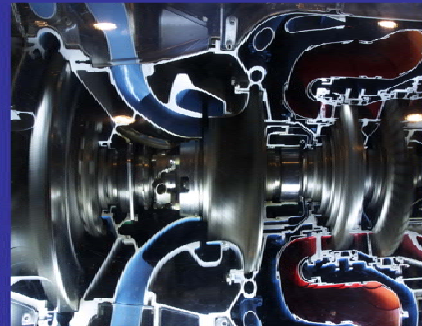


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Global Infrastructure Series



Global Supply Chain Management: New York

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Summary

- **New York in Perspective**
 - A key gateway for consumer airfreight imports
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 - Third largest US port (by TEU throughput)
 - Competing with mini-landbridge for imports
 - Slower growth than West Coast ports
 - A new wave of Suez traffic will boost growth
 - As mega-ships become more economical
- **Terminals, Services, and Connections**
 - A blend of European and Asian services
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 - Congestion – the solutions
 - \$2b investment plan
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 - Portfield distribution center project
 - Long-term



New York in Perspective

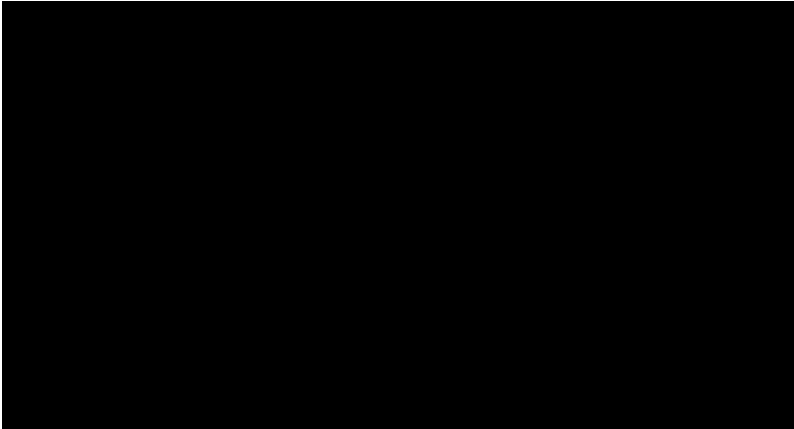
An East Coast distribution hub



Source: PANYNJ

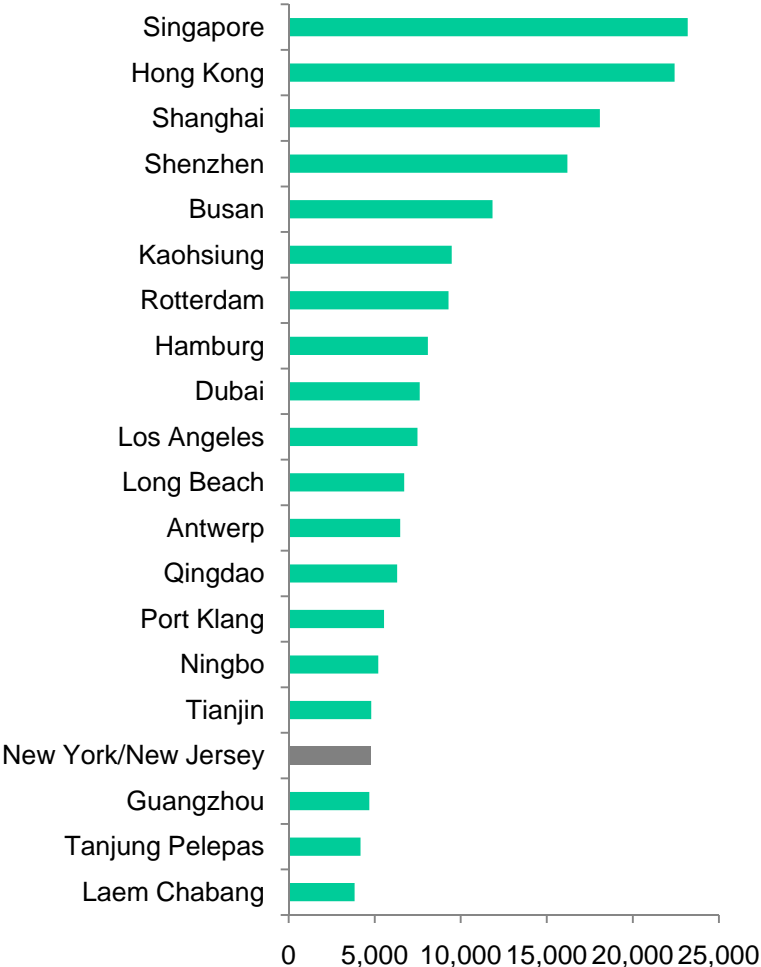
Third largest US port (by TEU throughput)

