

Optimizing Freight Transportation System Performance

*Innovative Technologies for a Resilient
Marine Transportation System R&D
Conference*

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Alliance of the Ports of Canada, the Caribbean, Latin America and the United States

Seaports
Deliver
Prosperity

American Association of Port Authorities
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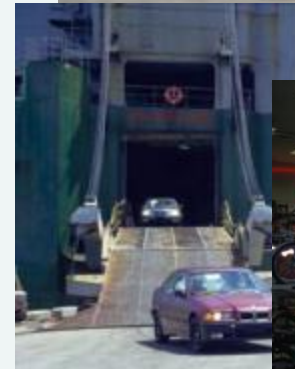
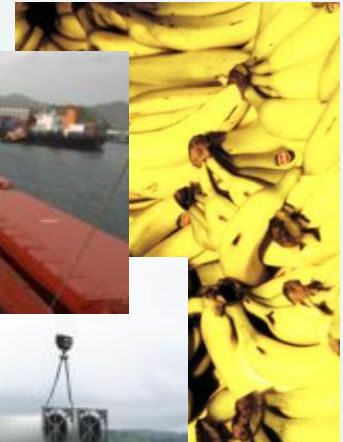
Representing Seaports of the Western Hemisphere for more than 100 years!

- **AAPA was established in 1912**
- Since that time AAPA has been providing a space for collaboration and exchange of best practices
- Fostering collaboration among members and allied groups. We deliver this through:
 - Education and Training, PPM
 - Networking and one-on-one interaction
 - Legislative and Policy support
 - Outreach



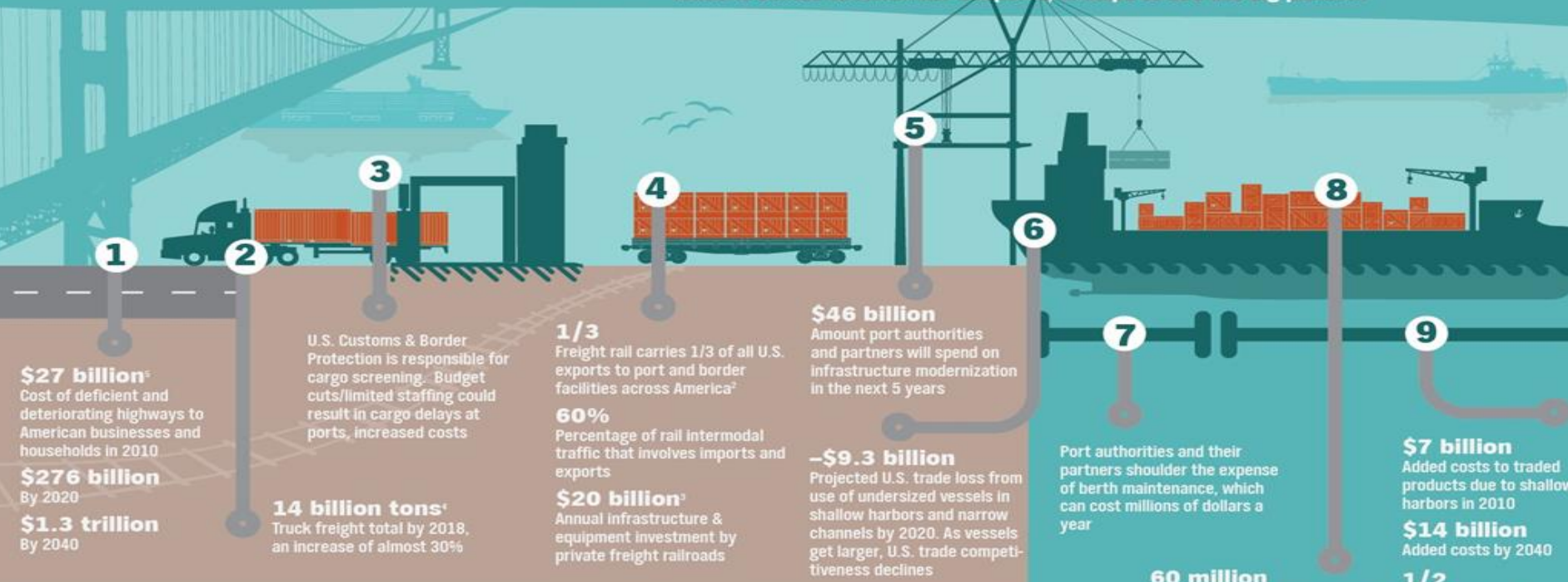
Seaport Activity can be a Key Economic Driver if Investments are Made

- Cargo moving through ports generates 13 million jobs
- Over one quarter of U.S. Gross Domestic Product accounted for by international trade
- 99% of overseas trade goes through America's seaports
- Port activity generates over \$200 billion in federal, state and local tax revenues
- According to the *ASCE Failure to Act Report*, if investments are not made in infrastructure, the losses will profoundly impact the economy, household costs and international competitiveness



ENDANGERED SEAPORTS: THE BIG PICTURE

A \$46 billion investment gap by 2040 threatens U.S. seaports – critical economic lifelines that rely on connecting transportation infrastructure to deliver prosperity for millions of Americans. With America's trade volume expected to quadruple after 2030, and port connections in poor condition, now is the time to invest in vital infrastructure. When it comes to American seaports, it helps to see the big picture.



