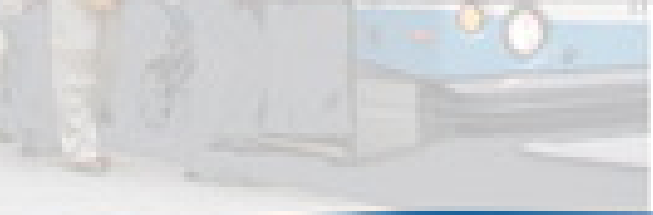
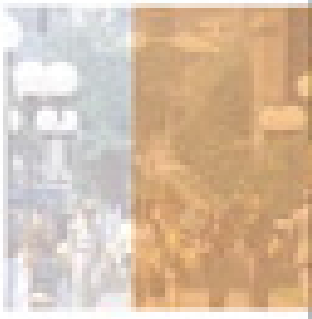
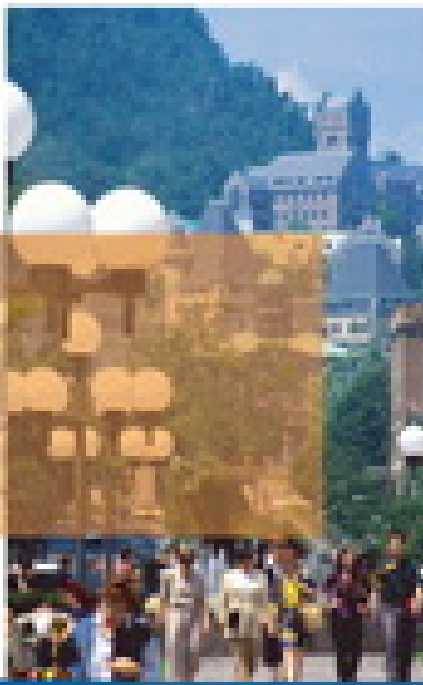
2007 Transportation Plan

Consultation Document

Réinventer
Montréal







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Réinventer Montréal

Montréal

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Message from the Mayor of Montréal

Since my administration came to power, we have taken steps to foster both the rapid economic development of our city and to improve the quality of life of its citizens and this, through a sustainable development approach. This necessarily entails greater efficiency when it comes to how we move around the city. The Transportation Plan that we are submitting is the outcome of this vision. It is ambitious, even bold, and it takes an unequivocal stance in favour of public and active modes of transportation.

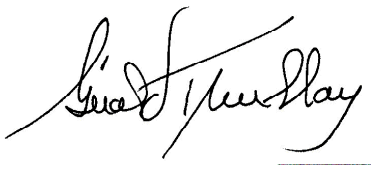
Its objective is to respond to the mobility needs of all Montrealers by making their city a great place to live as well as an economic development pole that is prosperous and respectful of the environment. In this regard, the Transportation Plan proposes to make the most of opportunities offering through road improvements or the building of transportation infrastructures to enhance the city's image.

Forecasts on population growth and increases in the number of jobs between now and 2021 foretell an actual increase in commutes within and to the island of Montréal. A number of additions and improvements will need to be made to the road network. Montréal already has an extensive public transit network; the Transportation Plan proposes to optimize its use and service a larger segment of Montréal's population.

Montréal considers the safety of road network users a priority. This is why we are putting forward a series of measures so that, in the end, pedestrians, cyclists and drivers will all be the ultimate winners.

The Transportation Plan proposes concrete measures to reach an enduring balance between the commuting needs of the population and the quality of the environment. At a time when climate changes are the source of concern for more and more specialists as well as for the public in general, we no longer have a choice. It is now urgent that we take the steps that will have a real impact. This is why the Transportation Plan also calls on higher-level governments and regional partners to commit themselves to support its orientations and to harmonize their own priorities with those of the city.

This Transportation Plan is at the heart of our citizens' interests. It also clearly demonstrates the will of our administration to transform the transportation system, to improve it and to rethink it for the benefit of efficient mobility, economic growth, quality of life, sustainable development and accountable management so that we may live better in a city where we will have successfully managed a secure and harmonious balance between the various choices of transportation modes.



Gérald Tremblay

Mayor of Montréal

Message from Mr. André Lavallée

In 1967, Montrealers and the whole world were discovering Expo. The islands were offering us an enchanting setting but also the bold outlook of a car-free city where pedestrians were kings–a city serviced by all kinds of public transit modes: the new metro, the Expo Express train, the monorail, electric mini-trains, bicycles, and the river shuttles. Cars were relegated to park-and-ride car parks.

The Montréal Transportation Plan is partly inspired by this bold and innovative vision; it also takes into account other indisputable factors.

Climate changes and the rapid deterioration of the environment preoccupy all of us. We must also acknowledge that modes of transportation contribute to a large part to the production of greenhouse gases. The negative effects of this pollution, in addition to its intensification on a planetary scale, have a direct impact on our quality of life. Montrealers are disturbed by the thousands of vehicles that invade central neighbourhoods every day and spill over into residential streets. They worry with good reason about safety in residential sectors and around schools.

From now on, our choices with respect to transportation modes must imperatively reflect our preoccupations regarding the environment, the quality of the air we breathe, health, security, the ambiance of our neighbourhoods, the quality and comfort of urban developments and our contribution to social justice.

Consequently, we are proposing that public and active transportation become more and more the modes that will be encouraged to move around or access the island. This choice calls for adopting and implementing decisive measures. Transportation and travels that are economic in nature must also be considered. A number of improvements to the road network are necessary to support Montréal's economic competitiveness and trade flows. But they must be realized within a sustainable development framework.

The Plan also recommends pursuing the building of public transit infrastructures on a regional scale, while proposing that the regional and structuring character of these assets and the necessity of an optimal development of sectors already urbanized be acknowledged. Montréal commits itself to actively participating in an action plan that would lead to the optimization of commuting and freight transportation linked with land-use planning, and this, at the metropolitan community scale.

Finally, the Plan clearly outlines the major initiatives that Montréal wants to implement over the next few years. Montréal is committed to investing its share of the large sums of money that will be required, but it will not be able to do it alone. To come true, the Plan's vision must be shared and supported.

Montréal is already an exceptional place in many respects. We are proposing a bold and stimulating project that is also meant to be unifying, a project to reinvent our future while banking on sustainable development and quality of life. We hope that all citizens will support the Plan.

André Lavallée

Montréal Executive Committee member
Responsible for public transit and urban planning

Message from Mr. Claude Trudel

As a publicly-owned transit corporation, the *Société de Transport de Montréal* (STM) is at the heart of the Montréal region's economic development. While contributing to our citizens' quality of life and to the protection of the environment, the corporation provides support to millions of people in their commuting to education, leisure, shopping and other activities.

As well as being a driving force behind economic development, public transit also comes in support of a sustainable development strategy, given that it is an effective tool to reduce the greenhouse effect.

A number of recent developments underscore a true political will to boost public transit in the Montréal metropolitan region. Among these, the Montréal Summit held in spring 2002 acknowledged the importance of investing in new public transit infrastructures, in service improvements as well as in the development of new services.

The STM is proud to be associated with the great undertaking that is the Transportation Plan, through which Montréal will make public transit one of the major underpinnings of its actions toward improving quality of life for its citizens.

The STM's vision and commitments will lead both to the improvement of current public transit modes, in terms of speed, comfort and security, and to a diversification of the services supplied, while taking a definite turn in favour of sustainable development, so that the STM can propose services that respond even better to Montrealers' various needs.

The STM is committed to the implementation of this major initiative of service improvements and aims to increase its ridership by more than 25% between now and 2021. The Government of Québec's *Plan vert* [Green Plan], and the unwavering support that it is getting from the Ville de Montréal give the STM, for the first time in many years, access to substantial financial means that will allow it to reach the increase in ridership.

There is no doubt that the STM and the Ville de Montréal are committed to making Montréal the number one public transit city in North America.

Claude Trudel

President of STM's Board of Directors
21 major initiatives to reinvent Montréal over 10 years!

Twenty One Major Initiatives to Reinvent Montréal Over the Next 10 Years!

The analyses undertaken during preparation of the Transportation Plan lead to the clear overall conclusion that all elements of the municipal road system including roads, bridges, tunnels and other physical infrastructure require major capital investment. The Plan identifies numerous specific initiatives that are required: interchange reconstruction; redesign, refurbishment, or major maintenance on complete road sections; and reconfiguration of a number of intersections.

The analysis has demonstrated that, in modes which compete with the private car, we are looking at billions of dollars in investments, whether in the maintenance or the development of existing transit networks, the development of new public transit to maintain the existing transit system, to extend existing services, to develop new innovative mass transit systems, and to promote the panoplia of innovative approaches which will be able to increase the shared use of automobiles and increase the number of walking and cycling trips.

We all seek efficient ways to travel in order to benefit from the social, economic and cultural opportunities offered by our community. Now more than ever before, collective and individual choices with respect to transportation must reflect the interaction of transportation with a number of societal issues involving the environment, air quality, quality of life, social security and health of the citizens, social justice, the character of our cities and neighbourhoods, as well as our individual and collective ability to pay for everything we want.

Montréal will exercise strong leadership in determining transportation solutions and priorities.

The Plan proposes, first and foremost, a bold and ambitious option namely, to invest massively in alternatives to the automobile: public transit, carpooling, car sharing, demand management and active modes of transportation such as walking and cycling.

The road system is in need of repair, redesign and consolidation and a number of improvements to the system are outlined in The Plan. In addition, Montréal intends to maintain its role as a commercial hub and will participate actively in the preparation and execution of an action plan to improve freight transportation throughout the entire Metropolitan Area. The Montréal Region accounts for more than half of Quebec's gross domestic product. Its commercial activities lead to interaction with partners in Quebec, in Canada and throughout the world.

Access to Montreal Island is an issue of special importance. Indeed, Montréal is the economic, social and cultural heart of the metropolitan area, but must contend with numerous geographic and institutional constraints.

What is required is a recognition, throughout the metropolitan area, of the impact of the transit system on urban structure as well as an awareness of the possibilities mass transit can create for more intensive land use in areas which have high quality services.

Consequently, **Montréal proposes an ambitious undertaking, composed of 21 major initiatives to be implemented in parallel over the next decade** which will radically improve the quality of the environment of the island of Montréal and the quality of life of its residents. The Plan makes an appeal to all stakeholders in the transportation sector to become involved, for to become a reality, Montréal's vision must be shared.

This list does not encompass all the initiatives that will need to be undertaken and which are outlined in the Transportation Plan. However, in order to achieve the goals that have been set, the municipal administration and its partners will need to focus on the efficient implementation of these projects, whether island-wide or at the neighbourhood level, because they are the ones most likely to bring about the changes that are being sought.

1st Major Initiative

Build a Light Rail Transit (LRT) Network in Central Montréal

The first line will complement the metro system and the pedestrian network and will form a loop servicing the areas with highest concentration of jobs and activities, namely the Central Business District (CBD), the *Havre de Montréal* [harbour front], Old Montreal, the new CHUM teaching hospital, UQAM university, the *Quartier des spectacles* (Theatre district) and the *Quartier International.*

The system will next be extended to the avenue du Parc and chemin de la Côte-des-Neiges corridors. The initial system will encompass close to 20 kilometres and will be built in consecutive phases. It will have an extraordinary impact on the urban environment and will be an important stimulus to a number of important development projects.

The system will then be expanded eastward and northward on boulevard Pie-IX to service in particular the Maisonneuve development pole.

The option of linking the avenue du Parc and chemin de la Côte-des-Neiges lines, through Mount Royal Park, with an LRT or other modern shuttle compatible with an ecologically sensitive environment will also be examined.

2nd Major Initiative

Build a rail shuttle between downtown and Montréal-Trudeau airport

Public transit to the airport is currently very limited and is restricted in part by traffic congestion in the vicinity of the airport and even more so, by long periods of area-wide freeway congestion. This project will provide a 20-minute trip time. An initial ridership study carried out in 2005 estimated the potential use of this shuttle at two million passengers each year. In addition to travellers, 25,000 workers commute daily to the airport.

In a subsequent phase, this project will provide an opportunity to improve commuter train services between downtown, the airport and the West Island.

3rd Major Initiative

Modernize the Metro's rolling stock and other equipment

The MR-63 subway cars that were put into service when the metro opened in 1966 have reached the end of their useful life. The proposed replacement program provides for the purchase of 336 cars requiring an investment of $1.1 billion. The Government of Québec will absorb 75% of the costs. Between now and 2008, 423 MR-73 cars will be repaired and refurbished in order to maintain them in good working order and increase capacity. In the long term, these cars too will need to be replaced.

4th Major Initiative

Extend the metro system eastward

In order to substantially improve transportation services to and from the new economic development poles in the east, centre and centre-west of the island, Montréal proposes to expand the metro system. In the short term, Montréal wants to extend the no. 5 line (blue line) from Saint-Michel to Pie-IX. Boulevard Pie IX constitutes the most important north-south transit corridor on the island in terms of both actual and potential use. The new station would facilitate transfer between the reserved bus lane on Pie-IX and the East Island Commuter Train. It would also improve public transit services in the eastern part of the Island and provide a new structuring east-west transit corridor in the centre of the island.

In a second phase, the line would be extended a distance of 5.1 kilometres from Pie-IX to Saint-Léonard and Anjou.

5th Major Initiative

Improve the STM's services in order to increase ridership by 8% over five years

Montréal and the *Société de Transport de Montréal* (STM) have agreed to immediately implement a service improvement plan aimed at increasing ridership by 8% between now and 2012 in accordance with Quebec's policy on public transit. Reaching this goal implies a substantial increase in service, in the order of 16%. Among other initiatives, the STM plans to increase the number of buses, use articulated buses on approximately 20 high usage routes, increase the frequency of metro trains during peak periods, at noon and in the evening on weekdays, and in the afternoon and evening on weekends. The STM will also, in cooperation with the city, implement a range of measures to improve access, cleanliness, public safety and information for users.

6th Major Initiative

Promote ride sharing

A number of organizations offer matching services to carpool users-among others, the *Agence métropolitaine de transport* (AMT). Currently, more than 250 companies are registered with *Covoiturage allégo*, a car pool matching service. However, despite these commendable efforts, individual car usage remains a widespread practice. In the morning peak period, the average occupancy of vehicles commuting to Montréal is 1.27 persons per vehicle. A number of factors can explain this situation, including the absence of a truly reserved carpool lane network. Indeed, on the island of Montréal, there is only one such lane - on Highway 15 Northbound. Montréal is thus proposing that the Government of Québec develop a network of carpool reserved freeway lanes on Montreal Island and on approaches to the Island. These lanes would also be used by buses and taxis.

7th Major Initiative

Provide for greater public transit capacity in the Champlain Bridge - Bonaventure corridor

The Ville de Montréal has already made public its plan to replace the Bonaventure Expressway by an urban boulevard. This project will be implemented in three phases. It will transform one of the main gateways to Montréal and allow the consolidation and development of public transit in the downtown/Champlain Bridge/South Shore corridor. The AMT, the STM and the Ville de Montréal are already looking into measures that could be implemented to increase the capacity of buses in the downtown core and facilitate their movements in the Bonaventure corridor (exclusive right-of-way lanes). These initiatives should not, however, compromise the long term need to

constuct an intermediate capacity light rail system in the Downtown/South Shore corridor.

8th Major Initiative

Implement a Bus Rapid Transit (BRT) network on exclusive right-of-way

A number of major public transit corridors, such as Pie-IX and Henri-Bourassa boulevards, are already widely used, in particular during peak period. Montréal wishes to implement exclusive right-of-way lanes for buses on these roads. These types of lanes are well suited to servicing sectors on the periphery of Downtown. Montréal hopes to implement these two projects as soon as possible. These new exclusive right-of-way lanes could be used for articulated buses or trolleybuses and, in the longer term, for LRT.

Other traffic corridors offer similar opportunities: rue Notre-Dame and the CN right-of-way in the east as far as Pointe-aux-Trembles; the Doney railroad right-of-way in the West Island south of Highway 40. The latter would enhance the use of public transit for trips to and from the Technoparc in the Saint-Laurent borough, the second most important work trip destination for West Island residents.

9th Major Initiative

Implement priority measures for buses on 240 kilometres of roads

To encourage a wider use of public transit, users must have access to efficient, comfortable services. In cooperation with the STM, Montréal will implement measures aimed at giving priority to public transit on its network of primary and secondary arterial roads, i.e. approximately 240 kilometres. Currently, buses benefit from a competitive advantage over cars only on a marginal portion of the road network. Depending on the circumstances, these measures may include the creation of new reserved lanes, the modification of traffic lights, the redesign of roadway geometry, the improvement of traffic signs, as well as changes in snow removal practices and parking regulations. In an initial phase, six of the busiest corridors will benefit from these measures: boulevard Saint-Michel, rue Beaubien, boulevard Rosemont, the Sauvé/Côte-Vertu corridor and the Saint-Jean/Pierrefonds corridor as well as rue Notre-Dame between rue Dickson and Pointe-aux-Trembles.

10th Major Initiative

Implement Mobility Management Plans

More and more planners and real estate developers propose projects that integrate the benefits of public and active modes of transportation

in their proposals. Montréal acknowledges the essential role of employers and institutions in achieving its new transportation and mobility objectives.

In the future, Montréal intends to ensure that all major real estate projects include a mobility plan in which all aspects of the movement of people will be evaluated with regard to the availability of public transit and active transportation, including carpooling, cycling, car sharing and the use of taxis. Montréal will also review urban planning by-laws to impose maximum thresholds for the number of parking spaces and revise its current policy on parking, which was adopted more than twelve years ago. Montréal proposes that Mobility Management Centres be opened throughout the agglomeration.

Montréal will ask the government to enact legislation requiring companies and institutions in the *Communauté métropolitaine de Montréal* [CMM or Montréal Metropolitan Community] to develop mobility plans for their employees and visitors.

Municipal employees will also benefit from measures to be proposed by the city.

11th Major Initiative

Modernize Rue Notre-Dame

The upcoming implementation of this long-awaited project should translate into a definite improvement of the quality of life in neighbourhoods in the vicinity, currently affected by the incessant overflow of vehicles of all types from rue Notre-Dame. The project will also foster the development of the vast areas of unused and neglected

industrial land in the East End and the implementation of a much more efficient public transit system for this large sector of the island. The complete rehabilitation of this section of road will also be an opportunity to redesign access to the port so that truck traffic can connect more directly between the port and the road network.

12th Major Initiative

Implement the East Island Commuter Train

The East Island Commuter Train project will be 51 kilometres long, including 35 kilometres on Montréal's territory, and will link downtown to the boroughs of Ahuntsic-Cartierville, Montréal-Nord, Saint-Léonard, Anjou and Pointe-aux-Trembles/Rivières-des-Prairies, as well as to the towns of Repentigny and Mascouche. Its implementation already has the approval of the Government of Québec. The eight new stations to be located in Montréal will contribute to higher density development of these sectors and, by the same token, a more efficient use of urban infrastructure. Park-and-ride facilities and bicycle stands will be provided at each station. Bus routes will be reconfigured to encourage the use of this new service and to improve local bus services.

13th Major Initiative

Double the extent of Montréal's bicycle path network within seven years

Montréal wants to encourage cycling as a viable transportation mode. The current network of bicycle paths and lanes encompasses close to 400 kilometres. It will be extended to 800 kilometres within the next seven years, thus doubling in size. Implementation of this ambitious but relatively inexpensive project will enable Montréal to become the cycling city "par excellence". As early as 2007, the construction of a new bicycle path on boulevard de Maisonneuve from east to west will affirm cycling as an essential component of the public transit network. And, as of winter 2007, Montréal also plans to make part of its bicycle network available year-round. In the short term Montréal plans to contribute to the development of a commercial self-service bicycle rental system and, at the same time, increase the number of parking spaces for bicycles. By-laws will also be reviewed to require developers and parking lot operators to have a minimum number of spaces for bicycles. Montréal will also, year by year, upgrade the current bicycle network.

14th Major Initiative

Implement the Pedestrian Charter

Montréal has already made public all the measures to be implemented in order to establish the primacy of pedestrians in the transportation system. The Pedestrian Charter was the object of extensive public consultation in 2006 and is now a major component of Montréal's Transportation Plan. Several of the Pedestrian Charter's proposals have already been implemented, including the continuance of the ban on right turns on red lights throughout the island, the installation of pedestrian crossing lights with digital countdown displays, an increase in the annual budget for pavement markings at intersections and an increase in the number of police officers assigned to traffic and traffic safety. In 2008, Montréal will develop a guide for the design of public roads and parks that will take into account pedestrian needs. The guide will include criteria related to universal access.

15th Major Initiative

Strengthen the pedestrian character of the downtown core and central neighbourhoods

Montréal has the reputation of being a great city for walking, by day or by night. As a point of fact, walking is the primary means of short distance commuting in the morning for 40% to 50% of trips in central neighbourhoods. In addition to the series of measures that Montréal proposes to implement at the agglomeration level, Montréal intends to strengthen the pedestrian character of the downtown core and central neighbourhoods. To do so, the city intends to pursue a further development of the indoor pedestrian network. The existing indoor network is 30 kilometres long and is located in the area around ten metro stations as well as major bus and train stations and is used by some 500 00 persons daily. Montréal will soon embark on an initiative to make intersections safer for pedestrians in the downtown core, starting with those along de Maisonneuve and René-Lévesque boulevards and rue Sainte-Catherine.

16th Major Initiative

Give back to Montréal neighbourhood residents the quality of life to which they are entitled

The Transportation Plan proposes the creation of Green Neighbourhoods. This approach, inspired by the *Plan de déplacements de Paris* [Paris Mobility Plan], will encourage the designation of perimeters inside of which a series of measures will be implemented to restrict traffic, improve safety and give back to residents the tranquility and quality of life they deserve. These perimeters will designate residential neighbourhoods as well as sectors encompassing parks, educational institutions, hospitals, public amenities and, in some cases, commercial sites and tourist attractions. The authority for designating areas as Green Neighbourhoods will lie with cities and boroughs, which will have the responsibility to target and implement relevant measures as part of their local mobility plans. The approach will be supported through the adoption of standardized rules to reflect the relative priority of a wide array of needs (trucking network, bus services, bicycle network, etc.).

17th Major Initiative

Improve transportation safety

Montréal remains one of the safest cities in North America. However, there is still room for improving traffic safety. Indeed, each year, more than 12,000 people are injured and approximately 50 are killed in traffic accidents in Montréal. The Transportation Plan puts forward a series of safety enhancing measures, most of which can be implemented quickly. Lack of attention, absent-mindedness and disrespect for the Highway Safety Code have been identified as the principal causes of accidents. In addition to maintaining a vigorous police presence dedicated to road safety, Montréal's proposed safety initiatives include setting up a road safety office, making construction zones more secure, reducing the speed limit from 50 km/h to 40 km/h on local streets, redesigning the areas around metro stations, improving pavement markings for pedestrian crossings, decreasing the width of roadways at pedestrian crossings and implementing site specific safety measures at 50 intersections per year. Montréal is also in favour of banning the use of cellular telephones behind the wheel and will launch annual campaigns to enhance public awareness of the Highway Safety Code.

18th Major Initiative

Maintain and complete the road network on Montreal Island

Over the past years, Montréal has substantially increased the budgets dedicated to the repair and regular maintenance of the road network under its juristiction, even though a large proportion of this network functions as if it were regional infrastructure responding to regional needs. Over the next few years, Montréal intends to continue this practice, resulting in an investment of close to $160 million per year. Although the Transportation Plan shows an unequivocal bias toward public and active modes of transportation, a number of improvements and additions to the road network must nevertheless be undertaken.

Montréal will pursue the following priority projects:

- Undertake work to improve safety on rue Notre-Dame (east of rue Dickson up to rue Curatteau);
- Redesign rue Sherbrooke Est between 36e Avenue (Pointe-aux-Trembles) and rue Notre-Dame;
- Repair rue Sherbrooke, between boulevard Pie-IX and rue Papineau;
- Connect boulevard Cavendish; phase 1 of the work will connect Cavendish with Royalmount;
- Connect boulevard Langelier (between des Grandes-Prairies and Henri-Bourassa boulevards);
- Extend boulevard Rodolphe-Forget (Bourget);
- Extend boulevard Jacques-Bizard to Highway 40;
- Create an urban boulevard on Highway 440 right-of-way in the West Island;
- Build a new bridge between Île Bizard and the island of Montréal.

These projects must reflect the needs of public and active modes of transportation. The road network will be designed to ensure that public transit can supply commuting time that is competitive with the car. Bicycle facilities will be built within each project. Road design will ensure comfortable and safe mobility for pedestrians. Each project will be conceived not only as a road link, but also as a truly integrated part of the urban fabric.

This priority list does not encompass all the work that would be required over the Plan time frame or beyond. The prioritization of projects will be reviewed every five years to account for the evolution of development and transportation characteristics which will vary from project to project.

19th Major Initiative

Facilitate the transportation of merchandise and travel derived from economic output

The Montréal region is a hub for cross-continent freight transportation. Maintenance and improvement of strategic infrastructure like the port, airports, and the rail and road networks will help guarantee efficient trade between the region and the rest of the world. The proposals that

are in the Transportation Plan aim to sustain Montréal's competitiveness and attractive force by offering conditions which are beneficial for established companies as well as for new investors. The modernization of rue Notre-Dame will improve road access to the Port of Montréal. The building of a rail shuttle between the airport and downtown is targeted at the support of future growth of the airport system. The Plan also proposes an initiative that would improve train service in the Montréal-Toronto corridor.

Montréal will be on the lookout for structural changes, which are likely to occur in the context of the globalization of trade and new production methods, and will actively participate in an action plan that will enable the optimization of freight transportation across the metropolitan area. In the meantime, Montréal will pursue its collaboration with industry stakeholders through the *Comité interrégional pour le transport des marchandises* [CITM or Interregional committee on the transportation of merchandise], whose mission is to consolidate Greater Montréal's position as a hub for freight transportation. Montréal also proposes to extend the trucking network to the whole territory of the agglomeration and to further reduce the risks associated with the transportation by road of hazardous material.

20th Major Initiative

Review governance

Montréal can not and does not intend to make its vision come true alone, nor behind closed doors. The Montréal agglomeration is at the heart of a community of more than 3.4 million inhabitants. The Transportation Plan and the priorities established within it call on a number of actors and individuals, whether they reside in Montréal or in the suburbs, as well as private or public enterprises and major stakeholders such as the *ministère des Transports du Québec* (MTQ), the *Agence métropolitaine de Transport* (AMT), the *Communauté métropolitaine de Montréal* (CMM), the *Société de Transport de Montréal* (STM) and senior levels of governments.

Montréal can influence a portion of the transportation system but it has little impact upon a significant number of aspects related to transportation movements in the region, notably: inter-regional through traffic; freight transportation; commuters from all corners of the region; regulations concerning motor fuels and emissions from all types of vehicles, etc. Discussions between the different actors are, at times, difficult in part because of the large number of structures involved in management and decision-making at the metropolitan level.

For some time now, elected officials in Montréal and the metropolitan region have been demanding increased responsibility and accountability in public transit. The issue is especially important because transportation choices also have an impact on urban development, housing and infrastructure issues.

The Bernard Report stated in 2002 that there cannot be an efficient and high-performing public transit system without a metropolitan vision that provides a framework and driving force. In 2003, Montréal supported this idea in the Bernard report and reasserts today the urgency of pursuing discussions with respect to the metropolitan governance of public transit in order to reach a consensus with its regional partners and the Government of Quebec.

21st Major Initiative

Means that are commensurate with our ambitions

The mayor of Montréal and his colleagues in other major cities were able to convince the Government of Canada to dedicate a portion of the federal tax on gasoline to the improvement of the public transit system. The mayor also insisted on several occasions that the Government of Québec ensure that the moneys coming from the federal government be used first and foremost for public transit. The creation of the SOFIL [local infrastructures financing corporation] and of the *Fonds vert* [Green Fund] were also received as encouraging decisions, even if these programs have considerable constraints.

Over the last few months, cities have, on a number of occasions, asked the Canadian government that all federal funding of public transit (percentage of the tax on gasoline and C-66) be permanent and that a National Public Transit Plan be developed. Based on estimates from the Canadian Urban Transit Association, public transit networks need an annual injection of $4.2 billion, of which 44% is needed to maintain existing equipment and 56% is required for development. The federal Public Transit Capital Trust currently amounts to $300 million per year. The Big City Mayors Caucus (BCMC) proposes, as a first stage, an annual financing of $2 billion, over and above existing funding. This new funding would be apportioned on the basis of populations and ridership ratios. The moneys would be put at the disposal of cities that have integrated transportation plans promoting public transit as the principal tool to respond to future increases in travel demand. It is worth noting that the BCMC also asked that the federal government transfer to cities the equivalent of one cent of the GST so that these cities might respond to urban growth from a sound financial base. This would represent an additional $275 million annually for Montréal.

Montréal has also initiated discussions with the Government of Québec to identify new tax bases that would give the city access to revenue sources linked to economic developments and also to be

given the required enabling powers necessary to fulfil its role as a metropolis.

Implementation of the Transportation Plan will require considerable investments on the part of Montréal, its major partners and the senior governments.

Over the next ten years, Montréal anticipates, for its part, to devote an additional amount of just over $200 million per year to develop public collective transportation systems and active transportation networks and to undertake a number of improvements of the road network.

Considering that the financial contribution of public transit users must not increase in real terms (i.e beyond normal inflation), Montréal intends to rely on a combination of several new revenue sources to carry on with its commitments in addition to the sources of funding it already has (i.e SOFIL and the Fonds vert):

- the public transit national strategy;
- the one-cent transfer from the GST;
- new enabling powers.

In parallel with these steps, Montréal is also considering the possibility of establishing tolls on bridges to the island. The net revenues, potentially up to $300 million per year, would be used for the implementation of the priority projects in the Transportation Plan.

The final decision with respect to financing the Transportation Plan and creating new revenue sources will be made in December 2007 after the completion of consultations and will reflect the results of the various approaches made by Montréal to senior government.

Figures A, B and C present the major projects that are part of the 21 major initiatives in the areas of public transit, and the road and bicycling network.

