



**Growth Opportunities for
General Cargo and Shallow-Draft Ports
November 15, 2006
Memphis, TN**

**Defining Short Sea Shipping
Land and Water Side**

Mark Yonge, Managing Member

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Active members of the:

Coastwise Coalition

***MTSNAC – Intermodal
Capacity Planning Team***





“Maritime Advisors” – Consulting Group

- **Diverse, Executive Level, Hands-On Industry Experience**
- **Areas of expertise**
 - **Business Development**
 - **Domestic & International Trade**
 - **Finance**
 - **Government Contracting**
 - **Industry and Government Relations**
 - **IT and Systems Development**
 - **Labor Management & Relations**
 - **Logistics Management**
 - **Maritime Operations**
 - **Port Management, Development**
 - **Short Sea Shipping Specialist, EU, & North America**





Maritime Transport & Logistics Advisors, LLC

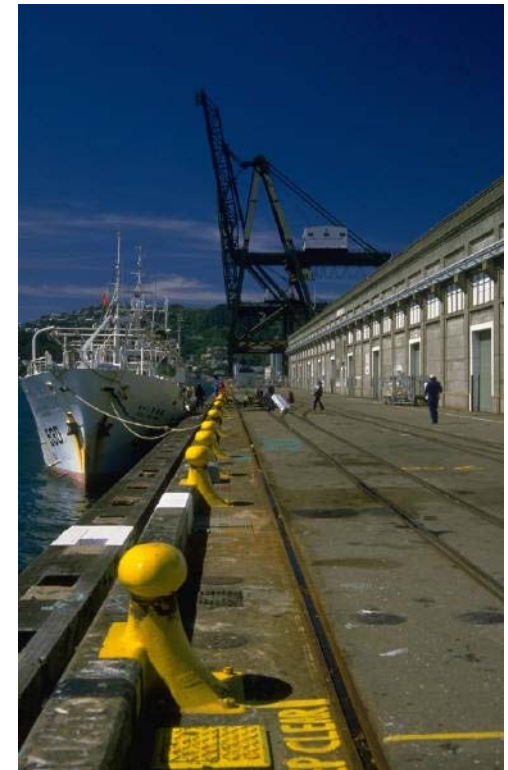


“Maritime Advisors” – Consulting Group

29 Advisors – Maritime & Logistics Expertise

Port Expertise Advisors:

- **Ray Barberesi – Ex. MARAD**
- **Paul Bea – Ex. Port NY/NJ**
- **Paul DeMariano – Ex. Port Everglades**
- **Larry Henesey – Blekinge Institute of Technology**
- **Davis Helberg – Ex. Port of Duluth**
- **Bernard List – Ex. Brownsville**
- **George Mihaiu – Seaports Magazine**
- **Chuck Towsley – Ex. Port of Miami**
- **Tony Vasil – Ports Sales Representative**





Maritime Transport & Logistics Advisors, LLC



Active membership:

Coastwise Coalition



**Marine Transportation System
National Advisory Council**

(Team/Committee Member)



NATIONAL DEFENSE TRANSPORTATION ASSOCIATION



TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

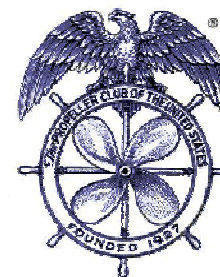


Short Sea Shipping

COOPERATIVE

**Founding Members of
"SCOOP"**

NAVY LEAGUE
of the United States
"Citizens in Support of the Sea Services"





Maritime Transport & Logistics Advisors, LLC



- ***MTLA recently concluded an in depth Short Sea Shipping Port Probability Study for Port Canaveral***
- ***MTLA developed a new Short Sea Shipping Decision Tool that provides Marine Carriers, Port Authority's and Terminals a new method to determine if Short Sea Shipping should be included in their strategic planning.***
- ***MTLA Short Sea Shipping Decision Tool recognized by the TRB at the 2006 TRB Annual Meeting – Meet the Author's Poster Session***



Transportation Congestion: “Looming threat to our economic prosperity”



**REMARKS FROM
THE HONORABLE NORMAN Y. MINETA
SECRETARY OF TRANSPORTATION**

**NASDAQ OPENING BELL
NEW YORK, NY**

MAY 23, 2006



“... there is a looming threat to our economic prosperity in the form of transportation congestion. Goods stalled at overwhelmed seaports, airplanes circling crowded airports, and delivery trucks stuck in traffic cost America an estimated \$200 billion each year. Traffic jams alone waste 2.3 billion gallons of gasoline and 3.7 billion hours...”



Freight Capacity Crunch



- **“One of the Nation's biggest challenges, and a critical focus of USDOT, is closing the gap between the demand for transportation services and infrastructure capacity.” (FHWA FAF)**
- **A freight capacity crunch of unprecedented dimensions is predicted for the next decade, and just building more roads or expanding rail capacity to meet projected demand are simply not viable options, even if they were possible.**
- **America needs fresh ideas for absorbing some of the projected freight growth. We need innovative solutions that will attract freight movements away from overcrowded highways, for at least part of the journey from shipper to receiver.**





Challenges to the Nation's Transportation System



- In many areas of the U.S. today, highway, rail and port facilities are nearing capacity.
- The U.S. transportation system carried over 15 billion tons of freight valued at over \$9 trillion in 1998.*
- By 2020, the U.S. transportation system is expected to handle cargo valued at nearly \$30 trillion.*
- By 2020, U.S. highways, railways and ports will be expected to move 70% more freight than they did in 1998.*
- An annual expenditure of \$75.9 billion (2000 dollars) will be needed for the 2001-2020 period just to maintain the physical highway infrastructure, as it existed in 2000. (USDOT FHWA 2002c).



(source: FHWA FAF updated April, 2006)



International Trade Growth to Double Domestic Freight Volumes will grow by more than 65%



- **U.S. International trade is projected to increase by 2.8 percent annually between 1998 and 2020, nearly doubling in volume.**
- **This growth in international trade is likely to present challenges to U.S. ports and border gateways.**
- **Domestic freight movements accounted for nearly \$8 trillion of the total value of shipments.**
- **Domestic freight volumes will grow by more than 65 percent, increasing from 13.5 billion tons in 1998 to 22.5 billion tons in 2020.**