\$27 billion*
Cost of deficient and deteriorating highways to American businesses and households in 2010

\$276 billion
By 2020

\$1.3 trillion
By 2040

14 billion tons*
Truck freight total by 2018, an increase of almost 30%

U.S. Customs & Border Protection is responsible for cargo screening. Budget cuts/limited staffing could result in cargo delays at ports, increased costs

1/3
Freight rail carries 1/3 of all U.S. exports to port and border facilities across America²

60%
Percentage of rail intermodal traffic that involves imports and exports

\$20 billion*
Annual infrastructure & equipment investment by private freight railroads

\$46 billion
Amount port authorities and partners will spend on infrastructure modernization in the next 5 years

-\$9.3 billion
Projected U.S. trade loss from use of undersized vessels in shallow harbors and narrow channels by 2020. As vessels get larger, U.S. trade competitiveness declines

\$7 billion
Added costs to traded products due to shallow harbors in 2010

\$14 billion
Added costs by 2040

Port authorities and their partners shoulder the expense of berth maintenance, which can cost millions of dollars a year

60 million
Containers¹ imported annually to the U.S. by 2037, nearly 3x current container imports

52 million
Containers exported annually by 2037, nearly 3x current exports

1/2
Amount of Harbor Maintenance Tax revenue utilized, resulting in channel dimensions available <35% of the time

A \$4 trillion loss to U.S. GDP by 2040 is projected for failure to invest in America's crumbling transportation infrastructure.

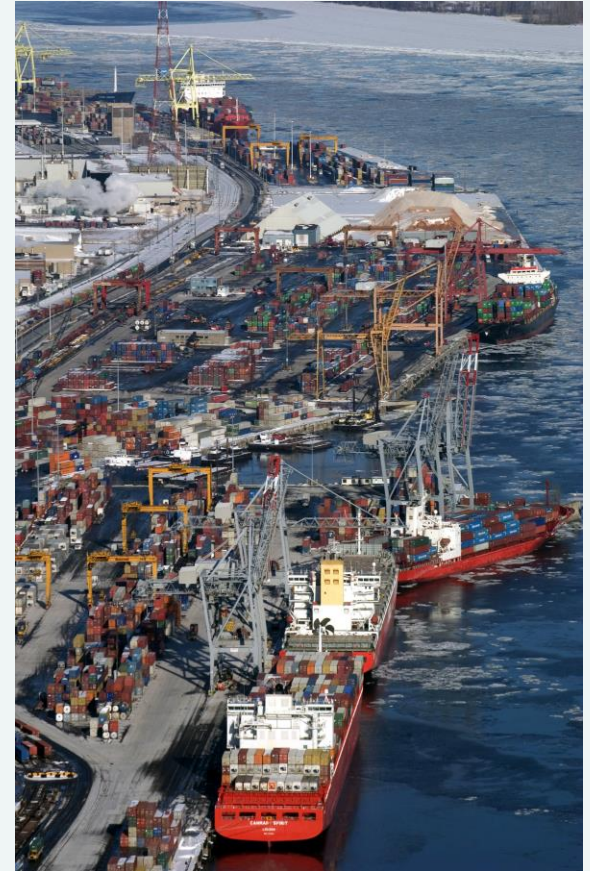
Urge Congress to support federal investment in seaports today.

- 1 FEDERAL/STATE HIGHWAYS & CONNECTORS**
(Funded by gas taxes)
- 2 TRUCKS**
- 3 SECURITY SCREENING EQUIPMENT**
- 4 FREIGHT RAIL**
- 5 PORT FACILITIES**
- 6 OCEAN-GOING VESSEL**
- 7 BERTH**
- 8 CARGO**
- 9 FEDERAL CHANNEL**
(Funded by Harbor Maintenance Tax)

Statistical source except where indicated: The American Society of Civil Engineers (ASCE)- Failure to Act: The Economic Impact of Current Investment Trends in Airports, Inland Waterways, and Marine Ports Infrastructure, 2012 (Loaded TEUs)
¹The Association of American Railroads, www.aar.org
²U.S. Customs and Border Protection, Washington Post, February 24, 2013
³The American Trucking Associations, www.trucking.com
⁴ASCE- Failure to Act: The Economic Impact of Current Investment Trends in Surface Transportation Infrastructure, 2011

Port Performance

- *Drivers and Considerations are:*
 - Competition with other ports
 - Community concerns
 - Regulations
 - Limited government funds
 - Cost and pay-back important



