

Container Terminal Fluidity – Adjusting to the New Normal

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1. Abstract

The surge in demand for imports of consumer goods which resulted from the COVID pandemic has highlighted structural problems in container logistics at North American ports. The Southern California ports of Los Angeles and Long Beach have been most affected due to terminal congestion from long dwell times for both import and empty containers which prevents the efficient flow of containers through the facility. Several initiatives have been undertaken on an emergency basis to address the backlog:

- The Ports announced a Container Excess Dwell Fee in October 2021 to provide an incentive for moving import containers off the terminal promptly. The threat of the fees has been effective in reducing the number of long-dwelling import containers stuck on the docks and the fee has not actually been implemented.
- Options to move empty containers off the terminals, including moving empty containers to near-dock facilities; use off-peak hours for empty returns; and the use of “sweeper vessels” by the shipping lines to pick up empty containers.

The Port of Vancouver faced similar congestion problems in 2005 and 2006. In response, container terminals at the Port of Vancouver permanently adopted policies like those being implemented on an emergency basis at the Ports of Los Angeles and Long Beach, including shortened free time on the terminal for both import and export containers; elimination of empty container storage on terminals; and hefty fees for containers dwelling too long on the terminal.

These policies resulted in rapid changes to container logistics in the Lower Mainland, including a short-term surge in the development of off-dock storage facilities and major impacts on the efficiency of drayage operations due to inefficiencies in trip patterns. This was a major factor in the port trucking strike which took place at the Port of Vancouver in 2005, and stability in the

drayage sector was not achieved until both drayage firms and the port terminals' turn times became tightly regulated following a subsequent strike in 2014. In the longer term, the high storage fees charged by the port terminals and higher drayage costs resulted in innovations in logistics support facilities which increased the efficiency of trip patterns and the productivity of chassis operations.

The Port of Vancouver example suggests that permanent policies to reduce the dwell time of containers at port terminals are an effective means of improving the throughput capacity of the limited port land base. This paper will examine the Vancouver example to explore the extent to which the private sector could adapt to the new paradigm, and the potential applicability of this experience to the Ports of Long Beach and Los Angeles.

2 Previous Studies

Empty container logistics in Southern California have been examined in several studies. The Tioga Group led a study for the Gateway Cities Council of Government, the Port of Long Beach and the Southern California Association of Governments in 2002 (Tioga Group, 2002). This study examined issues related to the movement of empty containers, including the potential for off-dock storage. It concluded that in the short term the use of off-dock storage faced several obstacles including increased storage and drayage costs to shipping lines and detour costs for truckers. It also noted that current chassis logistics practices which dictated a rapid return of chassis to container terminals also limited the attractiveness of off-dock storage.

Another paper dealing with off-dock empty container storage in Southern California was published in 2003 (Hanh Le-Griffin, 2003). It also identified the impact of additional storage and delivery costs, and shipping lines' requirements for rapid return of chassis to the terminal as obstacles. The chronic imbalance between import and export shipments means that the number of empty containers shipped back to Asia greatly exceeds the number reused for exports. Consequently most empty containers have to be returned to the terminals for repositioning back to Asia, and the use of off-dock storage would increase costs with no immediate advantage. In the longer term the paper suggests that shipping lines may be more willing to consider off-dock storage if increased traffic levels result in increased costs and congestion at on-dock container terminals. (Hanh Le-Griffin 2003 p. 24.)

Impacts of off-dock storage at the Port of Vancouver were analysed in a paper by Philip Davies (Davies, 2006). The paper found that at a system level the choice seems to be a simple trade-off between increased productivity at the port terminals and increased trucking and off-dock facility costs. However, the inability to rapidly adjust institutional factors – particularly the rate structure for terminal charges and drayage rates - prevented effective implementation. In the case of drayage rates, the implementation of off-dock storage was a contributing factor in a dispute which disrupted port operations in the Lower Mainland for five weeks. This disruption had impacts on shippers and carriers far greater than the incremental efficiencies to be gained from off-dock storage, at least in the short term.

A 2015 paper on Port Congestion and Drayage (Davies and Kieran, 2015) highlighted the impact of “densification” of port container terminals on the drayage sector and the short- and long-term responses of the logistics system to higher drayage costs. Increased drayage costs provided the motivation for rationalization of container logistics in BC’s Lower Mainland, including cooperation among import and export shippers to expand the use of “triangulation” to reduce empty truck trips and deployment of container-handling equipment at both import distribution and export transload warehouses to increase the efficiency of chassis utilization and throughput on firms’ limited land base. A model was developed to analyse the impact of “peel-off” and “dray-off” operations at Southern California port terminals on drayage efficiency. The study found that the use of these options resulted in higher drayage costs.

3 Container Dwell Times and Port Productivity

In an environment of scarcity of suitable land for development of port terminals, land productivity is a key determinant of achievable port capacity. Land productivity is typically measured in throughput (TEUs) per acre of total terminal land area.