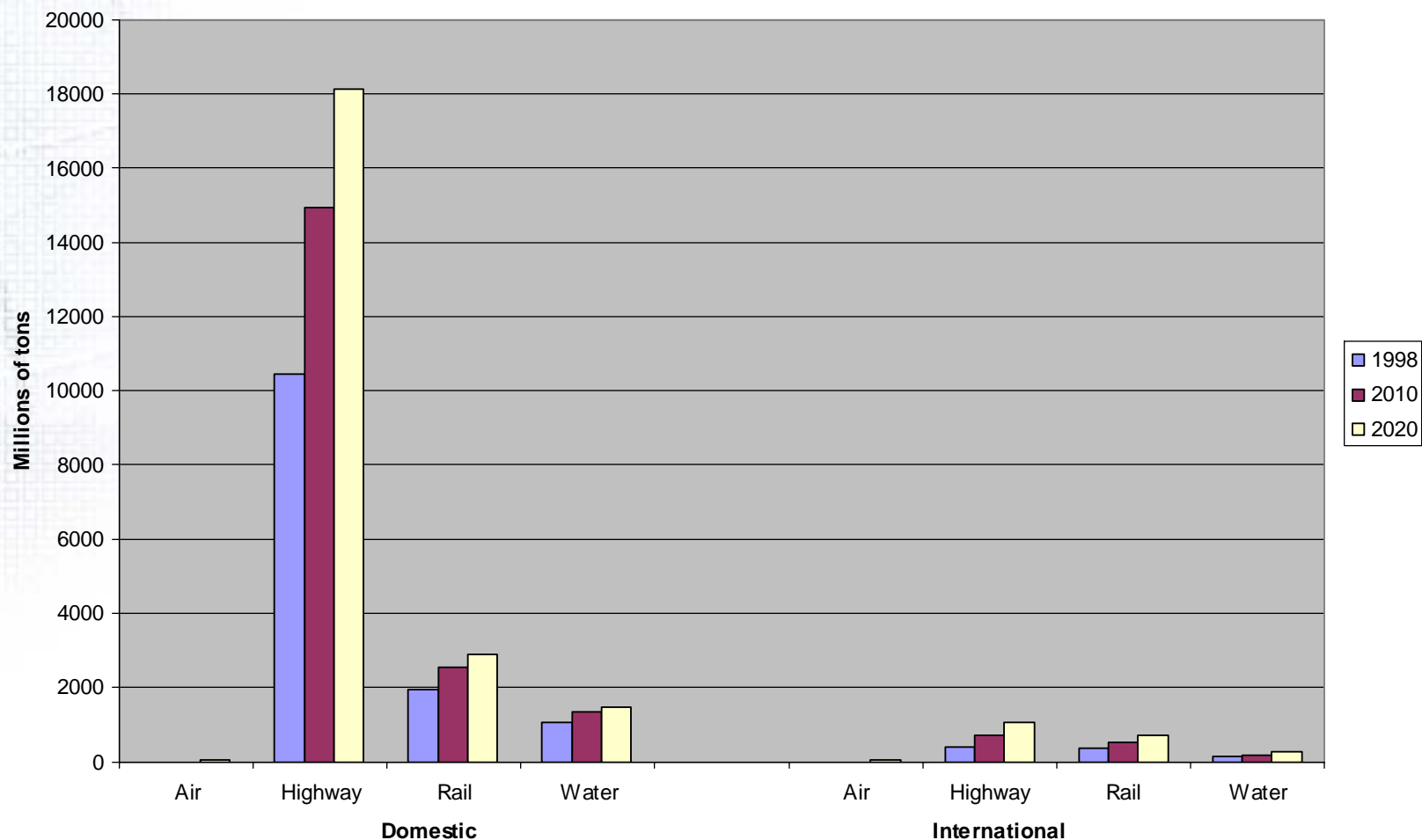


Freight Growth Rate Projections Feb. 2005



Freight Movements by Weight

FHWA FAF updated Feb 16, 2005

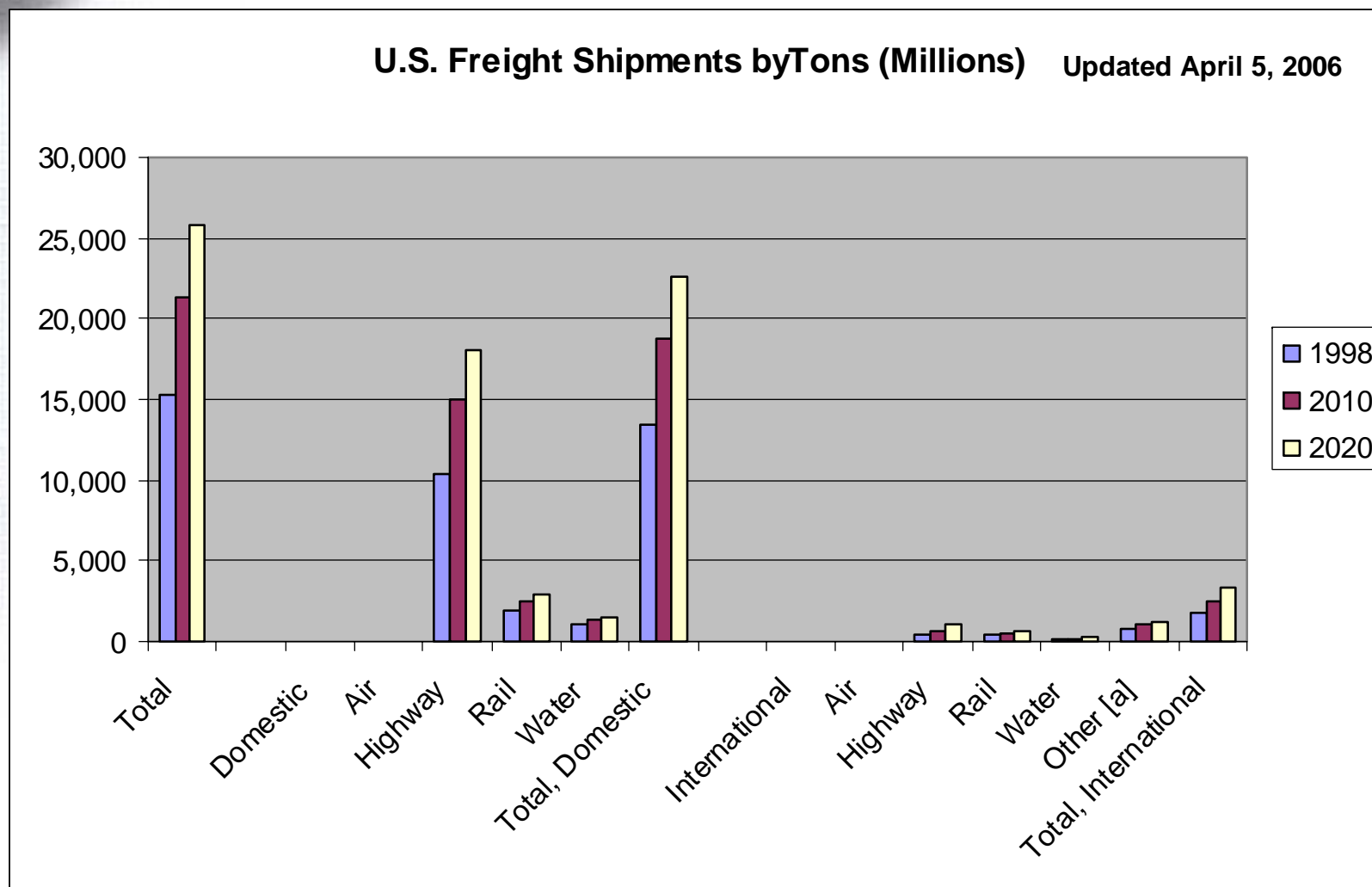




Freight Growth Rate Projections updated April, 2006



FHWA Freight Analysis Framework (FAF) National Summary: 1998, 2010, 2020



Shipment Characteristics by Mode of Transportation for the United States
Source: FHWA – Website (Updated April 5, 2006)

