

# Port of Philadelphia Port Advisory Board

JULY 7, 2016



**PHILADELPHIA**  
Regional Port Authority

Meeting Overview:

*Natural flow of port development arising from the channel being deepened to 45 feet.*

# Channel Deepening Project

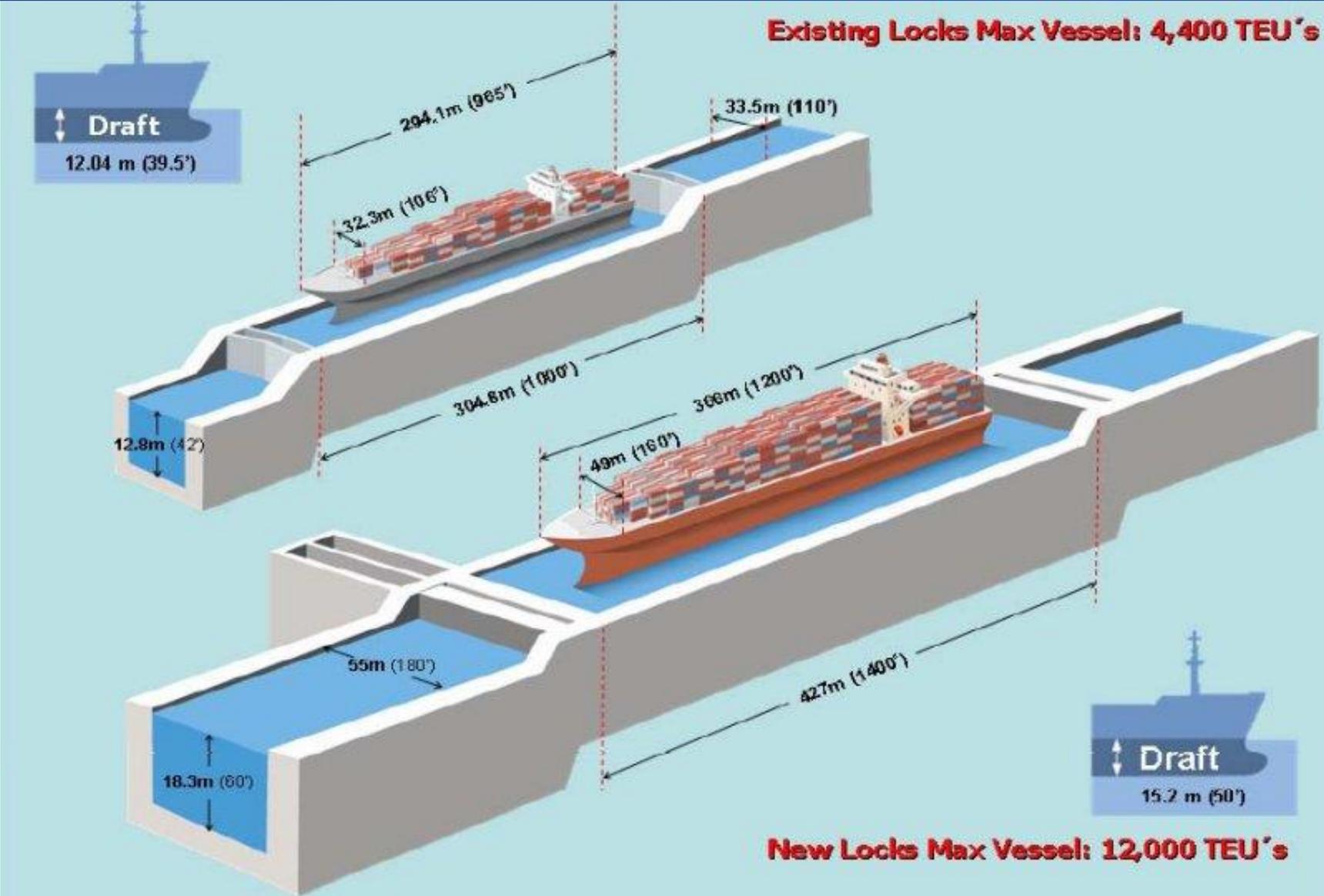


- The Channel Deepening Project better connects the Port of Philadelphia to the world.
- How will this depth help and what else do we need to do at the port to move cargo through Philadelphia?

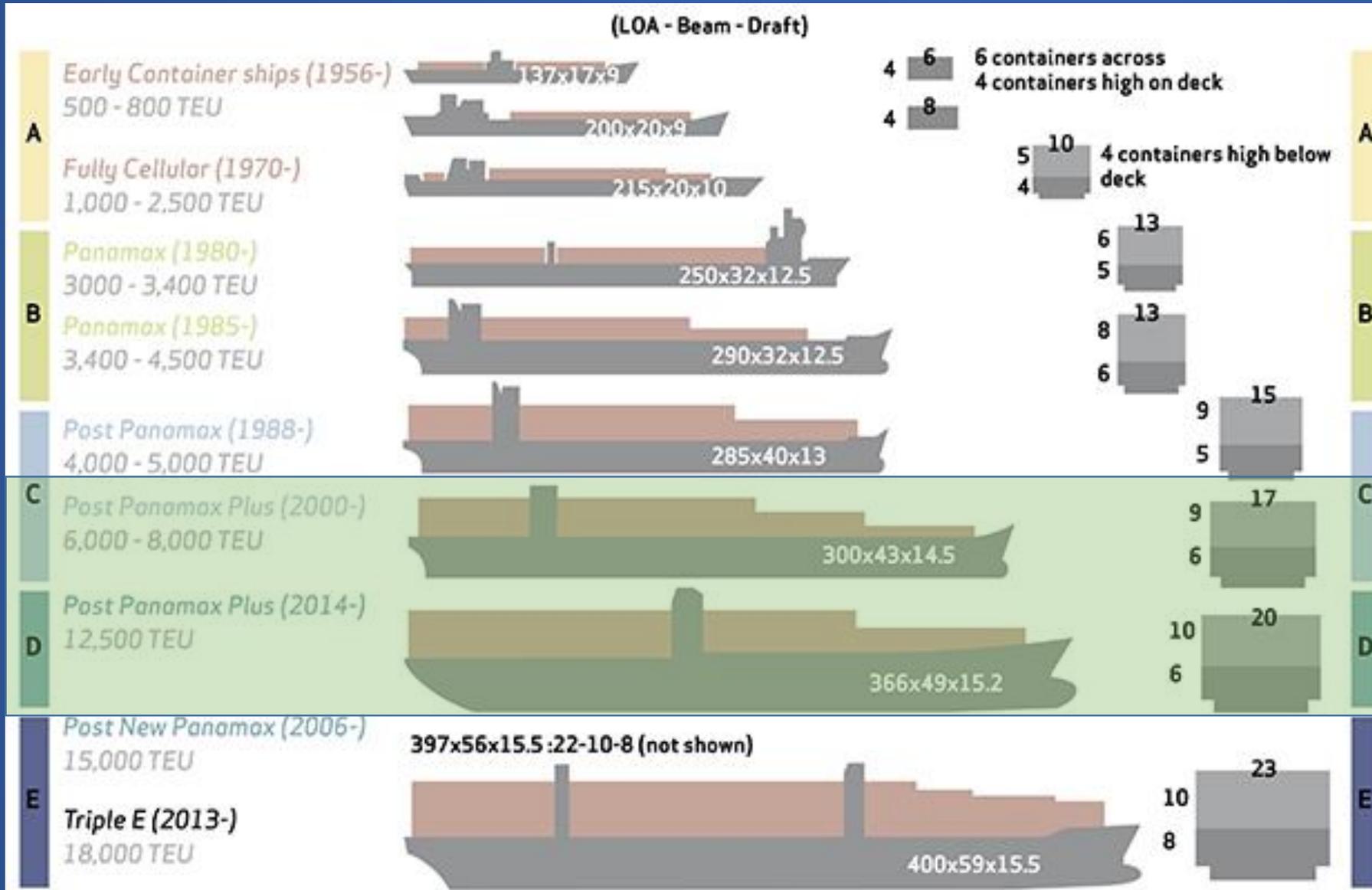
# Waterborne Access: Post-Panama Canal Expansion