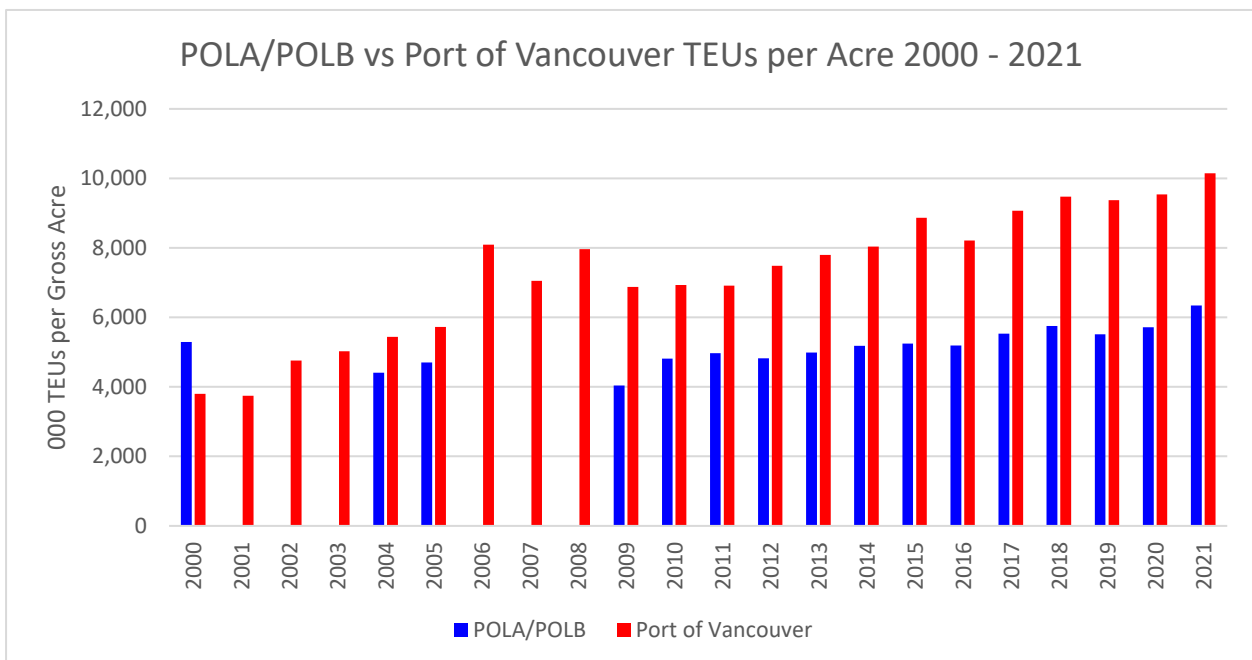
Land productivity has been a key focus of port strategy at the Port of Vancouver due to the limited availability of suitable sites for container terminal development. Reduction of dwell times for containers at port terminals has been a key strategy for maximizing throughput. Dwell time is the time that a container sits at a marine terminal. For loaded import containers, it is the time between unloading from the vessel and leaving the terminal. For loaded export containers, it is the time between receipt of the container at the terminal and loading onto the vessel. At most North

American ports, the volume of loaded imports exceeds that of loaded exports and empty containers are typically stored on the terminal to facilitate loading to vessels for repositioning. Consequently, the dwell time of empty containers often substantially exceeds that of loaded imports and exports.

Port authorities and/or terminal operators influence dwell times through financial penalties. These include:

- Demurrage: A daily charge per container by containers which remain on the terminal longer than the free time allowed. “Free time” is the period during which containers are allowed on terminal without demurrage charges being incurred either before loading to or after unloading a vessel. Terminal operators attempt to reduce dwell times either by reducing free time or increasing demurrage charges (or both).
- Storage charges for empty containers which remain on the terminal longer than the designated free time. Container storage is the service of providing a space in the storage area for empty containers in idle status.

Terminal operators at the Port of Vancouver have been very aggressive in the use of these charges to reduce dwell times since 2006. The success of these policies in increasing land productivity at Port of Vancouver container terminals is shown in the figure below.



In 2021, average land productivity reached over 10,000 TEUs per gross acre. In comparison, land productivity at Port of Long Beach and Port of Los Angeles terminals is estimated at about 6,000 TEU's per gross acre for the same year. Land productivity at the Port of Vancouver increased by 167% from 2000 to 2021; at the Ports of Long Beach and Los Angeles, land productivity increased by only 20% over the same period.

