



HORIZONS

POLICY RESEARCH INITIATIVE

EMERGING DEVELOPMENTS AND KNOWLEDGE IN PUBLIC POLICY RESEARCH

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Welcome!

Transportation infrastructure has always been essential to Canada, whose geographic size makes it imperative for its citizens to have a quality transportation system that is able to meet their many needs and expectations.

Canada's transportation sector, which recently underwent numerous changes, continues to face many public policy challenges. This issue of *Horizons* looks at some of the challenges associated with the world of

Canadian transportation, in particular transportation accessibility, competition policy, a North American transportation framework, greenways, and municipal transportation needs in urban and rural areas.

Continental Transportation Policy

"Canadian policies must be continental in scope. It is no longer feasible for Canada to adopt isolated domestic transport policies (e.g. levels of taxation on carriers, forced access). The Canadian economy is increasingly being integrated into the much larger and dominant US economy. The US and Canada effectively constitute a single market for the purpose of developing regulatory

standards. Failure to harmonize taxation and regulations across the border could negatively affect Canadian competitiveness in the continental market and induce some sectors to consolidate in the US."

For more information, see: The Railway Association of Canada, *Developing a Continental Transportation Policy for Canada's Future* (RAC, March 2001) available at http://www.railcan.ca/documents/CTP_eng.pdf.

Policy Reflections

"Since we can't export
the scenery, we'll
import the tourists"

– Sir William Cornelius

Van Horne

Former President of the
Canadian Pacific Railway

Next Up!!!

Achieving sustainable development objectives remains a major challenge for Canadian researchers and decision makers. How do we ensure that today's needs are met without compromising the ability of future generations to do the same? The principle of adaptive management may provide some possible answers. The next issue of *Horizons* will look at adaptive management, from its theoretical bases to its diverse applications, with an emphasis on the potential of adaptive management to make sustainable development a reality in Canada. If you know of any research or programs that may be of interest to readers, please contact us at horizons@prs-srp.gc.ca or call (613) 947-1956.



Executive Brief



Transportation: *Then, Now and in the Future*

Transportation infrastructure has undoubtedly been vital to the nation's development. Whether it is the Trans-Canada railway, the St. Lawrence Seaway or the Trans-Canada Highway, Canada is a nation built on transportation infrastructure. What is sometimes forgotten is that an efficient and modern transportation system is just as essential to Canada's present and future.

THE CHALLENGES OF A GLOBAL ECONOMY

From the outset, transportation networks have served as bridges among Canadians from coast to coast and to the rest of the world. At a time of growing globalization and continental integration, Canada must be able to count on a competitive, safe, sustainable transportation network able to meet the emerging needs of the population. In such a situation, policy researchers and policy makers are facing an unprecedented challenge to move with globalization as it evolves, while ensuring that the quality of life of Canadians is enhanced.

The challenges are many, especially since what is possible constantly changes. While laying the Trans-Canada railway represented a considerable feat at the end of the 19th century, issues related to competition, sustainable development and transportation in the age of e-commerce are

but some of the emerging public policy challenges facing us today.

Within our North American home, the harmonization of transportation policies and commercial requirements is a difficult and evolving task. This includes

“...policy researchers and policy makers are facing an unprecedented challenge to move with globalization as it evolves, while ensuring that the quality of life of Canadians is enhanced.”

the integration of transportation infrastructure on a continental and even global level. Then there is the need to develop an urban transportation strategy able to overcome problems associated with traffic, urban sprawl and new demographic realities, through efficient transportation infrastructures, including seamless inter-modal travel. Access to transportation is also increasingly associated with equal opportunities for individuals and the economic development of rural regions.

A COMPLEX REALITY

Not surprisingly, transportation is a horizontal issue that is directly

linked with several priorities of the Policy Research Initiative. For instance, the strategic challenges posed by the harmonization of policies and regulations and north-south transportation corridors will be an important area for research under the North American Linkages Research Project. The Sustainable Development Research Project will be looking at greenhouse gas emissions and its link to sustainable development. Transportation issues in urban centres and rural and remote communities will also be part of the investigation in the Social Cohesion Research Project.

Since the importance and impact of transportation on the quality of life of Canadians are sometimes poorly understood, we must strive to expand and complement our knowledge, particularly the links among issues traditionally seen as discrete. Finally, an expanded transportation knowledge base is a logical precursor to the development of a broader, more integrated transportation policy framework in step with globalization. As globalization deepens, so too must our understanding of transportation's important role.

Laura A. Chapman
Executive Director,
Policy Research Initiative



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**DÎNER DE REMISE DES PRIX
LE 6 DÉCEMBRE 2001**

Canada



In this issue



Feature Columnist



Performance in Transportation An Ongoing Research Agenda Item

Since the late 1980s, the Canadian transportation industry has been subjected to some significant changes. These were introduced due to shifts in Canadian transportation policy (e.g. the National Airport Policy, the National Marine Policy), amendments to transportation's legislative and regulatory framework (e.g. the *National Transportation Act, 1987*, the *Motor Vehicle Transportation Act, 1987*, the *Canada Transportation Act, 1996*, the *Canada Marine Act, 1998*), privatization and commercialization of portions of the country's transportation system (e.g. Air Canada, CN, airports, ports, the Seaway) and termination of some important subsidy programs (e.g. the *Western Grain Transportation Act*, the Atlantic Region Freight Assistance program and the *Maritime Freight Rates Act*).

PERFORMANCE IN TRANSPORTATION AND THE CANADIAN ECONOMY

Behind these changes lay the objective of instituting greater reliance on market forces in transportation decision making and the expectation of improved efficiency and, consequently, lower transportation prices. Monitoring of the total factor productivity by Transport Canada shows that these changes did generate the expected results — improved efficiency

in the modes most affected by the changes. Deregulated transport modes have since shown important productivity gains (e.g. rail, trucking). The transportation activities still operating under a restrictive institutional environment, such as urban transit, are showing less significant productivity improvement.

PRODUCTIVITY CHANGES

Given the derived nature of transportation demand, a productivity analysis must also determine what caused productivity changes. For instance, in rail, total factor productivity gains came first and foremost from labour reductions, and from rationalization of the rail network. In trucking, they came from efficiency improvements in the operations made possible by unrestricted licence authorities and the integration of domestic and transborder operations. In urban transit services, the urban sprawl phenomenon, which makes it more costly to operate such services, can explain partly the lower productivity gains achieved. Productivity gains at VIA Rail are significant and came mostly from recently introduced untapped efficiency improvements.

Overall, in Canada, transportation productivity performance in recent years has surpassed that of the Canadian economy. Returning to this derived transport demand, analysis has also determined the contributions made by such productivity improvements to the nation's economy. Between 1994 and 1999, productivity improvements in rail freight transportation translated into declines in unit cost. These lower unit costs resulted in reduced total rail freight transportation costs in the order of \$1.2 billion over that period, allowing lower rail freight rates and improved financial results. Over the same period, VIA's robust productivity performance meant cost reductions in nominal terms of around \$145 million. In trucking, unit costs in 1999 were one percent lower than in 1994, which represents in real terms cost reductions of over \$700 million in that period. In the intercity bus industry, productivity gains have allowed unit costs to decline by

PRODUCTIVITY — TRANSPORTATION SERVICES VERSUS ECONOMY (average annual percentage change)		
	1994-1999	1986-1994
Rail – Freight	4.0	3.2
Trucking	2.1	2.3
Maritime	NA	1.7
Air	3.1	(0.2)
Rail – VIA	5.3	0.8
Bus – Intercity	3.8	0.4
Bus – Urban Transit	(0.4)	(0.7)
Transportation	2.5	1.4
Canadian Economy	1.0	0.5

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Continued from page 4

1.6 percent per year between 1994 and 1999, generating cost savings of over \$75 million in real terms from the level where they would have been without the productivity improvements. Transit costs have fallen by 1.2 percent since 1994, entailing savings of over \$60 million in real terms. The productivity gains in air transportation between 1994 and 1999 meant annual unit costs increases (0.4%) below inflation, even with the internalization of air navigation fees in recent years.

Productivity changes clearly vary over time and place, and according to the economic and institutional context of the firm, sector, region or country. But Canada's trade activities benefited significantly from the real term declines in transportation rates made possible by transportation productivity improvements.

PRODUCTIVITY MEASUREMENTS

The concept of productivity, when it comes to transportation, cannot only be applied to transportation services *per se* but also to transportation infrastructure (specific to a mode or from a system point of view). Transportation infrastructure productivity should be noticeable at two levels:

- at the level of the infrastructure itself; and
- in terms of economic benefits to the other sectors of investment in transportation infrastructure.