# Waterborne Access: Post-Panama Canal Expansion



# Waterborne Access: Vessels



# Waterborne Access

*What can we handle at 45 feet?*



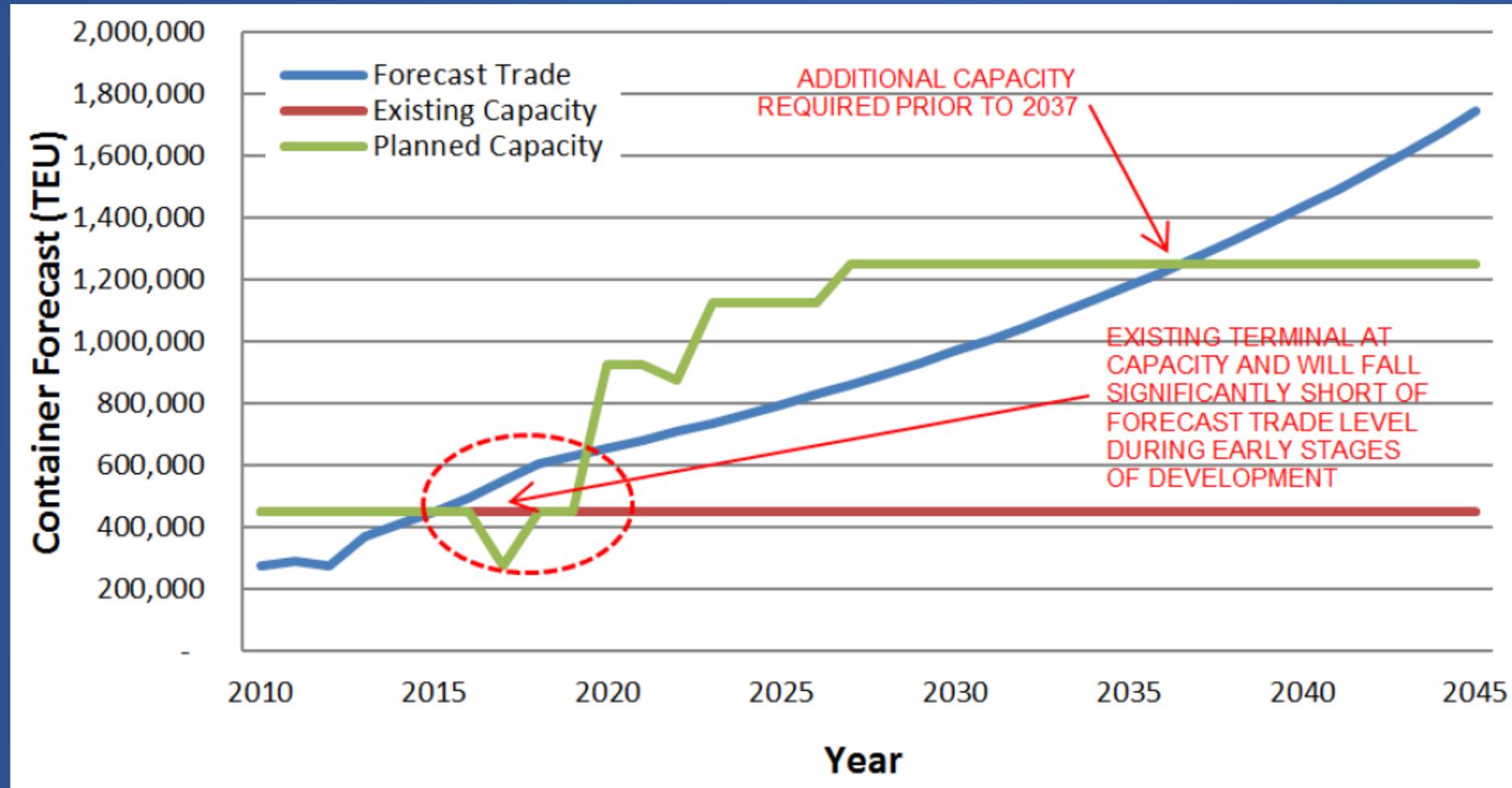
**PHILADELPHIA**  
Regional Port Authority

Cargoes that benefit from a deeper channel:

- Containers
- Wood Pulp
- Steel Slabs
- Energy

This presentation focuses on Container cargo growth opportunity.

# Planning & Resource Allocation: Forecasting Containers



## Forecast Trade vs. Capacity for Existing Port Facilities: Containers

# 10,000 TEU vessels opens possibility for Asian Service



## MSC Transpacific East

- USA East Coast to Asia (EMPIRE)
- Main South and Central China ports to North Atlantic
- Direct service from Kaohsiung & Hong Kong
- Currently calls 3 USA ports and 7 foreign ports.

## Benefits include:

- Help support growth of business in Philadelphia, leading to more work and a more stable labor environment.
- Economic growth thru out our region.

## Asia Service by numbers

- Typical, **242,000 TEUs** per Year.
- **2.1 million** in Metric Tonnage.
- Commodities: General Goods, Forest Products, Steel, Projects and Autos.
- Trade Companies: Raymour & Flanigan, Michelin NA, IKEA, ToysRus, Dupont, Pier 1.

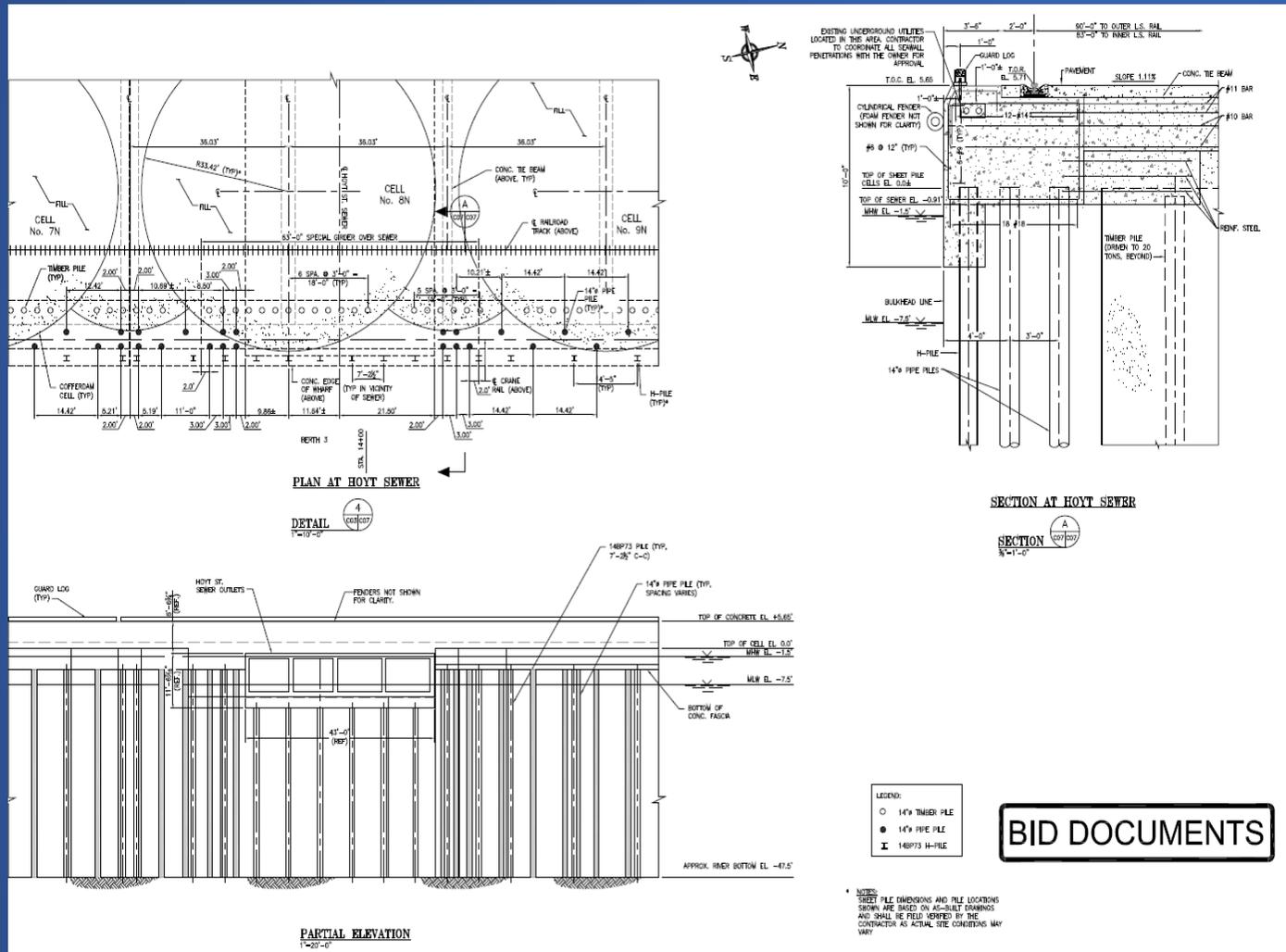
## Vessel Sizes: 9,000-10,000 TEUs

# Terminal Requirements

*What are the necessary measures to be ready?*



# Terminal Requirements: Berth at 45'



## Build new berths or improve existing berths:

- Berth Enhancements – fendering
- Structural Strengthening

## Dredging

- Vessels in 10,000 – 12,000 TEUs range
- Partially laden vessels up to 14,000 TEUs being evaluated

# Terminal Requirements: Dock



MSC Judith – 8,000 TEU Vessel

## Considerations:

- Length of vessels in excess of 1,000 feet.
- Additional load on dock due to number and size of new cranes