Highway Capacity

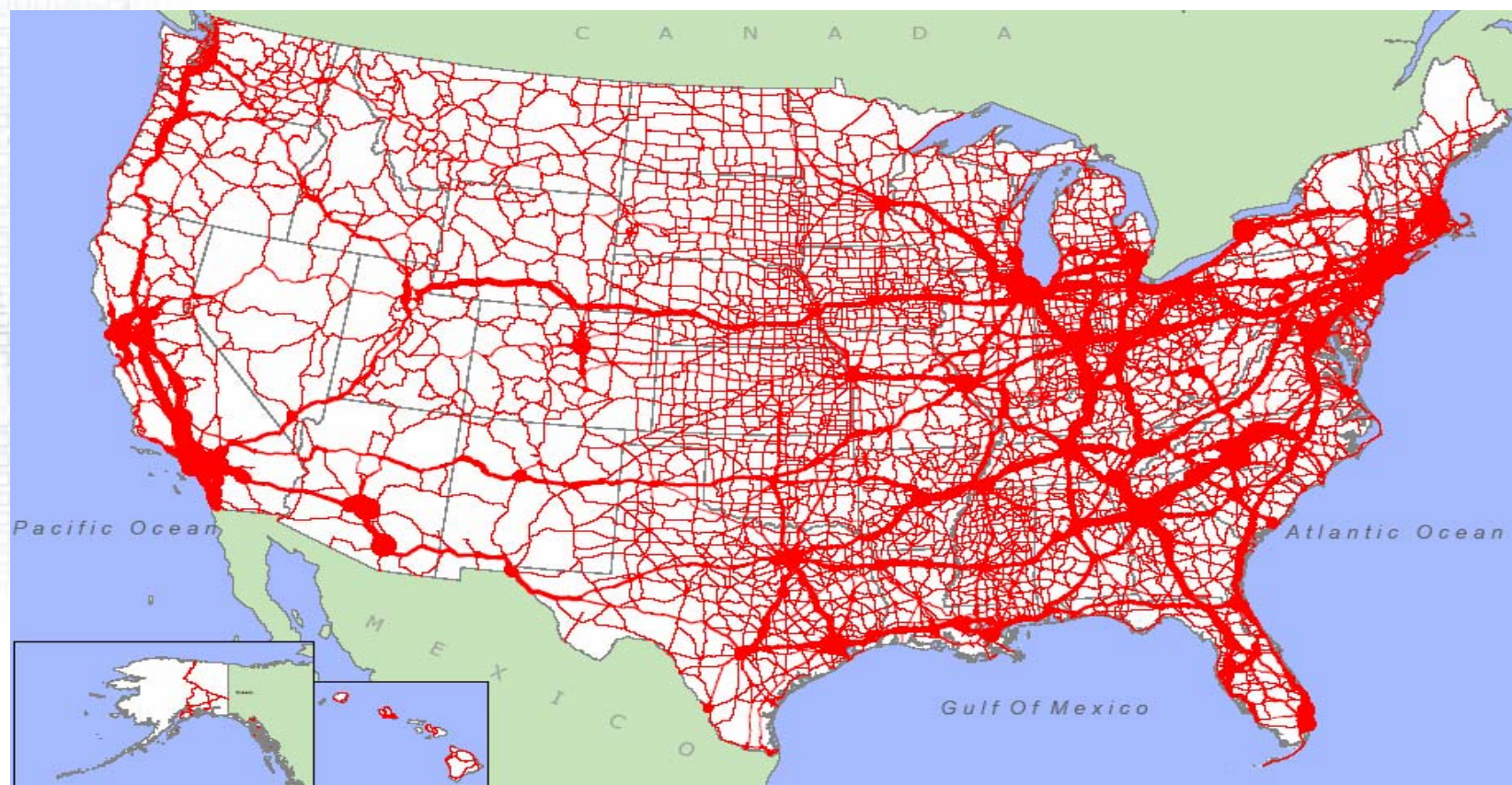


“The U. S. Highway system has experienced nearly a doubling of vehicle miles traveled in the past 20 years while the total highway mileage has increased only by 1 percent.”





Freight Flows by Truck: 1998 (daily truck volumes)



Source: FHWA FAF



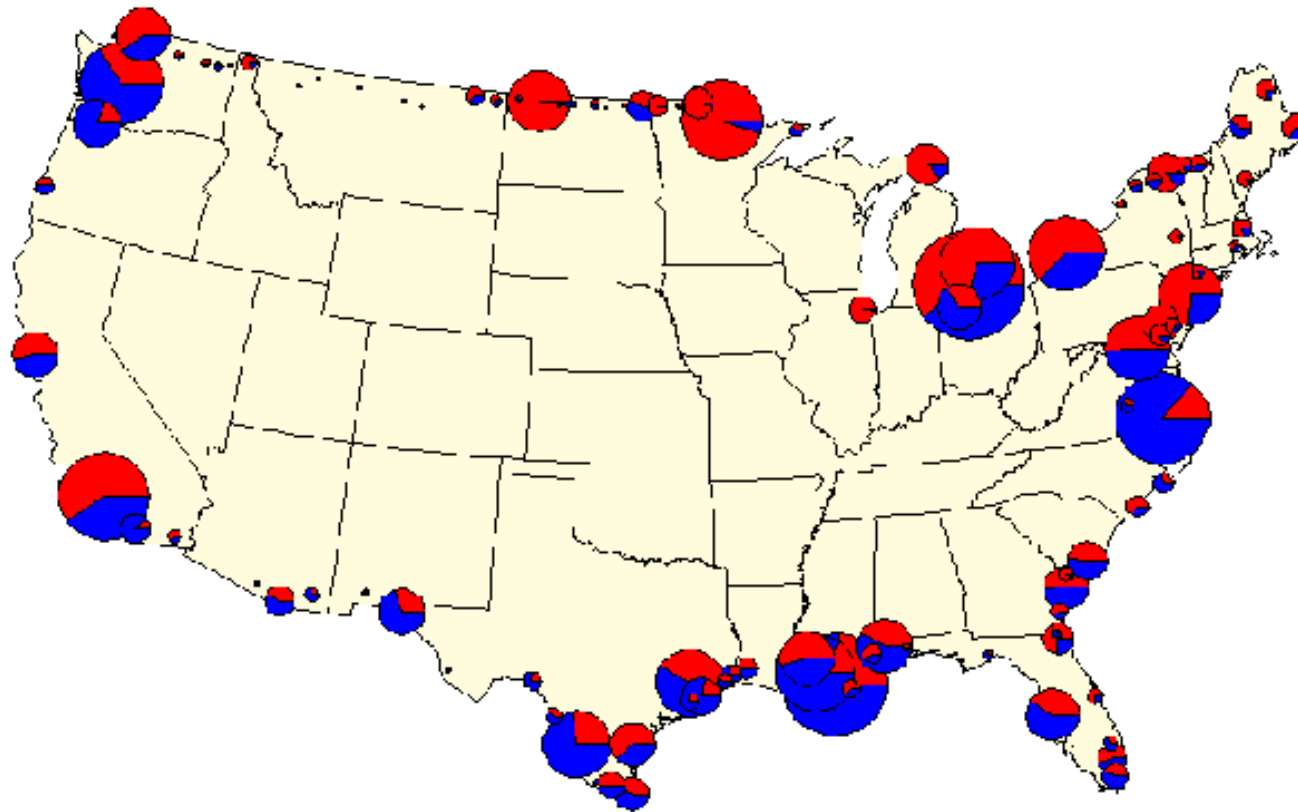
Freight Flows by Truck: 2020 (daily truck volumes)



Source: FHWA FAF



Top U.S. Gateways for International Freight – Exports Imports in Tons



Source: FHWA FAF

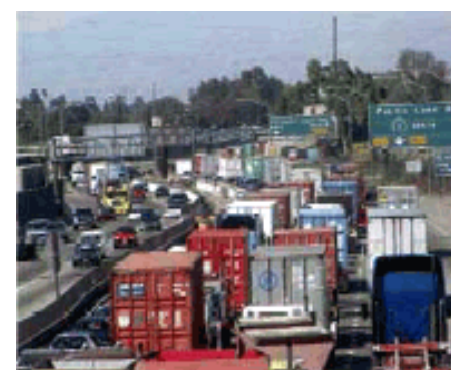


Congested Highways



The most severely congested routes in the U.S. are:

- **Interstate 95 on the East Coast,**
- **I-5 on the West Coast,**
- **I-10 on the Gulf Coast,**
- **I-35, I-55 and I-65 along the Mississippi-Ohio River system**
- **I-90 and I-94 in the Great Lakes region. Along**





“Perfect Storm” Brewing



Recent interview with a major trucking company:

“ A Perfect Storm is forming” (for the Trucking industry)

- 1. Highway Congestion**
- 2. Rail & Highway Capacity inadequate to handle future freight projections**
- 3. Long Haul Driver Shortages – Quality of life a priority**
- 4. Ultra Low Sulfur Fuels required Oct. 2006**
- 5. New environmental regulations – Fleet replacement cost high**
- 6. New Hours of Service regulations**
- 7. New Immigration laws/License requirements**
- 8. Aging truck fleet**
- 9. Trucks are expected to move over 75 percent more tons in 2020**



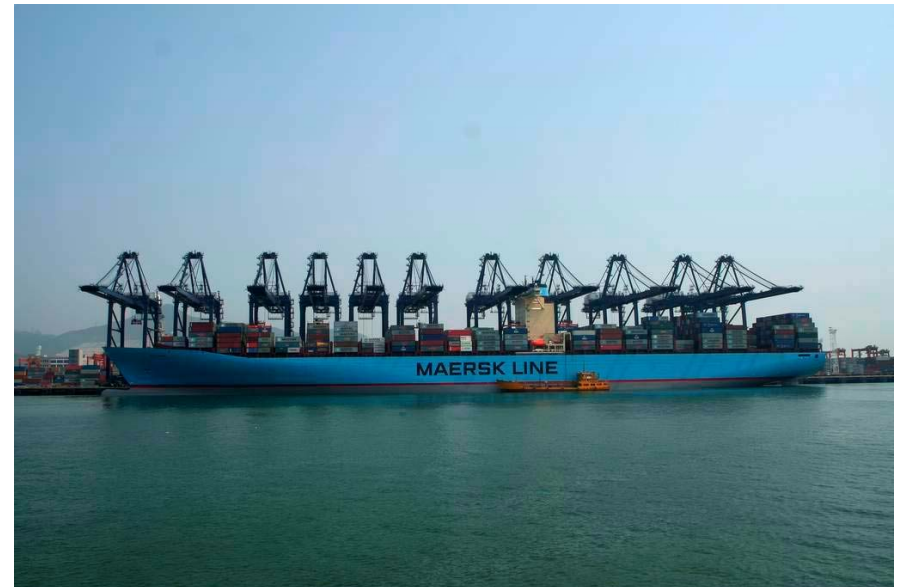


Capacity of U.S Intermodal Freight System insufficient



USDOT/FHWA

- **United States will experience an overall doubling of international freight by 2020.**
- **As a result, in less than 20 years, U.S. ports and related infrastructure must be capable of handling more than 50 million TEU's per year.**
- **The U.S. intermodal freight system is now being operated in many areas near the limits of economically sustainable capacity.**



Emma Maersk – 14,471 TEU Vessel



Capacity of U.S Intermodal Freight System insufficient



**The U.S. Chamber of Commerce
Report on Trade and
Transportation concluded that:**

- **Ports and their associated intermodal systems can no longer build their way out of their capacity problems.**
- **75% of the 16 ports surveyed for the report will have significant capacity problems by 2010.**



Port of Long Beach



Must add a new Port of Oakland every year



***MTSNAC Intermodal Committee report to Secretary Mineta
(Sept. 2005) stated:***

“To put the requirements in stark detail, consider that, to handle the annual increase in container traffic, we must annually add capacity across the system which is equal to the current capacity of the Port of Oakland.”



