



Port of Philadelphia

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Technical Memorandum Summary of Existing Conditions

Contract E03691

Work Order #3- Port of Philadelphia Capital Improvement Plan

Task 1.1: Existing Conditions of Non-PRPA Properties

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EXECUTIVE SUMMARY

The Port of Philadelphia (Port) is a group of publicly and privately-owned marine terminals that are engaged in commercial maritime activities within the greater Philadelphia area of the Delaware River basin. The Port is an important economic engine to the Commonwealth. PennDOT has undertaken an analysis of the components of the Port located in Pennsylvania with the goal of identifying the range of capital investments the Commonwealth could support that would improve the efficiency of goods movement through the Port. The first step in this analysis is to identify and characterize the properties and landside assets that make up the Port.

The Port spans approximately 56 total miles of navigable waterway along the Delaware and Schuylkill rivers from Marcus Hook, Pennsylvania to Falls Township, Pennsylvania. In Pennsylvania, the Port includes approximately 3,500 acres of U.S. Government, Commonwealth and privately-owned properties within Delaware, Philadelphia, and Bucks counties.

This existing conditions assessment complements a detailed assessment of the Philadelphia Regional Port Authority (PRPA), conducted in 2015, by augmenting the inventory of Port marine terminals to include those not owned by the PRPA.

1. There are 12 owners of real estate holdings and infrastructure at the Port, which consists of 11 private owners and the PRPA.
2. There are 13 privately operated marine terminals in addition to eight PRPA marine terminals.
3. There are three major refineries at the Port for petroleum and natural gas that are privately owned and operated.
4. Girard Point is 10th largest refinery in the U.S.
5. Marcus Hook is the first U.S. export terminal for ethane natural gas.
6. Approximately 2,950 of the 3,448 total acreage of the Port is privately owned.

The Port has seen a steady increase in ship traffic from 2012 to 2015 and receives a variety of goods:

1. The Port ranks 3rd of 21 competing east coast ports in annual tonnage.
2. The majority of vessel calls is received through the PRPA. Containerized cargo represents the top commodity transported through the Port.
3. Petroleum, gas and chemical products represent 45% of commodities moving through privately owned terminals.

In addition to available berthing space, the Port has several landside assets (i.e., cranes, warehouses and other structures) within its real estate holdings:

1. Privately owned terminals have the greatest area of berthing space.
2. There is rail service available at eight of the 13 privately owned marine terminals.
 - a. Conrail Shared Assets Operation (CSAO) operates at all eight of the privately owned marine terminals.
 - b. In addition to CSAO, CSX operates at Girard Point.
 - c. Philadelphia Beltline operates at all eight of the privately owned terminals; however, CSAO provides all rail switching and track maintenance under a long-term lease.
3. The PRPA owns half of all cranes and 22 out of 26 warehouses at the Port.
4. The Port has 5,815,100 sq. ft. of warehouse space, in addition to 284 petroleum storage tanks.

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INTRODUCTION

The Port of Philadelphia (“Port”) is a regional asset vital to the statewide movement of goods and the creation of high-paying jobs. The Port spans approximately 56 total miles of navigable waterway along the Delaware and Schuylkill rivers from Marcus Hook, Pennsylvania to Falls Township, Pennsylvania. In Pennsylvania, the Port includes approximately 3,500 acres of U.S. Government, Commonwealth and privately-owned properties within Delaware, Philadelphia, and Bucks counties. The Commonwealth has invested millions of dollars repairing infrastructure at the Port, dredging the Delaware River and subsidizing the Philadelphia Regional Port Authority (PRPA).

To maximize return on past investments the Commonwealth made in the Port and to guide future investments, the Pennsylvania Department of Transportation (PennDOT) has undertaken a review of the PRPA and the greater Port of Philadelphia in a three-phase study:

- *Phase 1- PRPA Existing Conditions Assessment*, a comprehensive evaluation of strengths and weaknesses of the PRPA that was used to inform the development of a PRPA *Business and Operations Plan* (completed Spring 2016);
- *Phase 2- PRPA Business and Operations Plan*, an action-oriented vision and direction used to the maximize the efficiency and effectiveness of the PRPA (completed fall 2016); and,
- *Phase 3- Port of Philadelphia Capital Improvement Plan*, a blueprint of capital investments that will maximize the efficiency and effectiveness of the Commonwealth’s investments in the greater Port of Philadelphia, including those owned by the PRPA (to be completed Summer 2017).

The *Port of Philadelphia Capital Improvement Plan* (Phase 3) identifies project investments that build on, and align with, the *PRPA Existing Conditions Assessment* (Phase 1) and the *PRPA Business and Operations Plan* (Phase 2). The *Capital Improvement Plan* examines the greater Port of Philadelphia, including terminals under control of the PRPA and other private operators, to identify obstacles and opportunities to improve the efficiency and economic competitiveness of the Port.

This memorandum describes properties that comprise the Port, including the study area, goods movement, on-site (those assets located within each marine terminal property boundary) assets and various players important to the overall economic vitality of the Port. This assessment provides a detailed focus on commercial Port activities, public and private commodity flows and the utilization of port-related property.

The Port of Philadelphia is a group of public and private marine terminals (**Exhibit 1**) that are engaged in commercial maritime activities within the Greater Philadelphia Region of the Delaware River basin (**Exhibit 2**). The Port spans approximately 56 total miles of navigable waterway along the Delaware and Schuylkill rivers¹. This includes about 47 miles on the Delaware River from Marcus Hook, Pennsylvania north to Falls Township, Pennsylvania; and, approximately nine miles of the Schuylkill River from the conflux of the Delaware River. Additionally, the Port includes properties along the Delaware and Schuylkill rivers within Delaware, Philadelphia and Bucks counties.

¹ The Port of Philadelphia spans the Commonwealth’s portion of the Delaware River and the east and west bank of the Schuylkill River.

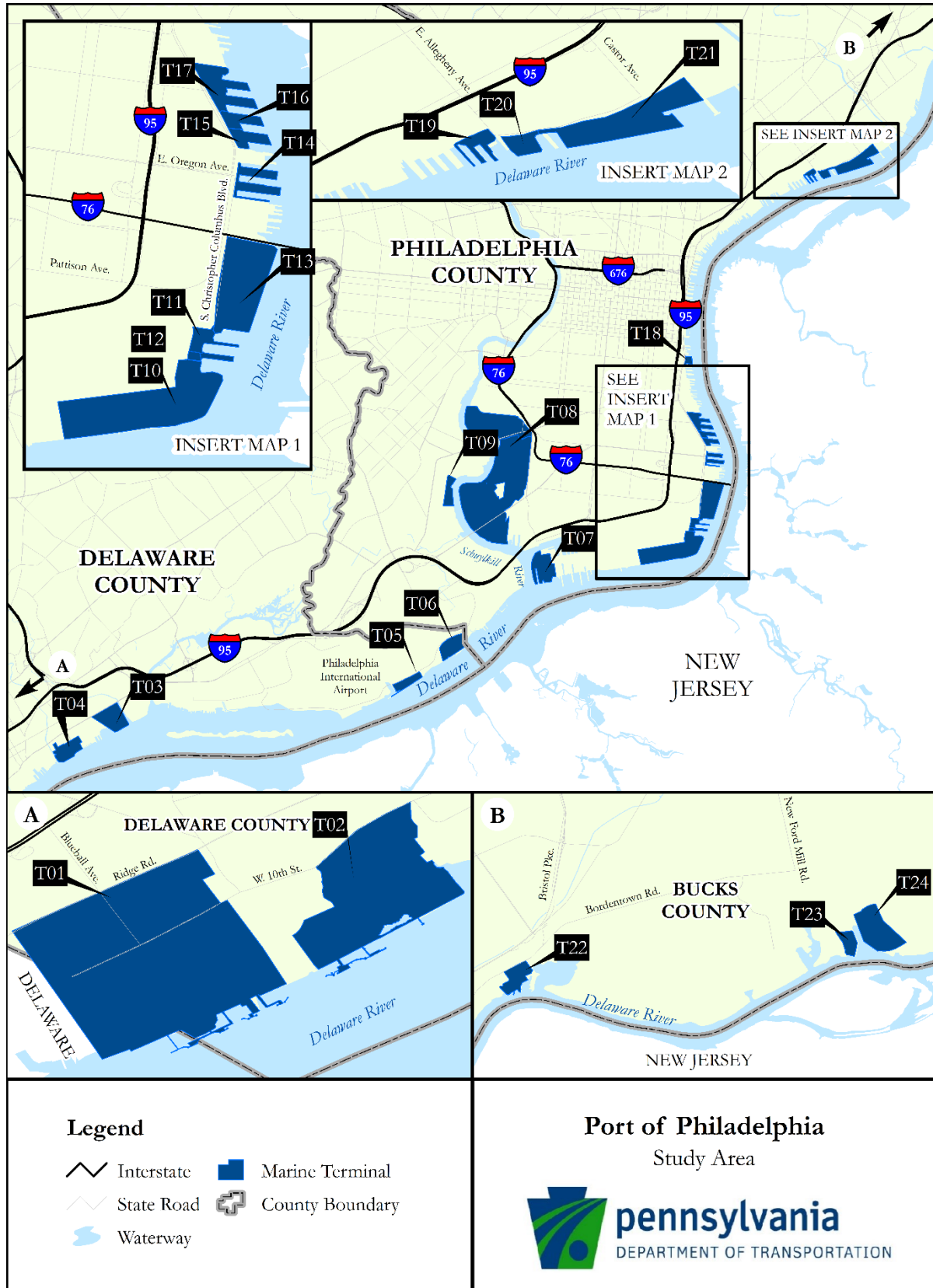
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Exhibit 1. Port of Philadelphia Marine Terminals

Map ID	Terminal	Owner	Total Acres
T01	Marcus Hook	Energy Transfer Partners, L.P.	693
T02	Monroe	Delta Airlines, Inc.	292
T03	Eddystone	Exelon Corporation	89
T04	Penn Terminals	Macquarie Group, Ltd.	78
T05	Hog Island	Energy Transfer Partners, L.P.	15
T06	Fort Mifflin	Energy Transfer Partners, L.P.	122
T07	Philly Shipyard at the Navy Yard	Philly Shipyard, Inc.	114
T08	Girard Point	The Carlyle Group, L.P.	1,310
T09	East Coast Terminals	PBF Logistics, LLC	49
T10	Southport	Philadelphia Regional Port Authority	182
T11	Pier 124 South	Philadelphia Regional Port Authority	8
T12	Pier 122	Philadelphia Regional Port Authority	14
T13	Packer Avenue Marine Terminal	Philadelphia Regional Port Authority	113
T14	Piers 96, 98 & 100	Philadelphia Regional Port Authority	22
T15	Pier 84	Philadelphia Regional Port Authority	13
T16	Pier 82	Philadelphia Regional Port Authority	13
T17	Philadelphia Forest Products Center	Philadelphia Regional Port Authority	38
T18	Piers 38 & 40	Philadelphia Regional Port Authority	9
T19	H Port Richmond	Contanda, LLC	2
T20	Tioga Liquid Bulk Terminal	Philadelphia Regional Port Authority	11
T21	Tioga Marine Terminal	Philadelphia Regional Port Authority	85
T22	Riverside	The Silvi Group	48
T23	Waste Management	Waste Management, Inc.	28
T24	Fairless Hills	United States Steel Corporation	100
Total Terminal Acreage			3,448

Exhibit 2. Port of Philadelphia



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CARGO ACTIVITY AT THE PORT OF PHILADELPHIA

The Port is a cold, deep water Port that is situated in the mid-Atlantic region of the U.S. The Port handles a variety of cargo (e.g., containers, liquid bulk, food, etc.) and is primarily import-based. Given its location upriver from the Atlantic Coast, the Port is in competition nationally and locally amongst other east coast ports. **Exhibit 5** depicts the locations of all active marine terminals within the Port that currently handle cargo.

National Rankings

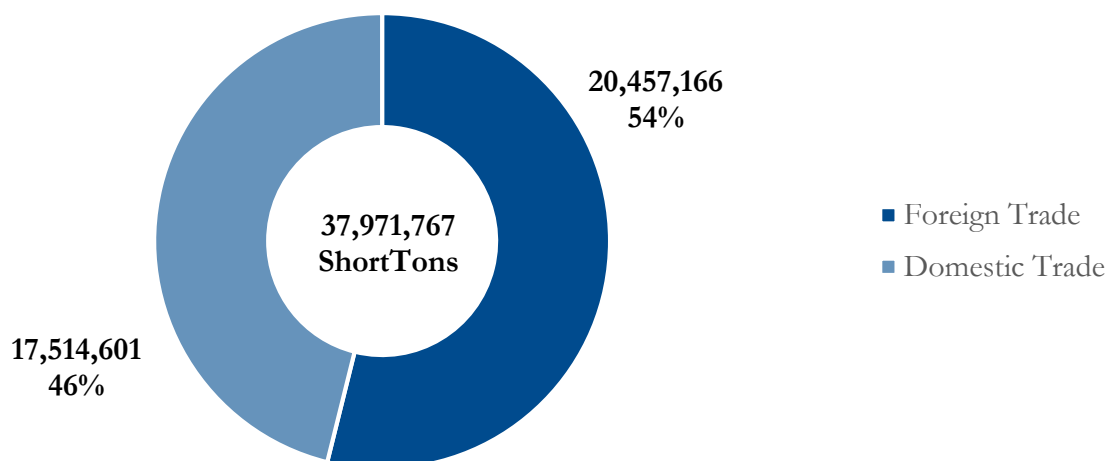
The most recently published national trade rankings² from the U.S. Army Corps of Engineers (USACE) Waterborne Commerce Statistics Center for 98 U.S. ports, ranked the Port³ 16th in total trade (**Exhibit 3**), 18th for domestic trade and 19th for foreign trade, as measured in short tons. Domestic trade accounts for 46% of total tonnage handled; foreign trade accounts for the remaining 54% (**Exhibit 4**).