# New Cranes



*Taller Cranes have greater outreach.*



*New cranes are electric and heavier than existing cranes.*

# Terminal



Reduce *grounded footprint*



Increase density *by stacking vertical*

# Container Terminal Capacity



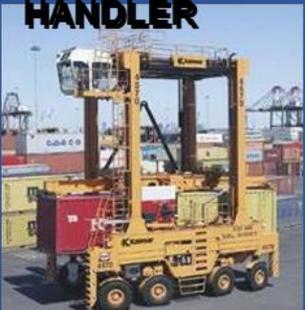
**TOP-PICK EMPTY HANDLER**



**REACH STACKER**



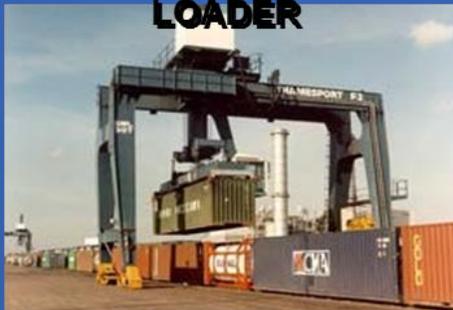
**SIDE LOADER**



**STRADDLE CARRIER**



**RUBBER-TIRED GANTRY (RTG)**



**RAIL-MOUNTED GANTRY (RMG)**

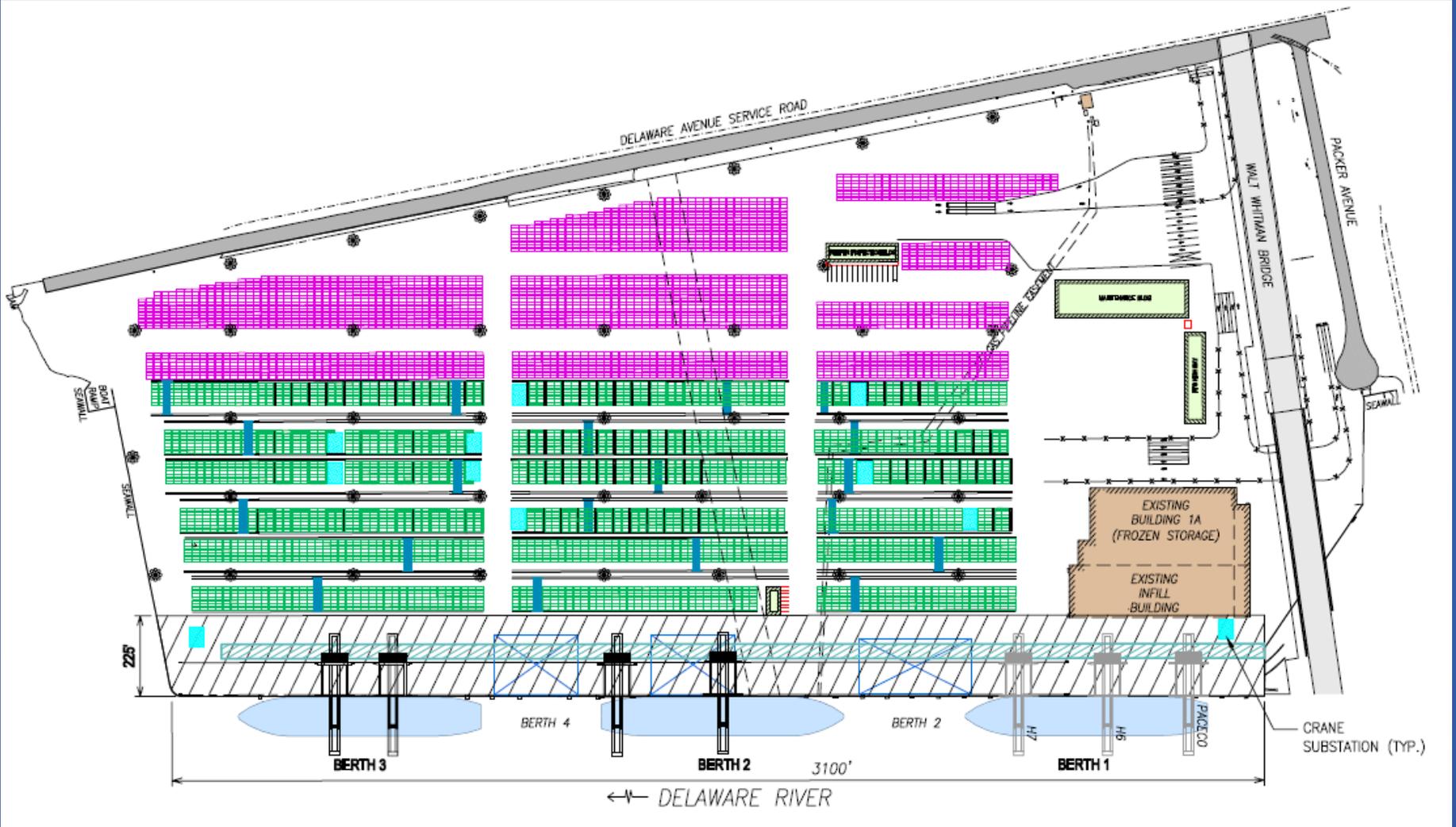


# Terminal Requirements: Gate System



- **Improve productivity** by elimination of data input and/or task confirmations.
- **Increase accuracy and velocity** of the transactions
- **Higher throughput and improved container inventory accuracy.**
- **Improved “truck-turn-around-times”.**
- **Safer operations** since no clerks are required in Gate lanes.

# Terminal Requirements: Terminal Solutions



Modernize Packer Avenue Marine Terminal

# Terminal Requirements: Terminal Solutions



Container terminal at Southport Marine Terminal Complex

# Competitive Factors

*Once infrastructure is in place at the terminal, what other factors can influence decision making to bring cargo to the port?*



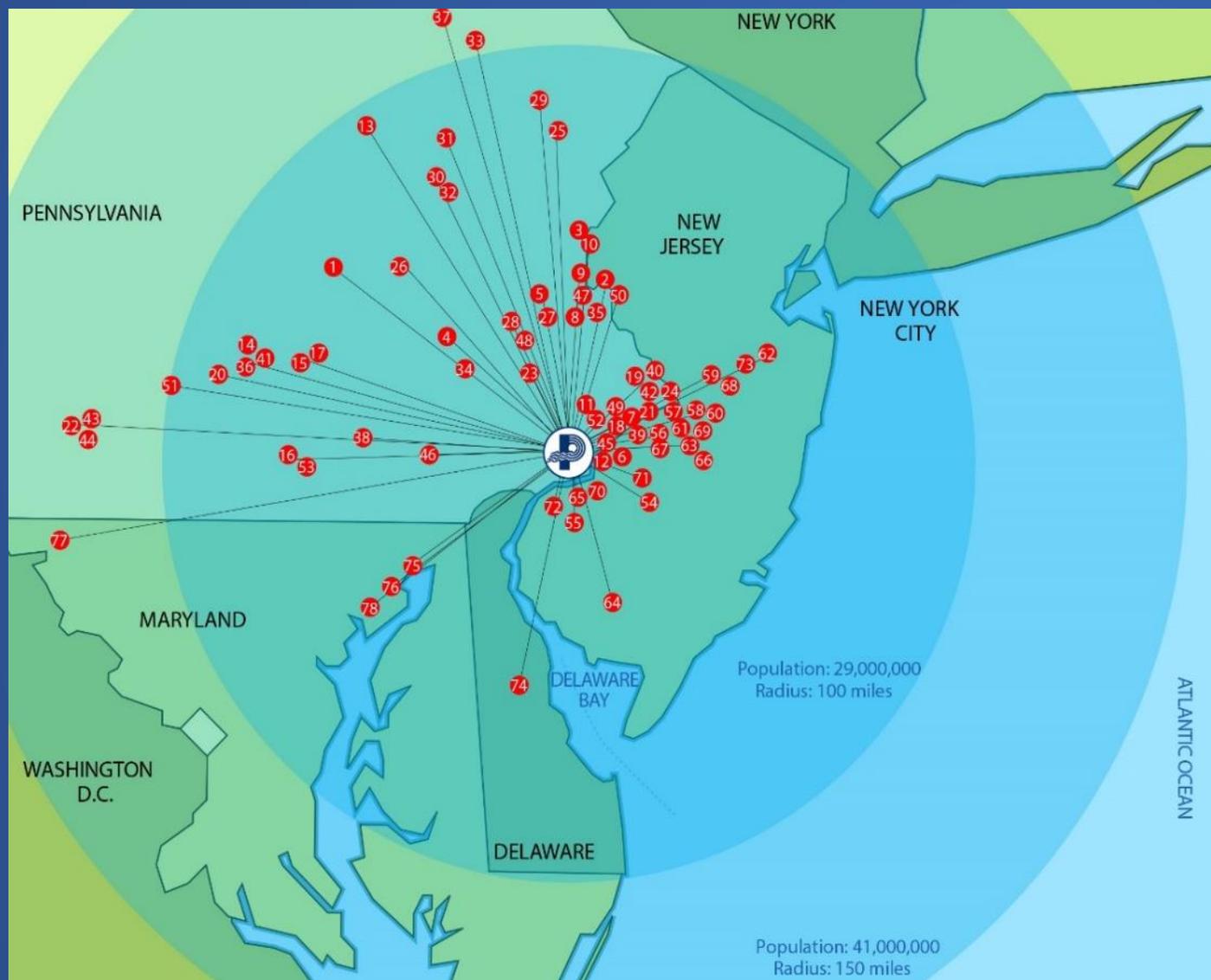
# Competitive Factors: Warehousing

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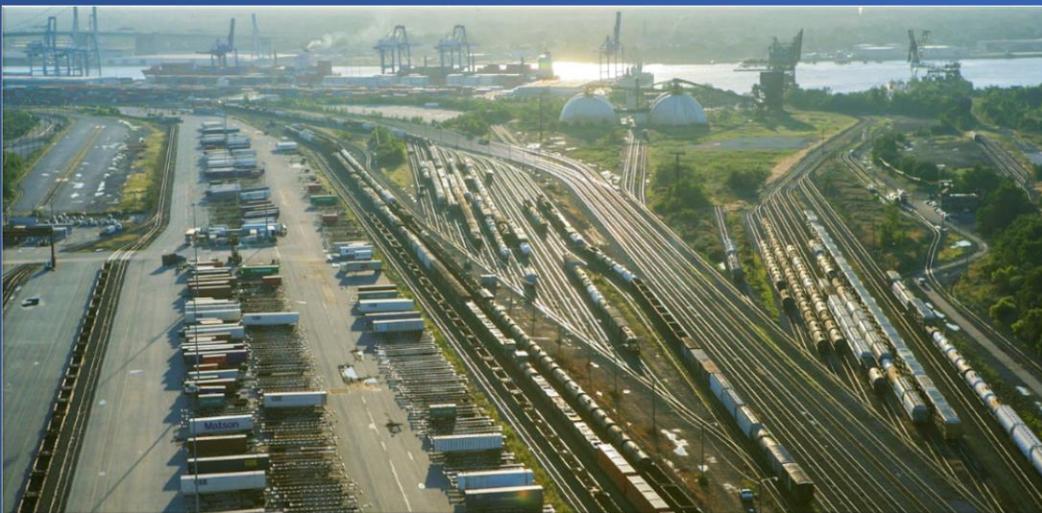
- Warehouses need to be positioned at their destination points.
- An increase of near dock refrigerated warehouses to serve local market cargo growth will be necessary.
- Dry warehousing is demand dependent of larger box retail.
- Larger DC's typically located beyond the “near dock” range.

