1. INTRODUCTION

The rapid expansion of international trade has been facilitated by the logistics efficiencies enabled by new technologies in transport and information and communication systems (ICT). New logistics systems were first realized in bulk systems, for example the movement of coal in unit trains through Roberts Bank in B.C. in 1970. The container has been the foundation of change in the transport of manufactured goods. Containers, larger ships, gantry cranes, improved yard container-handling equipment, solid trains and, then, double-stack trains have all contributed individually and interactively to the greater efficiency and throughput of ports. The changes in technologies have not only enabled greater volumes of cargo to be moved at lower costs, they have also enabled service levels, measured in the speed and reliability of transit, to improve and become important aspects of logistics performance.

The new technologies and increase in trade have also resulted in significant changes in the relationships among the operations in and around ports. Conceptually, there have been two important changes. The first change has been a shift from the traditional bottleneck in operations; the critical functions have shifted from the loading and unloading of the ship to terminal operations and the interface with and performance of inland transport. The second change has been to create greater interdependency among the operations as growing traffic volumes have utilized capacities and squeezed slack out of the system while the levels of service required have escalated to meet the needs of modern supply chains. The effective functioning of ports has been extended to off-dock operations; a trend that is continuing.

The changes in container transport and in logistics management generally are marked by the development of new visions and processes, reflected in the use of new terminology. The term ‘gateway’ was once used mainly by geographers to capture the image of a port serving a hinterland. Now, it has become popular in business and politics to capture the critical role that numerous activities, on and beyond port terminals, play in the flow of goods to and from hinterlands through the port communities. The term ‘supply chain management’ reflects the heightened linkage between buyers and sellers and the various organizations,

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including transport, that are involved in creating value for customers. Logistics systems are vital parts of supply chain structures. Just-in-time and lean manufacturing systems are approaches to logistics that enable supply chains to function with much less inventory than was required formerly. However, in spite of new language in supply chain management to describe concepts and more sophisticated processes, the same basic physical functions have to be performed. For inbound traffic, freight has to be unloaded from ships, information processed, freight transferred to domestic carriers for delivery locally, as a final or intermediate destination, and for carriage directly inland. Similar functions are required for exports. The execution of these functions efficiently is one of the most challenging in international logistics systems. The effective execution of the numerous activities in port communities is a greater challenge than the effective performance of the larger, more costly functions of inland or ocean transportation.

The challenges for efficient gateway performance are common among ports. They are local problems found globally. They are evident by the frequency of issues with container trucking services in ports around the world, not because the trucking industry is inefficient itself but because the failure of container transport systems have been evident there. Trucks have been the spots of the systems' measles! With problems evident and the collapse of systems possible (truck strikes have put many ‘patients in bed’) experience has gradually increased understanding of the underlying problems. This measles is not subject to a quick fix. Many players must participate and sorting out who does what and how takes time. The challenges have become sufficiently critical to the competitiveness of Vancouver that the right types of initiatives are finally in place. Therefore, Vancouver is used as the main context for this paper. This also provides the opportunity to consider how effective current initiatives may be for the future.

Because the term ‘gateway’ may be used in various contexts, it is necessary to define the scope of the term as used here. Many of the activities are common for freight destined for or originating in Vancouver and for freight for other parts of North America. While the latter may be regarded as the true gateway traffic, the co-mingling of most of the functions for local and long-distance traffic means that for the analysis of challenges, the traffic should be treated together. Therefore, the term gateway as used here relates to all traffic and is used to capture the concept of a range of logistics activities within Vancouver. Rail is the most separable of the services as it serves long-haul traffic but its performance affects all port terminal traffic and the railways bring freight and return empty containers to Vancouver for handling in the gateway.

Why are the challenges of gateway logistics so difficult and what can be done about them? These questions have conceptual and practical dimensions. The purpose of this paper is to identify some of the challenges and to comment on initiatives that might mitigate their effects. Many of the initiatives are now underway in Vancouver, but no one claims that all of the challenges to efficient gateway performance are resolved. Also, the risk exists that traditional approaches are being used to deal with challenges that are changing significantly as they evolve.

The paper is in three more sections. In the next section, the challenges to efficient gateway performance are reviewed briefly. The third and main section of the paper is devoted to policies and strategies that may enhance gateway
performance. The section is in two parts of unequal length. The first part examines general strategies of shippers. Shippers have adopted strategies to mitigate the uncertainties of logistics service performance. In so doing, they have eased the peaking of traffic faced by gateways but they have increased the level of competition among gateways. Some particular decisions of shippers are also considered in the following part of section three which focuses on strategies affecting the supply of gateway services. The final section of the paper highlights policies and strategies that may warrant greater attention in preparing for gateway services not just in 2010 but in future decades.

2. WHY ARE CHALLENGES TO EFFICIENT GATEWAY PERFORMANCE SO COMMON?

The fundamental challenges in gateways are fairly easy to identify. Here the focus is on matters that are critical to the functioning of relationships. Efficiency matters related primarily to the internal operation of businesses in management, capital and labour are only considered when they affect relationships and the performance of the gateway. The gateway challenges can be categorised as follows into eleven categories:

- **The division of responsibility along the logistics chain.** This division may be at different levels. They are:
  - A change in ownership of the goods and change in responsibility for the logistics system, as in FOB and CIF sales contracts.
  - A change in responsibility for functions, as in the interface between a shipping line and inland enterprises; to what point does the shipping line assume responsibility?
  - Different functions such as shipping, terminal operations, rail service, trucking, warehousing and many others are provided by separate private and public agencies. They have separate as well as shared interests.