Figure A – Public Transit – Priority Projects

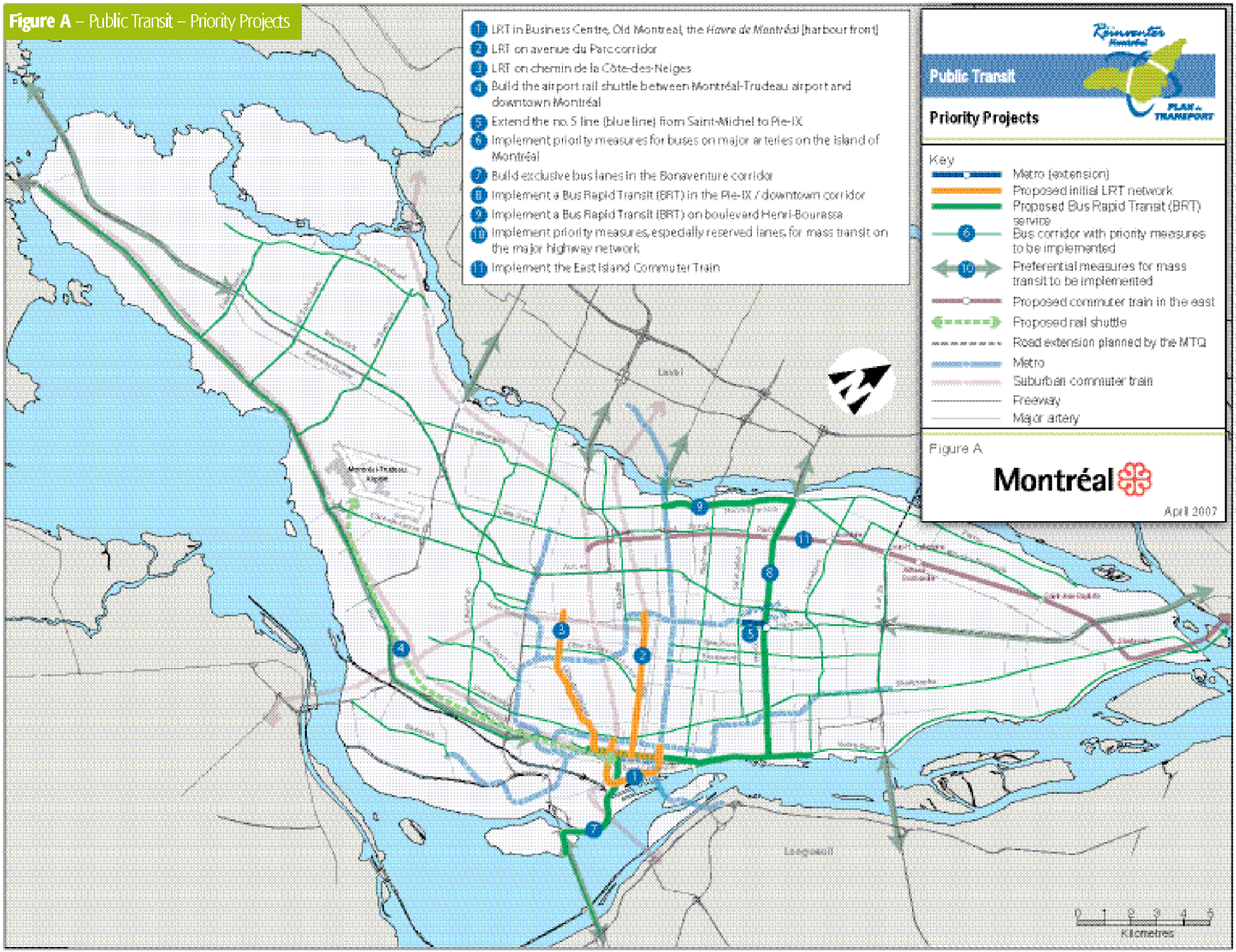


Figure B – Road Network – Priority Projects

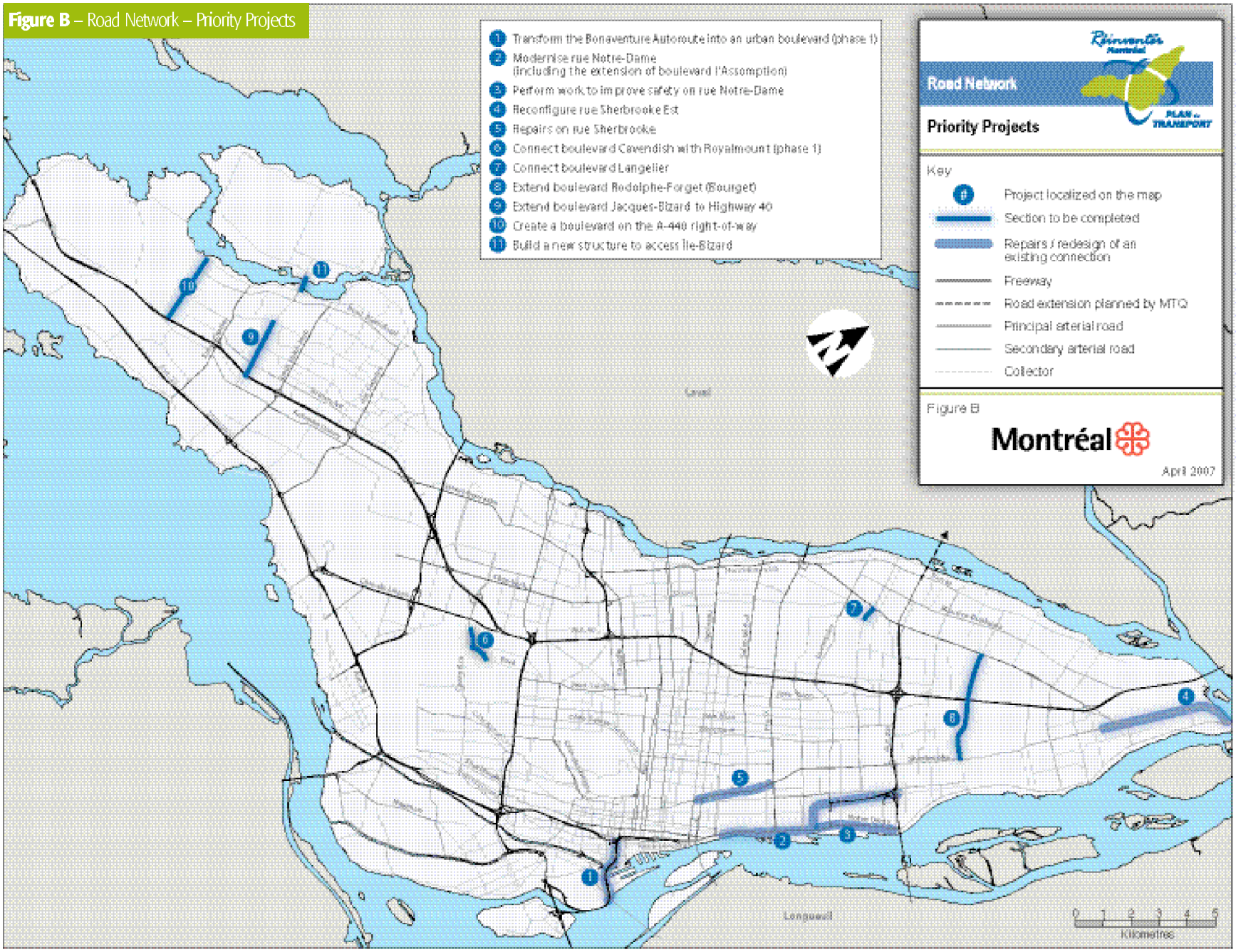
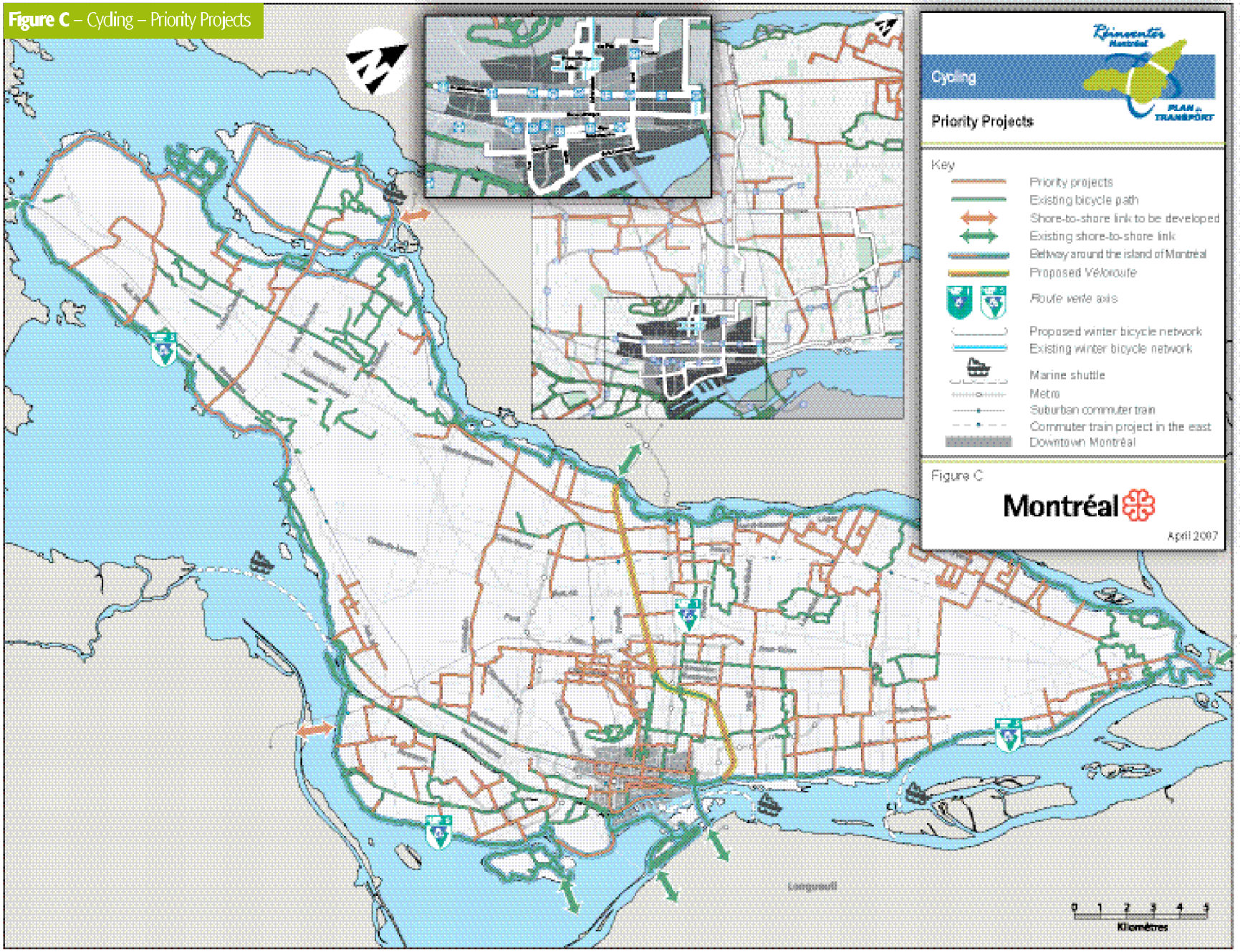


Figure C – Cycling – Priority Projects



Réinventer
Montréal

SECTION 1

Introduction

Transportation Planning Approach

During the Montréal Summit in June 2002, the city and its major partners agreed that there was a need for Montréal to invest in a transportation plan. It was also agreed that this plan needed to establish solid orientations as follows:

- adopt collective transportation as the preferred mode of commuting;
- promote automobile alternatives like public transit and active modes such a cycling and walking;
- consolidate Montréal's status as freight transportation hub;
- adjust the transportation supply to reinforce existing poles and limit urban sprawl;
- adopt specific targets with respect to the reduction of personal automobile use.

Following the Summit, Montréal adopted a global plan, *Imagining • Building Montréal 2025 - A world of creativity and opportunities* whose main focus is the quality of life of residents. The Transportation Plan is one of the major components of this global plan. The Transportation Plan embraces the major orientations of the city's Master Plan adopted by City Council in 2004, specifically, the consolidation of the city centre and the densification of development sectors.

In order to develop the Transportation Plan, Montréal adopted, as early as 2002, an approach that included the following fundamental stages.

The first stage defined a vision for transportation and the city's strategic goals in a document entitled *Vision et objectifs* [Vision and goals]. The consultation process with the city's major partners (governments, public and private transit corporations, economic stakeholders and public transit special interest groups) and the boroughs in fall 2004 resulted in a consensus on the specific orientation and, in particular, on how to clearly express the vision on transportation.

Respond to Montrealers' mobility needs by making their city an outstanding place to live as well as an economic development pole that is prosperous and respectful of the environment. For this purpose, Montréal wishes to decrease dependency to the automobile by opting for an increased use of public transit and active transportation modes.

The second stage involved an in-depth analysis and diagnostic of the transportation system and resulted in a description of the Montréal transportation system in a document entitled *Portrait et diagnostic* [Portrait and diagnosis]. The report also outlined the strengths and weaknesses of the system in relation to the vision on transportation which had been adopted. The *Commission sur le transport, la gestion des infrastructures et l'environnement du conseil municipal de Montréal* [City Council Standing Committee on Transportation, Infrastructure Management and the Environment] held public consultation on the document in June and September 2005 during which it was determined that participants by and large adhered to the ideas that were put forward in the document. The committee's recommendations were integrated in the present proposal.

The present consultation document is a crucial stage in the Transportation Plan adoption process. It proposes, first and foremost, an ambitious choice: public transit becoming the favoured transportation mode as well as a structuring tool for Montréal's development which will in future take into consideration issues related to quality of life and climate change. The Plan consequently proposes not only a vision and an overall plan for development, but also a number of priority and strategic projects which Montréal is determined to see implemented in order to bring about a radical change that would be advantageous for our city and its residents.

Reconstituted cities and boroughs are already implementing projects that are compatible with the Plan's priorities. They will have a major role to play in implementing the measures that are put forward in the Plan.

Once adopted, the Transportation Plan will be the frame of reference for Montréal's strategic initiatives. It will also influence Montréal's positioning within the *Communauté métropolitaine de Montréal* (CMM) and guide its discussions with senior levels of governments.

Scope of the Plan

In keeping with the framework set with the proposed orientations, the Transportation Plan advances concrete proposals for the different areas that influence the organization of transportation, even though some of these proposals do not fall under Montréal's jurisdiction. If they appear to be bold, they are nonetheless necessary if we wish to implement a new and enduring balance between the mobility needs of the population and the quality of the environment.

In this perspective, the Transportation Plan expresses a strong commitment to the following major issues:

- the development of public transit and active transportation modes;
- the decreasing role of the private automobile for commuting;
- transportation safety.

To lighten the text, the notes corresponding to the various reference marks are listed at the end of the document.

Montréal benefits from extensive public transit facilities. These include its metro system, which ranks among the best and the most efficient in the world. Montréal plans to encourage an optimal use of existing networks. By placing public transit at the forefront of its priorities, Montréal has chosen to provide transportation services to the greatest possible number of its residents to facilitate their access to those areas where they live, work, study and relax, thereby subscribing to the principle of social equity. At the same time, Montréal confirms the structuring role of public transit networks on land use and other aspects of urban form.

Montréal acknowledges the importance and even the urgency of investing in the development of transportation networks. However, Montréal will not be able to achieve this alone. Implementation of the Plan's proposals calls for the involvement of a large number of actors. Montréal is asking senior government and its partners throughout the region to make a commitment to support the Transportation Plan's orientations and to adjust their own initiatives to the principal established in the Transportation Plan. It is only through the development of a common vision that the Montreal area will succeed in acquiring a transportation system that is more effective, more competitive and more attractive.

Monitoring and Updating

Once the Transportation Plan is adopted, its implementation will span a period of 20 years and will be subject to regular follow-up.

The Plan's top priorities as outlined in the section *Twenty one major initiatives to reinvent Montréal over the next 10 years!*, are fundamental initiatives that will be implemented over the next ten years.

Following public consultation on the Plan, Montréal will develop a detailed timeline for the implementation of these major initiatives.

In 2008, Montréal will establish in cooperation with the boroughs and reconstituted cities, means and results indicators to be used during implementation of the Plan.

Means and Results Indicators

Means indicators will measure the extent of the modifications made to the transportation system. The results indicators will measure the impact of these modifications on Montrealers' commuting habits and on other social and environmental aspects linked to transportation (accessibility, safety, health, the environment, the economy, etc.).

The results of the public consultation on the Plan will also be taken into consideration when defining these indicators. Results indicators will aim at measuring, among others:

- decreases in the use of the automobile;
- significant impacts on the environment;
- improvements in transportation safety;
- the level of public and private investments;
- stimulation of the Québec transportation sector;
- reduction in direct individual transportation costs;
- decreases in public expenditures.

Annual Monitoring of Means

Means indicators will be used in the annual monitoring of the Transportation Plan in order to assess the progress made through various initiatives: for instance, increases in the number of hours of bus service or the number of intersections that were made safer for pedestrians. This annual monitoring will be a tool to compile and calculate the extent and the nature of investments made in the transportation sector in Montreal and the surrounding territory. This operation will enable the city, the boroughs, the reconstituted cities and other actors to modify their three-year capital expenditures budgets and other aspects of their implementation plans as needed. With this process, Montréal assumes the responsability of providing the means to implement the Plan.

Five-Year Monitoring of results

The monitoring of results will be conducted on a five-year basis and will be coordinated with the origin-destination survey at the metropolitan region level. This survey, which is carried out every five years, focuses on commuting habits. The next survey is scheduled for 2008 and its results will likely be available in 2009. However, the city would prefer if it were carried out every three years to ensure a more frequent monitoring of the Plan's results.

Plan Revision in 2012

Results monitoring will enable a first update of the Transportation Plan. Though the vision behind the Plan is meant to be unalterable, the implementation timetable and the details of the various initiatives may need to be adjusted in view of actual results achieved and to remain closely linked to Montréal's actual development. Updates may lead to project modifications and the determining of new courses of action, a new timeline and new priorities. This plan update will be submitted for public consultation and approval by city council.

Réinventer Montréal

SECTION II

Positioning Montréal

Vision and Strategic Objectives: a Radical Change of Course

Ever more congested roads, increasing demands made on a public transit system that often proves to be inadequate, the marked deterioration in air quality, and the ubiquitous presence of the automobile, particularly in residential neighbourhoods, are not just signs of an undesirable evolution in transportation; these factors also contribute to climate change and the rapid deterioration of the planet as well. These trends go against Montréal's vision of offering an exceptional environment that is safe and truly liveable.

The work done on the Transportation Plan has contributed to further defining the nature of this vision and to identifying the issues related to the environment, the economy, regional development, and transportation efficiency. A radical change of course is essential now.

Montréal should have a transportation system which is constantly improving, one that can ensure good conditions for the movement of persons and goods while contributing to both the quality of life of residents and to economic development.

A situation characterized by trends toward more extensive mobility and more varied access options combined with the inherent constraints of sustainable development and tight public finances, requires the formulation of well-targeted strategies. As such, the Plan seeks to provide a clear statement of orientations and to reconcile local and regional perspectives of transportation, while taking into account other aspects of human activity and regional structure.

Optimize Travel Time, Comfort, Safety and Cost

Individual mobility is essential to satisfying social and economic needs, such as access to employment, health care, education, training and cultural events. The transportation system should provide a better and more cost-efficient level of performance. Given this context, public and active modes of transportation should be promoted because of their ability to improve the environment and quality of life and to fairly distribute the services and associated costs.

Improve the Quality of Life for Citizens, particularly with Regard to Health and Safety

The tranquility of neighbourhoods, quality of life for families, and the safety and health of citizens are affected more and more by ever increasing volumes of traffic. The transportation system should contribute to improving these factors by making commuting less dependent on private automobiles and focusing on increasing the use of public transit, walking and bicycling.

Improve the Quality of the Environment

The Plan seeks a reduction of pollutants, a judicious consumption of resources, the lowering of greenhouse gas emissions in the spirit of the Kyoto Protocol and the protection of the natural environment. These concerns were also expressed in the Montréal's First Strategic Plan for Sustainable Development, which seeks a better conciliation between environmental protection and the responsible development of the agglomeration of Montréal. It is worth noting in particular that, despite an improvement in air quality since 1970 in terms of the number of pollutants, episodes of smog caused by high concentration of ozone are becoming more frequent, even in winter. What's more, greenhouse gas emissions produced by the transportation sector are constantly increasing.

Support the Vitality of Montréal's Economy

The transportation system should support economic activities within the agglomeration of Montréal, which is the industrial heartland and the primary consumer market in Québec. The movement of merchandise must be facilitated to contribute to the vitality of Montréal's economy. However, optimizing the efficiency of the transportation network must be part of a healthy balance that takes into account the tranquility of urban spaces and the safety of citizens. The Montréal Economic Development Strategy subscribes to this objective by proposing a series of positioning statements for Montréal that are presented as the principal levers of economic growth. The performance of the transportation system is an integral part of the above positioning statement targeted at allowing Montréal to rise to the top among cities offering the best standard of living and quality of life in North America.

Integrated Land Use and Transportation Planning

Montréal is aware of the integrating effect of transportation infrastructures on regional development. Transportation infrastructure contributes to the strengthening of employment sectors and to the enhancement of residential neighbourhoods. The Transportation Plan also reveals that transportation infrastructures can be the source of significant disturbances in the urban environment: traffic congestion,

Thus road redesign or the construction of new transportation infrastructure can be an opportunity to enhance the image of the city while respecting the unique character of Montréal's urban fabric.

In the future, all major infrastructure projects will be treated as urban development initiatives and not simply as transportation projects. Montréal has the advantage of bringing together large residential sectors and large employment sectors in a densely populated, well-structured territory. That is why transportation corridors will be planned to reflect the presence of these sectors and to reinforce regional development. Montréal will adopt these same orientations concerning transportation and regional planning during discussions to be held with the members of the CMM.

atmospheric pollution, long travel times and distances, urban sprawl, etc. In this sense, the regional transportation and development plans, both on the island and throughout the CMM, should be developed jointly to ensure an urban environment that is more attractive, safer, less polluted and more enjoyable to live in. To this end, in concert with the Master Plan, the Transportation Plan proposes a more judicious approach to land use, an acknowledgment of the structural effects of transportation systems and their more efficient integration into the urban fabric.

The Transportation Networks: Structuring Urban Form and Regional Development

The development concept recommended by Montréal in its Master Plan is based on a more intensive and strategic use of land, and promotes increased use of the public transit infrastructures via the densification and diversification of activities linked with the existing and planned public transit network. Figure 1 illustrates sectors which lend themselves to high density development. In future, Montréal will ensure that proposed projects have a higher density land use, provide a broader mix of land, and contribute to a high quality of urban architecture. It will thus be possible to reduce the need for motorized transportation and encourage other modes.

In recommending such an approach, Montréal embraces the principles of sustainable development by integrating the notions of social equity, respect for the environment and economic viability.

This approach implies an awareness of the important contribution urban planning makes to the viability of communities, to the return on investments in infrastructures and in the growing use of collective and active modes of transportation.

The Transportation Plan demonstrates the city's will to opt for an approach directed toward quality, excellence and innovation in transportation and in urban development in order to increase the quality of living spaces while contributing to economic development.

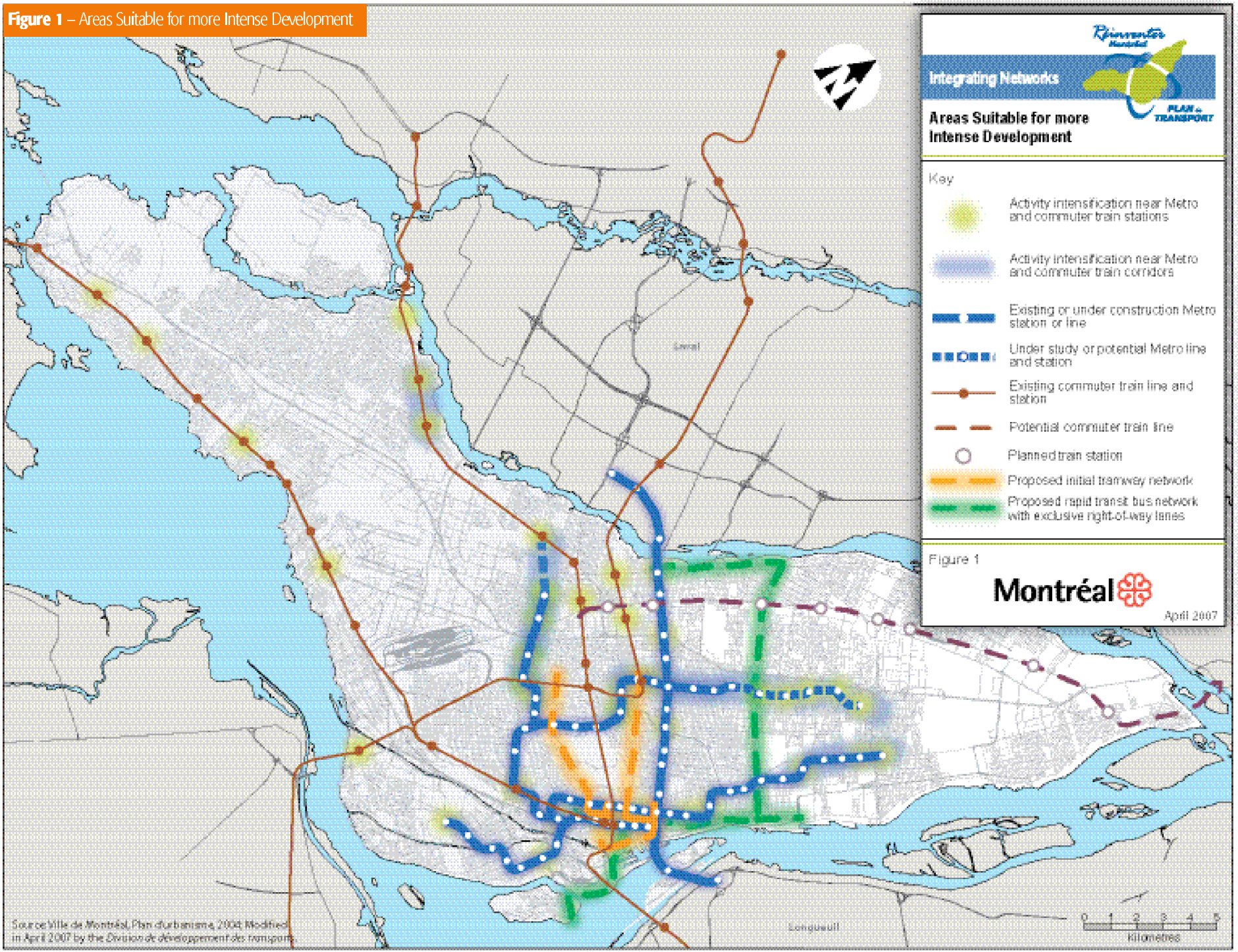
The Transportation Plan proposes a series of structuring actions that will contribute to serving residential, employment and educational sectors, as well as sectors that will be the subject of detailed planning. Careful to enhance established areas, Montréal understands the importance of harmoniously integrating the proposed actions with the existing built-up environment so that projects contribute to the consolidation and the revitalization of the areas been served.

The comfort and safety of the daily movements of pedestrians and cyclists will be enhanced by urban design principles applied to the development of public land which will be conceived to ensure a safe and secure coexistence between pedestrian, bicycle and motorized traffic. This secure urban environment could involve various actions such as the elimination of network discontinuity, a street grid giving pedestrians shorter and more direct routes to reduce walking distances to public transit infrastructure, the narrowing of roadways to reduce speeds, the building of wider sidewalks, pedestrian-friendly intersection design, etc.

The Transportation Plan also seeks to improve the image of public transit to encourage its use. As well, public property surrounding metro stations, Light Rail Transit (LRT) lines, commuter train stations, intermodal stations and rapid transit buses corridors will be designed to create a safe and pleasant environment that responds to the needs of users.

Ultimately, the need to reinvent the transportation system to respond to mobility needs, while respecting the principles of sustainable development, represents an enormous challenge that we will only be able to meet if we master the close ties that link urban planning and transportation. To do so, we must first and foremost call into question the hegemony of the automobile.

Figure 1 – Areas Suitable for more Intense Development



Montréal and Kyoto!

Montréal wishes to, and in fact must, take bold action with regard to transportation. It must adopt decisive, even radical, measures to make the greatest contribution possible to the collective effort to reduce greenhouse gas emissions throughout its territory. Montréal is acutely aware of the scope of the challenge to be faced to reach the objectives of the Kyoto Protocol. That is why it will make it its duty to be an example to follow when it comes to transportation, calling upon all citizens and partners-both institutions and the business community as well as municipalities of the *Communauté métropolitaine de Montréal* (CMM) and the two senior levels of government, to pool their efforts and to commit to actions as concrete and decisive as the Transportation Plan.

There are many ways to reduce the greenhouse gases emitted by transportation in general, and by passenger traffic in particular, such as reducing the number of kilometres travelled annually, reducing the number of trips made, using active modes of transportation, greater use of public transit and using less energy-consuming vehicles (e.g. hybrids and compact cars rather than sport utility vehicles).

In Québec, transportation accounts for 38% of the greenhouse gases produced. In the region of Montréal, it is estimated that about 14 million tons of greenhouse gases were emitted in 2003 by the transportation sector. It is estimated that the three new metro stations in Laval will allow us to reduce greenhouse gases in the Montréal region by 0.02 million tons annually. As part of the monitoring process of the Transportation Plan, Montréal intends to evaluate the contribution of the proposed measures to meeting this goal.

This is a major challenge. With the foreseeable potential growth in the territory (homes and employment), travel of all kinds will increase (the movement of people and merchandise as well as commercial travel). If nothing is done, the mobility conditions are likely to progressively deteriorate as transportation systems become saturated and the use of fuel increases as a result.

Montréal can influence a portion of the transportation system, using its legal powers and role as the manager of the transportation network, but it has little influence upon a significant part of transportation in the region (e.g. freight transportation, commercial travel and through traffic). Municipalities cannot assume the entire responsibility for reducing greenhouse gas emissions caused by transportation, particularly given their limited legislative powers and financial resources.

Senior levels of government have a critical role to play in the field of transportation. At the provincial level, as at the federal level, the choices made with regard to the planning of the territory, the development and operation of transportation systems and, especially, with regard to legislation should all converge toward this objective of reducing greenhouse gases.

Regulations on the vehicle fuel consumption are of capital importance and are the responsibility, first and foremost, of the federal government. We should not consider the problem of greenhouse gas emissions from all types of vehicles solely in terms of the number of vehicles in use-we must also go to the source: the fuel economy of all types of vehicles permitted in the territory must be improved.

Greenhouse gases emitted by the transportation system have a direct impact on the consumption habits of the population. Significant changes are needed in the way we consume goods, products and services of all kinds, as well as in our choice of activities, with a view to reducing energy consumption, thus reducing the greenhouse gas emissions that result.

Montréal: the Heart of the Transportation System

General Data for Montréal

Population and Employment

In 2001, the Montréal region numbered more than 3.4 million inhabitants and more than 1.6 million jobs. The majority of the population and jobs are located on the island of Montréal, with about 1.8 million inhabitants and 1.1 million jobs (Tables 1 and 2).

According to the growth scenario outlined in the Master Plan, the population of the island of Montréal could increase by 9.3% between 2001 and 2021[1] (i.e. an annual growth rate of 0.45%) corresponding to a slight slowdown in population growth compared to recent years. Based on the will expressed in the Master Plan to attract about 40% to 50% of the 15,000 new households formed annually in the region of Montréal, between now and 2021, this growth scenario corresponds to recent experience but constitutes an upturn compared to long term historical trends. Where employment is concerned, the growth scenario retained is based on the forecasting exercise done by the *Communauté métropolitaine de Montréal* (CMM), which forecasts, between now and 2021, an increase in jobs in the order of 110,000 (1,112,800 to 1,223,000) on the island of Montréal, or an increase of 9.9% in twenty years.