**Port of
Oakland**

Photo
Courtesy of
John Goyer,
San Francisco,
CA



Short Sea Shipping – Intermodal Alternative



Secretary of Transportation Mineta

“One intermodal alternative is the development of a robust short sea shipping system that would aid in the reduction of growing freight congestion on our nation’s rail and highway systems.”

**Speech at US Chamber of Commerce Conference
6/12/03**



Intermodal the Environmentally Benevolent Answer!



“ intermodal has been seen as the environmentally benevolent answer to ever-increasing truck traffic on the highways and the steady pressure to bring in longer and heavier trucks. (Railway Age, Oct 1, 1998 by Dan Lang)





Definition of Intermodal



- Merriam-Webster defines intermodal transportation as:

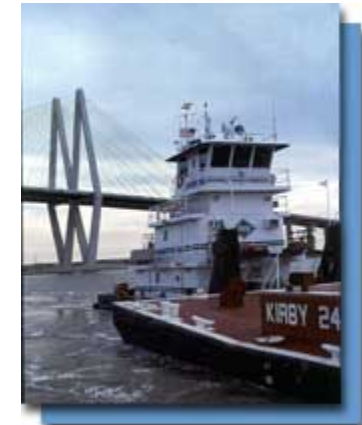
“being or involving transportation by more than one form of carrier during a single journey”

- The USDOT defines intermodal transportation as:

“Use of more than one type of transportation; e.g. transporting a commodity by barge to an intermediate point and by truck to destination”

- Department of Industrial Engineering, Mississippi State University paper “Developing a Standard Definition of Intermodal Transportation” –

“ the shipment of cargo and the movement of people involving more than one mode of transportation during a single, seamless journey.”



Kirby Barge/Tug



Defining Short Sea Shipping



European Shortsea Network Definition:

“Shortsea shipping is the intermodal transport of Intra-European cargo on a door-to-door basis, usually in containers or trailers. A large part of the transport trajet is done by sea.”

= Short
= Sea
= Shipping



EU Refers to Short Sea Shipping as –

“The Dynamic Choice Complementing the Sustainable Transport Chain”:

- **“Motor ways of the Sea” used interchangeably**





Defining Short Sea Shipping



MARAD Defines Short Sea Shipping as:

“Commercial waterborne transportation that does not transit an ocean.”

“It is an alternative form of commercial transportation that utilizes inland and coastal waterways to move commercial freight from major domestic ports to its destination.”

References here in the U.S.:

“Coastwise Shipping”

“Coastal Transport”

“Water 95”

“Highway H2O”

“Marine Highways”



Central Gulf R/R Vessel



Detroit Windsor Ferry



Short Sea Shipping



- **Short Sea Shipping Services have been in operation for many years**
- **New services are being developed now – some have already started**
- **Greatest immediate growth will come when the Harbor Maintenance Tax (HMT) is repealed for short sea shipping services**
- **Port and Terminal Infrastructure:**

The system requires separate domestic terminals to handle the trailer flows. Many States, MPOs and smaller port authorities are currently researching their ability to enter this market, (SCOOP presentation-2006 Marine Money Conference, NYC)



**Kirby/Dixie
Houston – Tampa Service**



TECO Ocean Shipping is TECO Transport's ocean-going connection. TECO Ocean Shipping carries bulk commodities within the Gulf of Mexico and to ports around the world. The company currently operates 15 vessels that range in size from 19,200 to 42,800 DWT and has a total shipping capacity of over 450,000 DWT. We offer self-loading as well as gearless vessels.