Top US Ports, by Container Volume



Source: Various

World's Largest Ports, by Container Volume

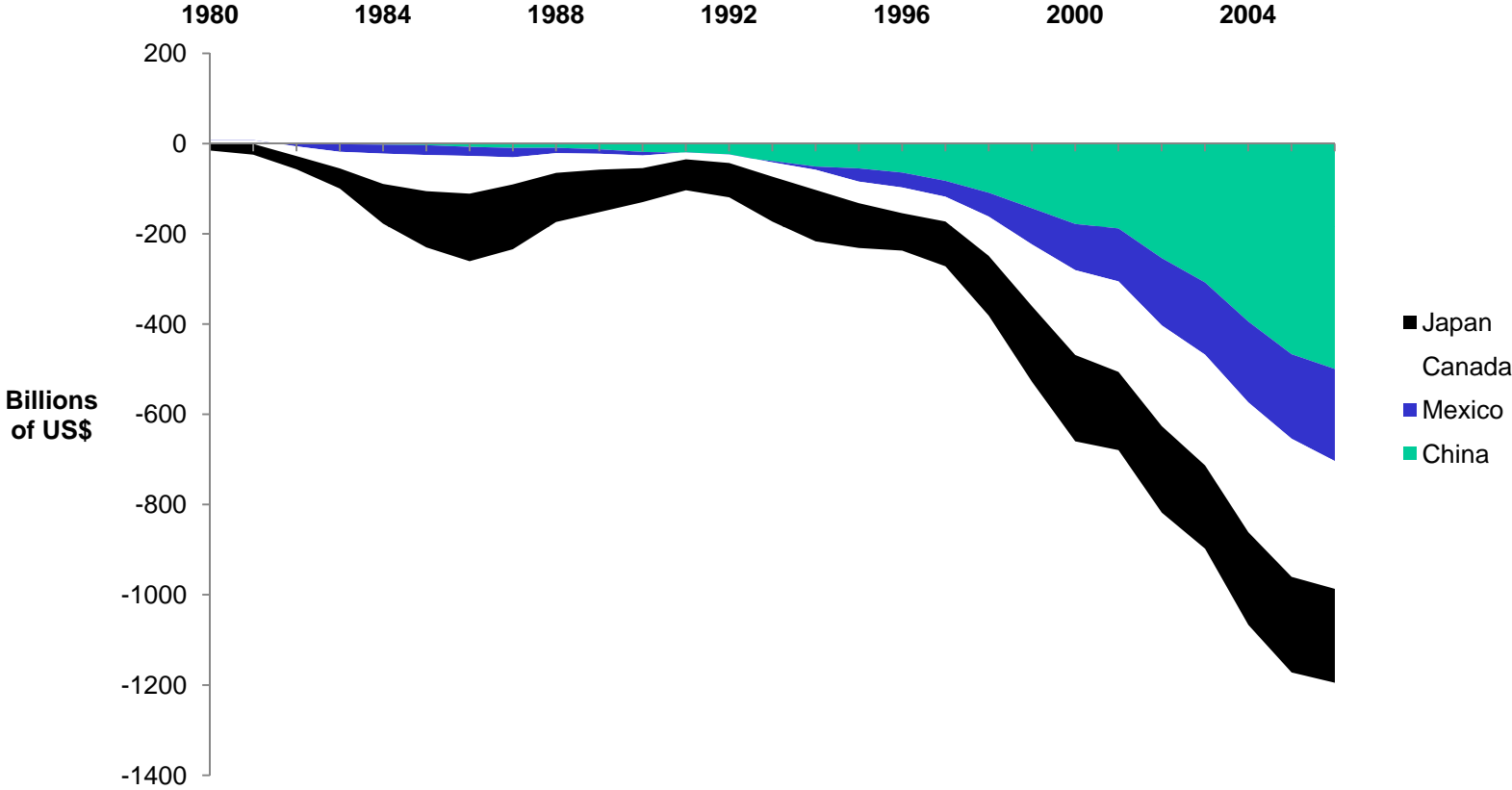


Source: Various



Competing with mini-landbridge for imports

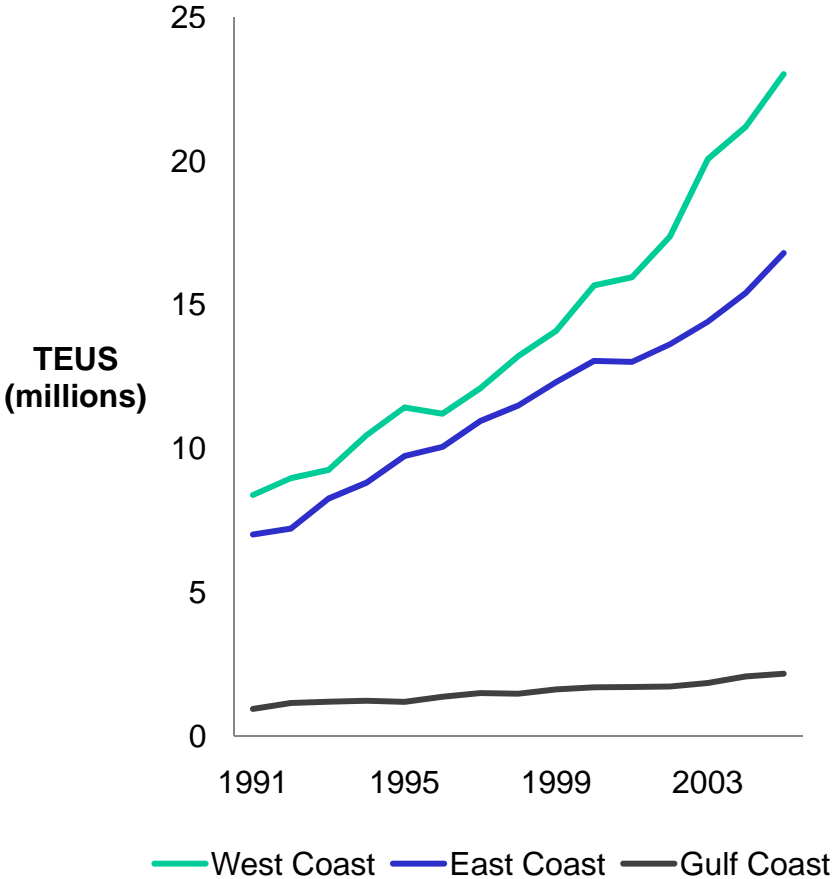
US Trade Balance by Trade Partner Over Time