Personal Mobility

The population of the region of Montréal generates about height million trips daily, with some two million occurring during the morning peak period[2]. The majority of these trips in the region during morning peak period have a destination on the island of Montréal (almost 1.2 million trips). Of these trips, more than three-quarters have origins on the island (Table 3).

Based on the forecast evolution of population and employment, internal trips, with both origins and destinations on the island of Montréal during the morning peak period could increase moderately between now and 2021, in the order of 91,000 (+10.3%). Total trips with destinations on the Island are forecast to increase by 112,000 (+9.7%)[3]. The annual increase of 0.52% in trips destined for Montréal is similar to the rate of increase of population and employment, and is comparable to that which was observed between 1987 and 2003, during which the annual increase in the number of trips was in the order of 0.6% annually.

The Personal Travel Market

Between 1987 and 2003, automobile travel destined to Montréal increased more rapidly than other modes of travel (Figure 2), growing annually by 1.5%, while travel using public transit fell by an average of 0.3%. The decrease in trips to destinations on the island of Montréal using public transit during the period 1987-2003 (modal share going from 38% to 33%), is solely attributable to trips originating on the island of Montréal. The increase in automobile travel originating on the island was also greater than for automobile travel originating off the island. Thus, the public transit modal share for travel within the island went from 42% in 1993 to 34% in 2003 (Figure 2). It should be noted however, that a change in this trend was observed between 1998 and 2003 as the modal share for trips made using public transit increased slightly, after many years of decline.

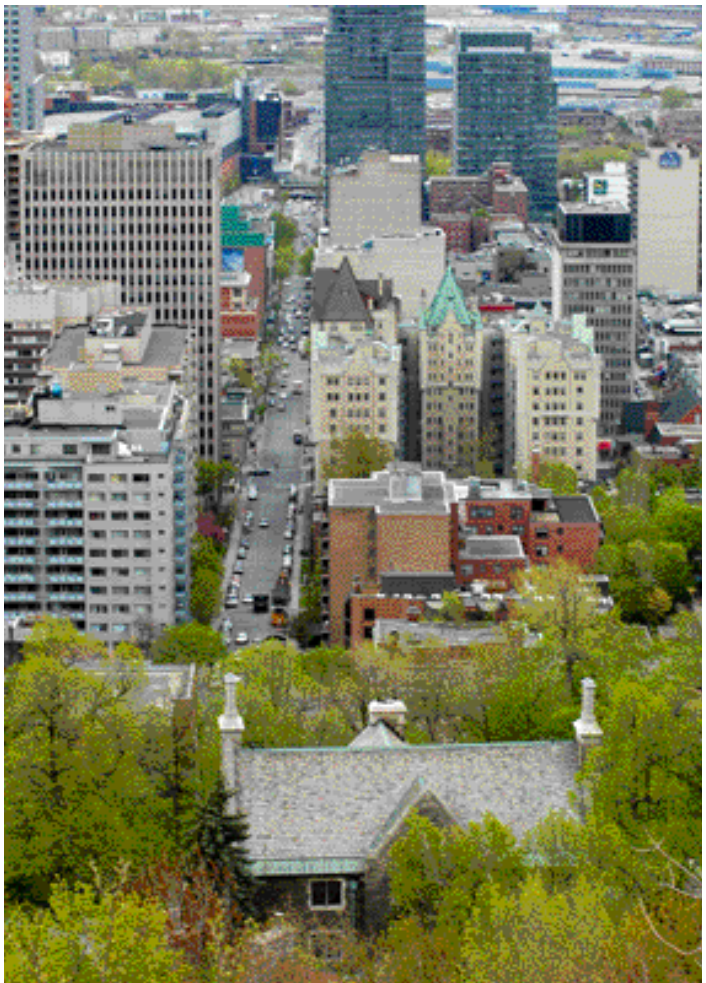


Table 1

FORECAST EVOLUTION OF THE POPULATION IN THE MONTRÉAL REGION, 2001-2021 *(in thousands)*

	HOUSEHOLDS		INCREASE	POPULATION		INCREASE
	2001	2021	%	2001	2021	%
Island of Montréal	805.8	943.4	17.1%	1,812.7	1,981.2	9.3%
Rest of the Montréal region	611.6	774.0	26.6%	1,613.7	1,869.1	15.8%
TOTAL	**1,417.4**	**1,717.4**	**21.2%**	**3,426.4**	**3,850.3**	**12.4%**

Table 2

FORECAST EVOLUTION OF EMPLOYMENT IN THE MONTRÉAL REGION, 2001-2021 *(in thousands)*

	JOBS		INCREASE
	2001	2021	%
Island of Montréal	1,112.8	1,223.0	9.9%
Rest of the Montréal region	509.9	682.2	33.8%
TOTAL	**1,622.7**	**1,905.2**	**17.4%**

Table 3

FORECAST EVOLUTION IN TRIPS IN THE MONTRÉAL REGION, 2003-2021 – MORNING PEAK *(in thousands)*

Trips 2003	**Destination**		
Origin	**Island of Montréal**	**Rest of the Montréal region**	**Total**
Island of Montréal	885	53	938
Rest of the Montréal region	271	687	958
TOTAL	**1,156**	**740**	**1,896**

Trips 2021	**Destination**		
Origin	**Island of Montréal**	**Rest of the Montréal region**	**Total**
Island of Montréal	976	68	1,044
Rest of the Montréal region	292	841	1,133
Total	**1,268**	**909**	**2,177**

Trips 2003-2021	**Destination**		
Origin	**Island of Montréal**	**Rest of the Montréal region**	**Total**
Island of Montréal	10.3%	28.3%	11.3%
Rest of the Montréal region	7.7%	22.4%	18.3%
TOTAL	**9.7%**	**22.8%**	**14.8%**

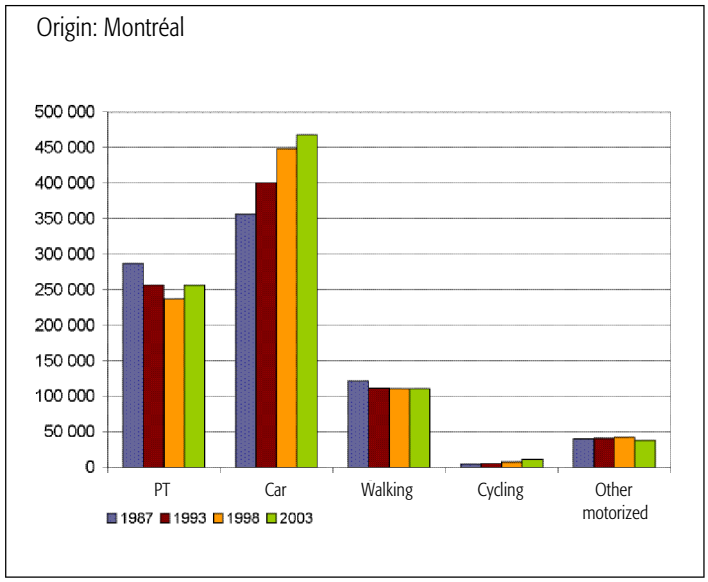
In the years to come, the modal share of public transit could decrease by virtue of the fact that the majority of the new households will be established in the outlying sectors of the island of Montreal. Since these sectors currently have lower rates of public transit use than central sectors, applying the current rates of public transit use to the projected population in 2021 could, in fact, translate into a decrease in the modal share of trips made using public transit with a destination on the island of Montréal. Besides the distribution of the population in the Montréal region, other factors are also likely to influence the modal share of public transit for internal trips notably the evolution of employment centres outside of the Downtown core, the aging population and an increased number of cars per household.

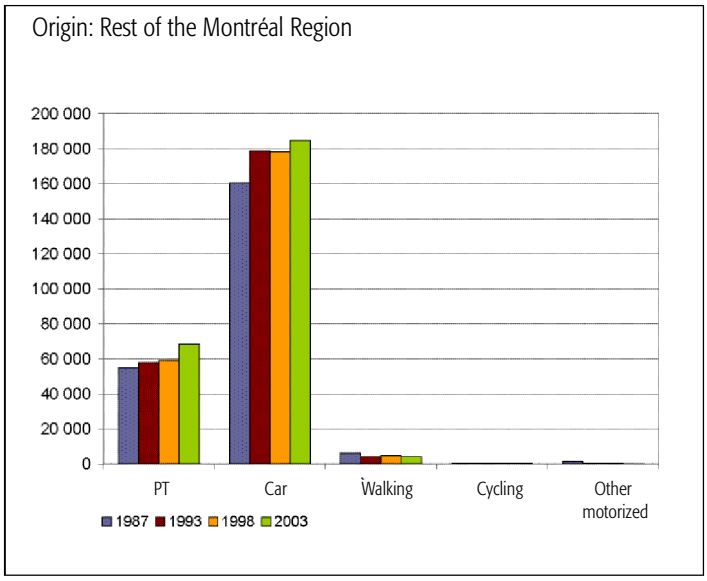
Passenger Transportation Supply

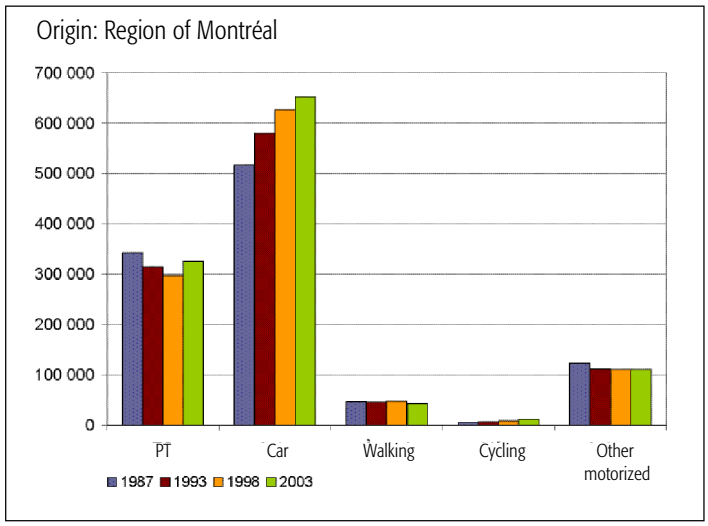
The passenger transportation services available in the region of Montréal have played a determining role in the evolution of regional transportation demand over the past decades. The road and metro networks, which currently make up the principle components of the transportation supply, were built primarily in the 1960s and 1970s, notably in the 1967 International and Universal Exposition (Expo 67) and the 1976 Olympic Games (Figure 3).

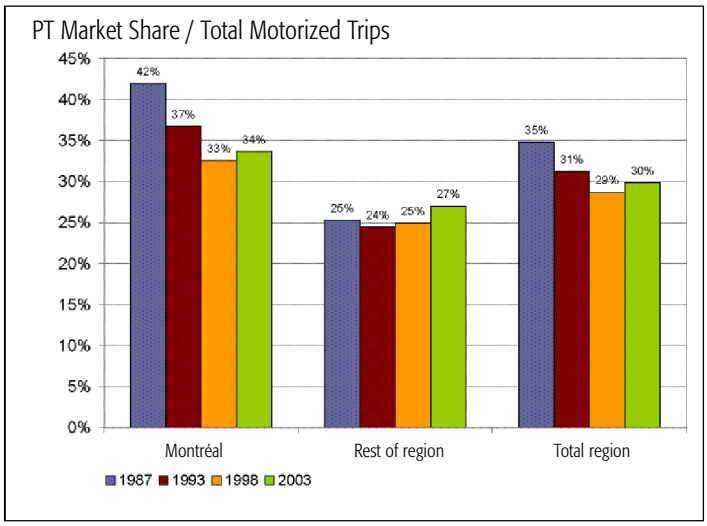
In terms of transportation services available, the 1980s were marked by the addition of more than twenty metro stations. Between 1990 and 2005, the services provided by the bus and metro system decreased (Figure 4). Note that, in 2005, the STM provided almost 82% of public transit trips in the Montréal region.

Figure 2 - Trips with a Destinations within the Island of Montréal between 1987 and 2003, Morning Peak









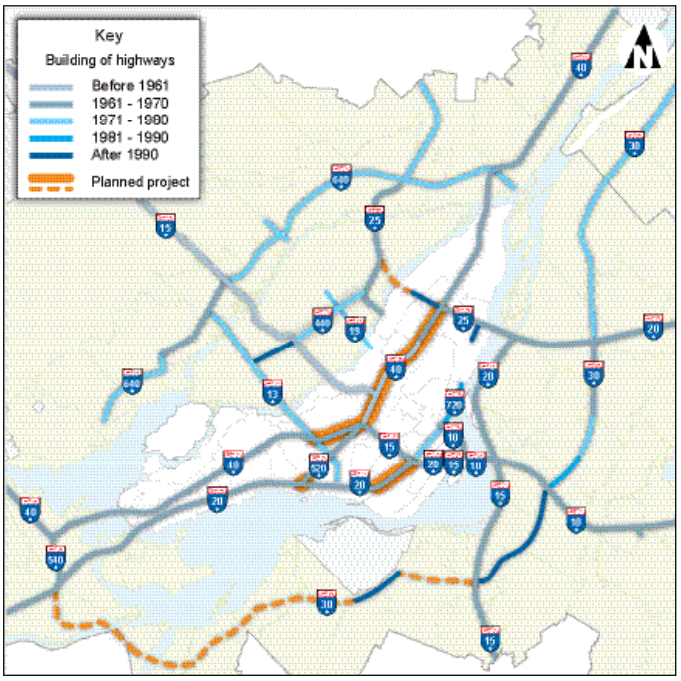
Source: AMT, O-D Surveys 1987-2003: analysis done by STM and Tecsult 2006.

In 1992, the Government of Québec withdrew financing for the operation of public transit services, calling upon municipalities to make up the shortfall. During this same period, however, there was a significant development in public transit services linking the island of Montréal with the periphery, and, in particular, the deployment of an enhanced network of commuter trains.

To re-establish the level of services on the island of Montréal, fares were raised several times over the past years. These successive fare increases have contributed to a decrease in ridership for the STM. It is worth noting, however, that the current STM fares are among the lowest in North America and the level and quality of the services provided remain the primary factors in increasing public transit patronage.

Figure 3 - Development of Freeway and Metro Systems in the Montréal Region

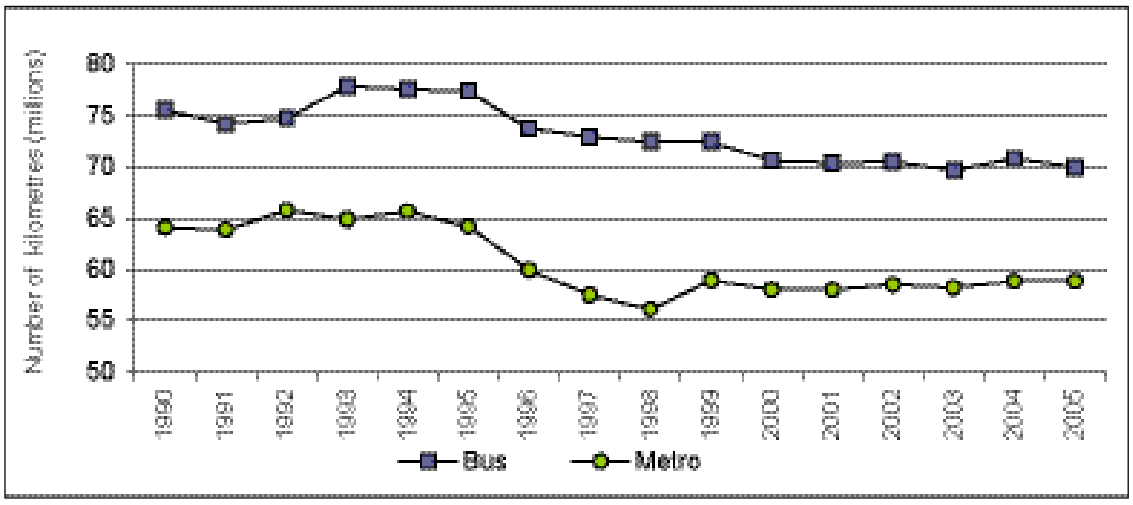
Freeway System



Metro System

Sources: MTQ and STM

Figure 4 - Evolution of Services Supplied by the STM, 1990-2005 (millions of kilometres)



Source: STM, Plan stratégique de développement du transport en commun, 2007.

CANADA (5)

Calgary
Montréal
Ottawa
Toronto
Vancouver

United States (10)

Atlanta
Chicago
Denver
Houston
Los Angeles
New York
Phoenix
San Diego
San Francisco
Washington

ASIA (5)

Hong Kong, China
Osaka, Japan
Sapporo, Japan
Singapore, Republic of Singapore
Tokyo, Japan

AUSTRALIA (5)

Brisbane, Australia
Melbourne, Australia
Perth, Australia
Sydney, Australia
Wellington, New Zealand

WESTERN EUROPE (32)

Amsterdam, The Netherlands
Athens, Greece
Barcelona, Spain
Berlin, Germany
Bern, Switzerland
Bologna, Italy
Brussels, Belgium
Copenhagen, Denmark
Düsseldorf, Germany
Frankfurt, Germany
Geneva, Switzerland
Glasgow, United Kingdom
Graz, Austria
Hamburg, Germany
Helsinki, Finland
London, United Kingdom
Lyon, France
Madrid, Spain
Manchester, United Kingdom
Marseilles, France
Milan, Italy
Munich, Germany
Nantes, France
Newcastle, United Kingdom
Oslo, Norway
Paris, France
Rome, Italy
Ruhr, Germany
Stockholm, Sweden
Stuttgart, Germany
Vienna, Austria
Zurich, Switzerland

Comparing Montréal with Other Cities

Compared to large American and even European cities, Montréal holds an enviable position with regard to the efficiency of its transportation system. Montréal could be considered one of the major cities in North America when it comes to public transit, an important asset in the current context, when cities are faced with the challenge of battling the causes of climate change. This efficiency can be measured using the following indicators:

Population Density

The population density (persons/km^2) in Montréal is the highest of Canadian cities and comparable American cities, and is similar to many European cities. That being said, high population density generally promotes more efficient mobility, particularly for trips over short distances made with public transit or active modes of transportation (walking and cycling).

Public Transit Ridership

Montréal ranks first among Canadian and American cities in terms of public transit ridership, with an average of 140 transit trips per capita per year. This is comparable to, or higher than indicators of public transit use in many European cities.

Public Transit Services

Apart from the density of residential development, the supply of public transit services has a significant influence on public transit use. Montréal ranks among those Canadian and American cities offering the most public transit service. The public transit services provided in Montréal are also comparable to those of European cities. The metro, the backbone of the public transit network in Montréal, plays a major role, as other subway systems do in other major cities.

Automobile Ownership

Montréal's lower dependence on automobiles can be seen in the indicators for vehicles per capita (0.4 vehicles/person), which is the lowest among Canadian and American cities, but is at the higher end of rates observed in European cities. Montréal relies on the presence of one of the largest car sharing services in the world, ranking first in North America with about 12,000 members.

Distances Travelled and Fuel Consumption

The low rate of automobile ownership in Montréal is reflected in the average distances travelled each year and in the annual consumption of fuel per person. These two indicators for Montréal are the lowest among Canadian and American cities, but are among the highest compared to European cities.

The results presented in this section were taken from *Urban Transportation Indicators, Survey #3, 2005* from the Transportation Association of Canada (TAC). Data for the reference year 1995 come from the International Association of Public Transport (UITP).

Changing Montréal by Transforming the Transportation System

Montréal has seen many significant changes over the course of the past few decades that have substantially altered the urban landscape: transportation infrastructures have been developed, the city's economic and industrial structure has diversified, the downtown area has seen a marked expansion with major companies establishing headquarters in the city, etc. The outlying communities have seen a parallel demographic expansion, placing further pressure on the maintenance and development of transportation networks.

The challenge faced by all major cities over the coming years is to seek innovative ways to offer economically competitive solutions to provide services to populations, while integrating the issues of sustainable development, quality of environment and quality of life.

This challenge can only be met through a commitment to transform and improve the transportation system, and to rethink its organization and deployment.

The Transportation Plan targets nine areas on which Montréal will focus its initiatives.

Prioritize the Pedestrian by Improving Conditions for Walking

Montréal recognizes the primacy of the pedestrian in urban spaces and, at the same time, the necessity for both pedestrians and all other modes of transportation to adopt safe practices in keeping with the Highway Safety Code. By placing the pedestrian at the centre of its priorities, Montréal plans to do everything needed to ensure a safe and pleasant environment for walking. As well, the city would like to do its part to address growing public health concerns, such as sedentary lifestyles and obesity.

To do so, Montréal plans to:

- improve conditions for walking;
- improve pedestrian safety;
- integrate pedestrian accessibility needs when planning roadways and public spaces.

Make Public Transit the Cornerstone of Development in Montréal

Increased use of public transit is among the most effective measures to relieve traffic congestion, reduce greenhouse gas emissions and improve the quality of life for residents. To be appealing, and to attract and retain the clientele, public transit services must be competitive, both in terms of comfort and transit times. It must adequately service neighbourhoods and the main economic centres of the city.

To do so, Montréal intends to modify the public transit services available to:

- increase speed;
- improve the quality, accessibility and comfort of the services;
- increase intermodal transit;
- increase capacity;
- modify propulsion technologies.

Develop Bicycle-Friendly Infrastructures and Establish New Measures to Encourage Increased Use of Bicycles throughout the City

Montréal considers the bicycle an essential element of its transportation system. It is fast, efficient, compact, non-polluting and requires little space. For short to medium distances, the bicycle could easily rival the automobile and public transit. Montréal recognizes the development potential of the bicycle and its contribution to quality of life and the environment. It only makes sense to improve and build upon the infrastructures intended for bicycle use.

To do so, Montréal plans to:

- double the bicycle network on the island of Montréal;
- improve the state of the existing bicycle network;

- increase the number of parking spaces for bicycles;
- improve the interface between the bicycle and public transit;
- allow greater accessibility to bicycles;
- make part of the bicycle network accessible year-round.

Promote the Collective Use of Automobiles

Montréal recognizes that the automobile is not a means of travel that is in keeping with sustainable development. The space taken up by the road networks and parking areas, the pollution, traffic nuisances and so on, are all clear indicators. On the other hand, car sharing systems clearly demonstrate that it is possible to address the need for car travel without owning a vehicle. This enables an overall reduction in automobile use and monopolizes less urban space. By encouraging the collective use of automobiles, Montréal clearly demonstrates its will to improve quality of life and reduce the negative impact attributable to a too-great increase in motorized traffic in its territory.

To do so, Montréal plans to:

- establish Mobility Management Centres;
- set up parking lots to accommodate fuel-efficient cars, car sharing, micro cars and carpooling;
- develop a network of reserved lanes for carpooling.

Assume Leadership in Transportation Safety within its Territory and Adopt a "Zero Accident" Vision

Travel of all kinds in Montréal should be risk-free. The city recognizes that, to reach this goal, motorists, pedestrians and cyclists must have a greater awareness of the importance of abiding by the provisions of the Highway Safety Code. By making safety one of its central concerns, Montréal would like to encourage a more cooperative sharing of the public roads by all types of users, and place more emphasis on pedestrians and public transit.

To do so, Montréal plans to:

- improve safety on road networks, especially at intersections, giving priority to pedestrians and cyclists;
- ensure that the Highway Safety Code is respected.

Share Public Roads to Put More Emphasis on Walking, Cycling and Public Transit

Montréal would like to adapt its transportation network to put greater emphasis on public transit, cycling and walking. While remaining concerned with the overall efficiency of the network, Montréal intends

to establish mobility conditions more respectful of living environments.

To do so, Montréal plans to:

- ensure an efficient sharing of right-of-ways on the road networks;
- improve traffic management;
- improve the hierarchy and functionality of the road network;
- complete the road network grid;
- increase the proportion of the road network in good condition.

Manage Parking as a Strategic Tool to Reduce Automobile Use

Cities have adapted to the constraints of the automobile. For many decades now, Montréal has been no exception to the rule. In this context, vehicle traffic and parking, though both erode the urban space, have rapidly come to be considered a foregone conclusion, even a right. Today, the city intends to reverse this trend by aiming for sustainable urban development.

To do so, Montréal plans to:

- review the requirements for parking spaces;
- incite businesses to offer the same benefits to public transit users as they do to motorists;
- adapt available parking to sustainable transportation practices;
- improve information provided to users.

Facilitate the Transportation of Merchandise and Travel Related to Economic Output

The importance of road transportation of merchandise and its role in the economy of the entire region is widely recognized. Because of its flexibility, this mode of transportation is the most suitable and best adapted to supplying the city with the goods it needs. Montréal recognizes, however, the negative effects of this mode of transportation in terms of noise, pollution, traffic congestion and deterioration of roads. Faced with this dilemma, we must search for imaginative

solutions to ensure that the urban transportation of merchandise can continue to play its important role and to contribute to the vitality of the city, while respecting the population's need for tranquility in their neighbourhoods.

To do so, Montréal plans to:

- increase overland access to the Port of Montréal;
- support the growth of the airport system;
- preserve the strategic position of the railway system;
- establish measures to encourage interurban coach transportation;
- ensure efficient movement of truck traffic;
- reduce the risks associated with the transportation by road of hazardous material.

Use Innovative and Efficient Transportation Technologies

Tomorrow's challenges will lead us to double our efforts to introduce new ideas and new ways of doing things that will allow us to maximize both resources and public and private investments with an eye to making transportation systems less polluting, less noisy and more energy efficient. Montrealers' quality of life depends upon it.

To do so, Montréal plans to:

- ensure a technology watch for transportation;
- adopt a plan on Intelligent Transportation Systems (ITS);
- implement an advanced ground transportation cluster.

Coordination and Collaboration

Montréal is recognized as the central city serving its region and the province of Québec as a whole. As a living environment, economic engine and international tourist destination, Montréal is the focal point for the transportation of people and merchandise for the region.

Montréal must assume and develop this role in terms of sustainable development by ensuring a safe and pleasant living environment for Montrealers. Given that transportation is at the heart of the activities of the city and the region, Montréal must position its vision on transportation and invite Montrealers as well as its partners, in a spirit of dialogue, to adhere to a common approach documented in the Montréal Transportation Plan.

The Transportation Plan addresses, first and foremost, the population of Montréal. Individuals, through the location of their activities, the modes of transportation they choose or their behaviour when travelling and commuting, are the ones that influence transportation in Montréal. The Transportation Plan is an invitation to Montrealers to change their transportation habits in accordance with the vision of the Plan.

Consistency with the City's Plans

The Transportation Plan is a strategic document that complements other documents adopted by Montréal like the Master Plan and the First Strategic Plan for Sustainable Development. The realization of several of these constitutes a legal obligation of the Charter of the Ville de Montréal: "The city must draw up a plan for development of its territory that encompasses the environmental, transportation, and community, cultural, economic and social development objectives pursued by the city."

The Master Plan is the planning document that has the most direct link with the Transportation Plan. These two documents offer an opportunity for the city to align its urban development and transportation goals and to propose collective choices for the community that correspond to the transportation vision, which is largely based on the development of high-performing public transit networks, active modes of transportation and the protection of living environments.

The projects contained in the Transportation Plan represent the desired framework for the agglomeration of Montréal as it looks ahead to 2025 and includes large-scale local and regional projects. The realization of these projects is a collective concern that requires everyone's participation. Together, we can make sure that actions taken are consistent with the transportation vision and ensure that we attain the strategic objectives of the Plan. The Transportation Plan calls upon, first and foremost, the citizens of Montréal and the cities and boroughs; but it is also a call to the *Communauté métropolitaine de Montréal* (CMM), the provincial and federal governments, large public and private institutions, as well as private companies and developers.

The Cities and Boroughs

The boroughs and the linked municipalities will have to implement important parts of the Transportation Plan, given that their jurisdictions encompass the development of Montréal neighbourhoods. Thus, it will be their duty to create local mobility plans. From these plans will come pedestrian action plans, the establishment of traffic calming

measures and services offered to cyclists. Local plans will allow us to define the appropriate kinds of actions to be taken according to the vision of the Transportation Plan and to determine priorities in each of the 34 administrative territories in Montréal.

At the same time, Montréal will develop the necessary harmonization principles and rules to ensure a balance between local and regional mobility needs and the enhancement and protection of living environments.

The *Communauté métropolitaine de Montréal* (CMM)

In 2004, the *Communauté métropolitaine de Montréal* (CMM) proposed the *Schéma métropolitain d'aménagement et de développement* [Metropolitan outline for design and development]. Montréal subscribed to the strategic vision of the CMM with regard to a living environment that calls for, among other things, the consolidation of the territory and increased use of public transit. In addition, the CMM recognizes the dominant character of downtown Montréal on the metropolitan scale.

The next transportation planning exercise anticipated by the CMM must ensure the consistency of choices made on a regional scale. Montréal will participate fully in this exercise.

Federal and Provincial Governments

The public transit ridership objectives set out in the Transportation Plan are compatible with those of the Government of Québec's provincial public transit policy. In its plan, Montréal associated itself with several projects already targeted by the Government of Québec (the *ministère des Transports du Québec* and the *Agence métropolitaine de transport*).

To ensure coherent actions, Montréal, along with elected officials of the CMM and government agencies, will define the regional priorities and financial structure of projects.

Public Institutions and Private Enterprises

Montréal invites companies, developers and institutions to review their transportation needs and to equip themselves with mobility management plans that they will create for themselves. Montréal will set the example and call upon the Government of Québec to make these new practices mandatory.

Governance

The organization of transportation in the Greater Montréal region has been a news item for many years now.

Because of the direct link between transportation and land use planning, the development of Montréal and its region are strongly conditioned by the decisions made regarding transportation. These decisions have had determinant economic, environmental and social impacts on the quality of life for citizens of Montréal and the surrounding communities.

Thus, it is important to consider the Transportation Plan within the larger context of governance in terms of transportation in the metropolitan Montréal area, and to examine how it fits in with a regional vision and what it adds to existing planning tools.

Indeed, the success of the transportation plan will most certainly depend upon the innovative nature of its proposals, as well as the efforts made to implement it and the will of decision-makers. In addition, its success will also depend to a great extent on its harmonious integration into a shared vision on the development of the metropolitan region, of which Montréal is the central core.

Many milestones have marked the progress of regional decision-makers in their search for an adequate model of governance in terms of transportation. Here are the principal ones.

1990 ➤ *Conseil métropolitain de transport en commun* (CMTC)

Le Conseil métropolitain du transport en commun (CMTC or Metropolitan council on public transit), created in 1990, was the first forum where elected municipal officials from public transit corporations from Montréal, Laval and Longueuil could exercise certain powers with regard to public transit on a metropolitan scale. The council benefited in particular from a subsidy allowing it to compensate for the costs of fare integration between the three public transit corporations' networks in the Montreal area.

However, considering the absence of a regional transportation plan and the discrepancy between its territorial jurisdiction and the actual reality of mobility issues in the region, and in a context where the provincial government withdrew financing for public transit operations, the CMTC simply did not have the means to realize its ambitions.

