

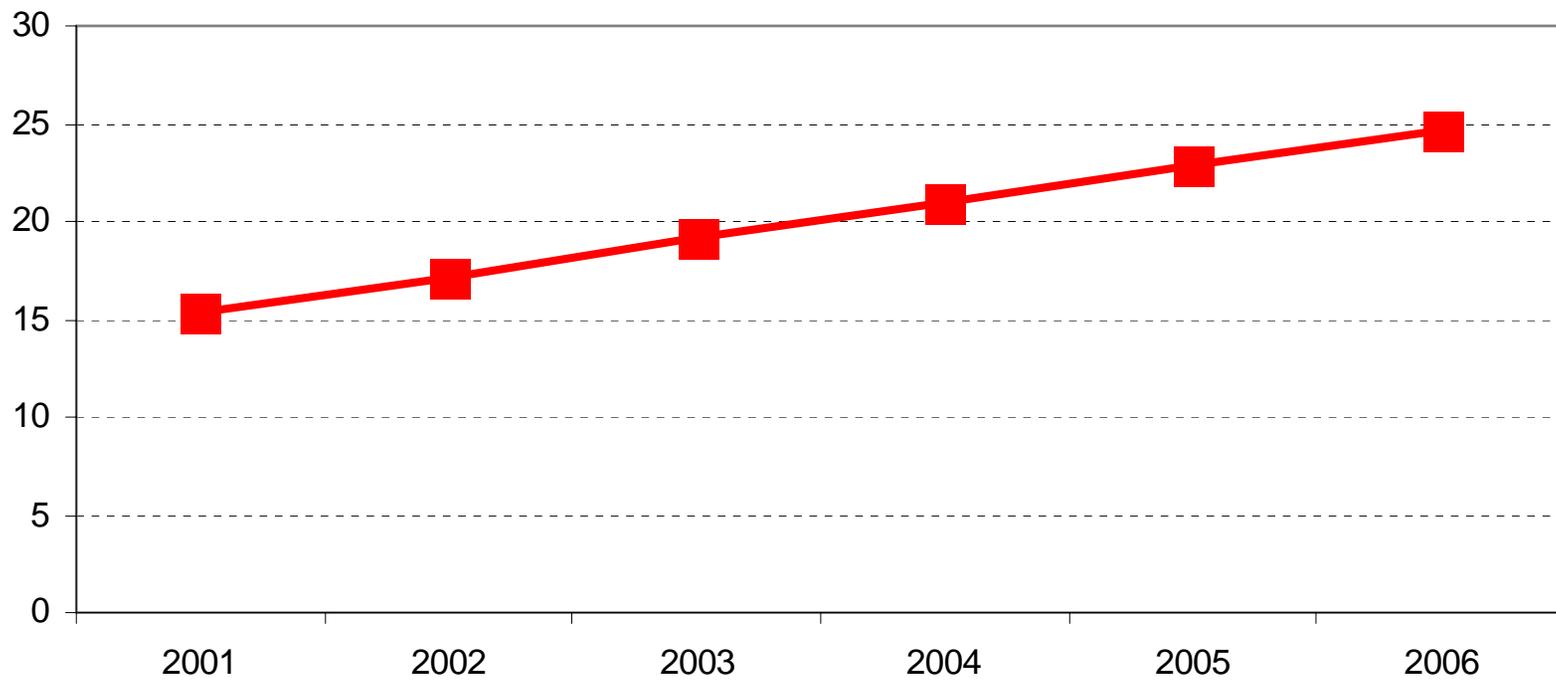
OPPORTUNITIES FOR SHORTSEA SHIPPING OF CONTAINERS IN BRITISH COLUMBIA'S LOWER MAINLAND

