STUDY

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Public transit:
a powerful economic-development engine for the metropolitan Montreal region

Chambre de commerce
du Montréal métropolitain
Board of Trade of Metropolitan Montreal

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SECOR CONSULTING

SUMMARY

Why the interest in the economic contribution of public transit?

Public transit plays a predominant role in the economic development and competitiveness of metropolitan areas

- The competitiveness and pulling power of metropolitan areas are essential to the prosperity of advanced societies - hence the importance that the majority of industrialized countries place on the economic health of their large cities or regions.

- Being able to count on attractive, competitive metropolitan areas is nevertheless an on-going challenge requiring diligent action with regard to several key wealth-creation factors. The presence of efficient transportation infrastructures, particularly public transit, is one of those factors.

- Public transit generates complex, but very important, economic benefits. Public transit reduces the unit cost of trips for users, decreases travel time for non-users, increases the pool of workers and consumers for companies, and mitigates the harmful effects of travel.

- The stakeholders in many of the world's most economically dynamic regions fully understand the specific benefits of this system of transportation. Areas such as Barcelona, Lyon, Montpellier, and Strasbourg have made public transit a regional priority. The most competitive areas in the United States generally fall into one of the following two categories: either i) they already have a high level of transportation services or ii) they have invested the most in their public transit network in recent years.

- For these areas, public transit is regarded as an investment in their productive capacity and pulling power, allowing them to reconcile strong economic growth and quality of life.

What are the economic benefits of public transit activities in the Montreal area?

The activities of public transit authorities in the Montreal area supported 12,845 jobs in 2003 and helped increase incomes in the Montreal economy by almost $1 billion

- Public transit alone generates important economic activity in the area. In 2003, the operating and fixed capital expenditures of the 19 mass transit authorities in the area totaled $1.3 billion.

- The expenditures of Montreal's public transit authorities have increased very little in recent years. In fact, if inflation is taken into account, the budgets of the region's public transit authorities fell recently to levels observed in the mid-1990s, even though the number of users has grown by 12.5% in the intervening years.

- The expenditures of public transit authorities nevertheless support 12,845 jobs and contribute added value to the Montreal economy of almost $1 billion annually. Hundreds of Montreal and Quebec suppliers also benefit each year from the purchases of these authorities. These include petroleum products, electricity, rolling stock, spare parts, electrical supplies, computer-related products, and financial services.

› The provincial and federal governments collect a little more than $300 million in revenues annually, or $23 per $100 of expenditures by local public transit authorities. While the Quebec government collects total revenues equivalent to what it contributes to funding public transit, the combined revenues of the two higher levels of government are 45% higher than their financial contributions.

The impact of public transit on the Montreal economy is double that of equivalent expenditures for user-operated transportation, since the import rate is much lower

› In addition, the expenditures of public transit authorities stimulate the Montreal-area economy twice as much as equivalent expenditures for private transport by car, since more than 50% of the expenditures for private transport are for products imported to Quebec, compared to 10% in the case of public transport.

What are the other economic benefits of public transit activities in the Montreal area?

› The economic benefits generated by public transit are not limited to the expenditures of transit authorities. By reducing transportation costs, facilitating trips, and mitigating the harmful effects of those trips, public transit creates substantial economic benefits for the Montreal area.

Public transit enabled Montreal transit users to save almost $570 M in 2003

› The unit cost of a public transit trip is two to three times lower than that in a car. This system of transportation thus enables Montreal households to devote a smaller share of their budget to transportation. In 2003 alone, public transit enabled Montreal households to save $570 million in travel expenses.

These savings resulted in increased household purchasing power and double the economic benefits for the Montreal area

› These savings resulted in increased purchasing power for households in the area. In addition, devoting $570 million to general personal expenses generates almost double the economic benefits for the Montreal area as spending the same amount on car operating expenses – to the advantage of a host of merchants and manufacturers.

› In addition to reducing travel costs, public transit makes it faster and easier to move between various residential, business, and shopping districts. The mobility of the population is very important to the economy of metropolitan areas because it increases the efficiency of the labour market: having the right workers in the right places.

Public transit is crucial for many important industrial sectors in the Montreal area

› This greater efficiency is particularly important for certain industries and certain economic centres in the area, including the following: the area's outreach clusters (accommodation, food services, retail, and recreation); the tourism industry; the downtown core; and university campuses. Not to mention that many Montreal companies, including many high-tech manufacturers, also count on services related to this system of transportation to attract, recruit, and retain workers.

While stimulating real estate development and increasing property values in the area...

...public transit contributes directly to reducing losses caused by traffic congestion

Public transit generates four to 20 times fewer harmful effects than private transport by car

- Public transit, in particular networks ensuring speedy connections with centers of economic activity, also boosts property values and stimulates real estate development. This type of impact may be observed in the areas surrounding subway stations such as those in the downtown area, Jean-Talon, de la Savanne, Longueuil, the Mont-St-Hilaire station, and the Chevrier bus terminal in Brossard.

- Non-users of public transit also benefit greatly from its existence. The use of mass transport reduces congestion, thus travel time. Economic losses related to traffic congestion in Montreal are estimated at nearly $1 billion annually, or the equivalent of 1% of the area's production, and they have grown steadily over the past 10 years.

- Public transit also helps reduce several harmful effects associated with urban transportation and thus improves the quality of life in the area. Public transit trips help reduce pollution (four times less), accidents (12 times fewer), energy consumption (five times less) and use of public road space (20 times less).

In short, in 2003, public transit meant the following to the Montreal area:

- economic benefits of almost $937 million generated by the activities of transit authorities;

- savings of $570 million for Montreal households using this system of transportation;

- benefits assessed at $159 million from the reduction in road accidents ($62 million) and polluting emissions ($97 million); not to mention the benefits related to the greater mobility of workers, the boost to real-estate development, and decreased traffic congestion;

- 12,845 jobs with transit authorities and their suppliers; and

- annual revenues of $300 million for the Quebec and Canada governments.

CONTEXT and limits of the analysis

Transporation, the economy, and regional development have always been closely linked, and Montreal is no exception to this rule. Since the beginning, transportation has played an important role in its development and economic prosperity.

Every city's first large wave of economic prosperity has been based on trade – and thus on the existence of natural transportation advantages. All major cities were founded at the crossroads of a transportation network and most were located near a navigable body of water. The St. Lawrence River, for example, was the decisive factor in the economic emergence of Montreal. The link between transportation, the economy, and the development of cities was at that time indestructible.

Transportation has always been at the heart of Montreal's economic development

Transportation was also central to the second wave of the development of cities, which, over time, grew into metropolitan areas. This second wave was fuelled by the growth of the manufacturing sector. In order to succeed, this sector required an efficient transportation network to convey input to production and then dispatch the finished product. Montreal continued to expand by taking advantage not only of its port but also of its solid railroad infrastructure. The link between transportation, the economy, and the development of cities was becoming more tenuous, however. Other factors, such as the availability of large pools of labour and supplies of capital were becoming equally essential. At the same time, the transportation of people was becoming more important, particularly for certain manufacturing sectors more reliant on personal contact and the proximity of customers.

This "marginalization" of transportation was accentuated during the 1980s with the growth of the service and knowledge economies — the third and current wave of the development of metropolitan areas. Many other factors became crucial and, in certain respects, much more important to the health of industrial sectors associated with what many have called the new economy. At the top of the list, of course, are education and the availability of a highly skilled labour force. There is no doubt that the economic prosperity of modern societies is now closely linked to the presence of a pool of educated and creative people. On the other hand, we also recognize that these people are increasingly mobile and that regions must offer a favourable environment, particularly in terms of quality of life, to retain or attract them. And when it comes to ensuring an environment favourable to economic development, transportation can still play an important role. It is, moreover, for this reason that, in recent years, the business community has, once again, begun to show growing interest in public transit.

Aware that the true economic role of public transit is not fully recognized, the Board of Trade of Metropolitan Montreal (the Board of Trade) asked SECOR to evaluate the economic benefits of this system of transportation and to quantify some of its effects. This is not the first time that the Board of Trade has shown an interest in this question. In 1997, for example, the Board of Trade commissioned a study of the optimal financing and rate setting policies for public transit[1].

[1] See Claude Fluet, *Les avantages économiques du transport en commun: une évaluation par l'analyse des politiques optimales sous contraintes de financement et tarification*, Université du Québec à Montréal, December 1997.

Public transit also contributes to the economic prosperity of regions and is a growing concern of business associations

More recently, the Board of Trade surveyed the opinion of the business community on the level and structure of public transit services in the Montreal area.[2] The Board of Trade thus joined several other business associations in Canada, the United States, and Europe that are increasingly concerned about the level and development of public transit services in their regions[3].

A framework for assessing the economic benefits of public transit in the Montreal area

It is also important to stress that the analysis carried out in this document has certain limits. On the one hand, it concentrates on the economic dimension. However, public transit also plays an important role on a social and environmental level, and in land-use planning. Our study should therefore not be interpreted as minimizing these other contributions. In addition, the analysis seeks to quantify the principal economic benefits of public transit. Certain types of benefits that are more difficult to measure are thus covered only partially. This study should therefore not be seen as a comprehensive cost-benefit analysis of public transit, and it should not be presumed that all public transit projects are necessarily cost effective.

Finally, this analysis should not be regarded as a tool for promoting mass transit as opposed to private transport. On the contrary, a lucid and rigorous analysis of public transit makes it possible to reconcile these poles, which are too often seen as opposing. By promoting the better use of resources, greater productivity, and improved quality of life, public transit benefits everyone.

This document thus aims to describe the links between economic development and public transit, and to present facts and data fueling discussion of the role of public transit in the Montreal area. In addition to the introduction and conclusion, this document is divided into three major sections:

- The first examines the growing role played by metropolitan areas in the economic development of modern societies and the role of transportation, particularly public transit, as a competitive factor in these areas.
- The second describes public transit activities in the Montreal area and assesses the economic benefits generated by these activities.
- Finally, the third section describes and measures a series of less "classic" economic benefits associated with public transit – benefits often overlooked but still very important to residents and companies in the Montreal area.

