

# A CASE FOR INVESTMENT IN RAIL AND INTERMODAL TRANSPORT



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*The authors argue for rail and intermodal transport as sustainable solutions to transportation infrastructure and the environment in the 21st century. As executives of the Railway Association of Canada, they obviously have a vested interest in rail solutions, passenger and freight, to the overburdened Canadian network of roads. They assert that Canada lacks, and urgently needs, a strategic vision for multimodal transportation. With respect to greenhouse gases (GHG), they point out that the rail segment accounts for only 4 percent of emissions in the transportation sector, and that rail has actually reduced emissions to 3.5 percent below 1990 levels; it is thus nearing compliance with the Kyoto targets, even while shipping activity has increased 29 percent over the period 1990-2000.*

*Le transport ferroviaire et intermodal offrirait une solution durable aux problèmes d'infrastructure routière et d'environnement du XXI<sup>e</sup> siècle, soutiennent les auteurs, de hauts dirigeants de l'Association des chemins de fer du Canada qui ont évidemment tout intérêt à préconiser le train de passagers et de marchandises pour résorber l'encombrement de notre réseau routier. Ils affirment ainsi que le Canada manque d'une vision stratégique du transport intermodal et qu'il lui faut en définir une de toute urgence. Au chapitre des gaz à effet de serre, par exemple, le transport par train n'est responsable que de 4 p. 100 des émissions produites par l'ensemble du secteur du transport. Mieux : ayant réduit ses émissions à 3,5 p. 100 au-dessous des niveaux de 1990, atteignant presque déjà les cibles du protocole de Kyoto malgré des activités en hausse de 29 p. 100 entre 1990 et l'an 2000.*

**Y**ou don't need to travel very far in France to alight upon a prime example of intermodalism in operation. The main airport in Paris will do nicely. As you deplane at Roissy-Charles de Gaulle Terminal 2 (CDG2), passengers are confronted with a striking example of what intermodalism looks like when it is properly planned and funded. Built right into CDG2 is a sleek and modern high-speed rail terminal. Opened in 1994, the TGV (train de grande vitesse) station at CDG is a key stop on the Paris-Lyon and Paris-Lille lines. It handles up to 25 trains a day and moves around a million passengers annually. It offers travelers downtown links to many of Europe's capital cities and to cities elsewhere in France. Here the transition from the air to rail modes is seamless and efficient. The Roissy-CDG airport example illustrates what a strategic vision for multimodal transportation looks like on the ground.

Infrastructure spending by the French state shares little in common with the expenditure on infrastructure by the present government in Canada since 1993. First, not a great

deal has been spent on transportation by the federal government during the last decade. Indeed, most of its activity in this area has been devoted to getting out of the transportation business, notably the withdrawal from the air navigation system and the transfer of the country's major airports to local authorities. In a climate of retrenchment, infrastructure spending in the area of transport was seen as a cost and not an investment. In the meantime, as our post-NAFTA economy has grown ever more dependent on trade and links to the outside world, our basic transportation infrastructure has become a victim of neglect and underinvestment.

It is our contention that a new approach to infrastructure policy for surface transportation is urgently needed in Canada. What form should new infrastructure spending take and where and how should it best be channeled? This article asserts that rather than additional spending on laying new tarmac or widening existing roads—actions that exacerbate the worst features of the status quo—govern-

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ments should be vigorously screening new investment against a range of key public interest criteria. This new approach must be inspired by intermodality, by transparency and full-cost accounting, and by a genuine commitment to environmental sustainability.

Since the 1950s, governments in Canada and the United States have been narrowly fixated on a unimodal policy for the provision of transport infrastructure. This is perhaps not surprising. Road building was popular with the public for it enhanced their newfound sense of mobility. Drivers, after all, were also voters. More importantly, though, the policy of encouraging road use garnered strong praise and support from the homebuilder and development community, from road construction companies and their unions, from the petroleum industry, from the nascent trucking industry and from a generation of planners and civil engineers for whom single use zoning and low density housing became a mantra. Suburban sprawl became the preferred model of development. In practice, it has meant a highly land-consumptive, gasoline-intensive, and emissions-indifferent approach to new residential and commercial development. As land was plentiful, in comparison to Europe, the limits to this kind of development were theoretical only. With respect to transportation, a policy of encouraging private vehicle use and commercial trucking has been the default posture of most governments.