- **The dynamic mismatch of transport capacities by mode.** The capacities of ships, trains and trucks are quite different and the discrepancies are widening as ships, free from route constraints are getting larger. The inevitable result is increased pressure on the operation of terminals as the interface among the modes.

- **The complexity caused by the number of parallel logistics chains.** Most gateways serve many and different types of shippers, sometimes with complementary, sometimes with conflicting interests. The variety adds to the complexity of gateway activities. The fewer number of bulk shippers than shippers of manufactured goods is one reason that those systems are often easier to design and operate. Similarly, gateway functions are performed by separate, competing organisations. While they strive to utilise their resources well in providing efficient services to customers, the subdivision of assets can come at the cost of efficient asset utilisation. This is a common attribute of imperfectly competitive markets but one that nevertheless needs attention.
• **The mismatch of corporate operating practices.** The pressures on capacity utilization resulting from increased trade have heightened the importance of being able to improve the relationships among the service providers. This is particularly important in the relationship of terminals and inland carriers. Efficient relationships are hindered by the existence of different practices among organizations such as hours of work and different ICT systems.

• **Difficulties in effective communication among participants in the supply chain.** Efficient logistics is dependent on the effective flow of strategic and operational information among the participants. Adequate strategic and operational information exchange is often a deficiency in gateway logistics.

• **Too limited attention to pricing and accountability.** Firms respond to the prices that they pay for goods and services and to the obligations that they and others have assumed, whether these are made on a pay-as-you-go basis or under a long-term contract. In transport and especially in the port business, too little attention has been given to the role of prices and the associated effects on efficiency. The right prices charged to the right organisations are generally the way to induce efficient behaviour. The wrong price signals encourage inefficiencies. In transport, tradition, perhaps influenced by the legacy of regulation, can allow inefficient pricing practices and assumptions of accountability to persist.

• **The interaction of gateway logistics with the local community.** Gateway logistics is affected especially by the local community because of its dependence on transport. This raises noise, air pollution and congestions concerns. The common use the road by gateway trucking and other traffic gives rise to serious and widespread problems.

• **The effects of traffic growth.** Improved logistics has facilitated rapid trade growth, especially in containers, but the growth has caused changes in practices and congestion where the expansion of capacity has lagged. For example, port terminals have had to change their practices and utilise their land areas more intensively which, in turn, has put pressures on the strategies of other parties in the logistics chain, including shippers. The difficulties of expanding terminals and their inland connections and routes have aggravated congestion problems.

• **The logistics system is affected by seasonality.** Different commodities have different seasonality patterns. As transport cannot be ‘stored’ to service peak demands, capacity shortfalls are to be expected at peak times. When peak traffic levels are beyond expectations serious traffic disruption can arise. Shippers can be expected to adjust their practices to heightened service problems during peak periods. Seasonality also occurs in supply. In shipping, weather related delays are most likely in winter. This is also the time when inland transport disruptions are most likely in Canada.

• **Measures of performance of logistics activities are absent or inadequate.** The traditional focus on the ship-port interface is reflected in this being the function for which most data are available. Beyond the terminal gate, the absence of data has been notable. Further, methods of measuring performance through a chain of separate corporate activities are not well
developed. This gives rise to the situation that what is not measured cannot be managed.

- **The absence of leadership.** Because of the large number of independent organisations involved in the end-to-end and parallel dimensions of gateway activities, no one organisation has the power to impose its will. This is good and bad! But complex systems often benefit from the role of a leader. In the port industry, the leadership of the Port of Singapore Authority stands out. But its distinctiveness demonstrates the difficulty of leadership in gateways where voluntary cooperation is more important than imposed requirements.

### 3. STRATEGIES TO IMPROVE GATEWAY LOGISTICS

The cost and service level of transport and logistics services for international trade have improved significantly over the last few decades. In spite of the pressures associated with traffic growth, ports and related services have coped well. Public and private organisations have been able to increase their capacities and manage their operations to satisfy the needs of trade without undue pressures on community resources. This is not to deny the existence of issues but they have not been of a level that the future growth of trade in aggregate seemed threatened. However, the growth of trade in recent years has caused congestion and constraints on trade through many ports. While trade in all commodities has expanded and contributes to gateway challenges, the recent surge and greatest source of challenges is container traffic. The increased efficiency and consistent growth seen in container trade has finally given rise to some widespread failures in logistics performance. These have shown up widely in gateways although limitations in inland rail transportation have contributed to the problems. However, the main focus here is on issues within gateways. The pressures justify closer examination of the strategies and practices of governments, shippers and service providers. Previous practices that may have been acceptable, although not optimal, need to be changed with an eye to long-run solutions not just short-run fixes.

The challenges outlined above affect all parties interested in gateway logistics. However, strategies to improve gateway logistics may be viewed differently among those interested. While they may share a common interest in improved gateway performance, they compete for their share of the margin in the trade. What may be beneficial for some may be detrimental for others, at least in the short run. Therefore, the perspective adopted here is that of the owners of the freight and whose interests the logistics system should be designed to serve. The owners of the freight are collectively referred to as ‘shippers’ whether they are consignors or consignees, importers or exporters.

Shippers are not only relevant as the customers of gateway services. The decisions of shippers contribute to the challenges faced by gateways. It is their decisions that determine the level and characteristics of the traffic that gateways handle.
3.1. The Interests and Strategies of Shippers

The importance for shippers of efficient supply chains with reliable service levels has implications for the design of their logistics systems and, therefore, for gateways. The pursuit of efficient services among alternate routes and service providers fuels the competitive dynamics among service providers. However, the strategies and decisions of shippers can contribute to the challenges of service providers in providing their services efficiently and reliably. This was evident in 2004 when the magnitude of peak demand was generally unexpectedly high. The result was widespread congestion and serious disruptions in logistics systems and to supply chain performance.

