

Nearly one-third of America's Gross Domestic Product (the monetary value of all the finished goods and services produced within a country's borders) is derived from international trade, and 99 percent of that trade passes through the nation's ports. Thirty million jobs are related to international trade, and \$200 billion in federal, state, and local tax revenue is generated by our ports each year. Transportation accounts for as much as ten percent of the total product cost for the food, clothing, and other goods we buy on a daily basis. The ports on the Delaware and Schuylkill Rivers handled 87 million tons of cargo in 2011 (the most recent available data), comprising 26.3 percent of the North Atlantic ports' market share. Most of the gasoline Pennsylvanians put in their cars, the food they eat and the clothes they wear passed through the port facilities on the Delaware River. The grade of C+ reflects the facts that 1) while the U.S. Army Corps of Engineers (USACE), Philadelphia District has been able to maintain (through dredging) the federal channels close to their authorized dimensions, there is not a stable funding stream and there is a shortage of confined dredged material disposal facilities on some portions of the channels and 2) the Delaware River Main Channel Deepening project, which will increase the river's channel depth from the existing 40 feet to 45 feet, from Philadelphia to the mouth of Delaware Bay, is only approximately 50 percent complete and does not have a stable funding stream for its completion. Extension of the current 2017 completion date for the Deepening project as a result of insufficient funding would delay the ability of the ports on the Delaware River to take advantage of the ongoing Panama Canal expansion which will allow the Port of Philadelphia to be competitive with other ports for oceangoing cargo.

BACKGROUND

This section of the report focuses on the Ports of the Delaware River and its tributaries in Pennsylvania. Inland Navigation, including the Port of Pittsburgh is addressed in a separate section ("Inland Waterways") of the 2014 Report Card on Pennsylvania's Infrastructure.

The Philadelphia District of the USACE maintains a 40-foot deep navigation channel in the Delaware River that extends from Fairless Hills, PA (just south of Trenton, NJ), to the mouth of the Delaware Bay. The upper portion of the navigation channel, the Philadelphia to Trenton Project, extends south from the Fairless Terminal and turning basin at the Port of Bucks County 23.1 miles downstream to Allegheny Avenue in Philadelphia. The lower portion of the project, the Philadelphia to the Sea Project, extends 96.5 miles south from Allegheny Avenue in Philadelphia to deep water in Delaware Bay. The Schuylkill River navigation project extends upstream 6.5 miles from its confluence with the Delaware River, to approximately Christian Street in Philadelphia. These channels serve three states—Pennsylvania, New Jersey and Delaware—and tie into other navigable waterways such as the Chesapeake and

Delaware Canal and the Christina River in Delaware, and the Salem River in New Jersey.

These federal navigation channels service numerous public and private port facilities, including the Port of Bucks County in Fairless, PA; the Tioga Marine Terminal, Packer Avenue Marine Terminal and numerous other piers owned by the Philadelphia Regional Port Authority (PRPA) in Philadelphia; the Broadway and Beckett Street Terminals owned by the South Jersey Port Corporation (SJPC) in Camden, NJ; petroleum terminals including Sunoco Logistics and Philadelphia Energy Solutions in Philadelphia, Marcus Hook, PA and West Deptford Township, NJ; Delta/Monroe Energy terminal in Trainer, PA; PBF petroleum terminals in Paulsboro, NJ and Delaware City, DE; the Port of Wilmington, DE; the Port of Salem, NJ; and Aker Shipbuilding Corporation in Philadelphia.

The publicly and privately owned port facilities are serviced by a comprehensive multi-modal transportation system. Highways including I-95, I-295, I-676, I-476 and the New Jersey Turnpike are easily accessible and provide convenient routes for the distribution of goods. In addition, the port complex is served by two major rail carriers, Norfolk Southern and CSX, and a number of short line systems.

Currently, SJPC is constructing a new port facility in Paulsboro, NJ. This facility, the Port of Paulsboro, will increase the port complex's capacity for the shipment of goods by water. Also, in anticipation of the completion of the deepening of the Delaware River channel to 45 feet (see Delaware River Deepening Project below), PRPA has developed a preliminary design and obtained state and federal approvals for the proposed Southport Marine Terminal in Philadelphia. This facility would greatly increase the port's capacity for containerized cargo, which is anticipated as a result of the expansion of the Panama Canal and the deepening of the Delaware River.

The combined ports of Philadelphia, Camden, NJ, and Wilmington, DE, comprise the second largest deep water port complex on the East Coast of the United States in terms of waterborne cargo tonnage. The facilities at these ports handled 87 million tons of cargo in 2011 (the most recent available data) comprising 26.3 percent of the North Atlantic ports' market share. The cargo shipped through the ports include crude oil and petroleum products, other liquid bulk cargoes, fruit, steel, frozen meat, paper products, cocoa, automobiles and sugar, with other commodities transported via bulk, break-bulk or container. Most of the gasoline Pennsylvanians put in their cars, the food they eat and the clothes they wear passed through the port facilities on the Delaware River.

