



WORLD SHIPPING COUNCIL  
PARTNERS IN AMERICA'S TRADE

Statement of

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Before the

**House Transportation and Infrastructure Committee's  
Water Resources and Environment Subcommittee**

on

***"The Economic Importance of Seaports – Is the United States Prepared for  
21<sup>st</sup> Century Trade Realities?"***

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Mr. Chairman, the World Shipping Council<sup>1</sup> appreciates your Subcommittee's examination of whether the nation's maritime transportation infrastructure is adequate to meet the future needs of the nation's commerce. It is a multi-faceted issue due to the fact that

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<sup>1</sup> The World Shipping Council (WSC) is a non-profit trade association whose goal is to provide a coordinated voice for the liner shipping industry in its work with policymakers and other industry groups with an interest in international transportation. WSC members carry over 90% of the United States' international containerized commerce. A complete list of WSC members can be found at [www.worldshipping.org](http://www.worldshipping.org). This statement addresses the issue before the Subcommittee only from the perspective of the liner shipping industry, not the energy, bulk or other maritime sectors. Each WSC member company has its own unique fleet, services, and future business plans. These comments seek to provide a general overview of this hearing's subject and do not seek to speak for any particular company.

the ownership, the financing, and the investment needs of the various pieces of this critical network will vary according to what part of the network one is examining.

First, each sector of the transportation infrastructure and its related industries has different needs and characteristics, affecting how improvement strategies are developed and implemented. Second, within these sectors, the various market participants may not act in the same way. For example, some ocean carriers may be more committed to large vessels than others; some ports may have more competitive geographic locations or harbor depths or intermodal rail connections than others. Third, some transportation infrastructure is public and requires public solutions, but some is privately owned and operated. Fourth, state and local governments are key decision-makers, especially for much of the needed land-side infrastructure improvements and the permission to improve the transportation infrastructure. Finding adequate capital to build or improve transportation infrastructure is increasingly only part of the issue. Getting permission from the appropriate authorities to build the improvements is just as much a part of our challenge, and in some cases, the greater part.

There is neither a single issue nor solution to how to prepare for future maritime transportation infrastructure needs. There will be many issues and many solutions to the topics likely to be touched on at this hearing. That may not be tidy, but it is reality. Understanding who is responsible for what improvements is a necessary foundation.

## II. The Maritime Transportation System’s Infrastructure Components

The following chart provides an overview of different sectors of the nation’s maritime transportation system, their ownership, their capacity to handle growth, and their need for additional government assistance :

<b>U.S. Maritime Transportation System Capacity and Infrastructure Problem Identification</b>			
<i><b>Sector</b></i>	<i><b>Ownership</b></i>	<i><b>Capacity Problem</b></i>	<i><b>Need for Government Assistance Programs</b></i>
Inland Waterway Conveyances (tugs and barges)	Private	No	No
Inland Waterway Locks and Dams Infrastructure	Public	Yes	We defer to the inland waterway and port community for an assessment of the needs for this sector.
Trucking Conveyances (trucks and equipment)	Private	At times.	No. Driver shortages exist in some areas, but this is an issue for the market place to address. However, certain regulations, such as those governing hours of service, impact

			total available capacity, and other regulations, like those governing vehicle emissions, increase the trucking firm's cost to operate.
Highway Infrastructure connecting to seaports and inland intermodal freight facilities	Public	Yes	This Committee is fully aware of the need for new federal highway legislation. This program is relevant to seaports because of its funding of landside highway infrastructure that connects the national highway system with the nation's ports. For example, the "Safe, Accountable, Flexible, Efficient, Transportation Equity Act" (SAFETEA) included many port-related freight movement projects in the list of earmarks, including for: the Port of Long Beach, the Port of Los Angeles, Alameda Corridor East, the Port of Virginia and the "Heartland Corridor", the Port of New York/New Jersey, the Port of Seattle, the CREATE Intermodal Project in Chicago, and the South Carolina State Ports Authority.
Maritime Conveyances and Equipment (ships, containers) <sup>2</sup>	Private	No	No
Harbor Dredging	Public	Yes. Location Specific.	The existing trust fund is adequate for <i>maintenance</i> dredging if the money collected and deposited in it is spent for harbor dredging. New <i>channel deepening</i> funding is project specific and has been slow and underfunded by Congress in the past. It does not need a new federal program as much as it needs better government attention to projects of national significance.
Port Terminal Infrastructure (inside the gate)	Combination of public and private	Yes. Location Specific.	No. Ports and the private sector generally can provide the capital. Obtaining permits for capacity expansion is often a more difficult issue.
Rail connections to seaports	Varies. Can be a combination of public and private.	Yes. Location specific.	The private sector can generally provide the capital, but some projects require a public-private partnership with ports, states and local governments or the federal government.

