

# ***The Panama Canal Expansion Plan and its Effect On the Intermodal US Mini-Landbridge Service***

***Presented by  
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***to***

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***on***

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Photo: Wikipedia





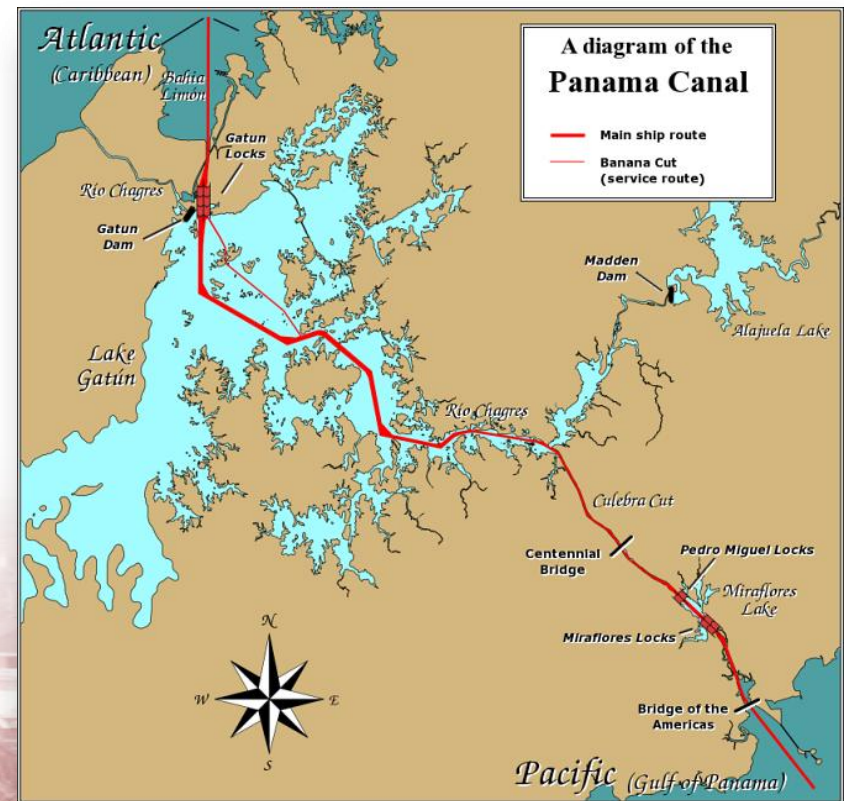
# Overview

- **Panama Canal**
  - Background
  - Expansion project
- **Asia to US east coast options**
  - Panama Canal
  - US mini-landbridge
  - Suez Canal
- **Comparison among services**



# Panama Canal: background

- **Gulf of Mexico (north)**
- **Pacific Ocean (south)**
- **80km long**
- **Three sets of locks,**  
**two lanes each**
- **Transit time  $\approx 1$  day**
- **Delay is typical**





*The Panama Canal Expansion Plan and its Effect On  
the Intermodal US Mini-Landbridge Service*