At the level of transportation infrastructure, productivity measurements are part of the plan for future work within the department. Transport Canada recently funded research to measure statistically and quantitatively the linkages between public infrastructure spending and economic activity. A production function approach was used for eight industry categories: agriculture, forestry,

mining, construction, manufacturing, transportation and communications, retail and wholesale trade, and finance, insurance and real estate. Because of this approach, the study faced a fundamental research challenge, that of causality: Is it the level of total economic activity that explains public infrastructure spending or is it the other way around? The study tested the hypothesis of whether public sector capital, particularly for highways, had a positive influence on private sector output. Some of these industry categories were not expected to be

closely linked to public investments such as roads. However, including them was part of the research plan, that is, to identify which sectors, if any, showed a link between the level of economic activity and highway capital stocks. For those sectors most likely to be influenced by provincial highway stocks — manufacturing, transportation and communications, and trade — a statistically significant, positive link was found between public highway capital and industry output. The marginal products

of highway capital indicated a normal return on investment of highway capital across the provinces and over the years.

BENEFITS OF FULL COST ACCOUNTING MEASURES

This study provided a disaggregated test of the hypothesis that public sector capital, particularly highways, has a positive influence on private sector output. While the calculations used by province are averages over the years, there may still be some debate over whether the most recent level of highway capital stock is optimal or not. With sustainability as a transport policy objective, there is also a need to pursue research to measure as precisely as possible the full costs of each mode of transportation. Full cost accounting measures not only the economic costs of producing transportation services,

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“Productivity changes clearly vary over time and place, and according to the economic and institutional context of the firm, sector, region or country. But Canada’s trade activities benefited significantly from the real term declines in transportation rates made possible by transportation productivity improvements.”



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but also the costs related to the use of publicly funded infrastructure. As well, it measures social costs related to transportation activities, such as those tied to population health as a result of greenhouse gas emissions, accidents and so on.

EMERGING RESEARCH CHALLENGES

In our market-driven environment, we are seeing a trend toward increasing integration of transportation systems, in North America and also at the global level. Such integration presents important research challenges, as the analytical focus must take into account both domestic and global considerations to infer implications on physical transportation assets as well as on policies, legislation and regulations. On the institutional front, the analysis must go beyond the transportation institutional framework. It needs to

include such other facets as rules and regulations applicable to transportation crews in international transportation activities and the question of taxation, with its significance for the level playing field.

In our world of changes, transportation remains strategically important to our country and its future, even in our growing information technology environment. It is the capacity of transportation not only to meet needs but also to adjust to shifting needs that will keep Canada growing. This explains Transport Canada's emphasis on research to monitor performance and changes.

Roger Roy
Director General,
Transport Canada

Primer

The term "information highway" is commonly associated with the Internet, e-mail and the Web. However, policy research currently under way suggests that a more literal interpretation of information highway may soon take flight — one that combines the notions of transportation and technology. Below are three terms associated with this more literal interpretation.

Intelligent Transportation Systems (ITS) refer to the monitoring of transportation corridors through the use of technologies such as information processing, communications, control and electronics. Combining these technologies enables advanced surveillance systems to provide feedback and response in real time to traffic-related issues. The types of ITS which currently exist include those focusing on traffic congestion, road safety, environmental effects

and road conditions. For more information, see <http://its.mit.edu/>.

Smart Roads are transportation corridors equipped with technologies which enable officials to test, evaluate, validate and analyze traffic flows, driver behaviours, vehicle dynamics, pavement conditions, and snow and ice removal. For more information, see <http://www.ctr.vt.edu/index.cfm>.

Smart or Hyper Cars are environmentally friendly automobiles, geared primarily for urban use, which use advanced information technology to enhance fuel efficiency, as well as better performance, safety, amenity and affordability. For more specifics on the features of Smart Cars, see <http://www.hypercarcenter.org>.

GS

Upcoming Events



DATE	EVENTS
MAY 27-29, 2001	<p><i>Impact of NAFTA on Aboriginal Business in North America</i> (Radisson Hotel, Saskatoon)</p> <p>The Estey Centre for Law and Economics in International Trade has partnered with the Native Law Centre of Canada and Dorsey & Whitney LLP in an effort to identify and document cross-border trade issues facing Aboriginal people doing business in North America and to develop a consultative framework within NAFTA to deal with these issues. A conference will launch this initiative. For more information, please visit http://www.esteycentre.ca/events.htm#ov.</p>
MAY 29, 2001	<p><i>Sustainable Communities – Policy Options and Emerging Challenges</i> (Université Laval, Quebec City)</p> <p>Sustainable development constitutes one of the greatest challenges facing our society today. What should a sustainable community consist of, and how do we get there? The Policy Research Initiative with the participation of the Canadian Political Science Association and the Environmental Studies Association of Canada is holding a one-day symposium to discuss these questions. For more information, please visit http://policyresearch.gc.ca/sustainability/Conference/sc.htm or contact Patrick Morin at p.morin@prs-srp.gc.ca.</p>
JUNE 5, 2001	<p><i>Governing Within the Law: New Challenges – Thematic Series 2001</i> (Poliquin-Greene Room, former Ottawa City Hall, Ottawa)</p> <p>Clare Beckton, Assistant Deputy Attorney General Aboriginal Affairs, Department of Justice Canada, will chair a session entitled Aboriginal Rights in the 21st Century. This session, organized by the Canadian Centre for Management Development, will look at Aboriginal rights and examine their reconciliation with governance in the 21st century. For more information, please visit http://www.ccmd-ccg.gc.ca/events/thematic/governing_law_e.html.</p>
JUNE 17-20, 2001	<p><i>Wealth, Health and Welfare: Tensions and Passions</i> (University of Calgary)</p> <p>The Tenth Biennial Conference on Canadian Social Welfare Policy will examine the issues of wealth, health and welfare in Canada through seminars that explore topics including the tension between the forces of globalization and localization, the erosion of public responsibility for the social rights of citizenship and the measure of social progress in relation to societal health and well-being. For more information, please visit http://www.ccsd.ca/cswp/cfpe.htm.</p>
JUNE 20-22, 2001	<p><i>Industry Canada Conference on North American Linkages</i> (Delta Bow Valley Hotel, Calgary)</p> <p>Building on the priorities outlined by Richard Harris in his paper entitled “North American Economic Integration: Issues and a Research Agenda,” Industry Canada has commissioned a number of research papers on key aspects of North American trade. These papers will be presented in a conference on North American linkages. Additional information on conference registration may be obtained from Prakash Sharma at sharma.prakash@ic.gc.ca.</p>
JULY 8-10, 2001	<p><i>Expanding Networks: Research, Policy and Practice to Prevent Falls and Injury Among Older Adults</i> (Ocean Point Hotel, Victoria)</p> <p>Featuring an exciting line-up of speakers and workshop leaders, the conference will provide an opportunity for researchers, practitioners and policy makers concerned with the prevention of falls and injuries among older adults to share their perspectives with one another, and to create and expand networks. For more information, please visit the conference’s Web site (http://www.aimnet.bc.ca/expand.htm) or contact Nancy Newall at nen@uvic.ca.</p>



Eyewitness

On-Road Heavy-Duty Vehicle Emissions Conference

The first On-Road Heavy-Duty Vehicle Emissions Conference was held March 26th and 27th in Windsor, Ontario, to address federal-provincial as well as international cooperation in the control of in-use heavy-duty diesel vehicle emissions. The

step toward controlling in-use heavy-duty diesel vehicle emissions. In the last two and a half decades, automotive manufacturers have made great strides in reducing the regulated emissions of newly manufactured vehicles. Unfortunately, much of these

trucks, which are usually smaller, are generally much older and use far more total fuel (diesel and gasoline combined) than the long haul trucks. When it comes to the regulatory atmosphere in Canada, the importance of pursuing an integrated plan for vehicles, engines and fuels, both on and off road was stressed. The mechanisms by which diesel emissions affect human health and the environment were linked and also examined.

“In the last two and a half decades, automotive manufacturers have made great strides in reducing the regulated emissions of newly manufactured vehicles. Unfortunately, much of these emission reductions are counteracted by insufficient maintenance or tampering with vehicles in use.”

Presentations covering existing I/M programs, both nationally and internationally were discussed. Currently, in Canada two provinces have implemented HDV I/M programs — British Columbia and Ontario. These programs were introduced in recognition of, and to deal with, air quality problems and the associated human health impact that are a direct result of the exhaust emissions from motor vehicles.

conference was organized by Environment Canada with the assistance of the Canadian Council of the Ministers of the Environment (CCME), the Canadian Trucking Alliance and Parsons Advanced Testing Technologies. There were 116 participants, including representatives from federal, provincial, municipal and state governments, environmental groups and private industry from Canada, the United States and internationally.

