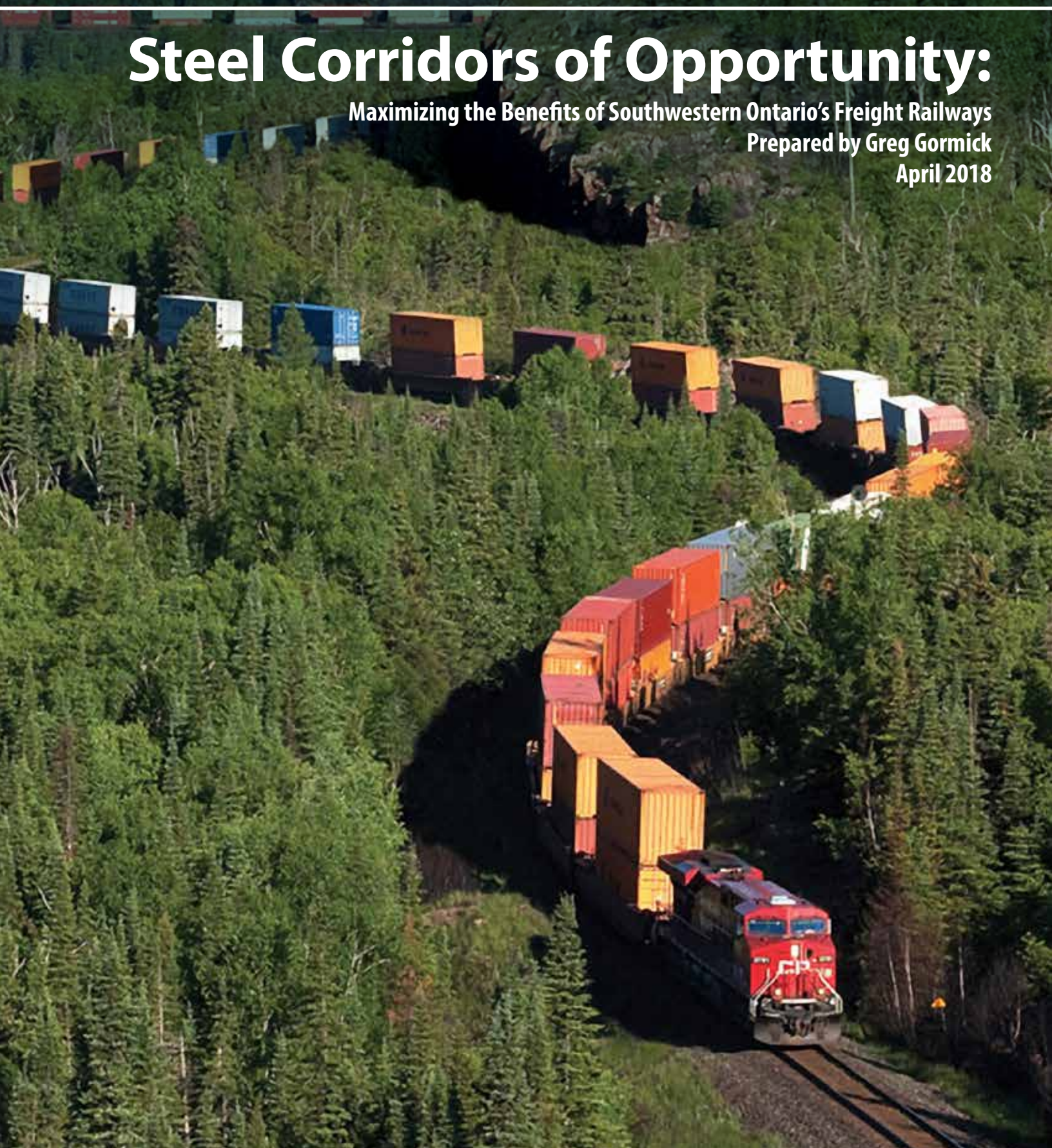


Steel Corridors of Opportunity:

Maximizing the Benefits of Southwestern Ontario's Freight Railways
Prepared by Greg Gormick
April 2018





**Prepared by Greg Gormick
On Track Strategies for Oxford County**

April 2018

Table of Contents

Executive Summary	4
Introduction	9
1.0 The Evolving Railway	10
1.1. Today's Southwestern Ontario Rail System.....	11
1.2 Not Your Grandfather's Railway.....	14
1.3 Geographic Coverage and Market Reach.....	18
1.4 Current Rail Freight Service Portfolio	21
1.5 Rail's Environmental Credentials.....	25
1.6 The Downside of the Evolution.....	28
2.0 Rail's Next Evolutionary Cycle	31
2.1 U.S. Precedents and Competitive Threats	32
2.2 Filling the Leadership and Policy Vacuums.....	34
2.3 External Threats and Counter-Measures.....	35
2.4 Environmental Policy Implications.....	37
2.5 The Policy Pendulum Swings – Barely	39
2.6 Passenger Considerations	41
3.0 Southwestern Ontario's Rail Traffic Growth Options	42
3.1 Short Lines	43
3.2 Shipper Sidings.....	46
3.3 Transload, Warehousing and Distribution Facilities	47
3.4 Shipper Car Pools	49
3.5 Regional Intermodal and Inland Port Facilities	50
3.6 Coordinated Passenger and Freight Strategies	53
3.7 A Southwestern Ontario Rail Corridor Coalition.....	55
4.0 Recommendations	57
4.1 A Southwestern Ontario Rail Roundtable	58
4.2 The Broader Issues	59
Maps	
Southwestern Ontario Rail System – 2017	12
CN System – 2017	18
CP System – 2017	19

Executive Summary

Southwestern Ontario's freight railways are vital components of the region's multi-modal transportation system. However, based on evolutionary changes now occurring in other jurisdictions with which this region competes – particularly the U.S. – this system is not living up to its full potential. This jeopardizes the economic and environmental competitiveness of Southwestern Ontario vis-à-vis these competing regions.

The main drivers of this international push for increased rail freight usage are its high cost efficiency, its ability to handle increased tonnage by expanding the existing infrastructure and its low environmental footprint.

As the next evolution of the rail industry occurs, Oxford County and its partners can stimulate changes that will maximize rail's role to their benefit, particularly through strategies now being applied in the U.S. However, this will be an end to the laissez-faire approach now taken by the federal and provincial governments concerning rail freight policy, planning and funding.

1.0 The Evolving Railway

Canada's Class I railways, CN and CP, and the "first and last mile" short line feeders, have evolved in a time- and cost-sensitive trading environment in competition with other modes, particularly trucking. This system is part of a North American grid of more than 300,000 route-km that connects Southwestern Ontario to domestic, cross-border and global markets, the latter through Atlantic, Pacific and Gulf ports.

The continental rail freight system's evolution has been driven by lean production methods to increase revenue, reduce costs and satisfy shareholder demands. Some markets have been lost and others expanded. Rail is now primarily a high-volume carrier serving markets of 800 km or more by providing rates below those achievable by trucking. Hybrid solutions that make use of rail's efficiency as part of a multi-modal package, such as intermodal service, have grown.

This evolution has boosted rail's economic and environmental efficiency by reducing assets and adopting technologies and methods that build on the superiority of steel wheels rolling on steel rails in moving large tonnages. The only mode that exceeds rail's superiority in terms of fuel efficiency and emissions is marine shipping, which is not applicable to most rail markets.

The downside of this evolution has been the loss of some markets, as rail has reduced its geographic coverage and de-marketed commodity flows deemed uneconomic under current public policy and market conditions. Asset reduction has also caused capacity and on-time performance problems for publicly-funded passenger carriers, such as VIA Rail Canada, which must access rail freight infrastructure to provide the bulk of its services in a mixed traffic environment.

2.0 Rail's Next Evolutionary Cycle

The latest, cost-driven cycle of freight railroading has reached its limits. New policies and techniques will be required to maintain the current system and grow its tonnage and revenue. This poses both challenges and opportunities.

The current Canadian network is threatened by a strong U.S. system that enjoys advantages in public policy and funding, including public-private partnerships and tax credit programs that have improved the main line and short line systems, as well as shipper facilities. Four of the five U.S. Class I railways can poach Canadian traffic with direct rail and off-line intermodal services that cross the border.

Canada's rail sector also needs to be concerned by the threat of autonomous trucks, which could greatly alter competition economically. This would compound the competitive imbalance caused by the provision of publicly-funded highways for which truckers do not pay the full cost.

However, there are opportunities for Canadian railways to counter these threats. An increased reliance on mechanization and automation is just as realistic for railroading as it is for trucking. Traffic and revenue growth may also be fostered by various means, including:

- Increased speeds, decreased transit times and increased train frequency;
- Attracting high-revenue traffic moving shorter distances;
- Increasing shipper access with more direct rail connections and transload facilities;
- Providing intermediate intermodal facilities to reduce long truck hauls; and
- Generating more back haul to fill empty cars returning to their points of origin.

However, all of the above require investment in assets and labour, which the Class I railways are reluctant to undertake on their own. However, a reliance on lower-cost short lines and other third-party operators for new terminal facilities, and public-private partnerships and investment tax credits, have proven to be effective mechanisms to foster growth in the U.S.

Other issues that may favour rail are increases in fuel costs, which affect trucking more acutely than the railways, truck driver shortages, government policies that require higher cost recovery from all publicly-funded transportation facilities and services, and carbon pricing programs that would increase costs for less efficient modes to a greater degree than the railways.

As well, public investment in expanded rail passenger service has been used in the U.S. to simultaneously improve freight service by eliminating traffic conflicts and capacity bottlenecks. This has not yet occurred in Canada because of the lack of action on the rail passenger issue, but this situation is gaining public attention and support, which may alter the situation.

3.0 Southwestern Ontario's Rail Traffic Growth Options

Increasing rail freight usage in Southwestern Ontario will require service-proven strategies from other jurisdictions, particularly the U.S. While the mechanisms to foster major change and growth are largely in the hands of the federal and provincial governments, steps can be taken by concerned local governments and various players in the transportation and logistics sectors.

A primary avenue for action rests with the short lines, as outlined in Oxford County's report, Empowering Southwestern Ontario's Short Line Railways. Convincing the upper levels of government to adopt low-cost, American-style tax credits and funding options to expand their role should be a major objective. This approach has already been discussed as part of Ontario's climate change action plan.

Advocacy of other service-proven measures that can be initiated at a regional level through changes in federal and provincial policies, taxation and funding mechanisms include:

- More shipper sidings to provide direct service to online customers;
- Construction of more rail-served transload, warehousing and distribution facilities;

- Establishment of shipper car pools to ease rolling stock shortages; and
- Intermodal and inland ports to establish rail-based logistics hubs within this region.

An important side issue should be consideration of the need for rail passenger improvements and the measures required to minimize freight/passenger conflicts and generate mutual benefits for both, as has been the case in the U.S.

The formation of a Southwestern Ontario rail corridor coalition to advance these issues would be a first step in placing this issue before the upper levels of government. The timing is excellent given recent federal commitment to strengthening Canada's trade corridors and gateways by providing a limited amount of funding for such projects. It is vital that rail be a beneficiary of these initiatives to generate the maximum benefits for Southwestern Ontario's agricultural, industrial and transportation sectors.

4.0 Recommendations

To foster and lead the formation of a Southwestern Ontario rail corridor coalition, it is recommended that Oxford County organize and host a roundtable on the future and the steps necessary to expand the usage of the region's rail freight system.

It is also recommended that Oxford County continue its efforts to draw public and political attention to the

opportunities, challenges and broad policy issues now facing the railways and the shippers and passengers they serve. The success of local and regional governments in initiating the positive changes in U.S. rail policy and funding demonstrates the potential impact of Oxford County's transportation vision.



Introduction

Southwestern Ontario's freight railways are vital components of the region's multi-modal transportation system. But do they have a larger role to play in boosting its economic and environmental prospects?

In some respects, that question has already been answered by decisions made in the other countries with which this region and all of Canada compete. In Asia, the European Union, Australia and the United States, projects to improve and expand the flow of both domestic and international freight by rail are already underway. As a result, every rail-served trading region around the globe has no choice but to embrace similar policies and investments if it is to match the transportation efficiency gains being made by its competitors.

The main drivers of this international push for an increased use of rail freight service are its high cost efficiency, its ability to handle increased tonnage through the expansion of the existing infrastructure and its low environmental footprint. The last point is especially relevant at a time when decision makers are being compelled to weigh the high environmental costs of various modes and methods of transportation, which is one of the largest contributors to global climate change.

In light of this growing international reliance on rail freight, an examination of Southwestern Ontario's system is timely. Can it carry more tonnage and perform more efficiently? What policies, practices, technologies and investments are required? What barriers prevent a larger share of Southwestern Ontario's freight from moving by rail rather than on the highways?