CONDITION AND CAPACITY

Delaware River - Philadelphia to Trenton

The Fairless Turning Basin, near the upstream terminus of the project, was deepened from 37 feet to 40 feet in 2011, which enabled ships calling at the facilities at the Port of Bucks to fully utilize the 40 foot depth of the federal channel. While funding for maintenance of the project channel has historically been less than required to maintain project dimensions, supplemental funding as a result of Tropical Storms Irene and Lee and Hurricane Sandy have resulted in dredging of the most significant shoals in the

channel for full use of the 40 foot project depth. Stable future funding is not guaranteed, and adequate Confined Disposal Facilities (CDFs) need to be provided by the local sponsors, Pennsylvania and New Jersey, for project maintenance. Currently Pennsylvania provides adequate CDFs for the maintenance of the upper reaches of the project, but adequate CDFs are not available for future maintenance of the lower reaches. The USACE is currently working with the State of New Jersey to secure CDFs in the lower reaches to provide adequate disposal capacity for long-term maintenance of the project.

Delaware River – Philadelphia to the Sea

The Delaware River – Philadelphia to the Sea project annually receives adequate funding (approximately \$20 million) to maintain the project to its 40 foot authorized depth via contract dredges and the Corps' Hopper Dredge *McFarland* and to maintain the project's CDFs. The USACE has adequate capacity in these CDFs adjacent to the Delaware River and a subaqueous disposal area in Delaware Bay to maintain the project over the next 20 years.

Delaware River Deepening Project

This project to deepen the existing 40 foot federal navigation channel to 45 feet from Beckett Street Terminal in Camden, NJ 102.5 miles to the mouth of Delaware Bay was authorized by the Water Resources Development Act of 1992. The non-federal sponsor is PRPA.

After decades of study, debate, and lawsuits, the project began construction in March 2010 with the dredging of Reach C, a 12-mile stretch of the river downstream from the Delaware Memorial Bridge. This initial contract, which removed 3.6 million cubic yards of material, was completed in September 2010. Subsequent contracts have dredged an additional 29 miles of channel, removing approximately 3.6 million cubic yards of material.

To date approximately 50 percent of the areas that require deepening (portions of the project are already at or below 45 ft) have been addressed. A contract to deepen Lower Reach A, an approximate one-mile section of the channel in the vicinity of Essington, PA was awarded in January 2014. The deeper channel will provide for more efficient transportation of containerized, dry bulk (steel and slag), and liquid bulk (crude oil and petroleum products) cargo to and from the Delaware River ports, with estimated net annualized benefits of more than \$13 million to the U.S. economy. It will also reduce the need for "lightering" of larger ships at the mouth of the Delaware Bay (transferring some cargo to barges or other ships) which is currently required to allow them to traverse the 40-foot channel. This operation is costly and inefficient and puts the Delaware River port facilities at a competitive disadvantage. Once the project is completed (target date for project completion is 2017), it will be able to take advantage of the benefits of the Panama Canal expansion currently scheduled for 2015.

To fully take advantage of the 45 foot channel and the Panama Canal expansion, numerous infrastructure upgrades to the existing terminal facilities will need to take

place. Necessary upgrades would include the dredging of the berthing areas to 45 feet, structural improvements to piers (some of which date back to the late 1800's or early 1900's) to accommodate the 45 foot depth of the berth and larger, heavier vessels, larger cranes for use on the larger, wider vessels, upgrades to the crane rails to increase their capacity, upgrades to the bollards and fendering systems, and upgrades to the terminals to allow for operational efficiencies and greater throughput. Funding for these upgrades is the responsibility of each facility owner/operator.

Schuylkill River

The project provides for a channel which extends 6.5 miles upstream from its intersection with the Delaware River-Philadelphia to the Sea project, with depths of 22 feet, 26 feet and 33 feet. As a result of decreased use of the upper portions of the channel for commercial navigation, currently only the 33 foot section of the lower Schuylkill River navigation project is maintained. While the project has adequate dredged material disposal capacity at its Fort Mifflin CDF, the project does not receive funding every year, which can result in shoaling, which in turn reduces the drafts of ships utilizing the channel.

FUNDING

The USACE, Philadelphia District navigation budgets over the last five years for projects on the Delaware and Schuylkill Rivers are included in Table 1. President Obama's Fiscal Year (FY) 2014 budget includes \$20 million in Construction General Funds for continuation of the Delaware River Main Channel Deepening Project, and Operation and Maintenance funds totaling \$19.7 million for the Delaware River – Philadelphia to the Sea Project and \$4.7 million for the Philadelphia to Trenton Project.