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[2] Survey *Opinion et tendances sur le transport en commun*, carried out in September 2004 by the Board of Trade of Metropolitan Montreal, the Centre d'études en communications des affaires (UQAM) and the journal *Votre Argent*.

[3] See for example, for Canada, *Strengthening Canada's Urban Public Transit Systems*, Canadian Chamber of Commerce, 2002; or, for the United States, *The Economic Importance of Public Transit*, The National Business Coalition for Rapid Transit, November 2003.

1 Public transit and the economic development of metropolitan areas

Summary

For many years, we have recognized the dominant role played by metropolitan areas in economic development, and this contribution continues to grow with the globalization of trade and the advent of an economy based more and more on knowledge. The competitiveness and pulling power of regions are thus essential to the prosperity of advanced societies. Being able to count on competitive and attractive regions is nevertheless an on-going challenge requiring diligent action on several key wealth-creation factors. The presence of efficient public transit infrastructures is one of those key factors. Stakeholders in many of the most economically vital regions have understood the specific advantages of this system of transportation. Public transit is thus considered an investment in the productive capacity and pulling power of these regions, making it possible to reconcile strong economic growth and quality of life.

The importance of metropolitan areas

Cities have obviously always been important to the process of economic development. The concentration of people in the same location facilitates the identification of economic opportunities and supports the more efficient organization of work to respond to them. However, it is important to stress that the contributions of cities and particularly of metropolitan areas have become more pronounced over the past twenty years with the globalization of trade and the growth of the knowledge-based economy.

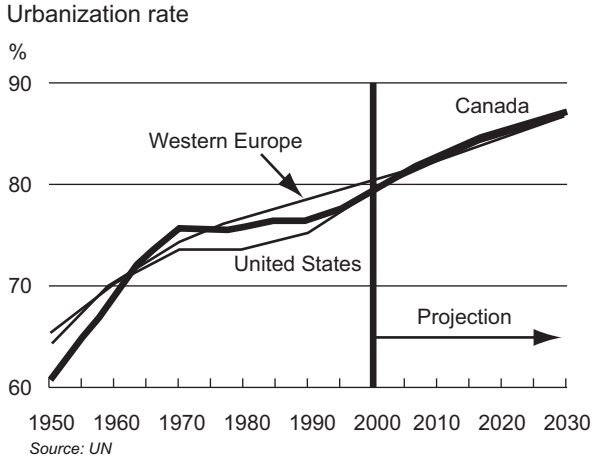
Metropolitan areas are the source of innovation. This role is explained by the importance of proximity and spatial concentration in the process of innovation. Despite the evolution of telecommunications, the grouping and close interaction of clusters of companies, training institutions, research centres, skilled labor, and knowledge infrastructures are fundamental to the emergence and marketing of new ideas. Metropolitan areas are therefore at the heart of wealth creation in advanced societies, since the current and future prosperity of these societies depends as never before on their ability to innovate. No need to insist on the fact that Quebec, like the rest of Canada, is no stranger to this fundamental trend.

This process is already well begun and notable in many respects. The major Canadian and Quebec metropolitan areas have cornered a growing share of employment, economic activity, and income.[4] At the same time, urbanization has surged in the past ten years and experts expect this trend will continue for the next twenty-five years (see Figure 1).

Metropolitan areas are now at the heart of wealth creation in modern societies

Figure 1

Metropolitan areas are at the heart of the economic growth of advanced societies, once again fueling the urbanization rate



Source: BC22, A statistical portrait of the 22 biggest Canadian cities, June 2004

[4] For Canada, see, for example, the documents recently prepared by the BC22: http://www.cmm.qc.ca/bc22 (last consultation 04/11/17).

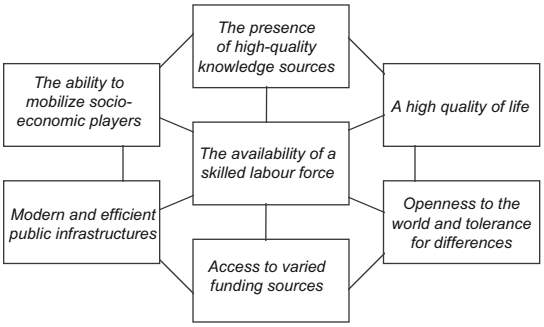
Development factors in metropolitan areas

This recognition of the growing role of metropolitan areas in economic development has triggered an in-depth analysis of their development factors and the public policies that support them. In particular, the most dynamic regions have been scrutinized — more than once — to determine what characterizes and distinguishes them. In spite of the diversity of the regions studied and the different analysis approaches adopted, the competitiveness and pulling power of the most dynamic metropolitan areas are consistently associated with a combination of seven major development factors (see Figure 2).[5] Among these factors is the presence of modern, efficient public infrastructures.

Figure 2

The most dynamic metropolitan areas combine a number of key characteristics, including modern and efficient public infrastructures

Major development factors in the most dynamic metropolitan areas



Source: Literature review, SECOR Consulting

The most dynamic regions combine a series of factors that reinforce each other

It is also important to stress that these factors reinforce each other. For example, the presence of high-quality knowledge sources requires the availability of skilled labour, which, in turn, is easier to retain or attract if the quality of life is high — while quality of life is enhanced by modern, efficient infrastructures. The whole should therefore be seen as a system, where each component is important.

This awareness is at the heart of the renewed importance placed in the United States and Europe on public infrastructures and, in particular, transportation infrastructures.

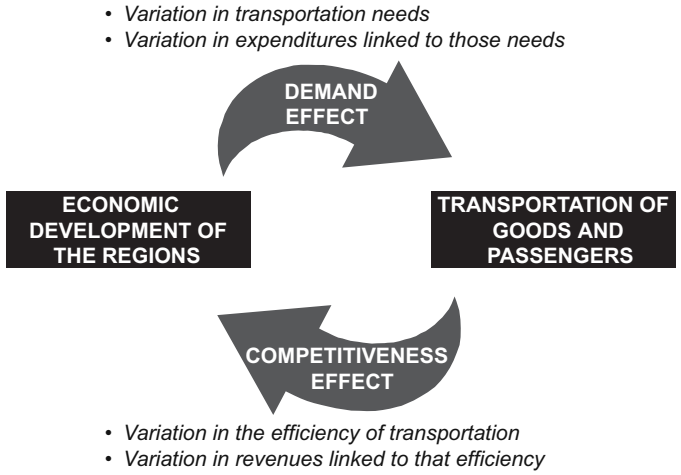
[5] These major factors may vary slightly from one study to another, or from one author to another, but correspond overall to the same dimensions. See also the *Montreal Health Report*, prepared by the Board of Trade of Metropolitan Montreal, 2004: http://www.ccmm.qc.ca/documents/bulletinDeSante/BulletinSante_Ang.pdf (last consultation 04/11/17).

The contribution of transport to the economic development of regions

There is indeed a strong close link between transportation and economic development. The more a metropolitan area develops, the greater its need to transport goods and passengers. Unfortunately, too many stakeholders stop with the equation *"an increase in economic activity requires **more transport**"* (the demand effect) and thereby neglect the retroactive effect: *"**better transport** leads to more economic activity "* (the competitiveness effect).

Figure 3

Transportation contributes in two major ways to the economic development of metropolitan areas



The two types of contribution of transportation to the economic development of regions: the *demand effect* and the *competitiveness effect*

The *demand effect* corresponds to the impact of greater transportation needs on the various economic sectors (transit employee wages, fuel and vehicle purchases, maintenance, etc.). This impact will be all the greater as transportation needs increase and the area is able to appropriate a larger share of the economic benefits generated.

The *competitiveness effect* is more subtle, but at the same time very important and structuring for a metropolitan area. It is related to the efficiency of transport or, in other words, to the concept of better transportation. Indeed, if the productivity of each economic sector is important, that of the transport sector is especially so, since, by the very nature of the demand for this service, it contributes to the productivity of the entire economy. The demand for transport is derived from the demand for other goods and services as well as from the need for the mobility of people. Transporting a good adds nothing to its value, but it must be delivered to consumers. Likewise, transporting people is largely non-productive, but it is essential to a host of daily activities. An efficient transportation sector will thus mean not only lower prices for goods but also lower costs for people and households, which, in the long run, improves their standard of living.

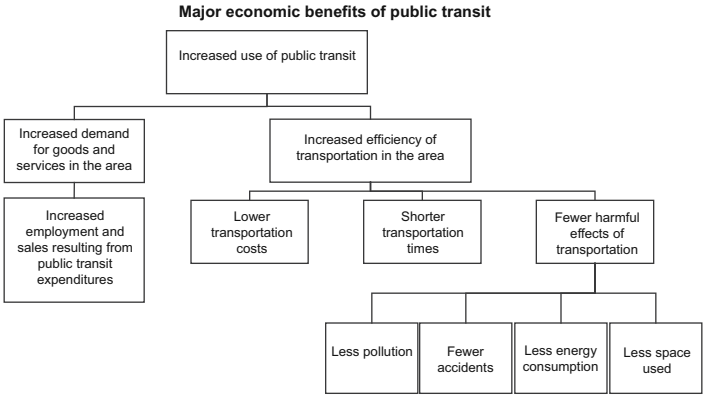
The specific contribution of public transit

Public transit generates many types of economic benefit

Public transit contributes in a specific but very useful way to the greater efficiency of movement in metropolitan areas (see Figure 4). Through its intrinsic characteristics, public transit generates complex, but very important, economic benefits. Public transit reduces the unit cost of user trips, decreases the travel time of non-users, increases the pool of workers and consumers for companies, and mitigates the harmful effects of pollution. These benefits tend to increase quickly with the size of an area. The more populated the area, the greater the benefits.[6] As discussed below, the economic contribution of public transit represents hundreds of millions of dollars annually for a region like Montreal.