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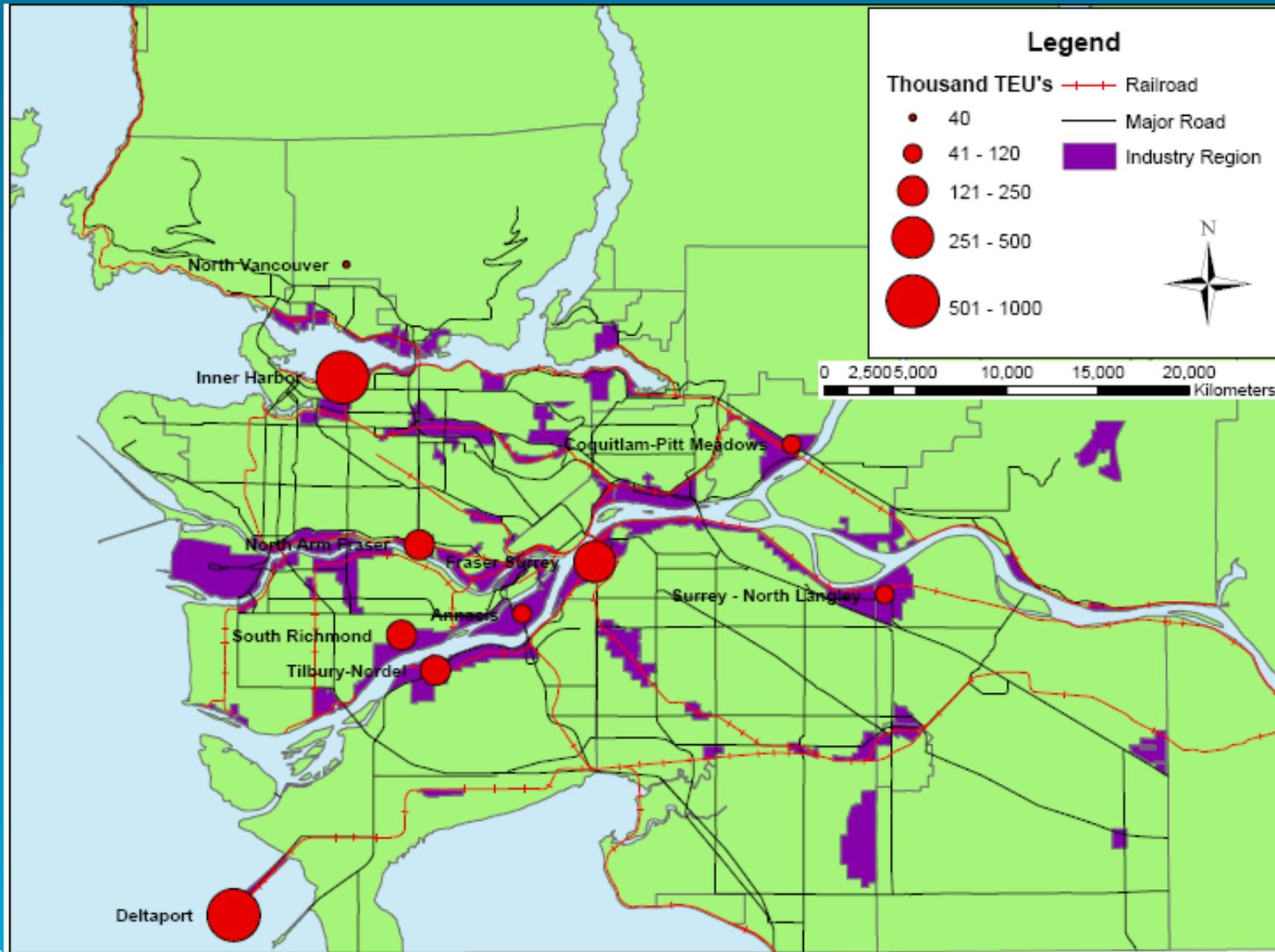
November 7, 2007

- **Review of current container logistics issues in the Lower Mainland.**
- **System demand, costs, and competitive factors.**
- **Impact on the potential for a viable shortsea container shipping service in the Lower Mainland.**
- **Critical review of previous studies**

