.

Initially, Phase I of the Turning Notch expansion adds a new berth for the importation of crushed rock aggregate. The crushed rock aggregate terminal and rail yard projects (see discussion below), in addition to creating a new berth, would have an underground enclosed conveyor to transport the rock from the berth to an enclosed building where the rock will be loaded on to rail cars. The rock, of which existing supplies in Florida are dwindling, is needed in the manufacture of ready-mix concrete for the construction industry. This project, in itself, adds both revenue and significant economic impact to the region. The crushed rock aggregate terminal and rail yard project, also adds the rail spur from the existing track on the north side of Eller Drive to

Southport. This rail spur is the first phase of the Intermodal Container Transfer Facility expected to occur in the 10-Year Vision.

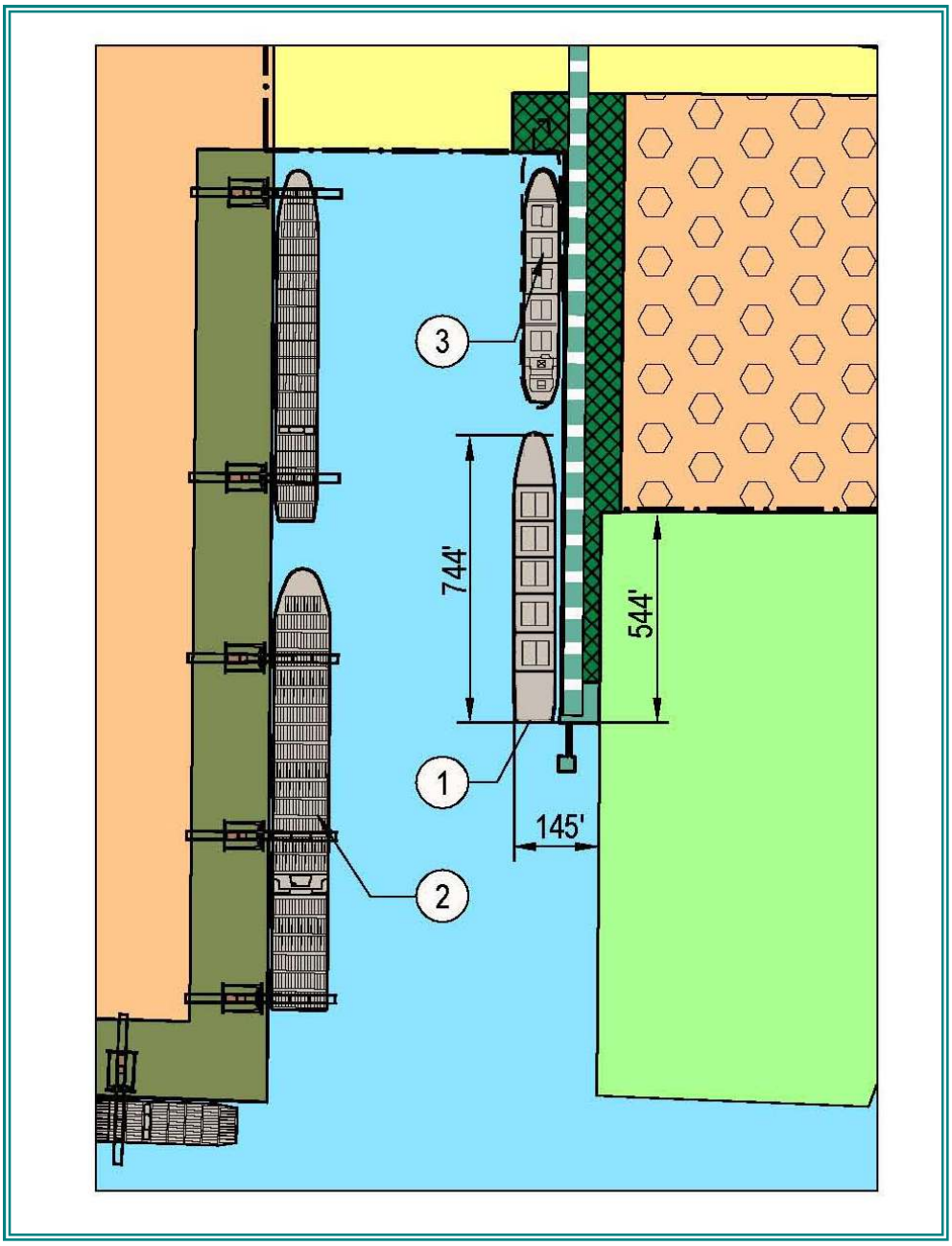
The berth for the crushed rock ship is planned for the north side of the expanded Turning Notch. The location of the ship is critical, so as not to interfere with the movements of other ships in the Notch. The U.S. Army Corps of Engineers (ACOE), in association with the pilots, previously conducted a simulation of the turning movements with a Susan Maersk-class vessel at Berth 30 and an Ambassador class RO/RO vessel on the north side, with stern at the western edge of the expanded Phase I Turning Notch. The LOA for the Ambassador is 544 feet; the expected LOA for the crushed rock vessel is 744 feet. The distance required from the south side of the Conservation Easement to accommodate the beam of the crushed rock vessel with hopper, conveyor, and mooring structure is 145 feet.

The position of the crushed rock ship, as shown on the Vision Plans, will require a simulation study to determine the most easterly position without interfering with ships turning in the Notch with a Susan Maersk- class vessel at Berth 30. Figure 5.4-5 shows Ship (1), the crushed rock vessel positioned further west than shown in the Vision Plans so that its most eastern point aligns with the most eastern point of the Ambassador-class vessel, that was previously simulated. Ship (2) is the Susan Maersk at Berth 30. Ship (3) would be a general cargo ship or banana ship. If the crushed rock ship needed to be positioned further to the west, as shown in Figure 5.4-5**,** it would not be possible to have the additional berth on the north side of the Notch. It is, therefore, recommended that the position of the crushed rock ship be determined by navigation simulation studies for both a Susan Maersk and a 900-foot Panamax vessel at Berth 30. Since the crushed rock ship is envisioned in the 5-Year Plan and the Susan Maersk-class vessel will not be able to berth at Berth 30 until the completion of the ACOE dredging and widening program, an interim position on the north side of the Turning Notch for the crushed rock ship and unloading facility may be a viable solution until the Phase II expansion of the Notch.

Expansion of the Turning Notch is also in the ACOE's *Feasibility Study/Environmental Impact Statement*. Expanding the Notch, as shown in the 5-Year Plan, expands Berth 30 from 900 feet to 1,448 feet, permitting longer and larger capacity container vessels at this berth. Further westward expansion of the Turning Notch beyond the 5-Year Plan configuration would permit additional cargo berths to be added to the Port's infrastructure.

To expand the Turning Notch, however, it is necessary to both secure a release for the 8.7 acres of the Conservation Easement (see Figure 5.2-5) and mitigate the mangroves in the 8.7 acres. The Port is investigating alternative sites on and off port for substituting suitable land and habitat area. Among the areas being considered for land substitution and mangrove mitigation are Deerfield Island in the ICW and land contiguous to the remaining Conservation Easement.

Figure 5.4-5
Potential Location of Crushed Rock Aggregate Vessel



Legend:
(1) Crushed rock vessel; (2) Susan Maersk at Berth 30; (3) General cargo ship or banana ship.