<sup>2</sup> "Short sea shipping" for the carriage of intermodal cargo is today, and will likely remain for the foreseeable future, a very market specific enterprise, with obvious and significant geographic limitations. Surface transportation usually offers faster, more frequent, and often less expensive service to shippers. Further, short sea shipping does not often avoid the need for a shipper to arrange for surface transportation service on both ends of the maritime movement; thus, a shipper that needs to arrange a combined truck/short sea shipping/truck move to get its goods from Point A to Point B may find it simpler to arrange for a single truck move.

This chart illustrates that where the private sector owns the nation's critical transportation infrastructure, there generally is not an existing capacity problem or a shortage of necessary investment capital, despite the enormous capital requirements.<sup>3</sup> The capacity problems tend to arise more often with those portions of the critical infrastructure that are owned by the government, such as locks and dams, harbor channels, and efficient connections for freight to the national highway system.

### **III. Maritime Infrastructure Planning for the Future**

#### **A. Overview**

##### **Forecasting Trade Growth and Demand for Infrastructure Expansion**

Five years ago, it was common to see trade projections assuming containerized trade growth in the U.S. of 8-12% per year for 20 consecutive years, with conclusions that we could be "maxing out" our port capacity by about now. Such projections did not forecast the 2008/2009 recession, the questions today about the Euro and European sovereign debt, and other important events. Such projections cannot accurately predict future important questions either, such as real estate bubbles in China, or what kind of protectionist policies might be implemented and what kind of damage to trade they would cause.

Both the maritime industry and policy makers must struggle with such uncertainties as they decide how much capital to invest in what kind of assets at what time. The current sluggish economy is certainly taking a financial toll on the liner shipping industry as capacity exceeds market demand, and financial losses this year are forecast to be at least in the hundreds of millions of dollars, if not more.

This kind of variability makes it difficult for one to predict to this Subcommittee exactly what kind of ships will be calling with what volume levels at what ports at any particular time in the future. But, what we can consider from a macro planning perspective with confidence is that over the longer term, as economic growth continues so will the need for expanded maritime infrastructure capacity to handle that growth efficiently. In that regard, no one wants to see the nation's critical maritime infrastructure be at a level that is insufficient to efficiently handle trade volumes or to keep American businesses as competitive as possible in world markets. We must also be prepared for the possible effects of the Panama Canal Authority's expanded capacity when the new locks open in 2014.<sup>4</sup>

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<sup>3</sup> For example, a single string of five, new 8-10,000 TEU container ships needed for a service between Asia and the U.S. West Coast service would cost an ocean carrier more than half a billion dollars before even considering the cost of the necessary containers or the ships' fuel and other operating costs.

<sup>4</sup> The current maximum size of a ship that can transit the Canal is a width of 32 meters, a length of 294 meters, and a draft of 12 meters (39.5 feet). A current "Panamax" container ship (the largest that can

## Handling Future Trade Volumes and Forecasting Ship Size

An initial observation would be that there is more to planning future seaport infrastructure and capacity than just channel depth. U.S. ports will need to handle the growth of cargo volumes, whether they arrive on 4,000 TEU ships or 10,000 TEU ships. Whether 20,000 containers arrive on two ships or five ships, the port still needs to handle 20,000 containers, as do the rail and highway connections to the port.

This Committee has been working for quite awhile on legislation to reauthorize a long-term surface transportation bill. As noted in the chart above, Congress and the business community have recognized that the national highway system needs to include efficient links to intermodal freight facilities, whether they are in Chicago, the Ohio Valley, or Los Angeles. The nation's economic health and competitiveness depend upon it. We hope that this point will be addressed in the Committee's continued efforts on this legislation, and that any future surface transportation funding program will address the importance of connecting the nation's highway system efficiently with intermodal freight facilities, including seaports.

U.S. ports today vary in their capacity and in their depth. The West Coast ports tend to be deeper draft harbors, and tend to need less maintenance dredging. The principal U.S. West Coast (USWC) container ports (LA/Long Beach/Oakland/Tacoma/Seattle) can all handle vessels with 50 ft draft; however, depth is not the only factor that limits the number and type of vessel calls.