Exhibit 3. National Trade Rankings in Cargo Tonnage (2013)

Port of Philadelphia	Short Tons	Rank
Foreign Trade	20,457,166	19th
Imports	20,194,510	9 th
Exports	1,179,997	48 th
Domestic Trade	17,514,601	18th
Total Trade	37,971,767	16th

Source: <http://www.navigationdatacenter.us/data/datanvus.htm>

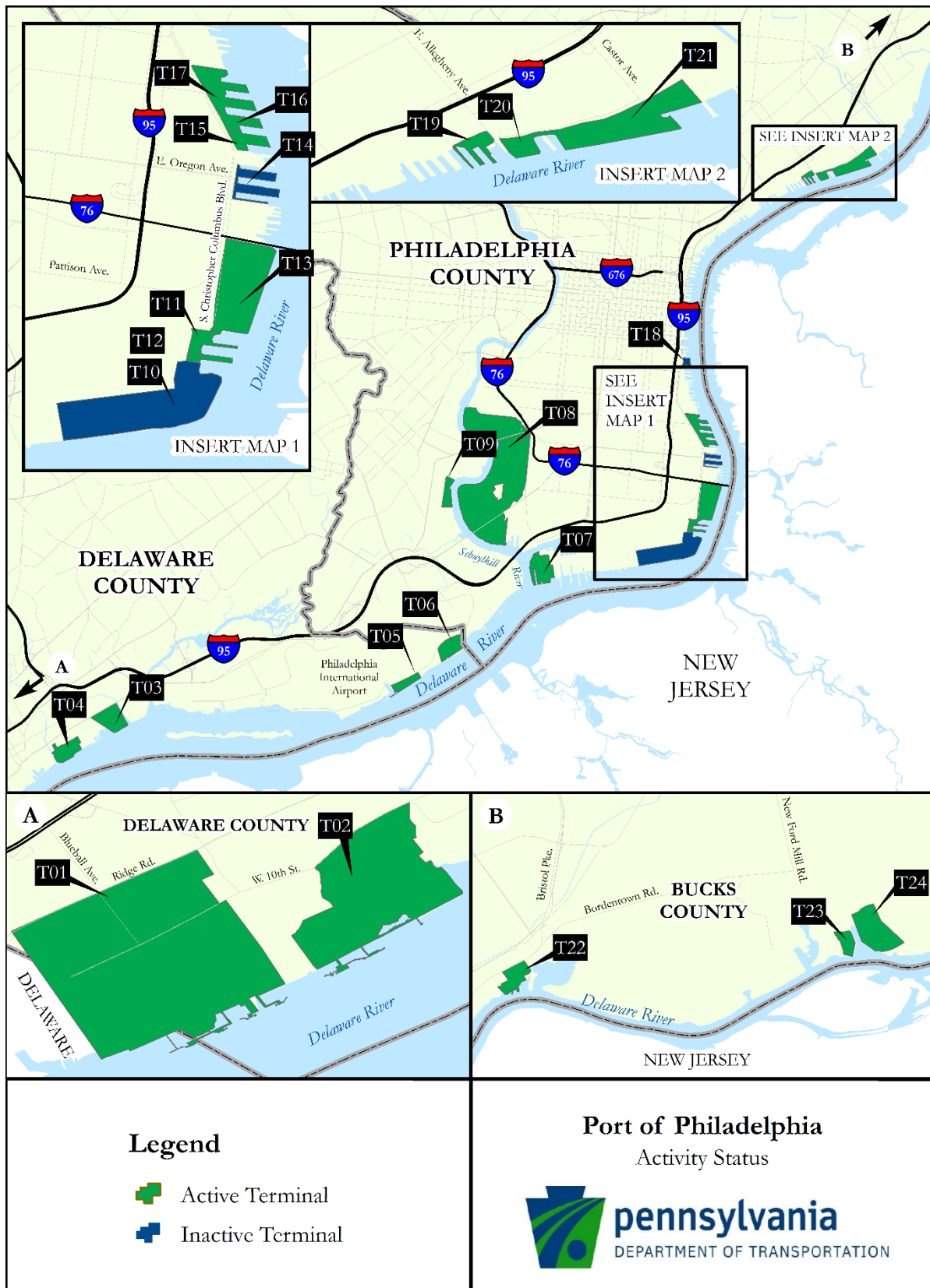
Exhibit 4. Percentage of Domestic to Foreign Trade by Total Trade Tonnage (2013)



² 2013 annual ranking of 98 U.S. ports by the USACE, Waterborne Commerce Statistics Center

³ USACE reports Philadelphia, PA and Marcus Hook, PA as separate Port/State entities. Both reported areas are included within the Port of Philadelphia study area and therefore, were combined for analysis and reporting.

Exhibit 5. Active Port Terminals



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East Coast Rankings

The Port competes with 21 ports along the east coast for maritime commerce. Of these, the Port ranks 3rd in total trade (**Exhibit 6**), 2nd in domestic trade (**Exhibit 7**) and 5th in foreign trade (**Exhibit 8**).

Exhibit 6. Top Ten East Coast Ports for Total Trade (2013)

No.	Port	Short Tons	% Difference from Port of Philadelphia
1.	New York/New Jersey	123,322,644	225% More
2.	Hampton Roads (VA)	78,664,496	107% More
3.	Philadelphia, PA	37,971,767	-
4.	Baltimore, MD	36,587,828	4% Less
5.	Savannah, GA	31,990,023	16% Less
6.	Port Everglades, FL	21,702,940	43% Less
7.	Paulsboro, NJ	19,122,088	50% Less
8.	Boston, MA	17,087,802	55% Less
9.	Jacksonville, FL	16,471,608	57% Less
10.	Portland, ME	12,039,600	68% Less

Source: <http://www.navigationdatacenter.us/data/datawcus.htm>

Exhibit 7. Top Ten East Coast Ports in Domestic Trade (2013)

No.	Port/State	Short Tons	% Difference from Port of Philadelphia
1.	New York/New Jersey	46,716,414	167% More
2.	Philadelphia, PA	17,514,601	-
3.	Albany, NY	10,005,872	43% Less
4.	Port Everglades, FL	9,852,960	44% Less
5.	Hampton Roads (VA)	7,319,424	58% Less
6.	Paulsboro, NJ	7,100,298	59% Less
7.	Jacksonville, FL	6,744,674	61% Less
8.	Baltimore, MD	6,585,999	62% Less
9.	New Haven, CT	5,777,649	67% Less
10.	Boston, MA	5,662,886	68% Less

Exhibit 8. Top Ten East Coast Ports in Foreign Trade (2013)

No.	Port/State	Short Tons	% Difference from Port of Philadelphia
1.	New York/New Jersey	76,606,230	274% More
2.	Hampton Roads (VA)	71,345,072	249% More
3.	Savannah, GA	30,223,800	48% More
4.	Baltimore, MD	29,992,829	47% More
5.	Philadelphia, PA	20,457,166	-
6.	Charleston, SC	16,494,191	19% Less

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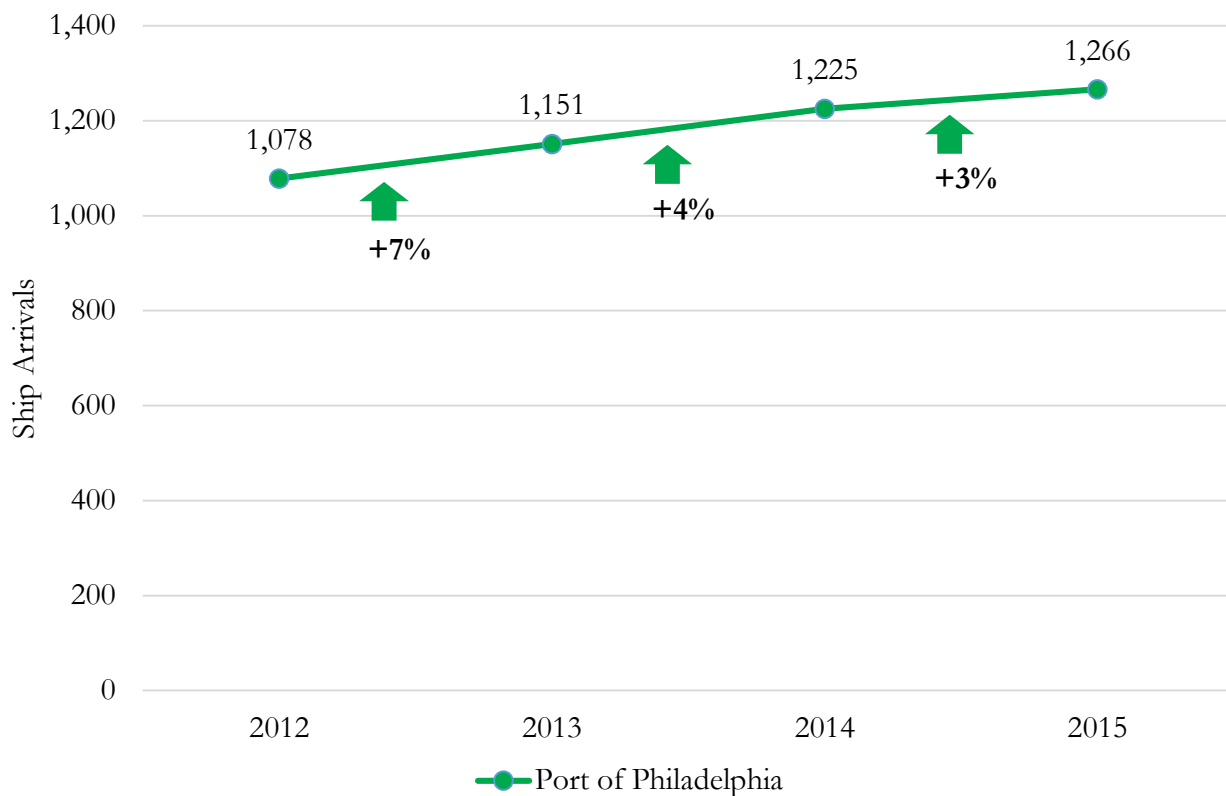
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No.	Port/State	Short Tons	% Difference from Port of Philadelphia
7.	Port Everglades, FL	11,849,980	42% Less
8.	Boston, MA	11,424,916	44% Less
9.	Portland, ME	11,109,415	46% Less
10.	Jacksonville, FL	9,726,934	52% Less

Ship Traffic

The Maritime Exchange for the Delaware River and Bay provides ship traffic information. The most recently published annual report⁴ on ship arrivals from 2012 to 2015 for the Port saw a 5.5% average annual increase in ship arrivals, going from about 1,078 ship arrivals in 2012 to 1,266 ship arrivals by 2015 (**Exhibit 9**). Annual ship arrivals increased overall by 17.4% during this period.

Exhibit 9. Port of Philadelphia Ship Arrivals (2012-2015)



Source: <http://www.navigationdatacenter.us/data/datancus.htm>

⁴ <http://www.maritimedelriv.com/>

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OWNERSHIP WITHIN THE PORT OF PHILADELPHIA

The Port consists of approximately 3,500 acres of property. These properties are located along the Delaware River from Marcus Hook, Pennsylvania north to Falls Township, Pennsylvania; and, about four miles north along the Schuylkill River from the Navy Yard in South Philadelphia.

The U.S. Government owns approximately 50 acres of Port real estate⁵. These properties are under the operation of the U.S. Department of Defense and the U.S. Department of Homeland Security, which includes naval support operations within the Navy Yard and the U.S. Army Corps of Engineers Fort Mifflin Distribution Center and the U.S. Coast Guard Station Philadelphia.

There are approximately 675 acres owned by the Philadelphia Regional Port Authority (PRPA), an independent authority established by state statute. PRPA is responsible for maritime activities on the Delaware River from Hog Island in Essington, Pennsylvania to the Poquessing Creek on the border of Philadelphia and Bucks counties. In addition, the PRPA has authority over the Schuylkill River from the Delaware River to the Fairmont Dam. The PRPA is the third largest property owner within the Port. A technical memorandum detailing the existing conditions of the PRPA was performed in 2015, which established a comprehensive infrastructure profile for PRPA-owned landside assets⁶.

In addition to the PRPA, there are a number of major private property owners with active operators at the Port:

1. Energy Transfer Partners, L.P.
2. Delta Airlines, Inc.
3. Exelon Corporation
4. Macquarie Group Ltd.
5. Philly Shipyard, Inc.
6. The Carlyle Group, L.P.
7. PBF Logistics, LLC.
8. Contanda, LLC.
9. The Silvi Group
10. Waste Management, Inc.
11. United States Steel Corporation

There are additional properties within the Port that are zoned commercial and port-industrial, which maybe acquired for a potential expansion of the Port. An inventory of vacant properties can be found within **Appendix A: Vacant Properties**.

Port Real Estate Holdings

About 15% of total Port acres are owned by the PRPA⁷ (**Exhibit 10**). The remaining 85% is privately owned.

The PRPA does not directly operate marine terminals, but acts as a landlord receiving revenues from leasing with operators and stevedoring companies. Private entities that own Port land also lease out

⁵ U.S. Government owned properties were not included within analyses for this technical memorandum since do not have active cargo terminals.

⁶ PRPA Existing Conditions Assessment: Task 1.2 Technical Memorandum – PRPA Infrastructure Profile

⁷ The Southport Marine Terminal Complex was included for this analysis due to anticipated future development.

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marine terminals; however, most of them directly operate terminal services through subsidiary companies. Included within real estate holdings are available berthing space and landside assets (i.e., cranes, warehouses and other structures).

Exhibit 10. Share of Port Ownership by Total Acres

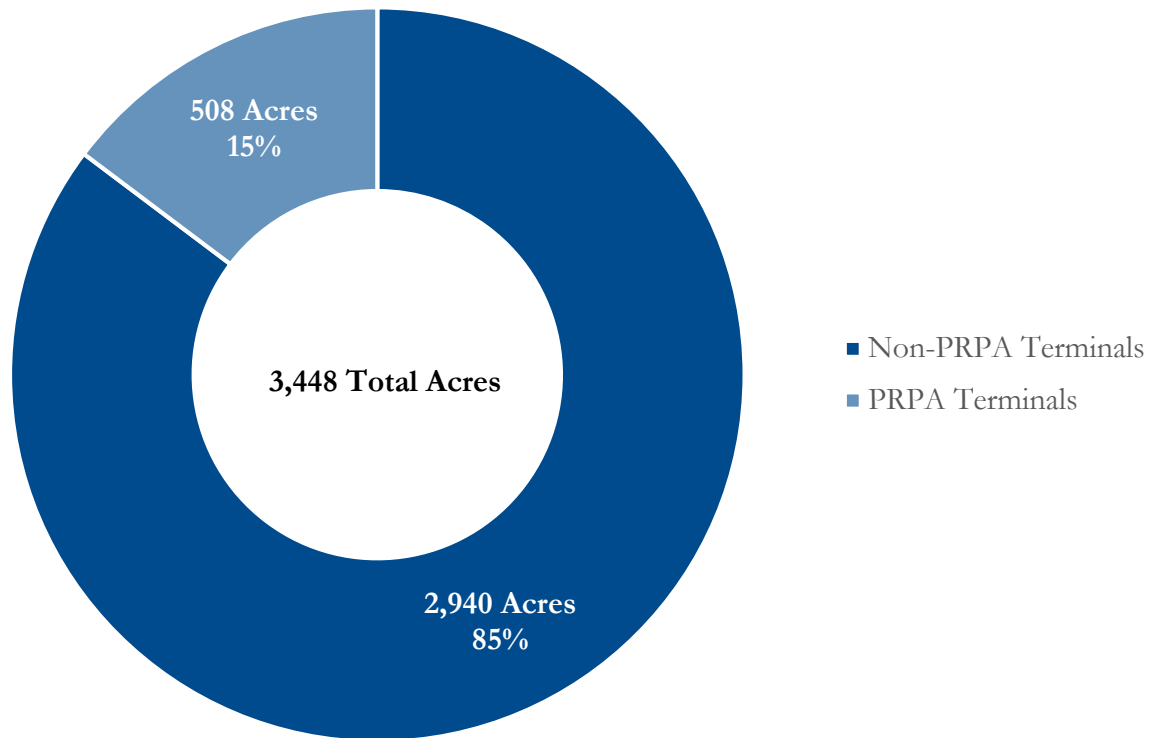


Exhibit 11 is a list of all Port marine terminals⁸ and properties. Each property has a corresponding Map ID for **Exhibit 12**, which lists the location and ownership of all properties within the Port.