# Distribution Centers: Imports



- 5<sup>th</sup> Largest Metropolitan Area
- Over 300 Distribution Centers within the PRPA's immediate hinterland

# Competitive Factors: Rail & Road infrastructure



- Road and Rail infrastructure
  - 2 Interstates I-76 & I-95
  - 2 Class One Railroads
- Less terminal congestion compared to other East Coast ports
- Quicker ship and truck turn times

# Total Cost of Transportation



- End-to-end cost is the cost of ports and terminals. These include: pilotage, tug support, handling off and onto the vessel, all terminal activity, and loading/unloading to truck and rail.

Element Cost (per TEU)	PRPA (from Europe/Americas)	PRPA (from Asia e.g. Hong Kong)	NY/NJ (from Europe/Americas)	NJ/NJ (from Asia e.g. Hong Kong)
Voyage slot	\$200	\$391	\$200	\$293
Port/terminal	\$203	\$203	approx. \$300	approx. \$300
Truck delivery to PRPA catchment	\$150 to \$350	\$150 to \$350	\$230 to \$380*	\$230 to \$380*
<b>Total</b>	\$553 to \$753	\$744 to \$944	\$730 to \$880	\$823 to \$973

Per-TEU Cost Comparison Between PRPA and PANYNJ; *PRPA Asia category is estimated*

# Total Cost of Transportation



- On smaller markets/volume haul from Europe and South America, PRPA is on par with NY/NJ for voyage slot cost, has a \$100/TEU port/terminal handling cost advantage, and has a truck haul advantage for close by deliveries.
- On long haul from China and elsewhere in Asia, PRPA has a \$100/TEU disadvantage on voyage slot cost and a \$100/TEU advantage on port/terminal handling cost, and hence is on equal terms for trucking cost to the dividing line in the catchment between PRPA and NY/NJ.

PORT AND TERMINAL CHARGES SUMMARY						
	Baltimore	New York	Philadelphia	Norfolk	Los Angeles	Seattle
Total Cost per Move:						
Truck	\$212.79	\$351.26	\$202.92	\$264.58	\$406.28	\$316.72
Rail	\$212.79	\$267.26	\$202.92	\$264.58	\$406.28	\$316.72
Truck In Excess of 260 miles	\$212.79	\$278.26	\$202.92	\$264.58	\$406.28	\$316.72

Port and Terminal Charges for Selected US Ports

# Competitive Factors: Labor



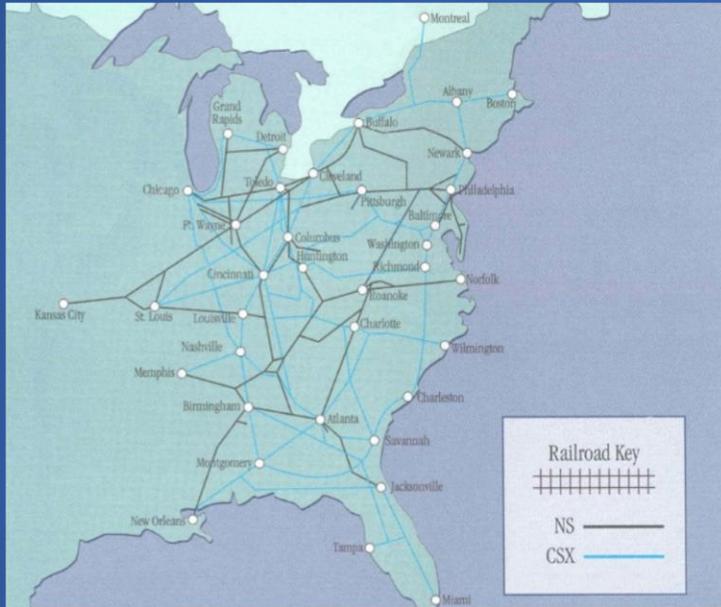
Philadelphia	New York
No assessment	<b>NYSA assessment</b> – <i>on average an additional charge of \$89 per container</i>
<b>19</b> ILA start times	<b>5</b> ILA start times
No pension withdrawal liability	Pension withdrawal liability
Gross production of <b>32 moves an hour</b> <i>with individual vessel gross production reaching 40 moves an hour</i>	Gross moves per hour <b>typically less than</b> Philadelphia
Truck turn time <b>less than 1 hour</b> due to lower density operation	Truck turn time <b>unfavorable</b> due to high density operation and overall congestion
<b>10</b> ILA holidays per year	<b>16</b> ILA holidays per year

# Planning & Resource Allocation

*What are some considerations as we grow to the future?*



# Planning & Resource Allocation: Warehousing



- Logistics Study to quantify near dock warehousing demand.
- Near Term Land availability exists for warehouse development
- Evaluate improvements of transportation corridors to distribution center clusters.



# Planning & Resource Allocation: Road Infrastructure



- Increased volume will increase congestion
- Coordinating with PennDOT and City on road improvements

# Planning & Resource Allocation: Rail Infrastructure



- Increasing demand through Philadelphia will drive improved rail interfaces and investment

- Inland ports are, *by definition*, located in "second-tier" nonurban markets; potential for lower property and logistics costs.
- Inland ports offer superior logistics, warehousing, close proximity to rail & highways, ample truck parking, less traffic congestion.
- Inland ports are ideal to connect to large box distribution centers.

PRPA, Port Canaveral (FL), and Columbia Group submitted a Marine Highway designation request to MARAD

## National Benefits

- Reducing air emissions, traffic congestion, and highway maintenance costs
- Provides system resiliency and transportation alternatives
- Increase national security by adding to the nations sealift resources

## Local benefits

- Increase in local trucking and warehousing
- Enhanced equipment utilization
- Potentially reduce terminal and gate congestion



**PORT OF PHILADELPHIA**  
**FROM ILA PERSPECTIVE**  
**PORT ADVISORY BOARD**  
**JULY 7, 2016**

**SOUTHPORT: DREAM OR REALITY**  
**PACKER AVENUE MARINE TERMINAL**  
**TIOGA MARINE TERMINAL**

JAMES H. PAYLOR JR  
ASSISTANT GENERAL ORGANIZER.

# ILA MAIN OBJECTIVES

- 1) CREATE MORE FAMILY SUSTAINING JOBS
- 2) INCREASE VOLUME AT EXISTING FACILITIES WHILE MAINTAINING INDUSTRY STANDARDS, DEVELOP PARTNERSHIP WITH PORT AUTHORITY
  - PARTICIPATE IN FACILITY ASSESMENT,
    - LEASE/ REVENUE SHARING, ECONOMIC RETURN
  - CREATE MARKETING INITIATIVE FOR EACH FACILITY
  - INCREASE CONTAINER VOLUME WITH LARGER MARKET SHARE
  - ANALYZE LOGISTICAL CHALLENGES OF INCREASING EXPORTS
  - IMPROVE IMAGE OF PORT AUTHORITY AND PORT
  - ALL INITIATIVES MUST HAVE MERIT BASED ASSESMENT, DIRECTION AND CONCLUSION

# JUSTIFICATION FOR PORT EXPANSION AND EXISTING MODIFICATIONS

- Global projections are still optimistic, expansion of Panama Canal and consideration of a new Nicaragua Canal
- 47 other Caribbean/South/Central American maritime projects are examples of the preparation for projected growth (Transshipping and Philly Perfect Together)
- Facility modifications, and construction of new port infrastructure in the Emerging Markets.
- Other competing ports are investing Billions of dollars for infrastructure improvements.
- Carriers are Investing in Larger Vessels
- OUR FUTURE HAS ALREADY BEGUN

# JUSTIFICATION PART TWO

- **Ports along the Delaware River experienced container volume increases of 29% in 2014 & 19% 2015**

**THIS INCREASE OUT PERFORMS THE NATIONAL RATES OF 6% IN THOSE YEARS.**

- **Ocean Carriers have recognized and acknowledged the lower throughput expense in Philadelphia.**
- **This has been accomplished as a result of good supervision and high rates of productivity on the vessel and terminal.**
- **PACKER AVENUE MARINE : HAS REACHED MAXIMUM CAPACITY**
- **CONTAINER DEVELOPMENT CAN ONLY GO SOUTH**
- **PORT OF SYDNEY CANADA WILL INTRODUCE SIGNIFICANT NEW BUSINESS TO OUR PORT**

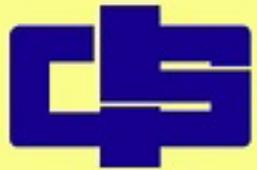
# **OTHER PORT ATTRIBUTES**

- 1. We have a high level of warehouses in close proximity to the port.**
- 2. We have Class 1 rails connectivity for distribution, this rail is connected to the port. Norfolk-Southern, CSX and CP.**
- 3. We are centrally located to high populated regions, New York, Baltimore/Washington, Pittsburgh and Cleveland and Chicago.**
- 4. We can reach 65 % of consumer market within one day of travel.**
- 5. The highway corridors include I 95 North and South, and we share with a greater advantage the 7A and 8A gateway heading west.**
- 6. Lowest throughput cost in North Atlantic, which should become more interesting and noticed by carriers if marketed properly.**
- 7. User friendly first port to introduce 19 starting times, flexibility that reduces detention costs.**