A general strategy for shippers to mitigate the risk of unreliable service is to diversify the structure of their supply chains. To the extent that the reliability and duration of marine logistics systems are less favourable than by other modes, companies may shift sourcing to avoid shipping. For example, the overall growth of sourcing in China and other Asian countries providing low costs goods has masked shifts in the supply of some goods to other locations, such as Mexico for the U.S. and Eastern Europe for the EU. These shifts have often occurred because the closer locations enjoy the advantage of shorter, more reliable lead times for goods of high value or characterized by demand uncertainties.

Nevertheless, the increase in sea-borne trade has been exceptional and higher than expected. A result was widespread congestion problems in gateways, particularly, those on the North American Pacific coast, during the peak-shipping season of 2004. The failure of the systems to provide the reliability expected has resulted in shippers adopting three new strategies. Each strategy comes with some extra cost, but those costs are preferred to the lost sales or delayed production caused by undue delays in logistics systems. The first strategy has been for retailers, in particular, to spread the peak of the fall shipping season by starting to ship earlier. This imposes higher inventory costs but enables lower transportation costs and provides greater logistics reliability. It has enabled gateways to handle higher annual traffic volumes without peak periods of serious congestion. The second strategy has been to diversify the location of distribution facilities by having some close to port facilities and others inland so that companies can truck or rail containers off terminals. This provides some flexibility in case of localized inland transport problems. The third strategy has been to develop alternate routes. The adoption of routings through the North American East Coast ports for trade with Asia was accelerated because the services provide flexibility, especially during the peak-shipping season, for trade with East Asia for which a trans-Pacific route is generally optimal. It has always been obvious to avoid ‘putting all one’s eggs in one basket’ but the strategy to diversify has been seen in a new light. Pacific gateways must expect that shippers will be more attentive in the future than in the past to the maintenance of alternate routes on the Pacific Coast and through other port ranges.

Customers of the Vancouver gateway should be expected to view it as one of their gateways. This may mean that some shippers who use Vancouver as their primary gateway will give more attention than formerly to ensuring the use of some other routes. It may also mean that some shippers primarily using other gateways will use Vancouver as a secondary routing. The strategy of diversifying
routes means that the competitive environment of gateways is increased. The pressure to improve performance is notched up. However, to the extent that the relative magnitude of peak traffic will be less than in the past, the environment for providing services will be better.

3.2. Strategies and Initiatives affecting the Supply of Gateway Service

It is not surprising that the diversity of players in gateway logistics gives rise to innumerable particular initiatives for the improvement of logistics services. Therefore, this review of possible initiatives is structured around five general strategies of a PLACE programme. They are: a greater role for pricing; leadership; the need for accountability; improved communications; and enterprising initiatives.

This paper does not deal with some matters that might affect gateway performance but are much more general in their ramifications. Four such matters deserve recognition. First, delays in environmental assessments point to the desirability of avoiding consecutive processes for federal and provincial environmental reviews. This is a matter of process harmonization, not standards compromise. Second, in Canada there is a case for greater capital cost allowances than apply currently. Third, the prospective shortage of labour in gateway logistics activities is an important issue but it is shared by transport in general and by many other industries. Finally, the paper does not examine issues of the capacity of inland transportation beyond the gateway. This is an important limitation as on the West Coast of North America insufficient rail capacity in the form of rail-line capacity and/or rail-car supply have been (especially in 2004) and are important constraints on gateway throughput. Rail congestion clogs the flow of containers and spreads congestion through the gateway functions to the marine interface causing ship congestion. As with congestion generally, congestion builds quickly and takes much longer to eliminate.

The sequence of strategies and initiatives discussed is somewhat capricious to fit with the PLACE acronym. However, a justification for placing pricing first is that a different pricing strategy for container terminal services is a long-term strategy for improving the critical inland gate function.

3.2.1. A greater Role for Pricing

Tradition often plays a powerful role in pricing practices. In the face of traditional arrangements, it may not be obvious that change is needed. Such is the case with the provision and pricing of services by container terminals to trucks.

*Pricing inland access to container terminals:* The notion that shipping lines are the customers of container terminals is deeply embedded in terminal management thinking. Indeed, they are the customers in the sense that the charges that they pay are the primary source of terminal revenue. However, they are not the ultimate customers as terminal managers now acknowledge; the ultimate customers are the shippers.

It was not long ago that terminal managers in most countries viewed what goes on beyond the terminal gate as someone else’s concern. In Vancouver, the length of truck delays outside terminal gates in and prior to 1999 and the absence of data on those delays by terminal companies attest to their lack of accountability
for the delays. While that view has arguably changed, terminals do not regard themselves as service providers with two sets of customers, those at the front door and those at the back door.

Dealing with the shipping lines as the immediate customers is convenient. Close relationships are maintained with few customers. The billing arrangements are relatively simple. The charges to lines cover cargo loading and unloading, terminal handling, the costs of gate access for trucks and loading and unloading containers to or from trucks and trains. (The details of the way the charges are calculated may vary among terminals and the contracts with individual lines but, in Vancouver, these are the current provisions.) The practice varies from traditional ‘liner terms’ of shipment under which the freight rate included the cost of carriage and the cost only of cargo loading and discharging at ports. However, with containerisation, the adoption of through bills of lading led to shipping lines assuming more responsibility for inland transport. In Vancouver, the lines delivered to local customers until the trucking strike of 1999 after which they left the cost of trucking to shippers. The terminal charges paid by the shipping lines cover one outbound and one inbound move per container unloaded. Nobody seems to object to the current arrangement.

