

# MEASURING SUCCESS: THE ECONOMIC IMPACT OF TRANSIT INVESTMENT IN CANADA



From left to right: TransLink, TransLink, Société de transport de l'Outaouais

Public transit is vital to the efficient movement of people and goods in Canada's cities. Every year, governments invest billions of dollars to operate, preserve and improve transit systems. But what is the return on that investment, economically speaking? What is the value of the benefits reaped by Canadians?

A new study commissioned by CUTA tries to answer these questions. The final report, *The Economic Impact of Transit Investment: A National Survey*, takes a wide-ranging and unprecedented look at the economic impacts of Canada's existing investment in transit facilities and services. Using a technique called multiple account evaluation, the study examines the benefits that arise from spending on infrastructure and operations, employment in the industry, and the effects of transit ridership on motor vehicle operating costs, collisions and emissions. The study also includes a statistical snapshot of the scale and distribution of current transit investment in Canada, a review of industry and academic literature on the economic benefits of transit, and a compilation of economic evaluations of individual transit projects from across Canada.

This paper summarizes the study's key findings, but they represent only a first step. Further research and analysis will be required to provide a more complete understanding of what transit means to Canada's economy, society and environment.

## Research highlights

The economic benefit of Canada's existing transit systems is at least \$10 billion annually.

The transit industry directly employs 45,300 Canadians and indirectly creates an additional 24,300 jobs.

Transit reduces vehicle operating costs for Canadian households by about \$5 billion annually.

Transit reduces the economic costs of traffic collisions by almost \$2.5 billion annually.

Transit reduces annual greenhouse gas emissions by 2.4 million tonnes, valued at \$110 million.

Transit saves about \$115 million in annual health care costs related to respiratory illness.

Readers can download the full report at [www.cutaactu.ca](http://www.cutaactu.ca).

## Transit: A pillar of Canada's economy

Public transit contributes to Canada's economic health at different scales—from the entire nation to local communities, and from society as a whole to families and individuals.

**National benefits.** The Canadian transit industry generates jobs, income and wealth for the country's economy. Capital-intensive transit systems generate employment in construction, professional services, research and development, and other areas of the economy. Canada is a major producer and exporter of transit equipment, so a high proportion of transit investment remains in Canada and creates spin-off employment in manufacturing and related industries.

**Community benefits.** Public transit boosts the productivity and economic efficiency of cities by letting them function smoothly, encouraging more compact development, and enabling the better use of scarce resources including land, energy and financial capital. Transit helps communities reduce the wasteful and economically damaging impacts of congestion, which grow exponentially as congestion levels increase.

The ability of transit investments to influence land use is also important to the fast-growing urban centres that are looking for ways to better manage future growth. The creation of walkable, dynamic urban environments is a more vital objective than ever, as knowledge industries remain a hub of employment growth and as cities look for competitive advantages to help attract new investment. Transit also improves access to the labour pool for employers in large and small communities alike.

**Social benefits.** Transit investments provide social benefits that extend beyond those traditionally attributed to transportation projects. Transit use reduces emissions from motor vehicle travel, helping to mitigate the impacts of poor air quality on the health of individual Canadians and the costs of providing health care services. By offering a safer alternative to automobile use, it also substantially reduces the number of traffic collisions and the related health care costs and lost productivity.

**Household benefits.** Public transit is an important transportation option for the majority of Canadians who live in urban areas. For people without access to personal motor vehicles, transit provides a way to get to work, school, recreation, shopping and personal services. Commuting by transit is one-third to one-half as expensive as commuting by car in major Canadian cities, and the decision to take transit can give a substantial boost to a family's disposable income.



City of Windsor

## The scale of transit in Canada

Here are a few figures to help readers understand the scale of supply and demand within Canada's transit industry.

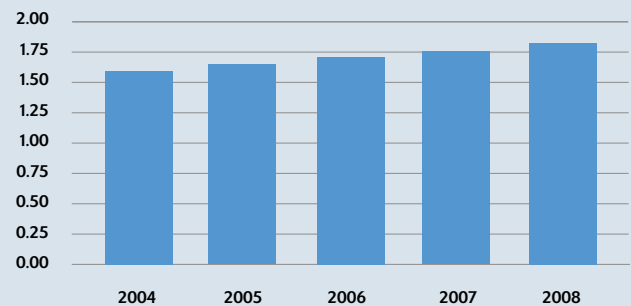
**Ridership.** In 2008, more than 22 billion Canadians lived in areas with transit service. In that year, transit ridership in Canada exceeded 1.8 billion passenger trips, representing an average annual growth rate of 3.4% since 2004. In 2006, the Census found that 11% of Canadian workers took transit to work, a significant increase from 10.5% in 2001 and 10.1% in 1996.

