US MARITIME INFRASTRUCTURE:
Investing in America
API Marine Subcommittee
TOPICS FOR TODAY’S DISCUSSION

1. Why is the US transportation infrastructure so critical to local, state, and national economies?

2. What is the maritime segment's contribution to local, state, and national economies?

3. What are the benefits and critical elements of the US maritime infrastructure?

4. What are the chokepoints within maritime infrastructure and what are the impacts of these chokepoints?

5. How can we work together to support US maritime infrastructure?
Our transportation and physical infrastructure is aging and needs to be rebuilt, yet we lag behind many other advanced countries in the level of our investment. I am committed to changing that.

Barbara Boxer (D-CA)  
Senate Environment and Public Works Committee, Chairman
June 29, 2010

"Building a world-class transportation system is one of the reasons that America became an economic superpower in the first place." 

President Barack Obama  
November 2, 2011

"Transportation is important. It's about people and how they live their lives. It's also about business. An efficient national transportation network lowers production costs and enhances productivity and profits. And it is about America." 

Chairman Bill Shuster (R-PA)  
House Committee on Transportation and Infrastructure  
February 13, 2013

"Infrastructure is important, and that's why energy is a key part of our plan to revitalize manufacturing and make America a nation of builders again."

Speaker of the House, John Boehner  
July 28, 2013
Waterways, highways, and railroads all play key roles in an intermodal system that moves trillions of dollars in raw materials and products into and around the US every year in a safe, efficient, environmentally responsible manner.
THE US MARITIME INFRASTRUCTURE STORY: MARITIME TRANSPORTATION’S LARGE PRESENCE

FOREIGN TRADE ON US INFRASTRUCTURE

MARITIME TRANSPORTATION
$1.7 TRILLION

AIR TRANSPORTATION
$900 BILLION

ROAD TRANSPORTATION
$700 BILLION

RAIL TRANSPORTATION
$200 BILLION

PIPELINE
$87.3 BILLION

OTHER
$218 BILLION

$3.8 trillion in total U.S. foreign trade in 2013

$200 BILLION
$700 BILLION
$900 BILLION
$87.3 BILLION
$218 BILLION
$1.7 TRILLION
$3.8 trillion

$200 BILLION
$700 BILLION
$900 BILLION
$87.3 BILLION
$218 BILLION
$1.7 TRILLION
$3.8 trillion
41% of all U.S. waterborne trade (imports & exports) is petroleum or petroleum products.

36.8% of all domestic waterborne trade is petroleum or petroleum products.

39.5% of all U.S. self-propelled waterborne trade is petroleum or petroleum products.

36.7% of all U.S. barge traffic is petroleum or petroleum products.

40% of all crude oil arriving at refineries is delivered via water.
The inland and coastal waterway system is a critical component for the safe, efficient, and secure transportation of raw materials, energy, consumer goods, and other commodities that impact our everyday lives.

**Short Tons Transported Via Water in 2013 by Commodity Group**

- All Manufactured Equipment: 4.7%
- Primary Manufactured Goods: 4.9%
- Chemicals & Related Products: 8%
- Food & Farm Products: 12%
- Raw Materials (Excluding Fuels): 15%
- Coal: 14%
- Petroleum (Crude Oil, Feedstocks, and Refined Petroleum Products): 41%
Waterways are the most efficient way of transporting everyday products – from petroleum, grain, coal, and farm products to steel, sand, chemicals, and other building supplies – across the country.

One tanker carries the tonnage equivalent to several common inland barge tows or thousands of rail cars or trucks.13
Waterway transportation is safe, environmentally responsible, and energy efficient as a result of the large capacity and a stringent industry standard of care.

- **Carbon Dioxide Emissions**
  - Tankers and barges emit 2.0 tons of CO₂ per one million tons of freight moved one mile compared to rail cars and trucks, which emit 16.9 tons.
  - Rail cars emit 22.1 tons, and trucks emit 171.8 tons.