Figure 4

The economic benefits associated with public transit are both complex and diverse



Source: Framework used by SECOR to assess economic benefits of public transit, inspired by Evaluating Public Transit Benefits and Costs*, Victoria Transport Policy Institute, July 2004*

[6] The relationship between the size of a city and the benefits generated is more than linear.

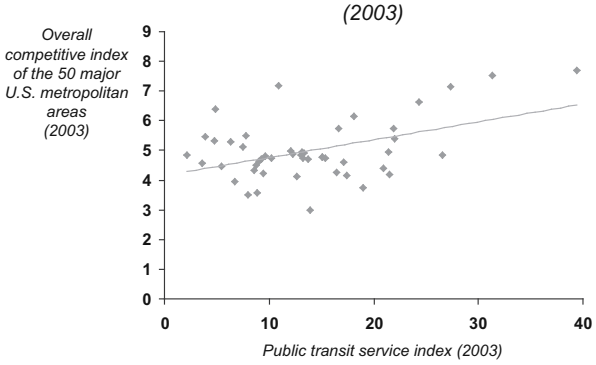
Public transit:
a recognized component
of the competitiveness
of metropolitan areas

It is easy to see why almost every competitiveness index developed to analyze and compare metropolitan areas includes a component related to the "level of public transit service".[7] This is obviously not the only – or even the primary – competitive factor in these regions, but public transit is considered one of the elements that makes a positive contribution to the economic attractiveness of metropolitan areas. Is this contribution merely theoretical? It is interesting to note that if you study the fifty leading metropolitan areas in the United States, you will observe a positive and statistically significant correlation between "better public transit service" and "greater competitiveness" (see Figure 5). Still, could this correlation be coincidental? More fundamentally, seventeen U.S. chambers of commerce decided in 2003 to highlight the importance of public transit to the development of their cities. Among the five most competitive regions of the United States, four signed the brief.[8]

Figure 5

The level of public transit service is a component of the overall competitiveness of metropolitan areas

Relationship between the level of public transit service and the overall competitiveness of U.S. metropolitan areas[1]
(2003)



[1] Statistically significant relationship at 99%

Source: SECOR Consulting analysis, based on data from Beacon Hill Institute, 2003

[7] See, for example, the indexes developed by the Beacon Hill Institute to compare the competitiveness of the major metropolitan areas in the United States: *Metro Area and State Competitiveness Report – 2003*, Beacon Hill Institute.

[8] The four cities represented are San Francisco, Minneapolis, Boston, and Denver. To see all of the signatories, see *The Economic Importance of Public Transit*, The National Business Coalition for Rapid Transit, November 2003.

An economic contribution that will grow in importance in the future

This action of the U.S. chambers of commerce reflects an awareness that has been growing for the past ten years in Europe and the United States. These chambers of commerce recognize that public transit is important from an economic standpoint and that it will continue to be so if we consider:

- the increased concentration of economic activity in metropolitan areas and its implications for the fluidity of goods and individuals;
- the attraction and retention of a highly qualified labour force and its implications for the quality of the living environment;
- the increased importance of air quality and its implications for transport modes;
- the ageing of the population and its effects on the modes of travel of a growing number of people;
- the renewed concerns for energy security and its implications for more energy-consuming modes of transportation; and
- the pressures on public finances and the need to optimize investments in public infrastructures by densifying regions.

Many regions have already taken action. In the United States, for example, the *Transportation Equity Act for the 21st Century* has made it possible to support american metropolitan areas by investing large sums of money in public transit systems (see Figure 6). This federal legislation, enacted in 1998, furthered the efforts begun in the early 1990s within the framework of another law promoting reinvestments in road networks and mass transit.

Figure 6

In recent years, many U.S. metropolitan areas have invested significant amounts in their public transit systems

Average annual investments in public transit between 1996 and 2002 in proportion to metropolitan populations

(in $ CA[1])

Metropolitan area (Top 15)	Annual per capita investment
1. New York	*$351*
2. San Francisco	*$311*
3. Washington	*$193*
4. Seattle	*$191*
5. Boston	*$186*
6. San Jose	*$172*
7. Chicago	*$167*
8. Salt Lake City	*$151*
9. Portland	*$144*
10. Pittsburgh	*$140*
11. Baltimore	*$140*
12. Honolulu	*$137*
13. Philadelphie	*$133*
14. Denver	*$121*
15. Houston	*$106*

[1] Based on exchange rate of $1 US = $1.33 CA

Source: SECOR compilation, based on National Transit Database of the US Transport Department

Many dynamic regions have prioritized public transit

In Europe, particularly France and Spain, major investments have also been made in the past ten years to improve public transit systems in several metropolitan areas — not just the capitals. Regions such as Barcelona, Lyon, Montpellier, and Strasbourg have made public transit a regional priority.[9]

It is also interesting to note that, in the United States, the areas considered most competitive generally fall into one of the following two categories: either i) they already have a high level of transportation services or ii) they have invested the most in their public transit network in recent years (see Figure 7).

Figure 7

The most competitive U.S. regions already have good public transit systems and/or invest more in public transit

Comparison of some U.S. cities in terms of overall competitiveness, level of public transit service, and rate of investment in public transit

Metropolitan area	Ranking among the top 50 U.S. city-regions in terms of...		
	...overall competitiveness[1]	...level of public transit service[1]	...rate of investment in public transit[2]
Seattle	1	2	4
San Francisco	2	3	2
Minneapolis	3	31	18
Boston	4	4	5
Denver	5	6	14

[1] *Source:* Metro Area and State Competitiveness Report 2003, *Beacon Hill Institute*
[2] *Based on average capital investments between 1996 and 2002 in terms of the region's population. Data taken from the National Transit Database gathered by US Transport Department.*

Public transit makes it possible to reconcile strong economic growth and quality of life

Public transit constitutes just one of the elements, albeit an important one, of the economic prosperity of highly urbanized regions. A study carried out for the World Bank based on data from 37 major metropolitan areas noted that the most efficient cities are those where the proportion of public transit trips is highest. It also stressed that public transit is essential to ensuring a high quality of life and remaining competitive so as to attract investments and skilled labour.[10] Public transit makes it possible to reconcile strong economic growth and quality of life.

[9] For example, in France, a survey carried out among representatives of the chambers of commerce and industry in eight city-regions that recently built new rapid transit systems (Grenoble, Nantes, Rouen, Strasbourg, Lille, Toulouse, Lyon, and Marseilles) indicated a positive relationship between these investments and the economic activity within their region (88% of respondents considered the effect had been positive). In addition, the firm Cushman & Wakefield Healy & Baker, a major European site locator, specifically acknowledged the importance of the public transit investments made in recent years in Barcelona by ranking it among the best places in Europe to invest. See *European Cities Monitor-2003*, October 2003.

[10] See Kenworthy et al., *Indicators of Transit Efficiency in 37 Global Cities*, the World Bank, Murdoch University Press, 1997.

The position of Denver's economic development representatives is enlightening from this point of view and fairly representative of the movement under way in several major American and European regions (see Figure 8)[11]. The case of Denver is also interesting because public transit was among the distinguishing criteria used by Boeing when selecting Chicago over Denver as the location of its corporate headquarters[12].

Figure 8

In Denver, as in many other metropolitan areas, economic stakeholders are increasingly aware of the importance of public transit

Recent statements made by economic players in the Denver region concerning a new light rail transit system expansion project

- *"Railroad was the defining decision of the 19th century. Denver International Airport, the defining decision of the 20th century. FasTracks will be the defining decision of the 21st century in Metro Denver."*

Tom Clark, Metro Denver Economic Development Corporation

- *"Improved mobility enhances economic development and makes metro Denver more competitive in the global market for jobs and capital."*
- *FasTracks is much more than a transportation proposal - It is about building on our existing investments to make us the kind of community that can succeed and thrive in this new century."*

John Huggins, Director of the Denver Office of Economic Development

Source: The Impacts of FasTracks on the Metro Denver Economy, *Metro Denver Economic Development Corporation and Denver Metro Chamber of Commerce, September 2004*

In short, metropolitan areas are now and will continue to be the engines of prosperity and economic growth for advanced societies. The competition between them is fierce, however, and each one must deploy constant efforts to increase, and even maintain, their level of competitiveness and attractiveness. To succeed, all the levers of development must be considered. From this point of view, the effectiveness of transportation within the region should not be neglected and, in particular, the role played by public transit. The stakeholders in many of the most economically dynamic metropolitan areas fully understand the many advantages of this system of transportation.

[11] The case of Denver is not unique. The heads of the chambers of commerce in the regions of Boston, San Francisco, Seattle, Portland, and Chicago, to name a few, hold similar views. See *The Economic Importance of Public Transit*, The National Business Coalition for Rapid Transit, November 2003.

[12] "One reason the Boeing Corporation chose Chicago over Denver for its corporate headquarters was the availability of a comprehensive transit system," quoted from *The Impact of FasTracks on the Metro Denver Economy,* Metro Denver Economic Development Corporation and Denver Metro Chamber of Commerce, September 2004. According to the Beacon Hill index, metropolitan Chicago had a better public transit service than Denver and, based on data from the National Transit Database, had also invested more in its network in recent years. It should be noted that Motorola also considered the availability of mass transport in Chicago when recently choosing the location of its new cell phone manufacturing facility. See *The Economic Importance of Public Transit*, The National Business Coalition for Rapid Transit, November 2003.

2 Public transit in the Montreal area and the economic activities generated

Summary

With its 1.2 million passengers daily, public transit facilitates the movements of almost 20% of residents of the Montreal area, including more than 50% of those who travel downtown during morning rush hour. This system of transportation alone generates significant economic activity for the area. In 2003, the operating and fixed capital expenditures of the 19 mass transit authorities in the area totaled $1.3 billion. These expenditures support 12,845 jobs and contribute almost $1 billion in added value to the economy each year. The provincial and federal governments collect slightly more than $300 million in revenues each year, or $23 per $100 of expenditures by the region's public transit authorities. While the Quebec government collects total revenues equivalent to what it contributes to funding public transit, the combined revenues of the two higher levels of government are 45% higher than their financial contribution. In addition, a high proportion of the expenditures of transit authorities remain in the region. Public transit therefore stimulates the regional economy twice as much as equivalent expenditures for private transport by car.