1995 ➤ *Table des préfets et maires du Grand Montréal*

As a result of this setback came the government proposal, in spring 1995, introducing a new institutional and financial framework that envisaged the creation of a government agency referred to as the *Agence métropolitaine de transport* [AMT or metropolitan transportation agency], a proposal to which the *Table des préfets et maires du Grand Montréal* [Greater Montréal board of prefects and mayors] responded, a few months later, with another proposal in its report, *Vers un Plan de transport pour la région de Montréal* [Toward a transportation plan for the region of Montréal].

Where governance was concerned, elected officials in the region wanted an organization that would be a partner of the government rather than its agent, respecting the move toward decentralization taken at the time by the same government. Thus, it seemed essential that the future organization be composed mainly of elected officials designated by people from the region.

1996 ➤ *Agence métropolitaine de transport* (AMT)

Created in 1996, the *Agence métropolitaine de transport* (AMT) is a government organization whose mission is to improve the efficiency of personal travel in the metropolitan area by promoting the use of public transit. From the beginning, however, its incorporating Act made provisions to integrate the AMT into regional bodies that could eventually be created.

As a government agency, the AMT implemented policies, programs and projects given to it by the *ministère des Transports*. As the managing transportation authority, the AMT operates the network of commuter trains and metropolitan bus transportation.

In addition, the AMT must devise a strategic plan for metropolitan public transit development to be integrated into the planning of regional county municipalities and the Montréal urban community. This plan, in the opinion of elected officials in the region, must constitute one of the elements of the metropolitan development plans. Its implementation must therefore be made on the basis of respect for the powers vested in municipal authorities in terms of development.

2000 ➤ *Comité des élus de la région métropolitaine de Montréal*

The *comité des élus de la région métropolitaine de Montréal* [committee of elected officials of the metropolitan Montréal region] was established in the spring of 2000 as part of the implementation of the government action plan on municipal reorganization.

Its work was particularly concerned with the establishment of the *Communauté métropolitaine de Montréal* (CMM), on the powers it should be given and on the possible implementation of a regional growth-sharing program. Regarding public transit as one of the most important responsibilities of the future CMM, the committee focused on the organization and operation of services, decision-making structures, financing and the rationalization of costs.

Given that the *Agence métropolitaine de transport* had contributed to promoting the development of metropolitan public transit since 1996, the committee recommended that it remain a distinct entity, but that it would, from now on, report to the council of the CMM. Its board members would be elected officials designated by the CMM council, with the exception of two members named by the government, and the chair of the board would be an elected official sitting on the council of the CMM.

Finally, the committee recommended that the CMM, rather than the AMT, have the responsibility for adopting a public transit development plan.

2001 ➤ *Communauté métropolitaine de Montréal* (CMM)

In the wake of municipal reorganizations undertaken in 2000, the *Communauté métropolitaine de Montréal* had, in particular, the authority to plan, coordinate and finance metropolitan public transit, taking into account government transportation policies.

This municipal organization is composed of elected officials designated by each of the five geographic sectors of the metropolitan

territory, namely Montréal, Laval, Longueuil, and the surrounding suburbs to the north and south.

With respect to transportation issues, the CMM is responsible for approving the strategic plan of the AMT and of the three public transit corporations in the Montréal region, approving the AMT's budget and for vetoing, if necessary, metropolitan fares it has established. The CMM is also consulted on the AMT's *Programme triennal d'immobilisations de l'Agence* [Triennial Capital Works Program]. Finally, it must establish a metropolitan arterial system, prescribe minimum standards of management for this system, as well as standards for the harmonization of directional signs and traffic movements.

2001 ➤ Planning Framework and Government Orientations - Montréal Metropolitan Region 2001-2021

The creation of the *Communauté métropolitaine de Montréal* was a major milestone for the design and development of the metropolitan territory. Thus, the CMM's mandate to elaborate a metropolitan land use and development plan gave the government the opportunity to clarify its orientations for the development of the metropolitan area and establish a framework.

The planning framework transmitted to the CMM and neighbouring regional county municipalities in 2001 defined several transportation issues at stake worth noting:

- developing the territory to promote urbanization that limits the social and environmental costs and impacts and optimizes use of all existing infrastructures and facilities;
- developing the territory by considering heavy mass transportation infrastructures as the backbone of the metropolitan region's future urban development:
- integrating transportation planning into land use planning within a metropolitan perspective;
- developing mass transportation so that it is the preferred mode of travel for people living in or travelling to the centre of the metropolitan region;
- improving the functionality of the Québec strategic highway network and, consequently, its role in supporting the economic development of the MCMA (Montréal census metropolitan area), the neighbouring regions and Québec as a whole.

By ratifying the planning framework as a frame of reference for all government departments and agencies, as well as municipalities, the government wished to ensure the coherence of their actions within the territory of the metropolitan region.

Conscious of the problems that remained, the government asked the *ministère des Transports du Québec* to propose, in the months that followed, a revision of the institutional and financial framework of public transit in the metropolitan area.

2002 ➤ Revision of the Financial Framework for Public Transit - the Bernard Report

The government representative's mandate with respect to the region of Montréal focused primarily on the revising the financial framework for public transit. This mandate was also an opportunity to produce a situation report and to reconsider the institutional framework for public transit.

On this subject, the report observed that the Montréal region found itself with two regional organizations with the powers to plan, coordinate and to finance the metropolitan components of public transit.

The AMT, since its creation, played a central role in the planning and financing of public transit; it also played the role of the organizing authority with regard to commuter trains, services and metropolitan facilities.

The CMM, for its part, is the only political authority that possesses the set of powers necessary for the elaboration and implementation of a mass transit development strategy, and that could exercise these powers through initiatives in land use management, environment, and economic development.

The Bernard Report therefore recommends that the AMT maintain its status as a government agency, but that the planning, coordination and financing of public transit, as well as network and fare integration of the network, be entrusted to the CMM. This arrangement made it possible to differentiate the allocation of resources, on the one hand,

and the management of the regional system, on the other, with the AMT becoming an organizing authority for transportation on the regional level.

2005 ➤ The *Communauté métropolitaine de Montréal*'s (CMM) Project to Decentralize Public Transit

In February 2005, in response to the government's will to reinforce local and regional autonomy, the *Communauté métropolitaine de Montréal* called upon the Government of Québec by submitting a institutional and financial decentralization project for public transit in the metropolitan region.

The CMM then proposed that the government grant elected officials greater responsibilities for metropolitan public transit, to negotiate a better balance between contributions by the various financial partners and to grant it the tax base that would allow it to deal with important established needs.

On the subject of their responsibilities in terms of public transit, the elected officials of the CMM, in 2005, had the same claims as their predecessors, namely that the majority of the AMT's board of directors should be made up of municipal elected officials and that the planning of metropolitan transportation should be the responsibility of the CMM council.

However, the institutional framework for metropolitan public transit did not make it to consensus and, given that the financial stakes had become critical, the efforts of the transportation community, coming together within the *Coalition métropolitaine pour la relance du transport en commun* [metropolitan coalition for the revival of public transport], focused on finding sustainable solutions to the problem of financing for public transit.

2006 ➤ Québec Public Transit Policy

In June 2006, the government made public the new Québec policy on mass transit, entitled *Pour offrir de meilleurs choix aux citoyens* [To offer better choices for citizens].

The policy found that the situation in Montréal was characterized by the coexistence of both local and metropolitan public transit services. Whereas the transportation of people is carried out on a regional metropolitan scale, the responsibilities for the transportation systems that make them possible are fragmented among a multitude of stakeholders. As well, the sharing of operating and capital costs for public transit remains problematic, particularly with regard to financing the metro.

Recognizing that adjustments were needed, the government wanted to reinforce the metropolitan vision with regard to the planning, development and organization of transportation services of the various organizing authorities. The government was equally aware of the necessity of quickly finding cost-sharing formulas that would be more equitable on the metropolitan scale.

From the point of view of local autonomy, the government would therefore like to see the reflections made by the CMM in 2005 continue, and names an agent charged to follow the CMM through this exercise. The CMM had several months to establish a regional consensus and to conclude an agreement on new financing rules for metropolitan public transit. This mandate did not deal with the institutional dimension of the organization of transportation in the region.

2007 ➤ Proposed Metro Deficit Sharing Agreement 2007-2011

After several months of discussions within a steering committee, the elected officials of the *Communauté métropolitaine de Montréal* settled on an agreement in principle with the *ministère des Transports,* under the terms of which the metro deficit would be shared among the metropolitan partners with a maximum of 67% charged to the agglomeration of Montreal and 20% to the other municipalities, the latter share being supplemented by a government subsidy.

This agreement constituted, for municipalities of the CMM, recognition of the Montréal Metro as a metropolitan transportation facility, just like suburban commuter trains. But this new contribution by the municipalities of the CMM inevitably reopens the debate on the governance of transportation in the metropolitan region.

As well, the agreement provides for the establishment of a committee to review the governance and financing of mass transit in the Montréal region, which must submit its recommendations by December 31, 2008, at the latest.

Therefore, it is in this context that Montréal presents its Transportation Plan, which must both integrate into what already exists and help to determine what should be done.

Given that Montréal is the centre of the metropolitan region, the plan will have a decisive impact on its development. Dialogue between Montréal and the region, on both orientations and priorities and on governance, is therefore essential.

This question of governance was brought up on several occasions over the past years as part of the "revision of the institutional framework for metropolitan public transit". As well, it remains an important point on the agenda of the committee that regional elected officials and the *ministère des Transports* recently planned to establish.

Elected officials of the metropolitan region have, for a long time, demanded increased responsibility and accountability in terms of public transit. In 2001, the CMM was given the power "to plan, coordinate and finance metropolitan public transit, taking into account the orientations of the government with regard to transportation"; this opened the door to a revision of the role of the primary public transit stakeholders in the region.

The full exercise of this power will only be possible, however, following a review of the traditional role reserved for the *ministère des Transports* and the *Agence métropolitaine de transport,* its agent, within the metropolitan territory.

Indeed, the law constituting the AMT in 1996 foresaw a deadline at the end of which the minister responsible for its application would have to consult public transit authorities and municipalities in order to conclude an agreement aimed at giving control of the AMT to local decision makers.

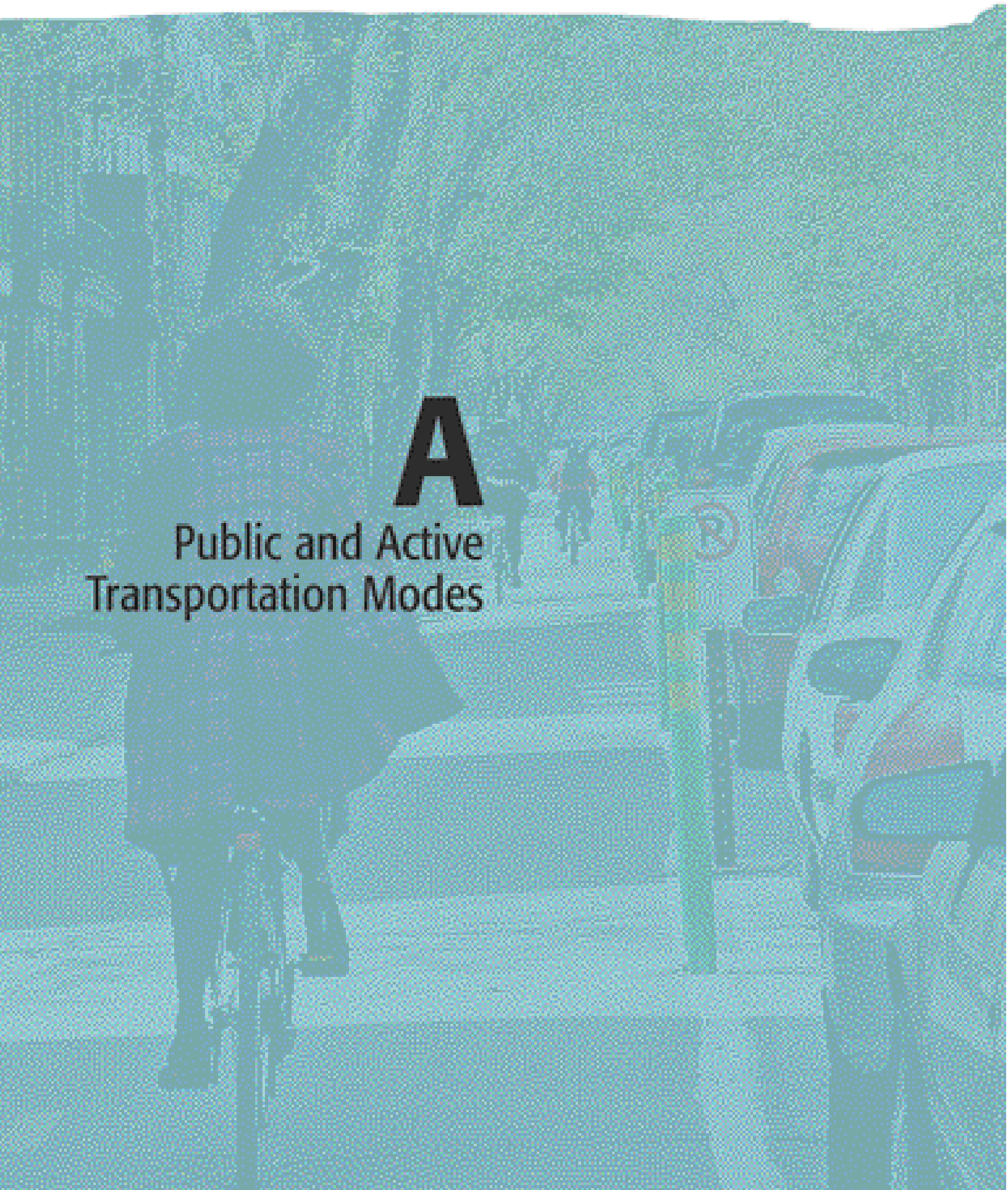
It is also worth recalling that, in 2002, the Bernard Report stated that, in terms of the institutional framework for public transit, a large region like Montréal could not have an efficient and high-performing public transit system without a metropolitan vision to provide structure and leadership, and that this vision could only come from regional officials, since that is precisely their role. The report also found that the CMM is the only political authority with the necessary set of powers to elaborate and implement a public transit development strategy and the ability to carry it out in terms of initiatives in land use management, environment and economic development.

In 2003, the Ville de Montréal gave its support to this recommendation in the Bernard Report and today, it reaffirms the urgency of continuing discussions to arrive at a consensus with regional partners as well as the *ministère des Transports du Québec* concerning the metropolitan governance in terms of public transit.

Réinventer Montréal

SECTION III

Orientations and Projects



A

Public and Active Transportation Modes

A1 – Improving of the Supply of Public Transit Services

Public Transit: the Cornerstone of Development

1. Orientations

Improving and developing public transit services is a key point in the Montréal Transportation Plan and is an essential condition for a balanced and logical development of the territory. Over past decades, development in the metropolitan region favoured motorists' needs and we can see today the consequences of this choice: substantial road maintenance and repair costs, environmental impacts, unproductive land-use, large unsightly parking lots, traffic on city streets and its ensuing nuisances for residents.

A number of facts and figures demonstrate how public transit's contribution to Montréal's economy goes beyond directly job-related factors, operating expenditures and capital investments. Public transit enables Montréal's households to save considerably in their commuting costs – in the order of $600 million in 2003[4]. Now, these savings increase the households' purchasing power so they can thus spend more on shopping, leisure and cultural outings. By the same token, this windfall would have been 50% lower if these same moneys had been spent on automobiles. Beyond this repercussion, public transit facilitates the access to industrial, commercial and education centres as well as to tourist attractions.

Montréal considers that there should be a wider use of public transit on the part of Montrealers and off-island residents travelling to Montréal, be it to access their homes, their jobs, their schools or for their leisure activities.

More specifically, at a minimum, Montréal aims to:

- increase public transit ridership by 8% between now and 2012 as proposed in the *Politique québécoise du transport collectif (PQTC)* [Québec public transit Policy];
- increase public transit ridership by 26% between now and 2021[5], an ambitious undertaking similar to those in the mobility plans of several large cities in the world such as Paris and London.

For this purpose, Montréal has agreed with the STM to immediately implement their service improvement plan so that the 8% increase in ridership may be reached over the next five years. In addition, the ridership increase objective set for 2021 in the Transportation Plan is a daunting challenge which calls for a substantial increase in services and infrastructure, in the order of 50%, and which will need to be matched by a radical change in commuting habits.

This will is expressed in a context of strong dependency on the automobile, which has unfortunately been reinforced in the past few years. Beyond changes in lifestyles, the more frequent use of the car is also the result of the lack of competitiveness of alternative transport solutions. During the period 1987-1998, where very little investment took place, public transit commuting to Montréal generally decreased by 13.2%. From 1998 to 2003, following a number of initiatives on public transit networks, in particular at the regional level, public transit commuting increased by 9.6% with the result that public transit's modal share remained stable.

The Transportation Plan's diagnosis underscores the following issues in relation to the expansion of services, changes in the needs of the clientele and Montréal's development in itself:

- saturation of the public transit supply: limited residual capacity of the bus fleet and of certain sections of the metro during peak period;
- need for the maintenance, refurbishing and renewal of the metro's infrastructures and rolling stock: public transit performance remains closely linked to that of the metro network;
- access to the different areas of the city: the public transit network must be adapted to the sectors to be transformed and developed;
- major commuting corridors: public transit's global competitiveness with the car has decreased in a number of major commuting corridors on the island of Montréal;
- diversification of public transit modes: need for a better adaptation to the characteristics of the sectors to be serviced;
- complementary role of the car for the use of public transit: opportunity to foster car/public transit intermodality;
- special needs of specific clienteles: seniors, mobility-impaired persons and students;
- high expectations on the part of the population with respect to the cleanliness of facilities and rolling stock.

2. Proposed Initiatives

To address these issues, Montréal and its partners will put in place a public transit system that will provive more service and infrastructure that are better adapted to users' needs in order to offer competitive alternative solutions to the car. The global strategy, which was elaborated through a cooperative planning effort between the STM and Montréal, is built on the following elements:

- maintaining and improving the metro's transport capacity; the metro network will be thus improved and extended and will remain, in terms of transport capacity, the fundamental foundation of the public transit system. It will act as a lever for urban development and quality of life;
- developing a modern Light Rail Transit network that will be a complement to the metro and service the city centre and a number of strategic corridors. It will also increase the value of the urban space, more specifically in those sectors offering substantial economic development potential;
- developing a complete network of Bus Rapid Transit systems (BRT) enabling buses to move on right-of-way lanes;
- developing a priority network for buses encompassing reserved lanes and other preferential measures to improve the general performance of bus services;
- increasing the number of buses during peak period by about 500 to provide a better service in terms of frequency, comfort and speed; the bus network will thus be greatly improved both in terms of transport capacity and performance: it will move a large part of the new public transit clientele, ensure that the territory is efficiently covered and will also ensure improved transit time on Montréal's principal arterial streets;
- contributing to the development of the commuter train network: the network will be improved and will offer a greater transport capacity which will enable to decrease the number of trips by car to Montréal;
- improving the metropolitan bus service so that it may become an appealing alternative to the automobile;
- completing the public transit network with park-and-ride car parks strategically located well ahead of traffic congestion so that the car can be integrated in the public transit system.

2.1 The Montréal Metro

During the 1960s, Montréal built a metro network that became the true backbone of its public transit system and a formidable incentive for urban and economic development. Towards the end of the 1970s, the Government of Québec joined Montréal in its metro consolidation project.

It is worth recalling that three out of five public transit users ride the metro in the course of their commuting and that the metro is an essential element in the proper and efficient running of public transit in Montréal.

However, the metro has reached a stage where fundamental remedies must be applied to ensure that it can continue to play its role. The metro therefore faces a number of problems:

- saturation of certain sectors of the network at peak period which will be amplified by the opening of the Laval extension;
- the rolling stock, which is reaching the end of its useful life;
- the necessity to support the development potential of the downtown core.

The strategy to ensure that the metro can play its role as the main mode of public transport encompasses a number of initiatives.

Rolling Stock Modernization

Because of the intensive use of the metro system at peak period and because a number of its components have reached the end of their useful life, Montréal intends to make infrastructure modernization and rolling stock replacement a priority. These initiatives aim at improving the system's reliability as well as freeing the required transport capacity for the planned increase in ridership. This increase will more

specifically take place on the Montmorency/Berri-UQAM stretch of number 2 line and is linked to the opening of the Laval extension that will occasion on a daily basis close to 10,000 additional metro rides.

→ Replace Half of the Metro Car Fleet

The MR-63 subway cars that were put into service in 1966, have already reached the end of their useful life. A major replacement program will span the 2006 to 2015 period and encompasses the purchase of 336 cars as well as an option to buy additional cars to increase transport capacity at peak period. The new cars will be more reliable and will have a greater passenger capacity—in the order of 15%—thanks to a well adapted design of the inside of the cars and the added possibility of moving from one car to the other while in transit.

This program involves investments of $1.1 billion. The Government of Québec announced in May 2006 its intention of absorbing 75% of the cost of the MR-63 cars, with the balance to be financed by local communities.

→ Overhaul and Refurbish the MR-73 Metro Cars

This project is required to increase the MR-73 metro car's capacity by 10% by the end of 2008 and to maintain the inside of the cars in good condition. The 423 cars, which are nearly 30 years old and have travelled each an average 2.3 million kilometres, will be given a more functional interior design resulting in an increased transport capacity over the next three years. This program involves an investment of $37 million.

→ Replace the MR-73 Metro Cars

On the longer term, the 423 second-generation cars will need to be replaced, having also reached the end of their useful life. This replacement program is evaluated at $1.4 billion.

Extend the Metro System

To markedly improve public transit service in the east and centre-west of the island, Montréal proposes to extend the metro network for the purpose of offering residents easier access and ensuring a better integration to other public transit services:

→ Extend the No. 5 Line (Blue Line) from St-Michel to Pie-IX

This is an addition of a short one-kilometre segment enabling a direct link between the metro and, both in terms of actual and potential use, the most important north-south traffic corridor on the island (i.e. boulevard Pie-IX). The new station will facilitate transfer to existing and future services (BRT, East Island Commuter Train) thereby becoming a structuring element of public transit in the east sector of Montréal. This initial phase is evaluated at $170 million.[6]

→ Extend the No. 5 Line (Blue Line) from Pie-IX to Saint-Léonard and Anjou

In a second phase, the metro blue line would be extended from Pie-IX to Saint-Léonard and Anjou on a distance of 5.1 kilometres. This will provide better access to the metro for residents in the east and also particularly to the Côte-des-Neiges economic development pole. In addition to improving transport services to the Anjou business and commercial pole, the four new stations will cross the major north-south transportation corridors in the east. The cost of this extension is estimated at $775 million, excluding the purchase of additional rolling stock.

→ Extend the No. 2 Line (Orange Line) from Côte-Vertu to Bois-Franc

This project would encompass the addition of two stations over a 2.2 kilometre segment. The terminal would become an intermodal station located on the Montréal/Deux-Montagnes commuter train line. This extension would provide better public transit service to the Saint-Laurent borough, which is experiencing a sustained increase in population and economic activities. Commuter train users will also be able to transfer to the metro and access sectors located west of Mount-Royal Park more easily. The cost of this extension is estimated at $340 million, excluding the purchase of rolling stock.

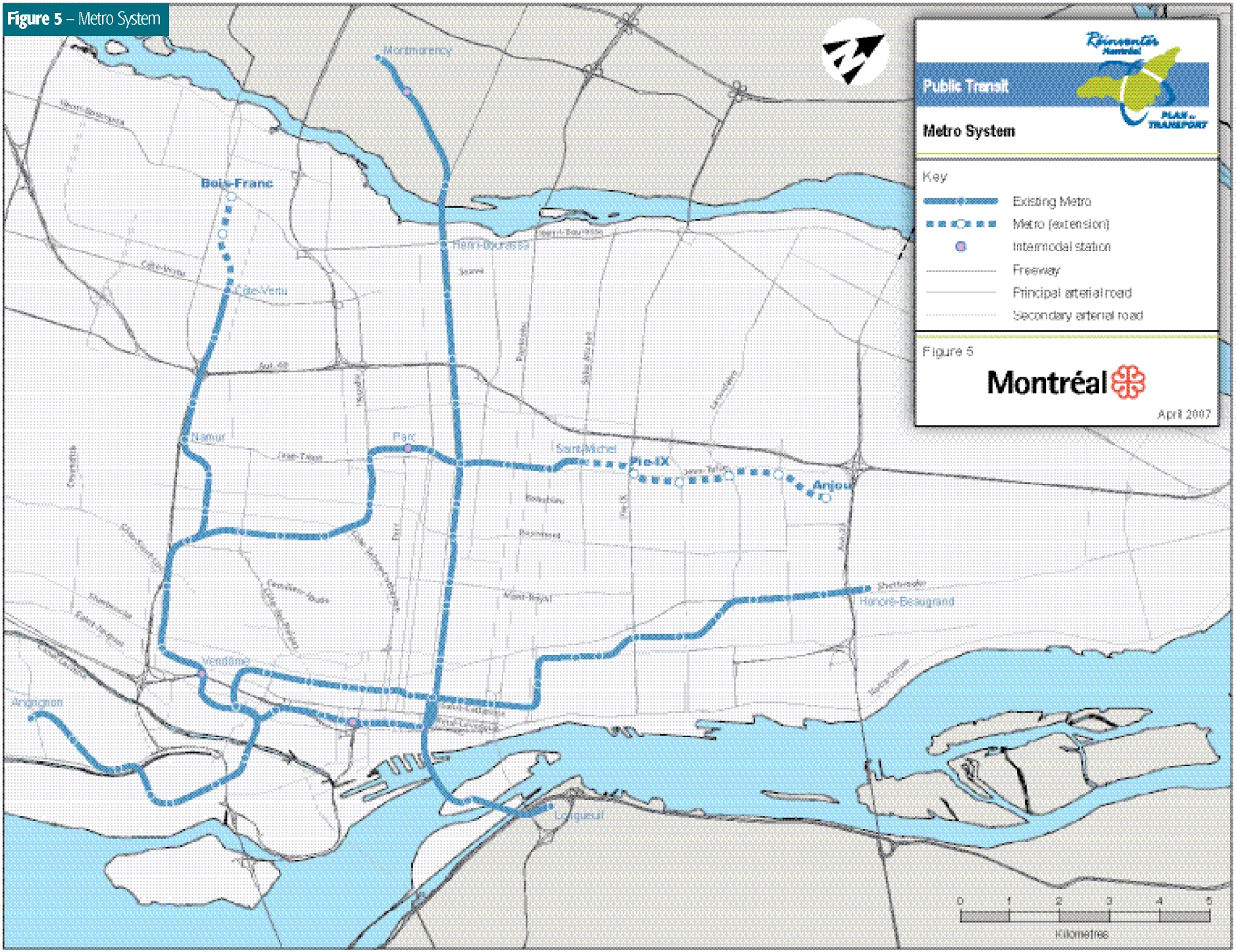
Improve Quality of Service

In order to better address the needs of current and future users, the metro must reinforce the services offered.

→ Increase the Frequency of Trains During Peak Period

Increased frequency will be made possible through the modernization of the metro's operations control systems. This improvement, matched with an increase in transport capacity and in the number of cars will enhance commuters' comfort during those periods when the metro is most used and will help attract new customers in the centre of the island.

Figure 5 – Metro System



→ Improve off Peak Metro Capacity

It is a matter of increasing the service at the beginning and at the tail end of peak period, at noon and in the evening on weekdays, in the afternoon and in the evening on weekends. This reworking of the metro's operating schedule is driven by the need to adjust it to user demand in the central part of the island by capitalizing on the efficiency of the most efficient public transit mode. Operating costs associated with this increased service supply are relatively modest. Moreover, no additional rolling stock would be required.

Improve Accessibility, Cleanliness, Safety and Information

→ Progressively Implement 100% Accessibility in the Metro Network

This measure aims at progressively making the metro network accessible to individuals in wheelchairs or with impaired mobility as well as to other specific clienteles, notably through the installation of elevators. In a first phase, five stations (Bonaventure, Henri-Bourassa, Lionel-Groulx, Berri-UQAM and Côte-Vertu) will be made accessible by 2010. Over the next twenty years, at the rate of three stations a year, the STM intends to provide the entire metro network with the same level of accessibility that is offered in the three new Laval stations on line 2.

→ Improve Cleanliness in the Metro System

In 2007, the STM launched a public awareness campaign on cleanliness called *Gardons notre espace propre* [Let's keep our space clean]. Among other objectives, this campaign aims at improving cleanliness in the stations and the trains by making passengers aware that they share part of the responsibility for keeping the metro clean.

In keeping with its *Programme de la propreté et de l'entretien 2007-2010* [Clean City Action Plan 2007-2010], Montréal will sign cooperation agreements with the STM that break up responsibilities between the STM and the boroughs with respect to maintenance of the areas around metro stations and of the *abribus* [bus shelters]. Cleanliness is also considered an important contribution towards users' sense of security.

→ Improve Information for Metro Users

As part of the *Réno-Systèmes* project, the platforms in each metro station will be equipped with communications systems to broadcast real time schedules and information in the case of breakdowns. This project aims at making the metro more user-friendly, at helping users to better plan their commuting and at lessening inconveniences to users during unforeseen incidents.

→ Improve Safety in the Metro

Metro users' security has always been a priority for Montréal and the STM. This security guarantees the reliability of this public transit mode and the well-being of users. Through its various initiatives, the STM decreased the number of crimes against persons by 48% between 1999 and 2002.

Since 2004, Montréal and the STM are working on the establishment of a police force dedicated to surveillance in the metro that will increase public security. In this regard, Montréal recently announced the creation of the *Division du réseau de transport en commun du Service de police de la Ville de Montréal (SPVM)* [Public Transit Division within the Montréal Police Department]. This division will be operational in 2007. These personnel will be supported by the development and maintenance of a wide network of surveillance cameras in the metro. Thanks to financial assistance from the federal government ($8.5 million from the Transit-Secure Program), the STM can better respond to users' expectations with respect to prevention and security.

→ Continue the *Entre deux arrêts* [Between two stops] Program

To improve safety for women in the city, the STM put in place its *Entre deux arrêts* [Between two stops] service. This service, available on all STM's bus routes, including after-midnight service routes, is for women who travel alone at night. With this service they can ask the bus driver to let them off between stops.

→ A Well-Connected Metro

As early as 2008, the metro network will become a WIFI zone enabling users to access the Internet and their e-mail service.

2.2 A Network of Light Rail Transit (LRT) and Bus Rapid Transit (BRT) on Exclusive Right-of-Ways

The metro's success, a transportation mode with its own right-of-way, is largely due to its great efficiency. However, because of substantial building costs, a metro line can only be laid where the demand would justify such investments.

The current success of high-performing bus services already offered in Montréal (reserved lanes, R-bus, Express bus) has demonstrated the need for rapid, frequent and reliable transit services on commuting corridors and poles located outside the corridors serviced by the metro. The development of a network with intermediary capacity to complement the metro and to service a large number of corridors and poles will help increase the number of rapid transit users in Montréal.

Currently, the ten most patronized bus routes on the island of Montréal account for about 40% of the total daily use of STM's bus services. Bus routes on the Henri-Bourassa, Pie-IX, Notre-Dame, du Parc and Côte-des-Neiges corridors alone account for 20% of the total daily use of STM's bus services.