**COMMUNICATIONS:** National search for Executive Director with Industry experience who can network with Industry leaders, Carriers, Agents, Shippers, Local, State and Federal Maritime Bureaucracies



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LINE



**amazon.com**



# Communication Recommendation

- Develop short and long term capital initiatives based on sound industry trends and cargo analysis
- Maximize usage of existing facilities based on compatibilities after professional analysis include assessments of:  
Leases, Industry standards or justification for other  
Tonnage or Container revenue sharing: Per Ton/ Container, Through-put costs and all ancillary charges, Dockage -Warfage, should be monitored to stop inter-port competition

# CAPITAL INVESTMENTS

## Immediate Priorities :

### Packer Avenue Marine Terminal

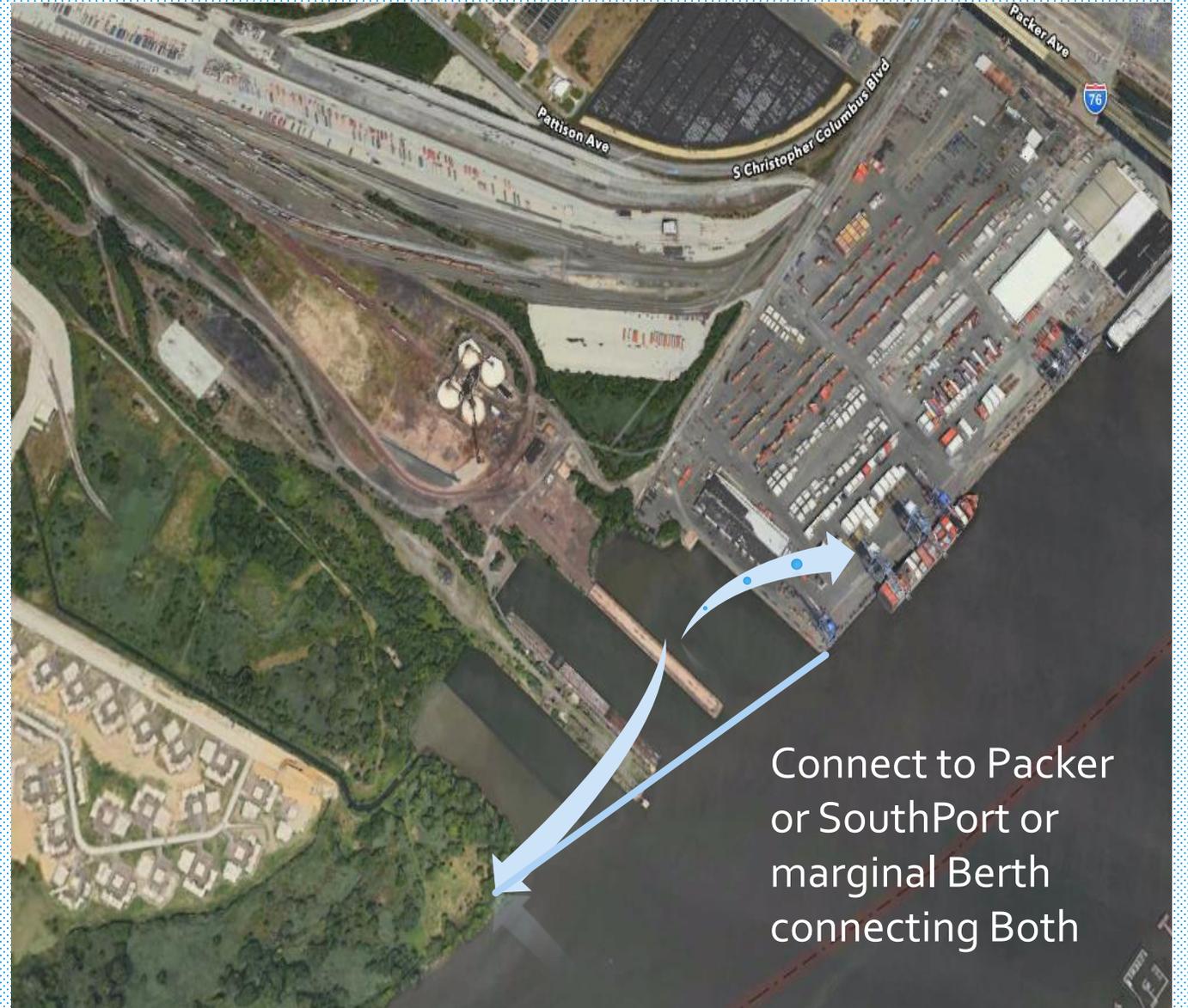
- 2 new post Panamax Cranes for Packer Avenue Marine Terminal
  - Our future has already begun, we have serviced vessels with 8500 Twenty Foot Equivalent Units (TEU) capacity, and unfortunately the existing operations of these vessels must be interrupted to turn the vessels because of the inadequacies of the existing cranes. This cost time therefore money.
  - The operator Mr. Tom Holt has stated he will purchase 2 additional cranes with matching funding if the State is able to secure the funding for the 2 cranes. ( As I understand, they already started procurement)
  - The procurement of these cranes is a 2 year initiative which requires re-gauging and electrification this must start immediately.
  - Estimated Crane Cost is 10 to 12 million per crane.

## Piers 122 & 124

Start water mitigation requirements and permits to fill in and develop Piers 122 and 124 as a necessary expansion of the existing Packer Avenue Marine Terminal as Phase 1 of the SouthPort Expansion.

This will be the quickest and most direct path to expanding our market share with increased volumes of existing carriers and new births that will be attractive to new customers.

The economies of scale are more advantageous when you can spread out some of the fixed costs of supervisors' office staff, craft foremen, volume incentive's etcetera. This equates to lower cost along with recognized existing high rates of productivity.



Connect to Packer  
or SouthPort or  
marginal Berth  
connecting Both

# TIOGA MARINE TERMINAL

Tioga is still capable of servicing many carriers who will still use vessels with 4,000 TEU capacity.

The carriers who will need this facility are being squeezed from other congested facilities from other ports.

The cranes at TMT need to be replaced, since they are over 40 years old and would normally be put out of commission.

2 new cranes would be able to accommodate at least 4 small to mid-size carriers.

The cranes may attract lines such as Bermuda Container Line (BCL), Independent Container line, Turkon Line, or a variety of carriers who will utilize transshipping as a necessary mode of shipping.

The need for cranes at Tioga is also needed in the event of a possible single source contract at SouthPort, we have to provide a separate option to address concerns that have been raised about the Port of Philadelphia is a monopolized port. The carriers have recognized that our economics is worth taking the risk of a single operator, however they would much rather have another option available for good business sense.

# Tioga a Future Compatible with Wood Pulp

- Sydney Canada, Transshipment
- Caribbean Transshipment
- Intercostal Shipping
- Utilize Riverside with a plan for specific cargo

# We do Not Have to Re-Invent The Wheel







**Entire Acreage for  
Container Terminal = 8,100 Jobs**

City Controller Alan Butkovitz, Economic Projection

# JUSTIFICATION SOUTHPORT CONTAINERS

- #1 Imported Cargo Petroleum 11 %
- # 2 Imported Cargo Autos 7 %
- # 3 Imported Cargo EVERYTHING ELSE 80 %
- DO WE INVEST MORE LAND FOR ONE CYCLICAL  
COMMODITY OR DO WE DIVERSIFY WITH THE 80% ?



STBU 810113 3

TOTE Maritime  
STBU 810088 3

TOTE Maritime  
STBU 810076 0

TOTE Maritime  
STBU 810070 7

TOTE Maritime

NO STACKING

NO STACKING

NO STACKING

NO STACKING





Apples



BIKES



Cameras



DOLE



Electric Fans



FISH



Grapes



Hair Dryers



IRONS



JEANS



Kiwi



Lights

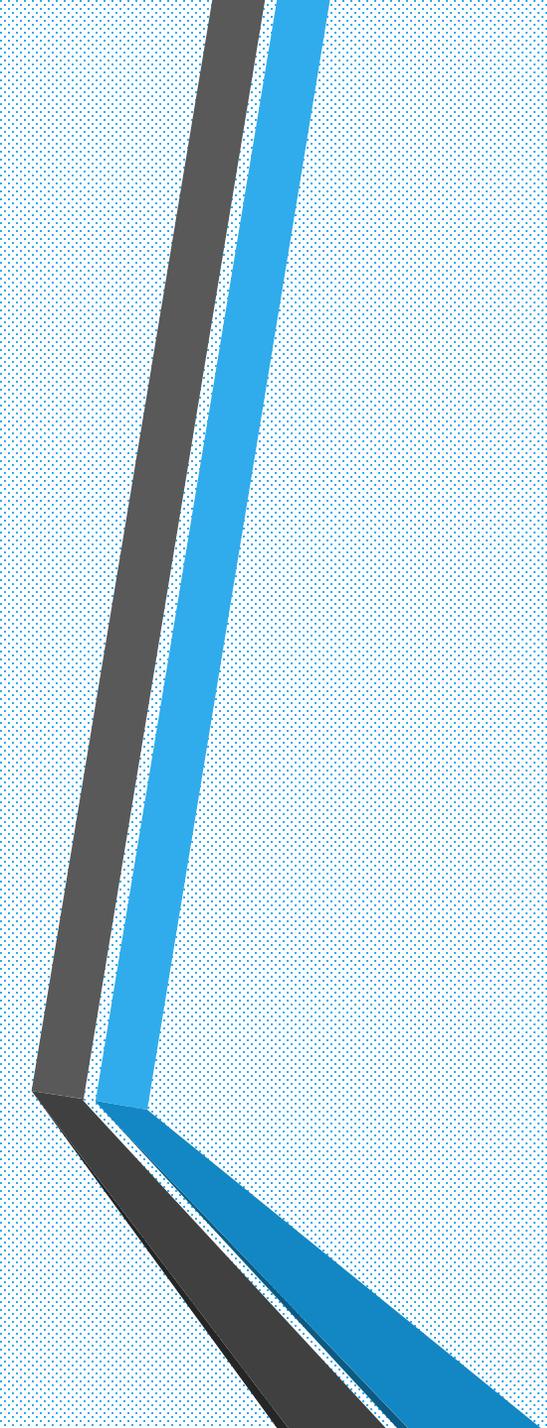


MEAT



ETC.