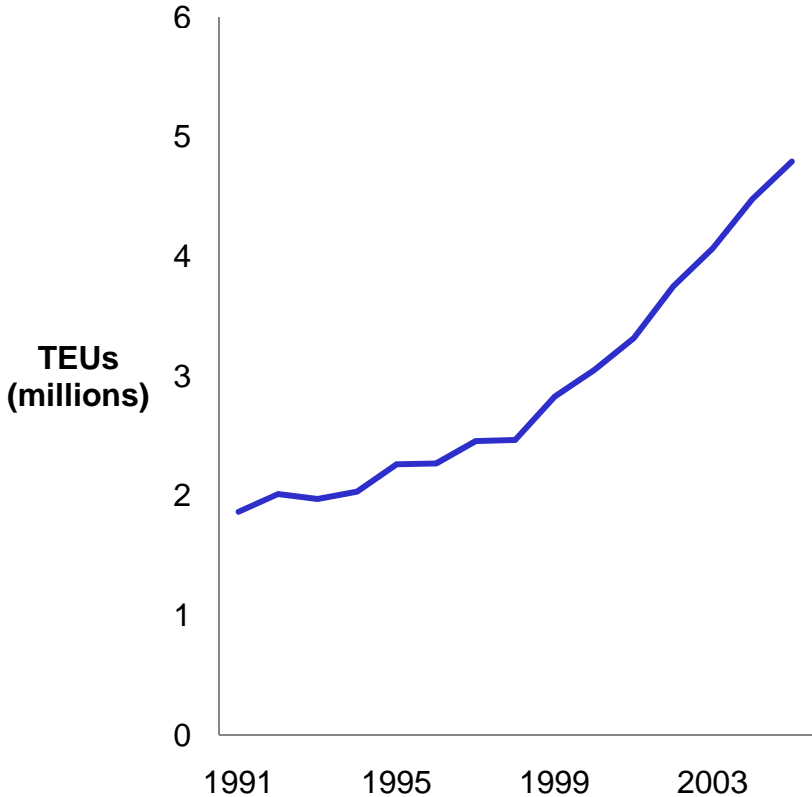
Source: Boston International analysis of Economist Intelligence Unit data