Short Sea Shipping Today



Detroit-Windsor Ferry



Columbia Coastal



Trailer-Bridge



Tote – M/V Midnight Star



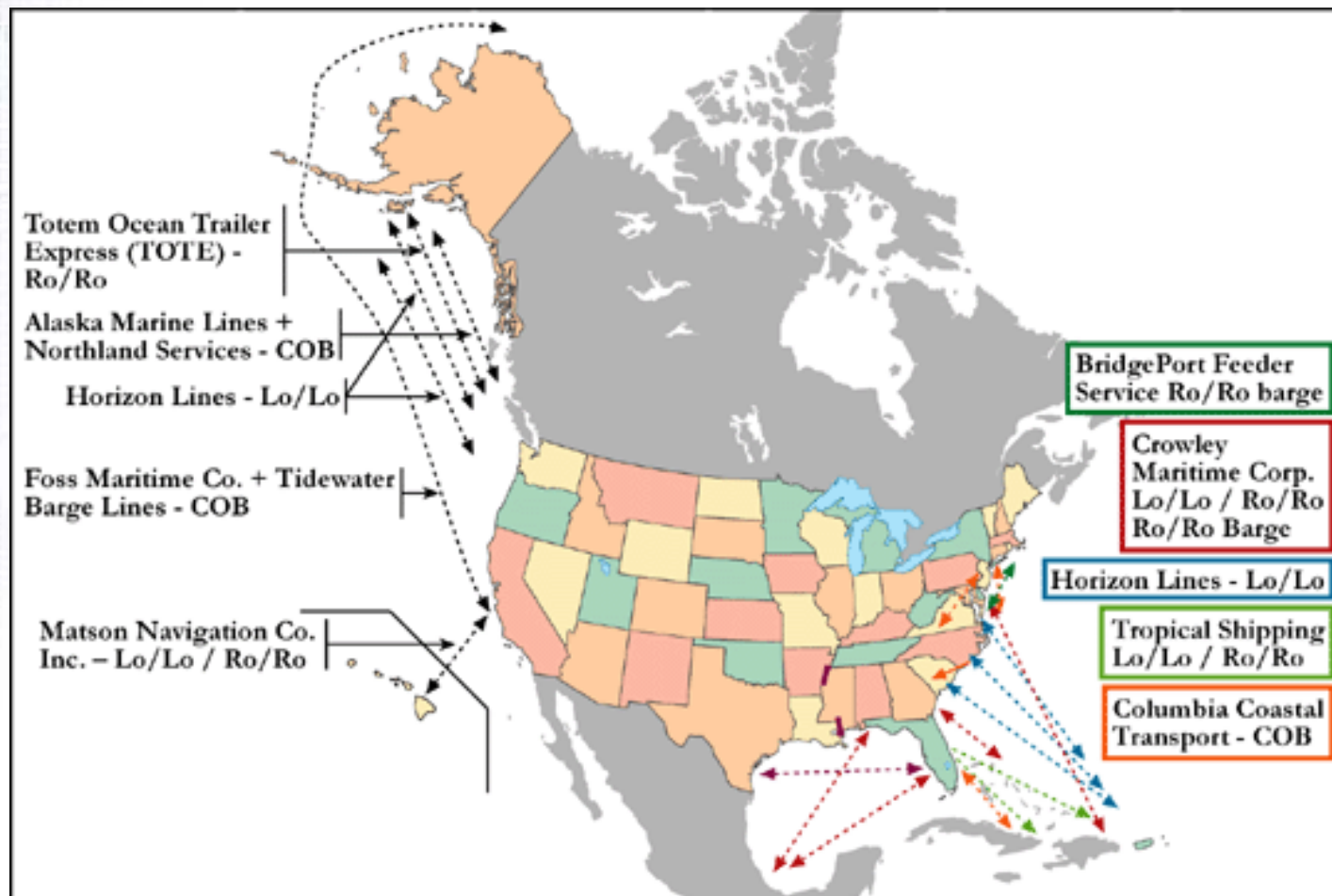
SeaStar Line



Central Gulf R/R Vessel

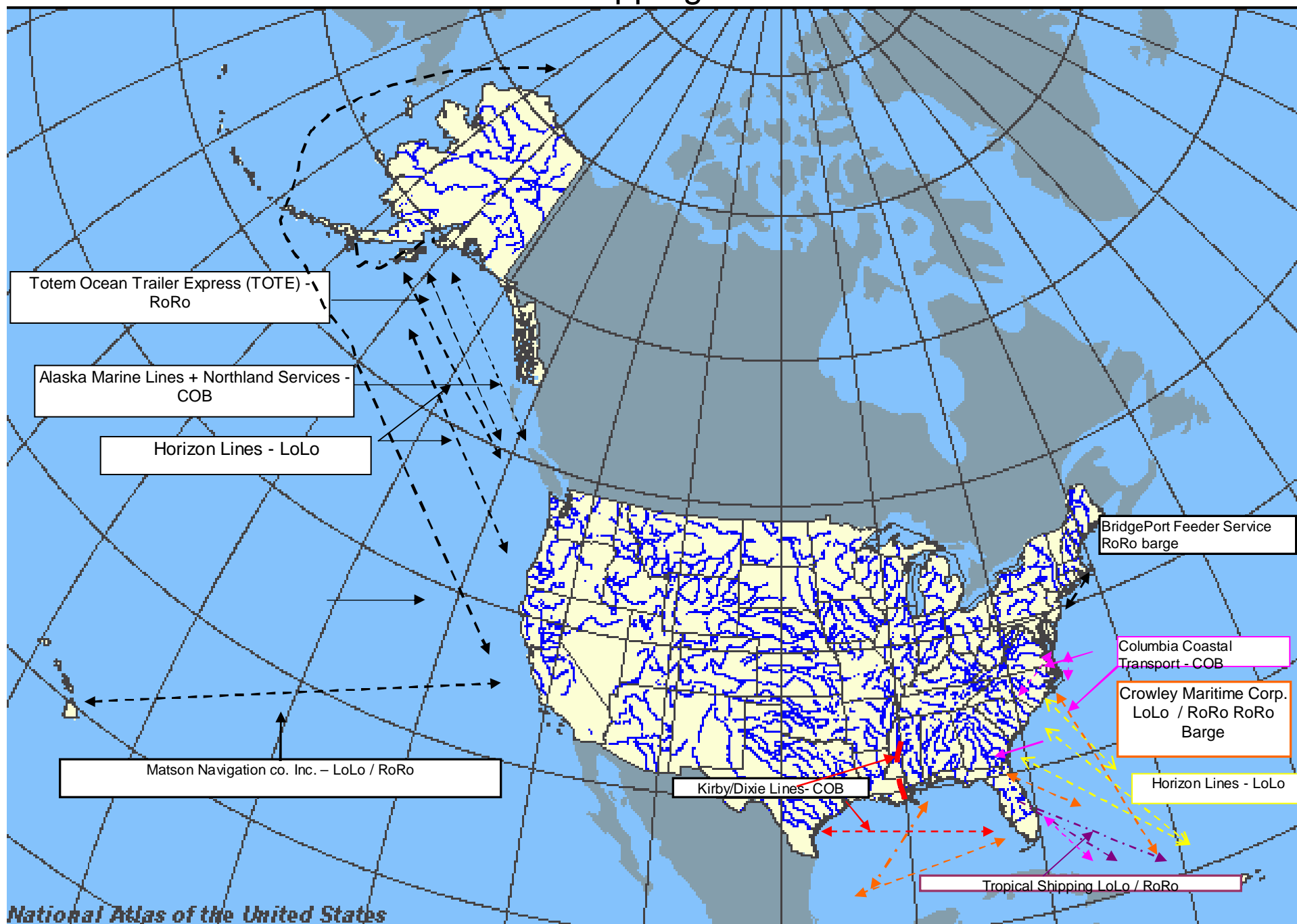


Short Sea Shipping in the U.S.



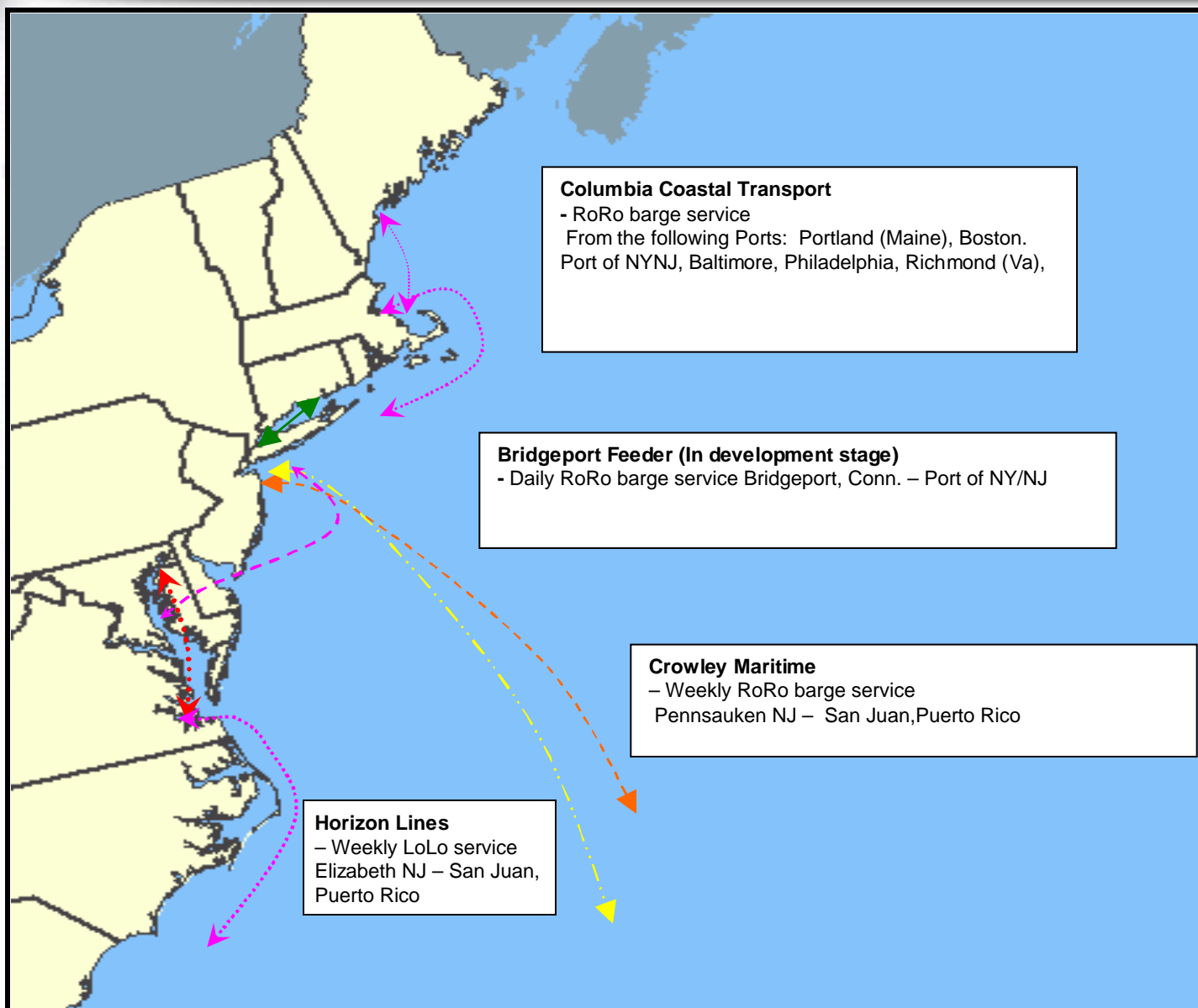
Source: MARAD SSS Web Site

Short Sea Shipping in the U.S.