OEC Insert

Even some specialist operators (as the conventional reefer shipping companies like to be referred to) have made a whole or part switch to the container. In 2013, these included:

- Isabella Shipping (Uniban) switches its conventional Colombia/Costa Rica-US Gulf service to containers
- Great White Fleet (Chiquita), terminates its own Ecuador/Guatemala-Hueneme (container) service between in favour of slots from a CCNI/CSAV/Hamburg Süd box service
- Cosiarma (GF Group) puts a stop to the ex Agrexco intra-Mediterranean perishables service operated with two “hybrid” conventional reefer ships

These developments have succeeded similar moves in 2012/2011 when:

- Great White Fleet (Chiquita) replaced three conventional reefer vessels on the Guayaquil-Port Hueneme (US West Coast) run with cellular tonnage
- Geest (Fyffes) substituted a dedicated Central America-Europe conventional reefer ship service with slots on a Maersk Line container service
- Dole Ocean Express Cargo (Dole) re-delivered five chartered conventional reefer ships plying the Ecuador-Mediterranean route to take slots from full container carrier MSC

DYNAMAR Reefer Analysis: Market Structure,

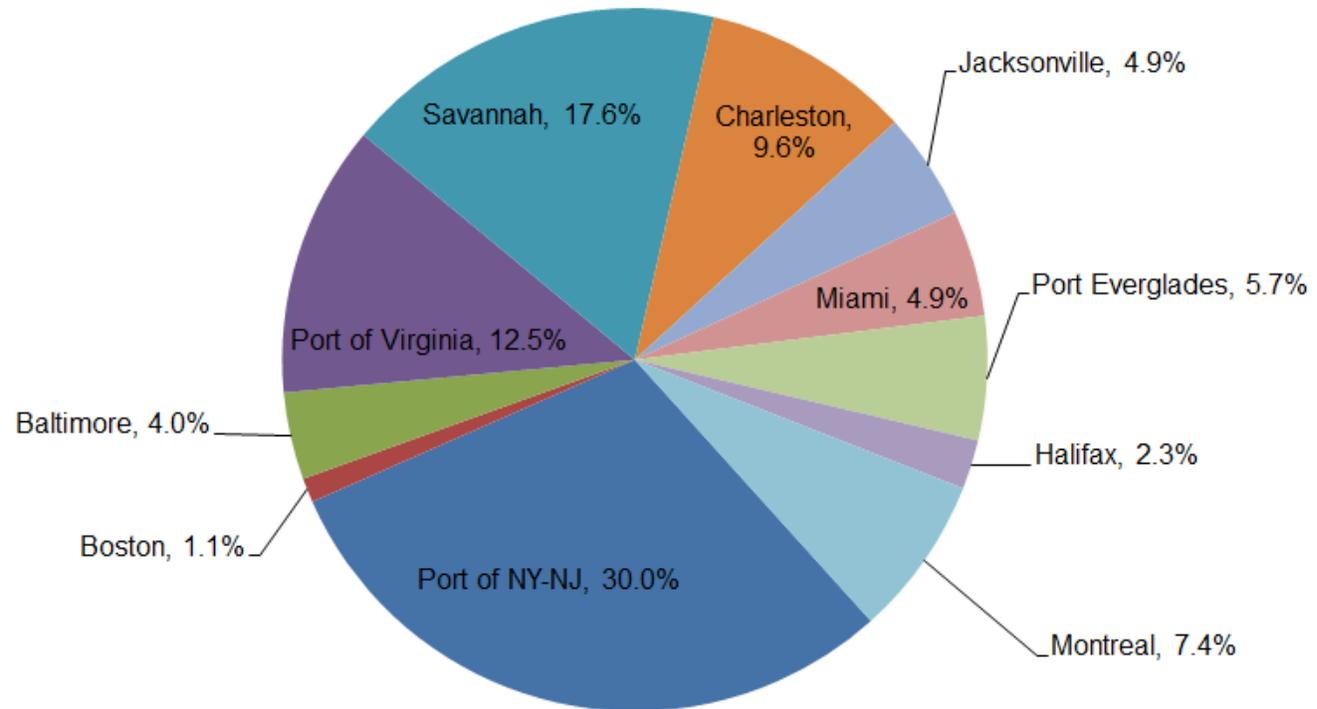
Conventional Containers

in [International Shipping News](#), [Shipping News](#)

[09/01/2014](#)

## Share of East Coast Container Traffic: First Half 2014

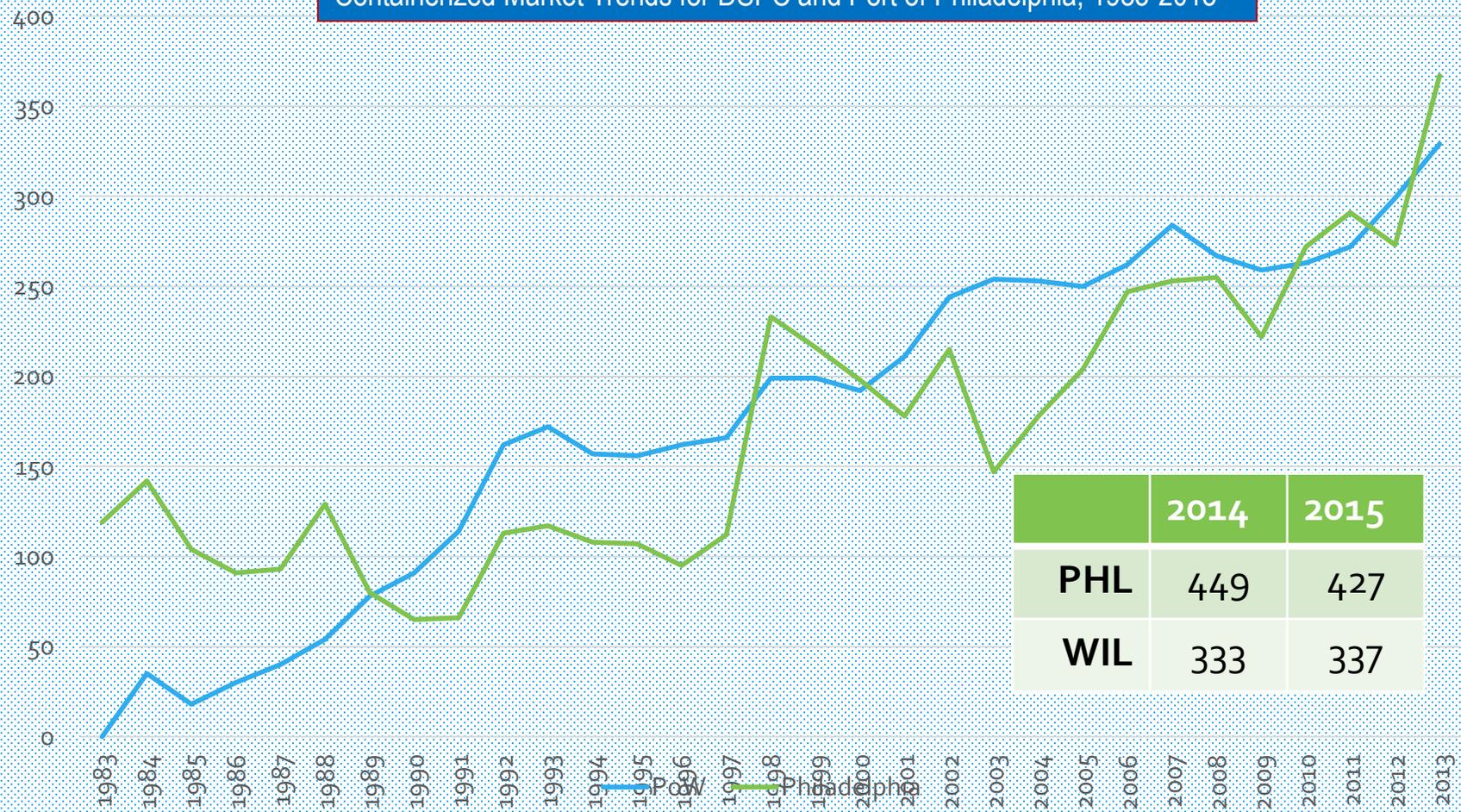
*Market Shares of Major North American East Coast Ports*