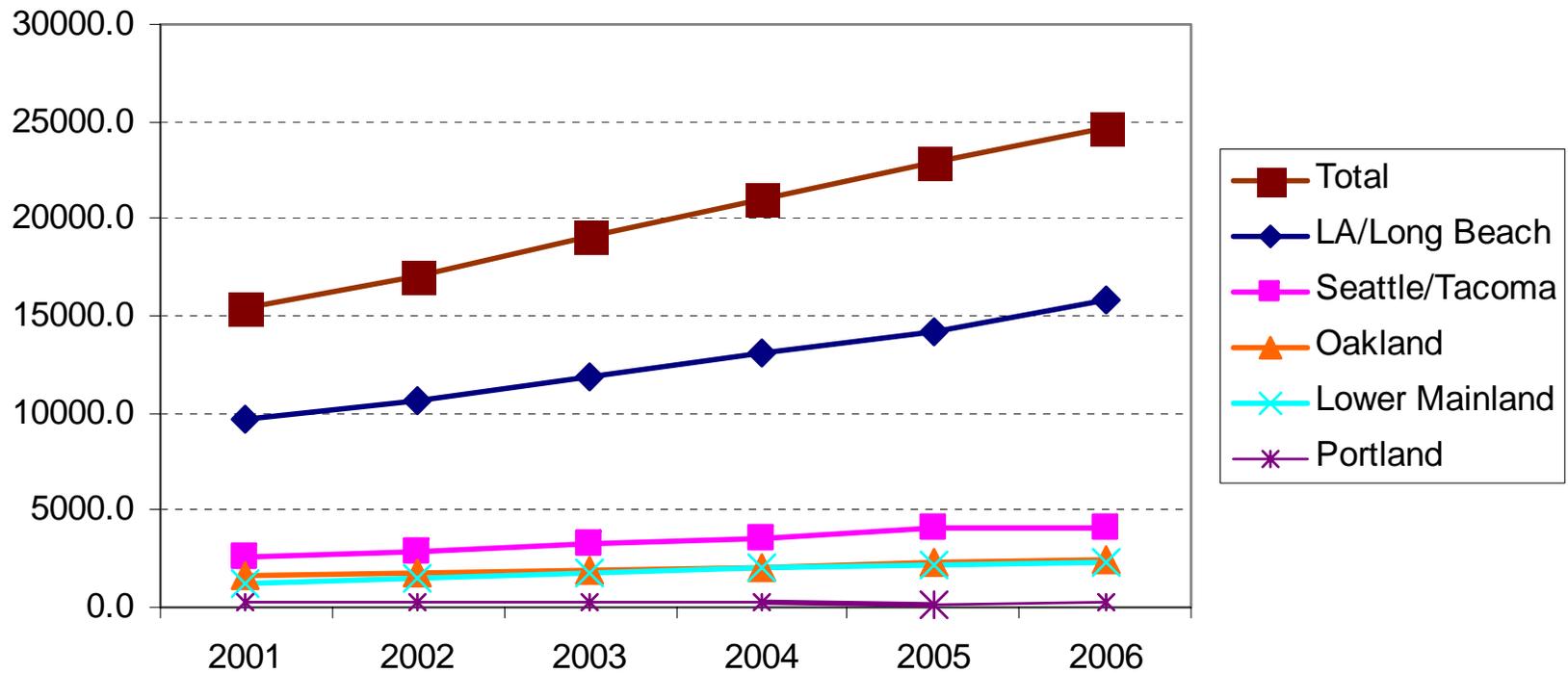
West Coast Ports Total Container Shipments 2000-2006 (Million TEU's)