4 Dwell Time Reduction Strategies at the Port of Vancouver

The main impetus for reductions in dwell times at the port of Vancouver came from the terminal operators. Problems of terminal capacity have been exacerbated by periodic rail service problems since early 2004. Congestion reached a crisis level at Deltaport in January 2005. The terminal operator (TSI) declared force majeure due to inadequate rail capacity to clear a backlog of 5,000 import containers off the terminal. A 25% reduction of import traffic was imposed on February 28 to clear the backlog. Subsequently, TSI implemented several changes in terminal procedures to maintain fluidity:

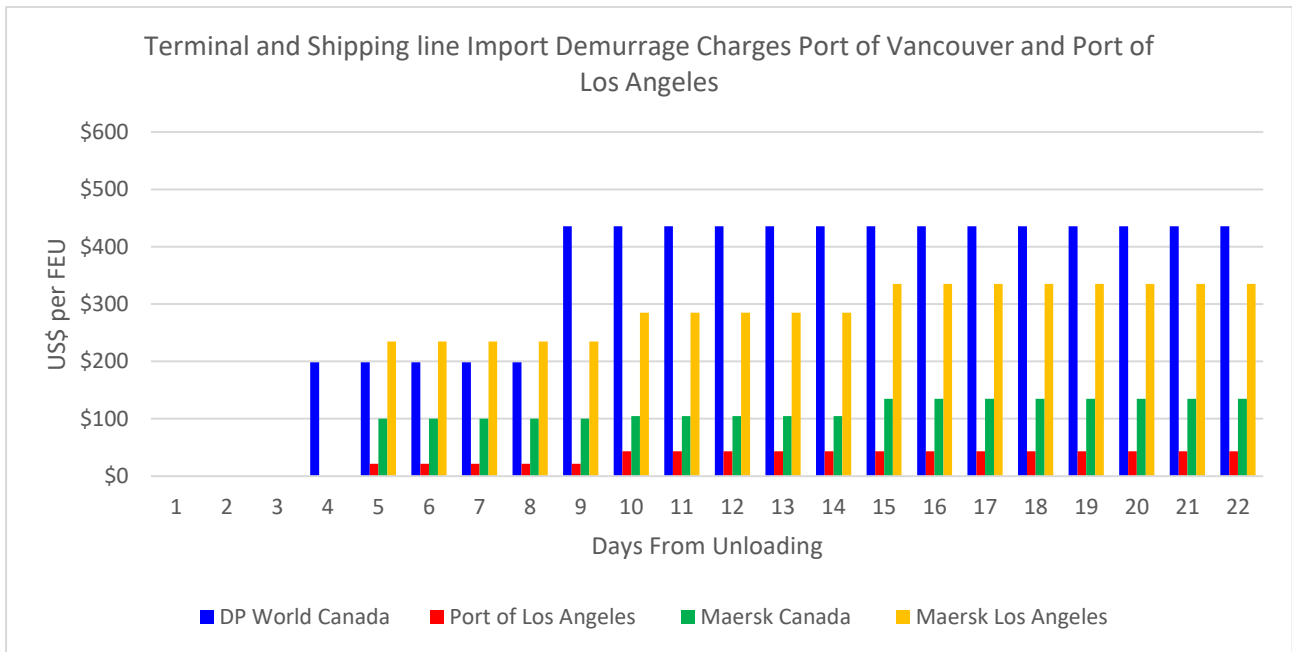
- Free time for import and export containers was reduced from 7 days to 5 working days in early 2005. (TSI, 2005)
- TSI's Fluidity Plan (TSI, 2006) eliminated empty container storage on terminals with the exception of empty containers scheduled for repositioning on the next vessel.
- Empty containers not scheduled for immediate repositioning, and empty containers positioned for export loading, were subjected to a fee of \$100 per TEU per day for any period beyond the free time of 2 days.
- Earliest Receiving Dates (ERD's) for loaded export containers were reduced from 5 days to 4 days. Export containers are not accepted at the terminal prior to the ERD.
- Acceptance of import containers for each shipping line was restricted to volumes agreed in capacity agreements between the line and the railways; any containers in excess of this volume were required to be trucked off the terminal immediately or faced substantial financial penalties.

These changes were not reversed following resolution of the short-term congestion issues; current tariffs contain more stringent measures than those introduced in 2006.

4.1 Import Demurrage Charges

The figure below shows current terminal and shipping line import demurrage charges at the Port of Vancouver (DP World Vancouver tariff April 1, 2021) and the Port of Los Angeles. Terminal

import demurrage charges are based on the DP World Vancouver tariff April 1, 2021) and Port of Los Angeles Tariff No. 4 October 16, 2019. The comparison of shipping line charges is based on Maersk tariffs. For Port of Vancouver imports, Maersk charges demurrage in addition to applicable terminal demurrage charges (which are charged directly to shippers by the terminals). For Port of Los Angeles imports, Maersk demurrage charges include those set out in the Port of Los Angeles tariff. Maersk demurrage charges are significantly higher in Los Angeles. Charges are shown in U.S. dollar equivalents. Free time for loaded imports is 3 days at Port of Vancouver terminals compared to 4 days at the Ports of Long Beach and Los Angeles.