⁸ Non-PRPA terminal names were provided by the Maritime Exchange for the Delaware River and Bay and are consistent with reported names for Port locations. However, they may not reflect current listings by private owners.

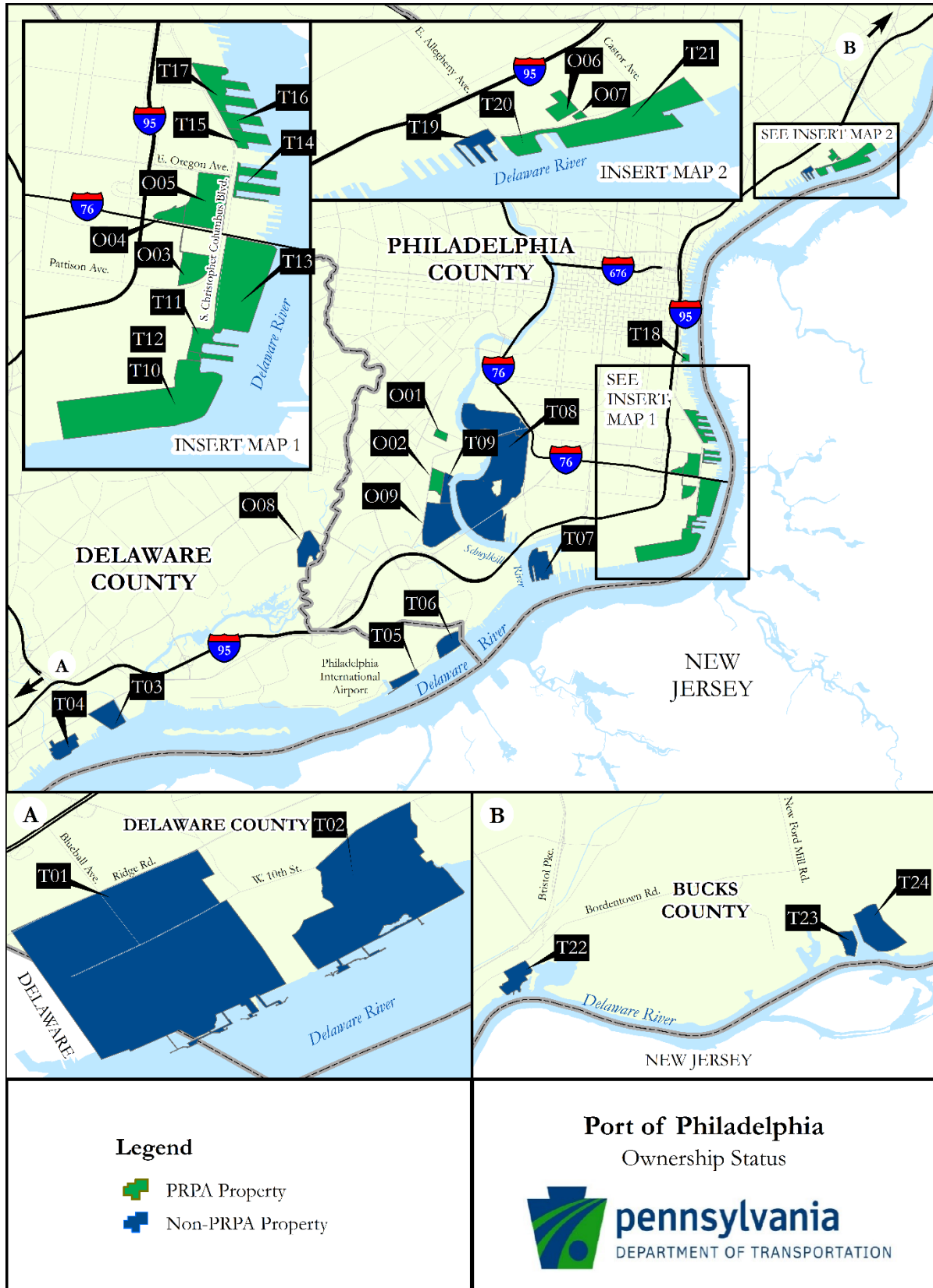
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Exhibit 11. Port Properties by Ownership

PRPA		Non-PRPA	
Name	Map ID	Name	Map ID
Essington Avenue Lot	O01	Marcus Hook	T01
Philadelphia Wholesale Produce Market	O02	Monroe	T02
Southport Marine Terminal Complex	T11	Eddystone	T03
Pier 124	T12	Penn Terminals	T04
Pier 122	T13	Hog Island	T05
Packer Avenue Marine Terminal	T14	Fort Mifflin	T06
Whiskey Yard	O03	Philly Shipyard at the Navy Yard	T07
Savage Yard	O04	Girard Point	T08
Philadelphia Auto Processing Facility	O05	East Coast Terminals	T09
Pier 96, 98 and 100	T15	H Port Richmond	T19
Pier 84	T16	Riverside	T22
Pier 82	T17	Waste Management	T23
Philadelphia Forest Products Center	T18	Fairless Hills	T24
Piers 38 and 40	T19	Darby Creek Tank Farm	O8
Tioga Liquid Bulk Terminal	T21	Schuylkill River Tank Farm	O9
Tioga Marine Terminal	T22	-	-
Tioga 2	O06	-	-
PRPA Administration Building	O07	-	-

Exhibit 12. Map of Port Properties by Ownership



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Berths

Port properties along the Delaware and Schuylkill rivers provide designated areas i.e., berths—for vessels to dock, load and discharge cargo. Berthing space may vary depending on the structure of the terminal⁹. **Exhibit 13** summarizes berths by utilization and the number of berths in groupings by length. **Exhibit 14** summarizes berths by utilization and by depths.

Exhibit 13. Utilization and Length of Port Berths

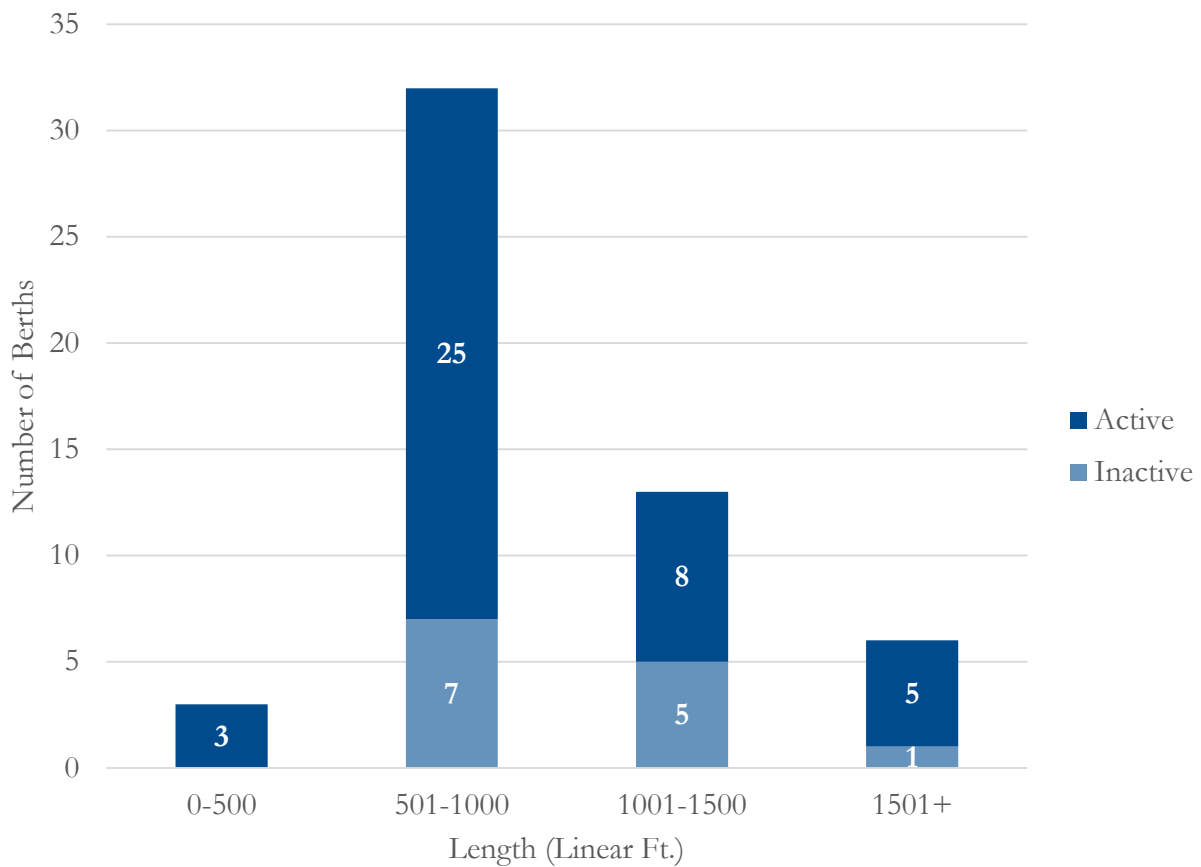
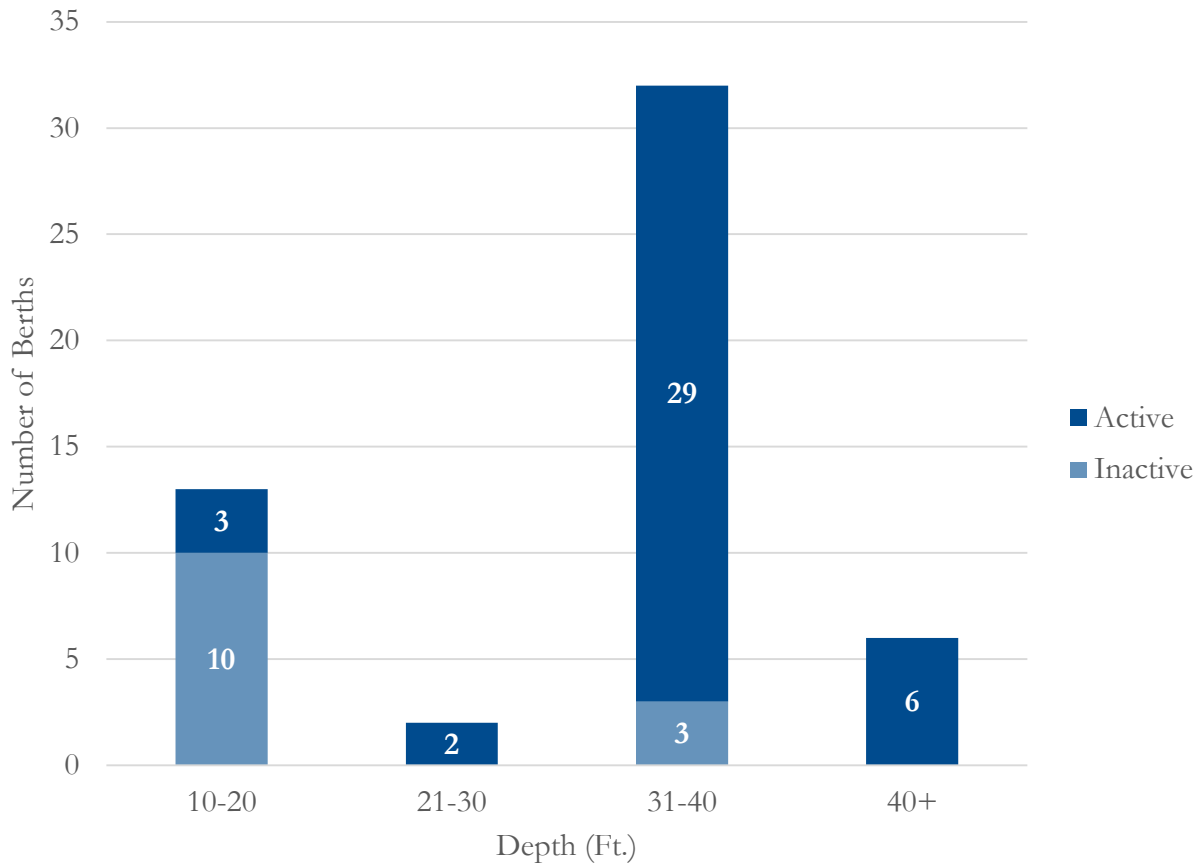


Exhibit 14. Utilization and Depth of Berths



Berths range from 200 ft. to greater than 1,501 ft. in length and are between 10 ft. and 40 ft. in depth. General observations regarding Port berths include:

1. The Port has 54 identified berths with approximately 80,880 ft. in total berthing space.
2. About 76% of Port berths are active and 24% are inactive.
3. 32 berths, or 59% are between 501 and 1,000 linear ft.
4. There are 5 berths greater than 1,501 linear ft. that are in use.
5. Privately owned terminals have about 51,500 ft. (64%) of Port berthing space.
6. The Navy Yard has the greatest amount of total berthing space at the Port with about 29,000 linear ft.
 - a. Berth space is used for Naval decommissioning and commercial vessel laybething.
 - b. There is no consistent depth available for total berthing space at the Navy Yard.
7. The greatest number of active berths are between 31 ft. and 40 ft. in depth.
8. The greatest number of inactive berths are between 10 ft. and 20 ft. in depth.
9. There are six berths over 40 ft. deep.

An inventory of berths can be found within **Appendix B: Berths**.