Given this level of demand, Montréal proposes to implement, in support of metro services, an LRT network and a Bus Rapid Transit (BRT) network on dedicated right-of-way. This network will improve services in the central sector of the island where population density and job concentration are the greatest.

Depending on the commuting corridor to be serviced, a modern LRT line or a Bus Rapid Transit (BRT) system will be implemented in an initial phase. Compatibility between the infrastructures of these two modes of transportation will enable to move, in a subsequent phase, from a BRT system to an extension of the LRT network.

Modern LRT Systems Have the Following Characteristics:

- they travel on right-of-ways that are reserved for them at all times thereby ensuring quick, reliable and precise travel times. This transportation mode is competitive with the car;
- they come with stations with distinctive shelters, elevated platforms, dynamic displays for waiting times, information panels, etc.;
- they offer spacious and stylish cars that may have more than one unit (articulated or other types) and often have a low floor thereby being easily accessible when in station, more specifically for mobility impaired users;
- they have a preferential status at street intersections where they have the right-of-way;
- furthermore, the cars' design ensures comfort and safety for pedestrians and users and is better adapted to the needs of various clienteles;
- LRT vehicles use non-polluting propulsion modes.

Montréal Chooses the Light Rail Transit System (LRT)

The LRT is a perfect match to the orientations of the Montréal Transportation Plan because it can reinforce the urban structure and revitalize neighbourhoods' arterial streets. It also addresses some of the objectives of the city's *Master Plan*.

Modern LRT vehicles that were built in recent years have nothing in common with those that were running in Montréal up until 1959. They are reliable, stylish, user-friendly and comfortable transit systems than can accommodate large numbers of users. These systems which are currently operated in a number of Nordic cities are completely functional in our climatic conditions.

This type of transit service is particularly well adapted to urban areas where one finds a concentration and diversity of activities generating short and long distance commuting throughout the day in both directions. Built at street level, these systems often provide the opportunity to redefine how the roadway should be shared, including the elimination of traffic lanes or parking spaces or the undertaking of major urban renewal projects.

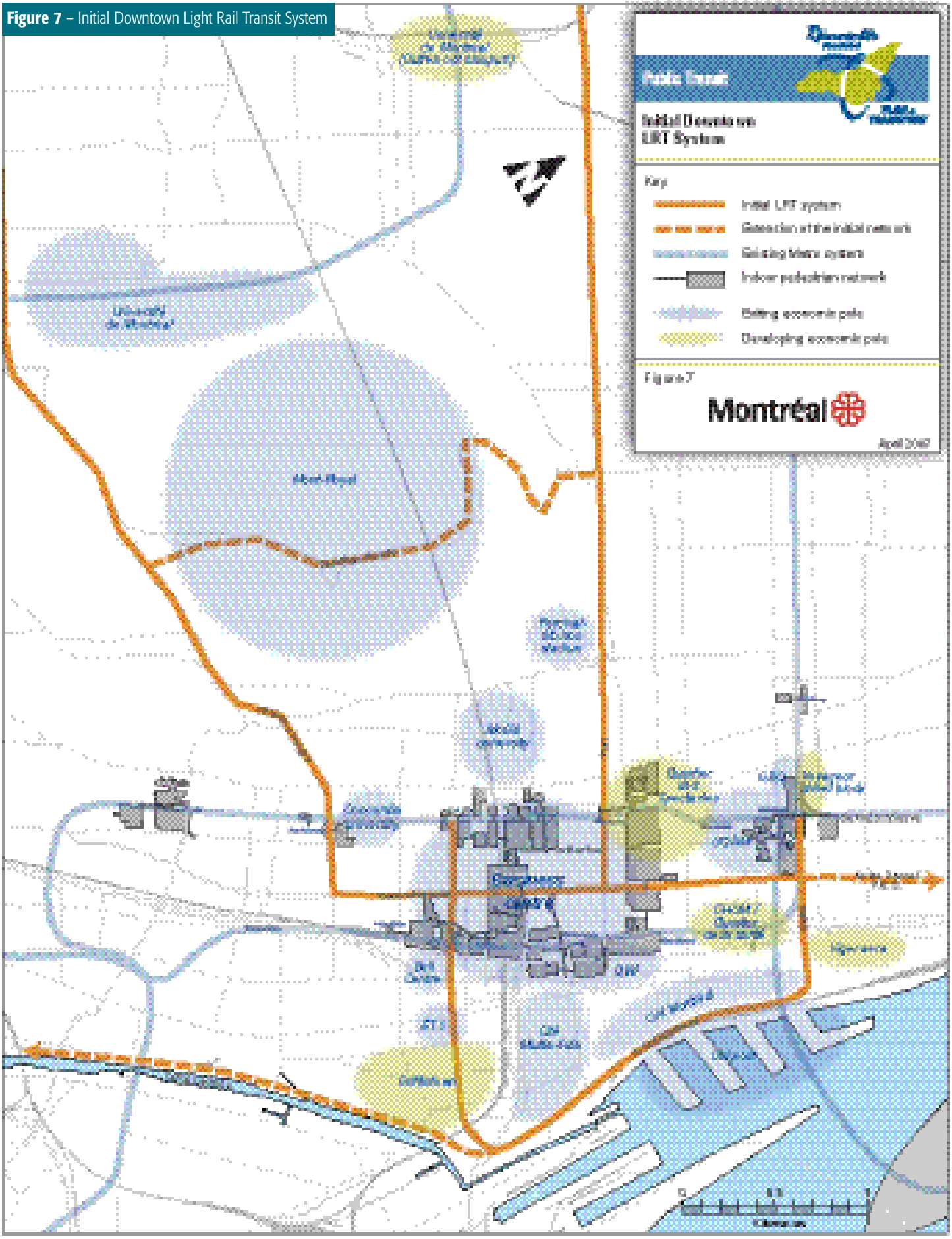
Montréal proposes to build an initial LRT network of close to 20 kilometres at the centre of the agglomeration that will encompass three routes (Figure 6) and which will be realized in consecutive phases. This initial LRT network will have an extraordinarily positive impact on urban environment and will be a catalyst for a number of other projects.

The first line will complement the metro and the pedestrian network and will be designed in a loop servicing the CBD, the *Havre de Montréal* [Montréal Harbour Front], Old Montreal, the new CHUM teaching hospital, UQAM University, the *Quartier des spectacles* and the *Quartier International*, where there is the greatest concentration of jobs and activities. The network will then expand into the avenue du Parc and chemin de la Côte-des-Neiges commuting corridors.

Starting in 2007, Montréal will set up a steering committee regrouping the major stakeholders in public transit in Montréal. This committee will have the authority to take over the implementation of the initial LRT network and ensure that it starts operating as soon as possible.

Figure 6 – Proposed Light Rail Transit System

Figure 7 – Initial Downtown Light Rail Transit System



→ LRT Line Linking the CBD, Old Montreal and the *Havre de Montréal*

The first line of the LRT network under consideration would be built along Berri, de la Commune, Peel and René-Lévesque to form a loop in the city centre. With more than six kilometres, it will enable people to move within the downtown core and it will link poles of interest (institutions, businesses, cultural and tourist amenities) such as Old Montreal and the Old Port of Montréal. It will also be complementary to the metro service (line 1 – green and line 2 – orange) by facilitating access to, and by being a development catalyst for a number of projects such as the Griffintown re-development, the new CHUM teaching hospital, UQAM University, the *Quartier des spectacles* and the *Cité Multimédia* (Figure 7). In total, these projects which are currently underway, call for investments evaluated at $5 billion[7] for culture, education, health services and housing. The cost of this line is estimated at $260 million.

Using the railway track that currently crosses the Old Port will come under consideration. Montréal could also capitalize on the building of its LRT network to carry out additional urban developments.

→ Avenue du Parc LRT

This line will be built along avenue du Parc starting at the Parc metro station on the number 5 (blue) line and will end in the heart of the CBD via boulevard René-Lévesque.

Avenue du Parc is a busy traffic corridor and its proposed LRT line will provide an alternative to the number 2 (orange) metro line and, at the same time, will relieve the pressure on the latter. The proposed LRT line on avenue du Parc has already been studied by the *Agence métropolitaine de transport* (AMT). Approximately seven kilometres in length, it can potentially accommodate 13.7 million commutes a year. In addition to the targeted clientele located along the corridor, the line will also attract customers from the new Université de Montréal campus to be built on the former Outremont railroad yards as well commuters on the Montréal/Blainville-Saint-Jérôme train line. Building the LRT line encompasses a complete reconfiguration of the public domain (roadway, sidewalks, urban furnishings and equipment, lighting, etc.) and therefore constitutes the revitalization of avenue du Parc.

Initial studies carried out by the AMT estimate the cost of building this line at $475 million, which is higher than the average $40M/km used in the cost evaluations made in the Transportation Plan. The AMT's estimates include $313 million for the transportation system itself and $162 million for urban redevelopments including the replacement of underground infrastructures. This cost estimate will be reviewed to take into account the network's total length, the fact that some tracks will be shared by two or more LRT lines and the order in which the lines will be built.

→ Chemin de la Côte-des-Neiges LRT

With its six kilometres in length, the LRT line to be built along chemin de la Côte-des-Neiges between Jean-Talon and René-Lévesque will complete the initial network. Chemin de la Côte-des-Neiges is the first arterial street that skirts around Mount-Royal Park on the west side and is therefore, in the northwest quadrant, a strategic axis to access the city centre. Currently, 43,000 public transit users travel daily in this sector making this axis the fifth most important traffic corridor in Montréal. The LRT will also service institutions that generate large numbers of commuters such as Université de Montréal and the major hospitals. As it will be the case for the avenue du Parc line, the Côte-des-Neiges line will also provide an opportunity to re-visit the configuration of the public domain, among others the redesign of the Côte-des-Neiges/Remembrance interchange which could be rebuilt into a street-level intersection to make the western access to Mount-Royal more user-friendly as did the reconfiguration of the avenue du Parc/avenue des Pins interchange. The preliminary cost estimates of this LRT line are in the order of $250 million.[8]

→ In Subsequent Phases, LRT Lines in other Strategic Public Transit Corridors

Once the initial LRT network is completed, it can be extended according to changes in demand and arising opportunities for urban development and integration. The du Parc line could be extended northwards to service the Parc Extension residential sectors and the L'Acadie-Chabanel industrial and commercial pole. The opportunity of linking the avenue du Parc and chemin de la Côte-des-Neiges lines through Mount-Royal Park and chemin Camillien-Houde will also be evaluated from the point of view of improving public transit and the environment. Other lines could be built, for instance, along rue Notre-Dame and Pie-IX and Henri-Bourassa boulevards as well as along the Lachine Canal because they offer both potential for public transit ridership and opportunities to develop and consolidate the urban fabric.

Develop Bus Rapid Transit (BRT) Systems

Montréal also intends to put in place Bus Rapid Transit (BRT) services on high traffic arterial roads. These services have characteristics that are similar to those of the LRT, i.e. that buses travelling on exclusive right-of-ways can provide a high level of transport capacity, comfort, user-friendliness, reliability and travel speed. However, they offer more flexibility, because they can use different types of buses in terms of size, propulsion mode, as well as a variety of services in terms frequency and sectors to be serviced. BRT systems are convenient to service less central city sectors (Figure 8).

We must point out that BRTs present more benefits than reserved lanes for buses. They have their own distinctive infrastructures, are more comfortable for users (stations, elevated platforms), use smart public transit systems (dynamic displays for waiting time, information panels) and they improve service quality. These facilities can eventually be re-used for the implementation of a LRT network.

Montréal therefore intends to implement as a priority the two following projects and to evaluate the potential of a third proposed project outlined below.

→ Build a BRT System in the boulevard Pie-IX/Downtown Corridors

This system will be built along Pie-IX, Notre-Dame and René-Lévesque and will enable an efficient commute to downtown without the need to transfer along the way. With 41,000 commuters every day, including 10,000 during peak period alone, boulevard Pie-IX is currently the main public transit north-south axis in the east of Montréal. The proposed BRT system will thus become a structuring public transit infrastructure and a common right-of-way suitable to accommodate a number of bus routes. Moreover, it will benefit from the extension of the number 5 (blue) metro line to Pie-IX. This BRT will lessen crowding on the number 2 (orange) and the number 1 (green) metro lines.

Montréal considers this particular BRT to be a top priority so its implementation along boulevard Pie-IX will be undertaken immediately with an accelerated construction schedule to allow its commissioning as quickly as possible. Implementation on the corridors leading to the city centre will be concurrent with the planned reconfiguration of rue Notre-Dame and the installation of LRT lines on certain segments of boulevard René-Lévesque. This project will cover a distance of about twenty kilometres (from Henri-Bourassa in the north to the city centre with the addition of an extension towards rue Dickson along Notre-Dame. Its cost is estimated at $100 million.[9] Moreover, Montréal wants to examine the opportunity for running trolleybuses on the same right-of-way.

In the course of a second phase, the Pie-IX BRT system will be extended towards Highway 440 in Laval. The right-of-way will be able to accommodate various bus routes servicing the metropolitan region's northeast quadrant. The cost of this extension is estimated at $15 million.

→ Build a BRT System on boulevard Henri-Bourassa

The segment of Henri-Bourassa under consideration for this second project is located between Henri-Bourassa metro station and boulevard Pie-IX and already has a reserved lane for buses at peak period. Boulevard Henri-Bourassa is currently the most important public transit corridor in Montréal with a multitude of bus routes originating in the north and the northeast and servicing a large number of major education institutions. The combined clientele of these bus services total 70,000 users daily which is more than any of the commuter trains. With the proposed BRT system, the buses will travel on exclusive right-of-ways at all times allowing for quick, reliable and precise travel times. The cost of this BRT of about five kilometres is in the order of $25 million. Its commissioning could take place within the next ten years.

→ Build BRT Systems on Unused Railway Right-of-Ways

Two corridors**,** the CN right-of-way in the east, together with the railway right-of-way along rue Notre-Dame and the Doney railway right-of way, south of Highway 40 in the west of the island, supply opportunities to develop strong public transit corridors. These corridors are worth preserving for eventual BRT systems.

The railway right-of-way located in the east has already been evaluated by the AMT as part of the *Via-Bus* project. This project will enable a quick link with the city centre by using those public transit infrastructures that are planned as part of the rue Notre-Dame reconfiguration. It would complement the East Island Commuter Train, currently being built by the AMT, given that it would specifically service the population located in the southern portion of the island.

Using the Doney right-of-way would address important commuting needs, specifically to and from the Technoparc in the Saint-Laurent borough, which is the second most important employer of West Island residents. This corridor, about ten kilometres long, is located north of boulevard Hymus. It would link boulevard Saint-Jean in Pointe-Claire, starting south of the Fairview terminal, to the Montréal/Deux-Montagnes commuter train close to the Bois-de-Saraguay Nature Park after going across Highway 40. Ultimately, it would offer the opportunity to link other destinations in response to new demand (boulevard Thimens, Bois-Franc commuter train station) and, eventually the Bois-Franc metro station and the Highway 13 train station that is planned by the AMT.

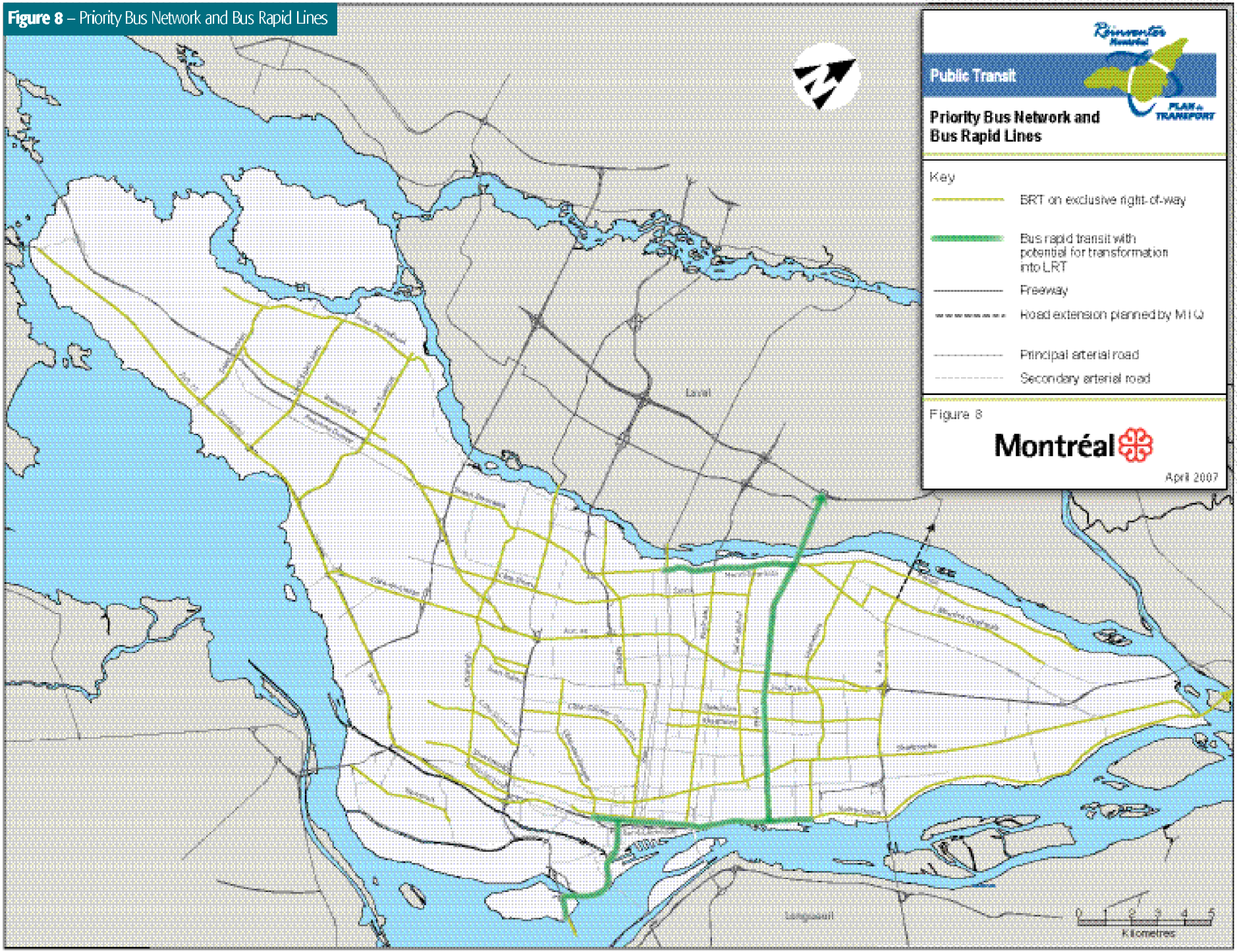
2.3 Montréal's Bus Network

A bus network is the essential component of public transit, the bus being a determining factor in transit mode choices and being often the point of first contact for the user. A large part of the new public transit clientele will be transported by bus.

The Montréal network does not currently have residual capacity during peak period. Given the present size of the bus fleet it would be impossible to service the additional users forecasted for 2025.

Currently, Montréal's bus network does not offer sufficient benefits in comparison to those of the car to be able to efficiently compete with

Figure 8 – Priority Bus Network and Bus Rapid Lines



the latter in terms of travel time and comfort. Considerable efforts must be made to give the bus an advantage on the road and to make commuting by bus more comfortable.

Montréal therefore proposes to act on several fronts to transform the bus network for the better:

Provide Greater Transit Capacity

→ Increase the Size of the Bus Fleet

The combination of new services and the accommodation of additional users proposed in the Plan call for a significant expansion of the bus fleet, in the order of 500 new vehicles to be added to the 1,600 current units, i.e. an investment of about $300 million. The purchase of a large number of buses, the increase in the number of garage spaces and associated resources including the hiring of new personnel, are the most important measures proposed in the Plan with respect to increasing transport capacity. The expansion of the fleet also calls for redesigning access to metro stations and terminals as well as building additional platforms. In order to lessen the environmental impact of an expanded fleet, the purchase program includes the buying of vehicles that use cleaner fuels or technologies (hybrid, bio-diesel, fuel cell, trolleybus).

→ Provide Articulated Buses on Twenty High Usage Routes

Introducing this type of vehicle will generate a substantial increase in transport capacity in the corridors chosen for this purpose and will offer users improved comfort and travel times. Articulated buses make a difference in service particularly when basic service is matched to rapid transit service. The STM will at first purchase 202 articulated buses at a total cost of $184 million. It will take delivery of the first vehicles in 2009 and of the last ones in 2011. This acquisition does not however expand the current fleet as it aims at replacing existing buses.

Implement Transit Priority Measures on Arterial Roads on the Island of Montréal

Montréal will add to the current 40 kilometres of reserved lanes and will put in place over the next ten years measures to give priority to buses on about 240 kilometres of arterial roads (Figure 8).

These measures encompass more specifically the setting-up of reserved lanes for buses, modifications to traffic lights (preempts, transit priority signals and green light extension), the redesign of roadway geometry and street marking as well as changes in traffic control, snow removal and street parking management. All these measures will enable buses to have priority over cars and will contribute to give them a dynamic image of efficiency.

These initiatives will improve public transit competitiveness on major corridors for both short and long distance commuting. Currently, buses benefit from a competitive advantage over cars only on a marginal portion of the road network. Yet, these corridors, particularly those in the centre of the island, support high volumes of commuting, for example, over 10,000 commutes on a typical weekday.

In an initial phase, six of the busiest corridors will benefit from reserved lanes. They are:

- boulevard Saint-Michel from boulevard Henri-Bourassa to Joliette metro station;
- rue Beaubien from Beaubien metro to Honoré-Beaugrand metro via Highway 25;
- boulevard Rosemont from Rosemont metro to boulevard Pie-IX;
- rue Notre-Dame from rue Dickson towards Pointe-aux-Trembles;
- the Sauvé/Côte-Vertu axis between Saint-Laurent and Cavendish boulevards;
- the Saint-Jean/Pierrefonds axis between boulevard Château-Pierrefonds and Highway 20.

Downtown Montréal, a crucial sector on the island generating large numbers of commutes, will benefit from the time saving yielded by implementing these measures in the network, even if public transit already offers interesting benefits over the car in this area of the city. Moreover, the east and west end of the island will also draw considerable benefits from these measures given the current lack of competitiveness of public transit over the car in these sectors and its weak modal share.

Implementation of preferential measures across the bus network will span a period of ten years on the major arterial roads in the agglomeration and will involve investments in the order of $60 million.

Establish Express Bus Services

Montréal proposes the establishment of express bus services to the downtown core and the metro.

→ Increase the Number of Express Bus Services to Downtown

The most promising corridors are located in the centre-east (from Pie-IX to Langelier) and centre-west (projected Cavendish link) sectors of the island. The new services will also, incidentally, benefit from the BRTs infrastructures on Pie-IX and Notre-Dame-René-Lévesque.

Improvements of travel times will stem both from the speed of these services and the absence of transfers. These services will support and complement the metro network at peak period.

→ Extend Express and Metrobus Services' Hours

This measure aims at extending the schedule of existing and future services between morning and afternoon peak period. Users will thus benefit from the speed, comfort and reliability of those services during the day as well.

→ Improve Passenger Comfort on Express Buses and Metrobus

The limit on the maximum number of on-board passengers will be lowered or the interior design of buses will be modified.

Ensure more Appealing and Efficient Services

The Transportation Plan supports the measures that are put forward by the STM to drastically improve public transit services as well as adapting them to user needs.

→ Improve Buses Schedule Adherence and User Information

The replacement of the bus network radio communication system with a new operating system will enable a real time monitoring of buses' on-time performance. It will also improve the quality of information for users such as announcing up-coming stops on the buses, and, at bus stops, announcing the up-to-date schedule of connecting buses. It will contribute to improving users' sense of security and will provide for a better planning of commutes.

→ Increase the Number of Limited Stop Bus Services to Complement Local Routes

This involves twinning "leapfrog" services with those bus routes that transport two types of clienteles, local and those coming from further away. These services will have stops at strategic points only, either to enable transfers to other lines or modes, or to service the major activity poles.

→ Increase Service during Peak Periods

About thirty bus routes on the major road network will provide more frequent service before and after peak period. With this initiative, demand will be more spread out and on-board comfort will be improved at the height of the peak period.

→ Improve Passengers Comfort on Regular Bus Routes

This involves increasing service frequency in order to provide more space for users. A redesign of the vehicles' interior will also enable the improvement of other components for enhanced user comfort. This measure should entice more users as it will improve public perception of the bus service.

→ Install Bus Shelters at Half of all Bus Stops

The current stock of 1,600 bus shelters only covers about 30% of the network. Some of the more strategic stops will be equipped with more spacious and comfortable shelters.

→ Evaluate Free Public Transit Access for University Students

There are a number of financial agreements between universities and public transit companies, for example, in the Unites States and Canada, and since 2004, in Sherbrooke, Québec, to share the cost of providing free access to public transit to university students.

Montréal proposes to study, in cooperation with local universities, the feasibility and opportunity of implementing a similar measure.

→ Implement Daytime Bus Routes Directly Linking Seniors' Residences

These routes will link seniors' residences to CLSCs, shopping centres and recreation halls across the island of Montréal, in particular during the day, outside of peak period. The most promising sectors for this initiative are Montréal-Nord, Saint-Léonard, Cartierville, Saint-Laurent, Rosemont, Pointe-aux-Trembles, Rivière-des-Prairies and LaSalle. This is to address specific concerns with respect to walking distance, waiting time at bus stops and overcrowded vehicles for an increasingly important clientele. The STM started to introduce this service in 2007 in certain neighbourhoods.

→ Make all Bus Routes in the STM Network Accessible to Persons in Wheelchairs

The STM provides its services to some 15,000 users eligible for specialized transportation. In 2005, it provided 1.7 million trips on minibuses or by taxi. In addition to specialized transportation, efforts are also made to adapt public transit services and equipment to the needs of mobility impaired persons and make them more reliable for this clientele. Hence, up until now, 66% of the STM bus network is accessible to these users. The progressive replacement of buses that are not equipped with a low floor will lead to making all the routes on the STM network accessible to persons in wheelchairs.

Improve Access to Public Transit in Specific Sectors

There is a need here to prioritize those sectors where challenges associated with public transit service are the greatest, i.e. sectors being developed or revitalized, low population density areas and industrial zones.

➞ Establish a Shuttle Service for Mount-Royal Park

Because of its great popularity, Mount-Royal Park deserves to get its own transportation service commensurate with its role as a regional leisure and recreational facility. The Camillien-Houde and chemin Remembrance corridors will be serviced by an ecological shuttle that will decrease automotive traffic on the mountain. This shuttle will be a wonderful experience for the park's clientele and will provide access to its major attractions. This mode, more compatible with orientations on the development and preservation of Mount-Royal will help decrease areas dedicated to parking. In the medium term, Mount-Royal Park could be serviced by a LRT line.

➞ Ensure Acessibility to Developing Sectors

Montréal's Master Plan outlines all the areas to be built or revitalized. To support the development of a number of residential, commercial, industrial sectors and school zones, new bus services will be implemented, existing bus routes will be improved or modified and/or new public transit services by taxi will be offered. In the short term, this may lead to projects such as: establishing a strong link between Nun's Island and the city centre; an Old Montreal-Old Port tourist shuttle; improving public transit services to the Technoparc Saint-Laurent; network readjustments to provide service to new residential sectors in Pierrefonds and Saint-Laurent; servicing sectors to be developed on the former Turcot and Outremont railway yards.

➞ Assess the Opportunity of Offering Minibuses and Shared Taxis, in Low Population Density Sectors

This measure is specifically for residential sectors, narrow streets and where demand is the weakest. The modes are more easily integrated to low density neighbourhoods, offer more flexibility and lessen energy demand.

➞ Improve Daytime Access to Industrial Areas

There will be a need to set up partnerships with companies in order to optimize services in low density sectors.

➞ Improve the Bus Network Structure in the Southwest and West Sectors of the Island

The network structures will be modified to facilitate access to the economic development poles in these sectors. In all cases, the number of required transfers will be decreased. The east sector of Montréal has already benefited from similar changes in the past few years for the purpose of providing an improved service to users. Two areas on the island are now targeted: the southwest sector (Sud-Ouest, Verdun, LaSalle and Lachine) and the West Island.

Reduce the Environmental Impact of the Bus Fleet

There is need for improving the propulsion systems of buses to lessen their greenhouse gas emissions. In keeping with the Canadian Government Urban Transportation Showcase Program (UTSP), the STM is associated with the implementation of a mixed public transit project whose objective is to test a series of measures to decrease greenhouse gases. In the medium term, the following measures will be implemented:

➞ Introduce the Use of "Green" Fuels such as Bio-Diesel

As early as 2008, the STM will start to fuel its 1,600 buses with biofuel to reduce pollution and greenhouse gas emissions. As part of a pilot project, the STM used bio-diesel as a fuel for 155 buses that were travelling in the city centre from March 2002 to March 2003.

➞ Use Ecotechnologies such as Diesel/Electrical Hybrid Propulsion or the Modern Trolleybus

As new buses are being purchased, the STM will introduce vehicles that will use environmentally sound technologies. As early as 2008, the STM will put in service eight hybrid buses as part of a pilot project for the purpose of expanding the use of these propulsion modes to a larger portion of its fleet.

➞ Foster Environmentally Sound Driving Practices

An environmentally sound driving program was launched in 2005 by the STM for the benefit of its bus drivers asking them to adopt less energy-consuming driving practices. With appropriate training, the drivers can contribute to lessening greenhouse gas emissions by more than 10,000 tons per year. The cost of this measure is essentially made up of expenditures for employee training in the order of $2 million per year. It is estimated that the new driving practices translate into an equivalent amount in savings.

2.4 Metropolitan Projects Prioritized by Montréal

Montréal has targeted metropolitan-scale projects that will not only address public transit needs, but will also structure the region's development. Hence Montréal will support and collaborate with the AMT and other partners to ensure implementation of the following projects that will contribute to reaching the goals set in the Transportation Plan:

A Rail Service for the Eastern Sector of Montréal - The East Island Commuter Train

For over ten years, the commuter train network has been the spearhead of a certain revival of regional public transit. From 1993 to 2003, public transit has registered a 17% growth in total trips to Montréal from sectors outside of Montréal. The major metropolitan commuting corridors have been fitted with train services. The AMT forecasts substantial improvements to those train lines in the next few years.

The eastern commuting corridor is the only one that does not have a train service. But, in March 2006, the Government of Québec announced the beginning of construction work to make the East Island Commuter Train in the east a reality.

→ Implement the East Island Commuter Train

This commuter train line, which will be 51 kilometres long, including 35 kilometres on Montréal's territory, will link downtown with the Montréal-Nord and Pointe-aux-Trembles/Rivière-des-Prairies boroughs, as well as the towns of Repentigny and Mascouche (Figure 9). The service to be offered will encompass five morning departures for Montréal plus one departure in the opposite direction and will address the commuting needs of 5,500 people. The line will have 12 new stations, eight[10] of which will be located in Montréal. These stations will be situated in order to foster urban development conducive to public transit use.