Port Performance Impacted by Many Parties



Close Population Centers

Intermodal connectors:
Rail and Road

Cargo-handling Equipment

Trucks

Ocean-going Vessels

Harbor Craft/Dredges

Very Complex Stakeholders' Group Impact System Performance

- *Different Groups in Control*
 - *Shipping Lines*
 - *Terminal Operators*
 - *Labor*
 - *Truckers*
 - *Railroads*
 - *Port Authorities*
- *Varying Government Agencies*
 - *Corps of Engineers*
 - *U.S. DOT*
 - *State DOTs*
 - *DHS (TSA, Coast Guard, FEMA, CBP, DNDO)*
 - *State Governments*
 - *NOAA*
 - *TSA*

Varying Cargo May Have Different Performance Standards

- *Containers*
- *Passengers*
- *General Cargo*
- *Dry Bulk*
- *Liquid Bulk*
- *Roll-on/Roll-Off*
- *Military Cargo*



Waterside

- *Look at Depth and Width of Federal Channel*
 - Controlled by Corps and its limited funding
 - How can we do it faster and cheaper?
 - Where to place the dredged materials?
 - Can we lower cost of reusing dredged material?
- *Berth Dredging and Approaches*
 - Who pays?
 - Can we make improvements so dredging costs less or is needed less often?



Surface Transportation

- *Focus on efficient intermodal freight network*
- *Look at the entire supply chain*
- *International Gateways and Corridors Strategy*
- *Last mile needs to be a higher priority*
- *Freight movement will change over time*



Challenges to Performance

Bringing the Cargo In

- Ship schedules – will they be late and how do we control schedule?
- Labor rules
- Limited space to handle cargo/vessels
- Size of cranes/vessels
- Federal inspections/regulations
 - TWIC
 - CBP Scanning Technology
 - Agricultural Inspections
 - Cruise Passengers
 - U.S. Coast Guard



Getting the Cargo Out



- *Trucks*

- Where does the line start?
- Chassis roadability
- Hours of service
- Low Pay – turn time
- Impact on community
- Security
- Tracking Trucks
- Greener Trucks



- *Rail*

- On-dock rail
- Security inspections
- Loading requirements

- *Marine highways*

- How to make it economically sound
- How to make this a priority with larger ports



Port Authorities

- *Most are landlords –
Don't control much of the operations*
- *Focus on connecting infrastructure*
 - Road
 - Water
 - Rail
- *Seek funding for infrastructure projects*
- *Use incentives for environmental performance*
- *More focused on competition, marketing and value of investments to the port business*



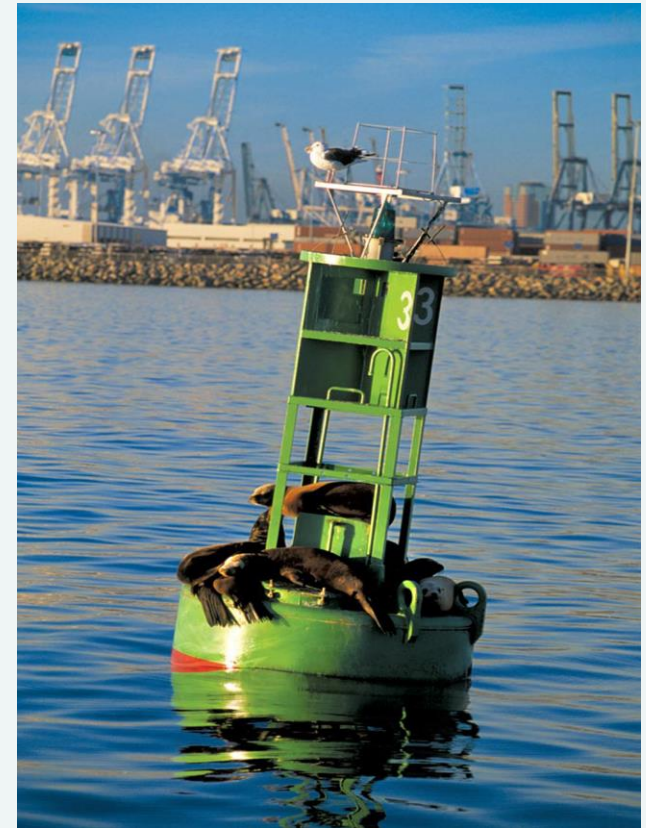
Key Areas for System Performance Improvement

- *Intermodal Equipment*
- *Drayage Operations*
- *Terminal Optimization*
- *Rail Operations*
- *Government/Community Outreach*
 - Regulations
 - Environmental Concerns
 - Environmental Justice



Environmental/Energy Needs

- *Vessel Issues*
 - Ballast water treatment technology
 - Scrubber technology
 - Alternative fuels including LNG
- *Sustainability*
 - Electricity and the grid
 - Storm response
- *Alternative energy*
 - Plug in for ships
 - DOE attention
 - Yard equipment
- *Stormwater Discharge*



Conclusion

- *Ports are complex in both the number of stakeholders and the types of cargo. Performance standards need to recognize this diversity.*
- *Port Authorities are often landlords and don't control equipment, labor or other cargo moving decisions.*
- *Interest in performance standards may vary based on congestion, cargo needs, labor, and community.*
- *We need to work with DOT more on performance standards.*