Puget Sound ports have naturally deep harbors and good intermodal connections, but far less population and cargo demand than Southern California; thus, fewer services call in the Pacific Northwest than in Southern California.

Bigger containerships require container cranes with wider reach. The new locks in the Canal will be able to handle ships with a width of 19 rows of containers. The biggest container ships in the world are now 22 container rows wide, with larger vessels on order at 23 rows wide. Accordingly, marine terminal operators have been installing larger cranes as they determine whether larger ships will be calling at their facilities.

Port productivity is also very relevant to ship deployment decisions. U.S. port facility productivity is much less than the productivity at major ports in other parts of the world. Today, a 10,000 TEU ship takes four days to unload at one port on the West Coast. An 18,000

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transit the Panama Canal) will have a maximum capacity in the range of 4,500 TEU (twenty foot equivalents). The new locks being built will be able to handle a ship with a length of 366 meters, a width of 49 meters, and a draft of 15 meters (50 feet). The width of the new locks will accommodate vessels carrying 19 rows of containers. This will raise the maximum ship size that can transit the Canal from approximately 5,000 TEU to 12,000 TEU.

TEU ship could take up to a week, thus limiting an operator's interest in deploying such vessels in the U.S. even if it had vessels of this size.<sup>5</sup>

Harbor channel depth is obviously an important factor in assessing the issue of the seaport's capacity to handle future cargo growth. All the major USWC container ports (LA, Long Beach, Oakland, Tacoma, Seattle) currently have 50 foot depth. At the largest U.S. Gulf of Mexico and East Coast (USEC) ports,

- The Port of New York/New Jersey is dredged to 50 feet, but its container terminals on Newark Bay have bridge clearance limitations for ships passing under the Bayonne Bridge. The Global Terminal on the Hudson River can currently accommodate post-Panamax ships and is not affected by the bridge clearance limitation.
- The Port of Baltimore is expected to complete its current efforts to be at 50 feet in 2012, and the National Gateway rail project, planned for completion in 2015, will provide improved rail connections from the port to mid-western markets.
- Norfolk is at 50 feet, and the completed Heartland Corridor rail project is providing much improved, connecting rail service into mid-western markets.
- Charleston is currently at 48 feet (at high water) and is planning to deepen further.
- Savannah is currently at 42 feet and seeking funding to get to 48 feet.
- Jacksonville is currently at 38-40 feet with unfunded plans to dredge to 50 feet.
- Miami is in the process of dredging to get to 50 feet.
- Mobile is currently at 40-45 feet.
- The Houston Ship Channel is currently being deepened to 45 feet from 40 feet.

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<sup>5</sup> 18,000 TEU ships have been ordered by one carrier and are planned for use on the Asia-Europe route, but there are no current plans to put such vessels into U.S. trades for a number of reasons. Major U.S. importers, in particular, require frequent, often daily, departures from major origins in Asia. Today, the average ship size in the U.S.-Asia trade is about 5,000 TEU. Deploying one new service with 18,000 TEU ships would in theory mean replacing three services departing on three different days of the week. It is highly unlikely that a carrier could retain the same amount of a customer's business from a particular location with one departure as opposed to three departures. Further, these very large ships would occupy a terminal berth at the U.S. port for up to a week and other services would have to be displaced to accommodate that.

## **The Panama Canal's New Locks**

As noted earlier, the current size of the Panama Canal has constrained the maximum size of ships that can transit, with the maximum draft being 39.5 feet and the maximum size container ships being roughly 4,500 TEU. The new Canal locks, scheduled to begin operation in 2014, will increase the maximum container ship size that can transit to roughly 12,000 TEU and a 50 foot draft. There is a plethora of studies, opinions and prognostications about what the effects of the new locks will be on trade flows, ship sizes, volumes, transshipment port development, and which U.S. ports will benefit by the new locks. The Panama Canal Authority has entered into cooperative agreements with virtually every major U.S. port to discuss and consider these matters. My testimony today will not attempt to provide any definitive predictions to these questions, but the following comments may be useful to the Subcommittee as it examines this subject.