This report addresses these and other questions. It outlines the development and current state of the rail industry in the region, including its market coverage, service offerings, strengths and weaknesses, and the economic and public policy frameworks under which it now functions.

Based on actions already taken in other jurisdictions, particularly the U.S., this report suggests there are measures that can be applied to selectively and incrementally increase the benefits of rail freight service in Southwestern Ontario. Several of these steps can be initiated at a regional level by partnerships undertaken between local governments, railway operators, shippers, receivers and logistics firms. However, it should also be recognized that federal and provincial involvement will be vitally important in moving these locally-crafted plans forward.

The next evolutionary turn of the railway industry's wheel is just beginning. Oxford County, in conjunction with its numerous potential partners in Southwestern Ontario can and should play roles to ensure this turn will be to their advantage. Oxford County has recognized the underlying link between a strong economy, a clean environment and healthy, vibrant communities. Enhanced rail freight efficiency and utilization are fully supportive of the vision and goals of the Future Oxford Community Sustainability Plan and Oxford's commitment to 100 per cent renewable energy by 2050.

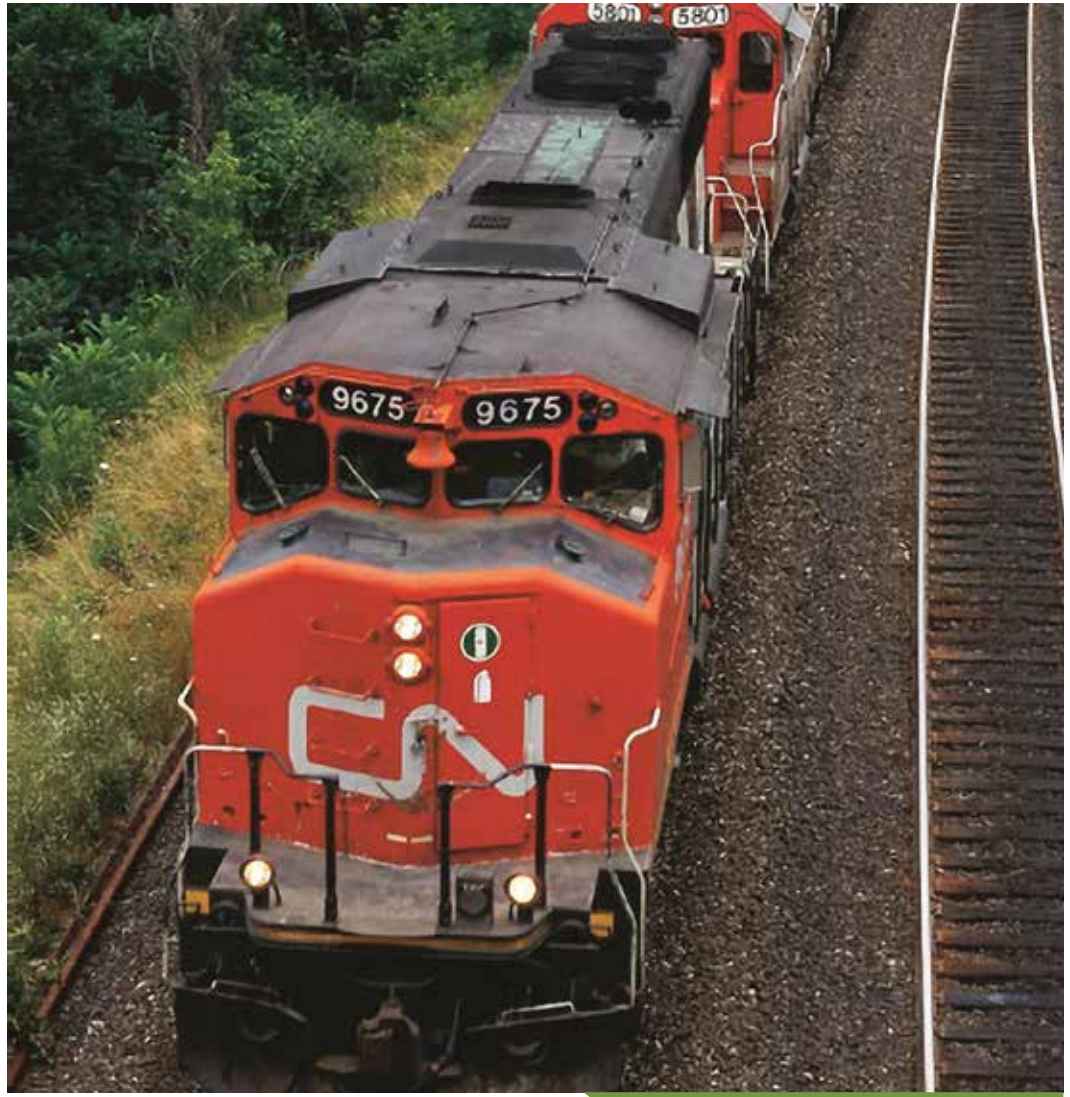


Photo courtesy of CN

1.0 The Evolving Railway

For more than 150 years, Southwestern Ontario has benefitted from its access to a wide range of rail freight services. The rail system has fostered and sustained numerous economic activities, bringing in goods for home and industrial use, and carrying finished goods and agricultural products off to national and international markets. It has also underpinned the provision of rail passenger services.

Southwestern Ontario's railways have undergone numerous and extensive technological, institutional and regulatory changes since the opening of the first main line in 1854. Greatly reduced from its maximum geographic coverage in the mid-20th century, this system now directly serves only the most densely-populated portion of the region. But where it continues to operate, Southwestern Ontario's rail system has a substantial impact.



As an interline partner, the Ontario Southland Railway extends CP's reach to shippers and receivers located throughout Oxford County. Photo by Walter E. Pfefferle

1.1 Today's Southwestern Ontario Rail System

The core of this system consists of the east-west main lines owned and operated by Canadian National (CN) and Canadian Pacific (CP), both of which are publicly-traded private corporations. Under the criteria set by the U.S. Surface Transportation Board and employed throughout the industry, CN and CP are classified as two of North America's seven Class I railways. CN operates a 31,543 route-km network and CP's system covers 19,956 route-km; both include a substantial amount of U.S. trackage.

The CN and CP main lines through Southwestern Ontario are the central segments of the two railways' Montreal-Chicago corridors, which link the Canadian and U.S. industrial heartlands to eastern ports and consumption markets. In turn, these routes are integrated components of the full CN and CP transcontinental systems, which not only provide domestic service, but also cross-border service

to several major U.S. markets, particularly in the Midwest, and numerous connections with the five U.S. Class I railways.

Working in concert with the CN and CP systems are the short line railways that act as feeders for both originating and terminating traffic in Southwestern Ontario. These "first and last mile" rail carriers have preserved and revived former Class I light-density routes. While these lines no longer fit within the operating models of the Class I railways, their continued operation has been made possible by the lower costs and operational flexibility that short lines can provide. By preserving a low-cost rail option, these short lines assist in sustaining the shippers and receivers they serve, enabling them to maintain their operations in Southwestern Ontario and other regions across Canada.

Southwestern Ontario Rail System 2017





As well, some lines formerly owned by the Class I freight railways, and on which freight demand has declined or vanished, have been purchased by VIA Rail Canada and GO Transit's parent, Metrolinx. This is due to their irreplaceable role in the provision of commuter and/or intercity passenger service. Where freight service is still required on these lines, CN and CP have trackage rights to maintain access to the remaining shippers.

This network of Canadian Class I main lines, short lines and passenger trackage is part of a continent-wide rail grid that provides freight service over more than 300,000 route-km in Canada, the U.S. and Mexico. It is the world's third largest railway system, transporting the fourth largest volume of freight traffic. It connects Southwestern Ontario to the world by providing domestic and cross-border services, as well as access to global markets through Atlantic, Pacific and Gulf ports.

1.2 Not Your Grandfather's Railway

Canada's railways have been compelled to evolve to meet the needs of shippers in an increasingly time-sensitive, globalized trading environment. They have had to find a niche in among the services provided by other modes – particularly trucking – and adapt to major changes in the public policies and funding that have affected all forms of transportation.

In this evolution, some markets have been lost, such as less-than-carload shipments of high value that move short or medium distances. However, other markets have expanded, particularly those built on a need to move large volumes of freight over longer distances at rates below those achievable by trucking. Hybrid multi-modal solutions have

also been born through partnerships with the other modes for certain types of traffic, taking advantage of the heavy-haul, long-distance attributes of rail for a portion of the total freight haul.

The creation of intermodal service using truck trailers on flat cars by both CP and CN in 1952 and its evolution into a system using high-cube containers doublestacked on trains of 150 cars or more is the most visible demonstration of the rail industry's attempt to remain relevant in a world of changing shipper needs and demands. Other less visible transformations involving a number of commodities, equipment types and operating plans have emerged and continue to evolve.



From trailers riding “piggyback” on flat cars in the early 1950s to today’s doublestacked containers moving in trains of 150 or more cars, intermodal has become one of the shining stars of Canadian railroading. Photos courtesy CP

While trucking is now the dominant form of freight haulage in terms of revenue and the value of the shipments handled, rail still outpaces it nationally on a tonne-kilometre basis. The railways sell on the basis of the volume- and distance-driven rates they can offer using a fixed, privately-owned network that is operated on a scheduled basis. Truckers sell largely through the faster and more flexible service they can provide on an on-demand basis over a much wider catchment area that is easily accessed through the publicly-owned road system.

This evolution of the railways into predominantly mass haulers of long-distance freight has been greatly affected by the enactment of deregulatory policies at the federal level, which began cautiously in the late 1960s and accelerated in the mid-1980s. Once viewed as agents of national policy and required to provide many marginal or non-compensatory services deemed to be in the public interest, the railways now operate within a regulatory framework where inter-carrier and intermodal competition and market forces are the prime agents for the provision of commercially-viable and effective freight service.

Canada's national transportation policy, as articulated in the preamble to the Canada Transportation Act (CTA), calls for "a competitive, economic and efficient national transportation system that meets the highest practicable safety and security standards and contributes to a sustainable environment and makes the best use of all modes of transportation at the lowest total cost is essential to serve the needs of its users, advance the well-being of Canadians and enable competitiveness and economic growth in both urban and rural areas throughout Canada."

One of the cornerstones of this policy is that "competition and market forces, both within and among the various modes of transportation, are the prime agents in providing viable and effective transportation services. . . ."

This national policy has led the railways to adopt lean production principles to cut costs, derive the maximum utility and value from their self-funded assets, and increase the return on investment for shareholders. The result has been the abandonment of unprofitable routes, the de-marketing of marginal services and the increased solicitation of high-volume, higher-yield traffic that can be handled with a minimum of physical, financial and human resources.

Cost control and asset minimization are at the heart of the strategies employed by North American Class I railways. Railroading is asset-intensive; its capital needs outstrip virtually every other industry. To maintain a state of good repair, the industry must reinvest about 20 per cent of rail revenue in maintaining and improving infrastructure, fleet and related support systems annually; expansion increases this level of revenue investment in the fixed plant.

Central to this evolution has been the adoption of technologies and techniques that can deliver a high return on this intensive capital investment through the haulage of the maximum tonnage with the minimum amount of handling. The most visible aspects have been the growth in the carrying capacity of the rolling stock and the length of the trains. The standard gross weight for loaded freight cars is now 130,000 kg, a 25 per cent capacity increase over the equipment that comprised most main line freight trains in the 1970s.

In addition to higher-capacity cars, the Class I railways have implemented operating plans that maximize the length of each train and minimize the number of locomotives and crews required. Under this long-train strategy, average train lengths increased from 79 cars in 2005 to 100 in 2014. Average train weights and the productivity of the locomotive fleets, measured by the gross tonne-kilometres generated per available horsepower, have also increased substantially.



Canadian Pacific Photo by Steve Coe and Cam Little

A third element is the use of distributed motive power, as pioneered by CP on long bulk trains in Western Canada and now applied system-wide. By placing digitally-linked locomotives in the middle and/or on the tail end, rather than coupling them all together at the front, the effective capacity of this motive power is increased, in-train dynamic forces are reduced and braking is improved. This technique has now been adopted by all the Class I railways.

The Class I railways have attempted to minimize peaks and valleys in their traffic flows by adopting more precise scheduling and variable pricing that essentially auctions the available capacity in ways most beneficial to the railways. The objective is to operate like a steady, predictable conveyor belt, producing a consistent and somewhat faster service.

In the opinion of Canada's two Class I railways, these lean production techniques have "right-sized" their physical plants, fleets and workforces to attract and

retain that traffic which can generate an acceptable return on the resources employed. The objective now is to improve the consistency and reliability of the service, increase the revenue yield by adding more value to the service, and grow the tonnage and revenue selectively with this higher quality service.