The main goal of the conference was to provide air-quality regulators with knowledge on issues related to diesel vehicle emissions and in-use testing of diesel vehicles. Due to the significant amount of inter-provincial operation of the trucking industry, developing reciprocity between the provinces and the United States is an important

emission reductions are counteracted by insufficient maintenance or tampering with vehicles in use. Inspection and maintenance (I/M) programs are one way of controlling in-use vehicle emissions caused by these factors. Environment Canada's interest in heavy-duty diesel-vehicle smoke testing stems from the contribution of diesel vehicles to air quality problems and the perceived inequity between light-duty and heavy-duty vehicle (HDV) emission inspections on the part of the general public.

The conference offered an overview on the state of trucking in Canada and included the regulatory atmosphere in Canada from the standpoint of both fuels and vehicles, and engines. It was revealed that Canada's long haul fleet is relatively new and clean while the local or vocational

Environment Canada recently initiated work on the development of a CCME Environmental Code of Practice for heavy-duty vehicle emission I/M programs. This code is meant to provide a guide for program compatibility between provinces. The conference allowed all stakeholders to obtain the latest information on this subject, before finalizing the contents of the Code of Practice.

Carol Burelle
Head, In-Use Vehicle Emissions
Transportation Systems Branch
Environment Canada

Research Brief

Diesel School Buses and Children's Health

The Natural Resources Defense Council (NRDC) and others have conducted a study measuring the level of exhaust emissions in diesel-powered school buses in California (Diesel exhaust is a complex mixture with major health concerns related to fine particles and nitrogen oxides). This study concludes that children who ride a diesel school bus would be exposed to higher levels of several substances than if they travelled in a car or in a similar bus fueled with natural gas. The study further concludes that children riding a diesel powered bus face a higher risk of developing cancer.

The NRDC is working on a campaign in California advocating that private and public fleets reduce their use of diesel by converting to cleaner alternative fuels. Both groups favour conversion and adoption of compressed natural gas (CNG) or propane powered vehicles to reduce emissions and resultant exposures. Cost considerations work against the natural gas option, as this type of engine is currently more expensive.

Diesel proponents on the other hand advocate conversion to "clean" diesel technologies. These technologies include very low sulphur levels (15 ppm) which in turn enable the adoption of particle traps and catalytic converters (reducing gaseous emissions). Low sulphur diesel is to be mandated across the United States and Canada in 2006, with overall emissions requirements for new vehicles also dictating the need to adopt particle traps and catalytic converters.

Natural gas and diesel proponents differ on which technology is the cleaner. While both substantially lower emissions from current diesel technology, both groups quote studies to support their technology as the cleanest.

Increasingly, studies point to an association between vehicle emissions and cardio-pulmonary health. Diesel exhaust itself has been linked to cancer, though research gaps make it difficult to quantify the impact of diesel particulates on health. To characterize the degree to which diesel emissions affect the health of Canadians, a specific research agenda is required. Given the sensitivity of children to exposures and emerging research documenting specific health concerns, the research agenda should especially address children's health. The relative improvements in air quality provided by CNG versus clean diesel, and the issue of market penetration and fleet changeover rates are other items to be considered in a Canadian research agenda.

For more information, the full report is available at <http://www.NRDC.org/air/transportation/schoolbus/schoolbus.pdf>.

Bookmark



Air Travel Complaints

"The breakdown and analysis of the number and nature of complaints received by the Air Travel Complaints Commissioner between July 5, 2000 and December 31, 2000 offer revealing snapshots of the fallout from the recent turbulence affecting the air industry in Canada. Complaints collected during the first six months also illustrate the depth of the travelling public's concern about a wide range of services that colour a flight experience, both in the air and on the ground.

[...] An analysis of the total number of issues revealed that three categories – quality of service at 45 per cent; flight schedules at 19 per cent; and baggage problems at 12 per cent – dominated the nature of the complaints.

[...] The majority of complainants sought either an explanation and/or an apology from the air carrier. However, an almost equal number sought compensation as well.

An analysis of the findings also suggests that complainants were most concerned about the lack of communication from the carrier, including full and frank information about flight delays or cancellations."

For more information, see Canadian Transportation Agency, *The Report of the Air Travel Complaints Commissioner* (Ottawa: Canadian Transportation Agency, 2001), available at http://www.cta-otc.gc.ca/cta-otc2000/report-rapport/index_e.html.



Feature Columnist



Commuter Rail's Compelling Case

BACKGROUND

Commuter rail is defined as passenger rail service using heavy rail technology to carry people who regularly make the same trip, whether for work, recreation or shopping. It is an essential part of the transportation infrastructure of Canada's 3 largest cities, complementing bus, subway and passenger vehicles as part of an integrated multi-modal system. It

- In the greater Toronto area, GO Transit carries 135,000 commuter rail passengers each weekday into and out of the downtown core of Toronto. To do that by automobile would require at least three more multi-lane Gardiner Expressways or Queen Elizabeth Ways and three more Don Valley Parkways along with other major arterial roads. Such a

- In the greater Montreal area, the Agence métropolitaine de transport carried 12 million passengers in the year 2000 on its network. That represents the capacity of six highway lanes into the Montreal core and six additional lanes out of the core. It is estimated, by that authority, that the equivalent of 53,000 tonnes of greenhouse gases are eliminated each year from the atmosphere as a result of the commuter rail services.
- In total, commuter trains in Canada provide about 52 million rides covering 1.3 billion passenger kilometres on only about 600 kilometres of rail corridor.

“Commuter rail is moving to the fore of the urban agenda in North America as evidence grows that traffic and road congestion are strangling economic growth and threatening the quality of life in cities and outlying communities from coast to coast.”

is particularly important in taking the pressure off overburdened road infrastructures without the large capital costs of subways. The latter can cost up to \$200 million to construct per kilometre of underground track, making it effectively out of reach for cash-strapped municipalities. In contrast, commuter rail works with relatively modest enhancements to existing rail infrastructures that permeate the business cores of all major cities.

THE ROLE OF COMMUTER RAIL

It is easy to forget the scope and impact of the current systems and their benefits. Consider the following:

massive sterilization of land for transportation purposes would not only reduce the tax base for the city, but would require approximately 400 additional acres of parking in the downtown core.

- The West Coast Express in the greater Vancouver area carries 8000 passengers each weekday thereby reducing the number of potential automobile trips in the environmentally sensitive Fraser Valley by some 6000 trips, and on an annual basis, this authority estimates it reduces automobile emissions by 470,000 kg.

THE STATE OF PLAY

Commuter rail is moving to the fore of the urban agenda in North America as evidence grows that traffic and road congestion are strangling economic growth and threatening the quality of life in cities and outlying communities from coast to coast. Mild and more severe road rage may have become emblematic of our stressed-out existence and declining levels of social cohesion, but its proximate causes are clearly the seemingly endless traffic snarls and long commutes that have become commonplace in large urban centres. For many, cities no longer seem to work.

Mobility is a basic need. In the absence of alternatives, who

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TABLE 1 — MODERN CITIES ON THE MOVE

City	Transit Model Split	Energy Used (Mj)/inhab/yr	Pollutant (kg)/inhab/yr	Density inhab/ha	Cost Urban Trans (%GDP)
New York	25%	43,000	170	18	9.4%
Munich	56%	17,500	110	56	5.8%
Hong-Kong	82%	6,500	25	320	5.0%

can blame citizens for viewing passenger vehicles as essential to maintaining their “freedom”? Yet, in the three cities discussed here, commuter rail is able to attract the customer who does have a choice, which is something transit in general often has great difficulty doing.

Commuter rail’s environmental sense is also compelling. Given the federal government’s Kyoto commitments on greenhouse gases and the fact that passenger vehicle emissions are a primary source of urban air quality problems (about 40%), minimizing use of passenger vehicles while enhancing quality of life is just the sort of win-win that policy decision makers ought to be seeking out.

A recent article by international transit professionals provided statistics on modern cities on the move (Table 1). It is a startling comparison of the impact of good integrated transit systems that are used by inhabitants who are not wedded to their cars. Where would Canadian cities sit?

Policy decision makers do recognize the need to provide more support to urban transporta-

tion infrastructures generally, and commuter rail in particular. In Washington, 300 mayors from across the United States recently converged on Washington’s Union Station calling for a national rail policy and urging President Bush and the US Congress to make commuter rail service a top priority. This is in addition to existing US commitments to invest some C\$314 billion in transportation infrastructure over the next six years. In Japan some \$850 billion has been earmarked over five years, while, in the United Kingdom, some \$390 billion worth of investment will take place over the next 10 years. All this funding is at the federal level.