Slower growth than West Coast ports

US Maritime Containerized Export and Imports by Coast 1991-2005



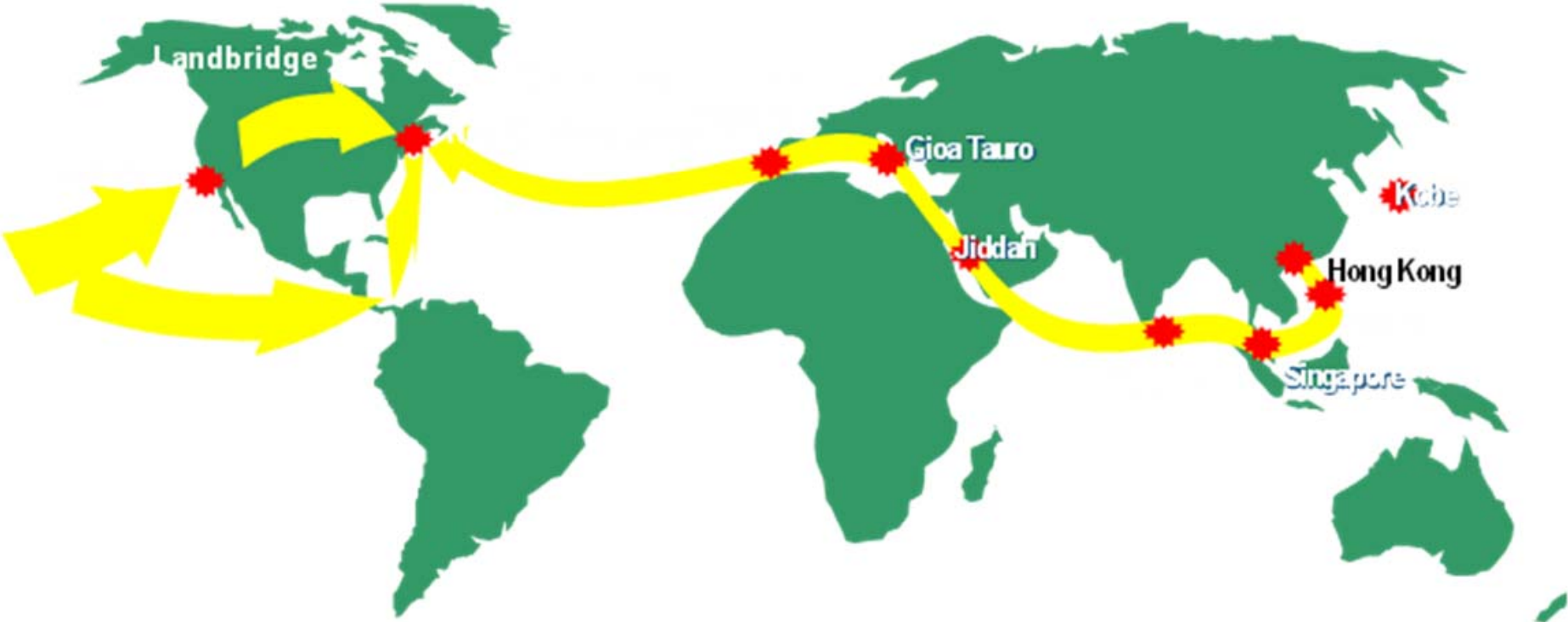
NY/NJ Container Throughput 1991-2005



Sources: Boston International, BTS, PANYNJ

A new wave of Suez traffic will boost growth

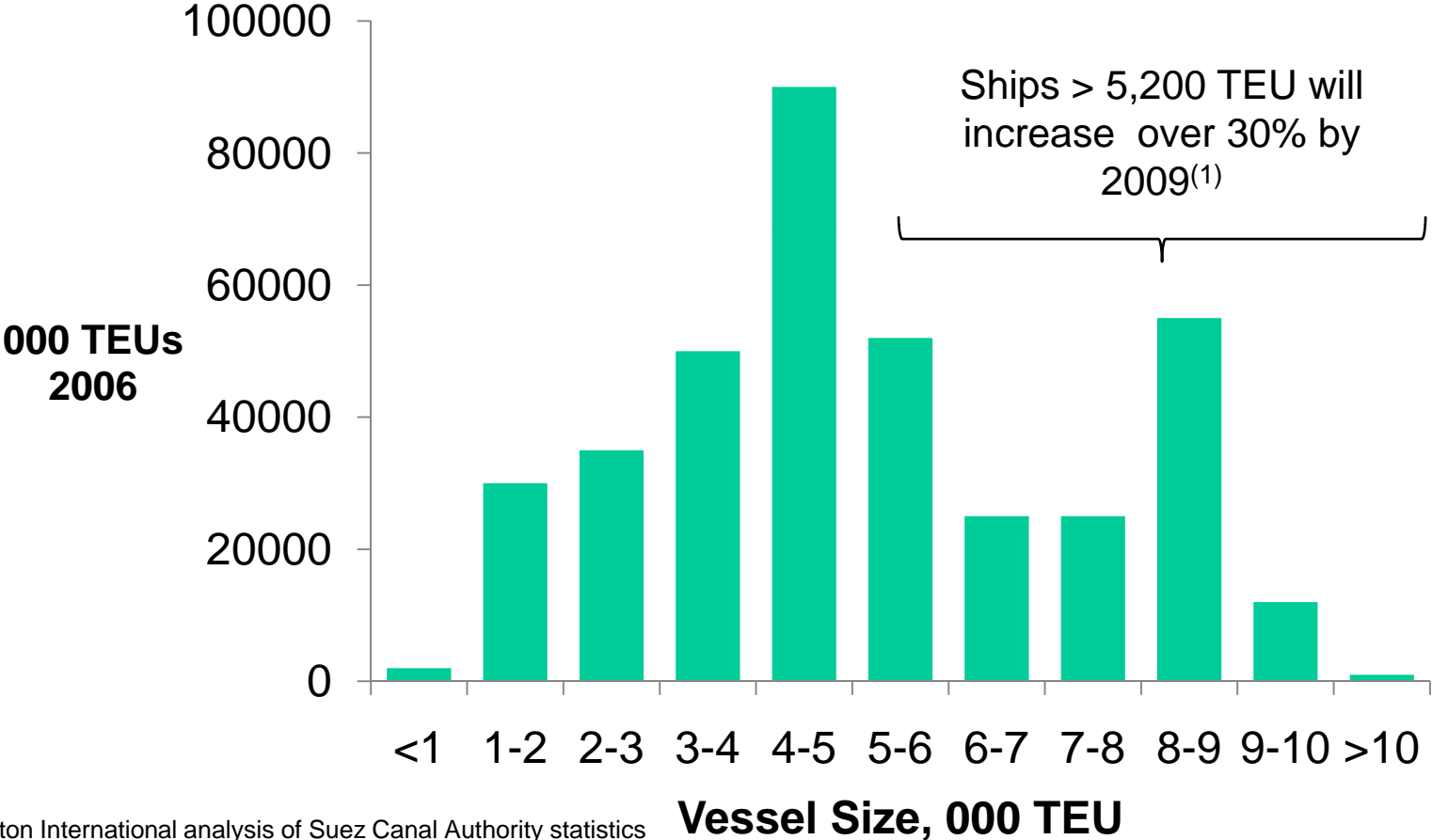