**Panama Canal: background**

**Gatun Locks (Gulf side)**

# Panama Canal: expansion project

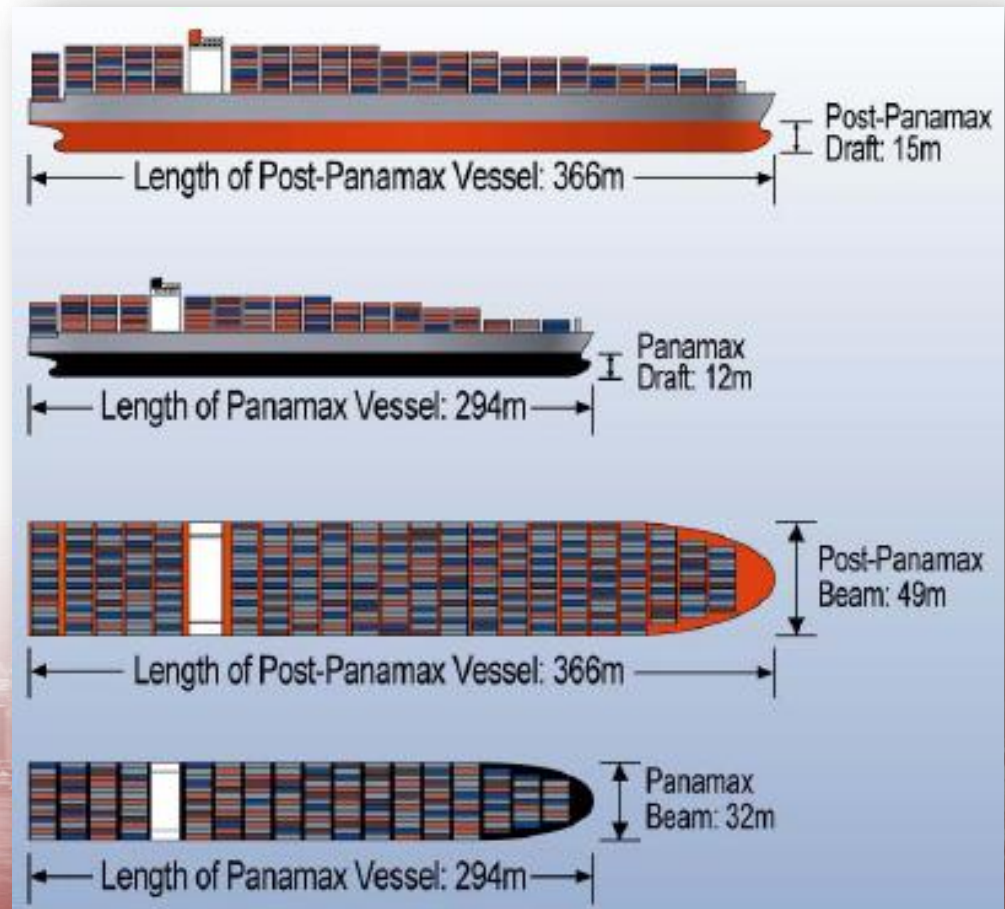
- Two new sets of locks, one lane each
- Cut installed between 1939-1942 by US Army Corps of Engineers
- 2014 target completion