A brief socio-economic portrait of the Montreal area

The metropolitan Montreal area covers a vast territory of 3,900 km^2 with nearly 3.4 million inhabitants and 1.4 million households. This population is concentrated on the island of Montreal, home to slightly more than half the people and nearly 60% of households. There are four other sub-regions, each home to approximately 10% of the area's population: Longueuil, Laval, the South Shore and the North Shore. The demographic weight of the island of Montreal has decreased steadily for many years (from 71% in 1971 to 54% in 2001), to the benefit mainly of the south and north shores. According to the MMC's latest projections, this trend should continue for the next few years, but at a more moderate pace (see Figure 9).

Figure 9

The population continues to grow, but at a slower pace and with growth more evenly balanced among the various sectors of the Montreal area

Population and number of households in the Montreal area
(2001 and 2018)

Major sectors	2001				2018			
	Population		Number of households		Population		Number of households	
Montreal	1,812,350	54.1%	799,438	58.0%	1,904,891	53.9%	861,319	56.5%
Longueuil	371,842	11.1%	147,811	10.7%	367,427	10.4%	157,151	10.3%
Laval	342,932	10.2%	132,010	9.6%	369,249	10.4%	152,076	10.0%
South Shore	385,020	11.5%	140,529	10.2%	412,433	11.7%	163,910	10.8%
North Shore	439,604	13.1%	158,101	11.5%	482,090	13.6%	189,448	12.4%
	3,351,748	100%	1,377,889	100%	3,536,089	100%	1,523,904	100%

Source: Statistics Canada 2001 Census, MMC 2018 projections

In addition, there are 1.8 million jobs in the metropolitan Montreal area. The economic weight of the Montreal region in Quebec is greater than its demographic weight, whether in terms of its labor force, its GDP, its income, or its investments.[13] There is also a high concentration of companies in the new economy in Montreal: 66% of all Quebec activity in the information technologies sector; 80% of that in the life sciences sector; and 90% of all Quebec expenditures in research and development.

[13] See for example, page 5 of the draft Economic development plan presented for consultation by the Metropolitan Montreal Community in fall 2004 (http://www.cmm.qc.ca/pde/documents/pde.pdf, in French only) and the brief presented by the Board of Trade of Metropolitan Montreal on Bill 9, page 13 (http://www.ccmm.qc.ca/documents/Positions/2004_2005/memoire_PDE_CMM_en.pdf) (last consultation 04/11/17).

This economic activity is distributed among several poles in the area, with a significant proportion in the downtown core. The downtown area alone accounts for nearly 250,000 jobs, or 15% of all employment in the area. Overall, the island of Montreal employs 1.1 million people, accounting for 70% of all employment in the region (see Figure 10). This clearly indicates the importance of the mobility of workers since this sub-region is home to just 54% of the area's population. Not to mention that jobs in the Montreal area are dispersed among a large number of different centres.

Economic activity divided among several poles, with a significant percentage in the downtown core

Figure 10

Employment in the Montreal area is divided among many different centres, including many on the island of Montreal

Employment distribution within the MMC by core and non-core
(1996 to 2001)

	Jobs		Share in the MMC	
	1996 *(No.)*	2001 *(No.)*	1996 *(%)*	2001 *(%)*
MMC	1,440,110	1,598,890	100.0	100.0
Montreal	1,016,755	1,112,885	70.6	69.6
Downtown	209,130	235,230	14.5	14.7
Dorval / Ville Saint-Laurent	156,155	185,355	10.8	11.6
Anjou / Pointe-aux-Trembles	29,235	38,520	2.0	2.4
Marché Central	30,855	34,045	2.1	2.1
Université de Montréal	18,160	21,200	1.3	1.3
Dickson / Notre-Dame	5,710	7,040	0.4	0.4
Saint-Michel	5,935	6,805	0.4	0.4
Angrignon	6,495	6,265	0.5	0.4
The Plateau	5,135	5,885	0.4	0.4
Maisonneuve Hospital	5,355	5,190	0.4	0.3
Non-core	544,590	567,350	37.8	35.5
Laval	**103,690**	**118,440**	**7.2**	**7.4**
Laval	37,065	42,740	2.6	2.7
Non-core	66,625	75,700	4.6	4.7
Longueuil	**130,700**	**141,805**	**9.10**	**8.9**
Longueuil - Boucherville	33,800	42,425	2.4	2.7
Metro Longueuil	5,370	5,580	0.4	0.4
Non-core	91,530	93,800	6.4	5.9
North Shore	**103,795**	**124,670**	**7.2**	**7.8**
Mirabel - Saint-Eustache	18,645	22,585	1.3	1.4
Repentigny	4,995	5,860	0.3	0.4
Terrebonne	3,745	6,325	0.3	0.4
Sainte-Thérèse / Rosemere A15	3,385	3,950	0.2	0.2
Sainte-Thérèse A15	3,930	4,290	0.3	0.3
Non-core	69,095	81,660	4.8	5.1
South Shore	**85,170**	**101,090**	**5.9**	**6.3**
Vaudreuil Highway A40	1,280	3,115	0.1	0.2
Châteauguay	1,760	2,530	0.1	0.2
Chambly	3,050	3,125	0.2	0.2
Varennes	2,015	2,495	0.1	0.2
Contrecoeur	3,340	3,360	0.2	0.2
Non-core	73,725	86,465	5.1	5.4

Source: Montreal Metropolitan Community (MMC), 2003

Trips in the Montreal area

More than 8 million trips daily in the Montreal area

According to the latest enquête Origine-Destination survey carried out in the area (1998), there were 8.1 million daily trips in the region. Not surprisingly, Montrealers travel primarily during morning rush hour.[14] The mobility of Montrealers has tended to increase, since the number of daily trips grew at an average rate of 1.9% annually between 1987 and 1998, while the population grew at an average rate of 1% annually. As expected, Montrealers travel mostly to go to work (32% of trips), to go to school (18%), to shop (17%) and for recreation (15%). During rush hour, work becomes the primary reason for travel (see Figure 11).

[14] The results of the 2003 origin-destination study were not yet available at the time this report was written.

Figure 11

Montrealers travel mostly during rush hour, especially to go to work or school

Number of trips per purpose in the Montreal area
(1998)

Trip purpose	24 hours		Morning rush hour	
	No. of trips	Prop	Nb de déplacements	Prop
Work	1,461,000	32%	962,000	52%
School	806,000	18%	592,000	32%
Shopping	769,000	17%	23,000	1%
Recreation	690,000	15%	39,000	2%
Other	862,000	19%	250,000	13%
	4,588,000	**100%**	**1,866,000**	**100%**
Return home	**3,496,000**		**101,000**	
TOTAL	**8,084,000**		**1,967,000**	

Source: Highlights of the 1998 enquête Origine-Destination, AMT, December 1999 (entire area)

A modal share of public transit between 16% and 20%, but decreasing

Nearly 87% of these trips were carried out with motorized vehicles (car, public transit, school bus, taxi...). Among the motorized modes, public transit represented 16% of daily trips and 20% of trips during morning rush hour (see Figure 12). These proportions (%) correspond to what we call the modal share of public transit. The modal share of public transit is higher during peak periods since this is when people are traveling most for work or school, the level of mass transit service is higher, and road traffic is more congested. This share has nevertheless decreased steadily since 1987 (from 28% in 1987 to 24% in 1993, and to 20% in 1998 for peak periods). The growing distances between work and home and the rising motorization rate have contributed to this situation.

Figure 12

Nearly 87% of trips are made with motorized vehicles, five times more by car than by public transit

Number of trips by mode in the Montreal area
(1998)

Mode of travel	24 hours	Morning rush hour
Motorized		
Automobile	5,546,000	1,258,000
Public transit	1,159,000	346,000
Other motorized	416,000	176,000
Total motorized	7,031,000	1,746,000
Non-motorized		
On foot or by bike	1,053,000	221,000
TOTAL	**8,084,000**	**1,967,000**

Source: Highlights of the 1998 enquête Origine-Destination, December 1999

The further you move from downtown, the smaller the modal share of public transit

The modal share of public transit decreases in proportion to the distance from downtown. This share is thus highest in the center of the region, with 32% of Montreal Island residents using public transit during morning rush hour (including 38% in the central neighbourhoods) (see Figure 13). If we focus instead on the destination, we see that more than half (55%) of trips toward the downtown area are carried out by public transit.

Figure 13

The modal share of public transit varies greatly depending on the trip origin and destination

Morning rush hour trips per sector of origin, all reasons except returning home

(1998)

Sector	Trips originating in			Trips headed for		
	Auto	PT	Modal share PT/ motorized	Auto	PT	Modal share PT/ motorized
Island of Montreal						
Downtown	12,900	8,000	37%	120,800	120,300	55%
Centre	225,800	142,500	38%	260,500	122,100	31%
East	82,800	39,700	31%	74,000	17,900	18%
West	162,200	48,600	22%	190,600	34,500	14%
Total Montreal	**483,700**	**238,800**	**32%**	**645,900**	**294,800**	**31%**
Near South Shore [1]	111,600	35,400	22%	98,300	12,900	10%
Laval	122,100	22,500	14%	85,500	9,000	8%
South Shore	194,800	13,700	5%	118,500	800	0.5%
North Shore	179,300	10,900	5%	109,200	2,200	1.4%
Total outside-Montreal	**607,800**	**82,500**	**10%**	**411,500**	**24,900**	**4%**
TOTAL	**1,901,500**	**321,300**	**21%**	**1,057,400**	**319,700**	**21%**

[1] This data is synthesized based on the divisions in the 1998 enquête Origine-Destination. The near South Shore is the former territory of the STRSM, which corresponds today to Longueuil without the borough of Saint-Bruno-de-Montarville.