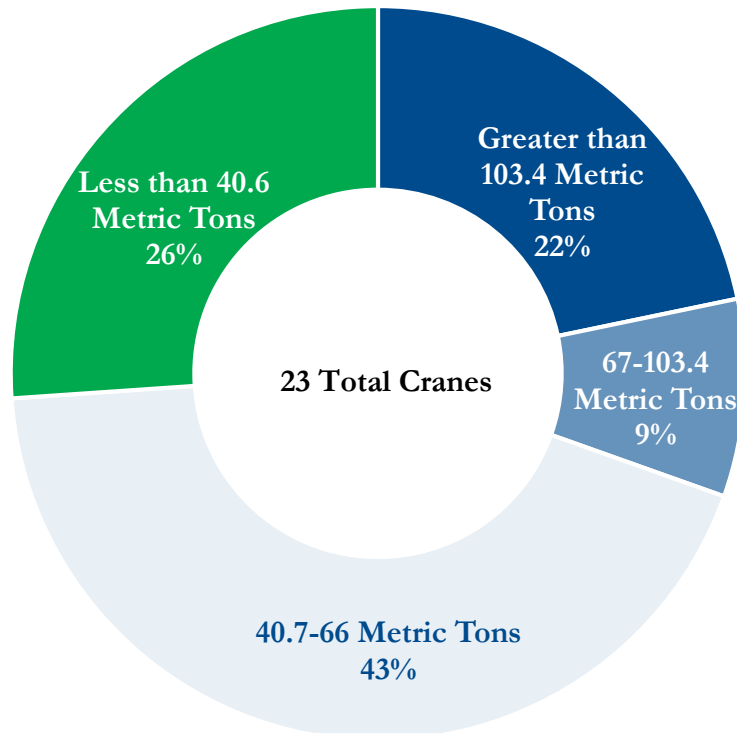
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Cranes

There are 23 cranes at the Port that are used to handle cargo. The Port has two main types of cranes, fixed-track rail-mounted gantry cranes and maneuverable mobile harbor cranes. Port cranes are capable of lifting between 30.5 and 660.0 metric tons. **Exhibit 15** summarizes the lift capacity of Port cranes.

Exhibit 15. Port Cranes by Capacity



General observations regarding Port cranes include:

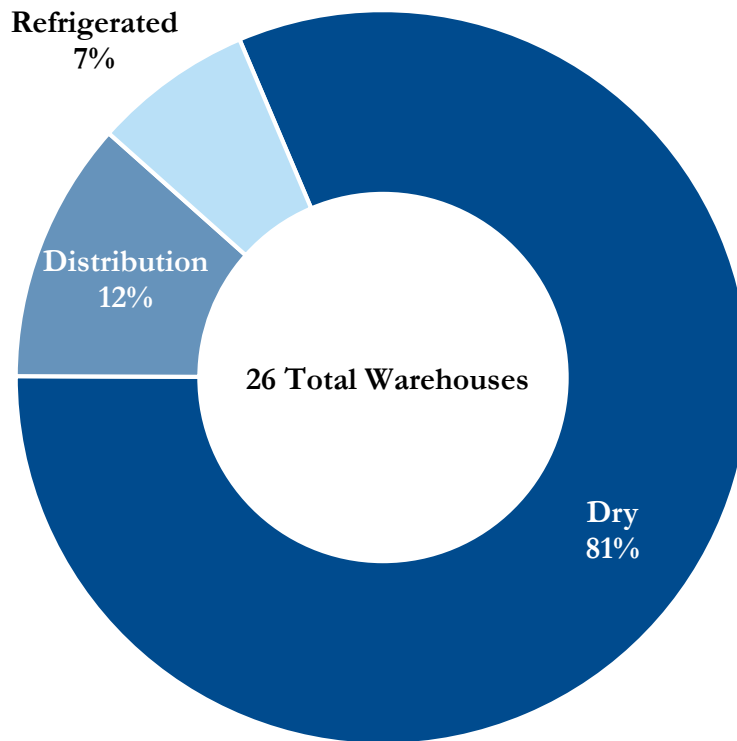
1. There are 23 active cranes between public and privately owned terminal operations at the Port.
2. The PRPA owns 50% of all cranes at the Port.
3. Rail mounted gantry cranes represent 60% of all cranes.
4. The majority of cranes, or 43% can lift between 40.7 and 66.0 metric tons.
5. About 22% of all cranes can lift more than 103.4 metric tons.
6. There is one heavy lift crane (i.e., Washington Whirley) located Penn Terminals capable of lifting 220 metric tons.
7. There is one heavy lift crane (i.e., Goliath) located at Philly Shipyard at the Navy Yard capable of lifting 660 metric tons.

An inventory of cranes can be found within **Appendix C: Cranes**.

Warehouses

The Port has 26 warehouses that are used for the storage of incoming and outgoing cargo. As an import-based Port, warehouses play an important role in the movement of goods by providing the adequate storage space (**Exhibit 16**).

Exhibit 16. Port Warehouses by Type



General observations regarding Port warehouses include:

1. There are 26 warehouses available at the Port with a total of 5,815,102 sq. ft. in dry and refrigerated storage space.
2. Dry storage warehouses represent 81% of all warehouses at the Port.
3. The Philadelphia Wholesale Produce Market is the only warehouse used for distribution and has about 670,000 sq. ft. of useable space.
4. The PRPA has 22 out of 26 warehouses, including two out of the three refrigerated warehouses at the Port.
5. Private terminals represent 15% of all warehouses.

An inventory of warehouses can be found within **Appendix D: Warehouses**.

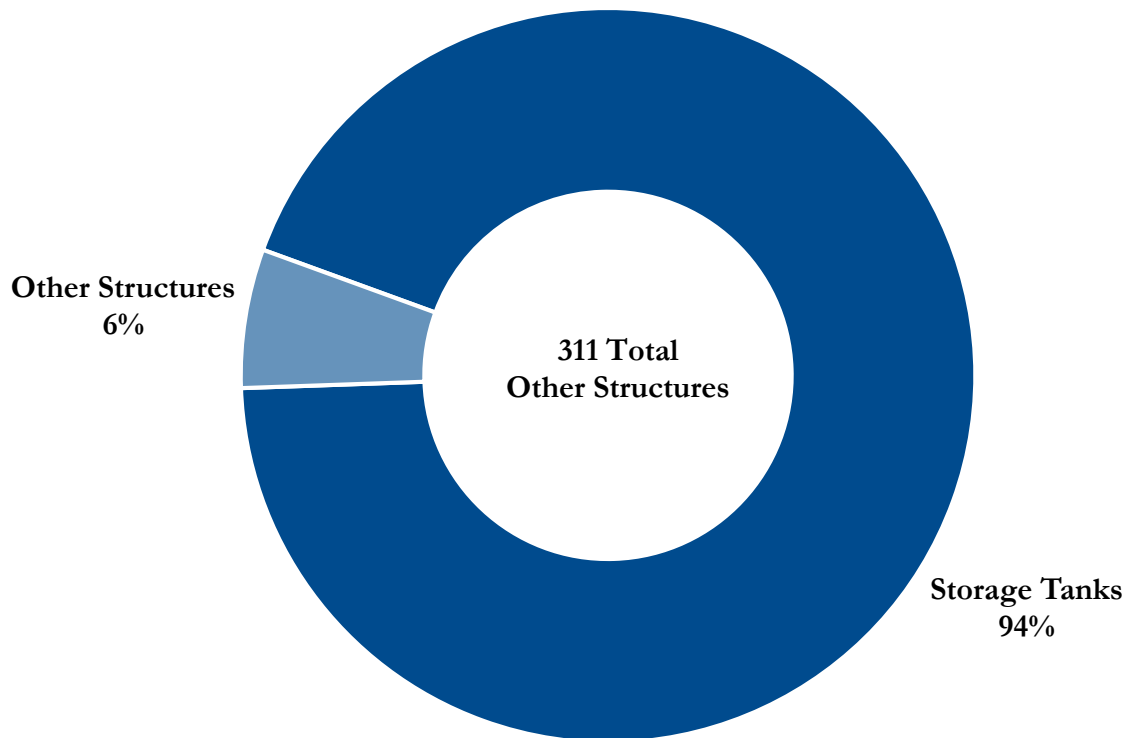
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Other Structures

Based on available data, there are about 311 other structures at the Port. These include ancillary buildings on Port properties, storage tanks and petroleum and natural gas refinery infrastructure. Given the presence of three petroleum and natural gas refineries within the Port, storage tanks represent the majority of other structures (**Exhibit 17**).

Exhibit 17. Percentage of Storage Tanks to Other Port Structures



General observations regarding other structures include:

1. There are approximately 292 storage tanks at the Port.
2. The majority of storage tanks are used for petroleum, natural gas and fertilizer at the Port.
3. Storage tanks represent 94% of all other structures.
4. Other structures also include refinery equipment used within the petroleum refining process and generators for electricity production.

An inventory of other structures can be found within **Appendix E: Other Structures**.

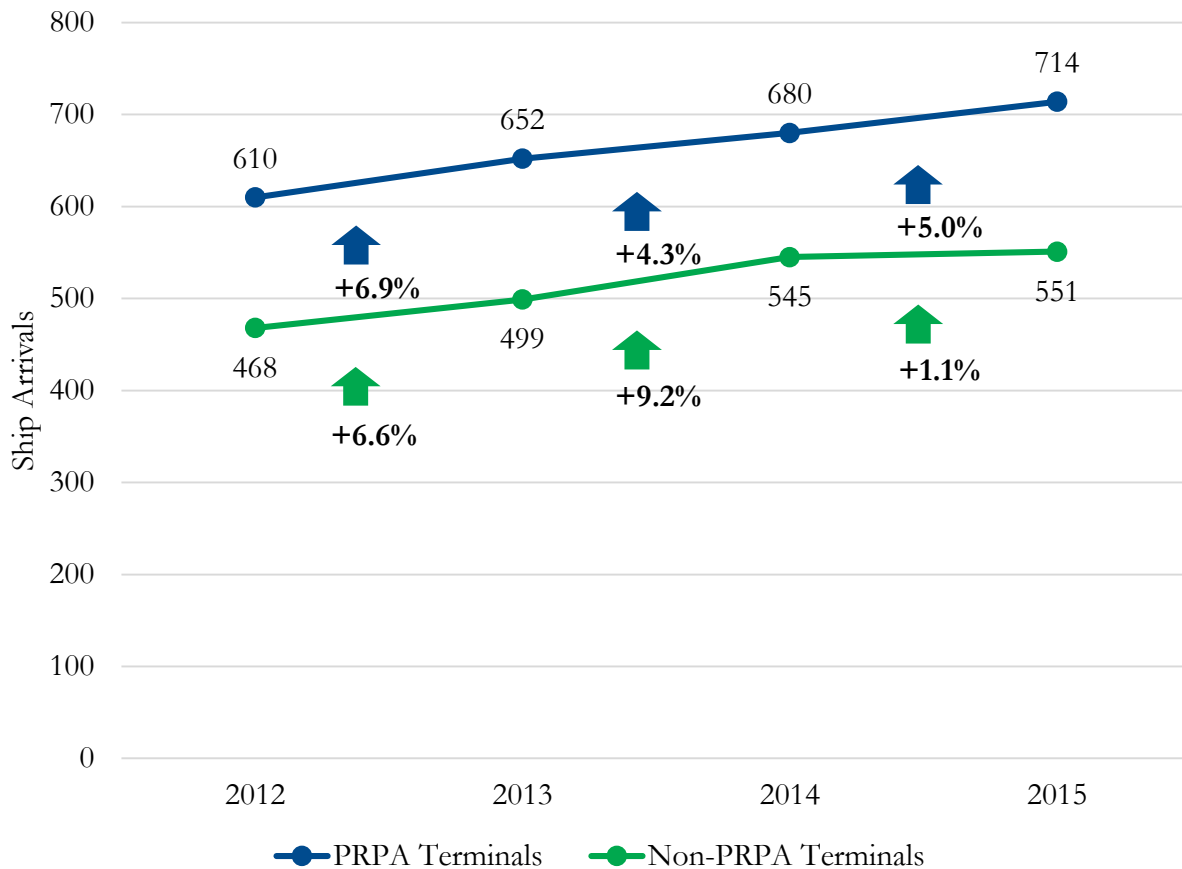
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Vessel Calls

From 2012 to 2015, annual ship traffic to privately owned marine terminals increased on average by 5.6% as compared to 5.4% for PRPA facilities. However, PRPA owned terminals accounted for a greater overall portion of arrivals on an annual basis (**Exhibit 18**).

Exhibit 18. PRPA and Non-PRPA Annual Ship Traffic by Arrivals (2012-2015)

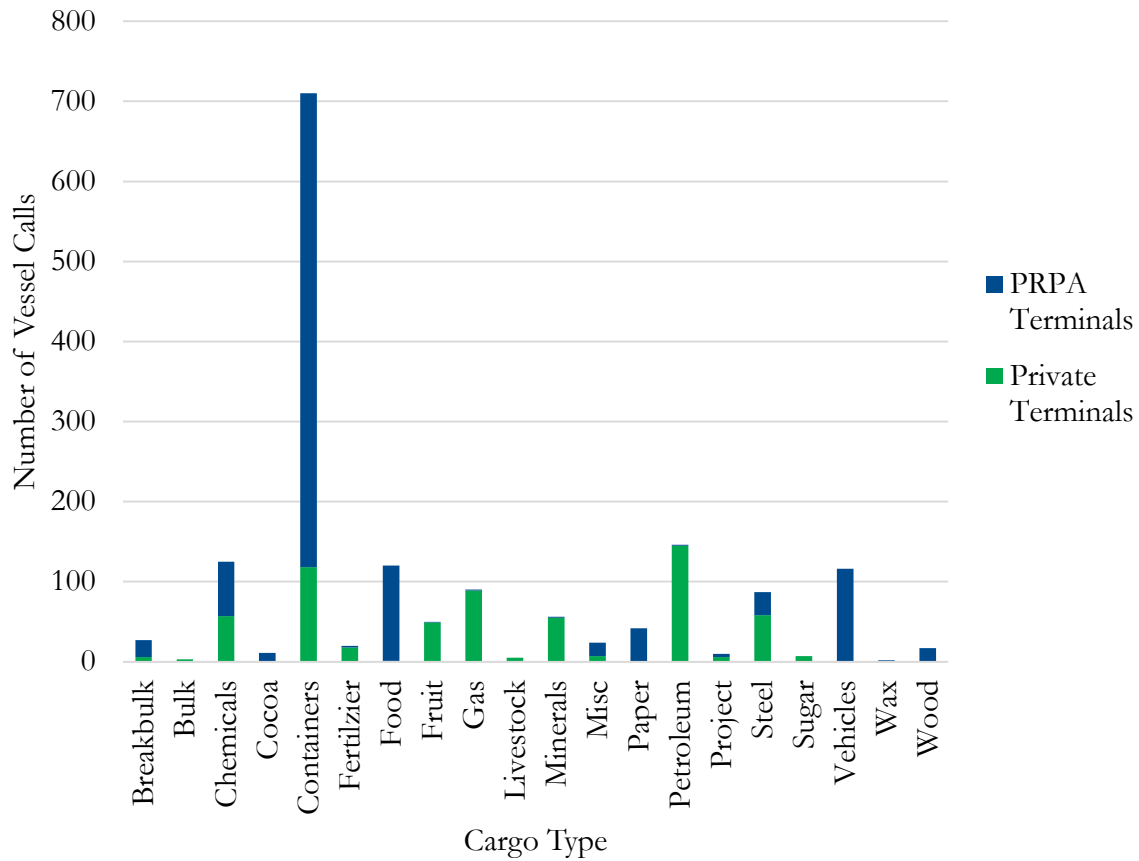


Source: Maritime Exchange for the Delaware River and Bay: <http://www.maritimedelriv.com/>

Cargo Types

The Port handles a variety of cargo types (e.g., breakbulk, bulk, containers, petroleum, etc.). As shown in **Exhibit 19**, the greatest number of vessels loading and discharging cargo handle containerized cargo.