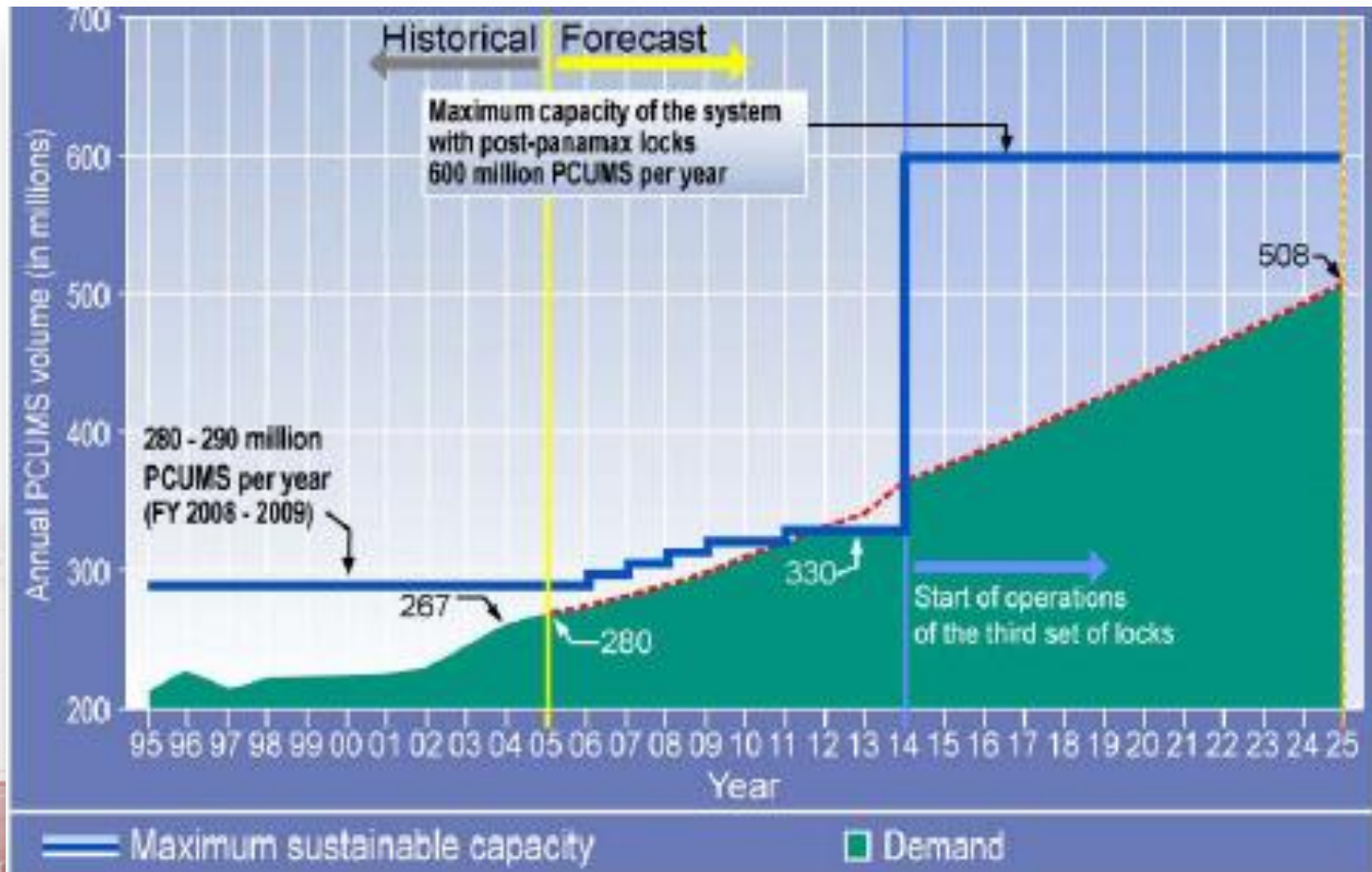
# Panama Canal: expansion project

- **Current locks**
  - LOA: 294m
  - B: 32.2m
  - T: 12m
  - 4,800 TEU
- **New locks**
  - LOA: 366m
  - B: 49m
  - T: 15m
  - 10,000TEU