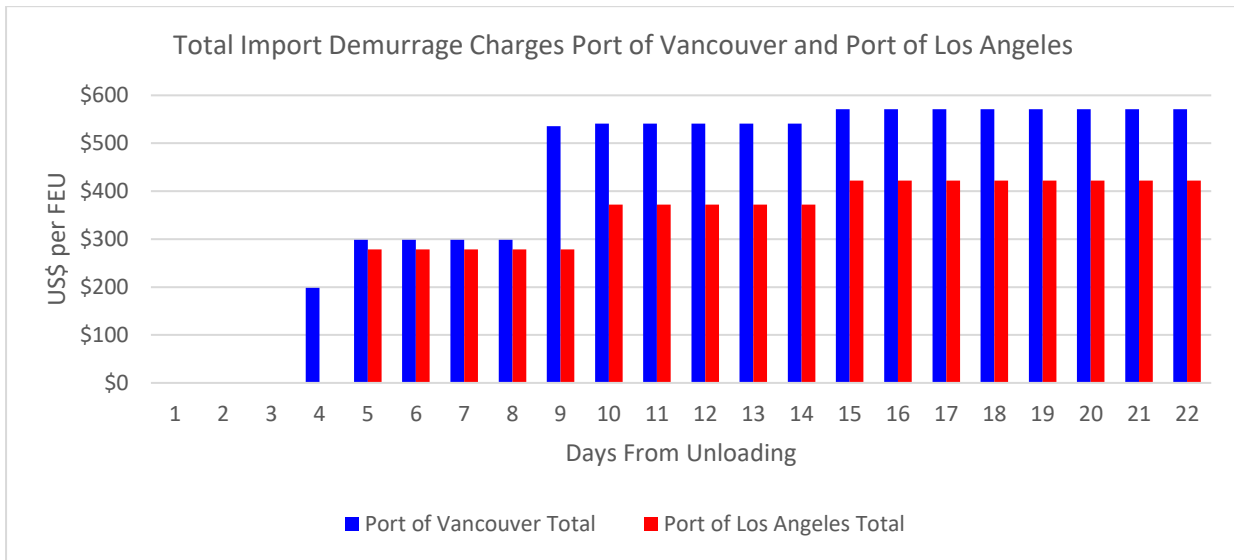


At the Port of Vancouver, terminal demurrage charges begin at almost US\$ 200 per day per FEU following the expiry of the 3-day free time. These escalate to over US \$400 per day by the 9th day. Terminal charges are significantly higher than shipping line demurrage charges.

Under the current fee structure at the Ports of Long Beach and Los Angeles, terminal import demurrage charges are low relative to shipping line charges. For example, Fenix Terminal (Pier 300) follows Port of Los Angeles Tariff 4 with regards to demurrage including free time allowance, and rates. The POLA tariff charges only US\$ 44 per forty-foot container per day for the first 5 days following the expiry of the 4-day free time period. Shipping line charges are higher. For example, Maersk charges US\$ 235 per day for the same period. Under these circumstances, the shipping lines have the dominant role in enforcing dwell time limits. Shipping lines have been

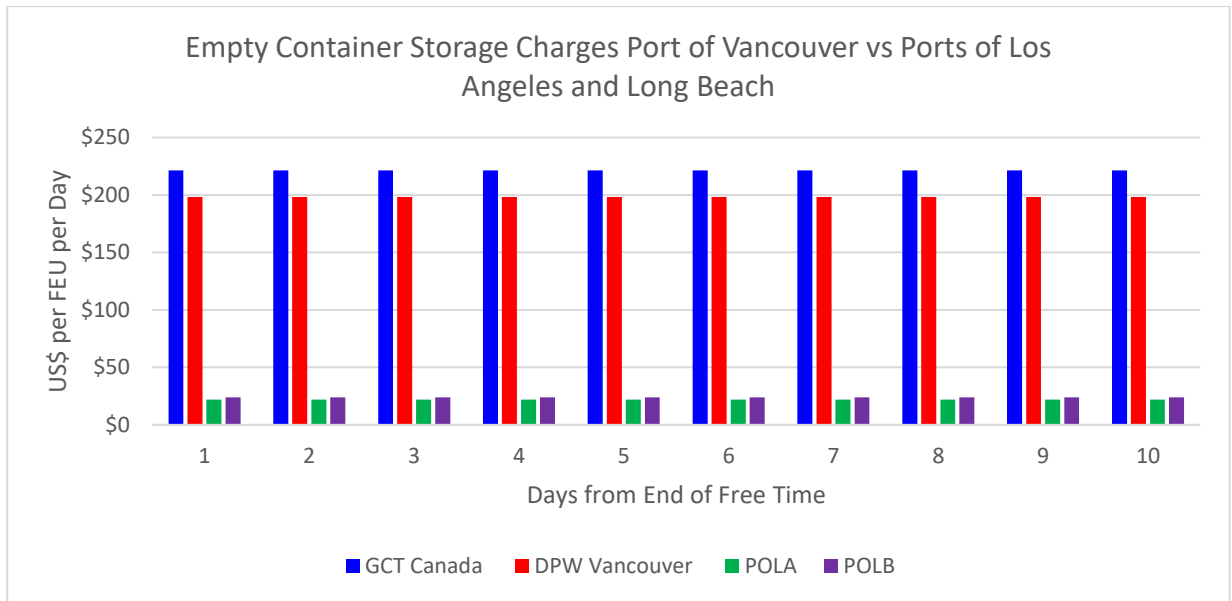
known to provide extended free time to major clients at POLA/POLB terminals and absorb the additional costs of the relatively small terminal demurrage charges to maintain their competitiveness with cargo owners. (Mongeluzzo, October 1, 2015).