In its recent Speech from the Throne, the federal government committed itself to “work with partners across Canada to launch a dialogue on the opportunities and challenges facing urban centres. It will cooperate with provincial and municipal partners to improve public transportation infrastructure.” This is welcome news, but what really matters is how the federal government follows through on this commitment so as to catch up to its counterparts in other countries.

**MORE THAN MONEY:
 REGULATION’S VITAL ROLE**

One of the primary attractions of commuter rail, namely its efficient use of existing rail lines, turns out to also be its Achilles’ heel. Canada’s national railways (Canadian National and Canadian Pacific) demand that infrastructure be built to ensure protection of their freight business before commuter rail services are allowed to start. Once this infrastructure is established, they then extract an access fee for commuter rail use.

To be fair to the railways, commuter rail services are not their bread and butter. Total revenues to CN and CP from the three services represents a very small percentage of their combined gross revenues. This occurs at a time of difficult competitive conditions vis-à-vis the trucking industry that uses highly subsidized road infrastructures and to which they have lost so much of their traditional business in recent years. With competition shifting to just-in-time delivery, the railways are loathe to divert their attention and reduce their flexibility, particularly in congested large urban areas.

This puts commuter rail agencies in a difficult bargaining position. Negotiations take place in a monopoly environment. There is no rail alternative to effect a competitive negotiation resulting in unreasonably high rates for access to the rail

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corridors. Contracts between commuter rail authorities and railways can contain restrictive contract provisions with no legislative remedies. Commuter rail is also inhibited by the lack of an independent assessment of the true capacity of rail corridors and confidential agreements. No one is questioning the Railways' entitlement to making a reasonable profit on commuter services operating in their rail corridors. The debate is over what is reasonable.

This absence of legislative remedies contrasts with the recourse that Shippers have to the Canada Transportation Agency on contract issues. A recent Canadian Transport Agency ruling denying West Coast Express use of Final

Offer Arbitration to resolve a dispute over rates has confirmed this status quo and spurred the commuter rail authority to petition the federal cabinet to overturn that decision as a court of last resort.

It is unreasonable that shippers of goods such as wood, potash and grain have more rights and dispute resolution processes available to them than commuter rail agencies, and, more importantly, the citizens who use these services. In 1986, the federal Minister of Transport introduced Bill C-97, *An Act Respecting Rail Passenger Transportation*. This bill would have obligated the railways to provide for commuter rail operations and regulated the

monopoly powers of the railways. Unfortunately it died on the order paper.

Commuter rail transit makes economic, social and environmental sense in large cities. Where it tends to fall short is that it must co-exist with a monopoly provider of rail access. This unequal bargaining situation makes it difficult for commuter rail in Canada's largest cities to achieve full potential. The result is to reduce urban quality of life, including reduced economic performance, lower urban air quality and increased strain on other urban transportation infrastructures, notably roads.

David A. Sutherland, P.Eng.
Rail and Transit Consultant

Bookmark



Integrating Transport in the City

Congestion in cities is a problem of growing importance. New infrastructure for transport, however, often gives rise to conflicts about how the cost of new services will be met by the public, and about how the demand for travel can be reconciled with efforts to improve the social and environmental quality of life in cities. Unless these conflicts can be managed, public-private partnerships for investing in new infrastructure will be handicapped. **The way forward requires a mix of strategies involving better information and communication with the public, better design of projects to take social and environmental objectives into account, a more comprehensive approach to urban development rather than a**

sectoral strategy and a better exchange of expertise between private and public sectors.

This book is based on case studies of both successes and failures in countries such as Australia, Japan, the United States, France and the United Kingdom. To inform this major debate and help design new strategies for transport integration in the city, this book puts forward the most promising ways to respond to urban travel problems, enhance public/private partnerships and raise social acceptability of urban transport infrastructure and road tolls.

For more information, see OECD, *Integrating Transport in the City: Reconciling the Economic, Social and Environmental Dimensions* (OECD, 2000, 121 pages).



The Census and the Commuter

Tuesday, May 15, 2001 was Census Day in Canada. On that day some 31 million people in Canada counted themselves in when they mail in their completed 2001 Census questionnaire.

Question 46 on the long census questionnaire asks about place of work. By linking place of work and place of residence data with other census variables, users of the data can:

- determine the best site for services such as a day-care centre;
- plan for daytime emergency services;
- make better informed decisions regarding public transportation such as bus routes and rapid transit systems; and
- respond to the needs of an area's "daytime population" which is much different from the night-time population.

Question 47 asks about usual mode of transportation to work. These data are useful in developing transportation, energy and environmental policies—a high priority of municipal, regional and provincial governments.

In 1996, 73% of the working population drove to work. 10% reported that they used some form of public transit, 7% walked to work and 1% used a bicycle. Drivers commuted the farthest, a median distance of eight kilometres one way. Public transit users commuted a median one-way distance of seven kilometres, while the median for walkers was one kilometre. Those who bicycled to work travelled a median one-way distance of 2.8 kilometres.

The first 2001 Census of Population results — population and dwelling counts — will be released in Spring 2002. Other census variables will be released beginning in July 2002.

For more information, see:
<http://www.statcan.ca/census.htm>.

Strategic Environmental Assessment for Transport

Environmental impact assessments are an essential component of making decisions on transport infrastructure investments. Traditional procedures have proved ineffective for impacts that go beyond the scope of projects in isolation. Strategic environmental assessment has emerged in response to large-scale effects including impacts on traffic across networks, impacts on climate change and biodiversity and the impacts of policy decisions as opposed simply to individual projects. This report examines recent experience in developing environmental assessment internationally and makes recommendations on how to maximize the effectiveness of this new tool.

For more information, see European Conference of Ministers of Transport, *Strategic Environmental Assessment for Transport* (ECMT Documentation Centre, 2000), available at <http://www.oecd.org/publications/e-book/7500071e.pdf>.

NOW AVAILABLE

Horizons – Special Issue *Rethinking the Line: The* *Canada–US Border*

The conference *Rethinking the Line: The Canada – US Border*, held in Vancouver from October 22 to 25, 2000, was organized to further our understanding of North American linkages by providing an overview of changing national borders at a time characterized by free trade, new security and public safety needs, global information flows and pressures to harmonize national policies and standards. Based on the four themes discussed, **safety and the line, working across the line, the virtual line and crossing the line**, this issue of *Horizons* (http://policyresearch.gc.ca/keydocs/horizons/Final_v3_sunset_E.pdf) summarizes the main points raised during this conference.



Canadian Connections



The Interdepartmental Working Group on Trade Corridors (IWG) was set up by the Government of Canada in recognition of the importance of trade facilitation to the economy. The IWG focuses on participation in efforts to harmonize standards and facilitate cross-border movements within NAFTA; coordination and communication of federal initiatives which may have ramifications for corridors; research and publication of corridor-related studies; and consultations with provinces and stakeholders on opportunities for and barriers to trade corridor development. Many discussion papers, working reports and profiles can be found on the publications page of http://www.corridors.gc.ca/english/about_us.htm.

The Centre for Sustainable Transportation provides leadership in achieving sustainable transportation in Canada by facilitating cooperative actions, and thus contributing to Canadian and global sustainability. The Centre is working with federal government partners through the Sustainable Transportation Performance Indicators Project to develop indicators of progress toward, or away from, sustainable transportation. The indicators will concern environmental, social and economic aspects of

transportation and its impacts. The report on Phase 1, which includes a review of worldwide activity and a list of possible indicators is available at <http://www.cstctd.org/CSTcurrentprojects.htm>.

The Interdisciplinary Research Group on Mobility, Environment and Safety (GRIMES) based at Université Laval is a network offering researchers from various departments affiliated with research centres and labs the opportunity to work together on research assessing the impact of vehicle use on energy efficiency, the environment, and safety. Click on http://www.grimes.ulaval.ca/grimes_v3/francais/index.html to access the Automobile Mobility Data Compendium, a clearinghouse, depository and analysis centre for automobile mobility data from Canada and elsewhere. GRIMES also provides advice on data and design requirements for new automobile surveys.

GLADNET, the Global Applied Disability Research and Information Network is a non-profit, international membership organization, affiliated with the ILO Vocational Rehabilitation Branch with headquarters in Ottawa. The Network's objective is to promote disability policy and program reform favouring integrated training and employment options

for working-age persons with disabilities. It works to achieve this objective through collaborative applied research projects and by the global exchange of information via the Internet. For information and links to research projects and reports highlighting issues such as the importance of accessible transportation to the labour market participation of persons with disabilities, visit <http://www.gladnet.org/index.shtml>.