Its main features are increasing commuter trip times; a profusion of smog alerts; constant pressures for road construction and renewal spending; vehicular accidents resulting in injuries and fatalities that cost governments a fortune in policing, traffic management and health-care costs and result in enormous insurance disability claims; increases in overall ambient noise; consumption of valuable farm land and green space; and other undesirable outcomes. New road construction is self-defeating as it induces further road use and congestion. A recent article on traffic in the *New Yorker* magazine contained the following revela-

tion: "In the twenty-three American cities that added the most new roads per person during the nineteen-nineties, traffic congestion rose by more than seventy percent."

This is due to the fact that governments deliberately underprice the cost of road usage. Governments don't factor in total economic costs of road spending; they neglect to include long-term debt financing costs, the opportunity costs of the capital invested in the highway network, or the depreciation in the usable life of the asset that inevitably takes place. At present they include only the costs of construction, maintenance and a part of the expenditure on enforcement, safety and policy activity. In other words, they explicitly exclude the cost of congestion, pollution remediation or emergency medical treatment, costs which are absorbed by the taxpayer. There is, therefore, a significant concealed subsidy to road and highway usage. Not surprisingly, people choose to drive as much as possible and will continue to do so. The recent report of the Canadian Transportation Agency Review Panel predicts that, at present rates, total car use will be 50 percent to 60 percent higher in 2015 than in 2000. It is perhaps not

widely known that rail, the most capital-intensive of all Canadian industries, finances the entire cost of building and maintaining its right-of-way and then pays property tax on these linear corridors. Neither private motorists nor commercial truckers pay such a levy for use of the roads.

In the freight transport sector, the swollen market share obtained by commercial trucking reflects both the infrastructure subsidy described above, uneven tax treatment, and the lack, until recently, of good data on the relative pavement damage done by different categories of vehicles. Fearful of offending powerful interests, policymakers in Canada have turned a deaf ear to demands for road user charges. This can be explained, in part, by the fact that trucks are regulated provincially—the rail, air and marine modes are regulated federally—and data collection on proliferating truck movements has been patchy.



The TGV arriving at CDG2: Europe's bullet train pulls into one of the continent's busiest airports, Terminal 2 at Charles de Gaulle (Roissy) near Paris.

It is easy to see why. There are more than 10,000 provincially regulated, for-hire motor carriers in Canada operating over 250,000 heavy commercial trucks. This is in contrast to the 60 railways in the country, all of which are responsible for the condition of the infrastructure they run over. The trucking industry has been a highly successful opponent within provincial capitals of any move towards a user-pay policy. Governments have continued to uphold the view that road provision is a public good notwithstanding the distortions this causes in the freight market where other modes are at a serious disadvantage. However, more recent research has begun to illuminate the extent of the cross-subsidy that private motorists are providing to commercial truck users of the roadways. A 1993 study by the American Association of State Highways shows that while commercial trucks account for 30 percent of the vehicles on the road they account for 99 percent of the pavement impact.

The purpose of the foregoing is not to assert that there is never a sound case for investment in roads. Clearly, obvious bottlenecks or stretches of road that are manifestly unsafe, are examples where upgrading and new spending may be justified. The point, though, is that our transportation infrastructure policies should no longer be automatically linked to new spending on roads. The unwritten maxim that says governments shall provide free roads and highways, tacitly encouraging car and truck use and dysfunctional patterns of development, must be re-examined. As the Organization for Economic Cooperation and Development observes in a report into the unaccounted costs of transportation: "Transport's environmental impacts occur mainly during the operation of motorized transport, but are also caused during the production and maintenance of vehicles, the construction of infrastructure, the provision of energy and fuels, and the disposal and decommissioning of vehicles and infrastructure. All impacts during the entire life cycle have to be taken into account."

If rail has been constrained from expanding more widely in North America, part of the reason for this relates to the lack of internalization of the full environmental and social costs of road transport. Of Canada's total network of 900,000 kilometres of roads, the portion which is tolled is only 344 kilometres or .04 percent of the total. It can be argued that Canada has much to learn from other jurisdictions where the notion of

transparency and equity in the allocation of road costs is more widely accepted.

The question for Canadian policy-makers is how to break out of the straightjacket that continual demands for road construction and expenditure impose. The answer, in our view, is to develop a new national transportation model which is based on intermodalism. Envisage a network where the majority of medium and long haul traffic is carried on North America's extensive rail system and where trucks deal with local short haul traffic taking advantage of their mobile flexibility to deliver to and from local intermodal centers.