Exhibit 19. Number of Vessel Calls for the Port of Philadelphia by Cargo Type (2015)



*Source: Maritime Exchange for the Delaware River and Bay: <http://www.maritimedelriv.com/>

A comprehensive infrastructure profile for PRPA terminals, which detailed the existing conditions of PRPA-owned assets was completed in 2015.

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PRIVATELY OWNED MARINE TERMINALS

There are 13 privately owned marine terminals, in addition to PRPA-owned terminals, operating within the Port. As shown in **Exhibit 20**, private marine terminals received 1,077 vessels¹⁰ in 2015. Petroleum products, containers and gas represented more than half of all cargo vessels received by private terminals for 2015¹¹ (**Exhibit 21**).

Exhibit 20. Private Marine Terminal Vessel Calls (2015)

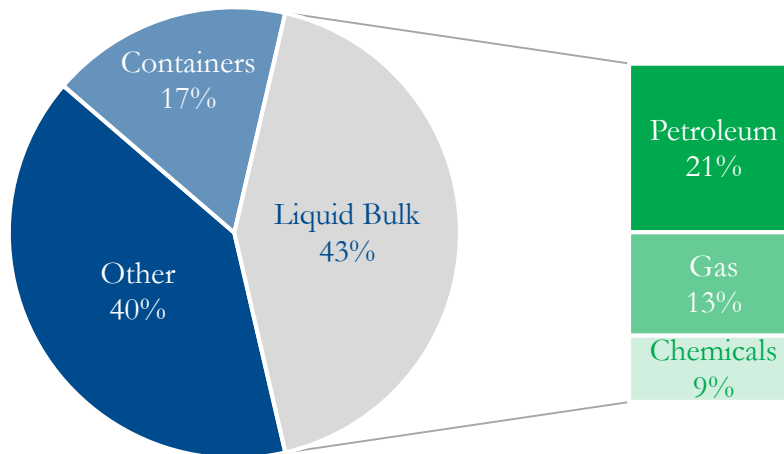
No.	Terminal	Vessel Calls	% of Total Private Terminal Vessel Calls
1.	Monroe	238	22.1%
2.	Penn Terminals	216	20.1%
3.	Marcus Hook	183	17%
4.	Fort Mifflin	134	12.4%
5.	Eddystone	95	8.8%
6.	Fairless Hills	63	5.8%
7.	H Port Richmond	54	5%
8.	Waste Management	35	3.2%
9.	Philly Shipyard at the Navy Yard	24	2.2%
10.	Riverside	13	1.2%
11.	East Coast Terminals	10	0.9%
12.	Hog Island	8	0.7%
13.	Girard Point	4	0.4%
Total Vessel Calls		1,077	100%

Source: Maritime Exchange for the Delaware River and Bay: <http://www.maritimedelriv.com/>

¹⁰ 2015 Vessel calls as reported to the Maritime Exchange for the Delaware River and Bay. This figure includes tug boat and barge services and does not necessarily reflect total load and discharge of cargo.

¹¹ Other cargo types include: steel, chemicals, minerals, fruit, fertilizer, sugar, breakbulk, livestock, bulk, food, project and miscellaneous.

Exhibit 21. Greatest Share of Private Terminal Cargo Handled (2015)



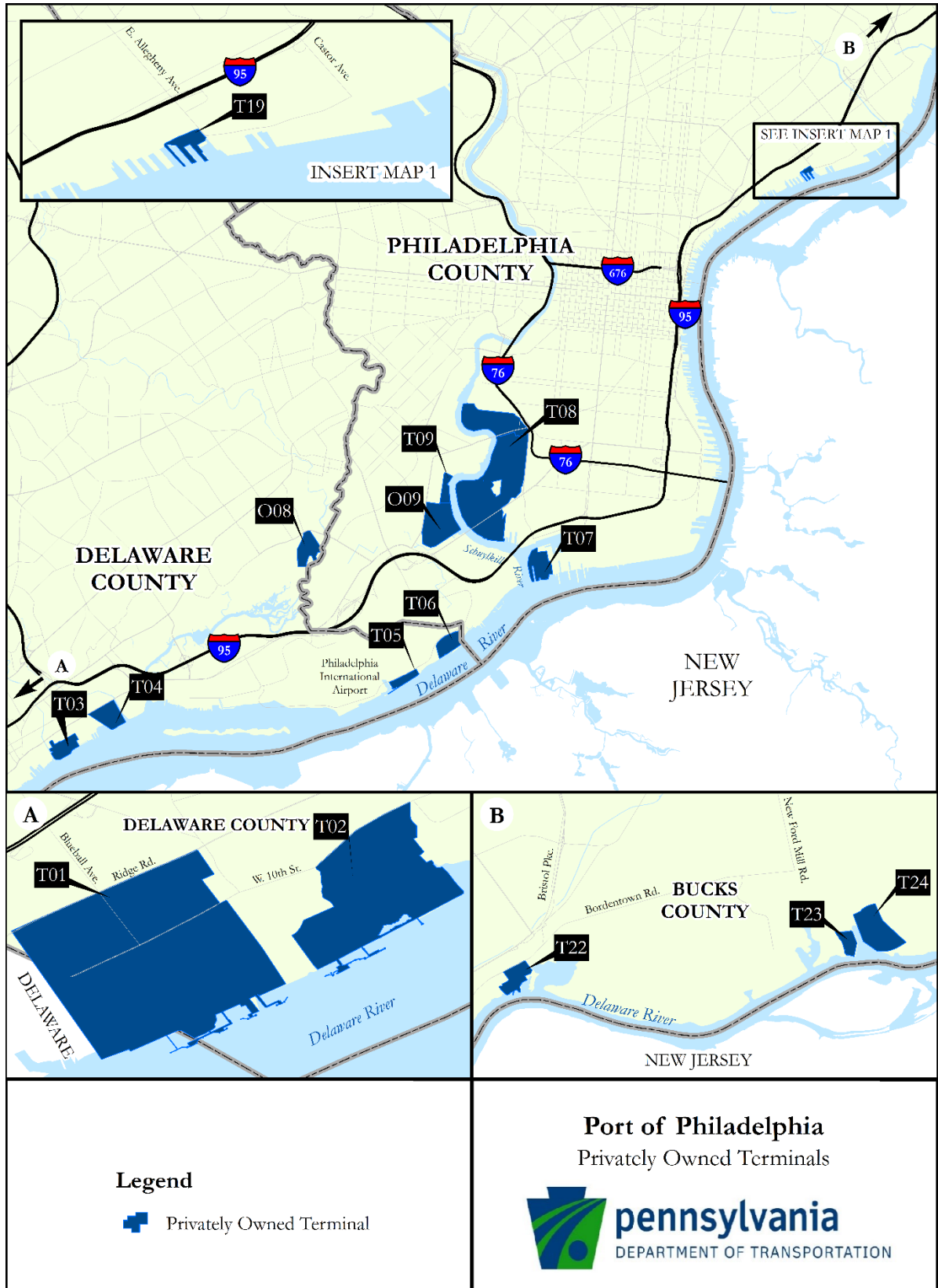
Source: Maritime Exchange for the Delaware River and Bay: <http://www.maritimedelriv.com/>

Exhibit 22 depicts the locations of active private marine terminals. A list of each terminal property¹² and corresponding Map ID is found in the list below:

1. Marcus Hook – T01
2. Monroe – T02
3. Eddystone – T03
4. Penn Terminals – T04
5. Hog Island – T05
6. Fort Mifflin – T06
7. Philly Shipyard at the Navy Yard – T07
8. Girard Point – T08
9. East Coast Terminals – T09
10. H Port Richmond – T19
11. Riverside – T22
12. Waste Management – T23
13. Fairless Hills – T24
14. Darby Creek Tank Farm – O8
15. Schuylkill River Tank Farm – O9

¹² The Darby Creek Tank Farm and Schuylkill River Tank Farm are identified separately within **Exhibit 22**. However, they are considered other properties and are part of the Fort Mifflin Terminal Complex and Philadelphia Refining Complex.

Exhibit 22. Map of Privately Owned Terminals



Port of Philadelphia Capital Improvement Plan

Task 1.01 Existing Conditions of Non-PRPA Properties

East Coast Terminals

East Coast Terminals is located along the Schuylkill River in West Philadelphia, at South 67th St. and Essington Ave and is directly behind the PRPA's Philadelphia Wholesale Produce Market.

East Coast Terminals was acquired from Plains All American Pipeline, L.P. by PBF Logistics, LLC in April of 2016. This marine terminal is one of four refined product terminals within the Greater Philadelphia area. The other three terminals are in the Port of Paulsboro, New Jersey.

Exhibit 23. East Coast Terminals



East Coast Terminals	
Map ID	T09
Status	Active
County	Philadelphia
Municipality	Philadelphia
River	Schuylkill
Waterfront (Miles)	0.48
Total Acres	49
Owner	PBF Logistics, LLC
Operator	PBF Logistics, LLC

Cargo Handled	Vessel Calls (2015)
Minerals	6
Petroleum	4
Total	10

Noteworthy Characteristics:

1. There is one berth that is approximately 750 ft. long with a depth of 32 ft.
2. There are no cranes at the terminal.
3. There are no warehouses at the terminal.
4. There are 21 tanks for petroleum storage.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Eddystone

Eddystone Rail Terminal (a.k.a., Eddystone) is located along the Delaware River in Eddystone, Pennsylvania, off Industrial Highway west of Crum Creek. It is at the former PECO Eddystone power station site.

Enbridge, Inc., the parent company of Eddystone Rail LLC, entered into a long-term lease with the Exelon Corporation for the Eddystone facility in early 2014 to provide rail-to-barge transport of crude oil. Barges connect to the terminal at berth locations and transport crude oil south to the Monroe Energy Inc. Trainer Refinery for processing.

Exhibit 24. Eddystone Terminal



Eddystone Terminal	
Map ID	T03
Status	Active
County	Delaware
Municipality	Eddystone
River	Delaware
Waterfront (Miles)	0.25
Total Acres	89
Owner	Exelon Corporation
Operator	Eddystone Rail Company, LLC

Cargo Handled	Vessel Calls (2015)
N/A	0

Noteworthy Characteristics:

1. 95 barges docked at the marine terminal in 2015.
2. There are two berths, measuring about 200 ft. in maximum length with a depth of 20 ft.
3. There is onsite rail service provided by Conrail Shared Assets Operation (CSAO) with the capacity for up to one 118-car unit train.
4. There are no cranes at this marine terminal.
5. There are no warehouses at this marine terminal.
6. There are two petroleum storage tanks located onsite, a power generating station and four generators.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Fairless Hills

Kinder Morgan Fairless Hills Terminal (a.k.a., Fairless Hills) is located along the Delaware River in Falls Township, Pennsylvania and is adjacent to the Waste Management terminal. Fairless Hills is part of the Keystone Port Industrial Complex, a Keystone Opportunity Zone (KOZ) Commonwealth Enterprise Zone that was established in Bucks County to generate economic activity at the location of the former U.S. Steel Fairless Works plant. Fairless Hills is currently operated by Kinder Morgan, Inc., which leases the 100-acre site from the U.S. Steel Corporation.

Exhibit 25. Fairless Hills Terminal



Fairless Hills Terminal	
Map ID	T24
Status	Active
County	Bucks
Municipality	Falls Township
River	Delaware
Waterfront (Miles)	0.41
Total Acres	100
Owner	United States Steel Corporation
Operator	Kinder Morgan, Inc.

Cargo Handled	Vessel Calls (2015)
Chemicals	2
Fertilizer	18
Minerals	19
Project	2
Steel	20
Sugar	2
Total	63

Noteworthy Characteristics:

1. There is one berth that is approximately 2,000 ft. in maximum length with a depth of 38 ft.
2. There is existing rail infrastructure with service provided by CSAO, although no activity is currently being reported.
3. There are five active cranes:
 - a. An HMK 330 Gottwald Mobile Harbor crane with an 80 metric ton lift capacity;
 - b. Two HMK 260EE Gottwald Mobile Harbor cranes, each with a 40 metric ton lift capacity; and
 - c. Two rubber tire gantry cranes.
4. There is one covered dry warehouse with approximately 208,000 sq. ft. of storage space.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Fort Mifflin

Fort Mifflin Terminal (a.k.a., Fort Mifflin) is located along the Delaware River in Tincum Township and is situated directly southeast of the Philadelphia International Airport. The Fort Mifflin terminal is a part of the Sunoco Logistics: Fort Mifflin Terminal Complex, which includes the terminal and storage facilities of Hog Island and the Darby Creek Tank Farm. Fort Mifflin is owned by Energy Transfer Partners, L.P. and operated by its subsidiary company, Sunoco Logistics, Inc.

Fort Mifflin primarily handles the movement petroleum products, generates revenue based on throughput fees, and is connected to the Darby Creek Tank Farm via pipelines.

Exhibit 26. Fort Mifflin Terminal



Fort Mifflin Terminal	
Map ID	T06
Status	River
County	Delaware
Municipality	Tincum Township
River	Delaware
Waterfront (Miles)	0.44
Total Acres	122
Owner	Energy Transfer Partners, L.P.
Operator	Sunoco Logistics, L.P.

Cargo Handled	Vessel Calls (2015)
Petroleum	58
Total	58

Noteworthy Characteristics:

1. 76 barges docked at the marine terminal in 2015.
2. There is one berth that is approximately 956 ft. in maximum length with a depth of 42 ft.
3. There are no cranes at this marine terminal.
4. There are nine onsite tanks for petroleum storage.
5. There is access to an additional 26 storage tanks via pipeline to the Darby Creek Tank Farm.