If additional traffic can be added using the existing trains, infrastructure and operating plans, then the Class I railways are interested. If new traffic requires additional resources for which the railways would have to invest a considerable amount of their own capital to modify their physical plants, work forces and operating plans, they are less eager. This is especially the case if the long-term retention of this new traffic is speculative because, should this traffic vanish, it would leave the railways with what would then be stranded assets.

1.3 Geographic Coverage and Market Reach

While the CN and CP systems have shed secondary and light-density branch lines, and exited some markets, they have also grown strategically. A series of acquisitions has broadened the reach of both railways, although CN has clearly been more effective than its competitor in this regard. This has been part of a wave of consolidation that began to sweep over the whole North American rail industry in the early 1980s.

Beginning in 1998, following its 1995 privatization, CN began acquiring U.S. and Canadian railways that broadened its reach. These additions have completed CN's "steel lariat" around the southern end of the Great Lakes with a complete route through Chicago and then northwest through Wisconsin and Minnesota to Manitoba, as well as adding the former Illinois Central south of Chicago to New Orleans and other ports on the U.S. Gulf Coast. Canadian additions such as the former provincially-owned British Columbia Railway have strengthened CN's

Canadian National Railway System



dominance in several markets. CP has not been as successful. The acquisition of the Delaware & Hudson Railway (D&H) linking Montreal and Buffalo with Northeastern U.S. points was poorly handled and ultimately resulted in the sale of all but the line from Montreal to Albany. The integration of its long-time U.S. Midwest subsidiary, the Soo Line, into the CP system did work well, as did the acquisition of the Midwest lines of the bankrupt Milwaukee Road. Other Midwestern lines were acquired, sold off and then bought back, only to have the package later split up and some lines sold off.

When executed properly, mergers can benefit shippers, shareholders and the railways. Recent acquisitions have increased the ability of CN and CP to offer “single line” service, handling the shipments on a single waybill over lines they control. This is preferable to interchanging traffic with other railways, which invariably adds costs and delays.

Less desirable are situations where a railway is dependent on access to another railway’s lines, creating a landlord-tenant relationship, with the

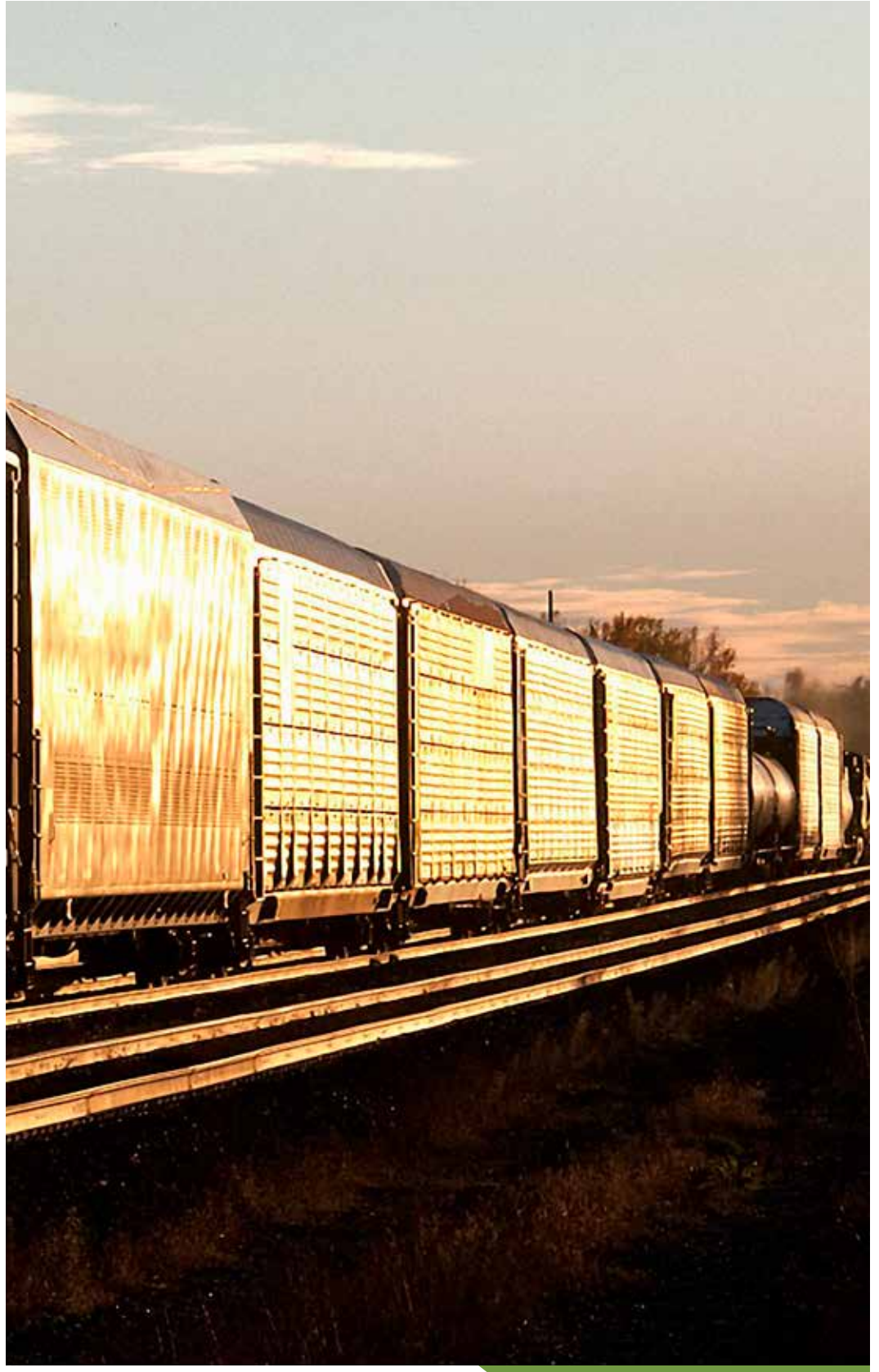
tenant’s rights invariably coming second to those of the landlord. This is evident in the competitive contest between CN and CP for traffic moving between Montreal, Toronto, Chicago and other U.S. Midwest destinations.

CN swallowed its long-time Detroit/Port Huron-Chicago subsidiary, the Grand Trunk Western Railway, bought the Chicago-Duluth Wisconsin Central Railway and later stitched them together by purchasing the Elgin, Joliet & Eastern, enabling it to bypass Chicago’s severe rail congestion. Cross-border traffic moves as a single transaction that is all under the control of CN.

Less efficiently, CP is dependent on running or haulage rights over various U.S. railways to bridge the gap between the ends of its track ownership in Detroit and Chicago. This adds costs and gives CP less control than CN over its Chicago-bound traffic. Consequently, CN outperforms CP on this route, which is reputedly the world’s busiest port-to-heartland corridor.

Canadian Pacific System





Carload merchandise freight service, often called "loose car railroading," is ideal for certain types of traffic because of the lower costs it can deliver due to the greater capacity of the rail cars, which typically accommodate three to four times the tonnage of trucks. Photo by Ray Farand

1.4 Current Rail Freight Service Portfolio

The cost-driven restructuring of the freight rail system has had a long-term effect on the traffic mix and the services the Class I railways market to shippers. The shipments handled are typically large in cubic volume and/or weight, and travel long distances. On a system-wide basis, the average length of a rail haul in 2015 was 1,179 km on CN and 1,365 km on CP.

Among the commodities moving in, out and through Southwestern Ontario by rail today are:

- Containers of domestic and imported manufactured goods
- Motor vehicles from local assembly plants to continent-wide distribution centres
- Potash and other fertilizers for agriculture
- Lumber and other construction materials
- Steel, plastics and chemicals for local manufacturers
- Fuels for home, farm and industrial use
- Oversized loads that can't be easily accommodated on the highways, such as wind turbine components, electrical transformers and industrial high-pressure vessels

Because of the weights, volumes and distances involved, some of this traffic is captive to rail as it is not physically or economically feasible to move it by truck. Without this rail service, major economic activities in Southwestern Ontario would become unsustainable.

Other types of rail traffic are highly truck competitive and shift back and forth between modes according to pricing, journey time requirements, service quality and other variables.

There is also a considerable amount of traffic that is simply not conducive to diversion to rail under current conditions. With its speed and on-demand

flexibility in handling smaller shipments that move under the just-in-time production and logistics models employed by many industries today, trucking remains the solution.

For those commodities best suited to rail haulage, and determined by the speed, cost and volume criteria of the shippers, rail offers one of three options:

- Carload or manifest service
- Intermodal service
- Bulk unit train service

An additional, specialized service is the handling of dimensional and extra heavy loads.

Carload or manifest service is the traditional form of rail freight and is often referred to as loose-car railroading. Loaded cars of various types containing a wide array of commodities are picked up at shippers' sidings and then assembled at main classification yards into full trains. At major intermediate yards and the end terminals, the cars are separated for delivery to receivers' sidings. Because of the number of processes and facilities involved, mixed carload service is asset and labour intensive, and time consuming.

While carload service cannot compete with trucking in terms of speed, it has advantages for those shippers who can adjust their production and distribution requirements to absorb the longer shipping times involved. The chief benefit of carload service is the lower costs it can deliver due to the greater capacity of the rail cars, which typically accommodate three to four times the tonnage of trucks.



Intermodal freight trains provide a service that is faster than carload haulage through the substitution of truck pick-up and delivery for the equivalent rail processes required by traditional merchandise handling. Photo by Ray Farand

Intermodal service employs multiple modes of transportation to move goods through the use of standardized containers that eliminate intermediate handling when the freight is transferred from mode to mode. In domestic and cross-border service, rail provides the long-haul portion of this seamless operation, while trucks pick up and deliver the containerized goods at either end of the rail haul. For overseas import/export traffic, rail and truck haulage bookend the trans-oceanic marine movement of the containers.

Intermodal service has successfully combined the cost benefits of moving large volumes over medium and long distances by rail with the flexibility of trucking in gathering and distributing less-than-carload shipments over shorter distances. It provides a service that is faster than carload through the

substitution of truck pick-up and delivery for the equivalent rail processes required by carload service. This modal partnership has helped the railways retain domestic and cross-border traffic that might otherwise have migrated to truck-only haulage.

As well, the cost efficiency of the rail component of intermodal haulage has been boosted by the introduction of double-stack service, which began in the late 1980s. This has dramatically increased per-train capacity by stacking containers two-high on low-slung, well-bottomed intermodal flat cars. As a result, intermodal has been a strong and growing market for the railways, accounting for 23 and 21 per cent of the revenue generated in 2015 by CN and CP, respectively.



*Unit trains of a single commodity that operate in Eastern Canada include western grain diverted from Thunder Bay to ice-free Atlantic ports during the winter, and crude oil and ethanol moving from the West to eastern markets.
Photo by Andy Cassidy*

Bulk unit train service eliminates the multiple processing and asset requirements of carload service by moving full trainloads of one commodity between single loading and unloading points, often in rolling stock owned by the shipper. In Canada, unit train service is most prevalent in the West, where full trainloads of coal, grain, potash and other bulk commodities move from inland load-out facilities to export positions for trans-loading to seagoing ships.

A limited amount of traffic moves in unit train service in Eastern Canada. This includes western grain diverted from Thunder Bay to ice-free Atlantic ports during the winter and crude oil and ethanol moving from Western Canada and the Midwestern and Upper Great Plains regions of the U.S. to eastern markets.

Efficient and cost-effective though it is, bulk unit train service has no foreseeable applications in Southwestern Ontario's rail freight mix because no single inbound or outbound commodity moves in large enough quantities to justify this type of dedicated operation. Therefore, it is through enhanced carload and intermodal offerings that any growth of rail's market share, tonnage and revenue can be achieved in the region.



Oversized loads that can't be easily accommodated on the highways, such as wind turbine components (shown above), electrical transformers and industrial high-pressure vessels. Photo by Walter E. Pfefferle

Dimensional loads are also moved by the Class I and short line railways, providing a service that cannot be handled by trucks because of weights, lengths, widths or heights that exceed the capabilities of the publicly-owned highways. A dimensional load is defined by CN as a shipment that meets one or more of the following conditions:

- 12' in height or exceeds 15'6" above the top of the rail once loaded
- Combined centre of gravity equals or exceeds 98"
- 10'8" in width or exceeds the length or width of the car deck
- Gross weight exceeds track capacity on a standard rail car
- Requires a car with six or more axles.

Examples of these dimensional loads are wind turbine components, electrical transformers and high-pressure vessels for various industrial applications, such as refining and thermal power generation.

1.5 Rail's Environmental Credentials

The documented environmental advantages of rail service have been major factors in transport policy and investment decisions made by other nations as part of their climate change action plans. Globally, transportation is one of the largest consumers of energy and one of the largest contributors to greenhouse gas (GHG) emissions – and it is growing in both categories.