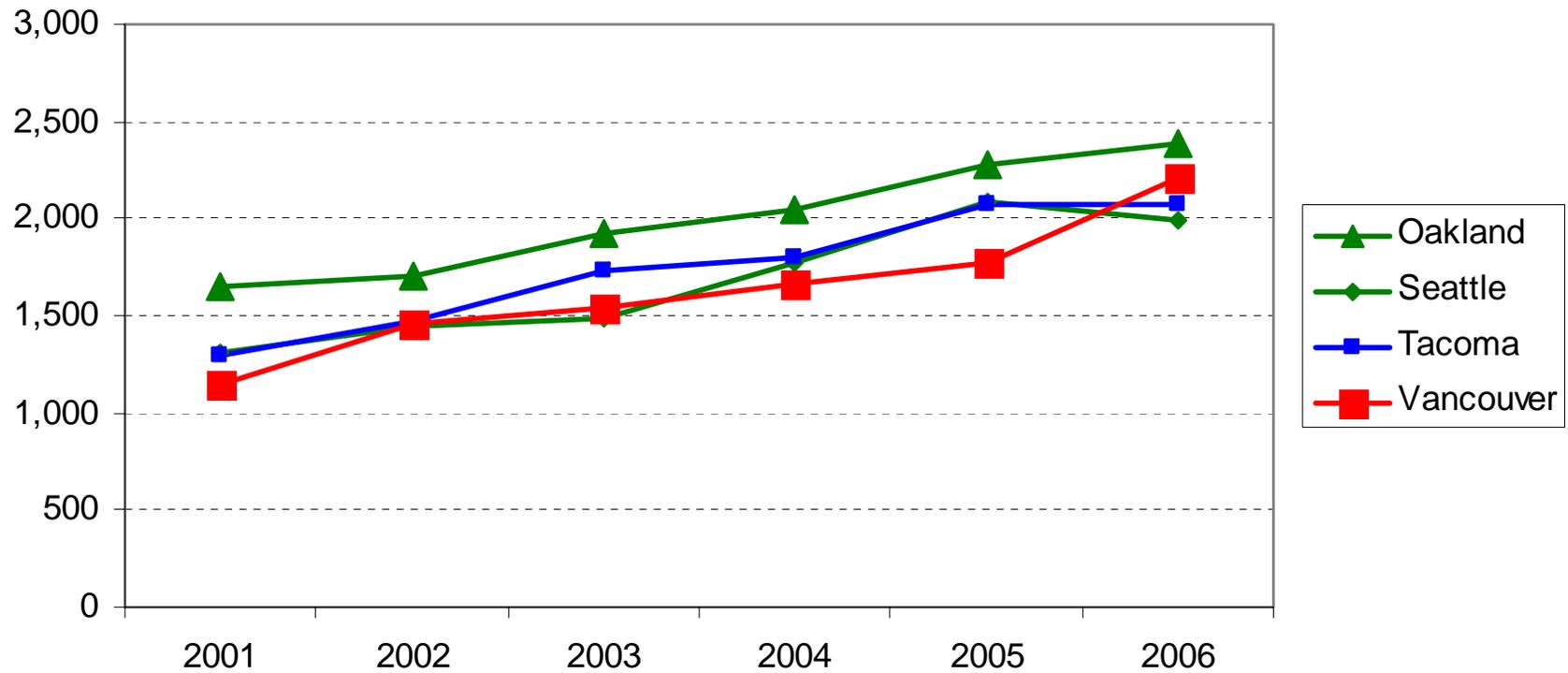
Lower Mainland Container Activity



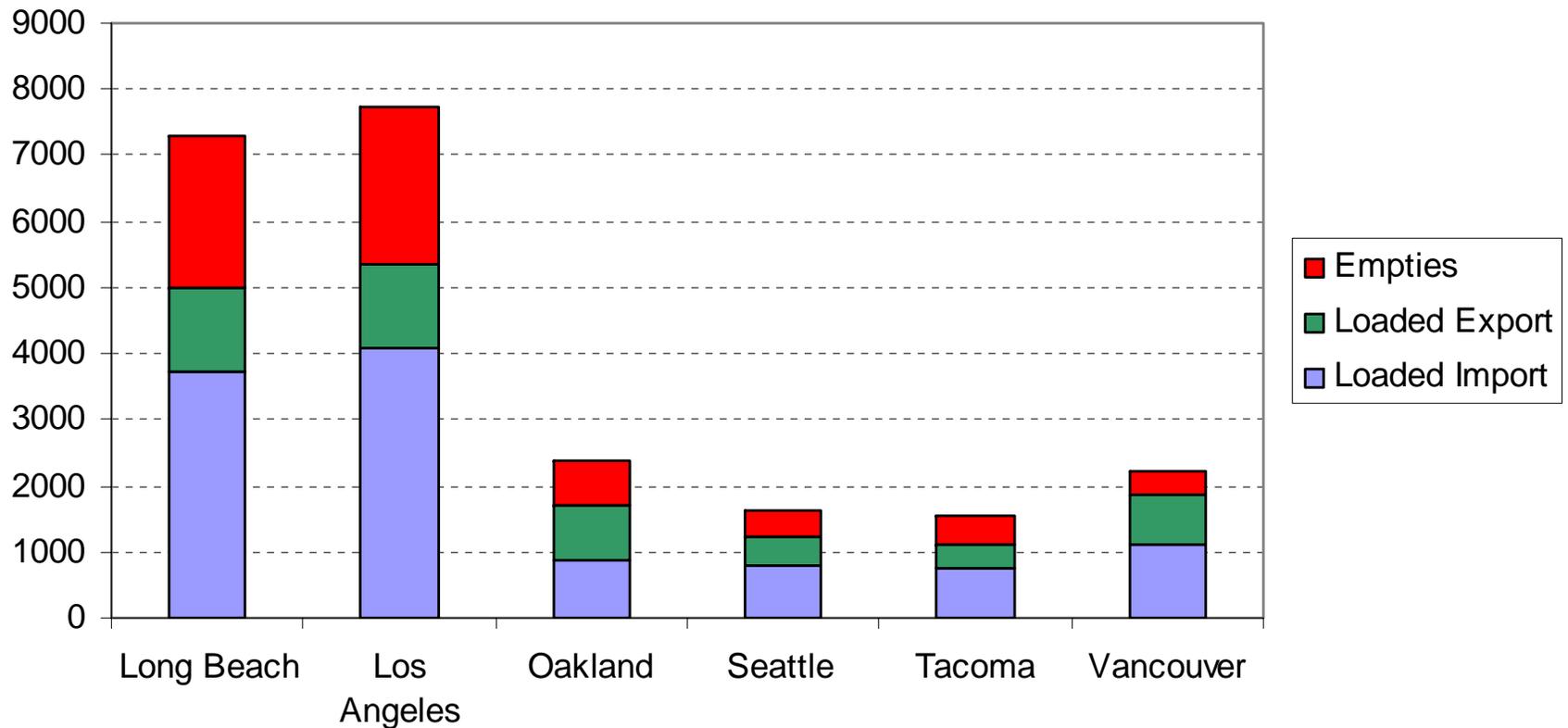
West Coast Ports Total Container Shipments 2000-2005 (Thousand TEU's)