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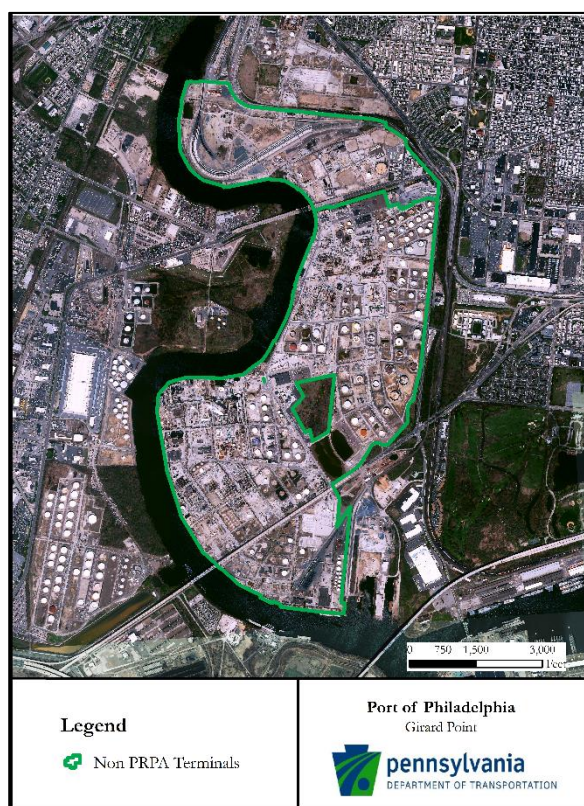
Task 1.01 Existing Conditions of Non-PRPA Properties

Girard Point

The Point Breeze Refinery Terminal and Girard Point Barge Docks (a.k.a., Girard Point) is located along the Schuylkill River in Southwest Philadelphia between Passyunk Ave. and Penrose Ave. Girard Point is part of Philadelphia Refining Complex, the largest marine terminal by acreage within the Port. Girard Point is operated by Philadelphia Energy Solutions, Inc., a partnership formed between The Carlyle Group, a multinational investment firm, and Sunoco Logistics, L.P., a subsidiary of Energy Transfer Partners, L.P.

Girard Point is ranked 10th in the U.S. for operational capacity with a refining throughput of 335,000 barrels per day¹³. Girard Point receives crude oil by rail and has access to the additional storage capacity across the Schuylkill River via underwater pipelines to the Schuylkill River Tank Farm.

Exhibit 27. Girard Point Terminal



Girard Point Terminal	
Map ID	T08
Status	Active
County	Philadelphia
Municipality	Philadelphia
River	Schuylkill
Waterfront (Miles)	3.65
Total Acres	1,310
Owner	The Carlyle Group, L.P.
Operator	Philadelphia Energy Solutions, Inc.

Cargo Handled	Vessel Calls (2015)
Petroleum	3
Total	3

Noteworthy Characteristics:

1. There are three berths, measuring approximately 1,775ft., 1,475 ft. and 600 ft. in length, with a depth of 32 ft.
2. There is a propane/propylene rail service provided by CSAO and CSX with 16 railcar stations.
3. There are ten storage tanks for crude petroleum and 53 tanks for refined petroleum products.
4. There is access to an additional 30 storage tanks via pipeline to Schuylkill River Tank Farm.

¹³ Reported as of January 1st, 2016 by the U.S. Energy Information Administration.

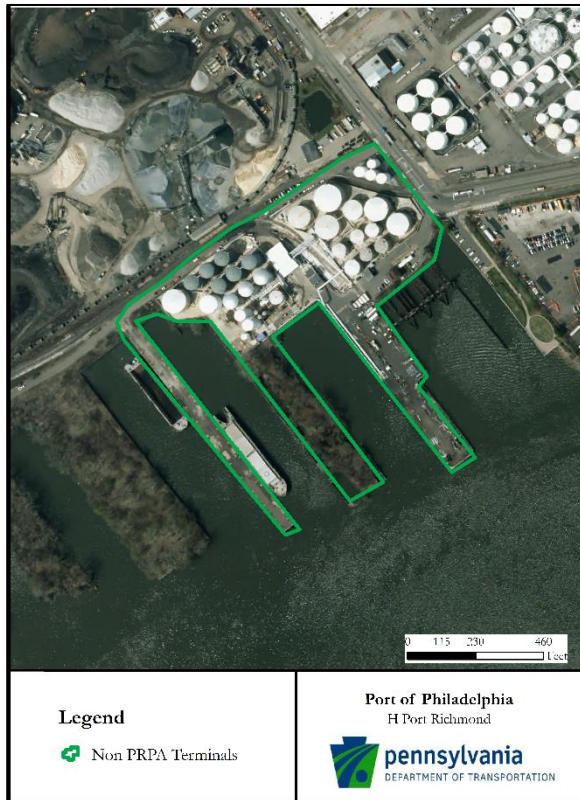
Port of Philadelphia Capital Improvement Plan

Task 1.01 Existing Conditions of Non-PRPA Properties

H Port Richmond

H Port Richmond (a.k.a., Westway Terminal, Contanda Philadelphia Terminal) is located along the Delaware River in the river wards area of Northeast Philadelphia. It is directly west of the PRPA's Tioga marine terminal and is situated on the site of the former Reading Railroad and Conrail Port Richmond Yards. H Port Richmond is owned and operated by Contanda, LLC, formerly known as Westway Group, LLC. H Port Richmond handles liquid bulk cargo (e.g., specialty chemicals, fertilizer, petroleum, etc.) and features onsite rail access.

Exhibit 28. H Port Richmond Terminal



H Port Richmond Terminal	
Map ID	T19
Status	Active
County	Philadelphia
Municipality	Philadelphia
River	Delaware
Waterfront (Miles)	0.23
Total Acres	2
Owner	Contanda, LLC.
Operator	Contanda, LLC.

Cargo Handled	Vessel Calls (2015)
Chemicals	53
Total	53

Noteworthy Characteristics:

1. There is one berth that is approximately 728 ft. in maximum length with a depth of 32 ft.
2. There is onsite rail access provided by CSAO with 11 railcar loading spots.
3. There are no cranes at this marine terminal.
4. There are 26 carbon steel tanks and four stainless steel tanks available for storage.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Hog Island

Hog Island Terminal (a.k.a., Hog Island) is located along the Delaware River in Tincum Township and is situated directly southeast of the Philadelphia International Airport. Hog Island is part of the Sunoco Logistics: Fort Mifflin Terminal Complex, which includes the terminal and storage facilities of Fort Mifflin and the Darby Creek Tank Farm. Hog Island is owned by Energy Transfer Partners, L.P. and operated by its subsidiary company, Sunoco Logistics, Inc.

Exhibit 29. Hog Island Terminal



Hog Island Terminal	
Map ID	T05
Status	Active
County	Delaware
Municipality	Tincum Township
River	Delaware
Waterfront (Miles)	0.68
Total Acres	15
Owner	Energy Transfer Partners, L.P.
Operator	Sunoco Logistics, LP.

Cargo Handled	Vessel Calls (2015)
Chemicals	1
Petroleum	4
Total	5

Noteworthy Characteristics:

1. Three barges docked at the terminal for 2015.
2. There is one berth that is approximately 2,745 ft. in maximum length with a depth of 39 ft.
3. There are no cranes at this marine terminal.
4. There are no onsite storage facilities.
5. Hog Island has access to 26 storage tanks via a pipeline to the Darby Creek Tank Farm.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Marcus Hook

The Marcus Hook Terminal (a.k.a., Marcus Hook) is located along the Delaware River in Marcus Hook, Pennsylvania and includes a small portion of its property within New Castle County, Delaware. It is part of the Marcus Hook Industrial Complex, a refinery that specializes in the processing natural gas products and is the first U.S. export terminal for ethane natural gas. Marcus Hook receives cargo via marine vessel, pipeline, truck and rail. It can distribute cargo by marine vessel, pipeline and truck. Marcus Hook is owned by Energy Transfer Partners, L.P. and is operated by a subsidiary—Sunoco Logistics, L.P.

Exhibit 30. Marcus Hook Terminal



Marcus Hook Terminal	
Map ID	T01
Status	Active
County	Delaware
Municipality	Marcus Hook
River	Delaware
Waterfront (Miles)	1.42
Total Acres	693
Owner	Energy Transfer Partners, L.P.
Operator	Sunoco Logistics, L.P.

Cargo Handled	Vessel Calls (2015)
Gas	88
Total	88

Noteworthy Characteristics:

1. 89 barges docked at Marcus Hook in 2015.
2. There is are a total of four berths measuring approximately:
 - a. A maximum length of 750ft. with a depth of 34 ft.;
 - b. A maximum length of 850ft. with a depth of 35 ft.;
 - c. A maximum length of 300ft. with a depth of 12 ft.; and
 - d. A maximum length of 1,000ft. with a depth of 40 ft.
3. There are 16 operational storage tanks for petroleum products.
4. There is onsite rail service provided by CSAO.
5. There are no cranes at this marine terminal.

Port of Philadelphia Capital Improvement Plan

Task 1.01 Existing Conditions of Non-PRPA Properties

Monroe

The Trainer Refinery Terminal (a.k.a., Monroe) is located along the Delaware River off Old Post Road in Trainer, Pennsylvania. It is at the site of the former ConocoPhillips Trainer Refinery and is adjacent to the Marcus Hook Industrial Complex. Monroe is owned by Delta Airlines, Inc. and is operated by a subsidiary company—Monroe Energy, LLC. Major cargo types handled at Monroe are petroleum, gas and chemical products that are transported by tanker and barge for refining at the Trainer Refinery.

Exhibit 31. Monroe Terminal



Monroe Terminal	
Map ID	T02
Status	Active
County	Delaware
Municipality	Trainer
River	Delaware
Waterfront (Miles)	0.53
Total Acres	292
Owner	Delta Airlines, Inc.
Operator	Monroe Energy, LLC.

Cargo Handled	Vessel Calls (2015)
Chemicals	1
Gas	1
Petroleum	76
Total	78

Noteworthy Characteristics:

- 160 barges docked at the terminal in 2015.
- There are two berths measuring approximately 1,400 ft. and 980 ft. in maximum length with a depth of 40 ft. and 34 ft.
- There is onsite rail service provided by CSAO.
- There are no cranes at this marine terminal.
- There are 89 storage tanks for petroleum products:
 - 29 tanks in the North Farm; and
 - 60 tanks in the South Farm.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Philly Shipyard at the Navy Yard

Philly Shipyard, Inc. is located on the Delaware River at the conflux of the Schuylkill River in South Philadelphia. It is on the site of the former U.S. Philadelphia Naval Yard, a military installation spanning 1,200 acres that closed in 1996. Today, the area is the site of the Navy Yard-KOZ that managed by the City of Philadelphia's public-private economic development corporation—PIDC.

The Navy Yard-KOZ is a campus for about 150 companies and is home to Philly Shipyard, Inc., a commercial shipyard that builds vessels for the U.S. Jones Act market. Philly Shipyard, Inc. owns and operates on 114 acres on the western end of the Navy Yard-KOZ campus and receives breakbulk cargo for shipbuilding activities. The entire Navy Yard has about 29,000 ft. in berthing space available for customers of Philly Shipyard, Inc. and commercial vessels layberthing in the Delaware River.

Exhibit 32. Philly Shipyard at Navy Yard



Navy Yard Terminal	
Map ID	T07
Status	Active
County	Philadelphia
Municipality	Philadelphia
River	Delaware
Waterfront (Miles)	0.97
Total Acres	114
Owner	Philly Shipyard, Inc.
Operator	Philly Shipyard, Inc.

Cargo Handled	Vessel Calls (2015)
Breakbulk	1
Total	1

Noteworthy Characteristics:

1. There is about 29,000 ft. in berthing space at the Navy Yard:
 - a. Several vessels utilize the Navy Yard's for layberthing on an annual basis.
2. In 2015, there were one tanker, two bulk vessels and one general cargo vessel that layberthed at the Navy Yard.
3. Philly Shipyard, Inc. has one Goliath heavy gantry crane with the capacity to lift 660 tons and two additional cranes with the capacity to lift 50 tons.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Penn Terminals

Penn Terminals is located along the Delaware River in Eddystone, Pennsylvania and is situated off Industrial Highway and east of Ridley Creek. Penn Terminals is operated by Penn Terminals Inc. and is owned by the Macquarie Group Ltd., an Australian-based international investment banking and diversified financial services group. Penn Terminals handles a variety cargo types and receives the second highest volume of containerized cargo within the Port.

Exhibit 33. Penn Terminals



Penn Terminals	
Map ID	T04
Status	Active
County	Delaware
Municipality	Eddystone
River	Delaware
Waterfront (Miles)	0.53
Total Acres	78
Owner	Macquarie Group, Ltd.
Operator	Penn Terminals, Inc.

Cargo Handled	Vessel Calls (2015)
Breakbulk	5
Containers	118
Food	1
Fruit	49
Livestock	5
Yachts	3
Project	4
Steel	26
Sugar	2
Total	213

Noteworthy Characteristics:

1. There is approximately 1,150 ft. of total berthing space with a depth of 37 ft.
2. There is onsite rail service provided by CSAO.
3. There are three rail mounted gantry cranes with the capacity to lift 35-40 metric tons.
4. There is one rail mounted heavy lift crane with the capacity to lift 220 metric tons.
5. There is one dry warehouse with approximately 300,000 sq. ft. in storage space.
6. There is one building with approximately 20,102 sq. ft. in refrigerated storage space.

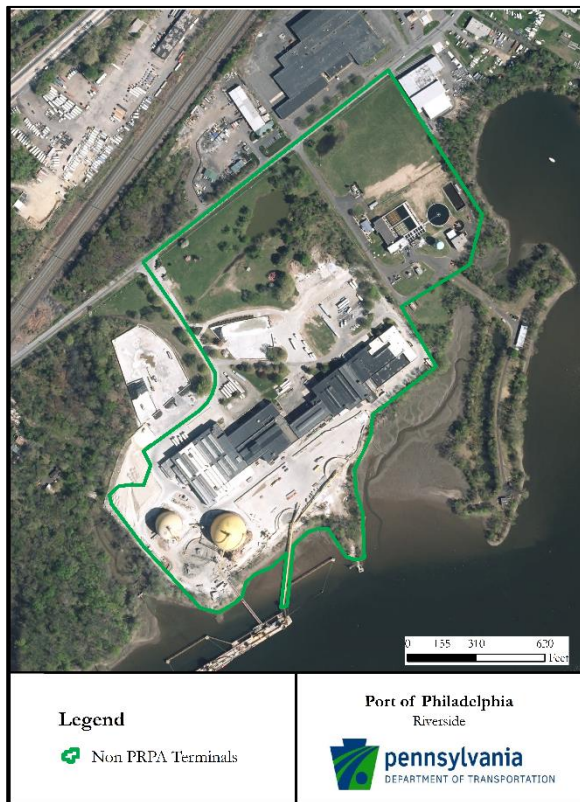
Port of Philadelphia Capital Improvement Plan

Task 1.01 Existing Conditions of Non-PRPA Properties

Riverside

Riverside is located along the Delaware River in Bristol Township within Bucks County, Pennsylvania and is west of Keystone Industrial Port Complex. Riverside is owned by The Silvi Group and operated by a subsidiary company—Riverside Construction Materials, Inc. Riverside specializes in the import and export of construction materials. The terminal features a Thor Conveyor unloading system that is used to stevedore bulk and minerals cargo from ship to rail cars and trucks.