Transportation is the largest energy consumer in Ontario, accounting for 36 per cent of all energy use in 2014. Of the 23,570.6 mega-litres of refined petroleum products consumed by the provincial transportation sector, railways – freight, intercity passenger and commuter – consumed only 472.6 mega-litres or 2 per cent of the total.

At its core, rail's environmental advantage comes down to one indisputable law of physics: Steel wheels rolling on steel rails encounter far less rolling resistance than rubber tires rolling on a concrete or asphalt surface. The low-friction characteristics of rail transportation result in its ability to move greater tonnage with less energy compared with road haulage.

Coupled with this inherent technological advantage are the tonnage-hauling capabilities of freight trains. A single 150-car, double-stacked intermodal train hauled by two locomotives equals the capacity of 300 individual truck movements. A 2009 USDOT study found rail to be anywhere from 1.9 to 5.5 times more fuel efficient than trucking over a range of route choices and profiles. A 2013 study prepared for various marine shipping stakeholders in the Great Lakes-St. Lawrence Region determined the energy efficiency per litre of fuel for the modes are:

- Marine 243 tonne-kilometres
- Class I Railways 213 tonne-kilometres
- Heavy Trucks 35 tonne-kilometres

As a consequence of this energy consumption, the study also reported that the carbon dioxide (CO₂) equivalents per tonne-kilometre produced by each mode are:

- Marine 11.9 grams
- Class I Railways 14.2 grams
- Heavy Trucks 75.5 grams

Nationally, the transportation sector generates 27 per cent of the total greenhouse gas (GHG) emissions.

Railways produce only 3 per cent of the sector's total and less than 1 per cent of the national total, while moving 70 million commuters and intercity passengers, and more than 70 per cent of the surface freight tonnage annually. By comparison, trucking accounts for approximately 40 per cent of the transportation sector's GHG emissions.

While all modes have improved their energy efficiency and reduced their emissions in recent years due to the adoption of more efficient equipment and operating practices, the comparative improvements have resulted in rail still producing, on average, greenhouse gas emissions that are 75 per cent lower than trucking on a tonne-kilometre basis.

Also to be considered is the ease with which most rail corridors can be expanded to absorb additional traffic, often without the need for lengthy environmental assessments. A double-track line with a modern rail traffic control system can handle the passenger and freight equivalent of 16 lanes of highway traffic. The land needed to create this highway capacity would be staggering, ripping a jagged wound through urban and rural agricultural area alike.

Capacity on existing rail infrastructure can be boosted further with the modern, computer-driven rail traffic control systems now available off the shelf from established manufacturers, including some Canadian firms.

Although it is unlikely to occur anywhere in Canada in the foreseeable future except on the GO system, railways offer something no highway can: Convertibility from oil-fuelled diesel power to electric traction, which can be derived from an extensive list of renewable sources, including hydro, geothermal, tidal, wind and solar energy.

Other fuel sources have also been tested, such as renewable natural gas (both liquefied and compressed), bio-diesel, hydrogen cells and battery storage systems. None have yet proved economically competitive or superior to diesel-electric propulsion, although research and testing continue. A hydrogen cell pilot project is now under way in Germany using lightweight, self-propelled passenger cars for light-density rural service and Metrolinx is investigating its possible application for its GO Transit rail operations as an alternative to electrification. However, GO's high-capacity and higher-speed requirements far exceed hydrogen's current technological and commercial capabilities.

What needs to be recognized in any discussion of the "greening" of freight movement is the increased efficiency of diesel-electric motive power that has occurred in recent years. Diesel locomotives are the rail equivalents of hybrid automobiles, employing a diesel prime mover to generate electricity that powers motors that supply the tractive force. The adoption of microprocessor control systems and the substitution of alternating current traction for less efficient direct current have been occurring progressively since the 1980s. Current diesel-electric locomotives are now much more fuel efficient than their predecessors and, under the new Tier 4 standards mandated by the U.S. Environmental Agency, operate with drastically reduced emission levels. Further technological advances continue to be made by the major locomotive builders.



Alternate fuel sources such as compressed natural gas (top) and hydrogen fuel cells (lower) are under development and being tested for various applications by operating railways and manufacturers. Photos courtesy CN (top) and Alstom (lower)



The lean production strategies employed by North America's Class I freight railways have led to the furloughing of large numbers of locomotives, rolling stock and crews. These cutbacks have, in the opinion of several diverse shippers, compromised various types of service. Photo by Paul Sincery

1.6 The Downside of the Evolution

There's no doubt the latest rail freight evolution has benefited investors and some large shippers. It also shook inefficiencies out of the system, led to a decline in the time cars sit idle in the yards and brought more precision to terminal-to-terminal main line operations.

However, there have been consequences for some users that make it difficult to view it as a large-scale blessing that is maximizing the use of rail and paying broad dividends to the economy, the environment and the public interest.

Driven by their investors, the railways have become obsessed with improving their operating ratios, which indicate how much they spend on operations for each revenue dollar generated. While useful as one barometer of short-term efficiency and financial

performance, it fails to provide a full picture of a railway's long-term health. A low operating ratio may be encouraging on a quarterly or annual basis, but it doesn't necessarily predict the long-term health of assets or a railway's ability to weather downturns in traffic or extraordinary operating conditions.

While rail freight volume nationally has grown 87.7 per cent since 1990 to 812.25 billion gross tonne-kilometres in 2014, this growth has not resulted from a diversion of traffic from the other modes, only as a result of the increase in the freight market. In fact, rail's domestic market share on a tonnage basis declined from 23.9 per cent in 2005 to 20.5 per cent in 2014, while trucking increased its share from 66.5 per cent to 72.3 per cent.

Rail also experienced a slight decline in its share of the import/export market, dropping from 12.8 per cent in 2005 to 12.2 per cent in 2014.

Another outcome has been a loss of system resilience. As traffic has surged in certain commodities, such as crude oil, it has put pressure on the slimmed assets of the Class I railways. The most dramatic example occurred in the winter of 2013-2014. A combination of soaring crude oil exports, a bumper grain crop and extreme weather conditions led to a coagulation of the CN and CP systems and ultimately provoked federal action, in the form of Bill C-30, the Fair Rail for Grain Farmers Act. Assented to on May 29, 2014, it requires CN and CP to move minimum quantities of certain grain commodities within specified time periods, subject to monetary penalties.

However, this legislation failed to address the root problems, which include a lack of investment to eliminate the bottlenecks that were the chief contributors to the service meltdown. It amounted to little more than a legislative gun aimed at the rail industry. The only reason the gridlock ended was because the winter came to an end and crude traffic declined.

While the latest evolution has benefitted some high-volume shippers, those shipping smaller quantities have faced increased costs and decreased service flexibility, which has driven some to higher-cost trucking. Where competitive rail service is available, shippers have switched back and forth between CN and CP based on the service and pricing offered.

These pressures have also affected the short line freight railways that have been spawned by the asset reduction strategies that have been keynotes of the latest evolution. While the short lines have built their business on the basis of the flexible service they can deliver to local customers, this advantage is often diminished by the service they receive from the Class I railways with which they interchange the traffic the short lines originate or terminate. Responsive though the short line service may be locally, its benefits can easily be lost through inadequate or poorly timed handling by the connecting Class I railways.

Another consequence of the Class I railways' policies and practices has been a deterioration of rail passenger performance. Competing for track capacity and operating with speed and scheduling requirements that are frequently at variance with those of the freight railways, VIA Rail Canada has suffered from a steady decline in the end-to-end running times it can offer on key routes and an adherence to the schedules it has negotiated with the freight railways.

VIA's on-time performance (OTP) declined from 86 per cent in 1995 to 71 per cent in 2015. Mostly due to the lack of priority VIA's trains receive from the host railways.

This VIA OTP decline has been severe on lines that are largely single-track and don't possess an adequate number of passing sidings long enough to accommodate the longer freight trains. In these cases, VIA's shorter trains are often put into the sidings when they must pass or "meet" freight trains. The lack of a sufficient number of lengthened sidings also makes it difficult for passenger trains to overtake slower moving freight trains on these single-track lines.

Created in 1977 as a Crown corporation to take over and revitalize the passenger services then being provided by CN and CP, VIA was born without the comprehensive legislation that would have given it the same rights that its U.S. counterpart, Amtrak, enjoys in its relations with the freight railway. Consequently, VIA largely has to accept the service provided by its freight railway hosts, especially CN, over which accounts for 83 per cent of VIA's route-kilometres.

Although there has always been a substantial difference in the service needs of passenger and freight trains, the two functioned more harmoniously on the same infrastructure prior to the asset reduction undertaken by the freight carriers over the last 20 years. The issue of the speed differential is one that has implications beyond the passenger question. In an era when shippers want their goods moved as expeditiously as possible, the Class I railways have offered few real improvements that make them competitive with trucking on a time basis.



Thousands of kilometres of secondary main and branch lines have been eliminated by Canada's railways as traffic has been diverted to publicly-funded highways over the past 60 years. Photo by Ray Farand

While CN and CP have reduced the time their cars, locomotives and crews sit idle, thereby reducing their fleets and workforces to improve the system operating ratios, they have not substantially boosted the average train speed. Both have altered their reporting standards at various times, so year-to-year and side-by-side comparisons are difficult. CN currently uses the performance criteria set by the Association of American Railroads (AAR) and reported an average train speed of 27.3 mph in 2016, which is only 0.1 mph faster than in 2012.

CP now uses its own non-AAR methodology, which it defines as network speed and believes to be a better indicator of its performance. Viewed in isolation, CP's reporting does show some recent improvement. CP's network speed was 23.5 mph in 2016, which is 5.5 mph better than when the new reporting system went into effect in 2012.

While railway shareholders and certain high-volume shippers have benefited from the changes that have produced this level of performance, rail is not living up to its full economic and environmental potential.

Instead of broadening its customer base and attracting new traffic from the other modes, it is losing ground. To both sustain itself and foster growth, there will have to be a different approach to freight railroading in Canada. It is becoming increasingly difficult for the railways to live off what amounts to stored-up capital, put in place decades ago when a much different business model was in effect.

To use a business cliché, CN and CP have picked all of the low-hanging fruit through cost cutting, asset reduction and the long-train operating plans. Reaching any of the higher fruit – new traffic diverted from the other modes through a superior service offering – is not likely under the current business models and operating plans. This raises questions about the sustainability of the rail freight system if these challenges aren't faced through a new approach to attracting and retaining traffic and revenue, which would build on those elements of the most recent evolution that remain relevant.

2.0 Rail's Next Evolutionary Cycle

Every evolution inevitably leads to the next. Many rail industry observers and analysts are of the opinion that the most recent one has run its course. The view is that major changes are required if there is not only going to be growth, but a retention of current traffic.

In this growing commentary, certain themes are emerging. The most prevalent are that the railways will need to shift from cost-driven strategies and focus on boosting their traffic base through service improvements. To do so, the railways must:

- Increase speeds, decrease transit times and increase train frequency
- Attract traffic that moves over shorter distances than is now considered rail competitive
- Increase shipper access with more direct rail connections for carload service and trans-load facilities for off-line shippers
- Provide intermediate intermodal facilities, not just widely-spaced hubs dependent on long truck hauls
- Generate more back haul to fill cars that return to their points of origin empty

The next evolution will be built on the solid financial footing created by the last one, but it won't be just cost control that will drive it. It will be shaped by the increasing shipper demands for more responsive and agile service, at a competitive price. This poses both threats and opportunities for the whole rail freight sector.



The CSX intermodal terminal at Valleyfield, Quebec, is but one example of the competitive tools the U.S. railways can mount to gain traffic at the expense of the Canadian lines, diverting it to their own and often superior routes close to the border.

2.1 U.S. Precedents and Competitive Threats

In any of the scenarios that have been suggested for a new approach to divert additional traffic to rail and build on the current base, capital investment will be required. This is the antithesis of the strategies that have fuelled the most recent rail freight evolution.

However, the implication is that this funding must in the future be a mix of private and public capital. This, in turn, requires the adoption of public policies that view rail as a solution with public benefits that justify investment, including reduced highway spending, increased economic competitiveness and substantial environmental dividends.

In terms of public policy, the U.S. has taken a divergent position on rail from the one that has been in effect across Canada for the past 30 years. While the five

American Class I railways have all engaged in the same cost-cutting strategies as CN and CP, and have also operated in what is largely a deregulated environment, they have also benefitted from federal and state transportation policies that are increasingly removed from those of Canada. These have led to public investment in partnerships with the private railways.