The figure below shows combined shipping line and terminal demurrage charges for the Port of Vancouver and Port of Los Angeles.



4.2 Empty Container Storage

Empty container storage charges are similarly higher at Port of Vancouver terminals. Free time is 2 working days for empty containers loaded to truck and 7 calendar days before vessel arrival for empty containers loaded to vessel at GCT Canada terminals. There is no free time for empty containers stored at DP World’s Centerm terminal; i.e. storage charges begin as soon as the container is moved to the storage area. Tariffs at the Ports of Long Beach and Los Angeles do not contain specific charges related to the storage of empty containers; the charges shown below apply to “general cargo stored in a container”.



Port of Vancouver container terminals impose additional measures to limit dwell times and congestion:

- GCT Canada imposes a “Rail Overage Surcharge” of CDN\$ 143.35 (US\$ 113.25) per TEU per day for laden import containers destined for rail shipment in excess of the shipping line’s contracted volumes with the railways. GCT also imposes an equal “Intermodal Railcar Shortage Surcharge” on loaded import containers dwelling more than 7 calendar days on the terminals due to a shortage of intermodal rail car supply from the railways.

- DP World has a 3-step Empty Management System for evacuation of empty containers over and above the empty pool allowances once the total empties on site for all shipping lines exceed 25% of the terminal yard capacity, escalating from trucking of containers off of the terminal at the shipping line’s expense to barging empty containers to Duke Point terminal in Nanaimo, Vancouver Island with the shipping line liable for applicable barge and storage fees.

4.3 System Impacts – Drayage

The Lower Mainland drayage sector has a history of instability. Port operations were disrupted by a strike in 1999 over erosion of trip rates paid to owner-operators and long turn times due to congestion at container terminals. Container operations in the Lower Mainland were again disrupted by a withdrawal of services by drayage owner/operators in 2005. The organization representing the owner/operators, the Vancouver Container Truck Association (VCTA) cited four major factors precipitating the withdrawal of services: continued competitive erosion of container

rates; cost increases (particularly for fuel); introduction of eight off-dock container terminals (“satellite terminals”); and lengthy waits at both on-dock and off-dock facilities (VCTA, August 2005 pp 7-8). The introduction of new off-dock container terminals resulted in drivers performing uncompensated trips, and excessive waiting time at both on-dock and off-dock container terminals.

A federal-provincial Task Force appointed in August 2005 to provide recommendations to avoid future strikes concluded that the inability of drayage firms to adjust rates to adapt to increased drayage costs was clear evidence of market failure in the drayage sector. (Federal-Provincial Task Force 2005 pp. 1-2). The 2005 strike was ended by the imposition of a 2- year contract based on a Memorandum of Agreement negotiated between the trucking companies and drivers with the assistance of labour arbitrators appointed by the federal and provincial governments. In July 2007 the Federal Cabinet amended the Regulations to extend the minimum rates requirement. This was unsuccessful in achieving industry stability and a third strike occurred in March 2014. Outcomes of the 2014 strike included:

Implementation of provincial regulation of the container trucking industry through creation of a governing agency called the British Columbia Container Trucking Commissioner. The Commissioner sets minimum hourly and trip rates and fuel surcharges. In 2014, trip rates were increased by 12% over the 2005 rates and the fuel surcharge was doubled. Rates under the provincial regulations were further increased in 2019. Changes included an increase in owner-operator trip rates by 2%; new rate zone definitions; introduction of a \$25 per trip surcharge to compensate for unpaid trips (the Positioning Movement Rate); amendments to the fuel surcharge formula; and phased increases to the hourly owner/operator rate. (OCBCTC February 2020). Based on current rates, drayage costs at the Port of Vancouver rates have increased by approximately 75% from the rates imposed in 2005.

- The Vancouver Fraser Port Authority implemented a new licensing system for access to the port terminals. All existing licenses were cancelled, and firms were forced to re-apply. The current local trucking fleet holding VFPA licenses is 1550 trucks, approximately 20% less than the licensed fleet before the 2014 strike.
- Container terminal operators are required to compensate drivers for excessive turn times. All port trucks are required to install GPS transponders which are used by VFPA to monitor turn times (including staging and terminal time) for purposes of identifying excessive turn times. Penalties

are paid by the terminal operators to VFPA and VFPA remits them to the drivers. This system has been successful in maintaining low turn times. For example, in the week of April 10 to 16 turn times averaged from a low of 32 minutes for Fraser Surrey Docks to high of 46 minutes for Vanterm.