The Transportation Development Centre (TDC) is Transport Canada's research arm, responsible for managing an R&D program to support the department's objectives of safety and security while contributing to broader national concerns such as economic competitiveness, accessibility, energy efficiency and protection of the environment. TDC's multidisciplinary research team — engineers, ergonomists and transportation planners and analysts — plans and manages projects involving all transportation modes and different stages of the innovation cycle, from concept definition to demonstration and deployment. To access research project reports, a library and to find application instructions for the Visiting Expert Program visit <http://www.tc.gc.ca/TDC/index.htm>.

KP



From the Cyberzone



<http://www.worldbank.org/gender/transport/index.htm>

The World Bank Gender and Transport Thematic Group (GTTG) is a cooperative venture of the Bank's Gender and Development Network and the Transport Technical Department. The goal of the GTTG is to provide development practitioners and World Bank staff with the tools and techniques required to integrate gender issues into transportation policies and projects, and to promote dialogue and exchange of experiences with other organizations concerned with the social dimensions of transport. The web site offers access to a number of case studies focusing on women's transportation needs, how transportation policy and other external conditions affect women's transportation needs, and how these needs relate to women's livelihoods.

<http://www.oecd.org/dsti/sti/transport/road/index.htm>

The OECD's Road Transport and Intermodal Linkages Research Programme (RTR) provides an opportunity for member countries to contribute to the development of transport policies by exploring road transport and intermodal linkage issues in a broad economic, social and institutional context. It is designed to develop a strategic framework in which national economic performance is enhanced by integrating road transport in the entire transportation system to ensure seamless transport. RTR recently released the report, "Performance Indicators for the Road Sector," which proposes a

management-by-results model and classification of performance indicators. The report's executive summary is available on the web site.

<http://www4.nationalacademies.org/trb/tris.nsf/web/path>

The California Partners for Advanced Transit and Highways (PATH) is a collaboration between the California Department of Transportation (Caltrans), the University of California, other public and private academic institutions, and private industry. PATH's mission is to apply advanced technology to increase highway capacity and safety, and to reduce traffic congestion, air pollution and energy consumption. The PATH database provides access to "the largest and most comprehensive" collection of bibliographic information on Intelligent Transportation Systems (ITS).

<http://www.trl.co.uk/dfid/contents.htm#Newsletters>

The UK's Department for International Development (DFID) research funding focuses on improving the understanding of road safety management, urban road safety and the costs of road accidents particularly their impact on the poor and underprivileged sectors of society. DFID sees a multidisciplinary approach to transport projects and development projects in general as essential in promoting longer-term sustainability. Also, it is working to increase the involvement of stakeholders in the research process. *Transport*, DFID's electronic newsletter, offers information on developments, activities and news in the sector.

KP

Isuma, vol. 2, no 3 – Genetic Testing

The sequencing of the entire human genome and all of its genes is laying a foundation for research that will eventually revolutionize the diagnosis, prevention and treatment of most human diseases. The autumn 2001 issue of *ISUMA: Canadian Journal of Policy Research* will

be devoted to the ethical, legal and social issues associated with genetic testing and genetic information. Judge Jean-Louis Baudouin, Quebec Court of Appeal, and Timothy Caulfield, Health Law Institute, University of Alberta, will serve as guest editors for the issue. The issue will

explain the science and reflect on what it means for our understanding of ourselves, for health care, and for a range of ethical and legal issues. Contributors will include: Bartha Maria Knoppers, Steve Scherer, Sonia Le Bris, Trudo Lemmens, Hubert Doucet and Soren Holm.



Research Brief

Transportation Needs in Rural Iowa: *A Challenge to Welfare Reform*

WELFARE POLICY CREATES WORK REQUIREMENTS

The *Personal Responsibility and Work Opportunity Act* of 1996 represents a profound shift in social welfare policy in the United States. Programs designed by each state to promote work and economic self-sufficiency have replaced the Aid to Families with Dependent Children entitlement program. The *Temporary Assistance for Needy Families* (TANF) block grants from the federal government to the states create new work requirements for most low-income parents. Providing new transportation options to disadvantaged rural residents will be a critical feature of TANF programs designed to help the poor achieve economic self-sufficiency. A study conducted by a team of Iowa State University researchers identifies a number of transportation barriers facing families and subsequent implications for policy development.

THE RURAL WELFARE-TO-WORK PROJECT

The *Iowa Rural Welfare-to-Work* project, funded by the US Department of Health and Human Services, focuses on the design, implementation and evaluation of a project to address the transportation needs of rural participants in Iowa's TANF program (called the *Family Investment Program* or FIP). Rural transportation issues include (1) barriers to owning and operating a personal vehicle, (2) owning vehicles described as old and invariably unreliable, and (3) the rarity of any form of public transportation except the school bus. A lack of reliable transportation is clearly a constraint on the ability of many rural FIP recipients to obtain and hold a job and to meet other household needs.

The Iowa Department of Human Services (DHS) selected a rural county in the southeastern part of the state as the site of the pilot project. The *Rural Welfare-to-Work* project is designed to 1) identify rural transportation issues in Iowa and the range of transportation problems faced by low-income rural residents, 2) identify strategies to overcome existing transportation challenges, 3) design and implement a program to meet the needs of low-income residents

in the pilot county and 4) evaluate the effectiveness of the program. The project includes two phases. The first phase assessed the transportation needs of rural FIP families. The second phase will develop, implement and evaluate a strategy designed to address these identified transportation needs. This research brief presents findings from the first phase.

In June 1999, the selected county had 411 adult FIP recipients. Most of these recipients (89%) had been on FIP for at least one full year. Among the adult FIP recipients, about 24% reported current vehicle ownership (registration). And, as expected, most (85%) vehicles were more than 8 years old.

CONFLICTING VIEWS FROM FOCUS GROUPS

Focus groups with community professionals and with welfare-to-work participants augmented information gleaned from administrative and secondary data regarding transportation issues facing low-income residents in the county. The professionals saw a need for a "mass transit" or multi-purpose, passenger system, and the need for a regional view in solving transportation issues. There was little discussion about the actual needs of, conditions faced by, or transportation problems of welfare-to-work participants. The group shunned discussion of an individual approach to transportation needs (such as personal car ownership) and focused more on the ideas of a transportation brokering service and a multi-purpose system for passengers.

In the focus group conducted with welfare-to-work participants, eight women discussed the obstacles they faced in dealing with transportation and employment. Themes in this second focus group included the transportation challenges to securing and maintaining employment. Most frequently, those challenges involved transportation and child care. The transportation needs of these welfare-to-work participants went beyond employment, and were heavily influenced by the needs of their children. Their general consensus was that personal vehicles were the best solution to their transportation needs.

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This group preferred an approach that would provide low-interest loans for participants to purchase an automobile, regardless of their credit history.

DESIGNING PROGRAMS TO MEET NEEDS

The study shows a need for reliable transportation as a critical element for enabling welfare recipients to gain stable employment. It also demonstrates the dependence on private transportation in rural areas. The study has a number of implications for policy

development. It underscores the importance of designing programs to meet the multifaceted needs of these low-income households, and illustrates the value of including the perspectives and needs of welfare recipients in policy and program development.

For more information on the *Iowa Rural Welfare-to-Work* project, please contact Cynthia Needles Fletcher (cynthia@iastate.edu), Helen H. Jensen (hjensen@iastate.edu) or Steven Garasky (sgarasky@iastate.edu) at the Iowa State University.

Interesting Faces

Sir William Cornelius Van Horne

In April 2000, Sir William Cornelius Van Horne was inducted into the Canadian Business Hall of Fame as Laureate of the Century.

Van Horne was born in the United States in 1843. At the age of 14, he began his career as a telegrapher with the Illinois Central Railway in the company's Chicago office. He quickly climbed to the top of the railway industry and, in 1881, at the age of 39, was offered the position of General Manager of the Canadian Pacific Railway. Under his management the Canadian Pacific Railway expanded into the West — an achievement that many considered impossible.

Despite the numerous political, financial and physical challenges encountered, work on the railway was completed on November 7, 1885. Van Horne would then serve as President of the Canadian Pacific Railway from 1888 to 1899 and Chairman of the Board until 1910.

Van Horne's accomplishments go far beyond railway transportation to include tourism, the economy and a coast-to-coast vision for the development of the country. In promoting tourism in the western provinces, he is said to have once quipped, "Since we can't export the scenery, we'll import the tourists." Van Horne saw to the establishment of a large chain of hotels, including Chateau Lake Louise. He was also involved in the Windsor Station project. Sir William Cornelius Van Horne, now considered one of the most important businessmen in Canadian history for his contribution to the construction of the Canadian Pacific Railway and for his overall contribution to Canada's economic development from coast to coast, died at his home in Montreal in 1915.

Air Transport Networks

Air Transport Networks provides an economic analysis of the way in which the air transport industry operates and the nature of the policies that have been adopted to regulate the sector.