**Service levels.** The availability of transit service has increased steadily across Canada in recent years, with the number of revenue vehicle hours growing at an annual average rate of 4.4% from 2004 to 2008.

**Capital investment.** Capital funding for Canada's transit systems has also grown quickly, both to meet the need for renewal and replacement of aging infrastructure and to make up for many years of underinvestment in transit expansion. Total capital investment in 2008 reached \$3.3 billion, up from \$1.1 billion in 2004.

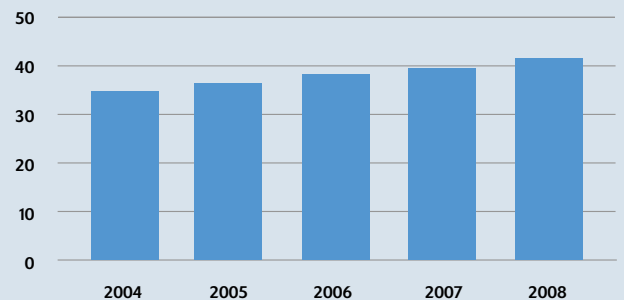
### Transit ridership

(billions of regular service passengers)



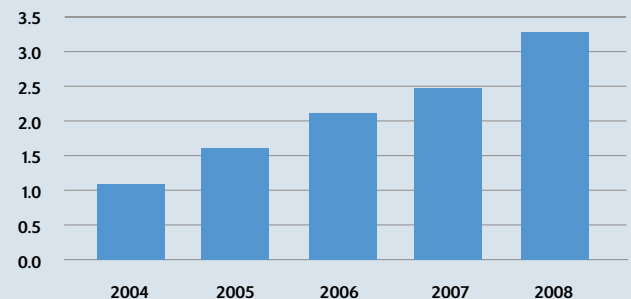
### Transit service provided

(millions of revenue vehicle hours)



### Transit capital expenditures

Value (\$ billions)



## Evaluating the full range of transit's economic impacts

For several years, formal evaluations of the economic benefits of major transit projects have been central to investment decisions by Canada's federal and provincial governments. Some of these used a conventional cost-benefit framework to compare the costs and benefits of each project in monetary terms. More recently, however, a broader approach known as multiple account evaluation has been applied. See the sidebar below for sample results from several evaluations of major transit investments, using both techniques.

Multiple account evaluation allows analysts to explicitly evaluate non-quantifiable project costs and benefits (not only those that can be expressed in dollars), and to compare projects on this basis. It provides decision-makers with a broader representation of project impacts, and categorizes them into accounts that reflect the economic, social and environmental dimensions of sustainability.

### Sample transit project evaluations

Several summaries of recent economic impact assessments for major transit system investments are provided below. More information on these and other transit project evaluations is available in the full research report.

**Benefits analysis for Sheppard-Finch rapid transit corridor** (Metrolinx—Greater Toronto and Hamilton Area, Ontario). This project used a multiple account evaluation framework to assess five light rail corridor alternatives. Compared to a bus service scenario, it found that 30-year economic benefits ranged from \$1.3 to \$2.2 billion for each alternative.

**Rapid transit evaluation** (Region of Waterloo, Ontario). This analysis applied multiple account evaluation to compare a major rapid transit project to a base case without rapid transit. It found that 30 year economic impacts included almost \$300 million in user benefits and more than \$10 million in regional health care savings.

**Autorooute 10 light rail evaluation** (Agence métropolitaine de transport—Greater Montréal, Quebec). An analysis of project costs and benefits to the year 2051 found net benefits of almost \$130 million and an overall 1.11 ratio of benefits to costs.



Translink

## Building a new perspective on the benefits of transit investment

CUTA's new research represents the first use of multiple account evaluation to assess the impacts of public transit on Canada's economy. The analysis measures those impacts by comparing today's situation to an alternative scenario in which transit does not exist, and in which most current transit passengers would be expected to travel by automobile. It uses multiple account evaluation to identify and, where possible, quantify the economic impacts of the differences in travel activity between these two scenarios. The study uses 2007 as the base year for analysis.

The research examines transit's benefits in view of its costs, which for 2007 included total capital investments of \$2.47 billion and total operating expenditures of \$5.49 billion. When operating revenues of \$2.92 billion (principally from fares) are considered, the net operating investment was \$2.57 billion.