What is required to make this happen? Governments need a new approach to screening surface infrastructure investment. They must clearly lay out their policy objectives and develop measurable criteria against which policy choices can be tested. These objectives could include improved competitiveness of Canadian industry, lower infrastructure costs for all levels of Government, reduced congestion and pollution, improved fuel efficiency, more efficient land use, reduced transportation accidents and fatalities, and so on.

A strategy based on clear policy objectives and measurable criteria would represent a departure from the approach that has seen billions spent building and renewing the 900,000 kilometres of roads we have created in this country during the last century. It is our contention, though admittedly not a disinterested one, that rail and intermodalism would better meet policy objectives and criteria than any other approach to surface transportation. Railways are self-sustaining entities that run over their own dedicated corridors and assume the entire cost of the construction and maintenance of their rail beds. This vertical integration of roadway and operations is absent in the trucking sector where operators have no proprietary interest in the highways. Rail rights of way parallel virtually all of the major east-west and north-south arterial roads and highways. A double-stacked intermodal train can take well over 200 truck trailers off the road. Per passenger kilometre travelled, railways require less than a third of the land taken by passenger cars. Commuter rail services, if attractively priced and conveniently scheduled, can attract thousands who might otherwise drive to work.

Perhaps the strongest arguments for a re-allocation of infrastructure dollars to rail and

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intermodal services, though, are the environmental ones. The environmentally harmful consequences of subsidies to roads are increasingly apparent. The profusion of smog alerts in Southern Ontario this past summer, breaking the previous record set in 2001, has highlighted a growing menace to the aged, to those with respiratory conditions and to children with asthma. Ground level ozone, the main constituent of photo-chemical (summer) smog, is formed from the action of sunlight on nitrogen oxide (NOx) and volatile organic compounds (VOCs). Ozone is harmful to almost all biological tissues. It is becoming a chronic problem and hospital admissions attest to this fact. Rampant single occupant vehicle commuting and a proliferation of heavy commercial trucks are big contributors to the problem. In this vein, rail and intermodal services enjoy two intrinsic advantages driven by simple physics. The first is the low rolling friction properties of steel wheel on steel rail over low grades. Low grades also mean much less horsepower is needed to move goods. The second advantage is the ability to couple numerous passenger or freight cars together behind one or two power units (locomotives) to form a train. Together these factors contribute to a highly favourable ratio of tractive effort (workload) obtained to fuel consumed. Hence, rail produces a small "ecological footprint" compared to other surface modes.

With respect to greenhouse gases (GHG), the rail industry accounts for only 4 percent of the transportation sector GHG emissions despite handling more than half of all the tonne-kilometres of freight moved in Canada. As Environment Canada states unequivocally: "Rail transport boasts the lowest GHG intensity of all the freight modes." Between 1990 and 2000, Canada's railways increased the amount of freight traffic they handled by 29 percent, yet total GHG emissions were 3.5 percent lower in 2000 than in 1990.

The point is that future infrastructure investments ought to take into account the demonstrated benefits of rail and intermodal operations as they relate to air quality and global warming. The unimodal, roads-first approach favoured by engineers working in departments of highways is only accentuating a problem that poses a serious threat to human health in our cities and towns. Laying new asphalt as a prescription for addressing growing congestion is no longer rational public policy. Even the David Suzuki Foundation has taken note of the growth in GHG emissions from distorted modal balance in the freight transport

sector, noting: "Responsible public policies, using financial and regulatory incentives, could reverse this trend and take advantage of the energy efficiency inherent in rail freight movement."

Sceptics will often resort to various facile and specious claims about how rail is an old technology that cannot match the flexibility of roads and commercial trucking. The rail industry's response to these assertions is to point to the significant and ongoing success of its intermodal services. Intermodal services tie the transportation system together to marry the best features of two or more modes. They are essentially, roll-on/roll-off and piggy-back systems that also involve the introduction of high capacity, double-stack container cars and multi-level auto carriers. They involve putting containers and truck trailers on rail cars. Crucially, intermodal business units function as scheduled services that employ the latest information technology, global positioning technology and e-customs clearance and are based in state-of-the-art, high-throughput intermodal terminals. Intermodal is now the largest line of business in the Canadian rail sector. It is also a key part of the equation in international movements, transporting import-export containers for ocean shipping companies.