Other projects in the 5-Year Plan include the following:

Cruise Terminal 2 Renovations. These renovations are required due to changes in defining the Port-secured area from the public space at and around the Convention Center. Renovations include relocation of at-grade air-conditioning condensing units, relocation of fire-service water piping, security enhancements, and a new entrance lobby.

Cruise Terminal 4 Redevelopment/Expansion. These improvements are necessary to accommodate larger passenger ships and an increased baggage-handling area within the terminal. The project includes moving the entrance to the terminal from the east side to the west to be serviced by a new passenger intermodal zone, i.e., ground transportation area, on the west side of the terminal.

Molasses Tank Use Request for Letters of Interest (RLI). Abandoned molasses tanks exist on County-owned property to the west of Eisenhower Boulevard and south of SE 20th Street. This property is a valuable asset to the Port. To maximize its economic value, an RLI will be developed to receive proposals for use of this site from potential private interests.

Relocation of Public Works/Port Maintenance. The construction of the By-Pass Road will require partial removal of the existing public works building, which is located west of Eisenhower Boulevard and south of SE 20th Street. The existing site of the public works building adjoins the existing molasses tanks along with Port maintenance buildings to the south. In lieu of rebuilding the public works facility at this site, it is envisioned that the facility will be relocated and the current land area be added to the molasses tank use RLI. This added land should increase the value of the RLI to the Port.

Midport Roadway Expansion. Expansion of East Eller Drive is to accommodate taxi staging and mitigation of existing traffic congestion at the Midport cruise terminals.

Berth 16-17 Crane Replacement. Berths 16-17 have two existing on-rail cranes in need of repair. One crane is to be removed from service and replaced with a mobile harbor crane. The remaining on-rail crane will be upgraded.

Demolition of Transit Shed 16. Demolition of this shed is required to increase terminal yard space for container operations.

Cruise Terminal 18 Redevelopment/Expansion. Expanding Cruise Terminal 18 will occur in two phases. Phase I will accommodate the Navigator-class cruise ship; Phase II will accommodate the Genesis-class cruise ship. Phase II is contingent on reaching agreement with the cruise line to host the new Genesis class vessel.

Midport Parking Garage. This facility will add 1,200 structured parking spaces above a passenger intermodal area to serve the Port's cruise facilities.

Cruise Terminal 19 Expansion. This project expands the baggage-handling area at an existing terminal to better accommodate larger cruise ships.

FPL Discharge Canal Intermodal Bridge. This intermodal bridge will connect the cargo areas at Midport to the cargo areas at Southport. The intermodal bridge will encourage operational

efficiencies, by not requiring traffic between these two cargo areas to go in and out of the security gates.

Cruise Terminal 21/22 Expansion. Combining the building footprints of these two terminals will enable the new facility to accommodate larger cruise ships. Currently, the berth that serves these terminals is adequately sized for the ships, but the landside facilities need to be expanded to serve the increased passenger volumes and baggage-handling requirements.

Southport Phase VIII. This phase of the Southport improvement program is currently on undeveloped land and represents an opportunity for expansion of the Port's container terminals. Improvements include pavement, drainage, and lighting.

McIntosh Loop Road. McIntosh Road is the entry road to the Southport container terminals. Currently, the road alignment requires trucks to make left-hand turns into the respective terminals without sufficient queuing space on the roadway. The proposed new alignment creates a loop road with ample turning radii for trucks, mandating all trucks to make right-hand turns into the terminals. The roadway section will have both de-acceleration and acceleration lanes in addition to the through lanes at terminal entrances. Appropriate signage will be provided for all truck routes.

Existing traffic is a critical concern to the users of McIntosh Road. Therefore, near-term solutions, consisting of controlling left-hand turns and adding signage, are envisioned as the first phase of reconstructing this traffic route. The second phase of this project will build two through lanes in a looped configuration.

Foreign-Trade Zone/Warehouse RFP. The Master Plan allocates a 15-acre site west of McIntosh Road for the relocated on-port Foreign-Trade Zone buildings. The current buildings have costly annual maintenance charges and new structures are needed. In lieu of Port investment into new buildings, an RFP will be issued in hopes of receiving proposals from the development community for using this property as warehouses for Foreign-Trade Zone occupants. The Port would consider a land-lease arrangement with a potential developer. In this manner, the Port will receive revenue from the land lease and be able to have new buildings constructed for the Foreign-Trade Zone occupants with capital costs covered by private investment.

Dry Stack Boat Storage Request for Letters of Interest (RLI). The Master Plan recommends relocation of the dry stack boat storage facility from the FPL Discharge Canal site to the Dania Cut-Off Canal. The relocation of this facility will eliminate 400 boats from entering this manatee-protected area and permit the construction of the intermodal bridge needed to increase operational efficiencies for Port users. The RLI will establish a land area suitable for this type of facility to be constructed by a developer with revenue paid to the Port through a land-lease agreement.

Crushed Rock Aggregate Terminal. This facility is envisioned to meet a portion of Florida's needs for crushed rock aggregate with supplies imported from off-shore locations. Private investment will pay for the facility, consisting of mooring structures, enclosed conveyors, an

enclosed storage building, and rail yard. To berth the crushed rock vessel in the turning notch, release of the 8.7 acres of the Conservation Easement is required, as discussed previously.

ICTF Rail, Phase I. The rail to serve the crushed rock aggregate terminal is the Phase I of the future ICTF. It is envisioned that private investment will pay for this rail along with grants secured by the Port.

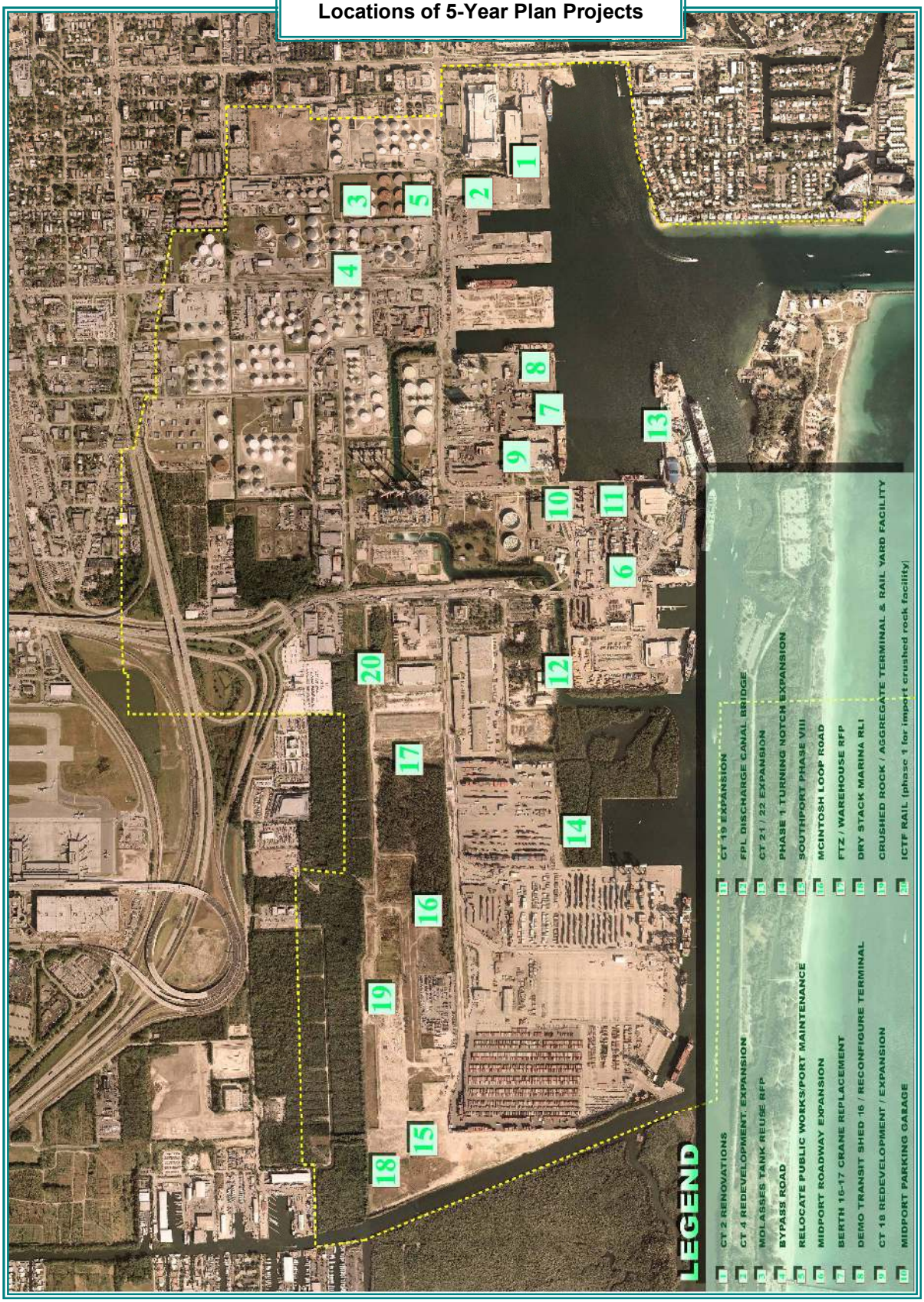
The Master Plan projects contained in the 5-Year Plan are shown in Table 5.4-2; their locations are identified on Figure 5.4-6.