However, the existing system is flawed, as an important incentive for efficiency through pricing is lost. Under the current system, the shipping lines pay while the scheduling of trucks is at the convenience of the users. Gate use, like roads, is a free good to users, aside from the associated congestion. Rationing the use of gate capacity is achieved through the reservation system, which works arbitrarily in relation to the value placed on gate times by shippers. There are no revenue incentives for the terminals to change processes or capacities. The shipping lines have little direct interest in the quality of gate service, although they do have an interest in keeping the costs low. The charges for the gate service for loaded containers onto and off terminals should be paid by the shippers that use the trucking services, have an interest in the quality of the gate services and would respond to incentives for the more efficient use of gate services. As empty containers are only held at ocean terminals in connection with moves controlled by lines, the shipping lines responsible should be charged for their moves on and off terminals.

The rates charged should cover two elements: the costs of loading and/or unloading trucks and the costs of gate operation. The costs of stack handling prior to picking for loading are costs of the terminal operation appropriate to charge to the shipping lines. Rates for gate service might reflect the costs of peak and off-peak times, the benefits of reserved service slots and the benefits of loaded in-and-out moves over one-way moves. Rates reflecting the level of demand by time blocks would encourage innovation by terminals and better matches of gate supply to demand. The economics of the logistics system may support greater gate capacity than is now provided during peak hours. (This might have implications for road capacities, which is taken up later.)

The rate structure, which would result from pricing gate services, is not clear. The costs of extended gate hours to terminals might commence (beyond a transitional period common for any new service or product) as higher than the costs during normal hours. However, higher gate expenses could be offset in the future by the opportunity costs of limits on terminal throughput caused by gate
constraints during normal hours. Then, lower rates during off-peak times might be the most efficient way to increase terminal capacity and, therefore, warrant lower rates. The interests of the port authority in shifting truck traffic away from the congested regular hours of business, if that was still desirable, could still be achieved by providing incentive discounts to terminal operators’ charges as they are now.

Separate pricing for the inland gates of terminals would also provide a more transparent basis for assessing the merits of alternate systems, for example, urban marine movements of containers from and to the deep-water terminals. It would thus facilitate more efficiency in the gateway more widely than just at the terminal gates.

In Vancouver, there may be concerns about the dominant power of container terminals in setting truck-gate-access rates. This is because they would be set by just two large companies serving many trucking firms and shippers. Although the terminals are parts of highly competitive logistics chains, the level of gate rates would be a small part of total logistics costs so that the suppliers would enjoy considerable market power. A solution is for the terminals to be required, as tenants to publish their gate rates, which would be subject to approval by the port authority. The gate rates should be the actual rates charged and not a maximum rate. There should be no discounts for large shippers as it is only in the minor cost of administration that there is any potential for economies of scale by corporate account. Differences in rates should all be related through published rates to the characteristics of operations. The structure of charges should include incentives for users to adopt more efficient practices.

Treated as the inland gates as a service and source of revenue goes beyond the practice of PierPass in Los Angeles and Long Beach where it is only the extra costs of gate hours beyond the times paid for by the lines that are charged to shippers. However, PierPass demonstrates the practicality of charging shippers for terminal access.

Charging trucks for access to terminals raises the question of what should be done about the terminal costs now charged to the lines for loading and unloading rail cars. The present practice appears appropriate, as there is no real equivalent of the truck gate operation. Also, the terminal and rail costs are commonly a part of through rates charged by lines to shippers. Finally, there is no reason to believe that any changing in the pricing system for rail would induce any changes in behaviour. (That is, unless rail rates were linked to levels of service guarantee, but that is a topic for a different paper!)

Trucking rates for containers: Trucking rates and the remuneration of truck drivers have been contentious in Vancouver and elsewhere. In Vancouver, inadequate earnings by many drivers involved in the carriage of containers resulted in serious interruptions to the ports’ container business in 1999 and 2005. The affected drivers were owner operators paid trip rates and, therefore,

1 The Vancouver Port Authority does not likely have this authority under existing lease agreements. However, with recognition that greater cooperation is in the interests of gateway efficiency, terminals should be under pressure to go along with the revised pricing regime.
2 Federal-Provincial Task Force, Final report of the Task Force on the Transportation and Industrial Relations Issues related to the Movement of Containers at British Columbia Lower Mainland Ports, October 26 2005
affected particularly by delays at terminal gates in 1999 and by traffic congestion and rising fuel costs in 2005. An effect of trip rates is to transfer the risk of delays from the trucking company arranging for the trip to the owner operator. Of course, if the time taken is less than expected then the rates may be profitable, if they are much longer, it is hard to make a living. The owner-operator business is characterised as being highly competitive. It may also have some features of gold panning and buying lottery tickets. It is easy to do, seductive, a losing proposition for the great majority of participants and too commonly undertaken.

Since the 1999 strike, the Vancouver Port Authority (VPA) has attempted to end the trip-rate system, but it has persisted. The VPA initiatives are described below. However, the number of trucks with employee drivers operated by shippers and freight forwarders acting on behalf of shippers has increased. These firms experience the full time costs of trucking.