Eastern and Western Approaches to NYNJ



Source: PANYNJ

As mega-ships become more economical

Distribution of Suez Canal Transits by Size of Vessel, 2006



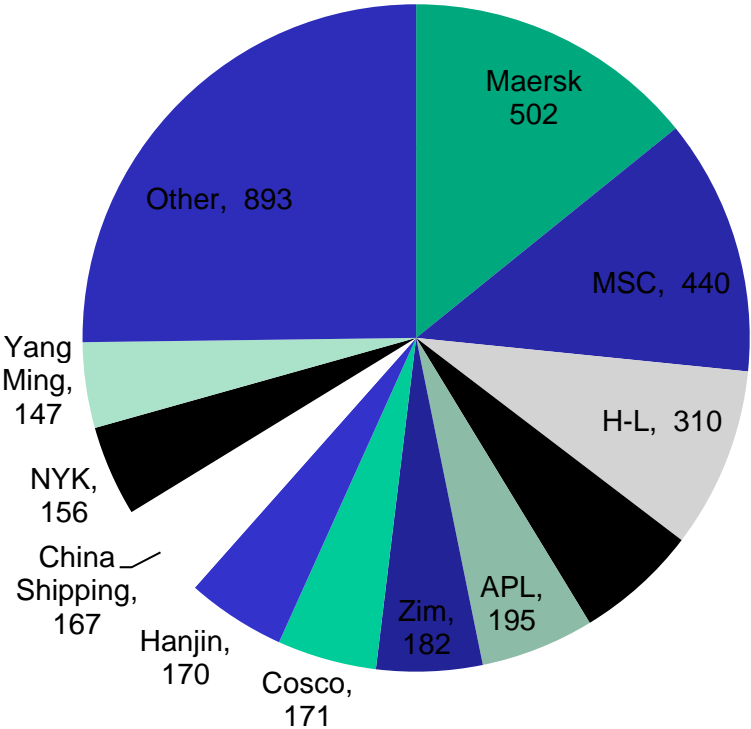
Source: Boston International analysis of Suez Canal Authority statistics
(1) Household Goods Forwarders Association of America