Table 1. USACE Philadelphia District Budget Information

Corps of Engineers Work Plan Budgets (\$ millions)					
	2010	2011	2012	2013	2014 (proposed)
Construction					
Delaware River Deepening	4.844	0.0	16.864	41.916	20.000
Operation & Maintenance					
Del River Philadelphia to the Sea	18.440	20.020	20.779	21.246	19.745
Del River Philadelphia to Trenton	0.771	0.820	1.683	0.820	4.735
Schuylkill River	0.188	0.250	0.243	0.089	0.0

POLICY OPTIONS

The Harbor Maintenance Trust Fund (HMTF) was established by the Water Resources Development Act of 1986 to fund the operation and maintenance of ports and harbors and is funded by the Harbor Maintenance Tax (HMT). The HMT is a federal tax imposed on shippers based on the value of the goods being imported into our ports. The tax is placed in the HMTF to be used by the USACE for maintenance dredging of federal channels and maintenance of dredged material disposal areas. HMT revenues are approximately \$1.6 billion per year, with expenditures averaging \$850-900 million per year. The resulting HMTF surplus was approximately \$7 billion at the end of FY12 and continues to grow by hundreds of millions of dollars each year. The low appropriations have resulted in a system in which channels are not being maintained to their constructed depths and widths despite adequate taxes being collected. This can result in safety risks of ship groundings and cargo spills and economic risks of light-loading ships, which increase transportation costs, impacting the competitiveness of U.S. exports in the global marketplace and the cost of imported goods to U.S. consumers and manufacturers.

This problem was highlighted in the American Society of Civil Engineers (ASCE) report issued in the fall of 2012 entitled "Failure To Act: The Economic Impact of Current Investment Trends in Airport, Inland Waterways and Marine Ports Infrastructure." This report concluded that aging infrastructure for marine ports, inland waterways, and airports threatens more than one million U.S. jobs. ASCE's 2013 Report Card for America's Infrastructure rated Port infrastructure a 'C', which represents the averaging of the generally good state of infrastructure at port facilities with the inadequate condition of navigation channels and land-side connections due to federal underinvestment.

The logical vehicle to modify how the HMTF distributes the funds raised by the HMT is the pending Water Resources Development Act (WRDA), which is named the Water Resources Reform and Development Act (WRRDA) in the current House bill. The Senate passed WRDA 2013 (S 601) on May 15, 2013. It includes language for changing the scope of the HMTF to provide additional funding for maintenance of federal navigation projects. The language in the Senate bill would (1) require that funding be made available to USACE budgets at a level not less than the level of receipts plus interest credited to the HMTF for each fiscal year by 2020; 2) ensure that revenues collected into the HMTF are used for the intended purposes of those revenues; 3) increase investment in the operation and maintenance of U.S. ports, which are critical for the economic competitiveness of our country; 4) ensure U.S. ports are prepared to meet modern shipping needs, including the capability to receive large ships that require deeper drafts; and 5) prevent cargo diversion from U.S. ports.

The House of Representatives passed WRRDA of 2013 (HR 3080) on October 23, 2013, without any HMTF modification language. The differences in the two bills will need to be resolved in a Conference Committee comprised of members of the House and Senate. Conferees were designated by both the House and Senate, and the

Conferees set a goal of completing work on this legislation in December 2013. They were unable to resolve their differences including the HMT/HMTF issue prior to the end of 2013. It is anticipated that the Conference Committee will convene early in the next session of Congress in 2014.

RECOMMENDATIONS

The four Pennsylvania Sections of the American Society of Civil Engineers (ASCE) support the following recommendations:

- **Continue Pennsylvania's investment in Port Infrastructure.**

The Commonwealth of Pennsylvania has invested significantly in improvements to port infrastructure on the Delaware River. To date Pennsylvania has provided approximately \$55 million for the deepening of the Delaware River through PRPA, the non-federal cost-sharing partner for the project, funding for the development of the proposed Southport Marine Terminal on a portion of the former Philadelphia Naval Shipyard property, and capital funding for the upgrading of PRPA's many terminals on the Delaware River. This funding needs to be continued. Passage of Pennsylvania's \$2.3 billion Transportation Funding Act in late November 2013, which includes funding for multimodal projects, including ports and waterways, and the establishment of a new Deputy Secretary for Multimodal Transportation, should greatly assist in providing some of the needed funding.

- **Revisions to the use of the Harbor Maintenance Trust Fund (HMTF).**

Currently the HMTF collects more than it distributes to USACE budgets for navigation projects. Changes need to be made by Congress to the HMTF which will 1) require that funding be made available to the USACE budget at a level not less than the level of receipts plus interest credited to the HMTF for each fiscal year; 2) ensure that revenues collected into the HMTF are used for the intended purposes of those revenues; 3) increase investment in the operation and maintenance of U.S. ports, which are critical for our economic competitiveness; and 4) ensure U.S. ports are prepared to meet modern shipping needs, including the capability to receive large ships that require deeper drafts, as well as projected needs for the future.

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ASCE POLICY STATEMENTS

ASCE Policy Statement 218: [Improvement and Maintenance of Ports, Harbors and Waterways \(PS 218\)](#)