Table 5.4-2

5-Year – Master Plan Projects
Years 2008 to 2012

	Project Cost ($ million)
– Northport Improvements	
• 5-1: CT 2 Renovations	1.650
• 5-2: CT 4 Redevelopment/ Expansion	13.000
• 5-3: Molasses Tank Reuse RLI	0.000
• 5-4: Bypass Road	19.000
• 5-5: Relocate Public Works/Port Maintenance	2.000
– Midport Improvements	
• 5-6: Midport Roadway Expansion	2.300
• 5-7: Berth 16-17 Crane Replacement	6.050
• 5-8: Demo Transit Shed 16 / Reconfigure Terminal	0.800
• 5-9: CT 18 Redevelopment / Expansion	38.900
• 5-10: Midport Parking Garage	27.700
• 5-11: CT 19 Expansion	6.700
• 5-12: Intermodal Bridge over FPL Discharge Canal	7.200
• 5-13: CT 21/22 Expansion	22.000
– Southport Improvements	
• 5-14: Phase 1 Turning Notch Expansion	47.030
• 5-15: Southport Phase VIII	15.500
• 5-16: McIntosh Loop Road	6.530
• 5-17: FTZ / Warehouse RFP	10.300
• 5-18: Dry Stack Marina RLI	0.000
• 5-19: Crushed Rock/Aggregate Terminal & Rail Yard Facility	55.000
• 5-20: ICTF Rail (Phase 1 for Import Crushed Rock Facility)	10.496
TOTAL	**$292.156**

Figure 5.4-6
Locations of 5-Year Plan Projects



The infrastructure projected to be in place at the end of the 5-Year Plan was reviewed to verify the capacity assessment for containerized cargo. Table 5.4-3 shows this capacity assessment.

Table 5.4-3

5-Year Vision Plan – Capacity Assessment

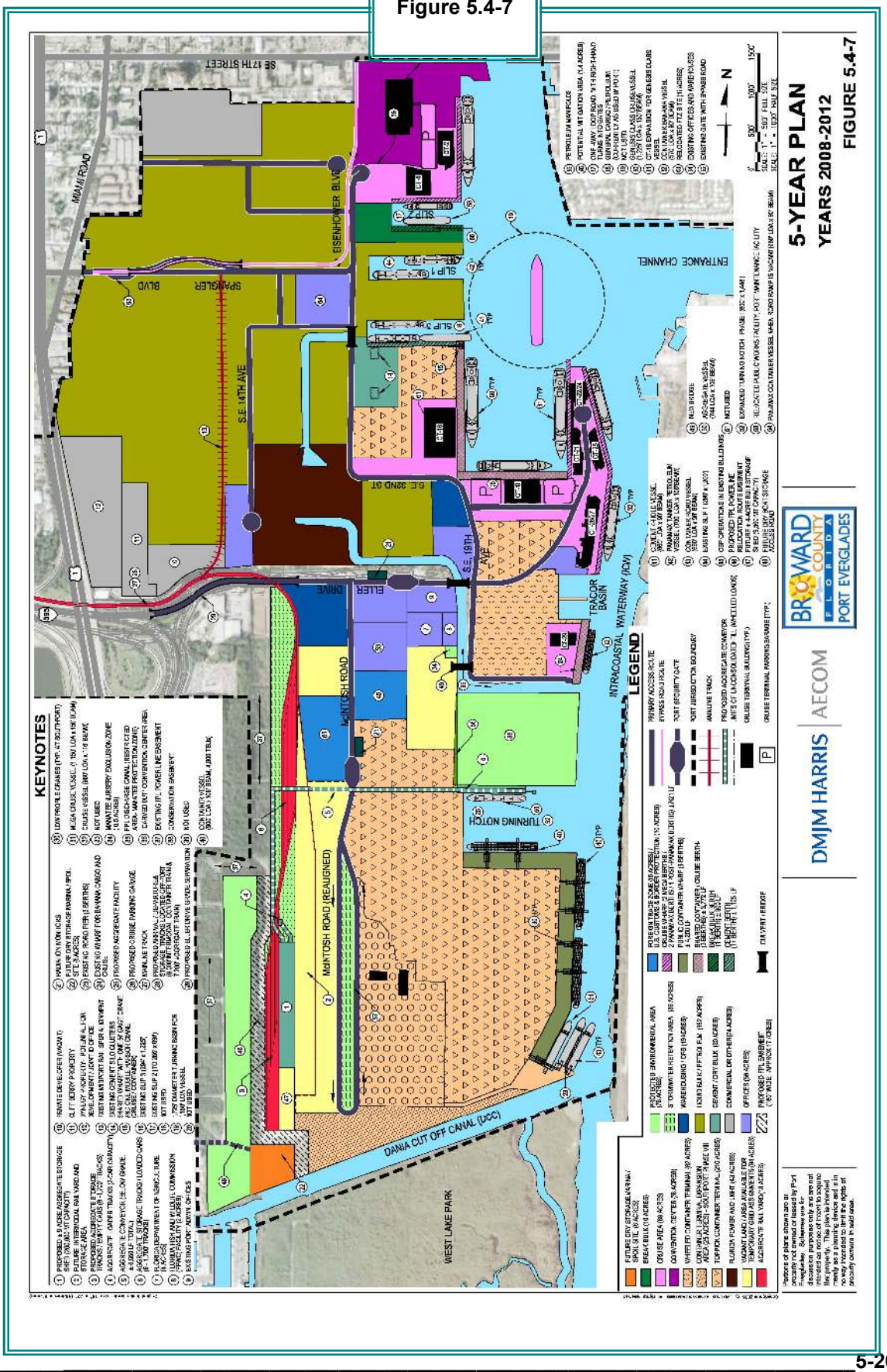
5-YR Vision Plan Annual CY Throughput Estimate - Container Terminals				
Storage Mode	Annual Throughput (TEU/gross ac)	Terminal Area (gross acres)	Estimated Annual Throughput	Market Forecast
Wheeled (RORO)	5,300	62	328,600	266,103
Wheeled (Banana)	10,500	20	210,000	74,909
Top-Pick (2-wide)	3,600	---	---	1,062,480
Top-Pick (4-wide)	7,400	210	1,554,000	
RTG	12,000	---	---	
Total - Container	---	**292**	**2,092,600**	**1,403,491**