The stations will also be planned bearing in mind the need to increase the potential for development and population density of the surrounding areas. The train line layout involves using the tunnel running under Mount-Royal thus guaranteeing a competitive travel time between Pointe-aux-Trembles and downtown of about 40 minutes. The project costs are estimated at about $300 million and the line is to be operational in 2011.

This new commuter train involves changes in bus services both in terms of accessibility and schedule synchronization in order to help commuters get to the stations.

The project also encompasses the building of park-and-ride car parks around certain stations. These facilities will help users who come from sectors that are less well serviced by the bus network and will foster a sound intermodality. Parking lots to be built around the stations located in Montréal will also have a large number of bicycle stands. The number of places will be assessed for each station on the basis of accessibility and purpose.

Airport - CBD Rail Shuttle

Montréal acknowledges the strategic importance of Montréal-Trudeau International Airport. Since 2000, *Aéroports de Montréal* (ADM) has invested more than $1 billion in the modernization of the airport terminal and a sustained growth in airport activities is forecast for the coming years. From 11 million passengers in 2006, airport traffic will likely reach 15.5 million passengers in 2016. In addition, 25,000 workers commute to the airport grounds every day. In keeping with its goal of improving accessibility to the airport and of giving it an international signature Montréal proposes to:

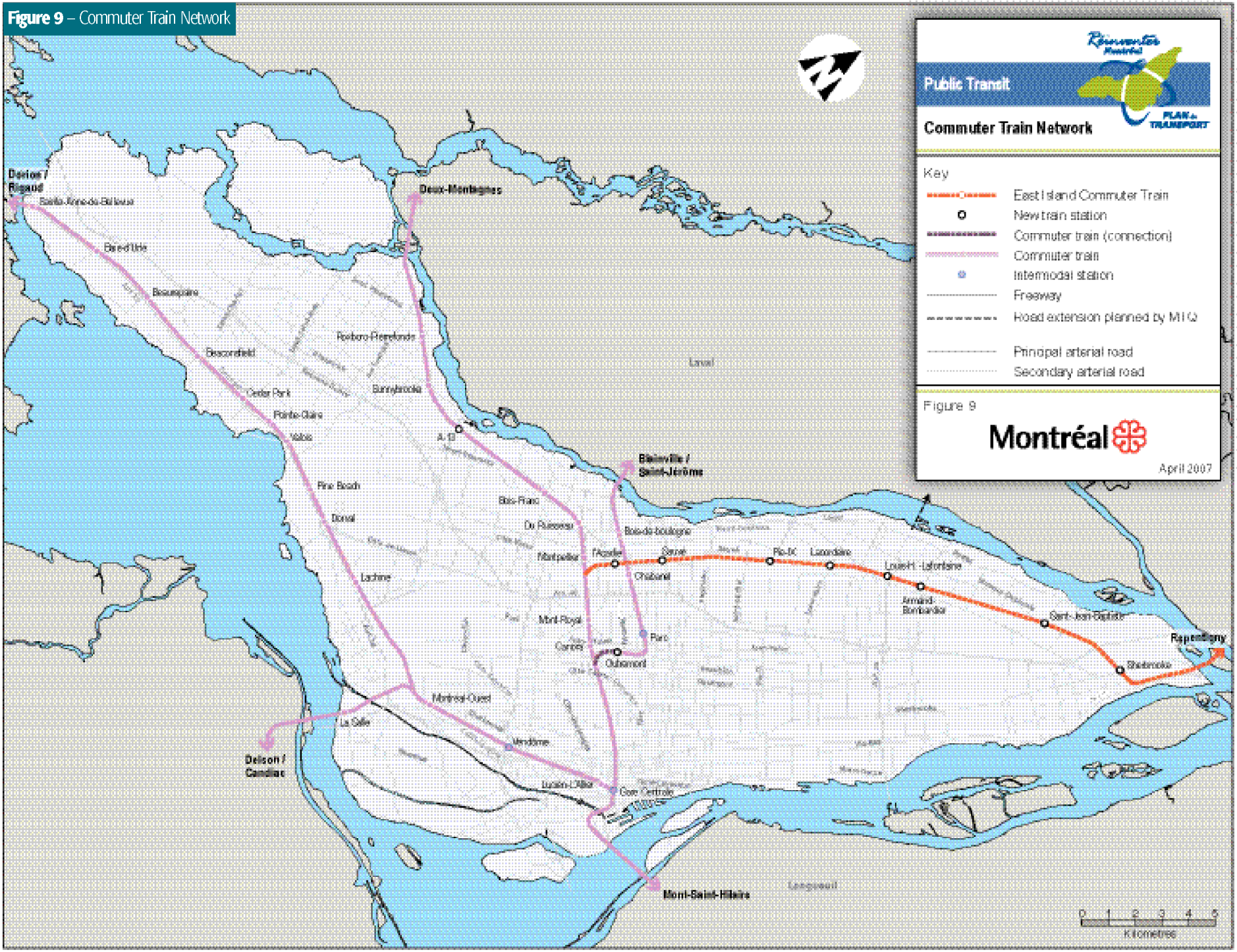
→ Build a Rail Shuttle Service Linking Downtown and Montréal-Trudeau Airport

Montréal-Trudeau Airport is one of the main gateways into Canada and, as such, must benefit from an accessibility that meets international standards. Public transit to the airport is still limited especially because of road conditions around the airport and more so because of traffic congestion on highways connecting downtown to the airport. This explains in part why public transit's share of trips to the airport (4%) is below the North American average (6%). The airport train shuttle would guarantee a 20-minute travel time from downtown to the terminal. Based on an initial ridership study carried out in 2005, the potential of this shuttle is in the order of two million users on a yearly basis.

In cooperation with ADM, the AMT, the *ministère des Transports du Québec* (MTQ) and Transport Canada, Montréal undertook in 2007 feasibility and other required studies for this project. Among other aspects, these studies will look at a scenario in which the shuttle is connected to Lucien-L'Allier (Windsor) station and compare it to another scenario outlined in the city's Master Plan in which the shuttle is connected to the *gare Centrale* [Central Station]. Work for this metropolitan-scale undertaking will be completed in 2012 and costs are estimated to be between $475 million and $575 million, depending on the ultimately accepted scenario.

As part of a second phase, this project would offer an opportunity to improve commuter train services between downtown and the West Island. Indeed, the railway corridor to be developed for the airport

Figure 9 – Commuter Train Network



shuttle between Dorval station and downtown could be used by all passenger trains and more specifically by the Montréal/Dorion-Rigaud commuter train. This project would benefit not only airport users, but also residents, workers and employers in the West Island by offering a new service travelling in the opposite direction of peak period traffic.

Regional Bus Services

Montréal proposes to substantially improve metropolitan-area bus services, which are an essential complement to the commuter train network.

Building a BRT network on the island makes the integration of public transit at a metropolitan region level possible. In addition to the extension to Laval of the Pie-IX BRT, Montréal proposes the following initiatives:

→ Develop Exclusive Right-of-Ways in the Bonaventure Corridor

This initiative aims at strengthening the downtown/Champlain Bridge/South Shore corridor, one of the two principal shore-to-shore links in the region with 17,000 daily commutes during morning peak period. A BRT-type installation inserted in the boulevard Bonaventure project would enable the accommodation of metropolitan-area buses and improve access to Nun's Island. The building costs of an exclusive right-of-way are estimated at $30 million. This project would not compromise the building, in the longer term, of an intermediate capacity Light Rail Transit System between downtown and the South Shore.

→ Increase the Capacity of the Regional Bus Terminal Serving Bonaventure Corridors

The growth of public transit services in the Champlain Bridge corridor is currently curtailed by the limited capacity of the downtown bus terminal. First, additional platforms must be built on a site located next to the existing terminal and buses should provide more stops in the downtown area. In addition, the proposed BRT would allow the buses to proceed to other destinations in Montréal.

→ Implement Reserved Lanes and other Preferential Measures on Freeways.

Highway 40 (between Highway 25 and boulevard Saint-Charles), Highway 20 (west of the Turcot interchange and beyond Lafontaine Bridge-Tunnel), the Laval portion of highways 13, 15 and 25 as well as Highway 10 can easily accommodate preferential measures (Figure 10) which will benefit buses, taxis and, if needed, carpools.

Park-and-Ride

Park-and-ride car parks complement and are essential to large public transit networks. They enable the integration of the car in the commuting sequence to the centre of Montréal and lessen traffic congestion on the roads leading to the city and, in particular, downtown. Ideally located well ahead of traffic congestion, they currently entice 6% of the commuters to use public transit. These car parks also contribute to lessening traffic on the road network, air pollution and greenhouse gas emissions.

The current overcrowding of park-and-ride car parks and the strong demand for this type of bimodal commute clearly show that the parking supply is insufficient. The majority of park-and-ride car parks on the island are saturated. Motorists park on the street along the number 1 and 2 lines of the metro during morning peak period. It is worth noting however that a residual capacity remains in the case of the car parks at the du Ruisseau, Bois-Franc, de Pointe-Claire train stations and the car parks on Sherbrooke Est in Pointe-aux-Trembles and at Angrignon metro.

→ Build Park-and-Ride Facilities near Metro Stations

Park-and-ride car parks will be built along those metro network segments that have a residual capacity such as the Angrignon/downtown segment on line 1 and the Côte-Vertu/downtown segment on line 2. The opportunity of building park-and-ride car parks around the stations of the proposed metro extensions will be examined. The existing Namur and Radisson car parks will be expanded; these expansions will foster an optimal use of the metro network and will provide a replacement solution to thousands of users who currently have to park on neighbouring streets.

→ Build Small Scale Park-and-Ride Facilities along Express Bus Lines

These car parks will help increase the number of users for some of the express bus lines. Small in size, these car parks will be located in low density sectors.

→ Build New Park-and-Ride Car Facilities and Expand the Existing Ones on the Montréal/Dorion-Rigaud Commuter Rail Line

These initiatives are geared to public transit users who are not as well serviced by the bus network and are aimed at encouraging more intermodal commuting. Car parks will be built or expanded at the Baie-d'Urfé, Beaurepaire and Cedar Park stations following a study on each station from the point of view of accessibility.

2.5 Other Strategic Projects Proposed by the AMT

To complement the projects that were prioritized by Montréal, the Government of Québec, through the AMT, has already announced its intention to implement the following:

Improve Service on the Blainville/Saint-Jérôme Commuter Line

When it came into service in 1997, this commuter train was an immediate success and now transports 10,000 passengers daily thereby decreasing the number of motorists in the territory of Montréal. Originally running between Montréal and Blainville, the line was extended to Saint-Jérôme in 2006 while an additional station (Chabanel) was built in Montréal. Montréal supports other changes for this line which are beneficial for the city.

→ Allow the Saint-Jérôme/Montréal Commuter Train to Use the Mount-Royal Tunnel

This project should be implemented at the latest within ten years to enable a connection with the Deux-Montagnes commuter train line in the tunnel under Mount-Royal Park. This would shorten travel time downtown and attract a new clientele of commuters who previously used their cars. Project cost is in the order of $50 million. This connection would decrease the number of transfers to the metro and lessen pressures on this network.

→ Build a Station to Service the New Outremont Campus of the Université de Montréal

The new Université de Montréal campus will generate a large number of public transit trips. It is estimated that the campus will accommodate 9,000 students in addition to 1,600 employees. The project includes 800 housing units and a 1,000-unit university residence. The proposed station would have a cost in the order of $2 million.

→ Make the Bois-de-Boulogne Station more Functional

Currently, this station, though located in a strategic sector, cannot play its role because of a number of physical and functional obstacles.

Improve Service on the Montréal/Deux Montagnes Commuter Line

The Montréal/Deux-Montagnes line is the most used in the commuter train network with 30,000 passengers every day. It is a strategic link between the northwest quadrant of the region and the city centre. It plays an important role in this commuting corridor where travelling by car is very difficult because of the limited number of itinerary options and the traffic congestion on highway 13, highway 15, highway 20 and highway 40. To improve service to this area, which includes Pierrefonds-Roxboro and Île-Bizard-Sainte-Geneviève boroughs, Montréal proposes the following projects:

→ Double the Railway Tracks of the Deux-Montagnes Line between Bois-Franc and Roxboro-Pierrefonds Stations

Doubling the track will improve the line's efficiency in servicing the northwest area of the island of Montréal. The project involves a $33 million investment and will be implemented within the next five years.

Improve the Speed, Comfort and Reliability of Commuter Trains

This endeavour involves the following modifications to the commuter train network:

→ Modernize Station Amenities and Infrastructures (with Priority Given to the Deux-Montagnes, Dorion-Rigaud and Blainville/Saint-Jérôme Lines)

The cost of these projects is in the order of $10 million. Work includes improvement of the access to the Baie d'Urfé station.

Commuter train service can also benefit from synchronization between bus and train services particularly where the Montréal/Deux-Montagnes and Montréal/Dorion-Rigaud are concerned.

The AMT plans to acquire locomotives and cars to increase transport capacity. Six new locomotives and 50 double-deck cars are required to improve service. The project also involves building garages and maintenance centres. Total cost forecast by the AMT is $336 million over a period of ten years. The AMT is also committed to improving the existing network's reliability by buying and refurbishing locomotives and passenger coaches. This acquisition plan encompasses nine diesel-electric locomotives and 54 double-deck cars. In addition, the refurbishing of 82 passenger cars is required. The cost over 20 years is estimated at $378 million.

Figure 10 – Measures Encouraging Collective Transportation on Major Corridors

3. Summary

Montréal proposes to considerably expand the public transit supply in the agglomeration's territory in order to address mobility needs of Montrealers and to reduce automobile dependence.

The strategy to be deployed is wide and varied. It encompasses the consolidation of existing transportation modes that have proven themselves over time, such as the metro. But the strategy also includes the introduction of a modern Light Rail Transit network and of a Bus Rapid Transit (BRT) network which are intermediary capacity transit modes. These new modes not only give new options to commuters, but also increase the whole public transit system's efficiency by adding complementary modes to the metro and the regular bus network. In addition, these projects enable the efficient servicing of targeted territories at costs that are less than those of metro network extensions.

A segment of this strategy consists of supplying bus services that are better adapted to today's context, and that are faster, more reliable and comfortable, by banking on high-performance technological innovations for operating systems.

With respect to regional-level transportation, the plan recommends pursuing the introduction of new services and the building of new infrastructures. The project for a commuter railroad in the east will, in particular, correct one of the major deficiencies in the metropolitan public transit corridors. The project, which will be the result of a regional consensus, will serve Montrealers' interests.

The series of proposed public transit projects involves massive investments on the part of higher-level governments, the region and Montréal over a number of years. The projects also involve an increase in operating costs. Table 4 presents the order of magnitude of theses costs, broken down by major components. In total, investments over a period of 15 to 20 years are in the order of $140 million per year, with the 2007 operating budget of the STM being in the order of $880 million, of which $310 million is financed by the Montréal agglomeration.

Table 4

COST OF PUBLIC TRANSIT PROJECTS PROPOSED BY MONTRÉAL

	CAPITAL COST *(In millions $)*				ANNUAL OPERATING COST
	0-5 YEARS	**5-10 YEARS**	**10 YEARS+**	**TOTAL**	**(In millions $)**
Metro	***207.0***	***1,140.0***	***2,525.0***	***3,872.0***	***33.1***
MR-63 car replacement		1,140.0		**1,140.0**	
MR-73 car replacement			1,410.0	**1,410.0**	
Metro network extension					
line 5 (blue) from Saint-Michel to Pie-IX	170.0			**170.0**	2.9
line 5 (blue) from Pie-IX to Anjou			775.0	**775.0**	13.0
line 2 (orange) from Côte-Vertu to Bois-Franc			340.0	**340.0**	5.7
Other initiatives	37.0				11.5
LRT (Light Rail Transit)	***260.0***	***725.0***		***985.0***	***38.0***
Downtown/Old Montreal LRT	260.0			**260.0**	13.0
Avenue du Parc and boulevard René-Lévesque LRT line		475.0		**475.0**	13.4
Chemin de la Côte-des-Neiges LRT line		250.0		**250.0**	11.6
Other LRT service	*To be determined*				
Bus Rapid Transit System (BRT)	***55.0***	***70.0***		***125.0***	***20.0***
BRT line in boulevard Pie-IX/centre-ville corridors	55.0	45.0		**100.0**	15.0
BRT line on boulevard Henri-Bourassa		25.0		**25.0**	5.0
BRT lines on abandoned railway right-of-ways	*To be determined*				
Bus network	***214.0***	***166.0***	***94.0***	***464.0***	***50.0***
Bus fleet expansion (500 buses)	132.0	84.0	84.0	**300.0**	
Preferential measures for buses on arterial roads	30.0	30.0		**60.0**	
Express service					25.0
Line operating modes	47.0	47.0		**94.0**	
Service quality and accessibility	5.0	5.0	10.0	**20.0**	25.0
Environmental measures	*STM internal costs*				
Metropolitan-scale projects prioritized by Montréal	***850.0***	***33.0***	***15.0***	***898.0***	
East Island Commuter Train	300.0			**300.0**	
Rail shuttle between Montréal-Trudeau Airport and downtown Montréal	550.0			**550.0**	
Regional bus services		33.0	15.0	**48.0**	
TOTAL	**1,586.0**	**2,134.0**	**2,634.0**	**6,344.0**	**141.1**

A2 – Promoting Active Transportation

Walking: Every Step Counts

1. Orientations

Montréal has a reputation for being a great city for walking, be it during the day or at night. In fact, walking is the primary means of travelling short distances, especially for people in central neighbourhoods. The popularity of walking in these neighbourhoods can be attributed to many factors. In addition to the higher population density, these areas also have a greater diversity of urban functions.

It is worth noting that in the territory of the island of Montréal, 35% of trips for distances shorter than two kilometres are done on foot.[11] In fact, almost all trips made on foot on the island of Montréal (96%) are less than two kilometres in length.

Montréal is therefore very aware of the importance of walking and has taken action in the past to make walking safe and pleasant:

- upholding of the ban on right turns on red lights across the island;
- the installation of pedestrian crossing lights with digital timer displays;
- improving the safety in areas around certain schools (road-marking, signage and surveillance);

- allowing longer pedestrian crossing times in traffic light cycles;
- implementation of measures to moderate traffic;
- widening of sidewalks, especially in the downtown core (*Quartier international*, McGill and Saint-Laurent streets, de Maisonneuve, etc.);
- the reduction of the width of pedestrian crosswalks at certain intersections;
- an increase in the number of police officers dedicated to road safety and traffic.

As well, Montréal recently adopted several strategic documents, like the Master Plan, the First Strategic Plan for Sustainable Development and the *Guide d'aménagement pour un environnement urbain sécuritaire* [Guide for developing a safe urban environment], all of which recognize the primary role that walking plays in terms of quality of life.

However, since the last half of the 20th century in Montréal, as in most cities, cars have become omnipresent to the point where, as underscored in the Master Plan, certain sectors have been conceived solely for the benefit of motor vehicle traffic, creating less pleasant and less secure spaces for pedestrians. Low-density neighbourhoods, distant from employment and commercial centres and set up primarily for people with cars, were structured around the car culture. These sectors can be recognized by the following characteristics:

- deficiencies in terms of street furniture;
- inadequate sidewalks, or the absence of sidewalks altogether;
- the width of roadways;
- fragmented pedestrian paths;
- excessive motor vehicle speeds.

The division between central neighbourhoods and those developed in the last thirty or so years is striking. While central neighbourhoods have a modal share of walking between 40% and 50% during the morning peak period for distances less than two kilometres, peripheral sectors are below the 20% mark.

On an island-wide scale, this translates into a constant decrease in the modal share of walking during peak period since 1987, especially for those under 17 years of age, for whom walking as a primary mode of transportation went from 52% in 1993 to 45% in 2003 for distance less than two kilometres. Trips to schools on foot or by bicycle reach 40%, a level that also continues to drop.

Recognizing the importance of walking in terms of public health, Montréal is targeting a considerable increase in trips made on foot during peak period between now and 2021. While it is a feasible objective, radical changes to the ways of designing pedestrian spaces will be necessary.

To make walking the preferred mode of travel and to reverse the downward trend of its practice, Montréal developed the Pedestrian Charter. It proposes a new pedestrian-friendly way of sharing the roads, notably by scaling back the space devoted to motorized traffic in favour of pedestrians.

To attain the objective the city has set for itself to increase the number of trips made on foot, Montréal recognizes three types of problems associated with walking and will bring solutions to the table for each. First, pedestrian security is often affected by conflicts with other users of public spaces. Second, the surfaces reserved for pedestrians, particularly sidewalks, are inadequate or poorly maintained: for example, the lack of uniformity of sidewalk surfaces, planting holes that are too deep and without protective grills and deficient street drainage. Finally, urban designs do not sufficiently take into consideration the needs of pedestrians in terms of the continuity of paths, or the user-friendliness and accessibility of spaces, particularly near schools and access points for public transit.

2. Proposed Initiatives

The Pedestrian Charter, the first undertaking of the Transportation Plan, was the subject of public consultations in June and in August of 2006 by the *Commission sur la mise en valeur du territoire, l'aménagement urbain et le transport collectif du conseil municipal de Montréal* [Standing committee on territorial improvement, urban development and public transit of the municipal council of Montréal]. This charter confirmed one of the major directions of the plan, namely the primacy of the pedestrian in Montréal's transportation system, and proposed a new sharing of the roads to make walking more pleasant and more secure.

2.1 The Implementation of the Pedestrian Charter

The deployment of the Pedestrian Charter within the boroughs and reconstituted cities includes three projects:

→ Implement Action Plans

This project consists of creating a portrait within the boroughs and cities of the situation in their territory and of defining the priorities for initiatives that will allow for the improvement of walking conditions by first targeting the actions to correct the deficiencies of the pedestrian network. Actions plans include the "pedestrianization" of certain street or sectors by applying a concept better known in Europe as "Green Neighbourhoods". The implementation of the action plans in the Pedestrian Charter represents expenditures in the order of $1 million over the next five years.

The downtown core is the subject of particular attention. An exhaustive analysis will be made of existing conditions near the hubs generating pedestrian traffic, especially in the areas surrounding access points to public transit.

For example, as of 2007, at the same time as the work that will be done to develop the bicycle path on boulevard de Maisonneuve, the 36 intersections concerned will be re-examined to give them a greater pedestrian character.

The city will encourage the forging of partnerships with the academic community, particularly with schools that have urban studies or transportation engineering programs, as well as with the *Direction de santé publique de Montréal* [Montréal department of public health], the *Institut national de santé publique* [national public health institute] and *Québec en forme*.[12]

The action plans will be integrated into local mobility plans, to be developed by the cities and boroughs.

→ Identify and Promote Best Practices

The definition and promotion of practices that are in keeping with the objectives put forward by the Pedestrian Charter in the territory of Montréal will make it possible to ensure their promotion to the population and encourage citizens' participation in municipal life.

Prizes will be awarded annually to encourage cities and boroughs to implement practices respectful of the Charter.

An annual symposium bringing together municipal partners will enable the sharing of knowledge gained throughout the year from completed projects. It will also be an opportunity to recognize local initiatives.

Such an approach will make it possible to take inventory of achievements. The information gathered will be collected in the form of records compiled in a report and will be made public through the Internet for the benefit of the entire community.

→ Develop a Guide for Urbain Design, Including Criteria for Universal Accessibility

The elaboration of this guide will allow for the updating and harmonization of criteria and standards for the development of public roads and parks with regard to the needs of pedestrians in the territory of Montréal. It will include a section focusing on the special needs of people with reduced mobility. The guide will be produced in partnership with the various partner organizations of the city.

The project will be implemented as soon as the Transportation Plan is adopted so it can serve as a reference tool for cities and boroughs as they develop their action plans and implement the Pedestrian Charter.

2.2 Pedestrian Safety

The *Service de police de la Ville de Montréal* [SPVM or Montréal Police Department] coordinates the *Table de concertation provinciale sur les piétons* [provincial round table on pedestrians]. Its mandate is to submit recommendations to reduce the number of traffic accidents involving pedestrians.

Taking into consideration these recommendations, Montréal intends to improve pedestrian safety by:

→ Adapting Traffic Lights to Pedestrians Needs

This project will complete a program already underway. Over the next five years, all traffic lights will be modified to improve pedestrian safety. The old lights with mechanical controllers will gradually be refitted with electronic controllers. This project will be an opportunity to reinforce the pedestrian character of the downtown area.

The project will give Montréal the opportunity to:

- improve pedestrian comfort and security by adding exclusive priority phases, sometimes simultaneously at the four corners of an intersection;
- continue to readjust the time allowed for pedestrians to cross the road at a slower pace to meet the needs of seniors and families with young children.

→ Install Traffic Lights with Digital Countdown Displays

There are presently 962 intersections in Montréal equipped with traffic lights with digital timer displays (i.e. 44%). This ratio is 46% for the island as a whole. The project consists of completing the program already underway and targeting intersections where the addition of pedestrian crossing lights with digital timer displays would be warranted. Considering the spin-off benefits of having this type of traffic light where it is needed, traffic lights will be refitted with this type of system between now and 2010. The cost is estimated at $1.8 million. A part of this amount could come from the *Programme d'infrastructures Canada-Québec* [PICQ or Canada-Québec infrastructure program].

→ Ensure that Pedestrians and Pedestrian Crosswalks are Respected

As the *Direction de santé publique de Montréal* [Montréal department of public health] demonstrated in a report published in 2005[13], an average of five pedestrians is injured each day on the island of Montréal. Figure 11 shows the geographic breakdown of pedestrians injured. As we can see, there is a concentration of collisions resulting in injuries in the central boroughs.

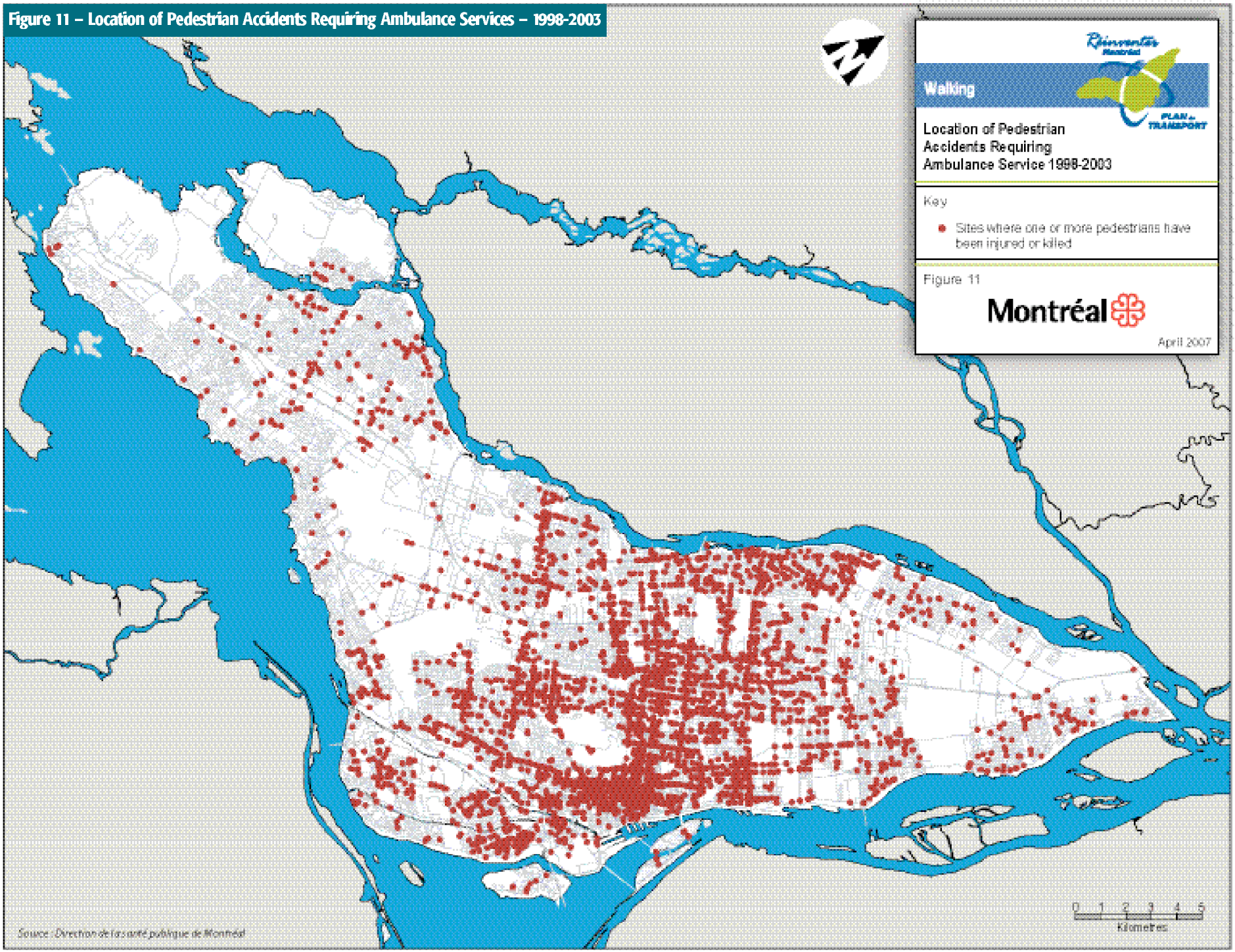
The lack of respect for pedestrian crosswalks is rampant. Montréal intends to remedy the situation to ensure pedestrian security and encourage walking by acting on several fronts: improving signage, intensifying road markings, reinforcing police control and creating annual awareness campaigns. By prioritizing respect for pedestrian crosswalks and pedestrians crossing at intersections, Montréal will be sending a clear message that it will no longer tolerate the bad habits that have developed over the years.

The urgency of the situation is an argument in favour of immediate action on this issue. In addition, as of 2007, Montréal will review the totality of pedestrian crosswalks to improve visibility for motorists and safety for pedestrians. As of 2008, it will launch a major awareness campaign, along with its partners, on respecting the Highway Safety Code. Between now and then, signage will be gradually improved and police control reinforced. The cost of this project is estimated at $4.4 million, including $4 million as of 2007 for the re-evaluation of pedestrian crosswalks. A sum of $100,000 is to be set aside annually for the awareness campaign.

→ Freeing Up Intersections

In many cases, pedestrians are not visible at intersections because there are vehicles parked right up to the stop line. By eliminating parking spaces at intersections, pedestrians and motorists can be more visible to each other, improving their safety.

Figure 11 – Location of Pedestrian Accidents Requiring Ambulance Services – 1998-2003



Therefore, as of 2008, parking spaces at intersections will be eliminated on major arteries, in collaboration with the cities and boroughs.

Sectors where pedestrian density is higher will be prioritized, especially in the central part of Montréal and, in particular near educational institutions and access points to public transit. This is a clear example of the concept of taking back public space to serve clienteles other than motorists.

→ Make Areas around Educational Institutions Safer

In the past, Montréal had a program to improve safety in the areas surrounding schools. Thanks to this program, more than 300 schools have been the subject of measures to improve safety. The city is committed to reviving this program. The selected schools will be the subject of particular attention in terms of signage, school crossings, bus stops, corridors and parking regulations. School administrations will be called upon to contribute to this program, which will be overseen by the boroughs and supported by the SPVM [Montréal police department]. The cost of this program, which will begin in 2008, is estimated at $3.5 million.