Unfortunately, inadequate earnings of owner-operators have and may again result in the withdrawal of their services, which may, as in the past, have wider ramifications on the ability of terminals to conduct their businesses. If there is really interest in the long-run reliability of logistics services, why is a more sustainable and efficient pricing regime not adopted? Is there really a drive to the lowest cost, irrespective of service reliability? These are questions taken up later under shipper accountability.

3.2.2. Leadership

Relationships among the participants in gateway activities must be considered in the wider context of the evolution of logistics management and of the Canadian port management structure. The appropriate roles to be played by organisations must be viewed in the context of the perceptions of the time.

In general, strong leadership in the provision of gateway services, as distinct from investment in the port and promotion of a port gateway, has not been a mark of North American port authorities. Systems have worked well enough left to their own devices and levels of inter-port competition have not induced port authorities or governments to adopt more aggressive gateway strategies until recently. Necessity caused by the importance of the gateway to the economy, as in Singapore, and/or competition among ports, as may be exemplified by Rotterdam, account for port communities with a long history of a community commitment to the gateway. A very recent example is Shanghai. The general view of ports working well with little leadership and intervention matches the evolution of logistics management from a very fragmented activity within firms to one that is well integrated across firms.

It has taken logistics some four decades to evolve into a vital part of corporations’ supply chain strategy. The change has been associated with initiatives of large firms such as automobile companies and large retailers that have acted as channel leaders and often imposed requirements on their suppliers. The evolution of demand for more sophisticated and better-integrated logistics services naturally stimulated change in the provision of services. Transportation companies have expanded geographically and have become more engaged in other logistics activities, as the logistics service business has become a new and rapidly expanding industry. The new expectation of logistics managers and service
suppliers is that all services can be performed with an efficiency and reliability greater than previously expected.

The changes in logistics management have affected gateway activities as the functional interrelationships have become of more obvious importance. The role of information technologies (IT) led ports such as Singapore, and Rotterdam, and new ports such as Felixstowe, to be leaders in the development of community IT systems. However, gateway responses have varied in line with their organisation structure, their history and with the history of their communities. Singapore also had a government interest and structure that could invest in education, communications and port infrastructure to ensure excellence and leadership in port and related logistics services.

Unfortunately, leadership in most gateways is difficult because of the horizontal and vertical fragmentation of activities. There is no channel leader able to impose an integrated strategy on the various parties. The organisations most likely to have the broad vision and authority or power to exercise leadership are the port authority and government. Recently, they have played important roles in Vancouver. However, the first effective voice promoting gateway interests was a coalition involving shippers, terminals, carriers and the port authorities, which evolved into the Greater Vancouver Gateway Council (GVGC).

The Greater Vancouver Gateway Council: The roots of the GVGC go back to about 1987 when representatives from the port authorities, the railways, employers and port labor held discussions about the competitiveness of Vancouver’s ports. The discussions led to the formation of the Roundtable on Transportation and the production of a paper on the need for all levels of government to address issues in the taxation of the rail system, primarily fuel and property taxes and capital cost allowances, which resulted in higher costs than faced by U.S. ports. The organization was an effective lobby. Governments were a ‘common enemy’ that enabled the different and often competing interests to cooperate. Membership in the organisation expanded and took on a wider mandate following the Asia Pacific Trade and Transportation Forum organized by the Asia Pacific Foundation in 1990. In 1994, the GVGC was formed with the federal Minister of Transport as the Honorary Chair. The GVGC adopted a vision of becoming the Gateway of Choice for North America, intent on achieving that by providing the highest level of customer satisfaction. To achieve the vision, the GVGC sought to identify and address issues that affected Vancouver’s competitiveness, and increase the awareness of the importance of the gateway to the local, provincial and national economies. The Council does not take up matters, which relate to operational matters or business dealings among members. The GVGC has been an effective model in promoting the gateway concept and in funding and executing projects, the most ambitious of which was the Major Commercial Transportation System (MCTS) for the Lower Mainland. This report and related activities have contributed positively to the gateway infrastructure plans adopted by governments. The sole employee of the Council is the executive director and the chair is the President and CEO of the VPA. The GVGC has been used as a model for similar organisations elsewhere.

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3 Bob Wilds, Presentation at the WESTAC Transportation Infrastructure Conference, Winnipeg November 27, 2003,
From http://www.gvgc.org/pdfs/WESTAC_IC03pres.pdf on 29 May, 2007
The success of the GVGC rests on its ability, in the absence of a channel leader, to bring multiple parties together to work on common issues, often involving government policies. It is likely that the Council’s work has encouraged greater cooperation separately among gateway participants. The work of the GVGC is evidence of the recent adoption of the gateway vision and for its translation into government programmes.

The role of the port authority: Vancouver got a late start on a port administrative structure appropriate to leadership and innovation. Vancouver was a National Harbours Board port until 1984 when the Canada Ports Corporation Act came into effect. Greater devolution of powers was achieved with the establishment of the VPA in 1999 under the Canada Marine Act. The transfer of greater authority to local port management enabled stronger leadership in several directions. The port has played an important role in marketing the port through overseas missions and establishing an office in Beijing. It has been active in long-term planning and the development of new terminal infrastructure. It has encouraged much more dialogue within the gateway community, supported the GVGC and has promoted new policies by governments at all levels. However, prior to 1999, the Vancouver Port Corporation was reluctant to extend its influence on businesses beyond its responsibilities. For example, in the late 1980s when some ports were taking a leadership role in the development of information systems for the broad port community, the port of Vancouver provided a room so that the ‘real users’ of IT could meet and discuss. As a public body, initiatives that might impinge on private businesses or that might favour one business over another were frowned upon. For example, it was thought that all truckers should have access to the terminals operated under lease from a public corporation.