*Source: Individual ports. Data includes imports, exports and empties.*

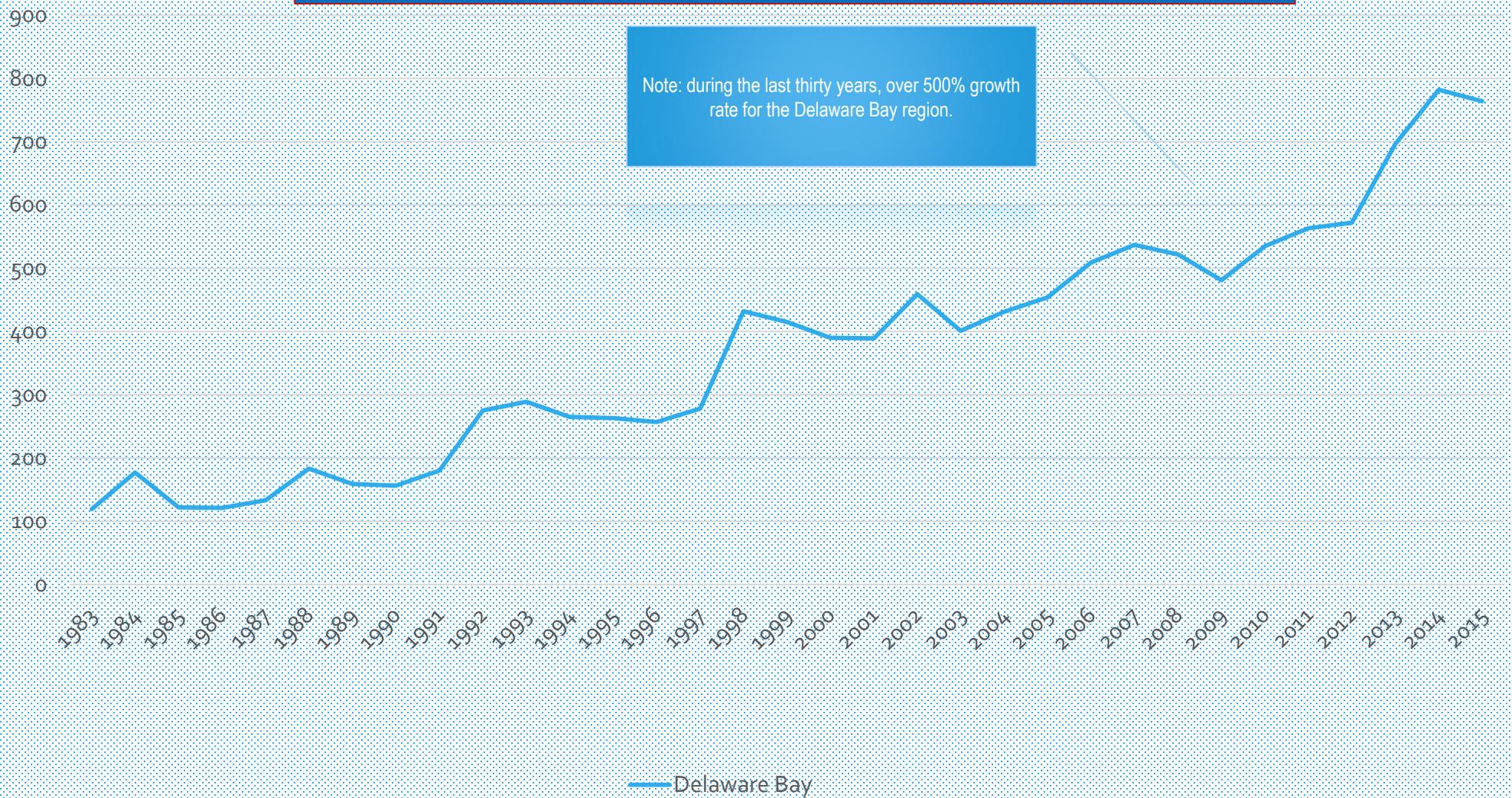
Port	TEU's	% ECNA	% Regional Port Participation	% Primary Port Competition
Montreal	1,300,000	7.6		
Halifax	416,572	2.4		
Boston	204,951	1.2		
NY/NJ	5,445,108	31.9	<b>60.4</b>	
Delaware Bay	711,116	4.2	<b>7.9</b>	<b>Philadelphia-4.9</b>
Baltimore	631,802	3.7	<b>7.0</b>	
Norfolk	2,230,008	13.1	<b>24.7</b>	
Charleston	1,381,349	8.1		
Savannah	2,944,678	17.2		
Jacksonville	900,443	5.3		
Miami	906,607	5.3		
<b>Total</b>	17,082,634	100.0%	<b>100.0%</b>	

Containerized Market Trends for DSPC and Port of Philadelphia, 1983-2015

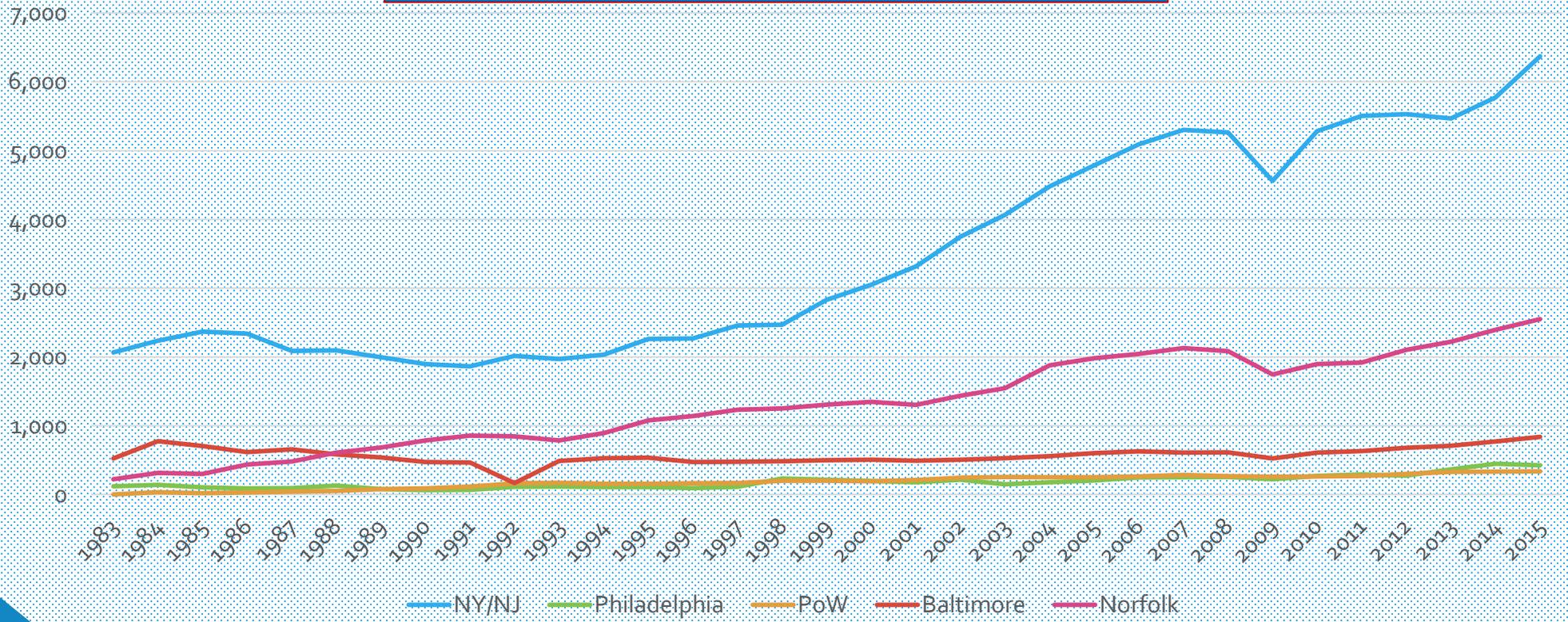


	2014	2015
PHL	449	427
WIL	333	337

## Containerized Market Trends for Delaware Bay Ports (DSPC and Philadelphia), 1983-2015



Containerized Market Trends for Principal Regional Ports, 1983-2015



# Container to Auto Economic Comparison Stevedoring

## Auto Vessel Only 1700 Cars

Wages	Benefit	Taxes	Insurance	TOTAL
7 Hours				<b>\$47,719.</b>
Regional	Benefit	Per	Car	<b>\$28.07</b>