The book covers domestic and international air transportation with an emphasis on airlines and includes discussions of related markets such as airports and air traffic control. The authors provide details of how the sector functions and the reasons why the airline industry performs as it does today. They also explore the way in which governments have, over the years, attempted to manipulate air transport markets to meet political objectives.

For more information, see Kenneth Button and Roger Stough, *Air Transport Networks - Theory and Policy Implications* (Edward Elgar, 2000).



Looking Outward

Thinking About the British Countryside

The British countryside and rural communities are currently facing some daunting challenges. Services are no longer satisfying demand, revenues are plummeting and jobs are dwindling in traditional economic sectors such as agriculture. In the face of this situation and in the hope of resolving the problems facing their country, Britain's Deputy Prime Minister and Secretary of State for the Environment, Transport and the Regions, the Right Honourable John Prescott, and Minister of Agriculture, Fisheries and Food, the Right Honourable Nick Brown, tabled a White Paper on the future of rural regions in the British Parliament in November 2000.

THE CHALLENGES

The White Paper outlined the four major challenges facing the British government and the commitments made to solve related problems. According to the document, the future of rural regions depends on their transformation into "working areas," where the countryside is protected and rural communities undergo revitalization.

The first challenge is to establish modern, high-quality services accessible to all. At the heart of this is the need for a flexible transportation infrastructure that can be adapted to local needs. The second challenge is to turn rural regions and the countryside into "working areas," that is, thriving regions able to promote local economic development and

economic diversity. The third challenge concerns protecting the British countryside by preserving and improving the overall quality of the environment. Finally, rural regions and villages must be given the tools to meet their needs and must be heard by governments at all levels.

TRANSPORTATION AS A MEANS OF REVITALIZING RURAL COMMUNITIES

The White Paper placed particular emphasis on the importance of transportation in successfully revitalizing the British countryside. The distance between people and the size of the area involved explain the sparsity of public transportation services in the country and the problems with those that do exist. Of necessity, people living in rural regions depend on cars more than do city dwellers. In fact, cars are sometimes their only viable means of transportation. The White Paper estimated that 84 percent of households in rural regions own cars, compared with 69 percent of urban households. They also use cars more (50%) for basic travel than people in urban areas. In addition to traffic, pollution and safety concerns for drivers, this usage causes major difficulties regarding access to transportation services for the one sixth of the rural population which does not own cars, especially young people, seniors and those with mobility impairments.

To rectify the situation, the White Paper proposed a response

plan aimed at improving access to services. Among the suggestions are expansion of public transportation systems, improved access to other services, carpooling and even use of new technologies such as teleworking, to ensure that rural residents have the same opportunities as urban residents. The recommended strategy is to improve access to transportation by recognizing the importance of cars in the lives of rural area residents, and by adapting public and voluntary transportation services to the specific needs of rural regions. According to the White Paper, this could be done by better coordinating services that reflect the real needs of the population identified by local authorities. Consultation and regional planning exercises will be necessary to accomplish this goal.

While the gulf between rural and urban areas continues to widen, the White Paper highlighted the need to develop an efficient transportation system and infrastructures to bridge the gap. The government's role is to provide communities with tools that will enable them both to close the gap and to improve the quality of life of the entire population. The questions and solutions outlined in the White Paper focused precisely on this situation.

For further information, the White Paper is available at <http://www.wildlife-countryside.detr.gov.uk/ruralwp/cm4909/index.htm>.

Bookmark



Reducing Gas Emissions

“Today we are much more aware of our environment, and we recognize the importance of preserving it for future generations. We are also aware that Canada is the second-highest per capita energy-consuming nation in the world. There is a strongly held view that transportation, which is responsible for the largest share of greenhouse gas emissions from human activity in Canada, is on an unsustainable path. However, the role of transportation in reducing emissions, or how it might be accomplished, is still unclear. As big energy users and a nation dependent on transportation, we would be particularly vulnerable to the potential economic repercussions of having to drastically reduce emissions. That is why the question of reducing emissions should not be developed without a substantial understanding of the implications for the economy and the transportation industry.

“It is generally felt in the transportation industry that policies to reduce emission levels should consider a range of measures, such as voluntary agreements, regulation, technology (e.g. more fuel-efficient and cleaner vehicles), and public awareness and education. Governments will play a key role because they can affect the economics of transportation activities through, for example, subsidies and tax incentives for fuel-efficient vehicles. In setting new policies, it will be critical for decision makers to appreciate the impacts that their decisions will have on the movements of people and goods.”

For more information, see David D. Colledge and Ruth Sol, *Moving Forward: A Guide on the Importance of Transportation in Canada* (Western Transportation Advisory Council, 1999), available at <http://www.westac.com/pdfs/transportationguide.pdf>.

Environmentally Sustainable Transport and Land Use

“The land used for transport infrastructure has numerous environmental impacts. These include degradation of niches and ecosystems, interference with natural drainage, and prevention of species migration.

“[...] There are well-established indirect relationships between land use and transport. With increases in land use for human purposes come increases in requirements for travel. This is especially noticeable at the edges of conurbations, where low-density development is associated with high daily travel rates. When arable land is displaced, there can also be an increase in transport, to bring farm products from greater distances.

“[...] The phenomenon whereby urban areas spread at a much higher rate than population growth is known as urban sprawl. This type of expansion of urban areas, typical of many OECD countries, notably the US, Canada, and Australia, is associated with very high levels of fossil fuel use for transport and other purposes, and massive appropriation of what is often prime agricultural land, with further implications in relation to food supply.”

For more information, see OECD, *Synthesis Report on Environmentally Sustainable Transport (EST)* (OECD, 2000), available at <http://www.oecd.org/env/ccst/est/curract/vienna2000/EST-Synthesis-Report-Part1.pdf>.

The Changing Face of Transportation

“The next 25 years present some real uncertainties. While vehicle miles of travel certainly have risen over the last 25 years, today congestion presents a real challenge. Our strong economy has increased demand and created capacity challenges. Record-level investments have made funding available, but we cannot build ourselves out of this situation. We cannot build enough lanes or roads in most places where capacity is needed.”

For more information, see Bureau of Transportation Statistics, *The Changing Face of Transportation* (Washington: US Department of Transportation, 2000), available at <http://www.bts.gov/transtu/cft/>.





Aging of the Population and Paratransit Demand in Quebec

In recent years, the Institut national de recherche scientifique-Urbanisation research institute and the Department of Geography of the University of Montreal have developed expertise on disabilities and the demand for transportation. They recently contributed to the transportation component of the latest Quebec activity-limitation survey (Enquête québécoise sur les limitations d'activités or EQLA, 1998) conducted by the Quebec department of health (Santé Québec). This survey is now part of the Quebec statistics institute (Institut de la statistique du Québec), and its report should be released in Fall 2001.

GENERAL OVERVIEW

Around the year 2030, population forecast trends indicate that persons aged 65 and over will probably make up 25 percent of the total population of Quebec, with the implication that certain urban regions or zones could have much higher rates. This substantial and rapid aging of the Quebec population raises certain questions as to the number of elderly clients with diminishing abilities, as well as institutional capacities to serve this clientele, notably in terms of housing, social services, health and transportation.

A new phenomenon is that the aging which so far has affected mainly the city centres of urban regions will extend into the suburbs and outskirts. Given the low population densities in these areas, it will be more difficult to provide traditional paratransit services and it will be necessary to consider more individualized transportation, such as taxi paratransit, for example.

A study for the Quebec department of transport (Ministère des Transports du Québec) on the projected demand for paratransit from 1993 to 2006¹ based on data from the Health and Activity Limitation Survey (HALS) 1986 and the Quebec department of transport² estimated the probable changes in the number of persons with disabilities (among

those 15 years of age or over who are not institutionalized) and found that, even in the short term, aging may have a substantial impact on demand for service and entail substantial spatial variants.

DEFINITION OF DISABILITY

Paratransit is a public service that targets a particular clientele: persons with one or more mobility disabilities as a result of legally recognized disabilities. A mobility-impaired person is defined as any person whose ability to move is reduced by one or more mental, physical or sensory disabilities, whether permanent or otherwise, resulting from the normal aging process or due to temporary or chronic health problems. To identify mobility-impaired clientele, four categories of disability are used, based on 10 criteria or types of disability. These four categories are ambulatory motor disability, non-ambulatory motor disability (requiring use of a wheelchair), mental disability and visual disability (see Table 1).

PREVALENCE RATES IN THE ELDERLY POPULATION OF QUEBEC

The disability prevalence rates in the population aged 15 or over can be calculated by comparing disability frequencies as drawn from surveys to census population data.