Under the current regulatory structure, two of the chronic sources of disruptions in the Lower Mainland drayage sector are regulated: driver compensation and terminal turn times. Direct regulation of the industry by the provincial government provides a mechanism to ensure that rates can adjust to changes in container logistics practices which affect drayage efficiency.

4.4 System Impacts – Land Use

The volume of empty containers stored off-dock soared after 2005. The rapid increase in off-dock storage generated concern over the availability of industrial land to accommodate this activity. The availability of industrial land for empty container storage in the Lower Mainland is constrained by a chronic and increasing shortage of available vacant land. In its most recent industrial land inventory, Metro Vancouver found that there are few vacant sites available for ‘trade-oriented’ logistics users, namely large sites with minimal constraints and close to major transportation infrastructure. (Metro Vancouver Regional Planning 2021 p. 84). Unlike Southern California, outward sprawl of logistics facilities is not possible because the provincial Agricultural Land Act essentially prevents the conversion of agricultural land to industrial use.

The shortage of available land has led to rapidly increasing land prices. Industrial land prices in Metro Vancouver increased from CDN\$ 900,000 - CDN\$ 1.2 million per acre in 2006 to CDN\$ 5 million - CDN\$ 7 million per acre in 2022.

There have been two types of empty container storage facilities in the Lower Mainland:

- Integrated facilities which offered empty container storage as an ancillary service to other activities. The number of these facilities has increased. These include export transload facilities stacking empty containers on site; import distribution centres stacking loaded import and empty containers on site; and drayage companies offering empty container storage. These options provide lower storage charges for the shipping lines, increased efficiency in land use and chassis productivity due to the stacking of empty containers, and more efficient trip patterns.

- Stand-alone empty container depots which were designed primarily for servicing of containers (reefer container checking, cleaning and installation of liners for food products, etc.) and incidental storage of empty containers when the port terminals were full. This type of facility has disappeared. The last remaining facility, Delco, ceased operations in 2021 and the 22-acre site was sold for redevelopment at a price of CDN\$ 117 million (CDN\$ 5.3 million per acre).

The solutions which have emerged in the Lower Mainland – centrally located facilities offering storage as an ancillary service – are the result of industry responses to the changing cost structure of terminal and drayage services and industrial land prices and have resulted in increased efficiency in the use of scarce and costly resources (port lands, industrial lands, and drayage).

5 Dwell Time Reduction Strategies at the Ports of Long Beach and Los Angeles

Congestion due to excessive dwell times has not historically been a major problem for terminals at the Ports of Long Beach and Los Angeles, in part because the terminals were constructed on very large sites to accommodate the storage of containers on chassis (“wheeled” operations”) rather than stacking them in the container yard (“grounded” operations).

The “wheeled” operations model has broken down due to increases in container volumes and peaking of container movements due to larger vessels. Southern California terminals are being forced to stack containers higher and deliver them directly to trucks rather than transferring them to chassis for pickup. The decision of shipping lines to divest their chassis fleets starting in 2009 has further complicated the situation, as the transition to fully “grounded” operations is incomplete and chassis are still required on dock to support terminal operations.

In response to increasing terminal congestion, the Ports of Los Angeles and Long Beach introduced “peel-off” and “dray-off” options for loaded import containers in 2015. In the “peel-off” option, containers from several pre-approved importers are discharged from the vessel and block stored at the marine terminal. When a sufficient block is formed, truckers are given preferential gate access and the ILWU equipment operator “peels off” the containers without regard to consignee. In the “dray-off” option truckers dray the containers to a near-dock site, drop the loaded chassis and then return to the terminal with another container. The loaded chassis is picked up by another trucker from the near-dock yard and transported to its destination. When these options are combined, turn

times at the terminal are reduced and trucks hauling to the near-dock site make more trips per day. A 2015 study of the “dray-off” and “peel-off” options found that the use of these options resulted in higher drayage costs (Davies and Kieran, 2015). Trucking efficiency at the Ports of Long Beach and Los Angeles is also hindered by long turn times at the port terminals, and inefficient trip patterns due to limited availability and/or mismatches in the locations of chassis and containers.

The Ports of Long Beach and Los Angeles have experienced a congestion crisis since 2021 due to the impacts of the COVID pandemic. Both ports have seen record import volumes. In November 2021, the level of congestion at the ports of Los Angeles and Long Beach reached record levels, with a total of 116 containerships either in port or anchor, including 86 vessels waiting for berths. Long dwell times for loaded import containers have been identified as a major cause of terminal congestion. Terminal restrictions on returns of empty containers have also impacted drayage efficiency due to reduction in chassis availability (empty containers stored off-dock on chassis). These restrictions have also led to a massive increase in demurrage and detention penalties collected by shipping lines due to the inability of drayage carriers and/or shippers to pick up imports and return empty containers.