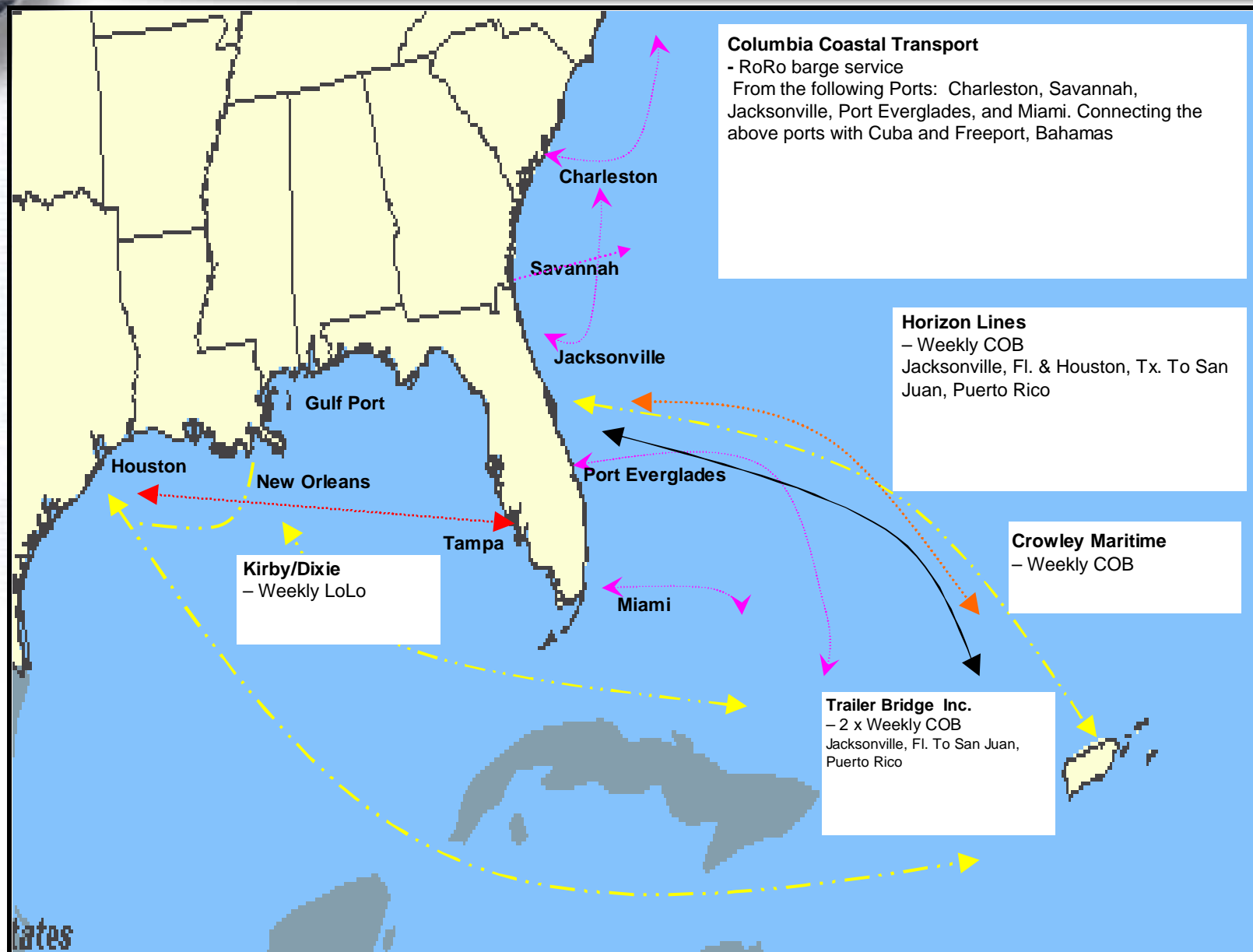


US Short Sea Shipping Domestic Networks from Mid-Atlantic to Northeast Coast

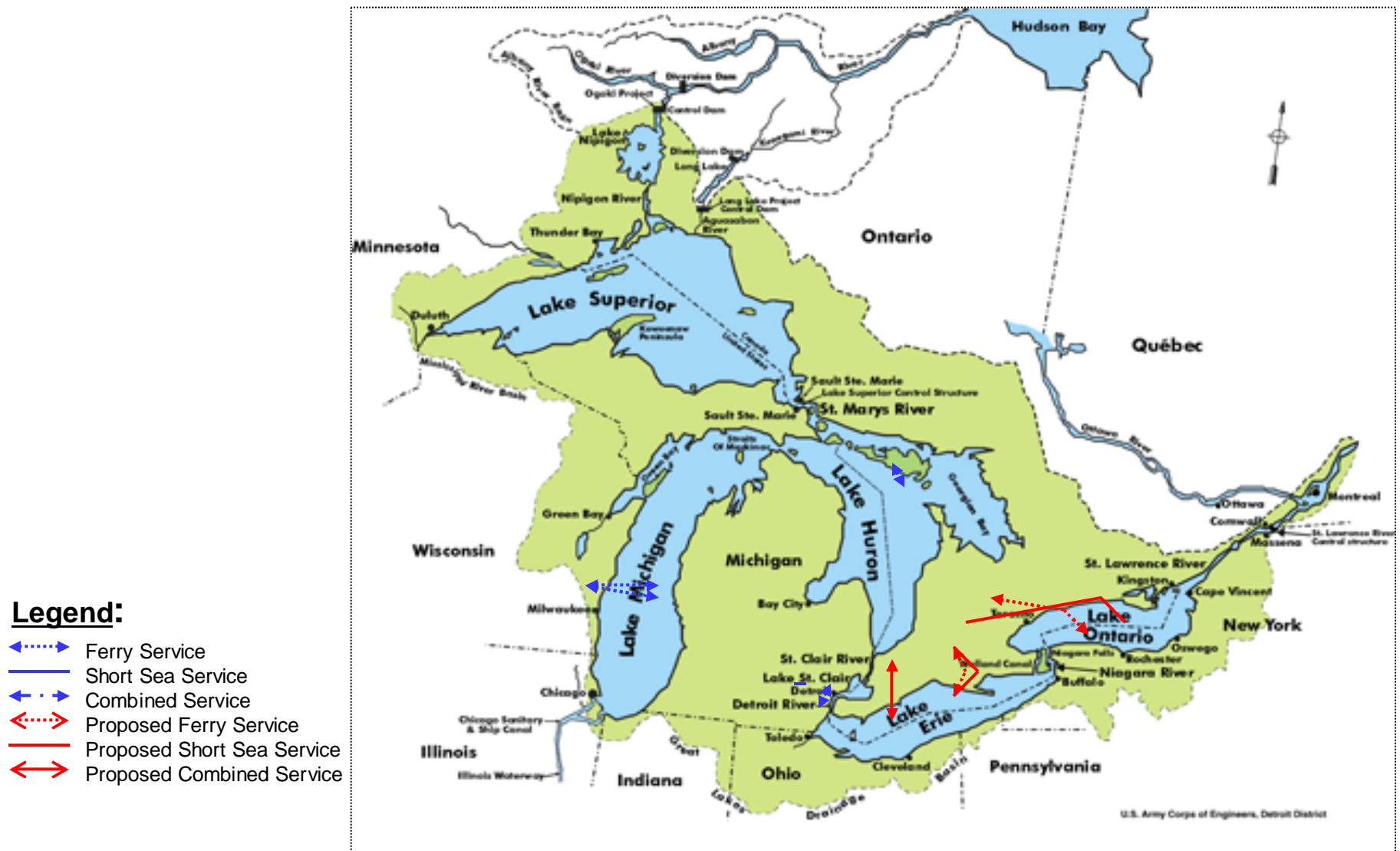




US Short Sea Shipping Domestic Networks from Mid-Atlantic to Southeast Coast



Short Sea Shipping in the Great Lakes



New Outlooks????

“Floating Garage for Barges”



- Last September (2005) the Institute of Shipping Technology and Transport Systems at Duisberg University, with the Shipping Department of Inha University in South Korea, announced a research program into a “new” form of barge carrier - ‘floating garage’ for barges
- Speaking at the RoRo conference in Ghent - “barge carrying ships could be the answer to port and road congestion on both sides of the English Channel” according to John Dodwell, managing director of Rolandon Water and Sea Freight Advisory Services.
- LASH (Lighter aboard ship) vessels have been around since the 1960’s!