5-YR Vision Plan Annual Berth Throughput Estimate - Container Terminals				
Vessel Loading Mode	Annual Berth Throughput (TEU/Berth)	Berth Lengths (1000' per berth)	Estimated Annual Throughput	Market Forecast
RORO	153,000	2	306,000	266,103
Ship mounted crane	95,000	1	95,000	74,909
STS crane (shared)	113,000	3	339,000	1,062,480
STS crane	204,000	3	612,000	
Total / Containers	---	**9**	**1,352,000**	**1,403,491**

Limiting Factor

The 5-Year Plan is illustrated in Figure 5.4-7.

Figure 5.4-7


5-YEAR PLAN
YEARS 2008-2012
FIGURE 5.4-7
KEYNOTES
LEGEND
SE 17TH STREET
MIAMI ROAD
EISENHOWER BLVD
SPANGLER BLVD
S.E. 14TH AVE
S.E. 32ND ST
S.E. 19TH AVE
ENTRANCE CHANNEL
McINTOSH ROAD
McINTOSH ROAD (REALIGNED)
TURNING NOTCH
INTRACOASTAL WATERWAY (ICW)
TRACOR BASIN
DANIA CUT OFF CANAL (DCC)
WEST LAKE PARK
SLIP 1
SLIP 2
SLIP 3
DMJM HARRIS
AECOM
BROWARD COUNTY
FLORIDA
PORT EVERGLADES

5.5 The 10-Year Vision Plan

5.5.1 10-Year Vision Plan Goals

The 10-Year Vision Plan goals were established by identifying the infrastructure needed to meet the projected market demand by 2016. The resulting infrastructure goals are shown in Table 5.5-1.

Table 5.5-1

10-Year Vision Plan Goals

	Berth Length (FT)	Berths Required (rounded)	Terminal Area (gross acres)
Container Terminals			
RTG Operations	1000	5.7 (6)	99
RORO (wheeled)	700	2.1 (2)	60
Bananas (wheeled)	650	0.6 (1)	4.5
Non-Container Cargo Terminals			
General Cargo	700-900	1.3 (1+)	7.7
Cement	750	1.5 (2)	7.3
Aggregate	900	0.8 (1)	2.6
Cruise Terminals	1000-1200	8	64
Petroleum Terminals	3 vessel/1 barge		357

5.5.2 Projects in the 10-Year Vision Plan

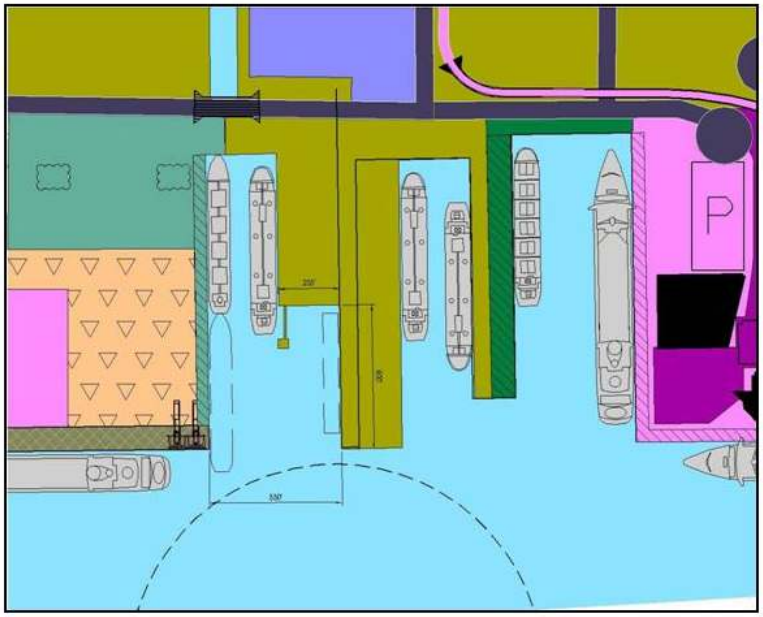
The 10-Year Vision Plan projects were derived to meet the 10-Year Plan goals. The projects proposed for implementation in the 10-Year Vision Plan are discussed below.

Petroleum Barge Slip. Within the 10-Year Vision Plan, the Port foresees the need to provide a petroleum barge slip at the end of Pier1. The Purvin and Gertz (P&G) Study recommended a slip of 250 feet by 600 feet to accommodate all of the potential barges (see Element VI, Page 13 of the P&G Study).

Figure 5.5-1 provides a plan view of the proposed slip to berth a 560-foot LOA petroleum barge. The north side of the slip would form the south side of the future pier head.

Figure 5.5-1

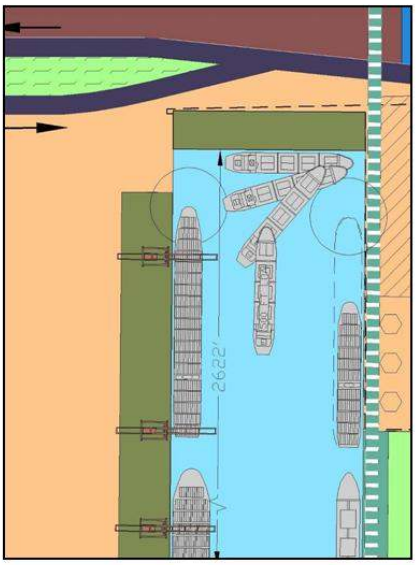
Pier 1 Barge Slip – Plan View



The Turning Notch. Phase II expansion of the Turning Notch is also a feature of the 10-Year Vision Plan. Alternative concepts for extending the Turning Notch are illustrated in Figures 5.5-2 and 5.5-3.

Figure 5.5-2

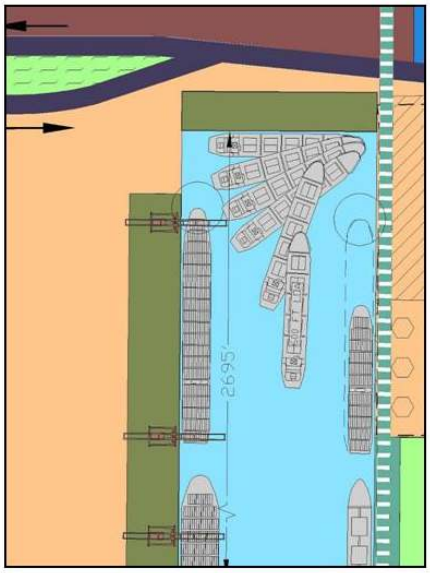
Turning Notch Berthing Study A



- Notch length; 2622 FT
- Max 500 FT vessel on west berth
- Larger SEGA class bulk vessels at banana berth; when unoccupied

Figure 5.5-3

Turning Notch Berthing Study B



- Longer cut west; +73 FT
- Accommodates longer bulk cargo vessels at west berth
- Max 600 FT vessel
- Larger SEGA class bulk vessels at banana berth; when unoccupied
- Needs further coordination with airport

These alternative concepts for expanding the Turning Notch were discussed with the Port's senior staff and the pilots. The 10-Year Vision Plan shown later in Figure 5.5-4 represents a consensus of these studies and discussions.