2.3 Comfort

To make walking more pleasant, Montréal plans to:

→ Develop and Implement a Systematic Program to Repair Sidewalks, Especially in Neighbourhoods with High Population Density

To ensure the quality of the sidewalk network, Montréal will establish a sidewalk repair program including:

- the preparation of surveys of the deficiencies affecting the comfort and the safety of pedestrians;
- the preparation of a guide on the harmonization of practices;
- a program of actions to be taken.

This project requires a considerable budget allowance in the order of $25 million for the next five years. This would include a preliminary study to determine the sectors where action is necessary, the preparation of a guide on the harmonization of practices and the development of a program of actions to be taken. Contrary to what has been done in the past, the sidewalk repair program on the arterial system will no longer be dependent on the road repair program.

→ Make Snow and Ice Removal on Sidewalks a Priority

For many years, snow removal operations have prioritized motor vehicle traffic. From now on, pedestrians will be the priority. In fact, since the Pedestrian Charter was proposed, many boroughs have modified their snow removal practices to prioritize sidewalks.

In the context of the climate change expected in the coming years, Montréal will review in detail its snow and ice removal practices. New methods of ice removal will be developed and snow removal practices will be reviewed to ensure pedestrian safety.

2.4 Integrating Pedestrian Needs into Urban Design

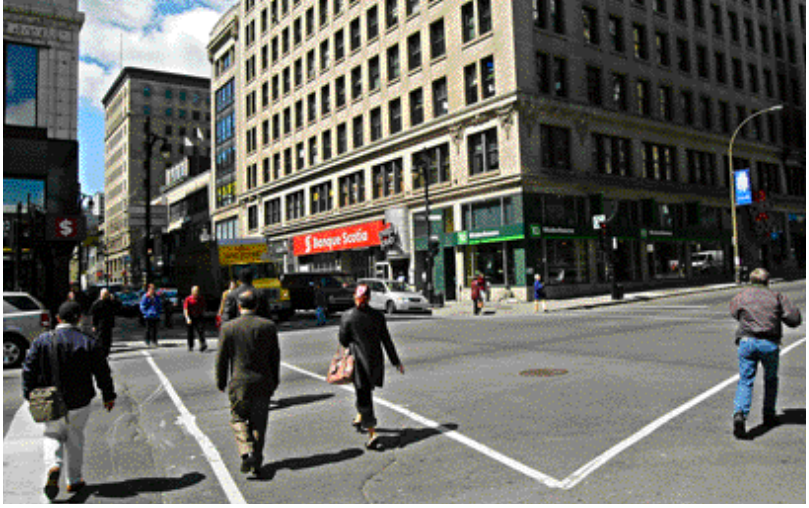
Residential neighbourhoods, school zones, areas surrounding parks, seniors' residences, hospitals and access points to public transit should be treated as sensitive sectors since they make up the heart of Montrealers' living environment and define their identity.

In addition, physical barriers that break the continuity of pedestrian routes will be progressively eliminated, wherever possible. Certain important hubs of activity in the city centre, though close together, are still isolated because of the lack of quality routes linking them, despite the presence of tunnels and footbridges. In certain cases, the site layouts are intimidating, driving pedestrians away and even causing them to modify their routes to avoid them.

Therefore, conscious of the importance of user-friendliness when it comes to walking, Montreal agrees to:

→ Institute Improved Pedestrians Facilities in Areas Surrounding Metro Stations, Commuter Train Stations, and Major Access Points to the Public Transit System.

As underscored in the Master Plan, public transit users are, *ipso facto*, walkers. The Master Plan notes that the areas surrounding access points to public transit are important passageways and meeting places and should be considered true public spaces in our living environment, designed so that they are pleasant spaces to be. To do so, Montréal will improve access to metro stations, commuter train stations and major access points to the public transit system, like bus terminuses.



All access points will be examined and actions to be taken will be prioritized. The program that will be established will target ten metro stations and five commuter train stations or terminuses each year. An amount of $1.25 million over the next five years is planned to install directional signage, street furniture, safety features and various other improvements. Additional sums may be invested later on, once the action plan has been finalized.

→ Pedestrian-Only Streets

The project consists of targeting corridors and hubs with high rates of pedestrian traffic that could be made pedestrian-only zones, primarily in the central boroughs. The borough councils, in concert with the executive committee, would be responsible for drawing up the list of streets that could be made pedestrian-only. The proposed concepts will be submitted for public consultation.

For many years now, the Ville de Montréal has developed several ways to close streets to automobile traffic: short-term, festival-related, seasonal and complete "pedestrianization". Within this project, the formula will be flexible and will maintain automobile access to authorized persons, notably residents.

These types of projects improve the quality of life for residents and safety for pedestrian and bicycle traffic while reducing the dependence on cars. They will be submitted for an analysis of their impact on the balance of urban activities and the quality of life for nearby residents, in accordance with the Master Plan.

→ Strengthen the Pedestrian Orientation of the Downtown Core

In accordance with the orientations proposed in the Master Plan, Montréal intends to give special attention to pedestrian spaces when redesigning the public domain. Streets in downtown Montréal and, in particular, those in the downtown core (for example, those providing comfortable, pleasant and stimulating environments for pedestrians), will receive special treatment.

→ Continue the Development of the Indoor Pedestrian Network and Improve Directional Signage

The underground pedestrian network, known in French as the *réseau piétonnier intérieur* or RÉSO (illustrated in figure 12), began in 1962 with the construction of a protected walkway between *gare Centrale* [Central Station] and the Place Ville-Marie shopping centre. Today, it is more than 30 kilometres long, making it the longest network of its kind in the world. It winds around ten downtown metro stations and plays a major role in personal travel. Some studies estimate that 500,000 people use the network each day.

The underground pedestrian network plays a complementary role to the surface network, particularly in the business district, where it helps to free up the sidewalks. It also encourages intermodal travel by linking major public transit facilities, like the Lucien-L'Allier station, *gare Centrale* and downtown bus terminuses, the metro and many buildings and universities.

Over time, the network evolved as new real estate projects were developed.

The project to standardize signage, implemented in the *Quartier international* with the cooperation of adjacent property owners, will gradually extend to other sections and buildings.

Montréal intends to seize every opportunity offered by new projects to strengthen the network, particularly within development projects of a cultural or institutional nature planned for the areas surrounding *Place des Arts* and in the *Quartier de la Santé*.

The following projects are especially targeted:

- the Voyageur terminus street block, surrounding the Berri-UQAM metro station;
- the future Concordia pavilions, linked to the Guy-Concordia metro station;
- the construction of the CHUM teaching hospital, the development of the future *Quartier de la santé*, near the Champ-de-Mars metro station;
- the extension of the "international axis" of the network (Place Bonaventure–Palais des congrès) in the *Quartier de la Santé*, linked to the Champ-de-Mars metro station;
- the extension of the "cultural axis" of the network (Place des Arts–Palais des Congrès) at the new facilities of the *Quartier des spectacles*.

As well, Montréal is committed to:

- continuing the installation of standard signage;
- ensuring better interrelationships between underground and surface networks by including major surface destinations in the RÉSO signage;
- improving access to the network for people with reduced mobility.

Figure 12 – Indoor Pedestrian Network

2.5 Universal Access

→ Annual Preparation of an Action Plan for Universal Access

For many years now, the Ville de Montréal has been working in close consultation with various associative partners to take into account the needs of people with reduced mobility. Since the Summit of Montréal in June 2002, universal access has been a municipal priority. In this context, and considering the modifications made to the "Act to secure handicapped persons in the exercise of their rights with a view to achieving social, school and workplace", the city and its associative partners have committed to the annual elaboration of an action plan and a report on the actions taken, tracking four development themes: architectural accessibility, access to programs, services and employment, sensitization and training of city employees and, finally, access to municipal communications.

The actions that will allow the improvement of access to public transit are presented in sub-section A.1 of the Transportation Plan.

In addition, the following projects are anticipated in the 2007 Action Plan:

- review design standards on public land to supply universal access and integrate these standards into the *Guide d'aménagement piéton* [Guide for pedestrian design];
- install pedestrian crossing lights with digital timer displays, as described previously;
- install touch screens at the level of curbcuts so that the visually impaired can detect intersections (pilot project);
- install audible warning signals at 30 intersections.

The budget associated with these steps will be evaluated annually, on the basis of the annual action plan presented and the results obtained.

3. Summary

Montréal would like to see more people walking in the city and is proposing actions that touch upon safety, comfort and the pleasantness of travel on foot. Montrealers should no longer have to sacrifice quality of life to adapt the fabric of urban life to the needs of the automobile. On the contrary, all means will be used to allow Montrealers to take back their public spaces, the roads in particular, which will help to retain and attract households in Montréal. The Pedestrian Charter will provide the necessary framework for actions to make pedestrians the priority in the transportation system.

Table 5

COST OF PEDESTRIAN PROJECTS

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	0-5 YEARS	5-10 YEARS	+10 YEARS	TOTAL	(THOUSANDS $)
Implement action plans set out in the Pedestrian Charter	1,000					
Identify and promote best practices	100					50
Create a pedestrian guide, including universal access criteria	100					
Adapt traffic lights to the pedestrians needs		600			**600**	
Install traffic lights with digital countdown displays		1,800			**1,800**	
Ensure that pedestrians and pedestrian crosswalks are respected at intersections	100	4,300			**4,300**	100
Freeing up intersections	50	250			**250**	
Make areas around educational institutions safer	500	3,000			**3,000**	
Establish a systematic program to repair sidewalks	500	25,000			**25,000**	
Make snow and ice removal on sidewalks a priority	100					
Deploy pedestrian-friendly measures at major access points to the public transit network	250	1,000			**1,000**	
Make pedestrian-only streets			10 000			
Continue the development of the indoor pedestrian network and improve signage	50	250			**250**	
Annual preparation of an action plan for universal access						50
TOTAL	**3,750**	**36,200**	**10,000**		**46,200**	**200**

Cycling: Shifting into High Gear!

1. Orientations

Bicycling is enjoying ever-increasing popularity, especially as a practical mode of transportation. Its benefits are widely recognized: it does not take up much space, and is fast, efficient and non-polluting–plus it has many health benefits. Establishing incentives to increase the use of bicycles supplies many advantages such as, in particular, improving public health and quality of life in the urban environment.

However, the infrastructures reserved exclusively for bicycles in Montréal have not evolved at the same pace as cycling's growing popularity over the past few years. Similarly, little progress was made regarding parking for bicycles or the integration of bicycles within various transportation systems like the metro, buses, taxis or commuter trains.

Though the city was crowned the most bike-friendly city in North America in 1999 and, in 2001, topped the list of Ten Best Cycling Cities in the category of cities with over one million inhabitants, we have a long way to go to recapture these prestigious titles or at least remain in the leading group of cities firmly committed to implementing measures to promote of bicycle use.

A change of course is essential. And, for this reason, Montréal is betting on becoming the cycling city "par excellence", and a source of inspiration through the implementation of bold and avant-garde measures. This is the only way that we will succeed in changing habits and behaviors to make cycling the preferred mode of transportation for all types of personal travel, whether for work, recreational activities or studies.

Montréal recognizes the bicycle as an essential component of the current transportation system and intends to take innovative action by deploying new measures to promote active modes of transportation.

A Few Big Successes – so Far!

- Implementation of the *Plan d'accessibilité et de mobilité à vélo* [Plan for bicycle accessibility and mobility] in the downtown area;
- Development of new bicycle lanes on the streets, accessible year-round;
- Redesign of the bicycle path on the Ile Perry Bridge, the first stage in the creation of the *véloroute* ["bikeway" or bicycle route] in the CP railway right-of-way.

However, the current bicycle network, apart from being incomplete, only partially meets this goal. More precisely, the following elements affect the conditions or safety of bicycle travel: the limited number of bicycle links heading toward employment hubs, services, schools, parks, metro stations, the shortage of places to park and the numerous breaks in the paths of the network. The city's Master Plan, adopted in 2004, drew attention to this situation and proposed many measures to remedy the situation and to encourage and facilitate bicycle travel.

2. Proposed Initiatives

To do so, concrete actions will have to be taken regarding bicycle-friendly infrastructures, bicycle parking for cyclists and the complementarity between cycling and public transit.

The city plans to take action on several fronts:

2.1 The Bicycle Network

→ Double Montréal's Bicycle Network

The Transportation Plan adheres to the orientation of the Master Plan to expand the bicycle network in Montréal, proposing to double it. From its present length of 400 kilometres, the bicycle network on the island of Montréal would increase to 800 kilometres. This ambitious project for the development of the bicycle network would be carried out over a period of five to seven years to encourage the opening of links between boroughs, linked municipalities and major traffic-generating hubs (Figure 13). The cost of developing the 400 new kilometres of bike paths is estimated at $50 million. Montréal has already submitted a request for financing from the *Plan vert* [Green Plan] to the Government of Québec.

The network in Montréal is composed of three types of bicycle facilities:

- the bicycle path on a street or on an exclusive right-of-way. The bicycle path on an exclusive right-of-way completely separated from automobile traffic is found primarily in parks. Bicycle paths on the street are separated from other traffic lanes by a physical barrier and ensure a level of safety for more vulnerable users (children, seniors, families);
- the bicycle lane is a reserved lane for cyclists, set up in the roadway on the right-hand side of automobile traffic. This concept has the advantage of being permanent and easy to maintain. It is designed to support cycling as a means of transportation;
- a designated roadway is a road officially recognized as a bicycle route that cyclists and motorists share.

The city should, as a priority:

- **Complete the Implementation of the *Plan d'accessibilité et de mobilité à vélo au centre-ville***

  The Plan d'accessibilité et de mobilité à vélo au centre-ville [Downtown bicycle accessibility and mobility plan], adopted in 2005, envisaged the building of 26 kilometres of bicycle infrastructures. To date, the plan is 31% complete (8 km). The remaining 18 kilometres will be built this year. As of 2007, Montréal will set up a major bicycle path on boulevard de Maisonneuve.

- **Build the First *véloroute* ["Bikeway" or Bicycle Route] on the Island of Montréal**

  This project consists of repurposing the present CP railway right-of-way that crosses the island of Montréal from the Rivière des Prairies right to the Saint-Lawrence River. A part of this right-of-way could be transformed into an actual linear urban park where cyclists could take centre stage.

- **Complete the Bicycle Beltway around the Periphery of Montréal Island**

  The building of the beltway in the west part of the island is one of the major issues that came out of the Summit of Montréal in 2002. A few segments not yet developed (about 15%) must be completed, especially in the western part of the island, to allow cyclists to ride the perimeter of the island of Montréal.

- **Strengthen Cross-River Bicycle Links**

  Access for bicycles from one shore to another remains unequal: there are river shuttles with limited hours of operation, bicycle routes closed temporarily on bridges, inaccessible bicycle paths, etc. Shore-to-shore bicycle traffic is important and therefore it is necessary to ensure the permanency of these links.

- **Carry Out a Pilot Project to Allow Cyclists to Use Reserved Bus and Taxi Lanes**

  The co-existence of cyclists, buses and taxis in the same traffic lane is entirely possible. This type of arrangement was set up when the realization was made that the average speed of bicycles and buses was about the same. As well, reserved lanes often service employment sectors and commercial zones also frequented by cyclists.

  The idea consists of reviewing the geometry of reserved lanes to allow cyclists to ride in complete safety. For Montréal, this new type of arrangement can prove to be advantageous in that it is not necessary to set up parallel bicycle paths.

  If the results of this pilot project are conclusive and demonstrate that the safety of cyclists is ensured, this type of project could be extended to other reserved lanes.

→ Apply Norms and Standards to Existing Bicycle Paths and Lanes

The Master Plan emphasizes the necessity of bringing existing bicycle facilities up to standard. This objective, which has been taken up by the Transportation Plan, involves the evaluation and targeting of corrective measures that could be applied to increase the level of comfort and safety.

A safe and well-maintained cycling network is important for the city's cyclists and will encourage them to use it regularly. As well, spot repairs done on a regular basis will extend the life span of the infrastructure.

Bringing the bicycle network up to standard requires an investment of $23 million. The work to be done on the overall network will be spread out over the coming years.

➞ Develop Montréal's "Winter Network"

With milder and milder winters, cycling is gaining in popularity during the cold months. Even though the majority of cyclists hang up their helmets as soon as the bicycle paths are officially closed for the season, a good number pedal on, braving weather conditions that are sometimes difficult, preferring this mode of transportation above all others despite the inconveniences. **That is why Montréal intends to make part of the bicycle network accessible year-round.**

Safety for cyclists is considerably improved if they have the possibility of riding on bicycle facilities that are cleared of snow and well-maintained. This avoids having to use streets or major arteries that can sometimes represent a risk.

Currently, on the 70 kilometres planned for Montréal's Winter Network, about ten (14%) are already passable year-round (Figure 14). More than 50% of the Winter Network will be accessible in 2007.

The costs associated with transforming certain sections of the seasonal bicycle network into a permanent bicycle network have not yet been evaluated. Such an operation would be spread out over a period of about five years, at the end of which the city would be equipped with a Winter Network, that is, a permanent bicycle network accessible in summer and winter. This year, in addition to the new permanent bicycle lanes that will be developed, the city intends to review the existing cycling facilities on rue Saint-Zotique and to propose new ones, better adapted to traffic issues and accessible throughout the year.

➞ Ensure the Development of Cross-River Marine Shuttles

Currently, four shuttle services are operated between Montréal and the South Shore. More precisely, service is supplied at the following locations:

- between Lachine and Châteauguay;
- between promenade Bellerive and Île Charron;
- between the Vieux-Port de Montréal and Île-Sainte-Hélène;
- between the Vieux-Port de Montréal and Longueuil.

River shuttles between the island of Montréal and its neighbouring shores could constitute an appealing option for cyclists, and even for pedestrians, wishing to cross from one shore to the other.

However, the periods of operation are often variable and limited, going from May or June until September or the beginning of October. As well, the shuttles do not necessarily offer much flexibility in terms of schedules. For example, departures from the piers in the Vieux-Port de Montréal heading for Longueuil start at 10:35 a.m. on weekdays, while at the Port de plaisance Réal-Bouvier, in Longueuil, departures for Montréal start at 11 a.m. For these reasons, the river shuttles are used almost exclusively by tourists and vacationers.

For these shuttles to be considered an important link in the chain of active modes of transportation—cycling and walking—and attract a primarily business clientele (commuters going to work), the hours of operation, schedule and frequency of departures will have to be reviewed. The fare structure should also be reviewed if we wish to supply services that are accessible and competitive with other modes of transportation.

Therefore, Montreal intends to ensure the permanence and development of river shuttles.

2.2 Self-Service Bicycles

➞ Implement a Self-Service Bicycle Rental System

This involves designing and developing a bicycle rental system in which users can borrow bicycles for their transportation needs for a nominal fee based on a specific period of use. These bicycles would be equipped with identification and tracking systems and would be compatible with parking meters specifically designed for this type of bicycle. Such a system will be initially implemented in the downtown core, and then extended to other sectors of the city.

Travel by bicycle could increase significantly due to the availability of a fleet of bicycles throughout the downtown area. For short trips, even during business hours, renting a bicycle could be an appealing and inexpensive alternative to the automobile.

The city's Master Plan advocates the implementation of self-service bicycles, but limits itself essentially to businesses and educational institutions. However, to encourage the increased use of bicycles as a means of transportation, this service must be offered to all potential users.

The cost of implementing a self-service bicycle system in Montréal is estimated at $15 million. Montréal would like to conclude a business agreement setting a partnership with a for-profit or non-profit corporation. The company selected would be responsible for the implementation and operation of the service. To this end, discussions are already underway with partners for the creation of a social economy enterprise for this project.

2.3 Parking for Bicycles

→ Five Times the Number of Parking Spaces for Bicycles

There needs to be a significant increase in the number of parking spaces for bicycles, particularly in the downtown area where demand is higher, by adding a sufficient quantity of safe and easily accessible parking facilities. This concern is also expressed in the Master Plan, which suggests establishing an adequate number of safe parking spaces for bicycles, particularly near employment and educational centres, set up inside buildings or in areas protected from inclement weather.

The availability of safe and accessible parking facilities for bicycles is an incentive for the use of bicycles as a mode of transportation. Quality, well-located parking facilities would also significantly diminish the risk of vandalism and theft.

- **Implement a Network of Bicycle Stations**

  A bicycle station is an indoor space designed and set up to park a large number of bicycles, often several hundred. There, one can find a variety of services, such as lockers, repair shops, showers, toilets, daycare services, etc. The bicycle station would be found in areas frequented by cyclists, often at high-traffic cycling intersections (Figure 15).

  There are numerous advantages for the cyclist, who could find a multitude of services under the same roof. As well, the bicycle racks would be secure, deterring thieves. Finally, since these are indoor facilities, the bicycle is protected from adverse weather conditions.

- **Install New Parking Facilities for Bicycles at Metro Stations**

  This measure is already described in the Master Plan. It is part of measures proposed to better combine the use of bicycles and the public transit system by offering cyclists the possibility of parking their bicycles at a metro station in a safe and weather-protected area. The idea consists of reviewing the number and quality of existing parking facilities and proposing new ones that are more appealing and likely to better respond to the needs of cyclists.

  More cyclists will ride to metro stations if they know they can park their bicycles in complete security. As well, it is an inexpensive way to encourage active modes of transportation.

- **Modify By-Laws to Oblige Developers to Provide Parking for Bicycles in New Real Estate Developments**

  This new approach will contribute to addressing the lack of parking areas for bicycles in certain neighbourhoods of the city.

  The addition of new bicycle racks available year-round in the territory, as well as at metro and train stations, the replacement of obsolete racks by new, more secure and better designed ones, and the creation of bicycle stations would require investments in the order of $43 million, spread out over about fifteen years. As in the case of self-serve bicycles, Montréal would like to make a call for private partners to operate certain aspects of bicycle parking. This could be done through corporate sponsorships or through the creation of a social economy enterprise.

2.4 Bicycle Racks on Buses and Taxis

➞ Equip Part of the STM Bus Fleet with Bicycle Racks

This is an initiative that could combine two modes of transportation: cycling and public transit. This measure was retained in the Master Plan, which suggested that Montréal draw inspiration from other cities' experiences to develop such a system. Many public transit corporations, both in Canada and the United States, have equipped their city buses with bicycle racks in the front of each vehicle.

Such a measure allows cyclists to appreciably increase their travelling radius or cross travel barriers unsuitable for bicycle traffic, such as bridges or tunnels. As such, even if faced with cold or rainy weather, fatigue or mechanical problems, cyclists can still get home with their bicycles using public transit.

As of now, none of the STM buses are equipped with bicycle racks and it will be up to the STM to determine which sectors already serviced by bus lines could eventually supply this new service to cyclists. The STM intends to move forward with a pilot project to define the conditions and procedures needed to install bicycle racks on a portion of its bus fleet.

➞ Equip Taxis on the Island of Montréal with Bicycle Racks

As with city buses, taxis on the island of Montréal could be equipped with bicycle racks installed on the back of their vehicles. This idea already exists in the Master Plan for Montréal, which sees this as yet another opportunity to encourage a greater complementarity between the bicycle and public transit.

Such an initiative would provide essentially the same advantages as the former project for city buses, but with a difference: taxi service offers the benefits of flexibility and the cyclist is not limited by the restrictions of the bus schedules.

In the territory of Montréal, taxi operations are governed by a provincial law and a municipal by-law, all of which are managed by the *Bureau du taxi et du remorquage* [BTR or taxi and towing bureau]. Montréal plans to collaborate with this organization to determine the level of service that should be provided to cyclists.

2.5 Review Existing Regulations

➞ Review Existing Regulations and Standards Regarding Bicycle Access on the Metro and on Commuter Trains

If we want to increase the use of bicycles and encourage an complementarity between cycling and other modes of transportation, certain practices must be reviewed. Consequently, there should be a review of the periods during which bicycles are permitted in metros and on commuter trains.

3. Summary

Travelling by bicycle in Montréal can be an enjoyable and rewarding experience as long as cyclists feel comfortable enough to want to repeat the experience and use their bicycles on a daily basis for all sorts of trips.

However, as much as cycling is increasing in popularity as a means of travel, the infrastructures devoted exclusively to bicycle use have not evolved at the same pace. Thus, several boroughs find themselves with an incomplete bicycle network that is poorly integrated into the urban framework, lacking ties to the principal focal areas for travel or to adjacent boroughs.

It should be noted that in several places the number of parking spaces for bicycles on the sidewalks or in public places is inadequate and respond so poorly to demand that cyclists are forced to attach their bicycles to street furniture. Finally, the bicycle would be even more efficient if it was better integrated into the various public transit systems, like buses, taxis and suburban commuter trains, as is the case in many European countries.

Faced with these facts, the city recognizes that cyclists' needs have changed and that their travel habits have clearly evolved. It is time to re-examine certain practices, to adapt ways of doing things to new realities, to innovate and rethink the very function of the bicycle network. The development of new bicycle infrastructures across the island of Montréal over the next few years, improvements to the parking facilities available for bicycles and the complementarity between the bicycle and the public transit system are all factors that

allow us to believe in a significant increase in bicycle travel in the coming years.

For several years now, Montréal has invested in the development of new bicycle facilities and in bringing the existing network up to standard. The scope of the actions outlined in the Transportation Plan requires the elaboration of a program dedicated to the bicycle network in which Montréal will invest $15 million annually for the next six years. Such a scenario would make it possible to better plan the sequence of actions aimed at doubling the bicycle network and how best to get the existing network up to standard.

Table 6

COST OF BICYCLE PROJECTS

	STUDIES AND OTHER START UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	0-5 YEARS	5-10 YEARS	+10 YEARS	TOTAL	(THOUSANDS $)
Double the bicycle network size	6,000	30,000	20,000		**50,000**	
Applying norms and standards		8,000	7,500	7,500	**23,000**	
Develop the Winter Network			*To be determined*			
Implement a self-serve bicycle system [1]					**15,000**	
Quintuple the number of parking spaces for bicycles [1]		13,000	15,000	15,000	**43,000**	
Equip STM buses and taxis with bicycle racks		2,500	250	250	**3,000**	
Review regulations concerning bicycle access on metro and commuter trains			*To be determined*			
TOTAL	**6,000**	**68,500**	**42,750**	**22,750**	**134,000**	**-**

[1] Partnerships according to a business plan

Figure 13 – Current and Proposed Bicycle Network on the Island of Montréal

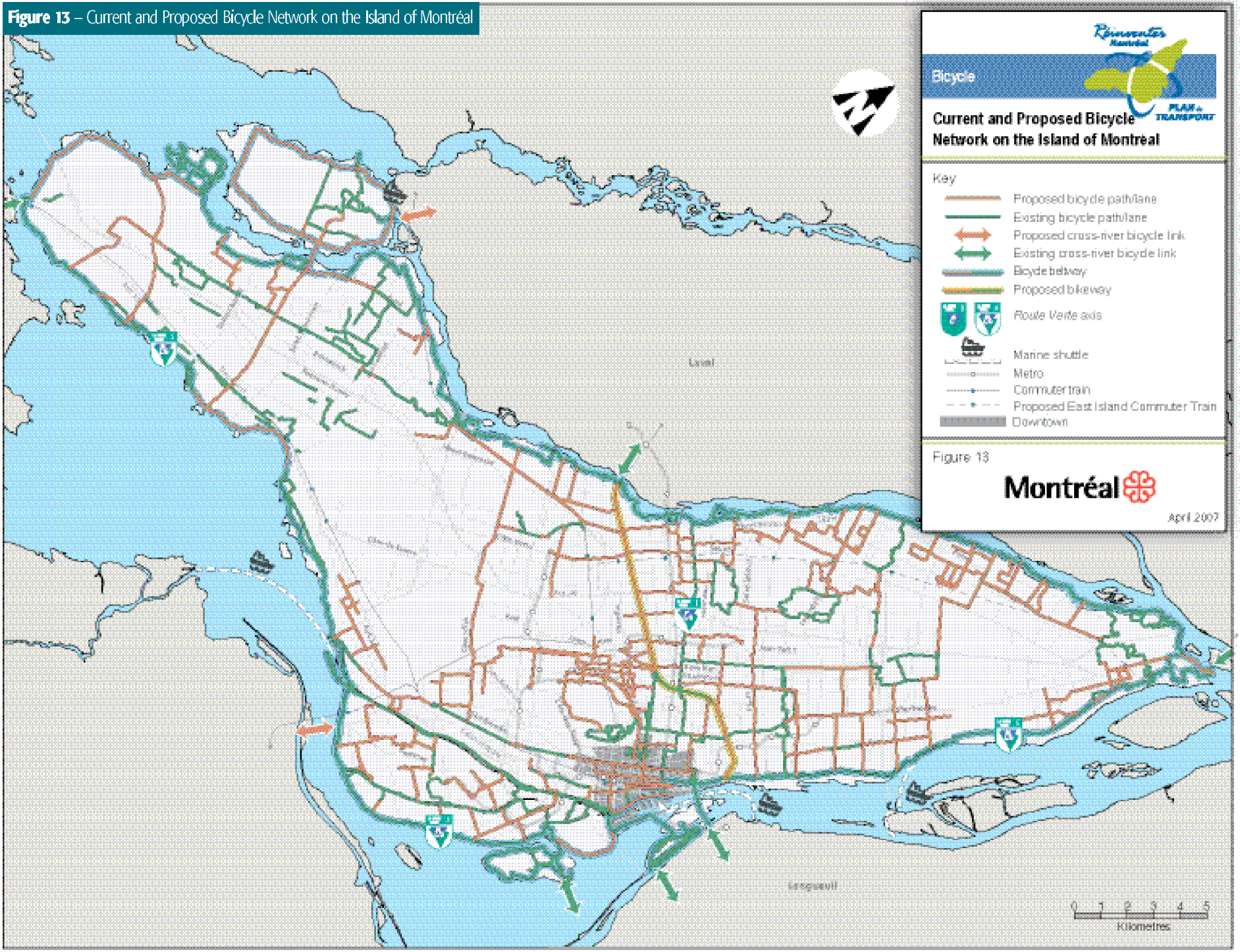


Figure 14 – The Winter Network: the Year-Round Cycling Network

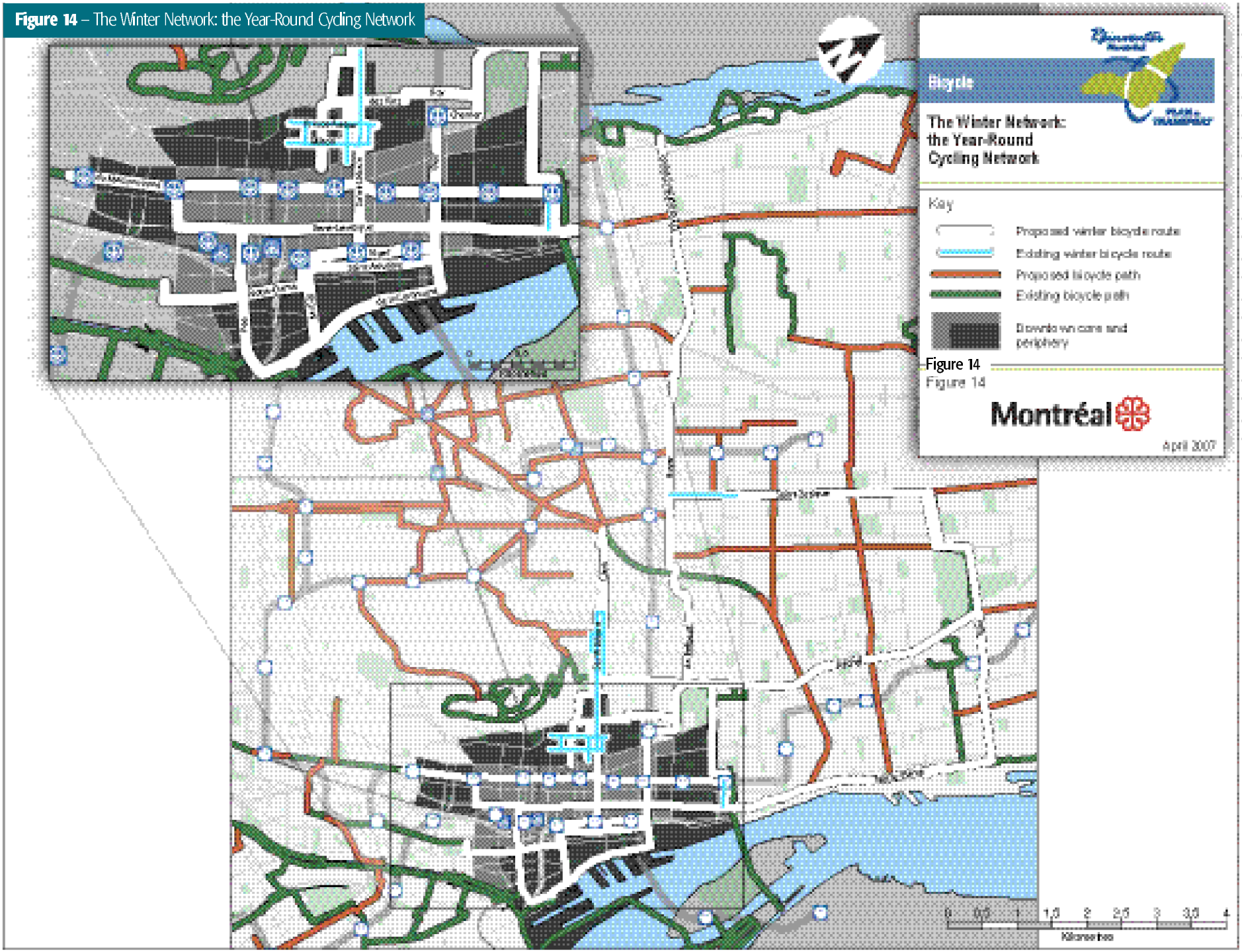


Figure 15 – Downtown Bicycle Stations

A3 – Encouraging Ride Sharing

Carpooling: Together, We Make a Difference

Existing Initiatives

In the region of Montréal, many organizations supply matching services for carpoolers. The oldest is *Allo Stop*, specializing in match-ups for long-distance travel. Since 2005, the *Agence métropolitaine de transport* (AMT), in accordance with the *allégo* program, set up *Covoiturage allégo*, an online car-matching assistance service facilitating the organization of carpooling to work, school or park-and-ride lots.