Over time, perceptions changed. As competition became more obviously among gateways, it become evident that without intervention, some needed developments might not take place and crises might occur. Since 1999, the VPA has taken more initiatives related to gateway activities that may be seen as beyond its responsibilities. There may have been objections to such interventions but the VPA saw them as necessary for the gateway. An interesting example is the partnership the VPA established in 2001 with Coast Terminals for the development and management of a 30-acre container facility for the receiving, unloading, loading of containers and the storage of empties. The VPA took this action because it felt that greater off-dock capacity than was being developed was needed to improve gateway performance, especially reducing the mileage of empty container transport. The VPA sold out its interest in the successful business in 2004.

The VPA has been in a difficult position with respect to issues surrounding drayage services. The VPA has been a strong advocate of measures to improve terminal gate performance but it was only following the 1999 work stoppage that it mandated the terminals to introduce a reservations system and port managers worked with the stakeholders to introduce systems. Manual at first, the web-based Container Terminal Scheduling System was started in 2001. In 1999, it also introduced a truck licensing system by requiring trucking companies to sign a Memorandum of Agreement, which raised trip rates and subsequently required a...
change to hourly rates. However, the rate structure could not be enforced, problems persisted at the terminals and, especially, with road operating conditions leading to another work disruption in 2005. The diversity of interests and the complexity associated with legal jurisdiction led to the settlement through a federal Order-in-Council. However, efforts to prevent a recurrence of the dispute continue. On December 1, 2006 the VPA announced a new trucking policy and a more rigorous licensing, audit and enforcement system. The VPA grandfathered all previous trucking companies with licenses to transport containers to and from the port but now will only issue new licenses to companies with company-owned equipment and employee drivers. It is hoped that this licensing system will ensure a more efficient structure without regulating the industry.

While the VPA is exercising more leadership in specific measures, it is also attempting to develop greater information exchange and cooperation among participants in gateway activities, as discussed later under the communication section. However, governments are also now playing an important leadership role.

The role of governments: The importance of transportation to the economy need not be argued in Canada. The effects of a closure of a major port or of rail services are immediate evidence of their importance. These are not new conditions. What is new is the shift in the position of governments from accepting the need to deal with tax and related issues affecting particular service providers to embracing the gateway strategy and the need to invest in supporting infrastructure. The shift in policy has resulted from congestion in gateways and transportation corridors adversely affecting the competitiveness of the Canadian economy. As a result, the federal government has adopted an initiative to support gateway and corridor projects across the country, of which the first developed is the Asia-Pacific Gateway and Corridor Initiative led by the Honourable David Emerson, Minister of International Trade and Minister for the Pacific Gateway, in collaboration with the Honourable Lawrence Cannon, Minister of Transport, Infrastructure and Communities. The initiative involves policy and investment strategies in partnership with the province through its Gateway Program, with private sector leaders and other stakeholders. Policies to be investigated include regulations involving the use of empty foreign containers domestically. It is in investments jointly with the province that actions are being taken to invest in road and bridge projects in the Greater Vancouver region to ease the flow of car and port traffic. Investment in grade separation for the rail line serving the expanding DeltaPort is one of the projects. Investments in the rail infrastructure are the responsibility of the private Canadian National Railway and Canadian Pacific Railway.

Governments' support for infrastructure development is an essential foundation for gateway development. In Vancouver, it is being done in a traditional direct public investment manner and is going largely into traditional road investment. While the commitments to investment are being made recognizing the needs of increasing traffic in the years and decades ahead, the investments are in traditional shared-space roadways. A case can be made that container transport warrants at least some roadways or lanes dedicated to truck and, close to the port, port traffic. Container transport has now evolved to a total volume and density of traffic that the old model of spilling general merchandise traffic from ports onto city roads is no longer appropriate. City traffic also has and continues to grow
greatly, conflicting with the performance of the container system. A new model with the specialized movement of containers largely separate from other city traffic warrants consideration to ensure the core infrastructure needed for future decades.

### 3.2.3. Accountability

In his recent presentation to the Standing Senate Committee on Transport and Communications Gordon Houston, President and CEO of the VPA noted the importance of accountability to customers and to each other of all those working in the gateway.\(^5\) It is not surprising that he featured the importance of accountability because as senior executive of the port authority he faces the challenge of leading the organisation best able to promote and lead a gateway strategy but without the authority or powers to control other players. Cooperation with and among the other players is therefore vital. Cooperation is most likely successful when the parties share a common vision, such as customer service, and are accountable (accept responsibility) for their actions. They first must recognise their effects on other parts of the logistics chain and then be prepared to work to improve system performance. Both steps are difficult. Two issues of accountability are examined further here; they are related to rail and trucking services.

**The quality of rail service:** The quality of rail service has been increasingly of concern to importers and exporters through Vancouver. Some factors have contributed to service problems; they include the unexpected rate of traffic growth, particularly in the peak period of 2004; traffic volumes pushing capacity levels; weather causing line washouts in the 2006/07 winter; and the mismatch of rail 24/7 operations with the hours of many shippers. The latter is not a new factor. At the heart of complaints appears to be service problems concurrent with improving railway profitability. While the railways are moving to scheduled train services, two complaints are common: they are the availability of equipment in a timely way and delays because of capacity constraints.