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

Slip 2 Expansion. Slip 2 will be expanded in both width and length to accommodate a cruise vessel 1,100 feet in LOA on the north bulkhead and a general cargo or petroleum vessel on the south bulkhead. The existing roll-on/roll-off (RO/RO) ramp on the north bulkhead of Slip 2 will be reconstructed further west in the slip.

Midport Cruise Passenger Intermodal Center - Phase I. This passenger intermodal center will integrate an intermodal zone, or ground transportation area, at grade with a structured parking facility above to serve the cruise terminals at Midport. The intermodal center will provide a central location for the loading/unloading of buses, shuttles, and taxis.

Container Terminal Area Expansion. This project fills in the Tracor Basin to expand the container terminal area at Midport.

Construction of Berth 28 and Extension of Berth 29. This project constructs the bulkhead at Berth 28 and extends the existing bulkhead at Berth 29 southward.

Crane Procurement for Berths 28 - 29 (four 100-gauge cranes). Four 100-foot gauge ship-to-shore gantry cranes on a rail structure will be procured for Berths 28-29.

FPL Discharge Canal Realignment. Extending Berth 29 southward necessitates the realignment of the FPL Discharge Canal; this occurs at the Canal's junction with the ICW.

Cruise Terminal 27. A new cruise terminal will be constructed at Midport with an elevated passenger concourse to serve cruise ships at Berth 28.

Cruise Terminal 29 Demolition. Cruise Terminal 29 is demolished to create additional cargo terminal area along the wharf.

Relocation of Banana and Other General Cargoes. On the north bulkhead of the Phase II expanded Turning Notch, a marginal wharf will be constructed to serve general cargo, including banana vessels.

ICTF Track and Storage Yard. The ICTF will be constructed to transfer international containers between rail and ship. The project consists of expanding the existing rail spur, created in the 5-Year Plan, into rail storage tracks adjacent to a new container storage yard.

Crane Procurement for Southport (three 100-gauge cranes). Three ship-to-shore 100-foot gauge gantry cranes will be added to Southport in the 10-Year Vision Plan.

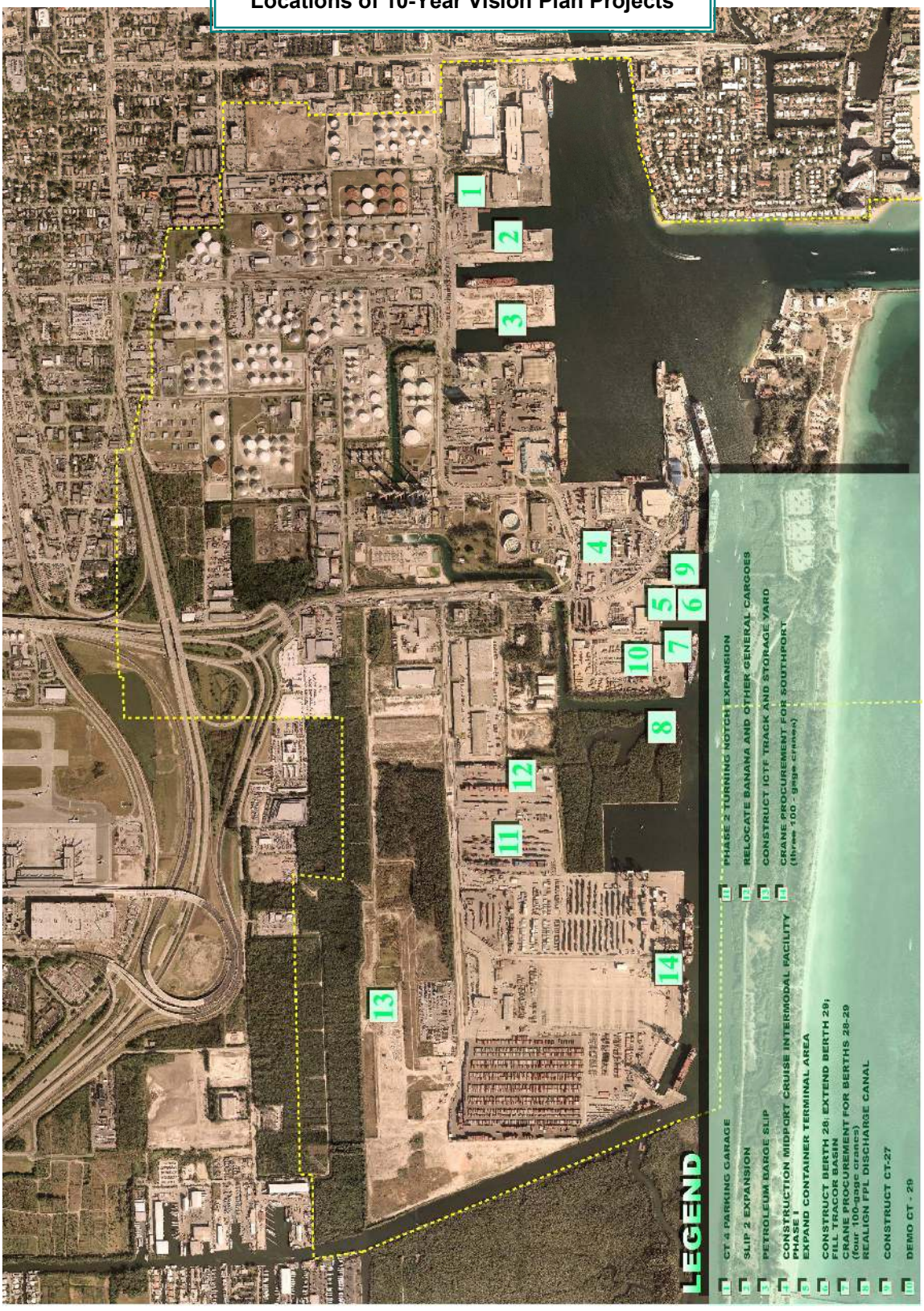
The locations of the Master Plan projects contained in the 10-Year Vision Plan are shown in Figure 5.5-4.

Table 5.5-2

10-Year Vision Plan – Master Plan Projects
Years 2013 - 2016

	Project Cost ($ million)
– Northport Terminal Improvements	
• 10-1: CT 4 Parking Garage	37
• 10-2: Slip 2 Expansion	90
• 10-3: Petroleum Barge Slip	24
– Midport Terminal Improvements	
• 10-4: Construct Midport Cruise Intermodal Facility - Phase 1	80
• 10-5: Expand Container Terminal Area	15
• 10-6: Construct Berth 28, Extend Berth 29	25
• 10-7: Crane Procurement for Berths 28-29 (four 100-gauge cranes)	40
• 10-8: Realign FPL Discharge Canal	10
• 10-9: Construct CT-27	35
• 10-10: Demo CT-29	1
– Southport Terminal Improvements	
• 10-11: Phase 2 Turning Notch Expansion	60
• 10-12: Relocate Banana and Other General Cargos	10
• 10-13: Construct ICTF Track and Storage Yard	50
• 10-14: Crane Procurement for Southport (three 100-gauge cranes)	30
In present-day dollars **TOTAL**	**$ 507**

Figure 5.5-4
Locations of 10-Year Vision Plan Projects



The infrastructure projected to be in place at the end of the 10-Year Vision Plan was reviewed to verify the capacity assessment for containerized cargo. This capacity assessment is shown in Table 5.5-3. The 10-Year Vision Plan is illustrated in Figure 5.5-5.