First, in recent years, the Canal has frequently operated at or close to maximum capacity in terms of the number of ships that can be safely scheduled for transit. By undertaking the current Canal improvement projects, the Canal will be able to handle significantly more cargo because the ships can be larger, because operations will be more efficient, and because of the addition of a third set of locks. The Canal Authority estimates that its current expansion projects will double the Canal's capacity.

Second, since 2001, there has been a moderate one percent shift of all international container cargo from the USWC to the USEC, with much of that adjustment taking place in 2003 to 2004 in reaction to labor disputes that led to the closure of West Coast ports in 2002. It is possible that more of a shift might have occurred as volume continued to grow until it peaked in 2007; however, the current Panama Canal is limited in the number of ships it can accommodate. As trade grows, USWC, USEC and Gulf ports all expect volumes to increase. It is not clear, however, the extent to which the new Canal locks will cause the Gulf and USEC ports to receive a substantially greater share of traffic between the U.S. and Asia, which is the dominant trade route by far that will be affected by the Canal expansion, in comparison to USWC ports. Many market factors can influence this, from port productivity, to labor conditions, to the relative attractiveness of the business climate in California versus the Gulf and Southeast. Intermodal services that utilize USWC ports for cargo going to or leaving from many Midwest or eastern destinations generally can provide faster service, using rail connections, than all water service between Asia and the USEC. Thus, if "time to market" is a shipper's predominant concern, the West Coast ports are likely to continue to have a competitive advantage for many interior U.S. destinations. On the other hand, if cost is a shipper's predominant concern, and their facilities are located east of the Rockies, the Gulf and East Coast gateways may receive a boost from the shipper's lower inland cost that results from shorter distance from the port to the shipper's facility or benefit from the new major rail gateways developing from East Coast ports. All of these comparisons and choices will be very case and cost specific.

Third, future toll increases by the Panama Canal Authority are uncertain, and thus their effect on cargo volumes using all water service via the Panama Canal is uncertain. One would expect that the Panama Canal would not raise tolls so much as to discourage use of the Canal, but that remains to be seen.

Fourth, the Suez Canal is able to accommodate all container ship sizes, including the most recently ordered 18,000 TEU ships. There are currently vessel services between Asia and the USEC via the Suez Canal, and these services, notwithstanding their longer sailing time, can be competitive, depending on the geographic origin of the goods, the level of Suez Canal tolls, and the fact that there are many intermediate port calls and markets in South Asia, the Mideast and the Mediterranean on such services.

Fifth, not all carriers are likely to make the same ship size deployment changes at the same time in response to the new locks. Carriers' vessel inventories are built for specific trades and for the long-term, and deployments will take time to adjust.

Sixth, large ships do tend to be more efficient, so carriers can bring those greater efficiencies to shippers. In the end, however, carriers do not decide the routing of cargo; shippers do, based on a variety of factors including cost, their particular markets, a region's warehousing and distribution system capabilities and efficiencies, rail and highway connections, and their service time requirements. That is why ports' marketing efforts seek to attract major importers and exporters to locate their consolidation or distribution centers nearby, because such commitments by cargo owners tend to ensure predictable cargo flows through that port.

Seventh, many forecasters conclude that ships using the Panama Canal for services between the USEC and Gulf and Asia will increase in size when the new locks open. Based on the size of ships currently serving the Asia trade to the USWC and accounting for some increase in cargo demand, it seems probable that 6-8,000 TEU ships will become common for several years after the Canal is expanded. That does not mean that larger ships might not be used if market conditions warrant, nor does it mean that smaller vessels will no longer serve that trade. If ships' sizes increase, this could mean that there will be fewer vessel services using larger ships. This can present challenges to carriers' decision-making as they will need to balance shippers' demands for frequency of service versus the fact that bigger ships are only more efficient if their greater capacity is utilized.

Finally, there is a question of the effect of the new Canal's wider locks on the possible development of larger transshipment hub ports in the Caribbean or Central America to handle very large ships arriving from Asia, which would then relay cargo onto smaller vessels for carriage to U.S. ports and to ports in Latin America and elsewhere. This is a possible scenario that is still being analyzed by trade experts. Transshipment can offer the potential of greater overall network efficiencies; however, it has the down side of causing slower total transit time for the cargo, and requires the added cost of double handling of the container. Different shippers and carriers may view these trade-offs differently. Thus, for example, a string of 10-12,000 TEU ships could use a transshipment hub to route some of the cargo via smaller vessels

to the U.S., some to Latin America, and some to Europe, etc. The Bahamas, Jamaica, and Panama are often discussed in this context of possible major transshipment port development using larger ships facilitated by the Canal expansion. In short, the issue of developing new transshipment ports as a result of the new Canal locks is being discussed, but carrier and shipper reactions are still being formed. This is simply one more reason to note that just because the new Canal locks will have a maximum capacity to be able to handle 12,000 TEU ships, it does not necessarily mean ships of that size will call at USEC or Gulf ports.