- 1 Y. Bussière, J.-P. Thouez et al. [1996]. *Portrait et prévisions de la clientèle à mobilité réduite en transport au Québec, 1993-2006* [current and projected mobility-impaired transportation clientele in Quebec, 1993-2006], 3 vol, Montreal: MTQ and INRS-Urbanisation.
- 2 The main data sources on mobility-impaired clientèles are health surveys of target samples, since disability prevalence rates are too low to ensure appropriate statistical coverage in the transportation surveys. The most recent source of reliable data on the disability profile of uninstitutionalized persons aged 15 and over is the Health and Activity Limitation Survey (HALS) of 1986-1987 conducted by Statistics Canada, since the later 1991 survey was less extensive. Although the federal government has abandoned these surveys, the Quebec department of health took up the survey in 1998 (EQLA 1998), allowing for the analyses to be updated, especially since the transportation component of the survey has been appreciably improved. Other data on paratransit are taken from the (annual) Répertoire statistique du transport adapté [paratransit statistical directory] of the Quebec department of transport.

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TABLE 1: DEFINITION OF DISABILITIES

CATEGORIES OF DISABILITY	TYPES OF DISABILITY
Motor disability: <ul style="list-style-type: none"> • Ambulatory motor disability • Non-ambulatory motor disability (in a wheelchair) 	<ul style="list-style-type: none"> - Difficulty walking 350 m without resting - Difficulty going up and down stairs - Difficulty carrying a 4.5-kg object 10 metres - Difficulty remaining standing for more than 20 minutes - Difficulty leaning over to pick up an object - Difficulty using the fingers - Difficulty extending arms
Mental disability	<ul style="list-style-type: none"> - Difficulty speaking and being understood - Memory and/or learning problems
Visual disability	<ul style="list-style-type: none"> - Legally blind

*Note: Ambulatory clientele have a motor disability but are capable of walking, whereas the non-ambulatory clientele require a wheelchair. Source: ESLA 1986 and study by Bussière et al., 1996 for MTQ.

The EQLA 1986 has made it possible to identify certain general characteristics of the population with disabilities (applied to 1993 demographic data). The highest prevalence rate in the Quebec population aged 15 and over living in a household is for persons with ambulatory motor disability (6558 per 100,000 persons, versus 2730 per 100,000 with mental disability, 391 per 100,000 with wheelchair motor disability and 93 per 100,000 with visual disability). These prevalence rates increase perceptibly with age, especially when people move from the 65-74 age group to that of 75 years and over (Figure 1). For example, of the 613,000 persons with disabilities who are 15 or over and live in a household, a large majority have an ambulatory motor disability (67%) and a substantial segment have a mental disability (28%). Private automobile transportation or regular public transit can accommodate minor motor disabilities through compensatory measures (such as low-floor accessible buses). However, more seriously disabled clientele (in a wheelchair) will always require specialized service. Furthermore, deinsti-

tutionalization means that many transportation companies find themselves with clientele composed mainly of persons with a mental disability, a situation which poses specific escort and security challenges.

FUTURE RESEARCH

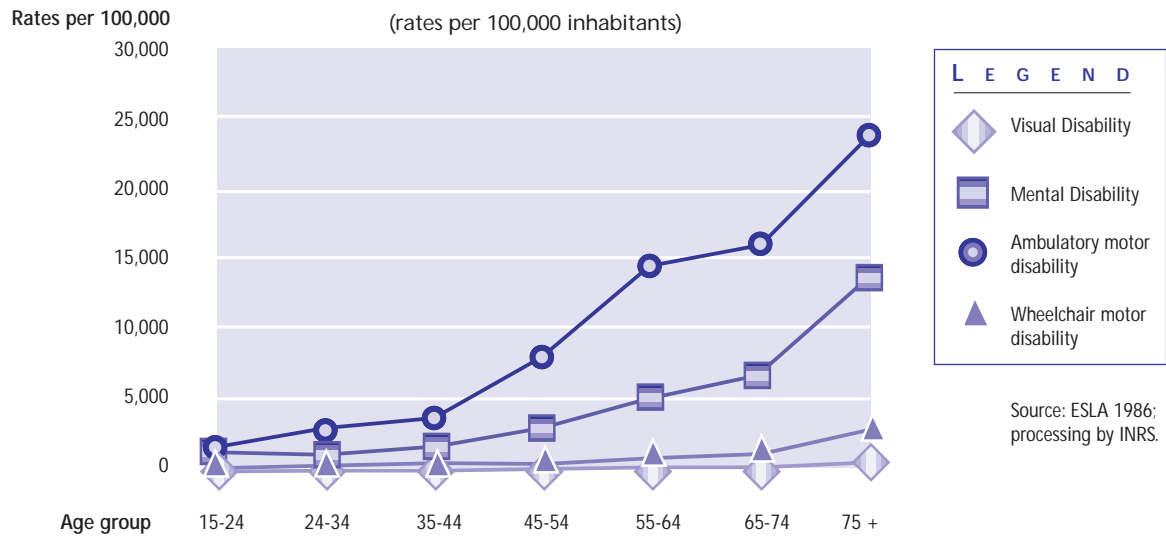
When the data from the EQLA 1998 survey are made public, the disabilities diagnosis, and the now-outdated forecasts for paratransit demand in Quebec, should be updated. The new EQLA survey will allow for the accurate measurement of paratransit demand according to mode of travel and reasons for use, something not possible with previous ESLA surveys. It will be important to know the proportion of paratransit in relation to that of regular public transit as well as individual transportation. It can be expected that paratransit will account for a smaller share of total demand, but it is important to measure the extent to which a portion of the demand is hidden because such a service is not offered. Various scenarios could be examined where

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FIGURE 1:
Disability prevalence rates by category of disability and age group, ESLA 1986



the mobility of persons with disabilities is brought to a level comparable to that of the general population. This could identify potentially unsatisfied demand that is very significant. It will also be necessary to take increased life expectancy into consideration, which will increase the numbers of the oldest clientele, especially among women, and to investigate the impact that the aging of the suburbs will have. To

our knowledge these new phenomena have yet to be studied.

Yves Bussière
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INRS-Urbanisation

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Improving Transport for People with Impaired Mobility

A large number of people with mobility impairments have difficulty using transport systems, and this number will increase significantly over the coming decades. It is therefore essential that transport infrastructure and systems are designed and built to cater to their needs.

This publication sets out key principles and guidelines for making all transport modes and related infrastructure more accessible. In addition, it provides examples and illustrations of good practice from many different countries.

It is intended to help policy makers, planners, architects,

and others working in this field, improve accessibility for people with impaired mobility.

For more information, see European Conference of Ministers of Transport, *Improving Transport for People with Mobility Handicaps: A Guide to Good Practice* (ECMT Documentation Centre, 1999).

Have the Factors of Social Inclusiveness Changed?

Until recently, social inclusiveness was closely associated with the accessibility of work. The economic growth of recent years and demographic change have led to a drop in unemployment, which should have a positive impact on social inclusion. Beyond these factors, the very nature of the new economy is changing the relationship between citizens and society and seems to be changing the basis for social inclusiveness. In such a context, it is important to ask ourselves whether the basis for social inclusiveness has changed in Canada and what factors are coming into play. To examine these questions and determine their effect on social inclusiveness and social integration, the Policy Research Initiative and the Centre de recherche interuniversitaire sur les transformations et les régulations économiques et sociales (CRITERES) sponsored a conference, entitled *Have The Factors of Social Inclusiveness Changed?* held last February 22 at the Université de Montréal.

As Gérard Boismenu, Director of the CRITERES group, pointed out during his closing remarks, the notion of social inclusiveness is vague and hard to define. The term inclusiveness is coming into general use — in Canada as elsewhere — and seems to refer to a whole series of measures and mechanisms aimed at disenfranchised segments of society. Boismenu noted that social inclusiveness and social cohesion must

be more than just a functional concern. He believes that it is necessary to bring this issue into the realm of policy analysis.

The basis for exclusion is varied and complex, so much so that any action in the area of inclusiveness will have to involve a multi-faceted approach that cannot be reduced to instrumental forms or simple mechanisms. To this end, policy analysis would enable us to identify rationales for public action and compare them over time, but also and more important, from one country to another. It is essential that the measures and mechanisms implemented by government be incorporated into the overall framework of the institutions which take action with regard to exclusion and marginalization. Otherwise, Boismenu explained, the measures and mechanisms would be viewed in an isolated fashion, without context.

If action in the area of inclusiveness implies a consistent, integrated policy, is it possible that an overall vision of inclusiveness will emerge in the Canadian political and institutional context? According to Boismenu, as things now stand, it is more likely that we will fall back on the lowest common denominator or that governments will focus their interest on a few token measures that, in themselves, embody the problem of inclusiveness.