Table 5.5-3

10-Year Vision Plan – Capacity Assessment

10-YR Vision Plan
Annual CY Throughput Estimate - Container Terminals

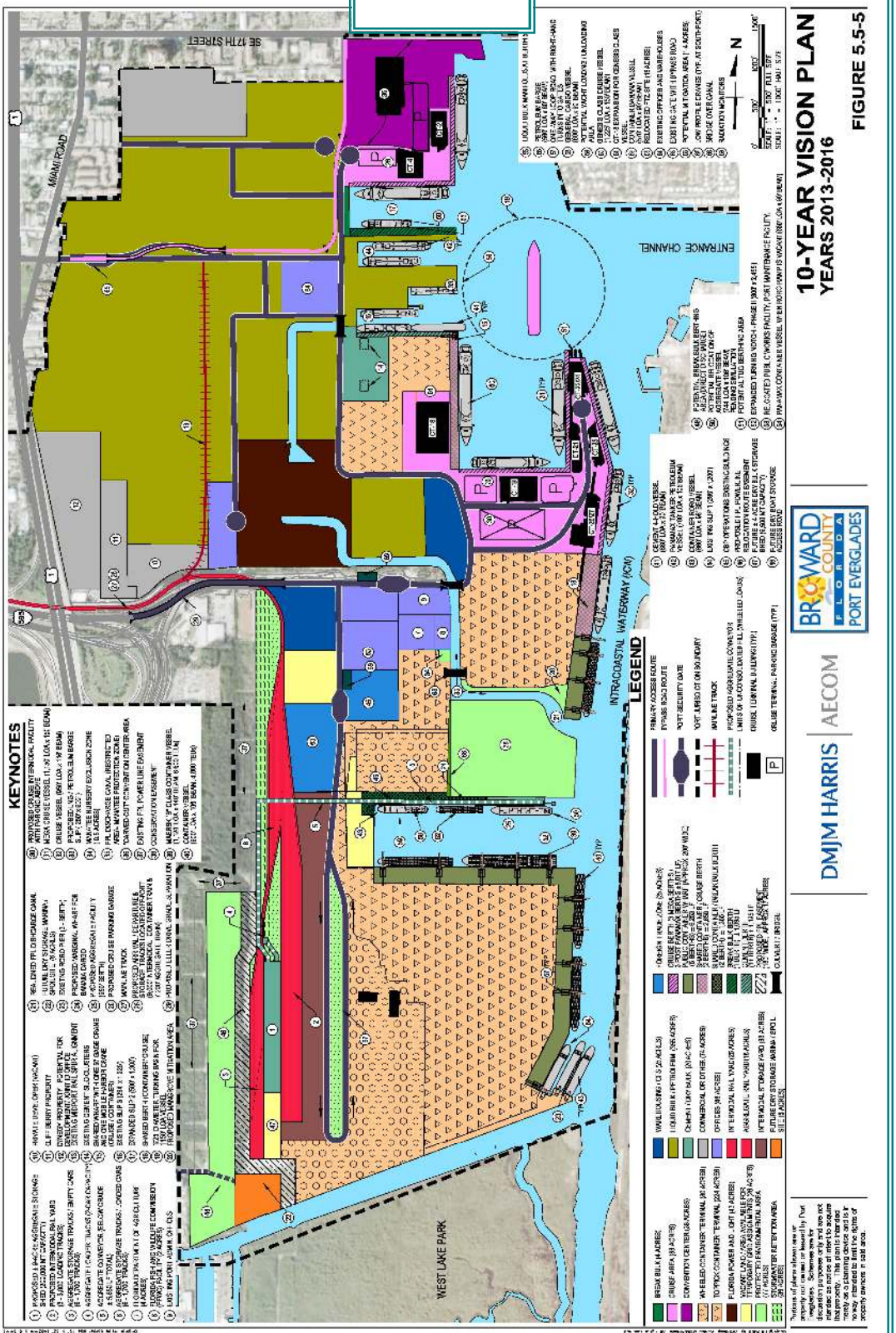
Storage Mode	Annual Throughput (TEU/gross ac)	Terminal Area (gross acres)	Estimated Annual Throughput	Market Forecast
Wheeled (RORO)	5,400	60	324,000	323,755
Wheeled (Banana)	10,500	20	210,000	80,698
Top-Pick (4-wide)	7,600	224	1,702,400	1,374,132
RTG	13,900	---	---	
Total - Container	---	**304**	**2,236,400**	**1,778,585**

10-YR Vision Plan
Annual Berth Throughput Estimate - Container Terminals

Vessel Loading Mode	Annual Berth Throughput (TEU/Berth)	Berth Lengths (1000' per berth)	Estimated Annual Throughput	Market Forecast
RORO	157,000	2	314,000	323,755
Ship mounted crane	133,000	1	133,000	80,698
STS crane (shared)	144,000	2	288,000	1,374,132
STS crane	242,000	5	1,210,000	
Total / Containers	---	**10**	**1,945,000**	**1,778,585**

Limiting Factor

Figure 5.5-5


10-YEAR VISION PLAN
YEARS 2013-2016
FIGURE 5.5-5
KEYNOTES
LEGEND
MIAMI ROAD
SE 17TH STREET
ENTRANCE CHANNEL
INTRACOASTAL WATERWAY (ICW)
WEST LAKE PARK
DMJM HARRIS | AECOM
BROWARD COUNTY FLORIDA PORT EVERGLADES

5.6 The 20-Year Vision Plan

5.6.1 20-Year Vision Plan Goals

The 20-Year Vision Plan goals were established by identifying the infrastructure needed to meet the projected market demand by 2026. The resulting infrastructure goals are shown in Table 5.6-1.

Table 5.6-1

20-Year Vision Plan Goals

	Berth Length (FT)	Berths Required (rounded)	Terminal Area (gross acres)
Container Terminals			
RTG Operations	1000	6.8 (7)	140
RORO (wheeled)	700	2.9 (3)	89
Bananas (wheeled)	650	0.6 (1)	5.2
Non-Container Cargo Terminals			
General Cargo	700-900	1.5 (2)	8.8
Cement	750	1.7 (2)	8.3
Aggregate	900	0.9 (1)	4.2
Cruise Terminals	1000-1200	8	64
Petroleum Terminals	3 vessel/1 barge		357

5.4.2 Projects in the 20-Year Vision Plan

The 20-Year Vision Plan projects were derived to meet the 20-Year Plan goals. The projects proposed for implementation in the 20-Year Vision Plan are discussed below.

Reconfiguration of Slips 1 and 3. Slips 1 and 3 will be expanded in width and Slip 3 lengthened. These two slips serve both petroleum and cement vessels. Expanding Slip 3 will eliminate the need for the cement vessel using Berth 14 to wait for Berth 15 to be vacant before it can maneuver into and out of Berth 14. Expanding Slips 1 and 3 will accommodate the berthing of larger petroleum vessels.