## Summary

The average size of container ships has been steadily increasing over the years, and the increase in fuel costs has reinforced this trend, because the average cost per TEU of cargo carried is an important efficiency consideration. The optimum vessel size depends on a host of factors, including the size of the trade, the distance, and whether the carrier has or needs vessel sharing partners to help fill the ship's space.

Today, the average size of all container vessels calling at U.S. ports is roughly 3,500 TEU and the average size of those serving the U.S. Asia trade is about 5,000 TEU. On the USWC, approximately two-thirds<sup>6</sup> of the vessels calling are post-Panamax in size, with some as large as 10,000 TEU. Several ports' infrastructure can accommodate such vessels today, and more will be able to accommodate these ships when current dredging and expansion projects are complete.

The Panama Canal has limited ships' draft to roughly 39 feet and container vessel size to roughly 4,500 TEU, but the Canal's maximum vessel size will increase to a ship's draft of 50 feet and capacity of approximately 12,000 TEU in late 2014. When that happens, there is an expectation that vessel size for all-water service between the USEC and Gulf and Asia will increase, but the extent of the size increase will be determined first by the increase in cargo demand, and next by operating conditions of the particular U.S. port being utilized. It will probably take some years before it is clear exactly what changes to cargo flow, and its supporting transportation network, will result from the new locks.

The major U.S. East Coast and Gulf ports are in various stages of readiness to handle larger ships, and larger volumes with improved highway and rail intermodal connections. Today, Norfolk, Virginia is likely the most prepared due to its unrestricted access to 50 ft depth and the 2010 completion of the Heartland Corridor rail project and its new rail services into North Carolina. As noted earlier, however, other ports' approved plans to have expanded operational capacity by the time of the new Panama Canal locks' opening are in different stages of completion.

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<sup>6</sup> There are an estimated 65 weekly services between the USWC and Asia, of which approximately 40 use post-Panamax ships.

Some other ports have plans to seek Army Corps of Engineers funding for channel deepening projects, and we expect each of those plans will be judged on its merits. We would like to comment to the Subcommittee, however, that the criticism of funding port deepening projects on the grounds that they are “earmarks” is misplaced and counterproductive.

U.S. port deepening projects have always been individually funded by port-specific appropriations. The Congress determines, after an Army Corps of Engineers review, that a particular port needs deepening, and funds it. That process has worked successfully for over two centuries. It has not created too many ports to handle America’s waterborne commerce. It is not a process akin to previous highway bills where Congress would select for funding a particular project in a particular state’s highway plan, rather than letting the normal, established funding protocols and process operate. It has not created “ports to nowhere”. The nation’s major ports are critical enablers of the nation’s economic health, and their ability to continue serving in that role and handling the growth of the American economy should not be impaired by aspersions that they are inappropriate “earmarks” -- aspersions that undermine an otherwise appropriate funding process. Such projects should meet environmental and appropriate cost-benefit analyses, but Congress should be able to fund them as it has in the past.

The nation’s maritime transportation infrastructure will need to expand to handle the nation’s future projected growth in trade. As a general, overall observation, one can see that U.S. ports are making such expansion plans, although for a variety of reasons, some ports are further along in implementation than others.

That portion of this critical maritime infrastructure that is operated by the private sector generally has, and should continue to have in the future, adequate capacity and adequate capital investment to serve the nation’s needs. Marine terminal operators and ocean carriers have shown no lack of interest or willingness to provide the capital for such growth and improvement. Receiving the necessary permits to proceed in a timely manner, however, can be a challenge.

That portion of the critical maritime infrastructure that the government owns, including the highway connections, deserves the Subcommittee’s and the Congress’ continued attention and investment. The Committee’s continued efforts to enact a long-term highway reauthorization bill that includes due recognition of freight transportation, and the Committee’s continued support for the Army Corps of Engineers channel deepening and maintenance projects are both important to making sure that American commerce will continue to have efficient and competitive access to world markets.

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