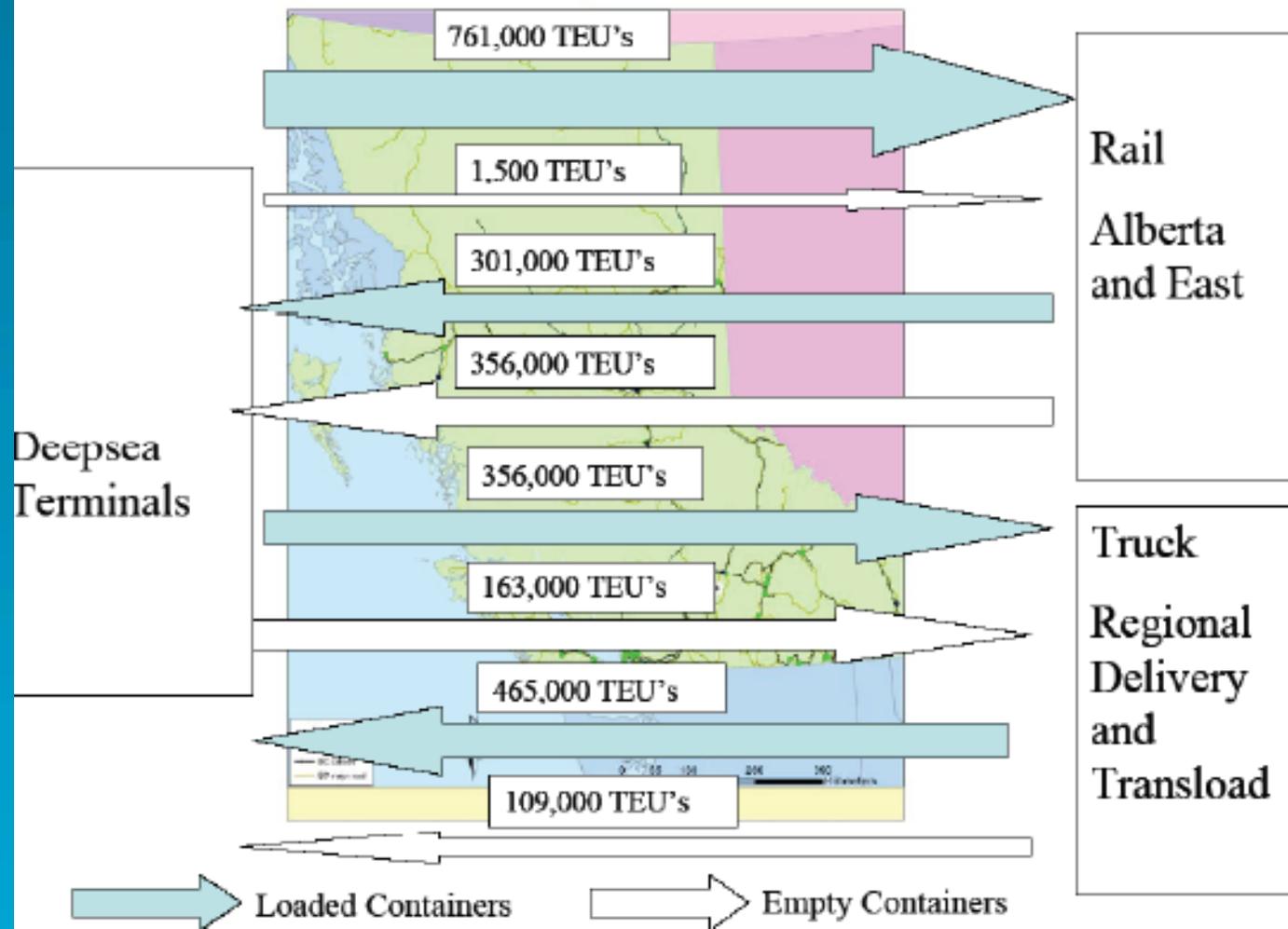
Second Tier West Coast Ports Total Container Shipments 2000-2006 (Thousand TEU's)