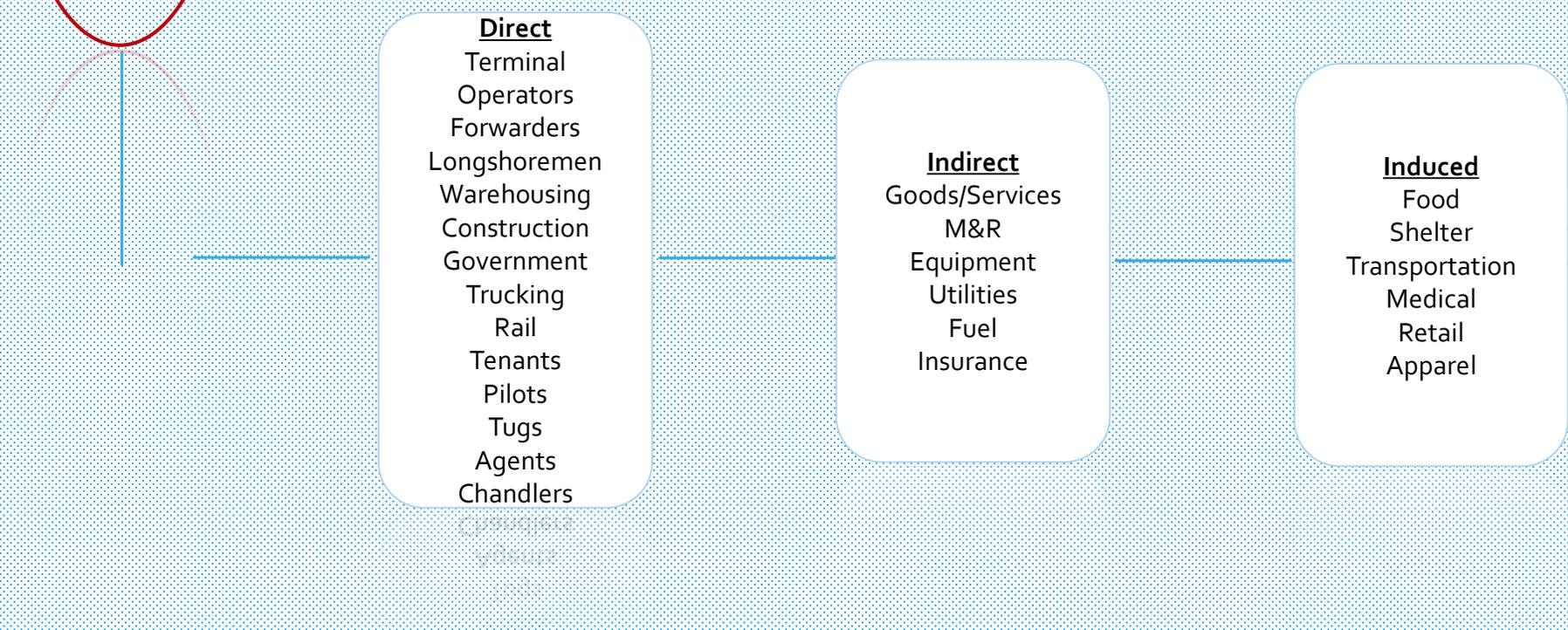
## Container Vessel Stevedore 1500 Containers

Wages	Benefit	Taxes	Insurance	TOTAL
16 Hours				<b>\$115,560</b>
Terminal Operat.				<b>\$249,690</b>
			TOTAL	<b>\$365,250</b>
Regional	Benefit	Per	Container	<b>\$243.50</b>



Chairman Sweeney  
reminds me I can't have  
all that I want,  
Can "WE" have HALF  
?????

		<b>Total</b>				<b>Total</b>	<b>State</b>	<b>State</b>	<b>State</b>	<b>Local</b>	<b>Federal</b>
<b>Port</b>	<b>TEU</b>	<b>Jobs</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Sales</b>	<b>GDP</b>	<b>Income</b>	<b>Taxes</b>	<b>Taxes</b>	<b>Taxes</b>
Savannah	2,944,678	352,146				\$66.9b	\$32.4b	\$18.5b	\$1.4b	\$1.1b	\$4.5b
Charleston	1,381,349	260,800				\$45.0b					
NC Ports	260,363	65,000					\$500m				
Baltimore	631,082	108,000	14,630	10,940	14,480			\$3.0b	\$304m		
<b>Wilmington, DE</b>	<b>329,200</b>	<b>16,877</b>	<b>2,203</b>	<b>444</b>	<b>1,673</b>				<b>\$31.0m</b>		
Norfolk	2,230,008	100,244					\$12.b	\$4.1b			
NY/NJ	5,445,108	279,200	170,770			\$37.1b		\$11.6b	\$1.6b		\$3.6b
Jacksonville	900,443	132,599	9,667	4,573	10,100			\$1.3b	\$168m		



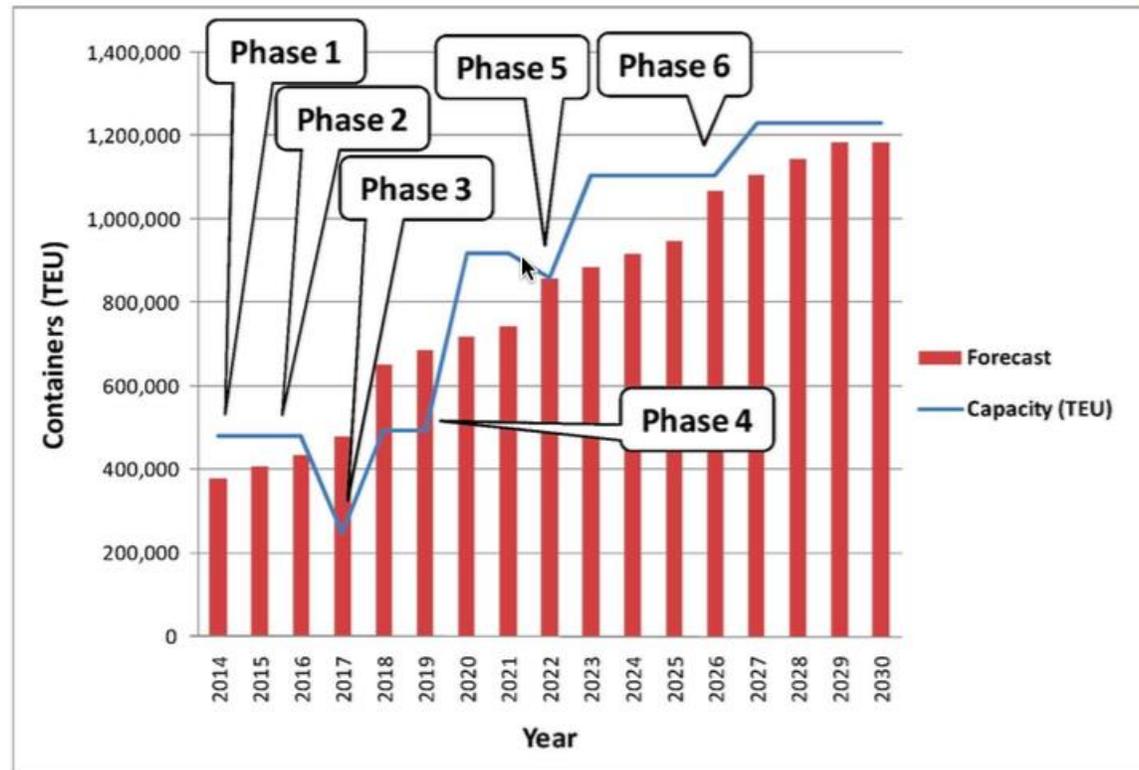


- INCREASE ACREAGE
- DOUBLE 9.3 ACRES
- MARGINAL BERTH

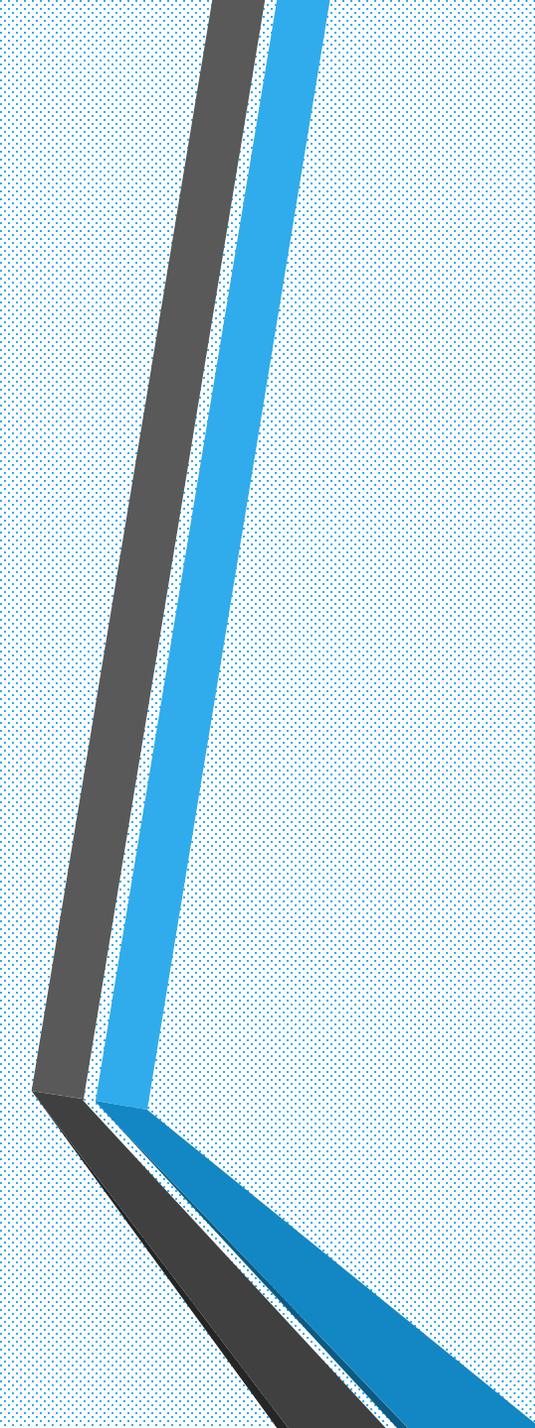
0 250 500 750 feet

# Packer Avenue Marine Terminal

## Demand Forecast



Future capital needs for Packer Avenue Marine Terminal estimated at \$136 - \$256 million. Discussions with the tenant and State are progressing.



chs

Deutsche Bank

AIG

Ontario Teachers Pension Fund

GIC (Singapore government co)

CMA-CGM

Eurokai

Hutchison Port Holdings

Maersk Line

Wall Street Bank

Prudential

Borealis (Canadian pension fund)

Babcock & Brown Infrastructure

Mantauban SA

Dubai Ports World

Eurogate Holding

Hesse Natie

PSA Corp.

Neptune Orient Lines

Nippon Yusen Kaisha P&O

[International Association of Ports & Harbors](#)

Thank you.



**PHILADELPHIA**  
Regional Port Authority