Midport Cruise Passenger Skyway. This project represents Phase II of the cruise passenger intermodal center and includes the implementation of an elevated pedestrian moving walkway that connects the 4,000+-space parking structure with all the cruise terminals at Midport.

Cruise Terminal 24/25 Expansion. This project will integrate the footprint areas of Cruise Terminals 24 and 25 into a single terminal to service larger capacity cruise ships.

Rubber Tire Gantry Crane Terminal Conversions. This project installs the necessary site infrastructure to accommodate rubber tire gantry cranes (RTGs) to increase densification of container storage within the Southport terminal yards.

Berth 33A Extension. The existing RO/RO ramps and structured pier at Southport will be removed and Berth 33A expanded to approximately 1,100 feet to accommodate a 900-foot LOA container ship.

Crane Procurement for Berth 33A. One ship-to-shore 100-foot gauge gantry crane will be procured to serve Berth 33A.

Dania Cut-Off Canal RO/RO Development. The Dania Cut-Off Canal will be widened to the north to accommodate the berthing of three RO/RO vessels. RO/RO ramps, bulkheads, and embankment protection are included in this project.

Customs and Border Protection Facility. A new facility to house the inspection services of Customs and Border Protection will be constructed west of McIntosh Road in the Port-secured area.

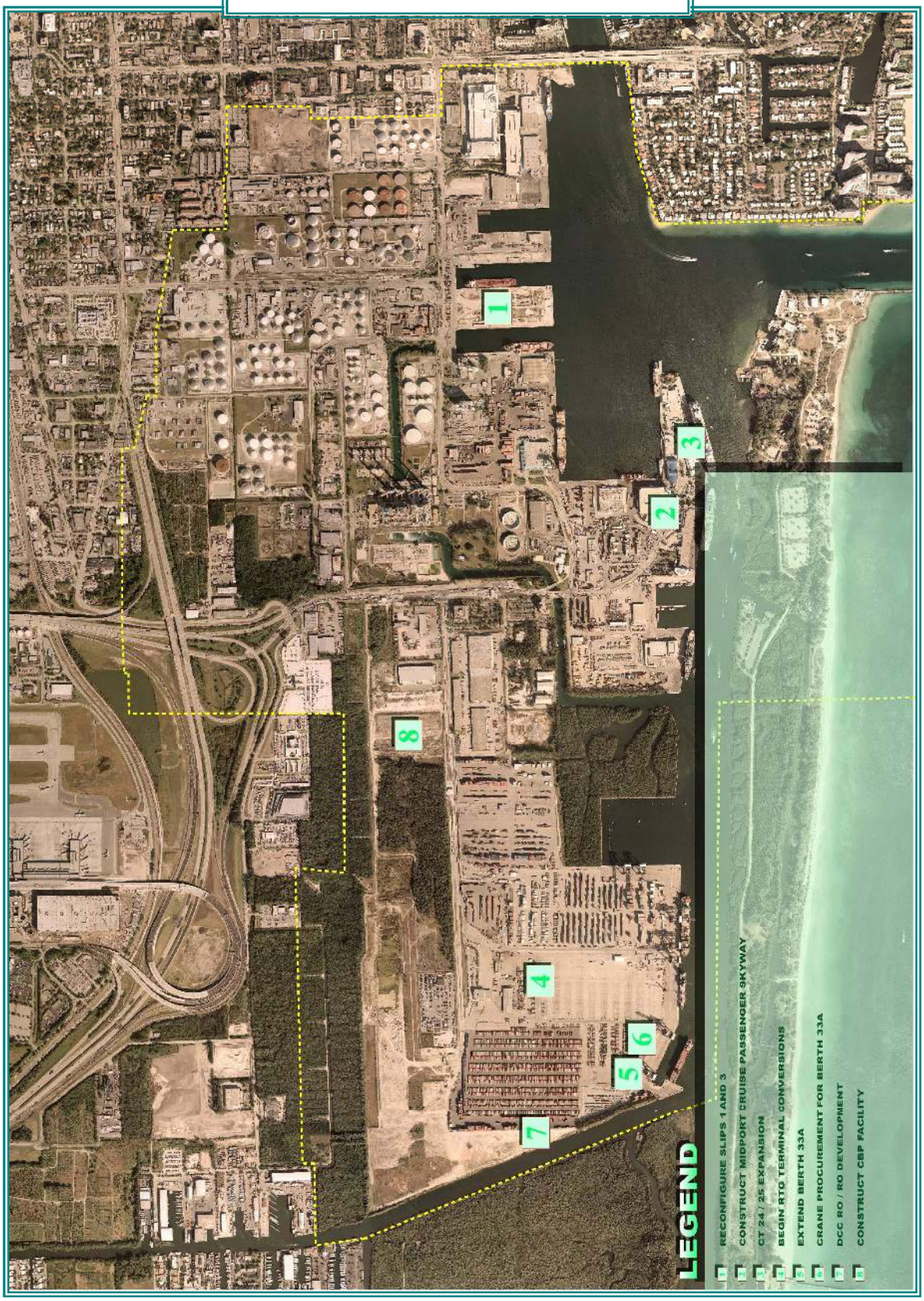
The Master Plan projects in the 20-Year Vision Plan are shown Table 5.6-2. The locations of these projects are shown in Figure 5.6-1

Table 5.6-2

20-Year Vision Plan – Master Plan Projects
Years 2017 to 2026

	Project Cost ($ million)
– Northport Improvements	
• 20-1: Reconfigure Slips 1 and 3	140
– Midport Improvements	
• 20-2: Construct Midport Cruise Passenger Skyway	80
• 20-3: CT 24/25 Expansion	40
– Southport Improvements	
• 20-4: Begin RTG Terminal Conversions	30
• 20-5: Extend Berth 33A	20
• 20-6: Crane Procurement for Berth 33A	10
• 20-7: DCC Ro/Ro Development	50
• 20-8: CBP Facility	16
In present-day dollars **TOTAL**	**$386**

Figure 5.6-1
Locations of 20-Year Vision Plan Projects



The infrastructure projected to be in place at the end of the 20-Year Vision Plan was reviewed to verify the capacity assessment for containerized cargo. Table 5.6-3 presents the results of that capacity assessment.