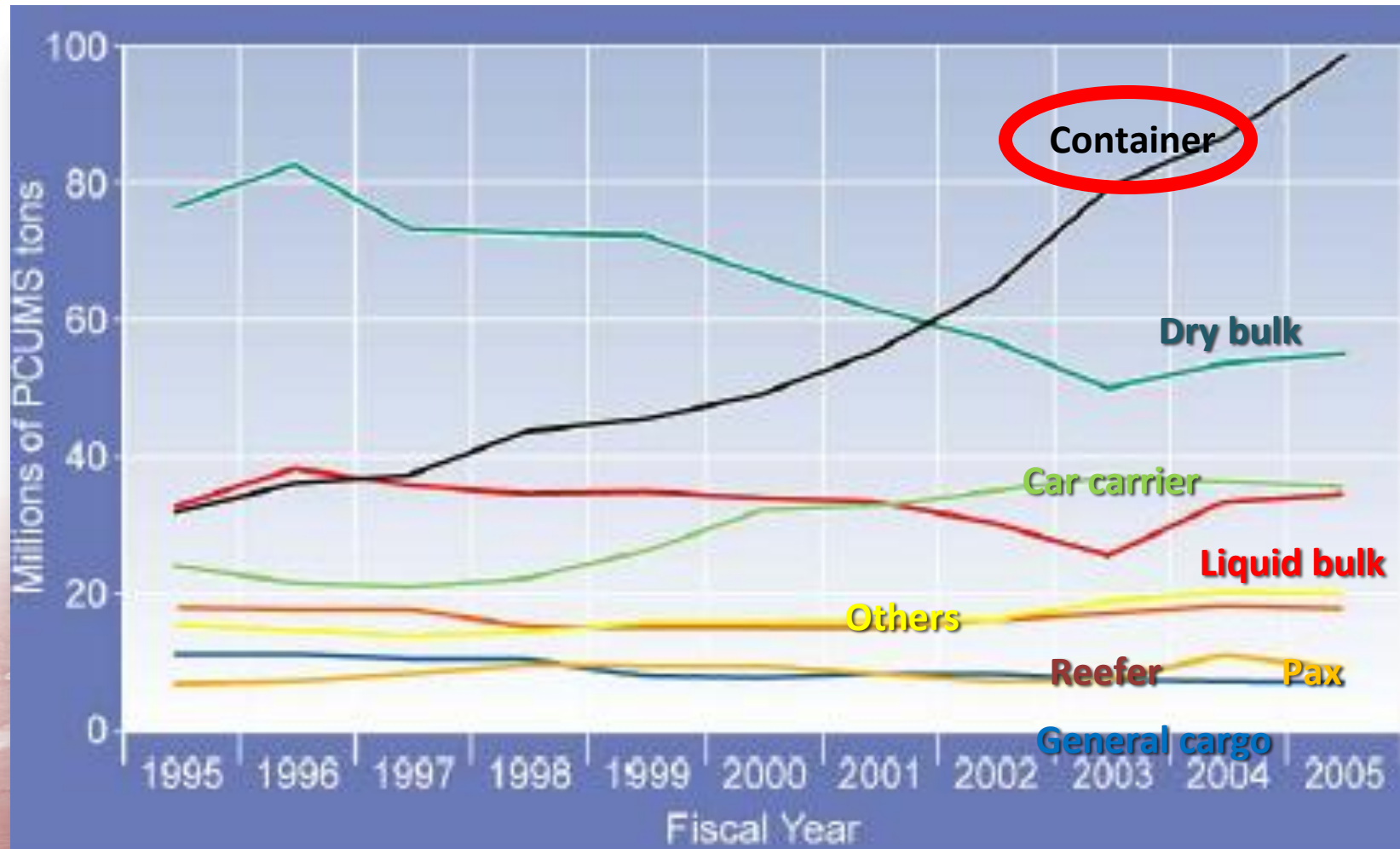


# Panama Canal: market focus





# Panama Canal: market focus







# Asia to US east coast containership options



**Panama Canal**



**US mini-landbridge**



# Asia to US east coast containership options

- **World containership capacity growing rapidly**
- **Average vessel size increase**
  - 1995: 1,535 TEU
  - 2005: 2,230 TEU
- **Post-Panamax vessels 25% of world fleet**
- **Post-Panamax fleet to grow capacity by 80% by 2011 (2.5M TEU to 4.6M TEU)**



# Panama Canal: challenge

- **East coast ports**
  - NY/NJ
  - Virginia
  - Charleston
  - Savannah
  - Jacksonville/Everglades/Miami
- **Port capacity**
  - Ports tight
  - Between 2001-2010, 38% expansion capacity expected (52% in north, 22% in south)
  - Expansion is estimated to keep with port demand

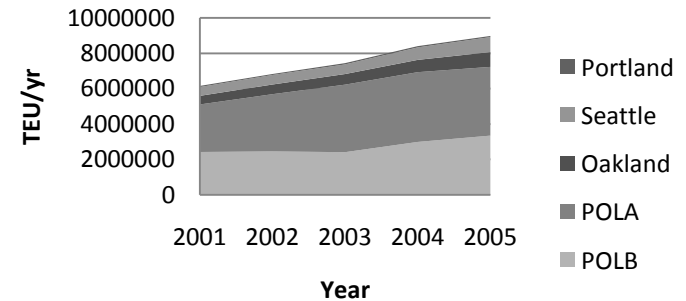




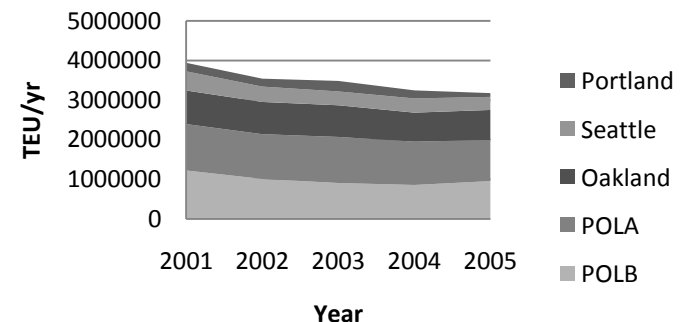
# US mini-landbridge: challenges

- West coast ports
  - Los Angeles/Long Beach
  - Oakland
  - Seattle
  - Portland
- Rail service east

West Coast Full Container Imports



West Coast Full Container Exports





# US mini-landbridge: challenges

- **West coast port congestion**
  - Real estate expensive
  - Environmental regulations constricting
  - Low efficiency
    - US west coast: 5,000 TEU/acre-yr
    - International: 15,000 TEU/acre-yr