Even in the face of a new federal government that is attempting to slash public spending, the policies and investment that have partially enabled the shift in U.S. freight railroading are still in effect. The most recent measure before the U.S. Congress is H.R. 3001, an act to establish a Multimodal Freight Funding Formula Program and a National Freight Infrastructure



Burlington Northern Santa Fe's sweeping main line capacity expansion projects on routes linking Chicago with several Pacific ports pose major benefits for American shippers and competitive threats to Canada's two transcontinental systems, which aren't investing at the same rate or with a similar vision. Photo courtesy BNSF

Competitive Grant Program to improve the efficiency and reliability of freight movement. This comes on top of the ongoing development of a National Freight Plan, a National Rail Plan and individual rail plans by all the states wishing to participate in federal funding.

These divergent policies and investment strategies are accompanied by another American competitive threat. Four of the five Class I railways in the U.S. have lines that enter Canada or serve important border points. Canadian traffic that can be diverted to these U.S. lines is gravy to the American railways and its loss can have a deep effect on CN and CP.

At the regional level, the U.S. approach is also benefitting the short line industry, strengthening it to play an even larger role as part of a complete transportation solution and bolstering regional advantages that compete with those of numerous regions in Canada. The passage of the Building Rail Access for Customers and the Economy (BRACE) Act is the most recent example. It consists of a tax credit system that requires a short line to invest one dollar for every 50 cents in credit up to a credit cap equivalent to \$3,500 per mile of track. It is critical to the nation's 603 short lines for the upgrading of track and bridges.

Regional and state programs are also enabling

shippers and the railways to expand access to rail through assistance in the development of a multitude of regional facilities. These range from new shipper sidings to trans-load facilities to bonded inland ports connected directly by dedicated rail service to booming ports on the Atlantic, Gulf and Pacific coasts.

As well, the expansionist aspects of U.S. rail passenger policy factor in as competitive threats because they are being practiced in ways that work cooperatively with the Class I and short line freight carriers to generate maximum benefits for all.

Many physical gaps and bottlenecks in the Canadian rail system affecting freight and passenger service are currently not being addressed. Such projects would fall below the freight railways' return on investment threshold of 12 per cent or more. The public policy makers have not awakened to the public benefits and cost savings that could be generated by forging partnerships with the railways to overcome these deficiencies.

Other countries with which Canada competes long ago recognized the need for public participation in railway policy and funding, and met it. Until Canada does the same, this will remain a serious competitive threat.

2.2 Filling the Leadership and Policy Vacuums

Behind the operating and internal policy changes, there were key leaders who drove Canada's most recent rail evolution. The two most important personalities in this metamorphosis were Paul Tellier and the late Hunter Harrison.

After a distinguished career in the federal civil service, Tellier was appointed president of CN in 1992 to prepare it for privatization in 1995. Stripping away branch lines, reducing the labour force, building a new Sarnia-Port Huron tunnel to handle the new generation of double-stacked intermodal trains and sharpening CN's performance were hallmarks of this program.

Tellier's team fully exploited CN's superb main line assets and route structure, broadening its reach by acquiring Chicago-based Illinois Central (IC) in 1998. This gave CN a superior main line south to New Orleans and valuable feeder routes in the Midwest and Gulf Coast. Also part of the package was IC's president, Hunter Harrison, who joined CN as its chief operating officer.

When Tellier left CN in 2003, Harrison took over, bringing with him 34 years of hands-on railroading experience and both a vision and a passion for lean, precision freight railroading. He also engineered the strategic acquisition of various smaller Canadian and U.S. railways, extending CN's reach and expanding its market reach.

That vision remained at work when Harrison reached CN's mandatory retirement age and reluctantly turned over the company's reins to a non-rail successor on January 1, 2010. He returned to Canada as CEO of CP

in 2012, when CN's under-performing rival was taken over by a U.S. hedge fund operator. Harrison then recast CP in the same mould he had created at CN, boosting its share price and lowering its costs dramatically.

Harrison left Canada in January 2017 when he took over as CEO of the Eastern U.S. railway, CSX. His reshaping of Canadian freight railroading is still being felt through the operating practices he left behind.

Today, CN and CP lack the visionary approach – right or wrong – that characterized the regimes of Tellier and Harrison. The presidents of both railways today have said they aim to wring further costs out of their operations and increase traffic, but no dynamic policies and practices have yet emerged. Both have talked about the need to lure business off the highways, but there is no proof this is happening. In fact, the evidence suggests that rail's market share is continuing to nose downward compared with trucking.

Momentum is gathering on some U.S. railways for a change in railroading. That can be a strong initiator of change in Canada, even without a shift in public policy at the federal and provincial levels. Indeed, CN and CP have been reluctant to pursue some of the avenues open to their U.S. counterparts because they don't trust government and they don't want them around as an uninvited management team.

Long-time rail industry commentator Fred Frailey recently wrote that the entire industry is going to have to adopt "a new mantra. Perhaps it goes like this: The future of railroads is to work like mad and price aggressively to find new customers, be they carload or intermodal or bulk shippers. There is no easy way out."

2.3 External Threats and Counter-Measures

The U.S. rail threat is greater than some may suspect. As previously mentioned, four of the five U.S. Class I railways not only have the means to poach Canadian traffic, they are already doing it. This is a situation CN and CP have always faced and they are taking steps to counter it by doing some of their own poaching. Their strongest cards are their lines in the U.S. and the American traffic they can attract.

The most recent example is CP's new expedited intermodal service to move containers off the Pacific Ocean to Detroit over what is the shortest of all routes from Asia to America's heartland. This makes Vancouver and CP arch competitors of U.S. Pacific ports and the railways that serve them.

Although more distant, the threat posed by the policies and investments of other nations are to be considered. By increasing the attractiveness of the various regions they serve, these projects also work against Southwestern Ontario. The traditionally pro-rail nations have always been factors in this, but now some that went the same way as Canada are reconsidering their actions and changing course. Massive rail freight and passenger programs funded by the national and state governments in Australia are direct threats to Canada's economy and its transportation sector, even though they are occurring halfway around the globe.

In terms of modal competition, the railways also need to be concerned by and respond to the threat of autonomous trucks, which could greatly alter competition based on costing. The technology is well developed and lots of forward-looking articles have been written on the subject, but there are major rivers to cross before autonomous trucks take to Canada's

highways. The largest issue is the public's reaction, which is not expected to be welcoming.

While it would be false to dismiss this as a Buck Rogers fantasy, the railways also have a technological arrow in their quiver: autonomous trains. The technology exists to operate main line freight and passenger trains without onboard personnel at the controls. This is already done on major transit systems and some remote freight lines that have little public exposure.

Furthermore, the new positive train control (PTC) system that has been mandated by the U.S. government and is now being implemented as a safety measure includes features that make this entirely possible. For now, PTC will be applied as safety system that will close the loop between the trains and the rail traffic control centres using advanced communications-based technology. It can do more.

But as with autonomous trucks, there is the very real issue of public pushback. Citizens would not take kindly to 150-car freight trains roaring through their communities, over open grade crossings, at speeds of 100 km/hour or more without an operator at the controls. This is especially so in an era of heightened concerns about rail safety.

Alternately, there is still room for increased automation in other aspects of railroading and all the Class I railways have said they are going to employ it them to maintain and expand their cost advantage over the other modes. That opens up the potential to attract and shift traffic from those other modes to the railways.



The global railway industry needs to be concerned by and respond to the threat of autonomous trucks, which could greatly alter competition based on costing.

Perhaps the largest opportunity for the rail industry to counter these and other threats is merely to become more effective in telling their story and outlining their numerous benefits. Although it was the rail industry that created the whole concept of public relations as a means of opposing farmer agitation against their monopolistic powers in the 1880s, they have generally lost that skill. The old saying to the contrary, if you build the better mousetrap, the world does not necessarily beat a pathway to your door.

Railroading is a complex and often misunderstood industry. If it is going to be sold as a public benefit with much more to give, its story is going to have to be told more effectively. That's a problem only the industry itself can remedy.

2.4 Environmental Policy Implications

As public policy on environmental matters shifts, it bodes increasingly well for all forms of rail transportation, passenger and freight. It also has cost implications that are favourable to privately-funded rail service because it brings with it financial penalties and rewards that are dependent on energy intensity and emissions. Without such a system, shippers and users of energy intensive forms of transportation have externalized their full costs, leaving the public to pay for the damage they do and, in turn, undermining other forms of transportation that don't saddle the public with these costs.

It is shippers who are going to ultimately feel the brunt of carbon pricing and it will affect their modal choices. This is happening more rapidly in other countries, particularly Western Europe, where the drive to de-carbonize transportation is under way. Coupled with the massive programs to build a new and interconnected network of main trunk lines for freight, it will recast the already excellent rail system of Europe and make it a stealth machine.

In Canada, policy makers have been slow to recognize and reward the environmental benefits of railroading. The initial rounds of carbon taxing and cap and trade legislation have not treated the railways as the environmental dividends they are. The answer to questions about this situation have been that the railways are already doing well, so it is the "bad boys" of transportation that need to be encouraged to reform their ways.

The problem with this assumption is that the other modes are reaching their technological efficiency limits. In a recent report card on transportation, the European Environment Agency notes that "gains in the fuel efficiency of new vehicles and aircraft were not enough to offset the additional emissions caused by a higher demand in both passenger and goods transport."

Commenting on the European Union's progress on increasing rail investment and market share, International Railway Journal associate editor Keith Barrow wrote:

"While the electrification and automation of road transport will drive a reduction in greenhouse gas (GHG) emissions in the coming decades, this huge technical and cultural shift will not happen overnight. By ensuring a level playing field between road and rail transport, with targeted investment to improve the competitiveness and attractiveness of rail transport, tangible short-term progress could be achieved through modal shift with its many environmental, economic and health benefits."



Canada will need to follow a similar course if it is to meet its GHG reduction targets, especially given the excessive quantities and growth trends for all but the rail and transit modes.

There are some early signs of progressive thinking at work in Canada, most notably in Ontario. Rail's environmental benefits have been recognized in the Ontario Climate Change Action Plan, which recommends yet more study to determine the actions required to improve short line competitiveness and assist in reducing Ontario's high-carbon fuel

consumption and GHG emissions. But action has still not followed these encouraging words and various provincial and federal policies have actually made financial stability more difficult for the short lines.

The rail industry's environmental credentials are cards that still haven't been played. They have the power to alter the situation if played skillfully.

2.5 The Policy Pendulum Swings – Barely

It will be difficult for the federal and provincial governments to forever resist all of these forces and maintain their current laissez-faire positions when it comes to rail policy and transportation investment decisions. As the competitive pressures build, both will have to finally develop new policies and make investments to counter the forces being brought to bear by nations that have taken a far different approach.

Public concerns about rail safety in the wake of the Lac-Mégantic tragedy of 2013 have raised questions and demonstrated a public appetite for change. While at first hostile to the railways, the public mood has swung to now include government in the flame of its lingering fury.

Media reporting and commentary has increasingly identified Canada's national rail policy – or lack thereof – as being as responsible for various safety problems as the privately-funded railways. A call for public investment has been part of the debate, which has been reinforced by questions asked of the current federal government by opposition MPs in Ottawa.

This call for change has been articulated in a handful of recent government reports and announcements. The most notable was the review of the Canada Transportation Act under the direction of former cabinet minister David Emerson. The committee's report provided insight on the mood of the transportation industry and the shippers dependent on it. The clearest was this finding: "Government resources dedicated to transportation infrastructure are significantly lower than what many believe is sufficient to remain competitive."

But the CTA Review Committee was unable to answer the biggest question of all, namely who will pay to correct this deficiency. It noted, "The CTA Review was asked in the terms of reference how the federal government could encourage greater private sector investment in transportation infrastructure. Submissions from stakeholders were largely silent on this point (although there was general agreement that greater investment is required)."

Funding aside, the committee did provide two key recommendations that could have positive implications for the next railway evolution:

“The Review recommends that Transport Canada lead the development of a clear performance and evidence-based National Framework on Transportation and Logistics, in collaboration with the provinces, territories and industry....

“Transport Canada [should] formalize in policy the concept of a National Freight Rail System, inclusive of all interconnected railways in Canada.”

To date, action has been slight. The most meaningful was the November 3, 2016, unveiling by Minister of Transport Marc Garneau of a strategy known as Transportation 2030. It includes a pledge to invest \$10.1 billion in infrastructure “to help eliminate bottlenecks and build more robust trade corridors.” A consultation process involving all stakeholders has been promised.

However, Transportation 2030 largely relies on private investment to fund the improvements the government says are necessary for Canada to remain competitive. The \$10.1 billion in public funds would be invested over a period of 11 years, or at an annual rate of \$918 million. By comparison, CN and CP will collectively invest nearly \$5 billion of their own self-generated funds in maintenance and capital improvements in 2018.

The federal push for a largely cashless improvement of the transportation system continued with the announcement on May 16, 2017, of the Transportation Modernization Act. Without allocating or identifying the required funding, the act is partially aimed at “improving access, transparency, efficiency, and sustainable long-term investment in the freight rail sector.”