Terminals, Services, and Connections

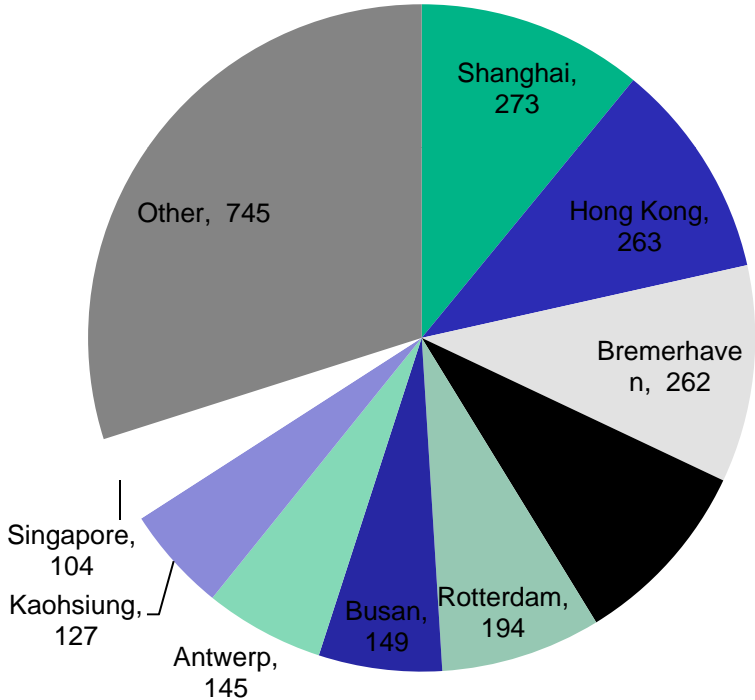


A blend of European and Asian services

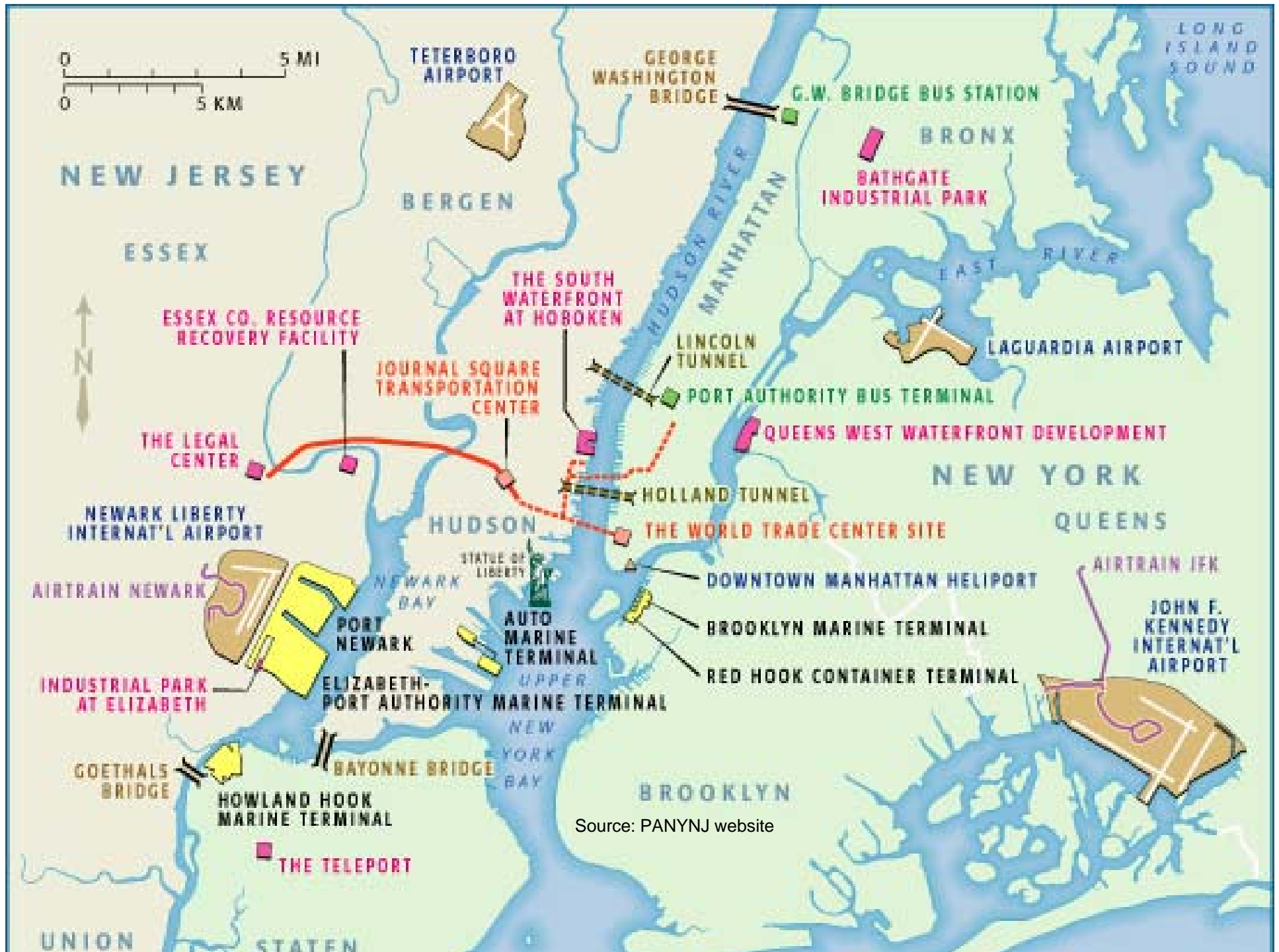
Largest Carriers Serving NYNJ Thousands of TEUs, 2007



Largest Foreign Ports Served Thousands of TEUs, 2007



Source: Boston Strategies International analysis of PANYNJ data
Note: Carrier data represents the top 90% of the market, and port data represents 68% of the market