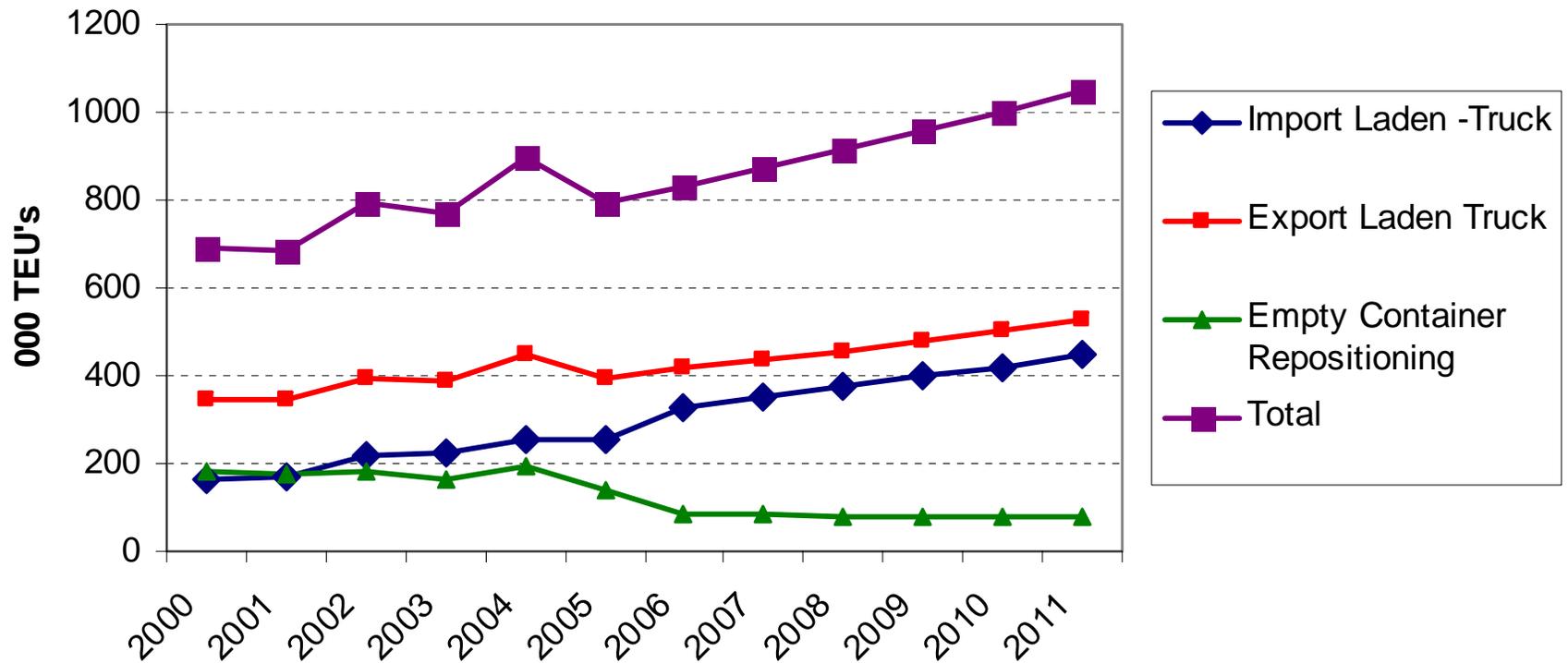
Major West Coast Ports International Container Balances 2006 (000 TEU's)