- **Distance**
  - Tankers and barges can move one ton of cargo many more miles per gallon of fuel than rail, cars, and trucks.
  - The chart shows that one ton of cargo can be carried per gallon of fuel:
    - Tankers and barges: 6842 miles
    - Rail: 595 miles
    - Cars: 456 miles
    - Trucks: 135 miles

These metrics highlight the environmental benefits of using waterway transportation for freight.

---

CRITICAL ELEMENTS OF THE OIL SUPPLY CHAIN

WELLS TO WHEELS

S.P.R. = Strategic Petroleum Reserve
The infrastructure elements of the maritime transportation system include:

**Locks**
- Devices for raising and lowering vessels between stretches of water at different levels

**Floodgates**
- Adjustable gates used to manage the flow of water

**Dams**
- Barriers that retain water within a specific location

**Ports**
- Gateways for the movement of goods and materials

**Inland waterways**
- Navigable bodies of water located in the interior of the US
CRITICAL ELEMENTS OF US MARITIME INFRASTRUCTURE

[Diagram showing the flow of cargo through various maritime infrastructure elements such as port/refineries, terminals, and inland barge transportation.]
Physical Chokepoints:
- Restrictive port surface bottoms
- Deferred dredging
- Lack of intermodal connections
- High cost of upgrading for maximum effectiveness

Chokepoints in Operational Flow:
- Outdated navigational technology
- Pilot and staff shortages
- Lack of agility to respond to increased market demand
- Need for breaking tows into multiple parts
- Need for conducting offshore lightering or light-loading

Reliability Chokepoints (magnified with infrastructure age):
- Unplanned maintenance and outages
- Delays and vessel backlogs
- Decreased efficiency
- Enhanced impacts of low water scenarios
- Increased risks around two-way vessel traffic

Waterway Chokepoints:
- Too narrow
- Too shallow
- Vessel size restrictions create inefficiencies
Physical Chokepoints:
- Expending Harbor Maintenance Trust Fund dollars
- Insufficient dollars in the Inland Waterways Trust Fund
- Delays in completing studies and authorizing/funding new projects
- Inability to build petroleum storage tanks in a timely manner

Chokepoints in Operational Flow:
- Lack of substantial contingency planning/preparedness plans and drills
- Lack of harmonization between US and IMO standards
- Inconsistent regulations around ballast water and emissions regulations by federal agencies and states
- Underfunding of maritime academies
- Limited regulatory capacity

Reliability Chokepoints (magnified with infrastructure age):
- Underfunding of lock, dam, and floodgate infrastructure improvement

Waterway Chokepoints:
- Daylight passage restrictions
- Underfunding for completing dredging activities
- Prioritization of water uses during droughts
Many of the country’s locks and dams are 50 years or older and have exceeded their life expectancy. This can result in significant delays due to unplanned outages, increased risk as a result of more trips to move the same quantity of cargo, and increased costs to the end consumer.
Underinvestment in maritime infrastructure chokes the flow of commerce. This can lead to increased costs of everyday products, commodities, and raw materials for the end consumer. As a result, revenue decreases for local economies and businesses.
Through a shared understanding of the importance of maritime infrastructure to local, state, and national economies – together, local, federal and state counterparts can:

1. Engage in an open dialogue around strengthening US transportation infrastructure, including maritime infrastructure.

2. Escalate the issue of maritime infrastructure policy and investment to the forefront of government and industry attention to proactively inform policy decisions.

3. Appropriate adequate funds to upgrade maritime infrastructure.
SOURCES

8 – http://transborder.bts.gov/programs/international/transborder/index/Index_Interface.html; http://www.census.gov/foreign-trade/statistics/highlights/annual.html
11 – American Waterways Council, Inc. briefing to the American Waterways Operators: April 18, 2013.
18 – http://www.gicaonline.com/media/tools/030724colorado.ppt