Source: PANYNJ website

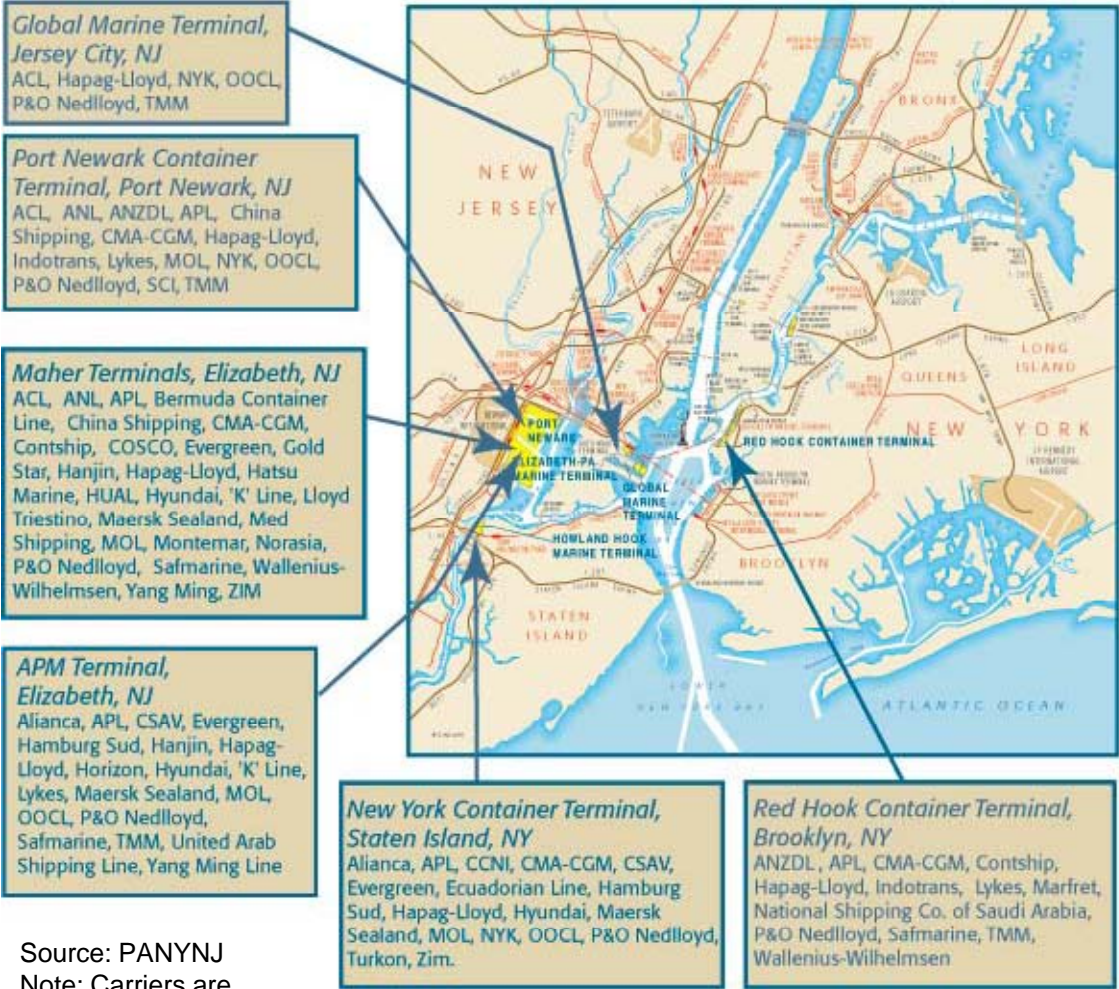
View of key cargo terminals



Source: PANYNJ

Container operators and services

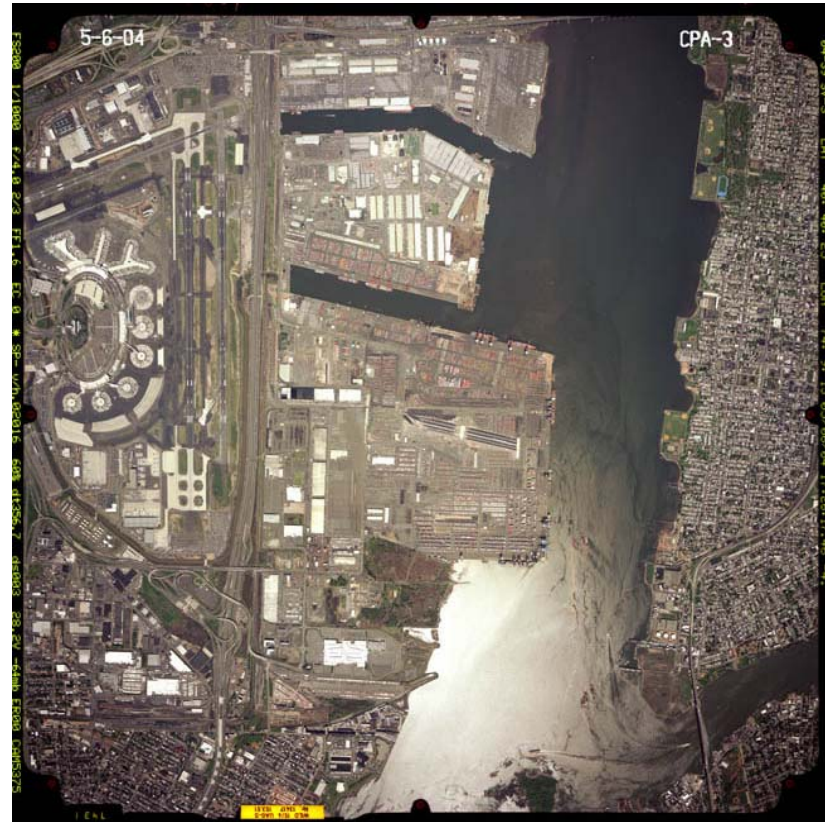
PANYNJ Container Terminals, Terminal Operators, and Container Lines



Source: PANYNJ
Note: Carriers are subject to change

Port Elizabeth terminal

- Maher and APM Terminals
- ExpressRail (on-dock-rail facility)
- >1m ft² warehouse space
- 7 DCs
- Auto preparation center
- 266 acres → 350



Source: PANYNJ



Port Newark terminal

- Operated by Ports America (AIG sub)
- Tank, box car service
- Rail terminal
- Refrig. storage space
- 2 food-grade liquid bulk facilities
- Copper rod plant
- 2 OJ blending facilities
- 2 auto prep centers
- Wallboard plant



NYCT and Red Hook terminals

- Red Hook
 - The only terminal on the East/Brooklyn side
 - 600+ Teamster jobs
 - Lease extended
- NYCT
 - Transfer of Orient Overseas lease to a teachers' pension fund