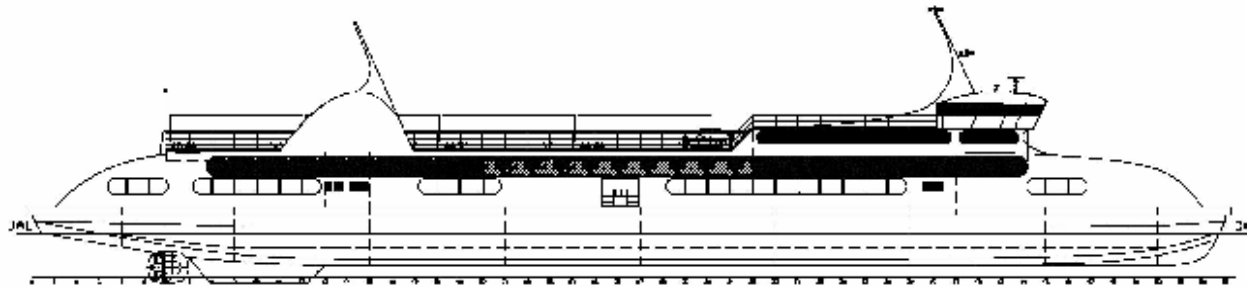
Waterman SS Lash vessel



Forest Lines Lash Feeder Vessel
(Float on/float off)



UNO “Most Efficient Design”



Vessel - Double Decked Trailer Ferry

Length overall	- 417' (127 metres)
Capacity	- 88 truck trailers total
Speed	- 18 knots
Crew	- 10

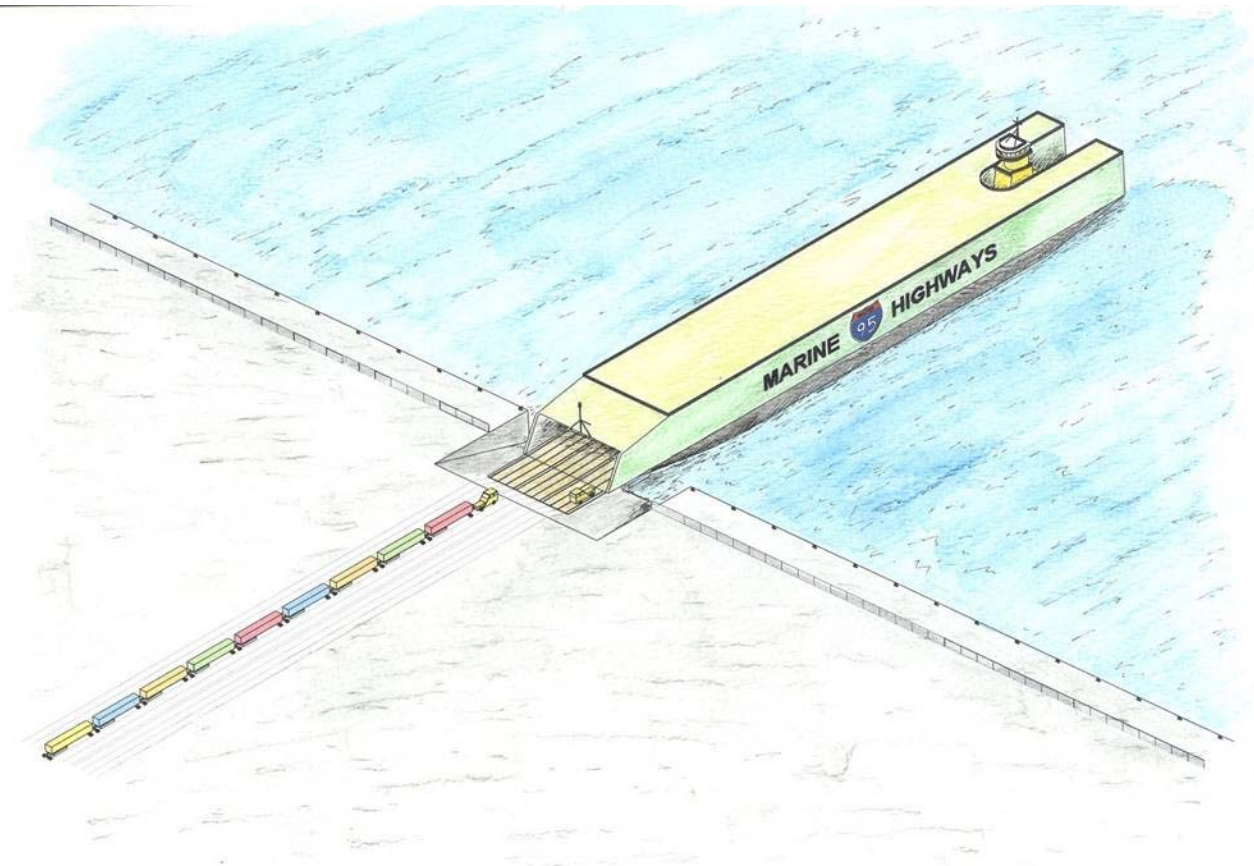


Marine Highways “ATB”



**Kirby Corporation &
Management &
Transportation
Associates
New Waterborne
Intermodal System
concept**

- **Cost efficient
Articulated Barge
design**
 - Quick port turn-around
 - Reasonable capital cost
 - Low operating cost
- **180 Trailers**
- **Competitive transit
up to 500 miles**





Mid-Atlantic Hovercraft Operation, LLC



High Speed Ferry Operations



Existing technology allows ships previously limited to 18 to 20 MPH to now travel at 45 MPH or more.



New Generation High Speed Monohull Ro/Ro vessel from Aker Yards Marine, Inc.



- **Aker Yards Marine Inc.'s new generation Roll-on/Roll-off vessels.**
- **Considerably faster than existing designs. 30 Knots**
- **Faster, more competitive service than traditional ships**





Thinking out of the box:



The 126.7 metre Trimaran cargo-vehicle-passenger ferry “Benchijigua Express” is larger than any existing diesel-powered fast ferry – catamaran or monohull – and is the world’s largest all-aluminum ship.

Ordered in June 2003 and launched in September 2004 the ferry will

- **sail at loaded speeds in excess of 40 knots,**
- **providing capacity for 1350 passengers, over 350 cars or 450 truck lane metres and 123 cars..**



Out of the Box



SeaBridge USA's roll-on/roll-off passenger vessel can transport more than 170 trailers or 100 trailers & 500 cars and 1,800 passengers at up to 42 knots



New Outlooks – The Future 50 Knots!!!



Kvaerner Masa Marine
High Speed Trimaran Technology

SSCE
Short Sea & Coastal Express

Note:
Kvaerner
now:
Aker
Yards
Marine,
Inc.



50 Knots!!! Whoa!!!!



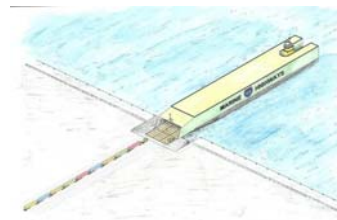


Short Sea Shipping – an “Intermodal Alternative”



Marine Intermodal Alternative's

- Ro/Ro; Ro/PAX; ATB's; ITB's
- Containers on Barge, LO/LO;
- High Speed Ferry's
- Hover Craft
- R/R Vessels (ie. Central Gulf)





Short Sea Shipping

An “INTERMODAL ALTERNATIVE”



Ports & Terminals

“Intermodal Marine Network”

- **Intermodal Waterway Terminals (Hub’s)**
- **Intermodal Coastal Terminals (Hub’s)**