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The complexity of factors affecting rail service is such that no observations about the complaints are appropriate. However, the general issue arises of whether changes are needed in the nature of the railways service obligations. Railway service has many dimensions including car supply and time in transit. Obligations may be based on ongoing contracts or on transactional relationships. At issue is whether and how the railways obligations should change as their operations become more profitable, operations more predictable and service quality becomes a more important component in the delivery process. Is it appropriate that service requirements remain the same over so many decades?\(^6\)

**Shipper accountability for owner-operator trucking services:** The difficulty of owner operators sustaining reasonable earnings in the drayage of containers in

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\(^5\) Presentation of Captain Gordon Houston to The Standing Senate Committee on Transport and Communications, Vancouver, March 13, 2007.

\(^6\) On May 30, 2007 after this paper was written amendments to the *Canada Transportation Act* were tabled in the House of Commons. The amendments deal with rail regulatory provisions of the *CTA*. A review of railway service will commence within 30 days of the passage of the legislation.
Vancouver has existed for a number of years.\textsuperscript{7} It was the reason for disputes that led to disruption of container services in 1999 and 2005. It is argued that a part of the problem is the competitiveness of the trucking business and the willingness of owner operators to lead the ‘race to the bottom rates’. In 2005, the withdrawal of service by owner operators was marked by the picketing of terminal access such that all trucks, even those owned and operated by employees of shippers or freight forwarders, were unable to gain access to the terminals for significant periods. Who was responsible for the low earnings of the owner operators? Can any group be identified as responsible for the market-determined rates?

The immediate problem of low earnings was the result of agreements between the individual owner operators and certain trucking companies. However, the instability that the rate problem would cause in trucking service was well known; as is the concern today about trucking service over the next few months. At a time when there is wide recognition that efficient supply chain management requires organisations to be aware of the characteristics and behaviour of their suppliers’ suppliers and of their customer’ customers, that is to look well beyond their immediate relationship, it is the shippers who should really be held responsible for using non-sustainable services. A maritime analogy is a shipper contracting through a broker for a low-rated ship, which is a ‘rusty bucket’.

Accountability should be seen to rest with the shippers. There is ample recognition of the nature of the problem. It is they that make the trade-off of low rates with uncertain service reliability over time and it is they alone that should be the parties inconvenienced by any withdrawals of service that may result from non-sustainable rates. In part, resolution of the problems with trucking services and progress on other challenges and on opportunities in gateway services can be achieved by improved communications.

3.2.4. Communication Strategies

Common communication strategies can be oriented to the transmission of data and other information electronically (IT) or they may be concerned more simply with information sharing and cooperation. Developments in IT have been and will remain very important to improvements in logistics and supply chain performance. IT systems, for example, radio-frequency identification technology (RFID), require adoption along the supply chain and may well become more important to ameliorating existing challenges in the movement of containers in terminals and the gateway. As such possibilities advance, it will be important for gateway leaders to emerge to encourage and facilitate the widest possible adoption. Currently, initiatives related to the broad gateway are more to do with information sharing and general cooperation. The GVGC is an excellent example. However, several other examples now exist.

One of the ways that the VPA has attempted to lead, well, encourage, cooperation and change is by facilitating several Stakeholder Committees within the Container Stakeholder Group which has existed for a few years. They include the Container Terminal Scheduling System Committee, the Empty Container

\textsuperscript{7} For a review see ‘Final Report of the Task Force on the Transportation and Industrial Relations Issues Related to the Movement of Containers at British Columbia Lower Mainland Ports,’ Federal-Provincial Task Force, October 26, 2005.
Dynamics Study Committee and the Container Rail Operations Committee. The VPA is being proactive in improving communications between stakeholders in the expectation that improved processes to the benefit of all will emerge. Undoubtedly, better communication is taking place among the participants; showing tangible results from the committees is more difficult. The VPA has entered into agreements with the railways to work together to develop capacity and the CPR and CNR have entered into a co-production agreement for Vancouver.

The B.C. Ministry of Transportation has established the Lower Mainland Container Logistics Stakeholders’ Forum. Its mandate is to develop and implement logistics and tactical solutions and identify strategic long-term solutions that improve the reliability, productivity and efficiency of the landside container logistics system involving trucks, inland terminals and port terminals.

Evidently, there are now several ways to exchange information. Care will have to be taken to avoid duplication of effort that might hinder productivity. This will be particularly important in 2008 when the three Lower Mainland port authorities will be amalgamated into the Vancouver Fraser Port Authority. This authority will be better positioned to consider the Greater Vancouver gateway in its totality, similar to the current provincial perspective.

The amalgamation of the port authorities will enhance the development of strategies and strengthen the voice of the gateway. In particular, it will facilitate better land use planning, although this will remain complicated by the existence of 16 separate local governments adjoining the new port.

The organisations noted above are devoted primarily to dealing generally with long-term types of problems. However, given the uncertainties about traffic trends and the variability of short-run conditions, communications among gateway participants about expected traffic conditions are important. The unexpected traffic congestion of 2004 led to a traffic forecasting exercise partly funded by Transport Canada but executed by the Western Transportation Advisory Council. After a survey of shippers and carriers, a forum was held to discuss preliminary results and to provide the basis for a final report. The programme was of the type that would be useful at least every five years with a less elaborate annual review to ensure continuity of widely based discussion of traffic expectations. In the short run, weekly meetings among carriers and terminals are required to smooth the way around the variety of special conditions that arise week to week. The scope of groups covers those that work together and are affected immediately by each others operations.