A revealing picture of shipper and transportation industry attitudes regarding these unfulfilled

investment needs emerged as a result of the 2017 Standing Senate Committee on Banking, Trade and Commerce report on a 7,000-kilometre coast-to-coast transportation corridor through the North. As visionary as the project may be, it didn’t impress numerous members of the transportation community, who viewed it as a diversion from the main problem.

Representative of the industry response was the statement by the Canadian International Freight Forwarders Association (CIFFA), which said, “When it comes to the transportation of containerized cargo, CIFFA believes it would be more beneficial to add capacity to existing railways and ports in order to meet future transportation needs.”

Investing in assets and services you already possess is a philosophy that can bode well for Canada’s railways, which still haven’t realized their full potential.

Slight though all of these changes in public and industry attitudes and political commitment may be, they indicate a growing chorus of voices calling for action that will produce public and private benefits through increased use of rail. The challenge now becomes how to pick up the pace of change and focus it on the rail option.



Investment in capacity expansion and track upgrading can pay mutual operating dividends to freight and passenger operators when they are undertaken through joint planning and funding. Photo by Walter E. Pfefferle

2.6 Passenger Considerations

Public pressure is building for action on the rail passenger issue, which has been allowed to languish for decades despite public calls for improvement. In congested urban areas such as the Greater Toronto and Hamilton Area (GTHA), the daily frustration of living with automotive congestion – a portion of which is attributable to highway freight movement – has built a constituency for rail investment. Rural alienation and isolation have brought calls from areas that once enjoyed reasonable rail service for its return.

As discussed previously, the shared use of infrastructure by passenger and freight trains poses several operational and investment challenges. In the ideal world, the two types of traffic would be separated and provided with infrastructure geared solely to the needs of each. Ideal though this vision may be, it has limited application in Canada because

of the enormous costs it would entail, not to mention the land acquisition problems. In but a few situations, it is not a realistic solution.

Freight and passenger trains have co-existed on shared infrastructure since the dawn of railroading nearly two centuries ago. The key has always been coordination to reasonably accommodate both forms of traffic on shared lines in ways that are beneficial to both. This remains the ideal solution in Southwestern Ontario and in all but a few situations in Canada.

In meeting the need for improved rail passenger service, there are definite benefits to be derived by the freight operators. The relief of any bottlenecks now created by this shared use is the most obvious. However, there are also opportunities for improvement and expansion for both types of traffic, if a collaborative approach is taken.

3.0 Southwestern Ontario's Rail Traffic Growth Options

Although the involvement of the federal and provincial governments remains the key to seizing the opportunities available from a more forward-looking rail policy, there are several steps that can be taken by regional governments in partnership with the Class I and short line railways, truckers, ports, shippers and others.

Based on the experience of several U.S. regions, the following is a suggested list of initiatives Oxford County and other Southwestern Ontario governments can pursue singly or jointly in partnership with those involved in and affected by rail freight service.



The critical role of short lines, such as Oxford County's privately-owned Ontario Southland Railway, has been recognized in several federal and provincial reports, and supportive actions have been proposed. A general failure to follow through is jeopardizing these vital local rail service providers. Photo by Walter E. Pfefferle

3.1 Short Lines

Ontario's regional or short line railways play a large role as "first and last mile" feeders to the continent-wide rail system. By lowering costs and providing a more locally responsive service, they have revived several former CP and CN branch and secondary lines. Nationally, short lines originate and terminate approximately one-fifth of all rail tonnage.

For those regions served by them, Ontario's short lines provide an opportunity to increase local rail freight options through their customized, retail-style service. They can and should be the first line of action in any campaign to increase rail usage.

The potential of Ontario's short lines is detailed in Oxford County's Empowering Ontario's Short Line Railways report, which was released in February 2017 and endorsed by the Western Ontario Wardens Caucus (WOWC) and the Mayors of Southwestern Ontario

(MOSO). It makes the case for the upper levels of government to adopt policies and programs conducive to the maintenance and expansion of the short lines' services.

While the vital role of short lines has been recognized in several federal and provincial reports, and affirmative actions have been proposed, none have materialized. In fact, the short lines appear to be losing ground everywhere except in Quebec, where the provincial government has maintained its positive, cooperative assistance program.

Since the Oxford County report was released, Saskatchewan has scrapped its short line program and sold its grain car fleet, which generated revenue for the short lines. The collapse and suspension of the American-owned line to Churchill, Manitoba, has also occurred.

In Ontario, the Sudbury-Sault Ste. Marie Huron Central Railway (HCRY) announced it requires assistance to continue rehabilitation and operation of the line, which serves many local shippers whose cost competitiveness would be affected if it closed. A previous public-private partnership began this work in 2010 after much government delay. That investment was more than recouped through the avoidance of highway maintenance costs that would have resulted from a shift of the HCRY's traffic to truck haulage, if it could have even been moved by truck.

Across Canada, short lines are grappling with new costs created by recent federal safety and grade crossing requirements. The small amount of federal funding available to offset some of these costs is not accessible to many short lines because they are provincially chartered, while those funds are only available to railways that operate under federal regulation.

There are additional challenges for municipally-owned short lines due to local budgetary constraints. The Town of Collingwood recently decided to scrap its portion of the Barrie Collingwood Railway, selling the right-of-way to the County of Simcoe for future transportation and utility use. Maintaining this 37-km line segment had cost the town up to \$425,000 annually. The City of Barrie continues to support the eastern portion of the line, which connects local shippers to the CP transcontinental main line at Utopia, but financial pressures are building.

Ontario's short lines have already demonstrated the extent to which they can and will go to invest in their own properties, which are vital to the regional economies they serve. All are still attempting to overcome the deferred maintenance that preceded the sale of these lines by the two Class I railways, which couldn't continue them under their higher cost structures.

Canadian governments, with the exception of Quebec, have been generally unwilling to assist the short

lines. This is jeopardizing their survival. The failure of a previous Ontario government to even recognize the need for legislative changes resulted in Class I branch lines north of Goderich, Stratford and Orangeville being dropped by short lines as candidates for retention and rehabilitation. Bruce and Grey counties lost all their lines, foreclosing the future economic benefits that would have flowed from the maintenance of these railways.

Strengthening the commitment to short lines that has already been expressed by Oxford County, the WOWC and MOSO should be a first step. Campaigning with and for these short lines – three of them municipally owned – to advance their case with the federal and provincial governments should be the next step.

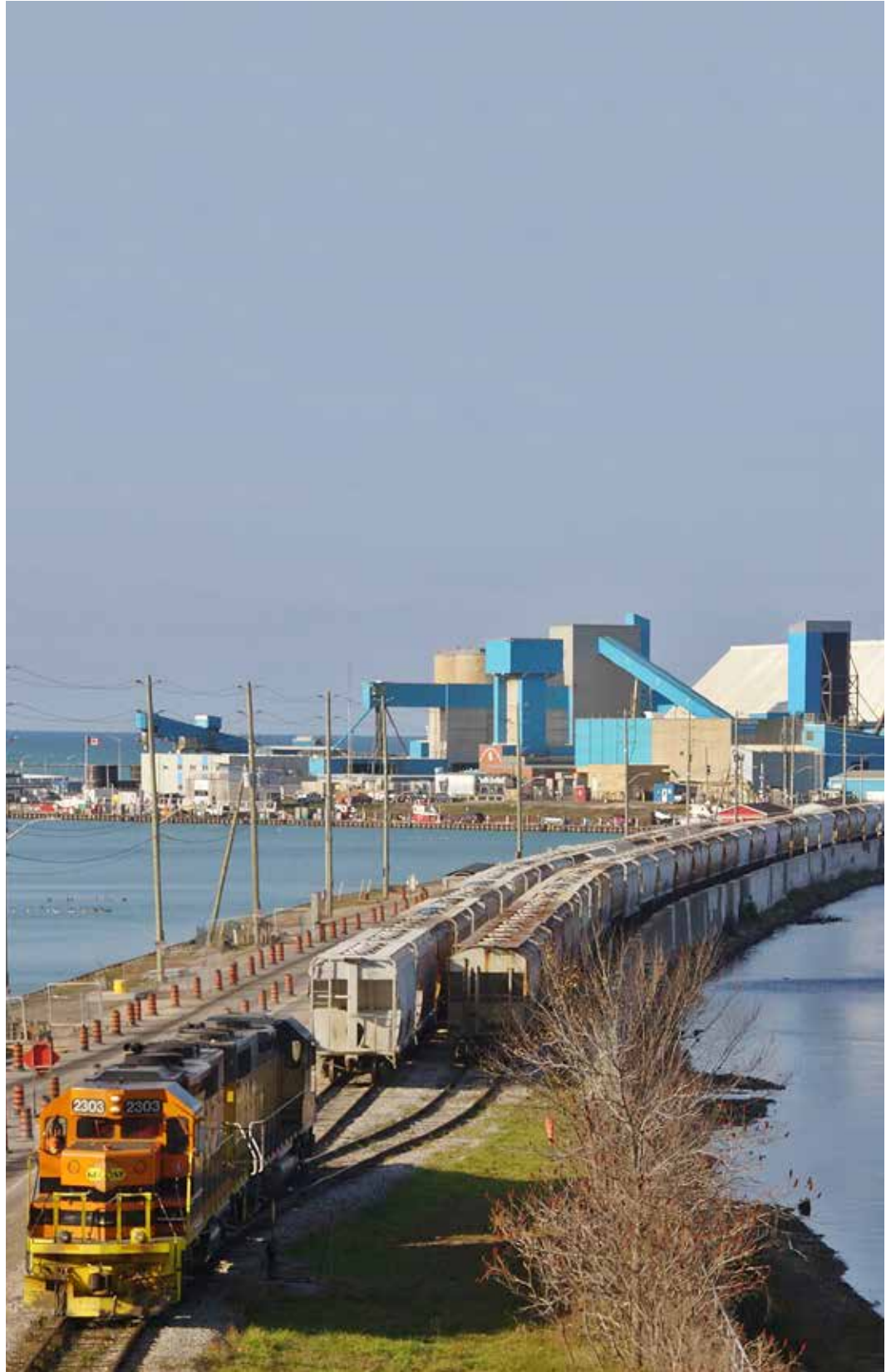
Two specific matters need to be brought back to the attention of the federal government:

- The CTA Review's short line recommendations, including U.S.-style tax credits to encourage infrastructure investment; and
- The short line endorsement in the Transportation 2030 strategy and eligibility for some of the \$10.1 billion it pledged to eliminate bottlenecks and bolster trade corridors.

An easy start could be supplied by adopting tax credit legislation similar to the U.S. Building Rail Access for Customers and the Economy (BRACE) Act. It requires a short line to invest one dollar for every 50 cents in credit up to a credit cap equivalent to \$3,500 per mile of track.

As well, Queen's Park needs to be encouraged to follow through on the recommendations in the Ontario Climate Change Action Plan, even though this largely amounted to more study.

The fragility of Ontario's short lines is real, their impact is large and the need for action grows.



The provision of sidings for the loading, unloading and storage of freight cars is essential in supporting important Southwestern Ontario shippers, such as the Compass Minerals' Sifto Salt facility at Goderich. The responsive service provided by the Goderich-Exeter short line plays a critical role in making this plant and its workforce competitive.

Photo by Walter E. Pfefferle

3.2 Shipper Sidings

The most basic building blocks of carload freight service, beyond the cars themselves, are the sidings that provide direct access to all manner of shipper facilities. In the era of railway market dominance, few industries could survive if they were not located on an active rail line and connected with a track switch and a siding of their own or a team track where multiple shippers could load and unload their individual carloads or less-than-carload shipments.

With the arrival of rail-based intermodal service in 1952 – first trailers on flat cars and then containers – the railways converted many shippers from carload service and the need for sidings declined. But for those shippers and receivers whose commodities remain unsuited to intermodal service, sidings are still their gateway to the North American railway grid.

As the Class I railways pruned their assets and eliminated labour-intensive services, the number of sidings and road switcher trains to serve them declined. The cost of maintaining the switches and track has been thrown to the shippers, many of whom have been only occasional users of carload service. Faced with these costs, they've allowed their sidings to be ripped up.

While CN and CP constantly talk about attracting more carload traffic, CP's 2016 annual report boasted, "Removing redundant switches from our main line meant less capital costs and a more fluid and productive railroad, as we turned assets more quickly. The excess switch inventory will contribute to lower capital costs related to future growth."

Some of those switches, which are admittedly high-maintenance points of stress and wear in the track structure, were related to shipper sidings. Although they can be reinstalled as required, that creates additional costs borne directly by the shippers.

This is a situation familiar to U.S. carload shippers, but the response has been different thanks to public intervention. Numerous federal, state and regional programs have encouraged the retention or reactivation of shipper sidings through grants and tax credits, which are matched by the shippers. This has worked most successfully where the sidings are located on short lines, which provide the required car switching at lower cost than the Class I railways.