Source: Highlights of the 1998 enquête Origine-Destination, AMT, December 1999

Each day, there are thus almost 1.2 million public transit trips in the Montreal area, whether by bus, train, or metro. On the other hand, there are also 5.5 million daily trips by car, including 2.6 million during rush hour (1.3 million during morning rush hour and 1.3 million during evening rush hour). And the motorization rate is increasing steadily in Montreal and much faster on the outskirts of the island (see Figure 14).

Figure 14

The motorization rate is rising steadily in Montreal and twice as fast on the outskirts of the island

Motorization of residents in the metropolitan area and in Quebec

(Total vehicles / 1000 residents)*

	1998	1999	2000	2001	2002	2003	Growth 98-03
Montreal	331	336	337	338	340	346	4.5%
Laval	474	481	485	490	493	500	5.5%
Lanaudière	504	513	518	529	539	539	6.9%
Laurentides	514	523	528	537	545	550	7.0%
Montérégie	493	500	505	513	521	528	7.1%
Quebec (province)	**449**	**456**	**461**	**468**	**475**	**478**	**6.5%**

** Automobiles and light trucks registered in Quebec per thousand residents*

Sources: Société de l'assurance automobile du Québec and Institut de la statistique du Québec

The scope of activities of public transit authorities

In 2003, public transit services in the Montreal area were managed by 19 different organizations known as public transit authorities (PTA).[15] PTA may be divided into three major groups: public transit organizations (OPT), intermunicipal transit commissions (CIT), and municipal and intermunicipal transit organizations (OMIT). The Agence métropolitaine de transport (AMT) is also a PTA, in part, since it manages the commuter rail and metropolitan express bus systems (see Figure 15).

In 2003, public transit in the Montreal area was managed by 19 organizations

Figure 15

In 2003, public transit services in the Montreal area were managed by 19 PTAs

Portrait of territories and populations served by PTAs in the metropolitan Montreal region[1]

PTAs active in 2003	Population served *(Thousands)* [1]	Area of territory served *(km^2)* [1-2]
	2001	**2001**
AMT	3,356	3,793
Montreal area OPTs		
STM	1,813	501
RTL	372	274
STL	343	245
TOTAL OF THE THREE OPTs	**2,528**	**1,020**
CIT/OMIT Laurentides		
CIT Basses-Laurentides	156	803
OMIT Saint-Eustache	42	70
CIT Deux-Montagnes	37	62
OMIT Saint-Jérôme	60	97
CIT/OMIT Lanaudière		
CIT des Moulins	112	261
OMIT Repentigny	103	60
CIT Joliette-Métropolitain	36	132
CIT Montcalm	62	108
NORTH SHORE	**608**	**1,593**
CIT/OMIT Montérégie-Est		
CIT Vallée-du-Richelieu	128	161
CIT Sorel-Varennes	76	259
CIT Chambly-Richelieu-Carignan	32	120
OMIT Sainte-Julie	27	51
CIT/OMIT Montérégie-Ouest		
CIT Sud-Ouest	96	226
CIT Le Richelain	41	61
CIT Haut-Richelieu	59	226
CIT Roussillon	47	73
CIT Haut-Saint-Laurent	24	46
SOUTH SHORE	**530**	**1,223**

[1] Population of the legal territory served
[2] The territories of some CIT / OMIT overlap with that of the AMT
Source: AMT

The size and level of activity of PTAs in the region vary greatly

The size and level of activity of the transit authorities obviously vary greatly from one PTA to another. At one extreme, one finds the Société de transport de Montréal (STM), by far the largest PTA in the area. In fact, the STM is the 8th largest PTA in North America and, based on its annual budget, the 15th largest enterprise (of all types) in Quebec. At the other extreme, one finds the CIT St-Laurent, whose scope of activity is 600 times smaller than that of the STM[16] (see Figure 16).

[15] In 2003, three (3) PTA in the Lanaudière region combined to form one CIT (OMIT Repentigny, CIT Joliette and CIT Montcalm). In 2004, four (4) Laurentides PTA did the same thing (CIT Basses-Laurentide, OMIT Saint-Eustache, CIT Deux-Montagnes, and OMIT Saint-Jérôme).

[16] The CIT Moncalm is smaller, but it is now part of a regional organization including the CIT Joliette and the OMIT Repentigny. Idem for the CIT Deux-Montagnes, which is now part of CIT-Laurentides.

Figure 16

The size and level of activity vary greatly from one PTA to another

Portrait of the clientele and total expenditures of PTAs in the metropolitan area
(2003)

PTAs active in 2003	Annual clientele *(Millions)*	Total annual expenditures *(Thousands of $)*
	2003	**2003**
AMT	14.68	272,279
Montreal area OPTs		
STM	363.23	814,302
RTL	30.38	106,105
STL	18.60	75,001
TOTAL OF THE THREE OPTs	**412.21**	**995,408**
CIT/OMIT Laurentides		
CIT Basses-Laurentides	2.37	11,526
OMIT Saint-Eustache	0.17	1,431
CIT Deux-Montagnes	0.13	1,009
OMIT Saint-Jérôme	0.31	1,266
CIT/OMIT Lanaudière		
CIT des Moulins	1.71	7,568
OMIT Repentigny	1.06[1]	4,724
CIT Joliette-Métropolitain	0.43[1]	2,438
CIT Montcalm	0.04[1]	675
NORTH SHORE	**6.21**	**30,635**
CIT/OMIT Montérégie-Est		
CIT Vallée-du-Richelieu	1.75	8,219
CIT Sorel-Varennes	0.96	4,079
CIT Chambly-Richelieu-Carignan	0.59	2,410
OMIT Sainte-Julie	0.39	2,449
CIT/OMIT Montérégie-Ouest		
CIT Sud-Ouest	1.54[1]	6,862
CIT Le Richelain	0.89	3,513
CIT Haut-Richelieu	1.55	4,653
CIT Roussillon	0.63	2,732
CIT Haut-Saint-Laurent	0.28	1,355
SOUTH SHORE	**8.58**	**36,273**

[1] The data related to the CIT / OMIT are estimates

Source: Ministère des transports du Québec, annual reports and SECOR estimates

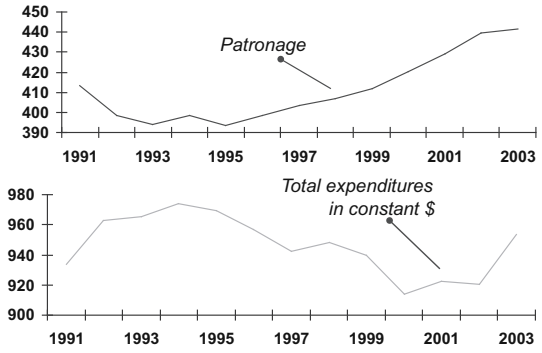
Expenditures (operating and fixed capital) of the region's PTAs totaled $1.3 billion in 2003

The combined activities of the region's 19 PTAs are significant. Their total operating and fixed capital expenditures were estimated at $1.3 billion in 2003.[17] It is important to stress that these expenditures have increased very little in recent years. In fact, if inflation is taken into account, the budgets of the region's public transit authorities fell recently to levels observed in the mid 1990s, even though the number of users has grown by 12.5% in the intervening years (see Figure 17).

Figure 17

1991 total expenditures (in constant dollars) of PTAs in the metropolitan area have remained stable for ten years, although patronage has begun to grow again

Evolution of patronage and total expenditures in constant dollars of PTAs in the metropolitan area



Notes :
• 1991 constant $
• Financial statements (OPT) or estimates (CIT / OMIT) 2003

Source: Processing by SECOR Consulting of data from Quebec's ministère des Transports

[17] This is an estimate since some PTAs have not yet reported their final results for 2003.

The economic impact of the activities of public transit authorities

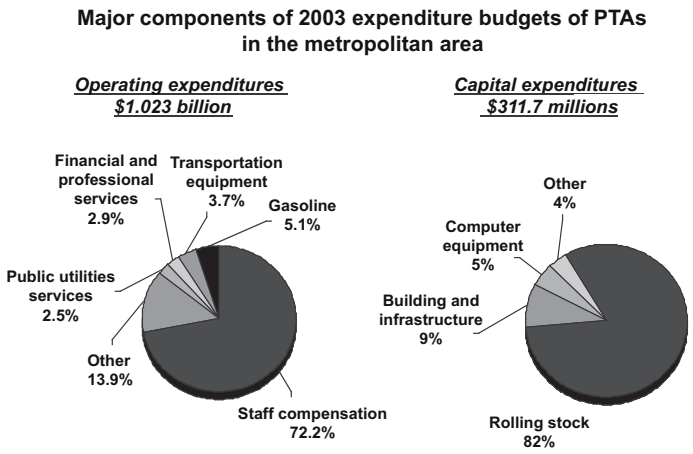
Nature and scope of PTA expenditures

Expenditures made in many different sectors of the Montreal economy

An expenditure budget of $1.3 billion generates significant economic benefits for the Montreal area and all of Quebec. First of all, there are the salaries paid to all the employees providing service to users. Nearly 72% of the PTAs' operating budgets are devoted to paying the people directly involved in service delivery, or a proportion similar to that found on average elsewhere[18]. But the activities of the PTAs also have an impact on other sectors of the economy. In 2003, PTAs in the area spent an estimated $284 million on goods and services. Hundreds of Montreal and Quebec suppliers benefit each year from the purchases of these organizations, which include petroleum products, electricity, rolling stock, spare parts, electrical supplies, computer-related products, and financial services. In addition, capital expenditures of the PTAs in the metropolitan area totaled more than $213 million dollars on average during the last four years, including $312 million in 2003 (see Figure 18).

Figure 18

Operating and capital expenditures of PTAs in the Montreal area totalled $1.3 billion in 2003



Source: Processing by SECOR Consulting of data received from various PTAs in the metropolitan area

[18] See, for example, *Public Transportation and the Nation's Economy*, Cambridge Systematics, October 1999, p. 29, where the percentage for all American transport companies is established at 71%.