3.2.5. Enterprising Initiatives

The increased volume of port traffic raises challenges that require new practices and processes. The relatively simple matter of greater container terminal throughput means that the storage of empties at the terminals is no longer

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8 Amendments to the Port Authorities Management Regulations to two or more Canada Port Authorities (CPAs) to amalgamate were announced by The Honourable Lawrence Cannon, Minister of Transport, Infrastructure and Communities on 30 May 2007.

practical. This affects the movement patterns of containers, the economics of trucking and of off-dock terminals. The return of empties by rail to docks creates a need to move the empties off the dock. The immediate effects are disruptions to practices; the long-term effects are new processes and business opportunities.

It is important to expect that new practices and businesses will be required to deal with future traffic. The pace of trade growth and the increase of urban traffic mean that the question is when not whether new approaches will be required. Current discussions about gate hours will become outdated as the economics of terminals and trucking change with increased volumes. Longer gate hours are likely to be more fully utilized. Another probable development is the use of short-sea shipping to move containers from Vancouver to facilities on the Fraser River.

The reason for emphasising the need for new initiatives is the prospect that the growth of trade through port communities has reached a stage where the capacity provided by unit trains and bulk terminals and by container systems is mature. New increments of capacity will need new solutions. The new container terminal in Prince Rupert is an example. It may be harder for existing ports and communities to accommodate growth.

4. POLICIES AND STRATEGIES FOR THE FUTURE

The evolution of relationships among the many stakeholder interests in the Vancouver gateway is the key to achieving success in the economic, social and environmental goals of the community. The challenge to develop appropriate policies and strategies among gateway stakeholders will be considerable as freight traffic volumes increase to serve a growing economy while Vancouver itself grows and faces new pressures and concerns associated with environmental conditions. A challenge when thinking about the future is to look far enough but not too far ahead. Change in the next 50 years may not be as dramatic as in the last 50, but it will be greater than can be anticipated now.

The policies and strategies of shippers will continue to be important to the conditions in gateways. First, competition among gateways will continue to increase as shippers become more sophisticated in developing diversity in the range of sources in their supply chains and logistics systems. However, while more competitive, the prospects for better operating environments for gateways is good. The wide adoption of gateway policies from governments on down will induce greater cooperation and accountability among the participants. Business strategies that lead to stronger and more effective relationships can be expected to evolve.

One aspect of gateway operation that is likely to benefit from a new relationship is that between the container terminals, truckers and shippers. As this becomes more customer-driven by the terminals, normal business relationships based on prices and service arrangements should be the core to change. The existing pattern of behaviour cannot be expected to last.

Change in pricing and service arrangements are likely for the railways also. For bulk as well as container shippers more explicit service provisions need to become the norm in the railway business. Shippers (and certainly not the railways) did not foresee the magnitude of benefits that would flow from greater
competition. The potential exists for benefits to shippers and the railways from dealing directly and more explicitly than is now the case with issues affecting service levels. Without direct attention in shipper-railway contracts, it is no wonder that service failures occur and are most likely detrimental to all. Experience with ‘do it right first time, shows that the identification of challenges and dealing with them explicitly and directly provide the route to greater efficiency. Improvement would require change in the pricing and service provisions of the railways’ transactional and contractual arrangements.

Leadership in gateway matters has already improved; the effort must be sustained. The adoption of gateway policies by the federal and provincial governments is a major step forward. It sets the environment for greater cooperation among stakeholders and it should enable more timely attention to infrastructure investments. In planning that infrastructure, there is a need to look decades ahead. The skeleton added now is the frame that will be operated in the future. In particular, greater attention is warranted for achieving better separation of gateway truck traffic from city traffic. This does not only involve consideration of truck lanes or routes but land use planning for the location of new ‘off-dock’ terminals that may be served by truck, rail and/or short-sea shipping.

The integration of the port authorities into the Vancouver Fraser Port Authority facilitates the development of a metropolitan-based gateway vision. It leads to a match in the organisation structure and the geographic span for land use and transportation planning. The Greater Vancouver Gateway Council already enjoys this span and has done well in leading communication and cooperation among the major gateway service providers. The number of working groups examining particular problems suggests that there is a need to sort out their roles and responsibilities. This is a better problem than there being no groups.

Communications among gateway participants about expected long-run and short-run traffic conditions are important. The 2005 forecasting process led by the Western Transportation Advisory Council proved to be useful and worth making a regular exercise. However, dealing with the short-run variability of conditions affecting businesses requires weekly meetings only of those affected immediately by each others operations.

The future will almost certainly involve developments that are not expected or still seem unlikely now. Short-sea shipping of containers may be an example; exclusive truck lanes another. A greater role for information technology to facilitate more efficient and better-integrated operations can be expected. But perhaps the greatest source of innovation and change should come from the broad adoption of cooperation and accountability among all gateway participants.

A service which is needed but which is now absent is a visible, formal, multidimensional gateway performance monitor. The rationale is simple: what cannot be measured cannot be managed well. Gateways are not subject to simple management but it is necessary for stakeholders to be able to track the systems performance and to measure the results of their efforts. In the long run, such a measure will also be necessary to provide a comparative yardstick with other gateways. The function of a gateway performance monitor would be to measure and report on the performance of individual and overall gateway activities and outcomes. The purpose of the monitor would be to facilitate better decision making to achieve economic, social and environmental goals of the community. There are
various ways in which the work of performance measurement could be conducted. However, the author’s experience at the Center for Transportation Studies at the University of British Columbia perhaps results in a certain bias towards a university base. The monitoring function by a university would be consistent with a formal involvement of education institutions in the gateway activities. Certainly, education institutions like financial and legal institutions are important contributors to strong gateways. A university would have the expertise and be able to provide the confidentiality needed for data. There would also be no conflict with business interests. However, as with the provision of gateways to shippers, there are alternatives!