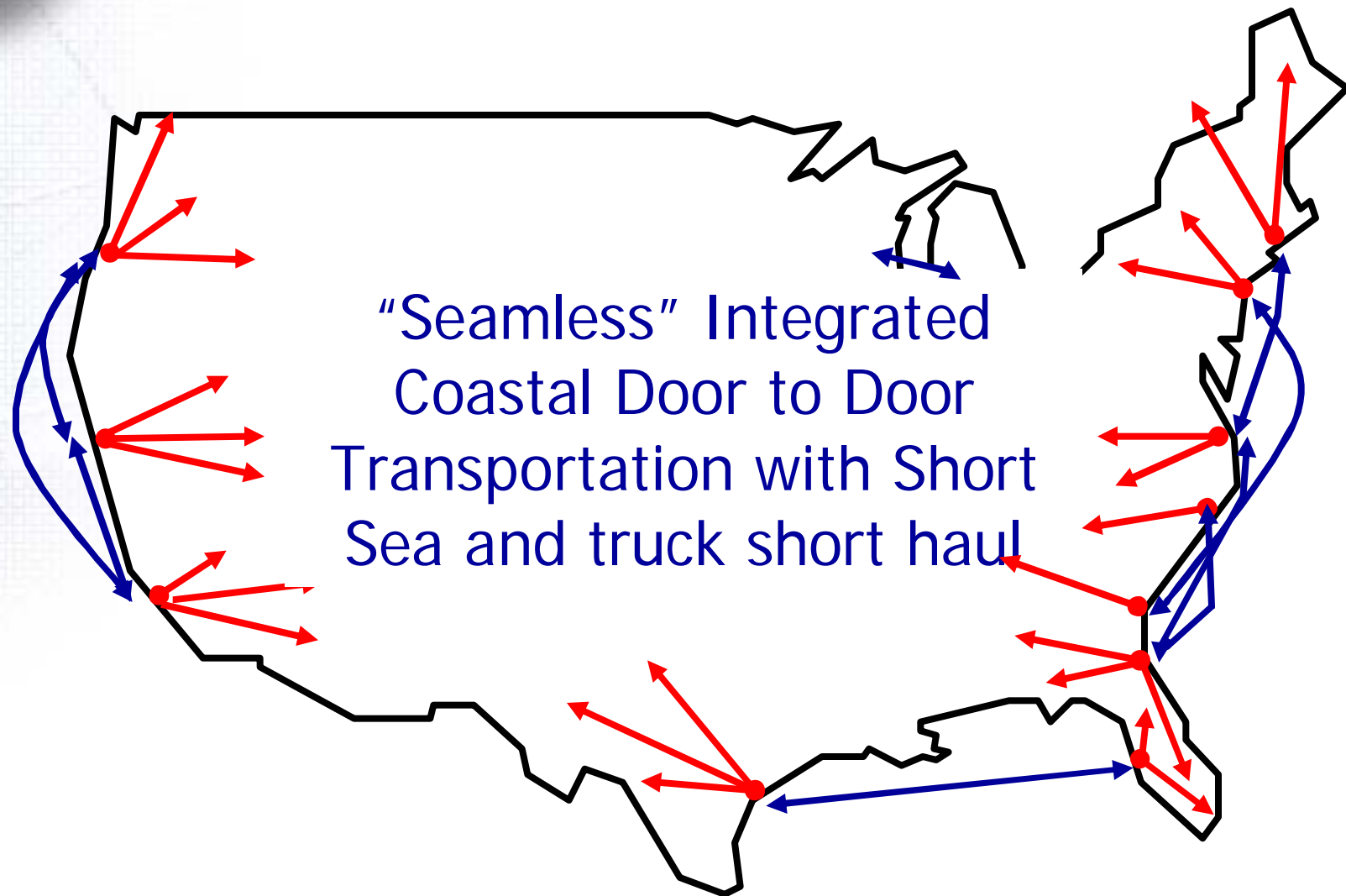
Port of Memphis



Port Canaveral



“Seamless” Intermodal Marine network





Short Sea Shipping Planning



Who will be the users of Short Sea Shipping?

1. **International Ocean Carriers?**
 - A. Hub & Spoke operators
 - B. Door to Door operators
2. **Shippers? Generally depend on Logistics Providers**
3. **Logistics Providers – 3PL's; Trucking Companies, IMC's**





“Rules of the Road”

Logistics providers/shippers requirements:

- **Speed**
 - **Just in time (JIT) still a priority with shippers but the reality of transportation capacity and congestion is a major concern**
- **Reliability**
 - **Consistent departure dates/times a must**
- **Quality of service**
- **Cost-efficiency**
 - **Intermodal rate levels that are competitive (not in competition) to present all land truck rates.**



Short Sea Shipping planning



Findings (Partial) from interviews with Logistics Providers:

- **Many trucking companies utilize “intermodal” to Maximum**
- **Some trucking company’s union contracts restrict the amount of intermodal they can utilize**
- **Often use Rail Intermodal “going in” – Highway back out**
- **Truck operators plan truck routes around congestion**
- **Ideal trip for drivers is maximum 250 miles (1 way)**
- **Long haul is considered over 500 miles**
- **Interstate weight limit 80,000# Tractor/Trailer**
- **“Huge” areas of freight imbalance**
- **Would consider SSS as an “Alternative” means of long haul**
- **Complaints about Rail Intermodal – “Reliability”**

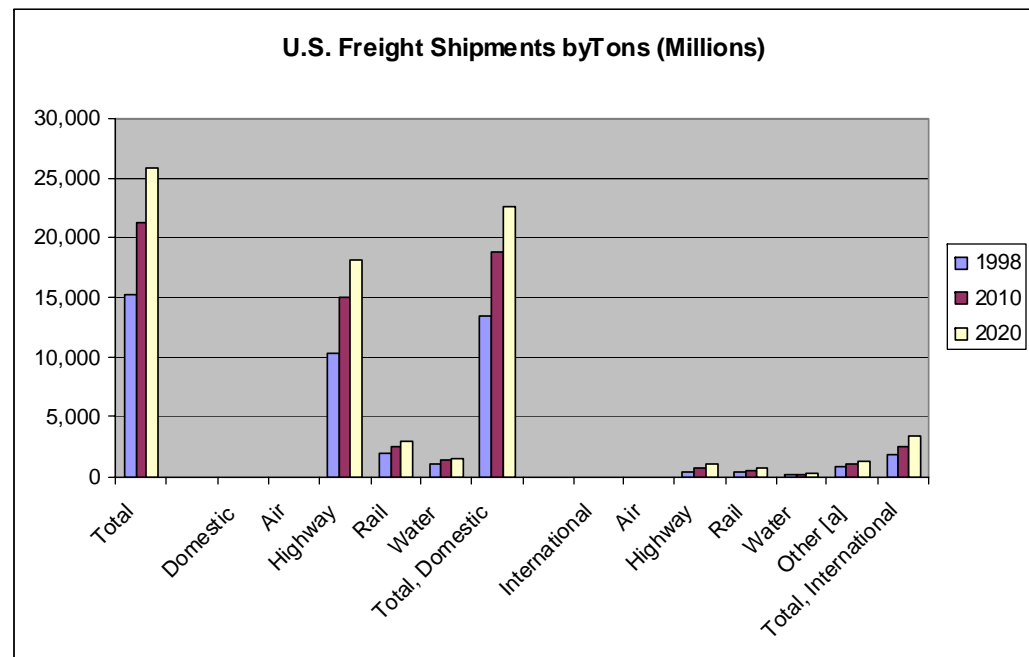


Short Sea Shipping Planning



New Market

1. Domestic transportation volumes are nearly 10 times International – “Follow the Money (Volume)!” New opportunity for Domestic ports/terminals and vessel operators.
2. Domestic Ro/Ro Intermodal Depot's/Terminals – clone Rail Intermodal Depot's and Truck Depot's
 - “Big Parking Lot”
 - 24 Hour Access
 - Quick pick up and Deliveries
 - Last minute deliveries
 - Tote operation excellent model





Short Sea Shipping Challenges

- **Truck contract is origin to destination – Are intermodal depots “logistically convenient”?**
- **SSS Departure times are daily from marine terminals rather than shippers hours of operation from origin - Will shippers adjust JIT requirements for Truck/SS? (“Changing Dynamics”)**
- **Are Head Haul volumes and rates adequate?**
- **Are Back Haul volumes and rates adequate?**
- **Will revenue share produce a Required Frt. Rate (RFR) for the SS Operator?**
- **Harbor Maintenance Tax**
- **Jones Act**



Benefits of Short Sea Shipping



- **For the Trucking Industry:**
 - Improves efficiency
 - Increases productivity
 - Reduces accidents and transportation-related operating costs
- **For the Public:**
 - Reduces road congestion
 - Reduces air pollution
 - Improves highway safety
 - Generates economic development
- **For Federal and State Governments:**
 - Adds significant freight capacity
 - Requires less time and lower cost than any road or rail option of equal capacity
 - Becomes self-financing, once operational and successful





National Intermodal Marine Transportation System



- **Economic Growth and transportation demand is quickly outpacing transportation capacity – “Snowball effect” is growing faster than solutions**
- **National Transportation Capacity – a significant National Security and Economic issue - Short Sea Shipping provides an “intermodal Alternative”**
- **DOT/MARAD goal – “Seamless transportation system that moves America forward”**
- **National Intermodal Marine Transportation System**





Thank You

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Active Members of:



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