Recently, North Carolina invested \$420,000 in a spur to serve a Danish textile firm that is investing \$60 million in a new manufacturing facility at Asheboro. An existing connection between the North Carolina Railroad and the Norfolk Southern main line completes the equation.

Oxford County has witnessed this through partnerships between its local short line, the Ontario Southland Railway (OSR), and its shippers. Sidings have been reactivated and improved through joint investment by the OSR and its customers.

The engagement of local governments in securing federal and provincial funding and tax credits to assist shippers and short lines in expanding siding availability would be beneficial.



Ontario Northland Temiskaming Region grain transload

3.3 Transload, Warehousing and Distribution Facilities

Where potential carload shippers don't have direct rail access, transload facilities supply an alternative. These are little more than a series of sidings where freight cars are "spotted" for the transfer of shipments to and from trucks, which "dray" the freight to and from local points. They are the modern, specialized equivalents of the team tracks of long ago, where shippers delivered and picked up shipments with wagons hauled by horse teams.

Plastics, fuels, chemicals, lumber and construction supplies, steel, fertilizer, grain and other agricultural products are among the many commodities handled by these transload facilities, which are expanding rapidly in regions across the U.S.

CN and CP maintain such facilities across their networks, often operated by third-party distribution firms. However, their coverage of Southwestern Ontario is minimal. CN has some transload facilities for various commodities on the Michigan side of the border, but those serving Southwestern Ontario require long truck hauls to and from Vaughan and Hamilton.

CP advertises a number of Southwestern Ontario transloads, but most are operated by third parties and served by connecting short lines. The privately-owned facilities in Guelph serve as a major hub for the distribution of granules and resins from Alberta and the U.S. Gulf Coast.

Other Ontario regions have awakened to the potential of this type of rail service in lowering regional shipping costs and road maintenance needs with a very small capital outlay. Several projects are now under way in Northern Ontario. The provincial government's decision to not privatize the Crown-owned Ontario Northland Transportation Commission (ONTC) has assisted, enabling its rail division to partner with municipalities to create or expand transload facilities.

The Town of Sioux Lookout, on the CN transcontinental main line, has proposed a transload to transfer truck-hauled chromite from the Ring of Fire mining development to rail for movement to a smelter in Sault Ste. Marie, Capreol or another northern location. It would also handle other commodities, such as inbound mining supplies and outbound forest products.

The current Northern Ontario transload projects have accessed funding sources not available to Southwestern Ontario, including the Northern Ontario Heritage Fund Corp. and FedNor. ONTC and municipal funds will be recovered through facility usage fees.

Similar upper-level government funding programs would enable Southwestern Ontario agencies to partner with short line railways, truckers and logistics firms to embark on comparable projects in this region. The Northern Ontario examples and those already in operation in Oxford County are proof of the ability of these facilities to attract freight to rail at low cost.

A more asset-intensive means of maximizing rail freight haulage in partnership with truckers and logistics firms is through rail-served facilities that receive, store and distribute shipments in bulk by rail. The U.S. Class I railways have been notching up their efforts to spur this sort of development on their own lines and in partnership with connecting short lines.

A handful of facilities of this type are already in operation in Southwestern Ontario, some even serving for the cold storage and truck distribution of U.S. frozen foods that arrive by rail.

Another method of warehousing and distribution related to long-haul rail freight movement is warehousing in transit. This uses freight cars as mobile and flexible warehouses on an as-required basis. Shippers and logistics firms pay per diem rates to the railways or car leasing firms for the use of the rolling stock in lieu of building actual warehouses. The cars remain on the sidings at these facilities until the commodities are required and only then transferred to trucks for highway drayage, following which the cars are released for backhaul and reloading by their owners.

There are examples of this type of service in Southwestern Ontario, particularly for the storage and distribution of fuels such as propane, which originates by rail in Alberta and is distributed by truck from these facilities for home, farm and industrial use throughout the region.



Washington DOT pool refrigerator car in Cold Train service

3.4 Shipper Car Pools

A complaint of many carload shippers is their difficulty in obtaining empty cars in a timely, reliable fashion for loading. This is a result of the Class I railways' lean production and asset reduction practices, which greatly reduced the rolling stock fleets that once gave them leeway to deal with traffic fluctuations. Now, the fleets have been pruned and pushed to higher levels of productivity. Large shippers generally get first crack at Class I-owned rolling stock.

As well, many large shippers use fleets of leased or owned equipment to assure themselves of equipment availability as and when they need it. This is popular with the Class I railways because it relieves them of the cost and responsibility for this rolling stock. Consequently, railways now own only 20 per cent of all North American freight cars.

One solution that would require some federal and/or provincial participation would be the creation of freight car pools as public-private ventures that would earn back their capital costs through lease charges to shippers. This has been done in the U.S. to assist smaller shippers develop or retain their markets.

The State of Washington partnered in 2006 with the federal government and a private rail freight forwarding company to lease and manage a pool of refrigerator cars for the movement of apples, pears,

onions, potatoes and other perishable produce to Chicago, New York and Boston. This traffic had been lost to the railways years before, but it has slowly been reclaimed in the U.S. over the last decade.

The \$2.2 million Washington State DOT Produce Railcar Pool Program ended in 2012, having bolstered the state's agricultural producers and enabling them to keep their traffic on the rails. This paid public dividends by reducing road maintenance, traffic congestion and environmental degradation that would have occurred had this traffic remained on the highways.

This is a solution that can ease the car shortages that stymie traffic growth. While there is strong demand for some cars, the used and leasing markets are glutted with others. A public-private pool car program would assist Southwestern Ontario shippers make greater use of rail.

In general, carload traffic has not been fully developed by the Class I railways as they made cost cutting their priority. This is costing them traffic and restricting growth. More equipment, facilities and service must be provided if this market is to grow. As has been demonstrated in the U.S. and some other Canadian regions, the way forward is to find methods to jointly fund and operate these services and facilities so they produce public and private benefits.



Regina Global Transportation Hub

3.5 Regional Intermodal and Inland Port Facilities

The most serious gap in the rail freight system in Southwestern Ontario is, ironically, the one type of service that the Class I railways relentlessly promote as their shining star: intermodal.

Soon after CP and CN began their initial trailer-on-flat-car (TOFC) intermodal services on the Toronto-Montreal route in 1952, they extended them to London, Windsor and other points in the region. The early terminals used fixed ramps at the ends of sidings so the trailers could be backed on and removed from the flat cars. When the gradual conversion from TOFC to container-on-flat-car (COFC) service began in the 1970s, these terminals were equipped with rubber-tired loaders to load and unload the containers from the side or the top.

In the drive to reduce their costs, these smaller intermodal facilities in Southwestern Ontario have been closed. CP and CN have consolidated their intermodal services in a network of major hubs across their systems, reducing the rail haul to several markets and replacing it with truck drayage of as much as 500 km. For example, not a single railway intermodal

terminal is now in operation on either CP or CN between the Greater Toronto Area and Winnipeg.

While this terminal consolidation may be good for the railways' shareholders, it isn't necessarily beneficial to smaller shippers. Many more would make use of intermodal service if the cost could be reduced and the convenience increased by eliminating the truck haul to and from the CP intermodal terminal in Vaughan or the CN facility in Brampton.

The only remaining TOFC services of any consequence were the overnight Expressway trains operated by CP once daily in each direction between Montreal and a Toronto-area terminal on the east side of Milton. Counting many Southwestern Ontario trucking and forwarding companies as regular clients, it demonstrated there is a specialized market for a fast and accessible intermodal service of this type in the region. Sadly, CP's Expressway trains made their last runs on May 30, 2018, for a variety of reasons, including governments' lack of interest in using it to divert truck traffic to rail and reduce road congestion and publicly-funded maintenance costs. This pattern

of intermodal terminal consolidation also occurred in the U.S., but now it is being reversed through public-private partnerships, as well as some growth in the railway-funded terminal network. Many of these U.S. intermodal terminal projects have been spearheaded by regional governments that have accessed federal and state funds to increase transportation efficiency, reduce costs and remove rail and highway bottlenecks that have worked against the establishment of regional intermodal hubs. This has also been the case in the development of new carload facilities, as discussed in Chapter 3.3.

This U.S. intermodal terminal growth has been driven by a number of factors. The partnerships between the Class I railways and the public sector for the expansion of robust rail corridors in the Southeast and Midwest have fuelled terminal expansion and coverage. So, too, has the expansion of the Panama Canal, the adoption of larger Panamax container vessels and increased traffic to and from Asia through the Deep South ports.

Many of these new intermodal terminals are inland ports, directly connected to the coastal port facilities through Class I and short line railways. This has resulted in new, direct rail services to expedite the containerized traffic in and out of the landlocked points they serve. In some cases, the inland facilities are owned and operated by the ports. This is the case with the Charlotte Intermodal Terminal, which is owned by the North Carolina State Ports Authority and directly connected to the Port of Wilmington by the CSX Queen City Express rail service.

This will be complemented by the construction of the CSX Carolina Connector terminal to serve northeastern markets through Rocky Mount, North Carolina. Norfolk Southern, the rival of CSX, is also engaging in partnerships with ports, short lines and regional and state governments. The states and the railways point

out that this not only increases their economic and investment desirability, it lowers shipping costs and reduces highway wear and emissions.

Canada has developed a few of these inland port facilities, but the pace is slow. An example is CentrePort in Winnipeg, which is Canada's first and largest tri-modal inland port. It is part of a designated foreign trade zone with direct rail, truck and air cargo access. CentrePort occupies 8,000 hectares of land available for manufacturing and assembly, warehousing and distribution, agribusiness, food processing and packaging, and transportation-related logistics. It is also developing a new rail park to provide co-location opportunities for rail-intensive businesses.

Smaller but more accomplished than CentrePoint is the Global Transportation Hub in Regina, which has a better governance model and has been able to move forward faster without being encumbered by the numerous political, financial and competitive constraints on CentrePort.

Southwestern Ontario agencies need to examine the potential for such a multi-modal facility in this region, ideally between the Highway 401/402 and Highway 401/403 junctions, and where access to a short line operator is practical. One of the key advantages for CentrePort, which also exists to an even higher degree in this region, is that it has direct service by both Class I railways and it is within 24 hours of more than 100 million consumers on both sides of the Canada-U.S. border.

A key benefit of these intermodal terminal developments has been their ability to attract and focus industrial development. Just as passenger facilities and services, coupled with supportive land use policies, lead to transit-oriented development, the same can be done with freight. There are a few examples of this in Canada, such as CP's Vaughan Intermodal Terminal.



The direct connections between CP's Vaughan Intermodal Terminal and the Fastfrate and SLH warehousing and distribution facilities in the background results in savings to taxpayers by reducing wear and tear on local roads. Photo courtesy CP

On the west side of the terminal are the warehousing and distribution facilities of Fastfrate and SLH Transport, which is the truckload division of Sears. Both have partnerships with CP for the domestic and international movement of intermodal freight to and from these facilities by rail. Containers move to and from the CP terminal on internal roads using yard tractors, which can be converted to electric operation. This increases the efficiency of this shipping and distribution system, and saves public costs by reducing highway drayage.

To succeed in Southwestern Ontario, a similar facility would ideally have direct service by both Class I railways and/or a connecting short line, which could eliminate the need for CP and CN to do more than just set off and lift loaded and empty intermodal and carload rolling stock. Long, flat sites adjacent to the railway lines, easy access to the main 400-series highway system and zoning that designates these sites for industrial and commercial purposes are additional requirements for maximum effectiveness.

3.6 Coordinated Passenger and Freight Strategies

In its report, *New Directions: Advancing Southwestern Ontario's Public Transportation Opportunities*, Oxford County made a strong case for the need for an integrated, multi-modal passenger system built on a foundation of much-improved rail passenger service. This has been endorsed by WOWC and MOSO.

Combining the high-performance rail passenger aspects of *New Directions* with a strategy to improve and expand rail freight service is already occurring on several U.S. corridors through a wide range of combined improvement projects. As in Canada, there are few opportunities and limited resources to pursue alternative projects that would separate the two forms of rail traffic.

In any strategy to increase rail freight use in Southwestern Ontario or elsewhere in Canada, the adoption of this joint passenger and freight approach has the potential to generate benefits for all operators

and users. Where it has been applied in the U.S., the results have not only been impressive, they've also been fast and affordable for all the parties in the partnerships.

A working example is the Capitol Corridor in Northern California. Starting from scratch in 1991, this high-performance rail passenger service has been developed on the infrastructure of the Union Pacific Railroad (UP), which is not noted for being passenger friendly. UP now uses it as the yardstick by which to measure other passenger improvement projects.