Economic benefits in terms of jobs and income

Expenditures support 12,845 jobs in the region

The salaries paid to employees and the purchases of goods and services fuel economic activity and create wealth in this region. Figure 19 illustrates the nature and scope of the economic activity generated in Quebec in terms of jobs and income (value added in Quebec). It is estimated that, in 2003, public transit supported the equivalent of 12,845 jobs[19], or 9,610 direct jobs with transportation companies and 3,235 indirect jobs with suppliers. PTA activities also generated value added of more than $936.9 million, including $656 million in payroll expenditures. Because of the nature of the expenditures and the location of the industry suppliers, it is worth mentioning that this impact is very strongly concentrated in the Montreal area.

Figure 19

PTA's thereby generate significant economic activity in the region

Estimate of direct and indirect economic benefits of PTA expenditure budgets
(2003)

	Economic benefits of...		
	...operating expenditures	...capital expenditures	Total expenditures
Jobs[1] *(in equivalent person-years)*	**11,989**	**856**	**12,845**
- direct	9,610	-	9,610
- indirect	2,379	856	3,235
Added value *(salaries, benefits to companies and other revenues)*	**$885,8 M**	**$51,1 M**	**$936,9 M**
- direct	$738,5 M	-	$738,5 M
- indirect	$147,3 M	$51,1 M	$198,4 M

[1] Does not include induced jobs

Source: Institut de la statistique du Québec, based on data provided by SECOR Consulting

Economic benefits in terms of government revenues

Expenditures that generate significant benefits for the provincial and federal governments

The provincial and federal governments also garnered more than $300 million in revenues from these activities. Together, these two levels of government collect approximately $23 for every $100 of expenditure by PTAs in the area. In addition, it is important to note that the Quebec government contributes directly to the funding of public transit. However, this contribution, which covered 42% of expenditures in 1991, has decreased considerably and today covers only 16% of expenditures.[20] In other words, for each $100 of expenditures by PTAs, the government of Quebec pays $16, but, in return, collects $15.71 ($9 if we exclude incidental taxes). As for the federal government, if we exclude a special initial contribution made recently within the framework of a metro project, it does not contribute to the financing of public transit but still collects more than $7.39 in various revenues for each $100 spent by PTAs (see Figure 20).

[19] Employment data is expressed in equivalent person-years. It does not include induced jobs, or jobs supported by the wages paid by PTAs or their suppliers.

[20] See *Portrait des transports collectifs dans la région métropolitaine de Montréal*, 2003 edition, AMT, p.25

Figure 20

The economic activites generated by PTAs contribute to the revenues of upper government levels

Estimated government revenues from activities generated by PTAs
(2003)

	Revenues from...			Revenues per $100 of PTA expenditures
	...operating expenditures	...capital expenditures	Total expenditures	
Government of QC	**$201.1 M**	**$8.6 M**	**$209.7 M**	**$15.71**
- Tax revenues	$117.1 M	$3.5 M	$120.6 M	$9.04
- Incidental taxation*	$83.9 M	$5.1 M	$89.0 M	$6.67
Government of CAN	**$94.6 M**	**$4.0 M**	**$98.6 M**	**$7.39**
- Tax revenues	$75.6 M	$2.7 M	$78.3 M	$5.87
- Incidental taxation*	$18.9 M	$1.3 M	$20.2 M	$1.51

** In Quebec, incidental taxation includes contributions to QPP, FSS, and CSST. For Canada, to employment insurance.*

Source: Institut de la statistique du Québec, based on data provided by SECOR Consulting

Comparing the economic impact of transport expenditures

Benefits twice as high for mass transit as for private transport

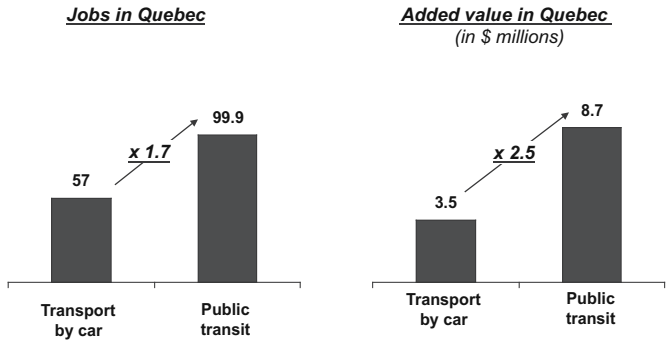
By definition, all types of expenditure generate an economic impact; hence the need to compare the economic benefits of various types. In this respect, it is certainly interesting to compare the economic impacts generated by public transit with those resulting from private transport by car.

Figure 21 illustrates this comparison in terms of jobs and added value. The impact associated with the expenditures for private transport by car is calculated by distributing all of the annual costs of owning a car.[21] It will be seen that for every $10 million in expenditures, public transit generates 1.7 times more employment and 2.5 times more added value than private transport by car.

Figure 21

Public transit generates double the economic benefits of private transport by car

Comparison of economic benefits of a $10 M expenditure on transportation
(2003)



Source: SECOR Consulting, based on simulations by the Institut de la statistique du Québec

[21] According to 2003 data from CAA for a Cavalier driven 18,000 kilometers per year.

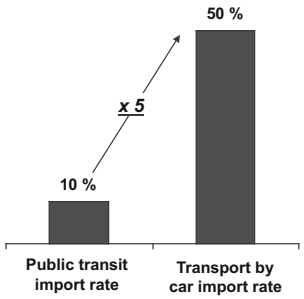
This result is explained mainly by the higher import rate for private transport by car. As indicated by Figure 22, for every $10 million in expenditures for public transit, approximately 10% is associated with the purchase of goods and services not produced in the area, which consequently "leaves" Quebec. This "leakage rate" is almost 50% in the case of expenditures for private transport by car.

Greater benefits from mass transit because of a lower import rate

Figure 22

The leakage rate for public transit is five times lower than for private transport by car

Comparison of the import rate associated with $10 M in transport expenditures



Source: SECOR Consulting, based on simulations by the Institut de la statistique du Québec

In short, public transit alone generates significant economic activity for the Montreal area. The operating and fixed capital expenditures of the 19 public transit associations in the region support thousands of jobs and generate annual value added for the region totaling almost $1 billion annually. Not to mention that the economic impact of mass transit is twice as high as that for an equivalent amount spent on private transport by car.

3 Public transit in the Montreal area and the economic benefits generated

Summary

The economic benefits generated by public transit are not limited to the expenditures of transit authorities. The contribution of this system of transportation to the economic efficiency and development of metropolitan areas is just as important and perhaps even more so. By reducing transportation costs, facilitating trips, and mitigating the harmful effects of those trips, public transit creates substantial benefits for households, companies, and the quality of life in the area. In 2003 alone, public transit enabled Montreal households to save $570 million in travel expenses. This system of transportation is also crucial for many important industrial sectors in the Montreal area, while also boosting real estate development in the region. Not to mention the economic value resulting from the impact of public transit on reducing pollution, congestion, and accidents.

Transport represents a sizable expense for households in the Montreal area

Reduced transport costs and their impact on Montreal households

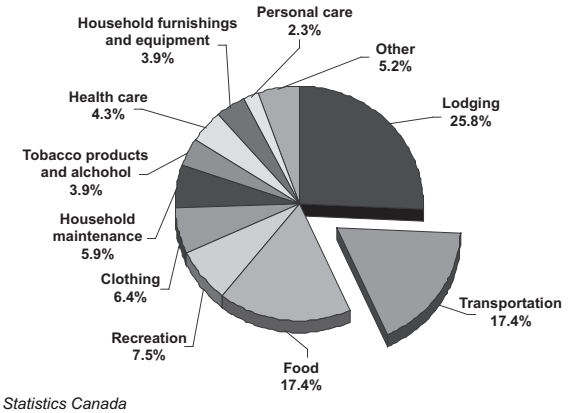
Transport represents one of the most sizable expenditure items in household budgets. In the metropolitan Montreal area, households spend an average of $6,878 annually on transportation. This item accounts for 17.4% of total expenditures, equivalent to the total amount spent on food.

Only the "housing" item exceeds the annual budget allocated for transportation (see Figure 23). However, because of its lower unit cost, public transit makes it possible to reduce the portion of household budgets devoted to transportation and thereby significantly increase the disposable income of households in the Montreal area.

Figure 23

Transportation is one of the biggest household budget items

Breakdown of household expenditures in the metropolitan Montreal area (excluding income tax)
(2003)



Source: Statistics Canada

In the Montreal area, a public transit trip costs an average of $0.17 per kilometer,[22] whereas a trip by car costs an average of $0.41 per kilometer[23] (see Figure 24). The cost of using a car includes all fixed and variable costs. The difference between $0.41 and $0.17 applies only to public transit users who do not have cars. For users with cars who choose to use public transit, the savings are slightly lower since part of the fixed costs of owning a car must still be paid.

[22] On the basis of operating costs for PTAs in the region and passenger-kilometers traveled. See *Portrait des transports collectifs dans la région métropolitaine de Montréal*, 2003 edition, AMT, p. 54, adjusted for the STM's factual data.

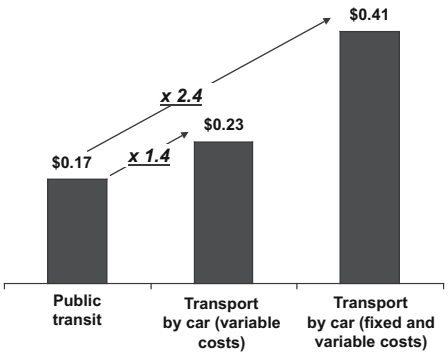
[23] On the basis of annual driving costs compiled by the CAA in 2003 ($9,072 for a Cavalier Z24 traveling an annual distance of 18,000 km).

If we consider only the variable expenses of operating a car, including the depreciation caused by the additional mileage and the higher insurance premiums charged for using a car for business, the unit cost of a trip by car is $0.23 per km[24] (see Figure 24).