Intermodal services have attracted business from time-sensitive customers who are cognizant of the fact that rail runs over separate and dedicated corridors and that rail's transactional times at border crossings are minimal. This has been particularly true in the wake of the September 11 terror attacks when road-based commercial freight haulers sustained massive wait times at crossings. That the Class 1 carriers have been able to capture this business testifies to their efficiency given the extent of the highway infrastructure subsidy that operates to the benefit of trucks operating in Canada's main trade corridors, a subsidy that is reflected in the rates trucks may offer shippers.

Intermodal transportation is clearly a potential solution to the public policy problem of too many trucks on the road. It affords the possibility of making greater use of existing rail capacity for goods movement as an alternative to costly expansion of congested highways. At a time when the trucking industry is experiencing a critical shortage of drivers, the intermodal option has the additional advantage of shifting drivers from long-haul to feeding intermodal terminals. Additionally, inter-

modal services can help to meet public objectives for the environment, safety and land use. In view of these benefits, why does the intermodal option remain an underutilized service? The answer lies in public policy. The United States has a legislated intermodal policy that integrates surface transportation infrastructure planning across modes, jurisdictions, and across the public and private sectors. The Transportation Equity Act for the Twenty First Century (TEA 21) consists of a \$217 billion (US) program designed to invest in all modes, including rail. Canada, by contrast, has no such policy designed to integrate the modes and no financial commitment to invest in rail or intermodal infrastructure. It is little exaggeration to say that Canada's surface transportation policies are rooted in a 1950s paradigm.

Canada is at a crossroads in the evolution of its surface transportation policy. Either it can continue with an approach based on inertia, permanently weighed down by a myopic commitment to funding ever wider and more expensive roads, or it can look to the future and make the kind of wise, strategic investments in infrastructure that will preserve our much prized quality of life.

The recently announced Canada Strategic Infrastructure Fund and the Border Infrastructure Fund are both opportunities to induce a paradigm shift. For the first time, private sector rail infrastructure has been deemed as an eligible cat-

egory for public investment. The government is also willing to countenance public-private partnerships, a fact that should work to the benefit of intermodalism. Where the investment dollars are ultimately allocated in these and any subsequent programs will be the proof of our commitment to a more enlightened approach.

It is time federal, provincial and municipal governments sat down and discussed a more logical and cost efficient approach to moving freight and people around this country, and to our key customer, the United States. In our view, the decisions we make now will determine whether our future is one shaped by congested traffic, clogged borders, polluted air and ever wider expanses of concrete or it is one in which emissions are reduced, congestion is diminished and arable land and green space is preserved for generations to come.

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### Le cynisme et la fonction publique

Analysant ici les interactions entre le système politique et le système administratif dans ce contexte, nous noterons d'abord que dans les réformes du fédéral, depuis les années 1990 et celles du Québec, plus récentes et datant de 2000, nous assistons à une critique de la bureaucratie comme responsable de la piètre performance des organisations publiques par le passé. Du coup, est rendu saillant le comportement bureaucratique des fonctionnaires, axé sur le suivi des règles et procédures prédéterminés par la conception et les processus de mise en œuvre des programmes, comme facteur de lourdeur et de rigidité. En accusant ainsi l'administration et en faisant du problème d'insatisfaction des citoyens un problème de mauvaise gestion, le système politique, ses membres et ses alliés, se distancient ainsi de leur administration et trouvent en elle une cible

clairement identifiée pour canaliser loin d'eux l'insatisfaction des citoyens. De plus, le discours de responsabilisation et d'imputabilité des fonctionnaires appuie cette tendance en diluant ou en faisant écran en quelque sorte à la responsabilité ministérielle qui prévaut pourtant dans notre système parlementaire. En sa capacité à punir sévèrement les gestionnaires imputables pour leurs manquements aux priorités ciblées—ce qui peut signifier une sanction pouvant aller jusqu'au remplacement—le ministre peut paradoxalement à la fois éloigner la responsabilité et prétendre ainsi avoir les choses bien en main en montrant son contrôle sur son appareil administratif.

*Tiré de : Isabelle Fortier, « Du scepticisme au cynisme : paradoxes et ambivalences des discours de réforme d'administration publique » / "From Scepticism to Cynicism: Paradox and Ambivalence in the Public Administration Reform Debate." Choix/Choices, à paraître.*