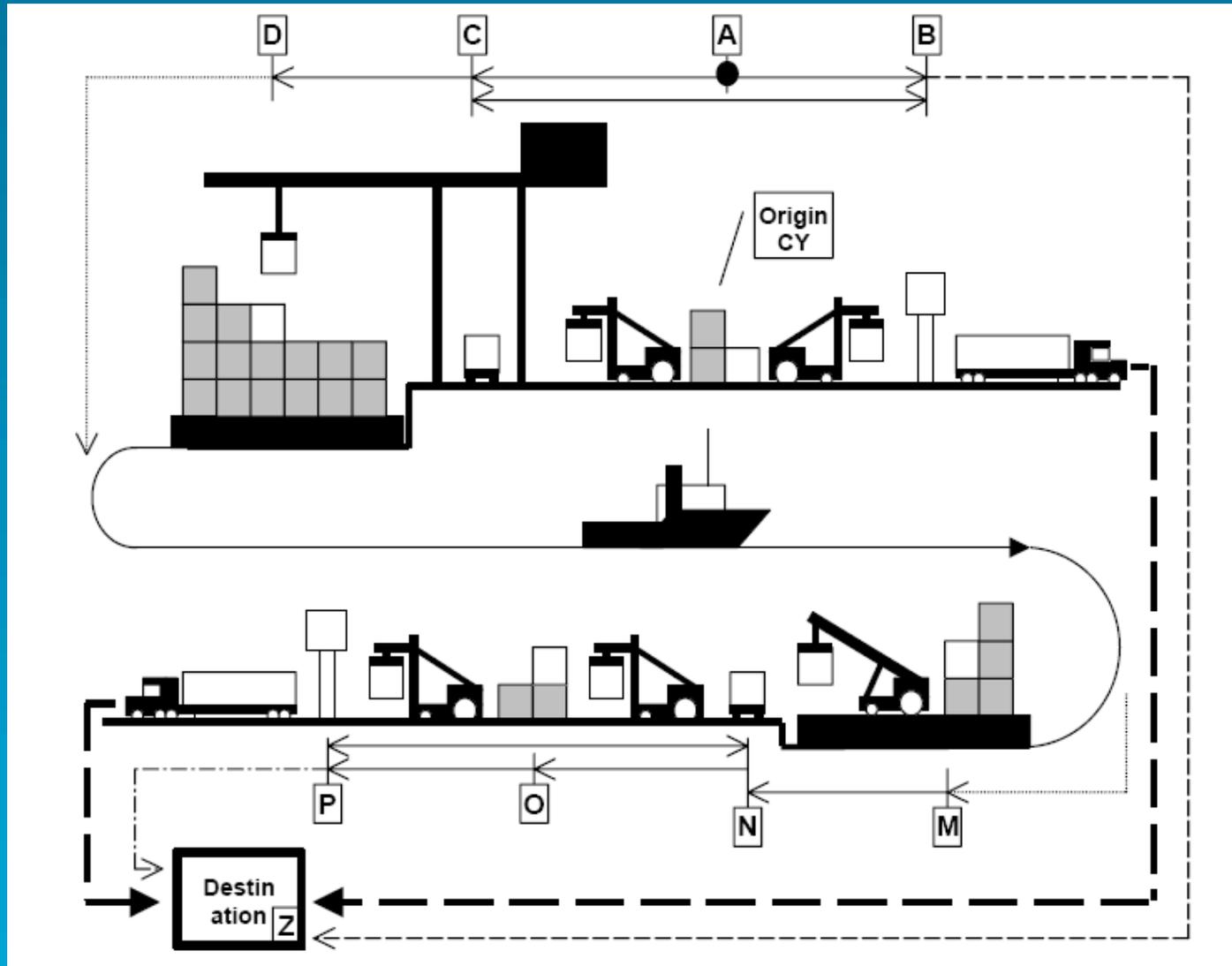
Vancouver Port Terminals Laden and Empty Container Flows 2006