Figure 24

The unit cost of a public transit trip is much lower than that of an equivalent trip by car

Comparison of unit cost in passenger-km
(2003)



Source: SECOR Consulting estimate, based on data from AMT, CAA and the Red Book

Public transit saved Montreal users some $570 M in 2003

Annual savings for transit users are therefore substantial. For example, if we consider that PTAs in the Montreal area transported 3.2 billion passenger-kilometers in 2003, one third of whom own cars, the savings generated by public transit users totaled $570 million in 2003.

We can also assess these savings by comparing the private vehicle expenses of households in the Montreal area with those of households in the rest of Quebec. For example, in 2002, households in the Montreal area devoted $6,235 to their private vehicle expenses, compared to $6,635 for households in the rest of Quebec. This difference of $400 per household applied to all households in the metropolitan area is equivalent to a "savings" of $564 millions in 2002 (or almost $580 million in 2003 dollars).

These savings result in increased purchasing power for households and double the economic benefits for the Montreal area

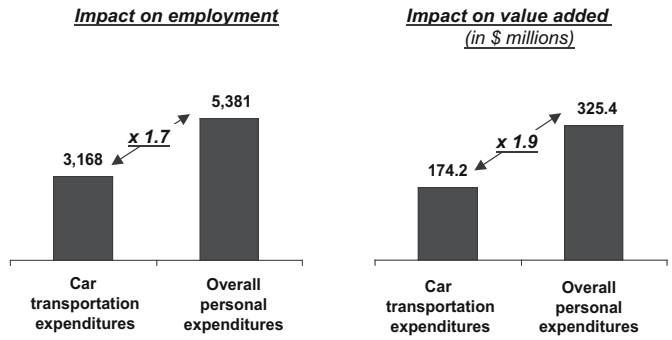
These savings automatically result in increased purchasing power for households in the area. In other words, the presence of public transit makes it possible for Montreal households to devote an additional $570 million to other personal expenditures, to the great benefit of a host of merchants and manufacturers. Of course, it is important to stress that these additional sales are carried out "to the detriment" of businesses that would otherwise have benefited from the additional expenditures on private transport. What is the net effect of this shift? As illustrated by Figure 25, the Montreal area and the province of Quebec both benefit from this shift. Devoting $570 million to all personal expenditures generates nearly double the economic benefits for the Montreal area as spending the same amount on car operating expenses.

[24] Note that this estimate does not take into account parking expenses when using a car. The variable costs of transport by car would be higher if this cost were included.

Figure 25

Replacing car transportation expenditures with other types of personal expenditures is beneficial to the metropolitan economy

Comparison of the economic impact associated with $600 Min personal expenditures[1] and $600 M in car transportation expenditures
(2003)



[1] Based on 2/3 people with no car and 1/3 who own one.

Source: SECOR Consulting estimate, based on statistics from the Institut de la statistique du Québec

Increased ease of travel and its impact on the development of key industrial sectors in the Montreal area

Public transit is important for outreach clusters in the Montreal area

In addition to reducing travel costs, public transit makes it faster and easier to move between various residential, business, and shopping districts. The mobility of the population is very important to the economy of metropolitan areas since it increases the efficiency of the labour market: having the right workers in the right places. This greater efficiency is beneficial to both companies and individuals.[25] This effect is difficult to quantify from an economic point of view, but it is important, particularly for certain industries and economic centres.

The accommodation, retail, food services, and recreation sectors

Take, for example, the accommodation, retail, food services, and recreation industries. With 375,000 employees, these industrial sectors play a major role in the Montreal area. The development plan presented by the Montreal Metropolitan Community (MMC) in October 2004 includes these industries among what it calls the "outreach clusters."[26] According to the MMC, these sectors help maintain the overall quality of life in Montreal and reinforce the region's public image. However, companies in these sectors employ a high proportion of people who are young and/or do not have motor vehicles to travel to their place of work (see Figure 26). Without public transit, these positions would be much more difficult to fill, increasing the operating costs of businesses and reducing the quality of service offered to customers.

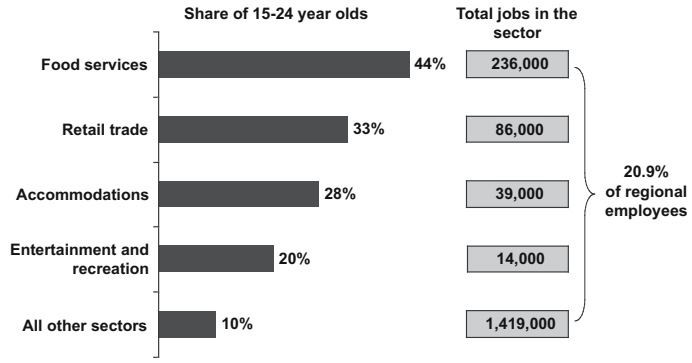
[25] To illustrate this point, according to a survey conducted in the United States, a significant proportion of public transit users said they would be unable to keep their jobs or would earn less in the absence of this system of transportation. See *Evaluating Public Transit Benefits and Costs*, Victoria Transport Policy Institute, July 2004, p. 18.

[26] See the *Cap sur le monde – Pour une région métropolitaine de Montréal compétitive*, Montreal Metropolitan Community, October 2004, p. 67.

Figure 26

The "outreach clusters" in the Montreal area depend greatly on young workers and therefore on public transit to fill jobs

Proportion of under 25-year-olds working in industrial sectors belonging to the region's outreach clusters
(2003)



Source: MMC and Statistics Canada

High-quality public transit services also help the tourism industry...

The tourism sector

The industrial sectors associated with these outreach clusters are also at the heart of the region's tourism products. Significantly, tourism is ranked 7th among Quebec's export products[27] and makes a major contribution to the economy of the Montreal area (see Figure 27). Public transit not only helps transport workers in the tourism industry but is also particularly important to the transportation of visitors and tourists wishing to visit many of the region's attractions. Imagine certain major events such as the Jazz Festival or the Grand Prix of Canada without public transit. It is not surprising, then, that this is one of the factors used by major organizations such as the International Olympic Committee when rating cities bidding to host events[28], that new tourist attractions are located close to public transit networks, or that major tourist guides always include a section on public transit.

[27] See *Le tourisme au Québec en 1999: une réalité économique importante*, Tourisme Québec, 2001.

[28] Transport is one of the assessment criteria used by the IOC in choosing host cities. In fact, Vancouver's public transit infrastructure was one of its strong points when being selected as host of the XXI Olympic Winter Games in 2010.

Figure 27

Tourism, an industry very important to Montreal, also counts greatly on the quality of service of public transit

Economic importance of Montreal's tourism industry in 2002

• *Tourist spending*	*$2,526.3 M*
• *Payroll*	*$1,761.8 M*
• *Total tax benefits*	*$1,477.3 M*
• *Total jobs*	*75,378*

Source: Tourisme Montreal, August 2004

...as well as the downtown core, institutions of higher education, and many major companies in the area

The downtown core and the knowledge industries

In fact, public transit is universally recognized as a key contributor to the vitality of downtown cores, their business districts, and their tourist attractions.[29] Indeed, public transit has been instrumental in ensuring the downtown area continues to occupy such a dominant position in Montreal. And it is obviously critical in transporting students, a major asset to the region's knowledge economy.

But the importance of good public transit is not limited to service industries located in the downtown area. Numerous businesses, including many high-tech manufacturing companies, also count on this system of transportation to attract, recruit, and retain workers.

The Société de transport de Montréal (STM), for example, is urged every year by many companies to extend, modify or improve certain bus lines. To illustrate the economic value of public transit, some companies have even taken advantage of a joint program established by the STM to improve the level of service offered, even though this initiative involved a certain financial risk on their part (see Figure 28).[30]

[29] Certain American studies have even shown a link between the quality of public transit services in the downtown core and the vacancy rates (lower) and rents charged (higher) in rental buildings located in this area. See, for example, *Land Value and Public Transport*, RICS Policy Unit, October 2002 .

[30] In the United States, high-tech companies such as Boeing, Motorola, and Microsoft have also been very sensitive to the offer of public transit.

Figure 28

Many high-tech companies also count on public transit to attract, recruit, and retain workers

Examples of sectors and companies that have signed partnership agreements with the STM

Source: Société de transport de Montréal

Real estate development

Public transit also stimulates real estate development and boosts residential and commercial property values

The economic value of public transit is also reflected in real estate development and property values. Many studies show, in fact, that public transit, particularly networks ensuring fast links with centers of economic activity, boost the value of residential and commercial properties. This increase in value is explained by the perceived and real advantages of increased mobility, not to mention the increased patronage for commercial properties.[31] In Toronto, for example, the appreciation of properties within a 460-meter radius of rapid transit stations was assessed at 15%, decreasing to 5% within a 600-metre radius of a metro station. In the United States, the appreciation of commercial rental value is assessed at 2.1% when the property is located less than 1,000 meters from a junction point with a rapid transit system.[32]

There are no equivalent quantitative analyses for the Montreal area, although some researchers have identified certain areas where Montreal's public transit infrastructures have had a positive impact on the region's property values.[33] Downtown Montreal and the metro stations of Longueuil, Rosemont, Jean-Talon, and de la Savanne are examples. According to these experts, the impact has until now been more limited than in other metropolitan areas. Slow demographic growth, the absence of public intervention, and the sites chosen for metro stations explain this difference. It is interesting to note that in areas where these three factors did not come into play, development was, in fact, much more significant. To the preceding examples, we might also add the major development projects near the Mont-Saint-Hilaire station and the Chevrier bus terminal in Brossard.

[31-32] The impact on building values is greater if the link is rapid, parking is limited in the area, and there is direct access to the business district. See, for example, *Land Value and Public Transport*, RICS Policy Unit, October 2002.

[33] See, for example, the review of existing studies in Paul Lewis et al. *Améliorer la mobilité en aménageant autrement*. Report prepared for the Commission de consultation sur l'amélioration de la mobilité entre Montréal et la Rive-Sud, Institut d'urbanisme of Université de Montréal, February 14, 2002.