Red Hook



NYCT



Rail access in Northern Jersey



Daily intermodal connections to all gateways



Source: PANYNJ

Road access to Mid-Atlantic, West, & Canada

New York Road Network



Congestion and Capacity Issues

Highway delays are bad, but not the worst

Estimated Annual Delay Hours at Major Highway Bottlenecks for Trucks

Annual Delay (hrs)

| Intersection | City |
|---------------------|-------------|
| I-405 at I-605 | Los Angeles |
| SR-60 at I-605 | Los Angeles |
| I-75 at I-285 | Atlanta |
| I-55 at Pulaski | Chicago |
| I-80 at I-580/I-880 | Oakland |
| I-285 at I-85 | Atlanta |
| I-90/94 at I-290 | Chicago |
| I-80 at I-94 split | Chicago |
| I-15 at I-10 | Los Angeles |
| I-880 at SR-238 | Oakland |
| I-90 at I-290 | Buffalo |
| I-93 at I-95 | Boston |
| I-77 at I-277 | Charlotte |
| I-90 at I-94 split | Chicago |
| I-17 at I-10 | Phoenix |
| I-710 at I-105 | Los Angeles |
| SR-315 at I-70 | Columbus |
| I-75 at I-74 | Cincinnati |
| I-20 at I-285 | Atlanta |
| I-75 at I-85 | Atlanta |
| SR-134 at SR-2 | Los Angeles |
| I-290 at I-355 | Chicago |
| I-93 at I-90 | Boston |

Source: FBL Report



Congestion in airfreight

- Delays up by 30% in 2007
- Only 59% of flights were on time in July 2007
 - Weather accounted for 62% of the delay minutes in the NY metro area; the other 38% can be attributed to congestion.
- Causes
 - Increases in traffic
 - Increase in mix of business jet slots
 - Deferred capital expansion programs

JFK Airport



Congestion – the solutions

- Adding capacity
 - Accelerating the NY/NJ Airspace redesign Project
- Leveraging technology to increase throughput
 - Utilizing available technology to reduce spacing on final approach
 - Expanding the use of Area Navigation (RNAV) procedures
 - Installing Omnidirectional Airport Lighting to aid arrival in hazy conditions
- Improving operating practices
 - Utilizing multiple runways at EWR and JFK
 - Improving traffic flows between runways and gates
 - Realigning/relocating arrival, departure and overflight routes to further facilitate deconfliction
 - Creating new routes where practical
- Adjusting regulatory frameworks
 - Eliminating miles-in-trail departure restrictions to airports >500 miles away
 - Utilizing "capping" and "tunneling" techniques to expedite departures
 - Congestion pricing

Source: Delta testimony to Committee on Senate Commerce, Science and Transportation Subcommittee on Aviation Operations, Safety and Security, September 2007



\$2b investment plan

- Recently completed
 - NYCT berth expansion
 - Port Jersey 38'→41'
 - Howland Hook rail connections
- Ongoing
 - \$530m on-dock rail
 - \$36m reconstruction of Port Newark Berths 8 & 10
- \$1.9b of investment over next 10 years

PANYNJ 2006-2016 Capital Program

| Program | \$ Millions |
|---|--------------|
| Dredging | 679 |
| Marine Terminal Development and Redevelopment | 299 |
| Rail Cargo Infrastructure | 237 |
| Port Roadway Capacity and Safety | 227 |
| State of Good Repair | 223 |
| Off-site and Inland Access | 190 |
| Security | 73 |
| TOTAL | 1,928 |

Source: PANYNJ

Other projects underway

- Dredging (50' overall)
 - Kill van Kull 40'→45'
 - Port Jersey 41'→50'
- Port Newark and Port Elizabeth expansion
- North Avenue Connector
- ExpressRail double sidings
- Rail link capacity expansions
 - Bayline Yard expansion
 - Port Newark interlocking
 - Chemical Coast Line
 - Lehigh Line
 - P&H Branch



Portfield distribution center project



Source: PANYNJ

Long-term

- Raising the Bayonne Bridge
 - Rebuild roadway
 - Jack up the arch
 - Build a new bridge
 - \$1b
 - 10-15 years
- Cross-harbor rail tunnel Jersey City-Brooklyn
 - \$3-5b
 - Environmental issues
 - Environmental study underway

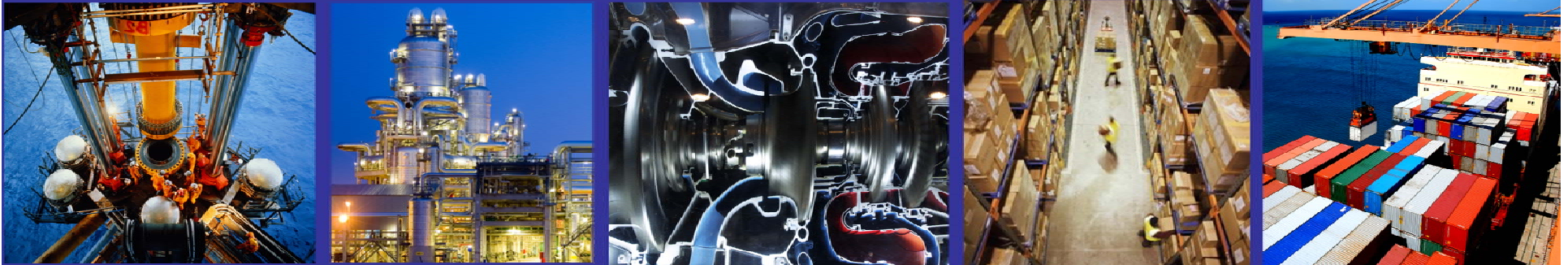


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Boston Strategies International is a global management consulting firm that helps market leaders achieve competitive advantage through supply chain management through:

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- **Supplier Enablement** that facilitates global growth and local content requirements
- **Supply Chain Optimization** that reduces project and life cycle costs



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