Operating from the western foothills of the Sierra Nevada at Auburn through Sacramento to Oakland and San Jose, the Corridor Capitol runs up to 15 daily roundtrips. It uses the western end of a busy UP transcontinental line and the mid-section of its equally busy Los Angeles-Seattle route. In the centre are many of the Bay Area's vital port facilities.



Chicago's Inglewood Flyover was constructed under a public-private partnership to bring benefits to Amtrak intercity passenger, Metra commuter and Norfolk Southern freight services. Photo courtesy CREATE

The Capitol Corridor's creators designed the system to produce a passenger service that would be as invisible as possible to UP. In turn, it also crafted it so the passenger trains would not face freight-induced delays. With federal and state funding, the existing UP trackage and signalling systems were built out to accomplish this. UP also contributed to the upgrading, some of which it had contemplated on its own without passenger considerations.

Today, the Capitol Corridor route is extremely fluid, posting a high on-time performance on the passenger side and assisting in UP's traffic growth in the Bay Area. More expansion is planned, including eventual passenger electrification, speed and frequency increases, and reconstruction of some abandoned trackage to ease capacity constraints as they emerge through joint passenger and freight growth.

Other joint passenger-freight expansion projects can

be found in the U.S. from Maine to Florida and New York to the Pacific Northwest. Even CP is engaged in a project like this in conjunction with the state-supported Amtrak Hiawatha Corridor between Chicago and Milwaukee.

By working cooperatively to bring about passenger and freight improvements, the railways, the passenger agencies, shippers and passengers are benefitting. There is no reason why this shouldn't be a consideration in any rail freight expansion programs in Southwestern Ontario.

Such an initiative would be especially timely as federally-funded VIA Rail Canada and the Government of Ontario are proposing rail passenger projects that would take an alternate approach and attempt to build separate, all-new passenger routes at high cost, with uncertain delivery schedules and with no demonstrable benefits for freight traffic.

3.7 A Southwestern Ontario Rail Corridor Coalition

Terminals and other rail-served facilities are only as good as the complete trade corridors they serve and of which they are key components. In Canada, much is said of the need to develop these international trade corridors and gateways, but little has been done.

The previous federal government, in partnership with the provinces, sketched out a national trade corridor concept in 2005-2006 and designated three main “gateway and corridor initiatives” requiring multi-modal investment and expansion:

- Atlantic Gateway;
- Ontario-Quebec Continental Gateway; and
- Asia-Pacific Gateway.

To date, only the last has seen anything resembling a long-term strategy and investment, although even this has been largely confined to highway and grade separation projects at the ports of Vancouver and Prince Rupert.

The Continental Gateway, covering the area from the ports of Quebec and Montreal to the Michigan border, was targeted for multi-modal development involving government, the railways, the ports and other stakeholders. The only noteworthy component of this proposal that has received attention is the Windsor-Detroit Gordie Howe International Bridge and related highway expansion, including the \$1.4-billion Herb Gray Parkway. The project’s total cost has grown to more than \$5 billion and its completion has been pushed back to 2023.

This highway project will do nothing to improve rail’s competitive position. In fact, it’s likely to weaken it at a time when Southwestern Ontario’s cross-border rail services need improvement. Nor are there any other signs of investment elsewhere in this corridor that will play a role in bolstering the rail option or even expanding the multi-modal corridor itself.

While the international bridge and highway project had its wheels greased by the federal and provincial governments, a parallel rail project went unfunded. For more than a decade, CP has been attempting to launch a public-private partnership (P3) to replace its constricted tunnel under the Detroit River. Completed in 1910 by the New York Central System’s Michigan Central Railroad, the twin-tube tunnel cannot accommodate the new generation of double-stack intermodal trains hauling two levels of high-cube containers on each car. CN built a new tunnel to the new dimensions at Sarnia-Port Huron before it was privatized and while it still had access to low-interest, government-backed capital.

CP formed a partnership with Borealis Infrastructure (now OMERS Infrastructure) to build a new Detroit River Tunnel, which could have released the old one for reuse by an extended VIA passenger service to connect with Amtrak at Detroit. With no public participation, the P3 tunnel project stalled and this has serious implications for Southwestern Ontario.

To take advantage of the economic benefits of unrestricted double-stacking, which reduces costs by up to one third, CP now diverts its Toronto-Chicago intermodal trains to Buffalo, where they are handed over to CSX for haulage to and from Chicago. This adds 228 km to the journey and jeopardizes the future of CP’s Southwestern Ontario main line from Campbellville to Windsor and Detroit by reducing the traffic it is now handling.

Since the current federal government came to power, endorsements and announcements have emanated from Ottawa regarding the trade gateway and corridor concept and its support for P3 projects. The committee reviewing the Canada Transportation Act received a submission from Transports Québec in July 2015

that said, "The federal government should recognize the importance of the Ontario-Québec Continental Gateway and Trade Corridor in international exchange and recommend resuming the work and update the analyses and the Strategy . . . to ensure its implementation."

As part of Budget 2017, Ottawa announced a Trade and Transportation Corridors Initiative that includes:

"A National Trade Corridors Fund; a Trade and Transportation Information System; measures to enable the modernization of Canada's transportation system; the Oceans Protection Plan; and funding to undertake climate risk assessments and address the requirements of existing federally funded transportation assets (VIA Rail Canada Inc., Marine Atlantic Inc. and Eastern Atlantic ferries). . . .

"Budget 2017 proposes to provide \$2 billion over 11 years to support the Fund's activities. At least an additional \$5 billion will be provided through the Canada Infrastructure Bank to address trade and transportation priorities."

The theory is fine, but the lack of a clearly defined plan and the low level of public investment are of concern. Also missing is any mention of the need for any Ontario-Quebec Continental Gateway and Trade Corridor to have branches that link it with other markets, especially in the Northeastern U.S.

This needs to be compared to the equivalent U.S. corridors that have been developed between various levels of government, the railways and others involved in the complete transportation system. The American initiatives include complete corridors, built out as public-private partnerships (P3s), such as the Norfolk Southern Heartland and Crescent Corridor projects linking the Northeast with the Deep South and the Midwest. The CSX National Gateway P3 project is another that is already functional.

Elsewhere in the U.S., there have been major rail-based P3 projects, such as the Alameda Corridor, which has streamlined and expanded access to the ports of Los Angeles and Long Beach through major improvements to the rail system of Southern California.

The trade corridor investment approach is obviously a sound one. The U.S. and other countries are far ahead of Canada on this score. The time is ripe for those in Southwestern Ontario who can see the virtues of such an approach taking the lead and starting the discussion, especially given the supportive comments and initial (if small) investment fund being provided by Ottawa.

It is, therefore, recommended that Oxford County, other concerned agencies and the members of the transportation and shipping community unite to form a public-private coalition to engage the upper levels of government in the development of a strategy. Such a coalition would ideally include, but not be limited to:

- Local shippers of industrial, agricultural and consumer products;
- Local short line railway operators;
- Local trucking companies, especially those that now provide drayage services linked to the Class I railway intermodal operations in the GTHA;
- Local firms engaged in freight warehousing and distribution;
- CP and CN representatives;
- Chief administrative and development officers of all the counties that form the Western Ontario Wardens Caucus (WOWC); and
- Mayors of the cities that form the Mayors of Southwest Ontario (MOSO).

The time for concerted action is now if this region is not to fall further behind competing jurisdictions in the U.S. and around the world in terms of rail freight options. It is vital that this be undertaken before whatever public funds that are available for transportation improvement and expansion initiatives are committed elsewhere.

4.0 Recommendations

That a county government such as Oxford should show an interest in and devote resources to broad issues such as increased rail freight usage, the role and the state of the short line rail industry, and the need for an integrated, multi-modal passenger system is both encouraging and shocking. That Oxford County should be pondering and advancing these issues in terms of their economic, social and environmental impacts is refreshingly visionary. Few others are doing this work.

The shocking aspect of this work is that the upper levels of government are not undertaking it. Worse, while the issues discussed in this and the previous reports on passenger transportation and short lines are advancing at a quickening pace in the U.S. and other nations, Canada seems stalled in its tracks.

4.1 A Southwestern Ontario Rail Roundtable

For Oxford County to advance the urgent and serious issue of rail freight maximization, it must consider how best to start and lead the discussion. It is an unfortunate fact that the multitude of players in the transportation game all largely live in silos, distracted by their individual day-to-day matters and rarely talking to each other, except when required to do so.

Dialogue among those involved in and who would benefit from a focussed review of the current state and the future direction of the rail industry should be a first step. The suggested means to begin this process for all current and potential players is with a roundtable discussion session hosted and directed by Oxford County.

Bringing all the various interests together to openly and freely discuss how those who see a greater role for rail can bring it about. Within its own boundaries, Oxford County directly and indirectly possesses many parties who would have a keen interest in such a conversation. Current, past and potential shippers, the local short line railway operators, representatives of the two Class I railways, truckers, logistics firms and others should be invited to participate in this first session.

Such an event has the potential to lead to the formation of the Southwest Ontario Rail Corridor Coalition, as discussed in Chapter 3.6 of this report.

However, an issue that does require discussion is how to engage with the federal and provincial governments. To date, the low level of interest by Ottawa and Queen's Park in the issues and the regional perspective has been discouraging. This must change if many of the local and regional improvement recommendations in this report are to be vigorously and swiftly addressed. The federal government has the lead role to play because of its broad powers and resources in the field of transportation. Greater interest and engagement must occur at the provincial level, too. This is especially important given the increasing crossover of services and projects between the federal and provincial levels of government.

A prime example is the proposed Southwestern Ontario high-speed rail service, which would have major implications for federally-operated VIA Rail Canada and the two national freight railways. Yet, little dialogue has taken place between the two governments or even VIA and GO Transit.

Bringing the various parties together at an Oxford County rail roundtable would also present an opportunity to draw the two governments into the mix, to impress upon them the need for change and, at the very least, to alert them to this situation and Oxford County's concerns.

4.2 The Broader Issues

While regional advocates of improved rail freight service can accomplish much on their own, there is a limit to the influence they can exert. Some aspects of those projects that can be advanced at the regional level can only attain their maximum potential if there is a serious revision of the transportation policies and modal investment decisions made by the provincial and federal levels of government, especially the latter.

This has already occurred in the U.S. and elsewhere, and Canada is falling far behind its trading partners and competitors. The progress that has been made in the U.S., in particular, is impressive, especially when one considers the state of its rail industry and its lack of upper level government attention back in the 1970s, when large chunks of the system were falling into bankruptcy and in danger of being shut down and liquidated.

In the U.S., there are now national rail freight, rail passenger and multi-modal freight plans in place or in development. These have been informed by state plans, which are required by the federal government if states are to participate in national funding

programs. Canada and Ontario have none of these.

This lack of comprehensive rail and freight plans to guide policy, regulation and investment was noted in the review of the Canada Transportation Act. The committee recommended that:

“Transport Canada lead the development of a clear performance and evidence-based National Framework on Transportation and Logistics . . . in collaboration with the provinces, territories and industry. . . .

“Transport Canada formalize in policy the concept of a National Freight Rail System, inclusive of all interconnected railways in Canada.”

There is also a serious information gap that makes analysis and planning difficult. Federal programs that once captured a plethora of rail data have been scrapped in the interest of budget savings. Others have been modified to such an extent that it is impossible to plot clear and accurate trends on an historical basis for purposes of comparison and performance measurement.

By comparison, the Congressionally-mandated Bureau of Transportation Statistics gathers and circulates a wide range of data that allows researchers, planners and operators to more accurately track rail and multi-modal performance and trends. While the federal government recently allocated \$50 million over several years to improve its transportation data gathering, Canada is far behind the U.S. and other nations in this work.

A failure to harmonize rail regulations, taxation and public sector funding also puts Canada years, if not decades, behind its international competitors. The adoption of simple regulatory and tax changes would bring Canada and Ontario in line with the U.S. and its border states. This could have a profound effect on the financing and functioning of Canada's railways, as well as ease and encourage the movement of freight by rail across the border.

There is also a need for an inter-governmental, multi-modal approach to policy, regulation and taxation so that changes for one mode don't negatively affect another. For example, the allowance by the provinces – to which Ottawa long ago devolved responsibility

for highway transportation – of increased truck weights and lengths has had a corrosive effect on both the federally- and provincially-regulated railways. The traffic and revenue losses that have resulted have been documented and they have undermined the rail sector.

Other jurisdictions have faced and dealt with similar issues. They need to be raised, discussed and resolved if Oxford County and all of Canada are to derive the maximum benefit from the freight railways. The suggested Oxford County rail roundtable is a method for starting this overdue process rolling.

As the not inaccurate cliché goes, "Think globally; act locally." That philosophy applies to any efforts to maximize the use of Canada's railways.



©Oxford County, 2018

For questions or permission to reproduce contact:
519-539-9800 | 1-800-755-0394
communications@oxfordcounty.ca

oxfordcounty.ca