Increased speed of travel and its impact on reduced congestion in the Montreal area

Non-users of public transit also benefit greatly from the existence of this system of transportation. The use of mass transport reduces congestion, thus travel time. Economic losses related to traffic congestion in Montreal are estimated at nearly $1 billion annually,[34] or the equivalent of 1% of the area's production, and they have grown steadily over the past ten years. These costs correspond to the value of the time wasted by individuals during their trips (75% of the total), the additional operating costs incurred by companies because of this wasted time (7% of the total) and other harmful effects of congestion such as pollution and additional energy consumption (18% of the total).

The costs of congestion are estimated at almost $1 billion in the Montreal area

If not for public transit, these costs would be even higher. To illustrate, the addition of 1,000 new travelers to a congested network creates a line-up stretching 5.95 km.[35] The use of public transit by these same users would reduce the marginal increase in the line-up to 0.25 km. It is easy to imagine the impact of public transit in Montreal, which eliminates nearly 500,000 car-trips from the network during peak periods.

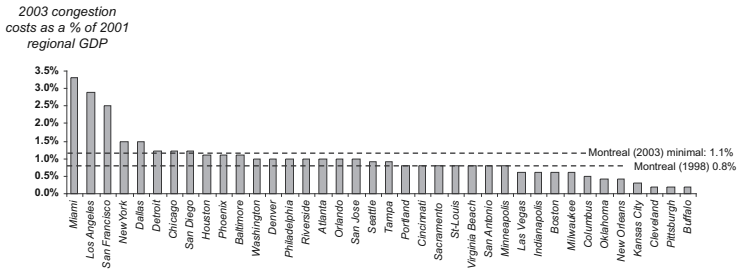
Public transit contributes directly to reducing losses caused by congestion

And contrary to popular opinion, the situation in the Montreal area is not better than that in many American regions. In fact, while the costs of congestion in absolute value place Montreal far behind many large American cities, the situation is much less favorable when you look at the costs of congestion in the metropolitan area in proportion to incomes in the region (see Figure 29).

Figure 29

Montreal's position in terms of congestion costs is far from better than that of many U.S. metropolitan areas

Comparison of congestion costs as a proportion of regional GDP of the largest U.S. cities (according to the method of the Texas Transportation Institute)
(2003)



Sources: SECOR estimate, based on studies by Gourvil et al., "Évaluation de la congestion routière dans la région de Montréal", ministère des Transports du Québec, 2004; "The 2004 Urban Mobility Report", the Texas Transportation Institute, September 2004; and data from the Conference Board, the US Conference of Mayors, and the Bank of Canada

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[34] See, for example, Louis Gourvil et al ., *Évaluation de la congestion routière dans la région de Montréal*, ministère des Transports du Québec, May 2004. The total cost to society of road congestion in the metropolitan area was estimated at $778.7 million in 1998. If we consider the increase in trips between 1998 and 2003 and conservatively postulate a linear progression of these costs, the estimate for 2003 would exceed one billion dollars (see Figure 29).

[35] Based on an occupancy rate of 1.26 persons per car.

Reduction of harmful effects of transportation and improved quality of life in the Montreal area

Public transit also makes it possible to reduce several harmful effects associated with transportation and thus improve the quality of life in the region. While this type of contribution is not new, it takes on added importance in the context of the intense competition between major metropolitan areas to attract and retain knowledge workers.

There are four major types of harmful effect associated with transportation: pollution, accidents, energy consumption, and road space used. The scope of these undesirable effects varies significantly depending on the system of transportation. Public transit makes it possible to substantially reduce each one of these effects when compared with travel by car (see Figure 30). It is important to stress that these benefits of public transit profit everyone in the Montreal area and not just the users of this system of transportation.

Public transit generates four to 20 times fewer harmful effects than private transport by car

Figure 30

Public transit substantially reduces the harmful effects associated with passenger transportation

Comparison of the impact of the public transit system and car transportation on various factors affecting quality of life in the region

Type of harmful effect	Ratio car transportation to public transit for the same number of passenger-kilometres
Air pollution	4.2 times less with public transit[1]
Cost of accidents	12.1 times less with public transit
Energy consumption	5 times less with public transit[1]
Space use	20 times less with public transit[1]

[1] Assuming travel by bus (25 passengers). The difference is even greater by train or metro.

Sources: SECOR Consulting estimate, based on Jacqueline Desrosiers, Guide de l'analyse avantages-coûts des projets publics en transport, *ministère des Transports du Québec, 2001; and Todd Litman,* Evaluating Public Transit Benefits and Costs, *Victoria Transport Policy Institute, July 2004, p. 39*

Economists have developed ways to assess the dollar value of some of these harmful effects. Although imperfect, these measures make it possible to grasp the significant contribution of public transit in a region like that of Montreal. By using the methodology of the ministère des Transports du Québec[36] and updating it for 2003, it is possible to assess the costs avoided in terms of accidents and pollution.

In 2003 alone, we estimate that public transit reduced costs related to road accidents in the Montreal region by $61.9 million.[37] As for the value of the reduction

[36] According to the methodology presented in Jacqueline Desrosiers, *Guide de l'analyse avantages-coûts des projets publics en transport*, ministère des Transports du Québec, 2001.

[37] SECOR estimate based on SAAQ cost statistics for various accident types and the data of Gaudrey et al., *Un premier bilan intégré des coûts et des revenus du réseau routier au Québec et du transport public de la grande région de Montréal*, CRT, 1997, for accident probabilities in the Montreal region.

of polluting emissions due to public transit, it is estimated at $97 million for 2003.[38] This system of transportation also helps reduce the amount of space taken up by road networks. To cite just one example, public transit trips in the reserved lane of the Champlain bridge during peak periods represent the equivalent of three car lanes, or a whole new bridge.

Economic benefits resulting from a 2% increase in the modal share of public transit in the Montreal region

A 2% increase in the modal share of public transit would mean 19 million fewer trips by car in the Montreal region

Too few stakeholders are aware of the importance of mass transit to their regional economy. To illustrate its contribution, the economic benefits associated with a 2% increase in the modal share of public transit in the Montreal area were estimated. This represents half of the loss of market share of public transit between 1993 and 1998. If a 2% increase seems insignificant, it should be remembered that this would require a 10% increase in the use of public transit and 19 million fewer car trips in the region (see Figure 31). It could also require an adjustment in public transit service, particularly for those segments that are already close to saturation during peak periods.

Figure 31

A 2% increase in the modal share of public transit represents a significant decrease in the number of vehicles on Montreal-area roads

Effects of a 2% increase in the modal share of public transit
(2003)

➢ Reduction in the number of passenger-km by car	300.7 millions
➢ Reduction in the number of trips by car	19.0 millions
➢ Reduction in the number of vehicle-km	238.6 millions
➢ Reduction in the number of vehicle-km by car in congestion situations	101.4 millions

Source: SECOR Consulting estimate, based on AMT data

[38] SECOR estimate based on Environment Canada (Mobile 5C for the emission factors according to modes of transport) and ministère des Transports du Québec (for the prices according to types of pollutants) up-dated for 2003.

A 2% increase in the modal share of public transit would generate economic benefits of more than $150 M for the Montreal region

Figure 32 summarizes the principal economic benefits associated with a 10% increase in public transit trips (2% of the modal share). The combined impact is clearly considerable and totals more than $150 million annually.

Figure 32

The benefits associated with a 2% increase in the modal share of public transit are enormous for the Montreal area

Synthesis of the major effects of a 2% increase in the modal share of public transit in the Montreal area
(2003)

➢ Higher added value in the region through increased disposable income for users	$32.9 M
➢ Lower congestion costs	$107.3 M
➢ Lower pollution costs	$9.7 M
➢ Lower accident costs	$6.2 M
➢ Total impact	$156.1 M

Source: SECOR estimate

In short, the economic benefits of public transit greatly exceed the demand effect generated by PTA expenditures. By increasing the overall efficiency of travel, public transit reduces the cost of transportation and thus production costs of companies, increases the mobility of individuals and thus labour productivity, and reduces the harmful effects of transportation, thereby improving the quality of life. The competitiveness effect is thus more subtle and difficult to measure, but at the same time very important and structuring for a metropolitan area like that of Montreal. The illustration of the benefits of a 2% increase in modal share of this type of transportation helps us better understand this role. The economic benefits total more than $150 million annually.

CONCLUSION

In short, public transit meant the following to the Montreal area in 2003:

- economic benefits of almost $937 million generated by the activities of transit authorities;
- savings of $570 million for Montreal households using this system of transportation;
- benefits assessed at $159 million from the reduction in road accidents ($62 million) and polluting emissions ($97 million); not to mention the benefits linked to the greater mobility of workers, the increased vitality of real-estate development, and the reduced congestion;
- 12,845 jobs with transit authorities and their suppliers; and
- annual revenues of $300 million for the provincial and federal governments.

An efficient transport sector is also a factor of competitiveness and wealth creation for the Montreal area. The mobility of individuals and goods is a crucial component of the Montreal economy, and a good public transit system facilitates this mobility while making the area more attractive in terms of quality of life.

To take full advantage of public transit, it is nevertheless important for the network to attract maximum users and, to do so, it must be accessible and attractive. In recent years, many economically dynamic regions that compete with the Montreal area have undertaken to upgrade their mass transit networks. By making this transportation system more competitive, they are simultaneously reducing the harmful effects of urban transportation and enhancing the economic growth factors in their territory.

Of course, public transit cannot solve all transportation problems. Moreover, all investments in mass transit are not automatically financially and economically viable. On the other hand, it would be detrimental to neglect or marginalize this system of transportation. Its contribution to the economy of a region like Montreal is too important. And the coming years will only increase the contribution of public transit. The importance of quality of life in the knowledge economy, increased urbanization, energy concerns, and the aging population are all factors militating in favour of a good public transit system.

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