Table 5.6-3

20-Year Vision Plan – Capacity Assessment

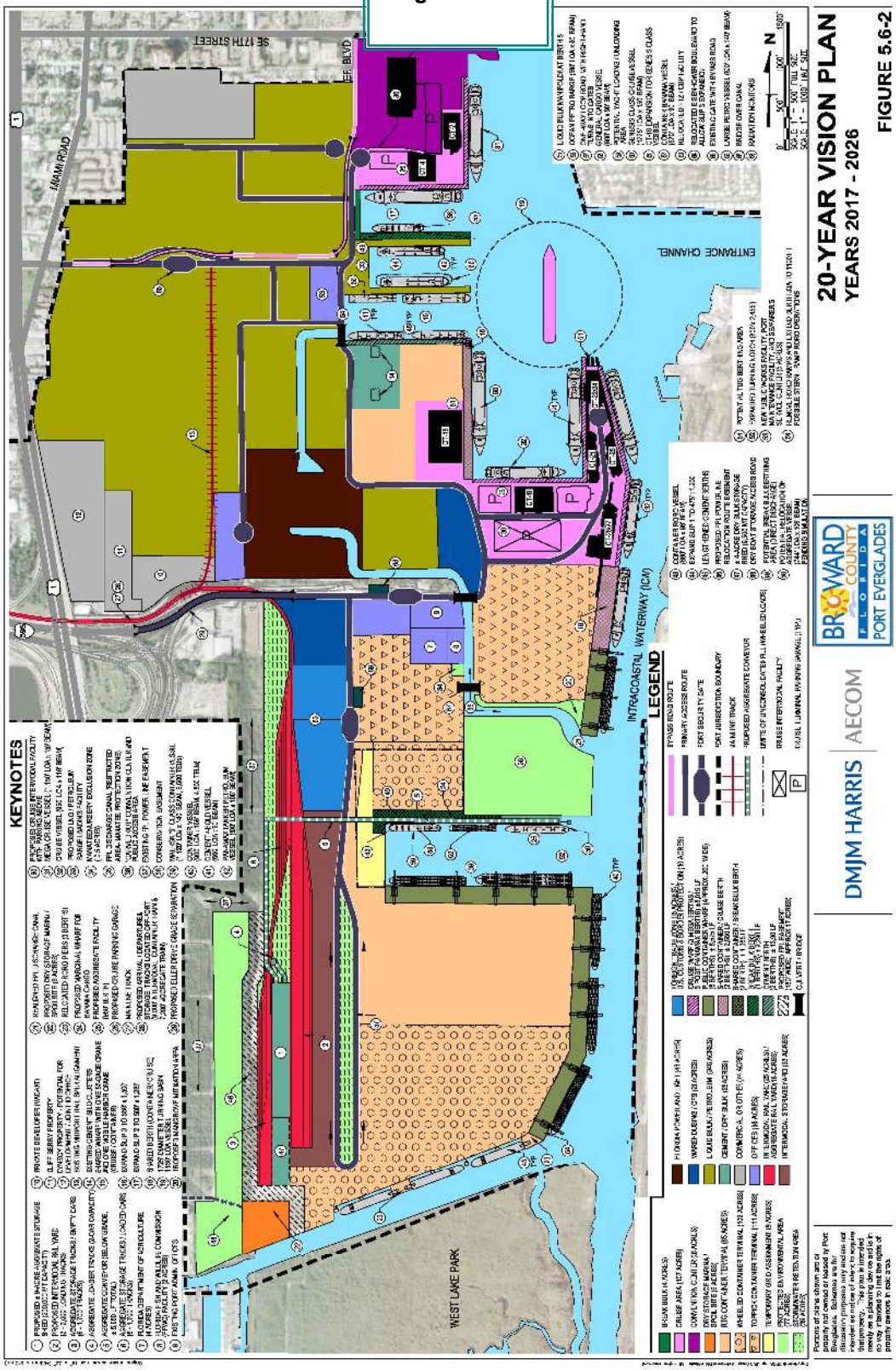
20-YR Vision Plan Annual CY Throughput Estimate - Container Terminals				
Storage Mode	Annual Throughput (TEU/gross ac)	Terminal Area (gross acres)	Estimated Annual Throughput	Market Forecast
Wheeled (RORO)	5,400	89	480,600	479,236
Wheeled (Banana)	10,500	20	210,000	93,654
Top-Pick (4-wide)	7,600	111	843,600	2,133,782
RTG	15,300	85	1,300,500	
Total - Container	---	**305**	**2,834,700**	**2,706,672**

20-YR Vision Plan Annual Berth Throughput Estimate - Container Terminals				
Vessel Loading Mode	Annual Berth Throughput (TEU/Berth)	Berth Lengths (1000' per berth)	Estimated Annual Throughput	Market Forecast
RORO	163,000	3	489,000	479,236
Ship mounted crane	169,000	1	169,000	93,654
STS crane (shared)	174,000	2	348,000	2,133,782
STS crane	315,000	6	1,890,000	
Total / Containers	—	**12**	**2,896,000**	**2,706,672**

Limiting Factor

The 20-Year Vision Plan is illustrated in Figure 5.6-2.

Figure 5.6-2


20-YEAR VISION PLAN
YEARS 2017 - 2026
FIGURE 5.6-2
KEYNOTES
LEGEND
SE 17TH STREET
MIAMI ROAD
ENTRANCE CHANNEL
INTRACOASTAL WATERWAY (ICW)
WEST LAKE PARK
DMJM HARRIS
AECOM
BROWARD COUNTY
FLORIDA
PORT EVERGLADES

5.7 Vision Plan Summary

5.7.1 Container Terminals

For the Port's container terminals, the Vision Plan is predicated on the following factors:

- Berth development and increased berth utilization will be critical.
- Abundant backland opportunities will occur through terminal consolidation.
- The phasing of the berth and terminal expansion program will need to be tracked with actual cargo growth annually.
- Densification of top-pick operations may be able to effectively delay RTG conversion and capital investments into outer years.

Table 5.7-1 summarizes the projected container terminal development at the Port over the 20-year planning horizon.

Table 5.7-1

Vision Plan Summary – Container Terminals

	5-Year Plan	10-Year Vision Plan	20-Year Vision Plan
Berths			
STS crane	3	5	6
RORO ramps	2	2	3
Ship mounted crane	1	1	1
Shared berth LOLO/RORO	1	1	---
Shared berths container / cruise	2	3	2
Terminal Area (gross acres)			
RTG	---	---	85
Top Pick	210	224	111
Wheeled (RORO)	62	60	89
Wheeled (bananas)	20	20	20

5.7.2 Non-Container Terminals

Table 5.7-2 summarizes the projected non-container terminal development over the 20-year planning horizon.

Table 5.7-2

Vision Plan Summary - Non-Container Terminals

	5-Year Plan	10-Year Vision Plan	20-Year Vision Plan
Berths			
Cement	<2	<2	2
Aggregate	1	1	1
General Cargo	---	1	1
Shared Berth General Cargo	2	2	2
Terminal Area (gross acres)			
Cement	10	10	10
Aggregate / Marine	10	10	15
Aggregate / Rail Yard	18	18	18
General Cargo	10	4	4

5.7.3 Cruise Terminals

Table 5.7-3 summarizes the projected cruise terminal development over the 20-year planning horizon. Although this figure shows no dedicated berth for the day cruises, it is understood that the day cruise ships would be accommodated at other available berths.

Table 5.7-3

Vision Plan Summary – Cruise Terminals

	5-Year Plan	10-Year Vision Plan	20-Year Vision Plan
Berths			
Day Cruise	0	0	0
Panamax Cruise	3	4	---
Mega-Cruise	3	2	6
Shared berths container / cruise	2	2	2
Terminal Area (gross acres)			
Cruise terminal	89	88	107

Figure 5.4-2

5.74 Petroleum Terminals

Figure 5.7-4 summarizes the projected petroleum terminal development over the 20-year planning horizon. In addition to the berths shown on this figure, Berth 5 will be equipped with the appropriate unloading facilities to accommodate a petroleum vessel as operations at Slip 2 warrant.

Table 5.7-4

Vision Plan Summary – Petroleum Terminals

	5-Year Plan	10-Year Vision Plan	20-Year Vision Plan
Berths			
Petroleum Vessel	3	3	3
Petroleum Barge	0	1	1
Terminal Area (gross acres)			
Tank Farm/Pier Areas	362	355	346