Four major types of transit benefit are considered by this analysis. The first is economic growth as measured by gross domestic product and employment. The second represents benefits to transportation system users, while the third and fourth represent environmental benefits and social benefits, respectively. The following paragraphs summarize the analytical findings for each category of benefit.

**Economic development.** Transit investment has spin-off effects including the creation of jobs, income and taxes through transit operations, construction and manufacturing.

| Metric   | Annual impact         |
|--|-----------------------|
| Economic output (increase in gross domestic product) | \$3.7 billion         |
| Employment from capital investment                   | 22,600 full-time jobs |
| Taxes arising from capital investment                | \$160 million         |
| Employment from transit operations                   | 45,300 full-time jobs |

**Transportation user benefits.** Transit passengers save money by not having to operate an automobile. Transit is also safer than automobile use and reduces death, injury and property damage suffered due to traffic collisions. Transit customers save time by avoiding congested roads, and other road users also benefit from reduced congestion—however, these savings were not quantified due to the extent of additional analysis required.

| Metric                         | Annual impact         |
|--------------------------------|-----------------------|
| Vehicle operating cost savings | \$4.99 billion        |
| Collision cost savings         | \$2.47 billion        |
| Travel time cost savings       | <i>Not quantified</i> |

**Environmental benefits.** Transit ridership reduces air pollutants including greenhouse gases and criteria air contaminants (carbon monoxide, volatile organic compounds, nitrous oxides, sulphur oxides and particulate matter). Transit also helps communities develop with a more compact form, reducing land consumption and travel distances—however, these benefits could not be quantified as part of this analysis.

| Metric   | Annual impact                        |
|--|--------------------------------------|
| Greenhouse gases <ul style="list-style-type: none"> <li>• Emissions reduced</li> <li>• Value</li> </ul>          | 2.40 million tonnes<br>\$110 million |
| Criteria air contaminants <ul style="list-style-type: none"> <li>• Emissions reduced</li> <li>• Value</li> </ul> | 119,000 tonnes<br>\$22.4 million     |
| Benefits of compact community form   | <i>Not quantified</i>                |

**Social and community benefits.** By reducing air pollutant emissions and resulting levels of respiratory illness, transit leads to reductions in hospital admissions and the economic costs of health care, lost productivity and loss of life. Customers who walk or cycle to reach transit service also improve their cardiovascular and musculoskeletal health through physical activity—but this analysis did not attempt to quantify the economic value of this benefit.

| Metric                                 | Annual impact         |
|--|-----------------------|
| Hospital admissions reduced            | 157                   |
| Economic damage avoided                | \$115 million         |
| Improved health from physical activity | <i>Not quantified</i> |



City of Winnipeg

## Numbers alone cannot tell transit's story

CUTA's new research report highlights the positive economic impacts of transit facilities and services in Canada. Through multiple account evaluation, it builds a solid understanding of transit's benefits for users, the environment and society as a whole.

The positive impacts of transit investment on vehicle operating costs, collision costs, air pollution and improved respiratory health alone are valued at \$7.71 billion annually. This figure excludes other important benefits related to travel time, land use effects and improved physical activity—impacts that could not be quantified in this research but, if measured through further work, could dramatically increase the magnitude of transit's impacts. In fact, future evaluations could consider an even wider range of benefits—for example, the economic value generated when transit helps people access jobs, schooling and services that they could not otherwise reach; the money saved by families when they avoid purchasing a second or third automobile; and the wealth generated when successful transit systems help cities attract investors and visitors.

This research looks at today's situation, but accelerating urbanization, congestion and economic competition will lead its conclusions to become even more relevant with time. As these factors grow, so will the rate of return on transit investment. However, Canadian communities will reap the benefits for competitiveness, quality of life and long-term sustainability only if they invest sufficiently in transit operations and infrastructure. Those that do not will experience the economic consequences.

In the end, of course, the true economic benefit of transit is much more than a number. As with any attempt to put a price tag on the value of individual health and happiness, or on the value of prosperous and sustainable communities, CUTA's new research can only tell part of the story. Ultimately, the value of investing in transit today will reach every corner of the nation tomorrow, and every generation of Canadians to come.



City of Ottawa

The Canadian Urban Transit Association (CUTA) is the voice of Canada's public transit industry. For additional information including research reports, industry updates, news bulletins and more, please contact us or visit our website.



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