Boismenu pointed out that if we stand back for a moment, we are struck by the passing nature of certain notions. Social safety net “incentives,” population “mobilization,” social “cohesion” and now social “inclusiveness” are some of these notions which fade into the background, even if they never completely disappear. In short, these notions are seen as disposable, yet the realities behind them remain. In a policy environment where targeted research is favoured, the passing popularity of certain notions rapidly affects the priorities set by government organizations.

Boismenu indicated that, in researching these issues, it is important to set parameters, imbuing the different notions with a content, restoring their historicity, addressing phenomena, measures, etc., in qualitative terms, using comparison to place things in perspective and focusing on general trends as much as looking at the differences between societies. That is what we can expect from university research, whether influenced or not by targeted research, and that is where its contribution is most significant, said Boismenu, adding that the papers presented at the conference on factors of social inclusiveness were consistent with this process.

For more information, the papers presented at the conference *Have the Factors of Social Inclusiveness Changed?* are available at <http://www.criteres.umontreal.ca/communicationsinclusion.html>.



Research Brief

Professional Training in Transportation

The future of professional training in transportation in Canadian universities is the subject of much concern. Transportation centres in Canadian universities are no longer attracting as many students as in the past. With the greying of faculties, universities are seriously concerned about where the next generation of professors will come from. Meanwhile, in the United States, large sums of money are being invested in universities to establish and support transportation centres that conduct research in specific transportation-related fields. Our neighbours to the south are therefore able to attract Canadian students to their transportation centres, making Canadian university centres all the more vulnerable.

HISTORICAL OVERVIEW

It is important to situate the issue of transportation training historically. In 1969, Transport Canada established a university program with a yearly budget of \$1.1 million until 1983-84, and approximately \$2 million in 1984-85. However, following a review, the program was abolished in 1986. Over its entire history, nearly 150 transportation research projects, mostly in policy, the social sciences and operations research, were funded through negotiated research contributions provided through the transportation centres at Dalhousie, New Brunswick, Montreal, McGill, Carleton, Toronto/York, McMaster, Waterloo,

Manitoba, Calgary and British Columbia universities. Some 420 students received financial assistance for their transportation studies through this program.

In the face of these concerns about the future of professional training in transportation in Canada, Transport Canada initiated an inventory of this type of training in the country. For this inventory, the transportation sector was defined as including transportation policy and legislation, engineering, transportation planning and systems — including their economics — safety, and social, economic and environmental impacts. Any *ad hoc* training in transportation that is not part of a specific program leading to a degree with a concentration or specialty in transportation was excluded. In universities, specific training in transportation is given to students in civil engineering, commerce or business administration, law, geography and economics departments.

OBJECTIVES

The inventory was intended to list the programs and evaluate the “quality” and “demand” aspects of the training offered. It was more difficult to obtain information on these latter two specific elements. The inventory also targeted professional transportation education programs offered in non-university establishments in the public sector, as well as those offered by the private sector.

RESULTS

The inventory illustrates that there are only a few comprehensive university programs in transportation, besides those offered by civil engineering departments which focus mainly on roads and traffic patterns. In addition, these programs are fighting to stay open in universities. Initiatives have been launched in recent years at Canadian universities to modify the training supply to reflect changing needs, in logistics for example, but with limited success.

A significant number of community colleges and CEGEPs offer transportation programs or programs including a transportation and logistics component. Some offer courses on transportation and logistics. Sometimes this is all done with the support of professional organizations such as the Canadian Institute of Traffic and Transportation (CITT) or the Canadian International Freight Forwarders Association (CIFFA). These optional courses are offered through commercial studies or continuing education programs. The most comprehensive programs are in Quebec and New Brunswick. In Ontario, transportation and logistics are part of the curriculum of other commercial studies programs.

It is clear from this inventory that demand for transportation graduates has been rather moderate in recent years. Transporta-

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tion firms and governments have been downsizing. Opportunities are available mainly in logistics and supply-chain management. All the universities surveyed indicated that lack of funding is a major concern, regardless of the discipline. For some in the Canadian university sector, the interdisciplinary nature of transportation is a key factor in the survival of professional training in transportation. To resolve

current and future problems in transportation, some academics see a need to create more interdisciplinary networks to better understand the overall picture. The lack of internships in Canadian firms has also been linked to this problem. Without a doubt, transportation specialists will always be an essential resource in Canada. In this regard, the inventory undertaken for Transport Canada demonstrates that

the issue of professional training in transportation deserves special attention.

For further information, consult the *Inventory of Professional Training in Transportation*, available at http://www.tc.gc.ca/pol/en/report/Inventory_Professional_Training_in_Transportation/Inventory_ProfessionalTrainingMenu.htm or contact Roger Roy, Director General, Economic Analysis, Policy Group, Transport Canada at royr@tc.gc.ca.

Enabling Tomorrow's Transportation Professionals To Address Climate Change

Along with urban planning, the design of sustainable transportation systems is recognized as essential to improving the environmental quality of cities and enabling Canada to meet its international climate change target. To learn more about the education of tomorrow's transportation professionals, the Centre for Sustainable Transportation undertook a two-part survey published in January 2001.

The study had two methodologies: a review of 297 course syllabi from university programs across the country and a survey of 119 transportation educators also from across the country.

Of the 297 syllabi in the sample, only 26 courses were found to combine a high level of transportation content with a high level of environmental content. Looking across these 26 courses the researchers noted the absence of a common intellectual core of books, articles or other readings that would form the canon of a mature discipline. Even where some integration

of environment and transportation education is occurring there was little evidence of interdisciplinary study per se. While environmental content has become more available across university curricula in the last decade, it has not yet penetrated transportation education within engineering departments.

The survey of educators revealed that a core of environmentally conscious faculty teaching about transportation does exist and could be tapped in the development of a better-integrated curriculum. For reasons unexplained in the report, educators in Ontario proved the most committed to the interdisciplinary teaching of transport studies. The Centre for Sustainable Transportation continues to work with researchers to articulate a vision of what an environmentally sustainable transport education system might look like.

For more information, see Anthony Perl and Michael Bates, *Enabling Tomorrow's Transportation Professionals to Address Climate Change* (Centre for Sustainable Transportation, 2001), available at <http://www.cstctd.org/CSTctpub.htm>.



Toolkit



Transportation Data Guide

Are you making the best use of Statistics Canada data? Do you know what's available and can you find it easily?

Statistics Canada collects and publishes a large amount of data on all modes of transportation. This guide contains key sources and shows you how to find them. It has a description of every survey at Statistics Canada with transportation-related information, including the survey name, a contact person, phone and fax numbers, a brief description of the transportation-related information in the survey, its periodicity and the publication catalogue number and name.

<http://www.statcan.ca/english/freepub/50F0001GIE/free.htm>

NORTH AMERICAN

TRANSPORTATION IN FIGURES

North American Transportation in Figures provides a comprehensive set of statistical indicators of the use, performance and impact of transportation in North America. It includes over 90 different data tables, supported by figures, maps and extensive technical documentation describing data categories and definitions relating to each country.

Under the auspices of the North American Transportation Statistics Interchange, the report was co-ordinated by the US Bureau of Transportation Statistics in cooperation with Statistics Canada and Transport Canada as well as other partner agencies from Mexico (Instituto Nacional

de Estadística Geografía e Informática, Instituto Mexicano del Transporte and the Secretaría de Comunicaciones y Transportes) and the United States Census Bureau.

<http://www.statcan.ca/english/freepub/50-501-XIE/free.htm>

STRATEGIS: TRANSPORTATION INDUSTRY INFORMATION

Industry Canada's comprehensive business Web site includes a wealth of information on the transportation industry. The Automotive and Transportation Branch at Industry Canada promotes the growth and competitiveness of the Canadian automotive, transportation and service industries.

http://strategis.ic.gc.ca/sc_indps/sectors/engdoc/tran_hpg.html

NATIONAL TRANSPORTATION STATISTICS ON-LINE (UNITED STATES)

Compiled and published annually by the US Bureau of Transportation Statistics, National Transportation Statistics (NTS) presents detailed national-level data on the US transportation system, its economic performance, safety record, energy use and environmental impacts.

<http://www.bts.gov/ntda/nts/nts.html>

INTERNATIONAL TRANSPORT RESEARCH DOCUMENTATION (ITRD) DATABASE (OECD)

The ITRD database is a bibliographic resource containing citations to worldwide literature, current research projects and computer programs on all aspects

of road research, transport and traffic planning. Records contain bibliographic data, abstracts and indexing information. The file is in English, with some abstracts and keywords in German, French or Spanish. Sources include approximately 850 journals from 40 countries as well as books, reports, dissertations, patents, standards and specifications, and conference proceedings.

<http://www.oecd.org/dsti/sti/transport/road/stats/IRRD/IRRD.HTM>

JF

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