Regional Container Movements Historical and Forecast



- **Roll On/Roll Off (RO/RO)**
- **Load On/Load Off (LO/LO)**



Barging Cost Summary Per Container* (From Inner Harbour)

Coast 2000 or Tilbury	\$
A>D Deep-sea terminal	
Stevedoring and terminal costs ex-CY	\$123.35
D>M En-route barging costs	
Deep-sea terminal to Coast/Tilbury	\$62.50
M>O River Terminal	
Handling and terminal costs to-CY	\$52.78
O>P River Terminal	
CY to Out-gate	\$50.00
Total	\$288.63
Deep-sea gate charge credit	\$57.90
Total net of gate charge credit	\$230.73

* Net of infrastructure contributions.

Barging Cost Summary Per Container* (From Inner Harbour)

Coast 2000 or Tilbury Total (Net of Gate Charge Credit)	\$230.73
Pitt Meadows/Port Kells Extra barging cost	\$15.00
Total	\$245.73
Fraser Surrey Docks (as river terminal) Extra barging cost	\$5.00
Vessel stevedoring	\$55.34
Terminal throughput (as deepsea)	\$322.00
Total	\$382.34
Less river terminal costs	\$72.78
Adjusted Total	\$309.56
Total	\$540.29

* Net of infrastructure contributions.

- **Key variable in competitiveness of Shortsea Shipping**
- **Rates to Owner/Operators regulated under Port Authority Licensing system**

Shortsea vs Drayage Costs per One Way Container Move* (From Inner Harbour)

	LO/LO	Drayage (MOA Rates)
Coast 2000 or Tilbury	\$	
A>D Deep-sea terminal		
Stevedoring and terminal costs ex-CY	\$123.35	
D>M En-route barging costs		
Deep-sea terminal to Coast/Tilbury	\$62.50	
M>O River Terminal		
Handling and terminal costs to-CY	\$52.78	
O>P River Terminal		
CY to Out-gate	\$50.00	
Total	\$288.63	\$157.00
Deep-sea gate charge credit	\$57.90	
Total net of gate charge credit	\$230.73	\$157.00
Drayage	\$143.00	
Total	\$373.73	

*Excludes terminal capital costs

- **The RO/RO option is estimated to cost in the neighbourhood of \$175 for a similar trip (Inner Harbour to Coast 2000), net of terminal charges.**
- **RO/RO river terminal costs would be around \$20.**
- **Estimation of handling costs at the on-dock terminals is impossible because there are no precedents under West Coast ILWU agreements.**

- **Shortsea shipping of containers by barge is still more expensive than drayage.**
- **If capital is required for terminal capacity on the river, shortsea costs are even higher.**
- **Under current rates, drayage at either end of a shortsea trip makes it impossible for shortsea shipping to compete.**
- **Short term market potential is limited to sites in close proximity to the river.**

- **Shippers are still motivated to examine SSS as an alternative due to perceptions of unreliability in the drayage sector.**
- **In the short term regional environmental and social benefits are small, but local impacts may be significant.**
- **A demonstration project would be valuable in building public support.**

- **Use of existing gantry cranes limits access to available berth windows.**
- **Developing capacity dedicated to barge traffic would require capital investment and dedication of a portion of the terminal footprint.**

- **Transit time to/from on-dock terminals – function of trip frequency and handling delays.**
- **Ability to meet tight time windows for pickup/delivery of containers.**

- **Requires sufficient concentration of container-handling facilities adjacent to river terminal.**

- **Optimal sites for eliminating drayage costs are Fraser Surrey and Fraser Richmond due to existing concentrations of container handling facilities.**

- **The key requirement is access to the on-dock container terminals, and development of business and operating processes by the terminal operator to accommodate the**
- **traffic.**
- **Compliance with the on-dock terminal requirements (ERD's, etc.) requires close coordination between shippers, transload warehouses, and shipping lines.**
- **Would require participation by members of each of these groups.**

- **Potential long term environmental and congestion reduction benefits are significant enough to justify financial assistance for a pilot by government agencies and the Port Authorities.**
- **The most effective means would be some form of subsidization of operations for a defined period.**
- **Investment in capital assets would be premature until viability has been demonstrated.**

- **Further research to identify innovative methods of handling containers shipped by barge should be undertaken.**