Exhibit 34. Riverside Terminal



Riverside Terminal	
Map ID	T22
Status	Active
County	Bucks
Municipality	Bristol Township
River	Delaware
Waterfront (Miles)	0.17
Total Acres	48
Owner	The Silvi Group
Operator	Riverside Construction Materials, Inc.

Cargo Handled	Vessel Calls (2015)
Bulk	3
Minerals	10
Total	13

Noteworthy Characteristics:

1. There is one berth that is approximately 700 ft. in maximum length and a depth of 38.6 ft.
2. There is onsite rail service provided by CSAO.
3. There are no cranes at this marine terminal.
4. There is one dry warehouse with about 208,000 sq. ft. in storage capacity.
5. There is one Thor Conveyor unloading system for stevedore operations.

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Task 1.01 Existing Conditions of Non-PRPA Properties

Waste Management

The Waste Management Marine Terminal (a.k.a., Waste Management) is located along the Delaware River in Falls Township, Pennsylvania and is adjacent to the Fairless Hills marine terminal. It is part of the Keystone Port Industrial Complex. Waste Management is owned by Waste Management Inc., and is operated by Port Contractors Inc. for the stevedoring of bulk and breakbulk cargo. Cranes and warehousing are not permanent on site, however, they are available on request through the terminal operator.

Exhibit 35. Waste Management Terminal



Waste Management Terminal	
Map ID	T23
Status	Active
County	Bucks
Municipality	Falls Township
River	Delaware
Waterfront (Miles)	0.41
Total Acres	28
Owner	Waste Management, Inc.
Operator	Port Contractors, Inc.

Cargo Handled	Vessel Calls (2015)
Minerals	20
Steel	12
Sugar	3
Total	35

Noteworthy Characteristics:

1. There is one berth with about 2,000 ft. in maximum length with a depth of 38 ft.
2. There are no onsite cranes at this marine terminal.
3. There are no onsite warehouses.

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Task 1.01 Existing Conditions of Non-PRPA Properties

KEY FINDINGS

This analysis examined available information related to the movement of goods through the Port of Philadelphia. Key findings from the analysis are as follows:

1. Includes marine facilities from Marcus Hook, PA to Fairless Hills, PA along the Delaware River and from the conflux of the Delaware River to the northern part of Girard Point along the Schuylkill River.
2. Properties for maritime use are owned by the U.S. Government, PRPA and private owner operators.
3. There are 12 owners of real estate holdings and infrastructure at the Port, which consists of 11 private owners and the PRPA.
4. There are 13 privately operated marine terminals in addition to eight PRPA marine terminals.
5. Approximately 2,950 of 3,500 total Port acreage is privately owned.
6. There are three major refineries at the Port for petroleum and natural gas that are privately owned and operated.
7. Girard Point is 10th largest refinery in the U.S.
8. Marcus Hook is the first U.S. export terminal for ethane natural gas.
9. The Port ranks 3rd of 21 competing east coast ports in annual tonnage.
10. The highest volume of cargo tonnage goes through PRPA owned properties.
11. The Port saw a 5.5% average annual increase in ship arrivals from 2012 to 2015.
12. The majority of vessel calls at the Port are carrying containerized cargo.
13. Petroleum, gas and chemical products represent 45% of commodities moving through privately owned terminals.
14. Privately owned terminals have the greatest area of berthing space.
15. There is rail service available at eight of the 13 privately owned marine terminals.
16. The PRPA owns half of all cranes and 22 out of 26 warehouses at the Port.
17. Petroleum storage tanks make up the 88% of structures within the privately owned Port properties.
18. There are 12 vacant properties at the Port.

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Task 1.01 Existing Conditions of Non-PRPA Properties

APPENDIX A: VACANT PROPERTIES

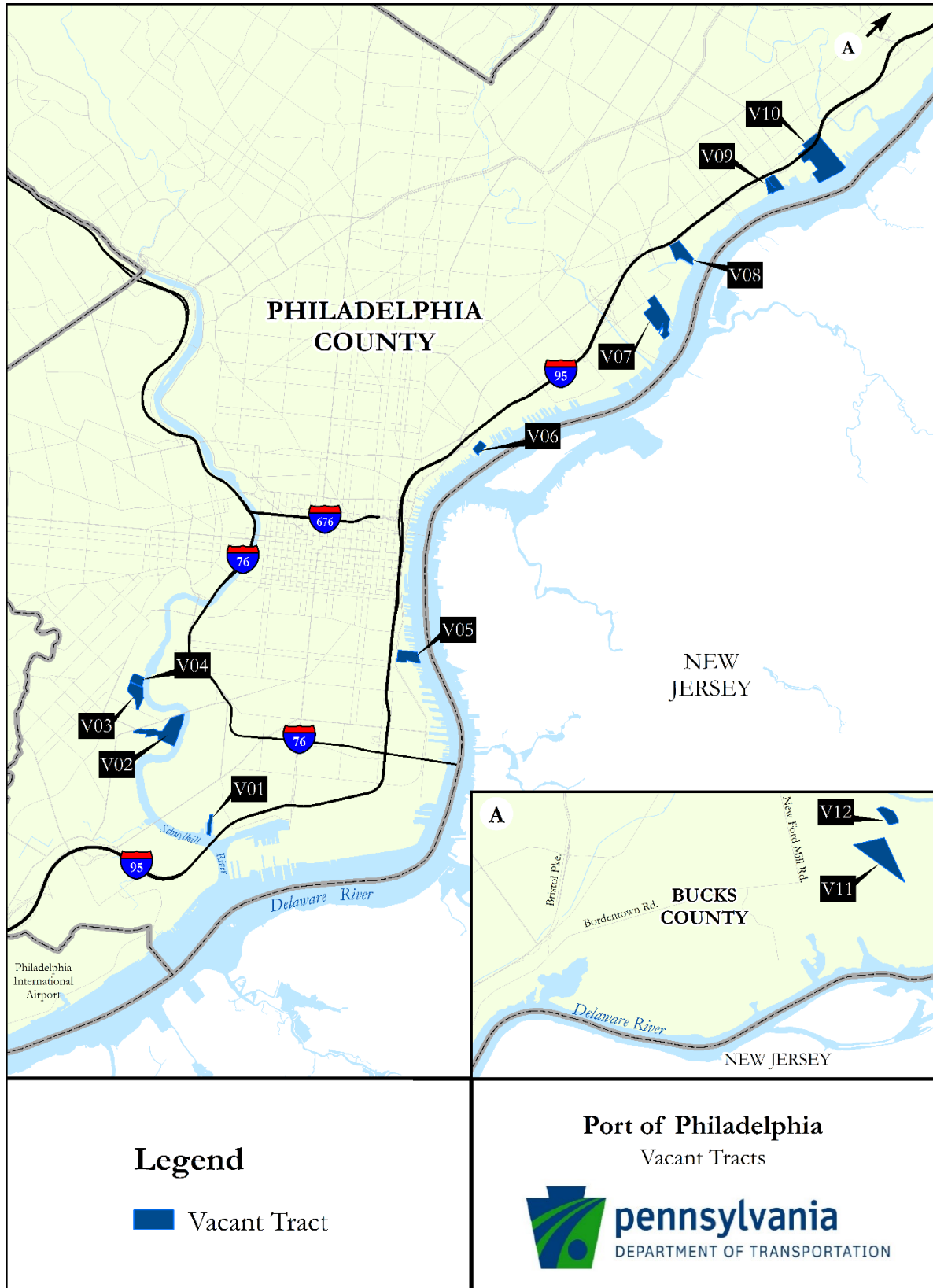
There are 12 properties that are zoned port-industrial that are currently not in use. These properties are vacant land (greater than 10 acres) approximately ½ mile from the waterfront, and some have ancillary existing structures or recently renovated facilities on site.

Exhibit 36 lists vacant properties as identified by this analysis. Each property has a Map ID that corresponds to a location shown in **Exhibit 37**.

Exhibit 36. Vacant Port Properties

Map ID	Street Address	Municipality	Owner	Total Acres
V01	2700 Penrose Ave. 2706 Penrose Ave.	Philadelphia	Transriver Philadelphia	12.6
V02	6300 Passyunk Ave.	Philadelphia	Philadelphia Energy Solutions	75.2
V03	3223 S. 61 st St. 2751 S. 5 th St.	Philadelphia	Philadelphia Redevelopment Authority	30.4
V04	3000 S. 56 th St. 5736 Eastwick Avenue	Philadelphia	Philadelphia Redevelopment Authority	14.6
V05	4 Reed Street 1301 S. Chris. Columbus Blvd. 1499 S. Chris. Columbus Blvd.	Philadelphia	City of Philadelphia Private Owner Private Owner	30.2
V06	2001 Beach St.	Philadelphia	Beach Street Corp.	11.9
V07	4501 Richmond St.	Philadelphia	Eastern Enterprises	71.8
V08	5501 Tacony St.	Philadelphia	Philadelphia Redevelopment Authority	35.8
V09	6975 Milnor St. 7071 Milnor St. 7001 Milnor St. 7001 Milnor St.	Philadelphia	City of Philadelphia City of Philadelphia City of Philadelphia Wared Sand & Materials	26.3
V10	5105 Bleigh Ave. 7999 State Rd. 7801 State Rd. 5135 Bleigh Ave. 5137 Bleigh Ave. 5139 Bleigh Ave. 7601 State Rd.	Philadelphia	State Road Storage City of Philadelphia City of Philadelphia Coilplus, Inc. Waste Management, Inc. CAA Newton Real Estate Drummond Decatur	144.1
V11	400 Gamesa Dr.	Morrisville	Gamesa Wind US, LLC.	70
V12	85 Ben Fairless Dr.	Morrisville	Not Available	16.55

Exhibit 37. Map of Vacant Port Properties



Legend

Vacant Tract

Port of Philadelphia
 Vacant Tracts



Port of Philadelphia Capital Improvement Plan

Task 1.01 Existing Conditions of Non-PRPA Properties

APPENDIX B: BERTHS

Information on berths was provided by the USACE Waterborne Commerce Statistics Center, the PRPA and private terminal owners and operators. **Exhibit 38** lists berths as identified by this analysis.

Exhibit 38. Berth Inventory

Berth	Length (ft.)	Depth (ft.)	Terminal	Owner	Operator
Marcus Hook Berth 2A	750	34	Marcus Hook	Energy Transfer Partners, L.P.	Sunoco Logistics, L.P.
Marcus Hook Berth 3A	850	35	Marcus Hook	Energy Transfer Partners, L.P.	Sunoco Logistics, L.P.
Marcus Hook Berth 3B	300	12	Marcus Hook	Energy Transfer Partners, L.P.	Sunoco Logistics, L.P.
Marcus Hook Berth 3C	1000	40	Marcus Hook	Energy Transfer Partners, L.P.	Sunoco Logistics, L.P.
Trainer Refinery Berth 1	1400	40	Monroe	Delta Airlines, Inc.	Monroe Energy, LLC
Trainer Refinery Berth 2	980	34	Monroe	Delta Airlines, Inc.	Monroe Energy, LLC
Penn Terminals Berth 1	1,150	37	Penn Terminals	Macquarie Group Ltd.	Penn Terminals, Inc.
Eddystone Berth 1	200	29	Eddystone	Enbridge, Inc.	Eddystone Rail Company, LLC
Eddystone Berth 2	200	29	Eddystone	Enbridge, Inc.	Eddystone Rail Company, LLC
Hog Island Wharf	2,745	39	Hog Island	Energy Transfer Partners, L.P.	Sunoco Logistics, L.P.
Fort Mifflin Terminal Wharf	956	42	Fort Mifflin	Energy Transfer Partners, L.P.	Sunoco Logistics, L.P.
Navy Yard	29,044	-	Navy Yard	Philly Shipyard, Inc.	Philly Shipyard, Inc.
Point Breeze Wharf	1,775	32	Girard Point	The Carlyle Group, L.P.	Philadelphia Energy Solutions, Inc.
Girard Point Wharf No. 1 and No. 3	1,475	32	Girard Point	The Carlyle Group, L.P.	Philadelphia Energy Solutions, Inc.
Girard Point Wharf No. 2	600	32	Girard Point	The Carlyle Group, L.P.	Philadelphia Energy Solutions, Inc.
East Coast Terminals Berth	750	32	East Coast Terminals	PBF Logistics, LLC	PBF Logistics, LLC

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Task 1.01 Existing Conditions of Non-PRPA Properties

Berth	Length (ft.)	Depth (ft.)	Terminal	Owner	Operator
H Port Richmond Berth	728	32	H Port Richmond	Contanda, LLC	Contanda, LLC
Riverside Berth	700	38.6	Riverside	The Silvi Group	Riverside Construction Materials, Inc.
Waste Management Berth	2,000	38	Waste Management	Waste Management, Inc.	Port Contractors, Inc.
Fairless Hills Berth	2,000	38	Fairless Hills Terminal	United States Steel Corporation	Kinder Morgan Inc. Eco-Energy Distribution- Philadelphia, LLC
Pier 124 Southside Berth	1,105	16	Pier 124 South	PRPA	The Vane Brothers Company
Pier 124 Northside Berth	1,105	15	Pier 124 North	PRPA	Northeast Energy Terminals, LLC
Pier 122 Southside Berth	1,300	36	Pier 122	PRPA	Northeast Energy Terminals, LLC
Pier 122 Northside Berth	850	15	Pier 122	PRPA	
Packer Avenue Marine Terminal Berth 1	620	42	Packer Avenue Marine Terminal	PRPA	Greenwich Terminals, LLC
Packer Avenue Marine Terminal Berth 2	620	42	Packer Avenue Marine Terminal	PRPA	Greenwich Terminals, LLC
Packer Avenue Marine Terminal Berth 3	620	42	Packer Avenue Marine Terminal	PRPA	Greenwich Terminals, LLC
Packer Avenue Marine Terminal Berth 4	620	42	Packer Avenue Marine Terminal	PRPA	Greenwich Terminals, LLC
Packer Avenue Marine Terminal Berth 5	620	42	Packer Avenue Marine Terminal	PRPA	Greenwich Terminals, LLC
Packer Avenue Marine Terminal Berth 6	817	38	Packer Avenue Marine Terminal	PRPA	Greenwich Terminals, LLC
Pier 96 Northside Berth	1,320	15	Piers 96, 98 & 100	PRPA	Greenwich Terminals, LLC
Pier 96 Southside Berth	1,320	15	Piers 96, 98 & 100	PRPA	Greenwich Terminals, LLC
Pier 98 Northside Berth	1,485	15	Piers 96, 98 & 100	PRPA	Greenwich Terminals, LLC