The Ports announced a Container Excess Dwell Fee in October 2021 to provide an incentive for moving import containers off the dock promptly. The fee initially applied only to import containers that remain at marine terminals for 9 days or more for containers scheduled to move by truck, and 6 days or more for those scheduled to move by rail, starting at US\$ 200 per FEU per day and increasing in \$200 increments each day with no limit as long as the container remains on the terminal. The dwell “free time” for containers was subsequently standardized for rail and truck shipments at 9 days. To date the fee has not been implemented. The threat of the fee has been effective in reducing the number of long-dwelling import containers on terminals without the need to implement the fee. A proposal for a similar fee for empty containers was proposed in January 2022 but no action has been taken.

There have also been efforts to move containers from port terminals to off-dock locations to reduce congestion. For example:

- The Port of Long Beach has provided Pier S as a temporary storage yard for temporary storage for rail containers that would otherwise be stored inside active marine terminals. Dwell times for rail-destined containers have increased due to shortages of empty rail cars, temporary embargoes by the railways, and congestion at inland rail terminals. (Mongeluzzo, June 11, 2021).
- The State of California has signed a deal with an online warehousing marketplace to operate six temporary off-port container storage sites on state-owned land as part of a move to free up space at key port terminals. The sites include armories in Lancaster, Palmdale, and Stockton; a former prison site in Tracy; and two fairground sites in San Joaquin County and the Antelope Valley Fairgrounds. (Angel, February 17, 2022).
- The City of Long Beach temporarily waived enforcement of current shipping container stacking and height limits for properties that are currently zoned to allow shipping container stacking. The waiver was applicable for 90 days from October 22, 2021. During this period, affected operations were to be allowed to stack up to four (4) shipping containers without being cited for a Code violation. Properties that wish to stack up to 5 containers high should contact Fire Prevention to ensure the site can safely accommodate the height prior to stacking above four containers high. (City of Long Beach Statement October 22, 2022)

All of these solutions are focused on short-term measures to resolve terminal congestion as a temporary crisis rather than long-term measures to increase land productivity. The Container Excess Dwell Fee is described as a “temporary amendment” to existing port tariffs and has not actually been implemented. Lease period for the California State properties is only one year, with an option for a second year. (California Department of General Services February 15, 2022).

Both Ports are planning significant capital investments to modernize infrastructure and operations at the terminals which will increase capacity and land productivity. The Port of Vancouver example suggests that changes in business practices could also make a significant contribution to productivity increases at the San Pedro Bay ports.

6 Port Productivity and System Adaptation

Based on the Lower Mainland example, increasing port terminal capacity through reducing container dwell times inevitably results in higher drayage costs. Continuing growth in traffic at the Port of Vancouver demonstrates that increasing drayage costs are not necessarily damaging to a port's competitive position. In the Lower Mainland higher drayage costs, combined with a limited industrial land supply and high land prices, have been a catalyst for innovation in container logistics and have been a factor in the development of more sustainable options including:

- **Short Sea Shipping:** DP World Vancouver has operated a successful short sea shipping container-on barge service from the Port of Nanaimo on Vancouver Island to the Centerm terminal at the Port of Vancouver since 2012.
- **Short haul rail service:** In September 2021 CP Rail and Maersk opened a new 117,000 square foot Pacific Transload Express facility adjacent to CP's Vancouver Intermodal Terminal in Pitt Meadows for transloading international containers into domestic 53-foot trailers. CP will shuttle containers approximately 35 – 60 km by rail from the three major Vancouver container terminals to the facility. (Maritime Magazine 2021).
- **Inland container terminal:** In December 2021 CP Rail announced a new direct intermodal service to Ashcroft Terminal as part of a multi-year contract with Canadian Tire. Canadian Tire purchased a 25% equity interest in Ashcroft Terminal in August 2021. Ashcroft Terminals is located between Vancouver and Kamloops approximately 400 km inland from the port terminals.

In the Lower Mainland, the precondition for adaptation has been the alignment of incentives for action and liability for costs with the capability for action i.e. the industry participants who bear the burden of increased costs have both the incentive and the capability to adjust their operations to accommodate the changed circumstances. The figure below highlights the alignment of incentives and capabilities of major stakeholders in the Lower Mainland and Southern California:

Alignment of Incentives and Capabilities - Port of Vancouver vs POLA/POLB					
		Vancouver		POLA/POLB	
Efficiency Measures	Agent	Incentive	Capability	Incentive	Capability
Off-Dock Empty Container Storage	Shipping Lines	Yes - High on-dock storage charges, short free time	Yes	No - Low or no storage charges, long free times, detention income	Yes
Land Use Efficiency - Stacking Containers Off-Dock	DC's-Export Transloads - Drayage Firms	Yes - Limited land base, high land prices	Yes	No - Availability of cheaper land farther from the Ports	Yes
Trip Patterns	Drayage Firms	Yes - Chassis Ownership, drayage costs	Yes	Yes - Drayage costs	No
Trip Patterns	Drayage Lessors	N/A	N/A	No - Increased productivity in chassis use would reduce revenue	No
Low Turn Times at On-Dock Terminals	Terminal Operators	Yes - Long turn time penalties	Yes	No	Yes

At the Ports of Long Beach and Los Angeles there has been little adaptation due to the lack of long-term strategies for dwell time reduction and the misalignment of incentives and capabilities among the major stakeholders.