# US mini-landbridge: challenges

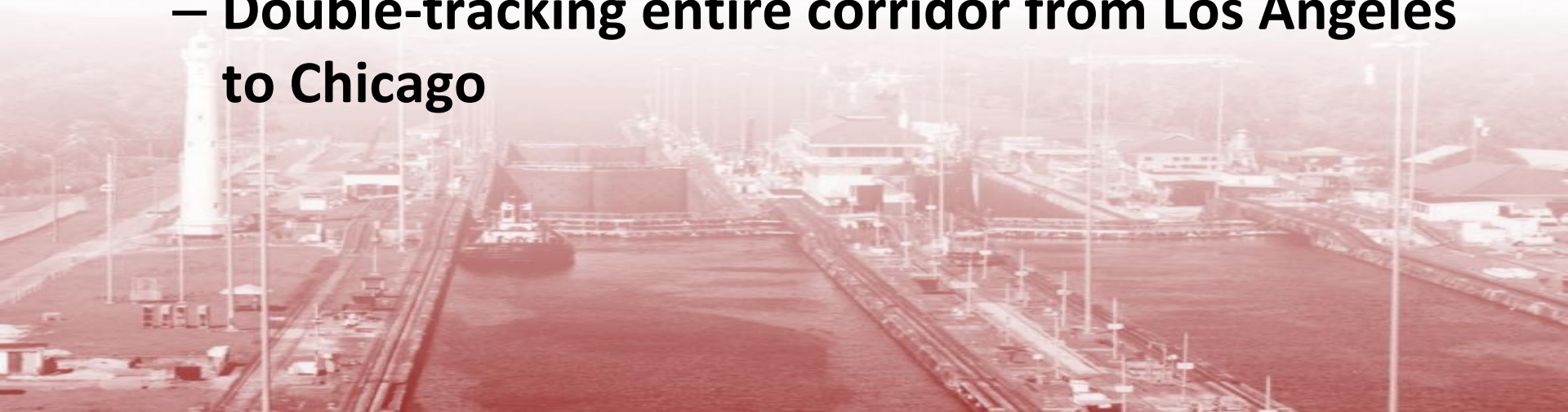
- **West coast port congestion**
  - Estimated that US west coast would have to “add a port the size of Elizabeth each year” to match port growth in China
  - Between 2001-2010, 35% expansion capacity expected (28% in north, 38% in south)
  - Expansion is estimated to keep with port demand in north, but fall short in the south
  - Shift of cargo north?





# US mini-landbridge: challenges

- **Rail congestion**
  - Containers less profitable than chemicals, coal
  - Infrastructure expensive
  - Railroad congestion backs up port
  - Double-tracking entire corridor from Los Angeles to Chicago





# Option Comparison

<u>Mini-Landbridge</u>		<u>Panama Canal (now)</u>		<u>Panama Canal (expanded)</u>		<u>Suez Canal</u>	
<b>Fleet and Vessel Particulars</b>							
Fleet size	5 vessels	Fleet size	8 vessels	Fleet size	8 vessels	Fleet size	10 vessels
Vessel size	10000 TEU	Vessel size	4800 TEU	Vessel size	10000 TEU	Vessel size	10000 TEU
Throughput	520000 TEU/yr	Throughput	249600 TEU/yr	Throughput	520000 TEU/yr	Throughput	520000 TEU/yr
<b>Opex to Operator</b>							
Cost	\$ 2,475 /TEU	Cost	\$ 1,079 /TEU	Cost	\$ 978 /TEU	Cost	\$ 1,093 /TEU
Time	17 days	Time	26 days	Time	26 days	Time	35 days
<b>Current Market Share (more generally, Asia to US east coast)</b>						<i>*All data adapted from ACP estimates</i>	
61%		38%		-		1%	





# Outlook

- Trade too large for either option alone
- Ports/rail congested; Canal under capacity
- Market will push “Panamax 2” vessels to Canal
- Free up west coast ports from turning around smaller vessels
- West coast ports have additional environmental requirements for operators







# Outlook

- **Ports/rail must be up to the challenge**
  - Improve equipment (larger cranes)
  - Improve port efficiency (logistics)
- **Current statistics imply high-value cargo is worth premium**
- **New Panama Canal likely to increase share**
- **Suez unlikely to play large role**
- **Operators win: more efficient operation**



# Thank you

## Questions?

Photo of container ship M/S Emma Maersk removed due to copyright restrictions.

See <http://www.maersk.com/NR/rdonlyres/DA9D71D3-9824-43D8-B6D2-49F50745781C/0/EMMAMÆRSK.jpg>