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Berth	Length (ft.)	Depth (ft.)	Terminal	Owner	Operator
Pier 98 Southside Berth	1,500	15	Piers 96, 98 & 100	PRPA	Greenwich Terminals, LLC
Pier 100 Northside Berth	1,140	15	Piers 96, 98 & 100	PRPA	Greenwich Terminals, LLC
Pier 84 Northside Berth	855	32	Pier 84	PRPA	Dependable Distribution Services, Inc.
Pier 84 Southside Berth	855	15	Pier 84	PRPA	Dependable Distribution Services, Inc.
Pier 82 Northside Berth	1,139	32	Pier 82	PRPA	Horizon Stevedoring, Inc.
Pier 82 Southside Berth	855	32	Pier 82	PRPA	Horizon Stevedoring, Inc.
Pier 78 North	900	40	Philadelphia Forest Products Center	PRPA	Penn Warehousing and Distribution Inc.
Pier 78 South	850	32	Philadelphia Forest Products Center	PRPA	Penn Warehousing and Distribution Inc.
Pier 80 North	994	32	Philadelphia Forest Products Center	PRPA	Penn Warehousing and Distribution Inc.
Pier 80 South	1,150	32	Philadelphia Forest Products Center	PRPA	Penn Warehousing and Distribution Inc.
Pier 38-40 Marginal	620	35	Piers 38 & 40	PRPA	Penn Warehousing and Distribution Inc.
Pier 38-40 North	550	15	Piers 38 & 40	PRPA	Penn Warehousing and Distribution Inc.
Pier 38-40 South	551	15	Piers 38 & 40	PRPA	Penn Warehousing and Distribution Inc.
Kinder Morgan Berth 1	600	34	Tioga Liquid Bulk Terminal	PRPA	Kinder Morgan Liquids Terminal, LLC
Kinder Morgan Berth 2	650	34	Tioga Liquid Bulk Terminal	PRPA	Kinder Morgan Liquids Terminal, LLC

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Berth	Length (ft.)	Depth (ft.)	Terminal	Owner	Operator
Tioga Marine Terminal Berth 1	635	36	Tioga Marine Terminal	PRPA	Delaware River Stevedores, Inc.
Tioga Marine Terminal Berth 2	635	40	Tioga Marine Terminal	PRPA	Delaware River Stevedores, Inc.
Tioga Marine Terminal Berth 3	635	40	Tioga Marine Terminal	PRPA	Delaware River Stevedores, Inc.
Tioga Marine Terminal Berth 4	635	36	Tioga Marine Terminal	PRPA	Delaware River Stevedores, Inc.
Tioga Marine Terminal Berth 5	635	36	Tioga Marine Terminal	PRPA	Delaware River Stevedores, Inc.
Tioga Marine Terminal Ro-Ro	610	15	Tioga Marine Terminal	PRPA	Delaware River Stevedores, Inc.

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APPENDIX C: CRANES

Information on cranes was provided by the PRPA and private terminal owners and operators. **Exhibit 39** lists berths as identified by this analysis.

Exhibit 39. Cranes Inventory

Crane	Type	Capacity (MT)	Terminal	Operator	Owner
Hyundai H-6	Rail Mounted Gantry	66.0	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	PRPA
Hyundai H-7	Rail Mounted Gantry	66.0	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	PRPA
Kocks K-1	Rail Mounted Gantry	40.6	Tioga Marine Terminal	Delaware River Stevedores, Inc.	PRPA
Kocks K-2	Rail Mounted Gantry	40.6	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	PRPA
Kocks K-3	Rail Mounted Gantry	40.6	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	PRPA
Kocks K-4	Rail Mounted Gantry	40.6	Tioga Marine Terminal	Delaware River Stevedores, Inc.	PRPA
Kocks K-5	Rail Mounted Gantry	40.6	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	PRPA
Liebherr LHM 400	Mobile Harbor	103.4	Pier 82 South	Penn Warehouse and Distribution Inc.	PRPA
Liebherr LHM 400	Mobile Harbor	103.4	Tioga Marine Terminal	Delaware River Stevedores, Inc.	PRPA
Paceco 1419	Rail Mounted Gantry	40.6	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	PRPA
South Kocks Crane	Rail Mounted Gantry	35.6	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	Holt Logistics, LLC
40 MT 1	Rail Mounted Gantry	40.0	Penn Terminals	Penn Terminals, Inc.	Macquarie Group Ltd.
40 MT 2	Rail Mounted Gantry	40.0	Penn Terminals	Penn Terminals, Inc.	Macquarie Group Ltd.

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Crane	Type	Capacity (MT)	Terminal	Operator	Owner
30.5 MT	Rail Mounted Gantry	30.5	Penn Terminals	Penn Terminals, Inc.	Macquarie Group Ltd.
Washington Whirley	Rail Mounted Heavy Lift	220.0	Penn Terminals	Penn Terminals, Inc.	Macquarie Group Ltd.
HMK 330	Gottwald Mobile Harbor	80.0	Fairless Hills	Kinder Morgan, Inc.	Kinder Morgan, Inc.
HMK 260EE 1	Gottwald Mobile Harbor	40.0	Fairless Hills	Kinder Morgan, Inc.	Kinder Morgan, Inc.
HMK 260EE 2	Gottwald Mobile Harbor	40.0	Fairless Hills	Kinder Morgan, Inc.	Kinder Morgan, Inc.
Rubber Tire 1	Rubber Tire Gantry	65.0	Fairless Hills	Kinder Morgan, Inc.	Kinder Morgan, Inc.
Rubber Tire 2	Rubber Tire Gantry	65.0	Fairless Hills	Kinder Morgan, Inc.	Kinder Morgan, Inc.
Goliath Crane	Gantry Crane	660.0	Philly Shipyard Inc. at the Navy Yard	Philly Shipyard, Inc.	Philly Shipyard, Inc.
50 MT 1	Gantry Crane	50.0	Philly Shipyard Inc. at the Navy Yard	Philly Shipyard, Inc.	Philly Shipyard, Inc.
50 MT 2	Gantry Crane	50.0	Philly Shipyard Inc. at the Navy Yard	Philly Shipyard, Inc.	Philly Shipyard, Inc.

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APPENDIX D: WAREHOUSES

Information on warehouses was provided by the PRPA and private terminal owners and operators. **Exhibit 40** lists warehouses as identified by this analysis.

Exhibit 40. Warehouse Inventory

Warehouse	Type	Area (sq.ft.)	Use	Terminal	Operator
Philadelphia Wholesale Produce Market	Distribution	670,000	Wholesale produce	Philadelphia Wholesale Produce Market	Philadelphia Wholesale Produce Market
Pier 82	Refrigerated	130,000	Bananas	Pier 82	Horizon Stevedoring, Inc.
Pier 84	Dry	435,000	Cocoa	Pier 84	Dependable Distribution Services, Inc.
Pier 84 Annex	Dry	40,000	Cocoa	Pier 84	Dependable Distribution Services, Inc.
Pier 98 Building	Dry	894,000	Not in use	Piers 96, 98 & 100	Astro Holdings, LLC
Shed 1	Dry	89,000	Stuffing and stripping containers	Packer Avenue Marine Terminal	Greenwich Terminals, LLC
Shed 1A	Refrigerated	96,500	Stuffing and stripping containers	Packer Avenue Marine Terminal	Greenwich Terminals, LLC
Shed 1B	Refrigerated	72,200	Stuffing and stripping containers	Packer Avenue Marine Terminal	Greenwich Terminals, LLC
Shed 2A	Dry	107,800	Stuffing and stripping containers	Packer Avenue Marine Terminal	Greenwich Terminals, LLC
Shed 6	Dry	90,000	Steel Coils	Packer Avenue Marine Terminal	Greenwich Terminals, LLC
Shed 38	Dry	180,000	Paper	Piers 38 & 40	Penn Warehousing and Distribution Inc.
Shed 40	Dry	180,000	Paper	Piers 38 & 40	Penn Warehousing and Distribution Inc.
Shed 74 Annex	Dry	115,000	Paper	Philadelphia Forest Products Center	Penn Warehousing and Distribution Inc.
Shed 78	Dry	364,000	Paper	Philadelphia Forest Products Center	Penn Warehousing and Distribution Inc.

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Warehouse	Type	Area (sq.ft.)	Use	Terminal	Operator
Shed 78 Annex	Dry	208,000	Paper	Philadelphia Forest Products Center	Penn Warehousing and Distribution Inc.
Shed 80	Dry	456,000	Lumber	Philadelphia Forest Products Center	Penn Warehousing and Distribution Inc.
Shed 80 Annex	Dry	125,000	Paper	Philadelphia Forest Products Center	Penn Warehousing and Distribution Inc.
Tioga I	Dry	300,000	Wood pulp	Tioga Marine Terminal	Delaware River Stevedores, Inc.
Tioga II	Refrigerated	90,000	Steel and wood pulp	Tioga Marine Terminal	Delaware River Stevedores, Inc.
Tioga III	Dry	97,500	Steel coils	Tioga Marine Terminal	Delaware River Stevedores, Inc.
Tioga IV	Dry	107,000	Project cargo	Tioga Marine Terminal	Delaware River Stevedores, Inc.
Shed 179	Dry	40,000	Stuffing and Stripping Containers	Tioga Marine Terminal	Delaware River Stevedores, Inc.
Riverside Warehouse	Dry	400,000	Gypsum, cement, road salt, and oil.	Riverside	The Silvi Group
Covered Warehouse	Dry	208,000	Steel, coal, minerals, sand, sugar	Fairless Hills	Kinder Morgan, Inc.
Dry Warehouse	Dry	300,000	Steel, cocoa, forest products	Penn Terminals	Penn Terminals, Inc.
Refer Building	Refrigerated	20,102	Fruit	Penn Terminals	Penn Terminals, Inc.

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APPENDIX E: OTHER STRUCTURES

Information on other structures was provided by the PRPA and private terminal owners and operators. **Exhibit 41** lists other structures as identified by this analysis

Exhibit 41. Inventory of Other Structures

Other Structures	Count	Type	Terminal	Operator	Owner
Auto-Washing Shed	1	Car Wash	Philadelphia Auto Processing Facility	Philly RO/RO Partners, LLC	PRPA
Packer Maintenance and Repair Shop	1	Maintenance & Repair	Packer Avenue Marine Terminal	Greenwich Terminals, LLC	PRPA
Philadelphia Wholesale Produce Market Auxiliary	1	Waste Management & Recycling	Philadelphia Wholesale Produce Market	Philadelphia Wholesale Produce Market	PRPA
PRPA Administration Building	1	Office Space	PRPA Administration Building	Philadelphia Regional Port Authority	PRPA
PRPA Maintenance Shop	1	Maintenance & Repair	PRPA Administration Building	Philadelphia Regional Port Authority	PRPA
Service Building	1	Auto Processing	Philadelphia Auto Processing Facility	Philly RO/RO Partners, LLC	PRPA
Tioga Terminal Maintenance and Repair Shop	1	Maintenance & Repair	Tioga Liquid Bulk Terminal	Delaware River Stevedores, Inc.	PRPA
Mustin Naval Seaplane Hangar	1	TBD	Southport Marine Terminal Complex	Philadelphia Regional Port Authority	PRPA
Tioga Crane Mechanic Shop	1	Maintenance & Repair	Tioga Marine Terminal	Delaware River Stevedores, Inc.	PRPA
Marcus Hook Storage Tank	16	Petroleum Storage	Marcus Hook	Sunoco Logistics, L.P.	Energy Transfer Partners, L.P.
750 Megawatt Gas-fired Electric Plant	1	Electricity Production	Marcus Hook	Sunoco Logistics, L.P.	Energy Transfer Partners, L.P.

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Other Structures	Count	Type	Terminal	Operator	Owner
50 Megawatt Gas-fired Electric Plant	1	Electricity Production	Marcus Hook	Sunoco Logistics, L.P.	Energy Transfer Partners, L.P.
Marcus Hook Administrative Building	2	Office Space	Marcus Hook	Sunoco Logistics, L.P.	Energy Transfer Partners, L.P.
Marcus Hook Guardhouse	1	Security Gate	Marcus Hook	Sunoco Logistics, L.P.	Energy Transfer Partners, L.P.
Trainer Refinery North Farm Tank	29	Petroleum Storage	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery South Farm Tank	60	Petroleum Storage	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Vacuum Still	3	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Distillation Towers	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Crude 543 Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Crude 544 Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Naphtha Hydrotreating Reactor	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Catalytic Reforming Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Fluid Catalytic Cracking Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Isocracker Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Diesel Hydrotreating Desulfurization Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Alkylation Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.
Trainer Refinery Gasoline Blending Unit	1	Petroleum Refining	Monroe	Monroe Energy, Inc.	Delta Airlines, Inc.

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Other Structures	Count	Type	Terminal	Operator	Owner
Eddystone Storage Tank	2	Petroleum Storage	Eddystone	Eddystone Rail, LLC.	Exelon Corporation
Eddystone Electrical Building	1	Electricity Production	Eddystone	Eddystone Rail, LLC.	Exelon Corporation
Eddystone Generator	4	Electricity Production	Eddystone	Eddystone Rail, LLC	Exelon Corporation
Penn Terminals Administrative Building	1	Office Space	Penn Terminals	Penn Terminals	Macquarie Group Ltd.
Fort Mifflin Tank	9	Petroleum Storage	Fort Mifflin	Sunoco Logistics, L.P.	Energy Transfer Partners, L.P.
Darby Creek Tank Farm Tank	26	Petroleum Storage	Fort Mifflin/Hog Island	Sunoco Logistics, L.P.	Energy Transfer Partners, L.P.
Point Breeze Refinery Crude Tank	10	Petroleum Storage	Girard Point	Philadelphia Energy Solutions, Inc.	The Carlyle Group, L.P.
Point Breeze Refined Products Tank	53	Petroleum Storage	Girard Point	Philadelphia Energy Solutions, Inc.	The Carlyle Group, L.P.
Schuylkill River Tank Farm Tank	30	Petroleum Storage	Girard Point	Philadelphia Energy Solutions, Inc.	The Carlyle Group, L.P.
East Coast Terminals Tank	20	Petroleum Storage	East Coast Terminals	PBF Logistics, LLC.	PBF Logistics, LLC.
Contanda Carbon Steel Tank	26	Petroleum, Fertilizer and Chemicals	H Port Richmond	Contanda, LLC.	Contanda, LLC
Contanda Stainless Steel Tank	4	Petroleum, Fertilizer and Chemicals	H Port Richmond	Contanda, LLC.	Contanda, LLC
Riverside Pneumatic Silo	2	Flowable Goods	Riverside	Riverside Construction Materials	The Silvi Group
Fairless Hills UAN Tank	1	Urea-Ammonium Nitrate Solutions	Fairless Hills	Kinder Morgan, Inc.	Kinder Morgan, Inc.
Fairless Hills Fertilizer Storage Dome	4	Fertilizer	Fairless Hills	Kinder Morgan, Inc.	Kinder Morgan, Inc.