7 Options for Dwell Time Reduction Strategies at the Ports of Long Beach and Los Angeles

Based on experience at the Port of Vancouver, potential options to reduce dwell times at Port of Long Beach and Port of Los Angeles terminals are highlighted below.

7.1 Import Dwell Times

Dwell times for loaded import containers could be reduced by a permanent increase in demurrage fees or reduction in free time for loaded import containers by the Ports. The Ports could

substantially increase demurrage fees for import containers to reduce dwell times by making it too costly for the shipping lines to offer extended free time to shippers. The fees would be payable by the terminal operators to the Ports; the terminal operators would still be responsible for ensuring that containers are available to be picked up within the free time to justify passing on demurrage charges to shippers.

7.2 Off-Dock Empty Container Storage

The traditional method of storing empty containers at on-dock terminals at the Ports of Long Beach and Los Angeles takes up space which could be better used for improving the efficiency of cargo-handling operations. The 2003 Metrans study on off-dock empty container identified the impact of additional storage and delivery costs, and shipping lines' requirements for rapid return of chassis to the terminal as obstacles. These obstacles remain, though arguably the shipping lines' divestiture of chassis has exacerbated problems related to chassis operations by adding daily chassis rental charges and less efficient truck routing patterns. The 2003 Metrans report noted that "in the longer term shipping lines may be more willing to consider off-dock storage if increased traffic levels result in increased costs and congestion at on-dock container terminals". (Hanh Le-Griffin, 2003) The current congestion crisis at the port terminals and the expectations for similarly high traffic volumes in the future suggest that resolution of these problems will become a critical element in strategies to maintain fluidity.

Implementation of storage charges and free time limits for empty containers by the Ports would provide the incentives necessary for adapting to off-dock empty container storage in Southern California. As long as the Ports provide on-dock storage of empty containers at nominal cost, there is no incentive for shipping lines to find off-dock alternatives and no incentive for service providers to develop options.

7.3 Truck Turn Time Reductions

Excessive turn times at port terminals are often associated with terminal congestion, and in turn reduce the effective drayage capacity available to handle large volumes of transactions. Experience at the Port of Vancouver has demonstrated that a requirement for terminal operators to compensate drivers for excessive turn times is an effective means of ensuring turn times stay within acceptable limits.

7.4 Chassis Reform

The U.S. container logistics system was unique in the pattern of chassis ownership, with chassis owned by the shipping lines and used as an integral part of port terminal operations. Since 2015, the primary source of chassis for port operations in Southern California is a “pool of pools” with interoperable chassis fleets owned by the three major proprietary marine container chassis pools (DCLI, Flexi-Van and TRAC Intermodal) operating in the San Pedro Basin port complex. This system is a major improvement over the system which prevailed following divestiture of the chassis fleet by the shipping lines, but there are still major operational issues which reduce the efficiency of container operations:

- The persistence of “legacy” agreements for preferential chassis rental rates for shipping lines which require matching of chassis and containers, and results in inefficient trip patterns.
- The continuing use of street chassis for terminal operations is an inefficient use of terminal space.

In other countries, trucking companies own or lease and control their own chassis and thus have the capability to adjust their operations to improve both trip patterns and chassis productivity. A 2016 study on the “pool of pools” noted that “many see the model as an interim solution with the end result being a competitive marketplace for the three leasing companies in which they pursue long-term leases or sales directly with trucking companies. This model allows the individual companies to focus on their own forecasting needs while allowing the trucker to continue using the same equipment throughout the terminal complex. (O’Brien, February 2016).

7.5 Drayage Reform

The owner-operator model in the drayage sector in Southern California has resulted in low driver compensation and instability in earnings as drivers’ daily trips and revenues are impacted by inefficiencies in port operations, including long turn times and inefficient trip patterns. Proposals for reform have focused on reclassification of drivers as employees rather than independent contractors, which would enable them to bargain collectively for higher rates and better working conditions. The Port of Los Angeles tried to implement a requirement for employee drivers as part of the Clean Trucks Program in 2008, but the 9th Circuit Court of Appeals ruled that the Port’s regulation was pre-empted by federal deregulation of the trucking industry in 2011.

The State of California has passed a new law (AB 5) which has a more stringent test for classifying workers as independent contractors. A challenge by the California Trucking Association to application of AB5 to the trucking industry was dismissed by the Supreme Court on June 30, 2022. The application of AB5 may have significant impacts on the California drayage sector.

It is worth noting that most drivers at the Port of Vancouver became unionized following the 2005 strike, but this was insufficient to prevent the collapse in rates which led to another strike in 2014. Comprehensive rate regulation of port trucking was implemented by the Province of British Columbia in 2014 to stabilize driver compensation.

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