Covoiturage allégo is offered free of charge to workers and students in the metropolitan area of Montréal. To have access to the system, however, the business or establishment to which they belong must register with *Covoiturage allégo* and join a transportation management centre (TMC).

These TMCs are partners with *Covoiturage allégo*. Businesses or establishments that register benefit from a range of services to facilitate carpooling: business recruiting booths, discounts or commercial savings, guaranteed ride home, customized follow-up of carpools, etc. Currently, more than 250 businesses and establishments are registered with *Covoiturage allégo*.

Challenges and Opportunities

However, despite efforts made over the course of the past few years, it is hard not to notice that the situation has not really evolved appreciably. The average vehicle occupancy rate of cars travelling toward Montréal is only 1.27 persons at the morning peak period.

Many factors account for this situation. The most significant are the absence of a truly reserved carpool lane network and the lack of parking exclusive to carpoolers. On the island of Montréal, there is only one lane reserved for High Occupancy Vehicles (HOVs) and it is on Highway 15, heading northward only. In addition, carpoolers do not benefit from tax breaks or reduced insurance premiums.

The American experience shows that carpooling programs supported by related measures (reserved lanes, parking, etc.) can reduce to-and-from commuting by 10% to 30% for participating businesses.

Proposed Initiatives

To boost the practice of carpooling, Montréal is calling on its partners and proposes the following projects:

→ Encourage Ride Sharing through Preferential Measures in Public Transit Corridors

The section on public transit describes the possibility of encouraging carpooling in public transit corridors with preferential measures on the major road networks, notably on the following corridors: Highway 40 (east of Highway 25 and west of boulevard Saint-Charles), Highway 20 (west of the Turcot interchange and beyond the Lafontaine Tunnel) and the Laval sections of Highways 13, 15, 25 and 10. The feasibility of these projects must be evaluated on a case-by-case basis, since the implementation of carpooling incentives on these corridors may, in certain cases, compromise the efficiency of preferential measures implemented for public transit.

→ Implement Reserved Parking for Carpoolers

The section on parking outlines a project to create exclusive parking for carpoolers. In the majority of cases, the actions are aimed at existing parking facilities, within which a minimum of 10% of spaces would be reserved for carpoolers when the occupancy permit is renewed. In all cases where new parking facilities are justified, spaces reserved for carpoolers would, from now on, be mandatory.

→ Encourage Ride Sharing

The section on managing demand shows the efforts the city intends to make to replace individual car use. To ensure that the physical measures put into place (reserved lanes and parking) will actually be used, Montréal would like to sensitize the population to the benefits of carpooling, in partnership with employers and institutions. The collaboration of transportation management centres would contribute to the success of these initiatives. The amount of $100,000 annually needed for this project would finance the development of a strategy aimed at informing individual drivers of the possibility of car-matching.

Car Sharing: Clubs and Cooperatives

One more Step toward Integrated Mobility

In 2006, the car sharing services offered in Montréal had 8,500 members, a number that is increasing at a rate of about 30% per year. According to data provide by the industry, between now and 2009, the number of members could rise to 18,000.

This new form of automobile use is part of a suite of appealing new products on the "mobility market" and has many benefits, particularly

in densely populated areas typical of Montréal. But one cannot help but observe that assistance offered by governments and municipalities to car sharing initiatives is unstructured, either because of lack of awareness or lack of commitment to a transportation vision promoting the reduced dependence on the automobile.

Therefore, there is currently no public mechanism to ensure reserved parking places for shared vehicles, limiting the expansion of the practice.

On the other hand, since car sharing falls within the vision of building complementarity between the various existing modes of transportation (taxi, metro, train, bus and active transportation), and the principle that no single mode of transportation, taken separately, can equal the convenience of the private automobile, Montréal wants to create links between existing services to better compete with vehicle ownership. Montrealers would be the primary beneficiaries of a direct tie between operators of public transit services and car sharing in a mixed approach to better manage mobility.

Many European examples demonstrate that the combination of carpooling and public transit can actually lead to increased fare revenues, despite discounts given, and an optimal use of the most appropriate modes of transportation, based on their relative efficiency and their respective costs.

It is worth noting that the decrease in the use of public transit observed over the past few years has begun to turn around since 1996. This new increase in patronage remains fragile, however, against the backdrop of easy access to automobiles and public financing constraints. It requires an ongoing effort to improve the transportation services offered and the development of new components for the transportation mix. Car sharing is part of this set of new products to complement public transit and respond to the increasingly diverse mobility needs dictated by modern life.

In conclusion, car sharing has the potential to become an important tool in the attainment of the objectives of the Transportation Plan. As a result, Montréal wants to take action to develop car sharing and is committed to:

→ Stimulate Car Sharing by Providing Car Sharers with Parking

The costs and details of this project are presented in the section on parking.

→ Creating the Necessary Links between Car Sharing and Public Transit to Reduce the Dependence on the Automobile

For the STM, this type of alliance would allow for the improvement in the quality of services by better responding to the overall needs of users, thus establishing loyalty within its clientele. The management mechanisms will be developed by partners involved in the project, inspired by the successfully implemented projects in Laval (*Société de transport de Laval*), Gatineau (*Société de transport de l'Outaouais*) and Québec City (*Réseau de transport de la Capitale*) in collaboration with *Communauto*.

Taxis: an Efficient and Flexible Mode of Transportation

1. Orientations

With some 4,500 vehicles combing the streets of the territory each day, taxis are an essential component of the transportation system. They contribute to the range of public transit options by providing a service complementary to the public transit system, particularly in sectors and during times of day where service is limited. Taxis provide transportation services to the entire population and to visitors, making more than 37 million trips each year. Montréal recognizes the role of the taxi as an efficient and flexible mode of transportation that enables a reduction in the dependence on private automobiles while supporting economic activities in the territory.

Through the *Bureau du taxi et du remorquage* (BTR), Montréal assumes the responsibility for overseeing the general operation of taxis within its territory. As such, the BTR plays a guiding role in terms of structure, orientations, control and compliance to ensure that users enjoy the best quality of service possible and that there is a harmonious sharing of the road networks with other users.

As well, since taxis are often the first contact that tourists have with life in Montréal, taxis play a key role in the city's tourism industry. Given this reality, the BTR also oversees various aspects of the taxi industry to make sure that taxi drivers take their role as our city's ambassadors seriously, by providing courteous service, safe and competent driving practices and a thorough knowledge of the territory.

A survey of the quality of taxi service in the metropolitan area, conducted in September 2006 and managed by the BTR, on the frequency of taxi use, reasons for taking taxis, perceived user safety and general satisfaction with taxis, revealed that, overall, Montréal taxi drivers deliver professional services and admirably fill their role as the city's ambassadors.

Overall, 95% of users said they were satisfied with the trips they had made by taxi, contradicting the often negative opinion circulated about the taxi industry. Given that almost all respondents to the survey use taxis at least a few times a year and more than 40% use taxis several times a month (which translates into an average of 39 taxi trips per person per year), it goes without saying that the taxi is an essential mode of transportation for a significant portion of the population of the territory.

Montréal intends to increase the number and proportion of trips made by public transit, bicycle and on foot. The taxi will be called upon to ensure a greater number of trips by complementing these modes of travel, especially in the downtown area.

Given this perspective, there are numerous issues to be addressed by the taxi industry: improving the quality of service, reinforcing links with other modes of transportation and encouraging innovation and new technologies in the industry, notably to evolve toward environmentally-responsible choices of vehicles.

2. Proposed Initiatives

To respond to these issues, Montréal is committed to supporting the taxi industry, particularly in the following ways:

2.1 Improving the Quality of Services

Even if the majority of customers reported that they were satisfied with their trips by taxi, improving the quality of the services is one of the main priorities set by the industry in the coming years. The improvement of services to residents and visitors will essentially take the form of better matching available services to demand and improving the quality of the services delivered by taxi drivers. In this sense, to better respond to the needs of passengers, Montréal would like to see the BTR, in collaboration with its partners, commit to:

→ Establishing a Policy for the Design of Taxi Stands

To better match available services to demand, a policy for the design of taxi stands will be developed, with the aid of all industry partners. The policy will aim to provide a greater number of taxi stands in the territory that are smaller but better equipped in terms of street furniture, maintenance and snow removal. Establishing this policy will involve defining specific criteria for matching available services to demand, particularly regarding the location and size of taxi stands.

The investments for such an initiative would include one-time costs for research and development, the preparation of the reference document, capital costs and costs related to the consultation process with partners.

→ Developing the "Accessible Taxi" Market

Currently numbering 180 in the territory, accessible taxis represent an efficient and flexible mode of private transportation totally dedicated to persons with reduced mobility, especially those who are not serviced by the special transportation services offered by the STM. To ensure a better match between available services and demand for this particular service, the number of permits granted for accessible taxis will increase in accordance with the needs of this clientele.

→ Improving Drivers Training

This measure aims to provide better training to all taxi drivers through ongoing training provided by the BTR. In addition to the mandatory 150-hour basic training and instruction on serving clients with reduced mobility and the promotion of tourism, this program will offer a range of courses on various strategies contained in the Transportation Plan, notably with regard to travel safety and energy-efficient vehicle use, and will target all drivers.

2.2 Improve the Complementarity between the Bicycle and the Taxi

→ Implement Measures to Increase the Number of Taxis Equipped with Bicycle Racks

As mentioned in the section on bicycle use, Montréal supports the project to equip all taxis in the agglomeration of Montréal with bicycle racks. In addition to increasing the range of travel distances possible for cyclists, this initiative will offer cyclists more mobility and flexibility. To strengthen this measure, taxi stands specifically for taxis equipped with bicycle racks will be set up in various strategic zones in the territory. Over all, Montréal regards this strategy, which is part of the Master Plan, as an opportunity to encourage a greater complementarity between the bicycle and other modes of transportation.

2.3 Encourage Innovation and Modernization in the Taxi Industry

Montréal is committed to supporting the *Table de concertation de l'industrie du taxi à Montréal* [Montréal taxi industry consultation committee] as well as the *Table de concertation provinciale de l'industrie du transport par taxi* [provincial consultation committee on the taxi transportation industry]–composed mostly of industry representatives and institutional stakeholders–in its studies, activities and projects on innovation and modernization in general. As such, Montréal will participate in various discussions and position itself regarding the various issues in the industry, including:

- the use of GPS systems in taxis;
- incentives to keep vehicles clean;
- the adoption of environmentally-friendly and safe behaviour;
- the authorization of advertising in taxis;
- the opportunity of requiring a common colour for all taxis.

3. Summary

Intermodality is an important element of personal travel and taxis are an important piece of the transportation puzzle. Overall, the taxi industry plays a key role in the city, both in terms of its strategic position in the tourism industry and of the critical role it plays in the organization of personal travel throughout the territory. Through the measures and projects proposed in its Transportation Plan, Montréal recognizes the taxi as a flexible and efficient mode of public transit and as a support to the city's economy.

Managing Demand: Doing more with Less

Efforts Made in the Region of Montréal

Managing demand consists of a whole suite of measures targeted to promote transportation choices that are appealing and competitive with individual car use. The proposed solutions, from the shared use of vehicles to the implementation of measures like reserved lanes and parking facilities, are often seen as innovative because they target individual behaviour by influencing the need, timing and choice of mode of transportation.

It is becoming more and more necessary to manage demand in the context of scarce public finance resources, especially given that traditional solutions are inadequate for resolving mobility problems and problematic traffic congestion.[14]

To promote measures to manage demand, the *Agence métropolitaine de transport* (AMT) developed and implemented the *allégo* program several years ago. The implementation of this program is operated, at least in part, by transportation management centres (TMCs).

The TMCs offer businesses and establishments expert advice on the organization, management and promotion of transportation alternatives to automobiles and support the operation of the *allégo* program. There are four transportation management centres across the island of Montréal:

- *Voyagez Futé Montréal* (downtown transportation management centre);
- *Centre de gestion des déplacements* in the east-end of the Montréal;
- *Centre de gestion des déplacements* in Ville Saint-Laurent;
- *Centre de gestion des déplacements* in Côte-des-Neiges.

Montréal's Involvement

Montréal recognizes the essential role of employers and institutions in attaining the vision of the Transportation Plan. As such, the city is committed to:

→ Asking the Government of Québec to Require Institutions and Employers of more than 100 Employees in the *Communauté métropolitaine de Montréal* (CMM) to Develop a Mobility Management Plan and to Ensure its Financing via the *Politique québécoise sur le transport collectif* [Québec Policy on Public Transit]

The enhancement of public transit supply and measures to encourage active modes of transportation that will be implemented will not be enough to make the switch from individual automobile use to sustainable modes of transportation. These initiatives will only succeed with the collaboration of employers.

Since 2000, according to the *Plan de gestion des déplacements pour la région métropolitaine de Montréal* [mobility management plan for the Montréal metropolitan region] submitted by the *ministère des Transports du Québec*, employers and institutions are invited to voluntarily implement measures to manage demand. While the results are encouraging, there is still a long way to go to make a significant difference. Legal provisions to oblige companies to set up such measures would have the advantage of generalizing their application on a larger scale.

→ Ensuring that all Major Projects Adopt Mobility Management Plans

Montréal cannot ignore the need for parking that arises as a result of major construction projects, notably the CHUM health centre. In order to conciliate the will to reduce the parking supply with the needs arising from major developments, Montréal will from now on require that developers submit mobility management plans, in which all aspects of personal travel are evaluated according to the existence of means of transportation other than individual automobiles, such as public and active modes of transportation.

→ Setting up Mobility Management Centres in all Areas of the Agglomeration between now and 2008

Mobility Management Centres ensure the link between transportation agencies, employers and institutions. To assist employers in their efforts to encourage public and active modes of transportation, Montréal will set up Mobility Management Centres in all areas of the agglomeration, in partnership with the Government of Québec, through the *Politique québécoise sur le transport collectif* [Québec policy on public transit]. Montréal will grant these centres the financial means to support employers in their efforts to reduce individual automobile use. An amount of $2 million annually will be dedicated to this project.

→ Installing Measures to Manage Demand within the Cities and Boroughs

Montréal already participates in the *allégo* program to promote measures to encourage public transit, carpooling and active modes of transportation (cycling and walking). The established program envisions three phases of implementation. The first phase, completed in 2006, targeted the Louis-Charland building located in the *Cité Multimédia*. The second phase, which began in 2007, targets municipal employees working within central services. The third and final phase, planned for 2008, will affect employees working in cities and boroughs.

With more than 29,000 municipal employees, the agglomeration of Montréal has a significant potential for reducing greenhouse gases. The measures implemented will be adapted according to the public transit services available in the targeted sector. The success of these measures will depend on the adoption of a philosophy of strategic parking management focused on sustainable transportation. This presupposes, therefore, a revision of the benefits given to employees in terms of parking.

In addition, the management of demand also includes other measures. Certain measures support more collective uses of the automobile (carpooling lanes, park-and-ride car parks, etc.) and are described in the sections on parking and the regional public transit network. Other measurements are more coercive (for example, the introduction of a tax on parking), and are covered in Section IV - *Cost and Financing*.

B

Road Network and Parking

The Road Network

1. Orientations

The road network facilitates the mobility that is essential to Montréal's economic prosperity and to the well-being of its residents and is used for most transportation modes. Currently, if non-motorized trips (walking or cycling) and metro and commuter train rides are excluded, 85% of all travel to Montréal during morning peak period take place on the road network. Travel by car alone account for 60% of the total personal commutes to Montréal at that same period of the day.

However, commuting by car has a negative impact on residential sectors as it affects their tranquillity, increases noise levels and pollutes the atmosphere, a topical public health issue. Part of this commuting is for short and medium distances and could be done differently by walking, cycling or by using public transit.

In order to shift the emphasis away from the increasing tendency to commute by car, Montréal proposes, between now and 2021, to keep this type of commuting at its current level and even to decrease it.

Montréal proposes a new way of sharing the road network which will from now on give a predominance to public transit and active modes of transportation.

The Montréal road network will be modified to ensure that public transit can offer improved travel times that are more competitive with the car. In addition, a large number of bike paths will be integrated into it, fostering increased usage of this transportation mode. Finally, walking, known to be the most popular transportation mode in Montréal, will be encouraged through user-friendly amenities that will ensure pedestrians' comfort and safety. Facilities to encourage car pooling will enable the transportation of more people per car, be it on municipal roads or on the major road system. Intelligent transportation systems (ITS) will be installed to optimize the use of the road network by all transportation modes.

In addition, for the purpose of improving the quality of life in residential neighbourhoods, Montréal will implement measures to curb traffic on local access streets. The need to access the workplace, schools and other institutions generates short distance travels that need to be facilitated and made more secure. Therefore the speed limit on local access streets will be lowered.

Montréal proposes to complete the road network in order to improve its functionality and to facilitate access to employment areas, residential sectors and areas that generate merchandise transportation as recommended in the city's Master Plan. Extensions or redevelopments of the network will service developing zones while other initiatives will enhance those areas that are already built.

The municipal road network which was built in past decades is falling into disrepair and is subject to intensive use. Montréal intends to rehabilitate and modernize its road infrastructures to preserve their functionality and to improve their serviceability, particularly for public transit users, cyclists and pedestrians.

Finally, initiatives are recommended for the purpose of establishing a hierarchy and a functionality that address needs in terms of transportation and the protection of living environments.

2. Proposed Initiatives

In order to adapt the road network to foster public transit and active transportation modes and to better integrate them to the urban space, Montréal proposes changes in the following areas.

2.1 A New Way of Sharing the Road Right-of-Way

To ensure a better balance between transportation modes, Montréal proposes the following:

→ Share the Roadway with Collective and Active Transportation Modes

Montréal proposes a new way of sharing the roadway so that more importance can be given to public transit and active transportation modes. Major works on the road system provide great opportunities to rethink roadway sharing. Recent roadwork, such as those on rue McGill, enabled the apportionment of the roadway differently to favour active transportation. Current roadwork – the redevelopment of rue Sherbrooke Est and the roadwork to make rue Notre-Dame more secure – are used to achieve a better balance between transportation modes. Moreover, much of the roadwork mentioned in this section will enable a more generous share of the road for public transit, pedestrians and cyclists.

The Transportation Plan recommends, for instance, preserving the central lane that was reserved for buses on Viau Bridge even after the opening of the Laval metro extension and evaluating the opportunity of using it for carpooling. This lane would also be used for other public transit modes during metro service interruptions.

Montréal will spend annually $4 million in support of various roadway sharing projects in favour of public and active transports.

2.2 Renewal and Modernization of Highway Assets

Growing needs for maintenance, rehabilitation and, to a degree, reconstruction of aging urban infrastructures, combined with scarcer financial resources make for a formidable challenge over the coming decades.

This challenge is even greater, given that road rehabilitation will present opportunities to review the roadway's various functions. The works will need to take into consideration increased expectations of users with respect to travel comfort and reliability as well as new needs stemming from vehicles that are increasingly heavier. These new demands will have an impact on the budgets required to execute roadwork.

These major projects will require considerable investments on the part of Montréal and those partners (public utilities companies) that use the public domain. These investments concern not only road repairs and rehabilitation, but also underground infrastructures, such as the sewage and the aqueduct systems.

Montréal therefore is committed to:

➞ Refurbish the Road Network and Ensure its Ongoing Maintenance (Arterial and Local Roads, Structures and Other Components)

Montréal is currently developing a master plan for the road system that will map out recurrent rehabilitation and maintenance initiatives of this network. This will include measures to ensure that road markings will always be visible. Rehabilitation of the road system will improve its users' comfort and security and residents' quality of life, will address new transportation needs and will lessen recurrent preventive maintenance costs (pothole filling, road patching, etc.). Over the past few years, Montréal has increased its investments for this budgetary item by approximately $85 million, for a total annual budget of about $160 million. Montréal plans to maintain this level of expenditures in the coming years.

Montréal thus plans to, among other projects, rehabilitate the segment of rue Sherbrooke between avenue Papineau and boulevard Pie-IX, starting in 2008.

2.3 Traffic and Mobility Management

The road network has reached its maturity and, given that it must now address needs other than those of individual cars, it has become necessary to improve traffic management for the purpose of maintaining a balance between traffic volume, travel times, speed regularity and road safety and to optimize its use for all transport modes. By modernizing its equipments, Montréal will from now on be able to use a number of strategies for managing traffic lights that will address public transit concerns and can also be adapted to arising needs.

➞ Revise the Road Network Hierarchy

The updating of the functional hierarchy of the agglomeration's road network will be in keeping with the new Master Plan. The last hierarchy dates back to 2000. An improved network hierarchy will seek to preserve tranquility in residential neighbourhoods and a well balanced integration of new developments.

Montréal is currently redefining the arterial network in order to incorporate feeder roads on which there are bus lines. With this inclusion, arterial roads management can be uniform and service for public transit can be optimal.

➞ Implement Measures to Limit Traffic on Local Access Streets in Residential Neighbourhoods

A traffic limitation policy and harmonization regulations must first be developed. These will provide boroughs and reconstituted cities with a framework and implementation guidelines. Montréal will prepare a guide on how to implement traffic limitation measures including street selection criteria, prescribed solutions and implementation methods.

Reconstituted cities and boroughs will put in place traffic limitation projects. These will enable the decrease of through traffic and speed on local access streets for the benefit of pedestrians and cyclists and could include, for instance, new street configuration or traffic direction. This series of measures will foster the creation of Green Neighbourhoods. The Green Neighbourhood concept, which fosters safe commuting using active transport and an improved quality of life, is described in the section entitled *Transportation safety and quality of life*.

The through traffic issue is more striking in older neighbourhoods where the perpendicular street layout makes for an easier access to secondary streets running parallel to major arterial roads. It is in these neighbourhoods that through traffic is the heaviest with laneways being sometimes used to avoid congestion.

International experiments have demonstrated that implementing measures to reduce speed and through traffic significantly improves safety for commuters and neighbourhoods' quality of life. Progressively making neighbourhood streets safer will encourage more and more residents to walk for their mobility needs.

→ Develop a Master Plan for Traffic and Mobility Management

Montréal will develop, over the next three years, a master plan for traffic and mobility management in the downtown area. This plan will particularly concern this area because of its strategic value and will be developed in collaboration with the concerned boroughs.

→ Extend the Trucking Network throughout the Agglomeration

Putting in place a real trucking network that covers the whole island is incumbent on the agglomeration as a whole. The task at hand is to develop a trucking plan for the whole territory, to coordinate and support cities and boroughs in the task of making or modifying their by-laws pertaining to truck and trade vehicle traffic. A coherent and complete trucking network that will regulate, among other issues, hazardous material transportation, will protect tranquillity and quality of life in residential sectors and improve their safety. The new network will include a management policy with respect to on-street parking for trucks across the agglomeration. It will also harmonize regulations with respect to licensing non-standard vehicles for the whole territory.

→ Improve the Management of Street Closings

Montréal aims at reducing inconveniences stemming from obstructions of the roadway or the sidewalks. With the development of standard specifications for roadwork projects, it will be possible to require that contractors abide by the regulations on sign postings and install pedestrian paths in the vicinity of roadwork. This project calls for a standardization of by-laws on the issuance of permits to obstruct the road. These measures will contribute to reducing the impact of roadwork on users and will improve safety on the road network.

→ Upgrade Traffic Lights

Before the end of 2007, Montréal will have completed the first phase of a program to upgrade 800 road intersections that includes the replacement of traffic lights. The program's second phase encompasses the upgrading, by 2010, of 1,400 road intersections equipped with traffic lights, the reorganizing of the coordinating networks and the implementation of new plans for traffic light coordination. The cost of this second phase is estimated at $30 million. This upgrading program is a prerequisite to the installation of pedestrian crossing lights with digital timers.

→ Install Traffic Responsive Control (TRC) Systems for Traffic Lights

Four strategic arterial roads – Henri-Bourassa, Crémazie, Sherbrooke and Pie-IX – will be equipped with TRC systems for their traffic lights. This project, which first involves an upgrading of the lights, will make it possible to decrease frequent stopping, certain types of collisions, gas consumption and emissions in addition to regulating traffic speed while lessening travel time on these roads. The project cost is evaluated at $10 million.

2.4 Reconfiguring the Road Network

Montréal proposes to rebuild certain segments of the current road network with the following goals in mind: improving their integration into their surroundings, fostering a better quality of life and optimizing the public transit supply. This will be accomplished in cooperation with different partners for most projects, including the Government of Québec. Montréal has adopted a traditional approach and has identified the range of projects that are required to achieve these goals. Of course, not all of these can be delivered (Figure 16).

→ Modernize rue Notre-Dame

This project consists of rebuilding a segment of rue Notre-Dame Est, from rue Amherst to boulevard de l'Assomption, while integrating facilities that will benefit public transit (reserved lanes and other preferential measures) and enhancing parks and heritage assets along this road. It also involves the rebuilding of avenue Souligny between boulevard de l'Assomption and Highway 25.

This project will confirm the strategic public transit role of this axis, will offer the opportunity to run bus routes without connections, improve traffic flow and safety and reduce through traffic on neighbouring streets. The cost of the project is estimated at $750 million.

→ Convert the Bonaventure Expressway into an Urban Boulevard

The transformation of Bonaventure Expressway encompasses three phases, the first one being the conversion of the current infrastructure into an urban boulevard between Brennan and Saint-Jacques streets. This conversion aims at emphasizing the importance of this gateway to Montréal and will enable a high quality urban redevelopment that will complement the *Cité Multimédia* and the *Quartier international*. The cost evaluation for this phase (to be launched in 2009) is $90 million.

The second phase consists of repositioning the segment of the Bonaventure Expressway running between Victoria and Champlain bridges in order to build a park on the shoreline. The last phase will link the first two segments of the new boulevard.

The project will integrate public transit improvements, including the LRT line to service downtown and Old Montreal as well as the optimization of the Bonaventure corridor as a strategic public transit link with the South Shore.

→ Improve Safety on rue Notre-Dame

This series of roadwork targets a segment located east of rue Dickson up to Curatteau (a segment that is not included in the modernization project of the street). It includes the building of a median strip, geometric corrections of certain problematic intersections, modifications to the timing of traffic lights and the improvement of the bicycle path in that sector. The project will be completed at a cost of $9 million.

→ Redevelop rue Sherbrooke Est

The redevelopment of rue Sherbrooke Est between 36e Avenue (PAT) and rue Notre-Dame includes amenities to support active transportation modes (walking and cycling) and public transit. The project is already underway and will be completed at a cost of approximately $60 million.

→ Redesign the Côte-des-Neiges/Remembrance Intersection

This project consists in demolishing the current tier structure to replace it with a conventional intersection while preserving the reserved lane for buses on chemin de la Côte-des-Neiges. This project will improve pedestrians and cyclists' safety and will help decrease through traffic on Remembrance and Camillien-Houde roads.

→ Build a Service Road in the rue Jean-Pratt Right-of-Way

The conversion of rue Jean-Pratt into a service road on the east side of the Laurentian Autoroute will facilitate the exit of heavy vehicles coming from the L'Acadie-Chabanel sector.

→ Complete the De Salaberry/Highway15 Interchange

The addition of a ramp from boulevard De Salaberry southward on the Laurentian Autoroute will decrease the through traffic on boulevard de l'Acadie.

→ Build Service Roads on Highway 40 in the West Island

The completion of the Highway 40 partial service road west of its intersection with chemin Sainte-Marie is linked to the rebuilding of the latter and of its interchange with Highway 40 (project linked to the boulevard Morgan and boulevard 440 projects). It will improve the road grid hierarchy in the West Island and will help the development of land fronting these roads.

To complement the projects that are planned by Montréal, the Government of Québec announced its intention to make, in the short and medium term, the following initiatives:

→ Improve Road Access to Montréal-Trudeau International Airport

The rebuilding of the Dorval interchange will provide for an uninterrupted highway network and will offer a direct link between this network and the airport. The project redesigns the local road grid, integrates public transit (buses, commuter trains and Via Rail) and addresses the needs of pedestrians and cyclists. Estimated cost for this project is about $150 million.

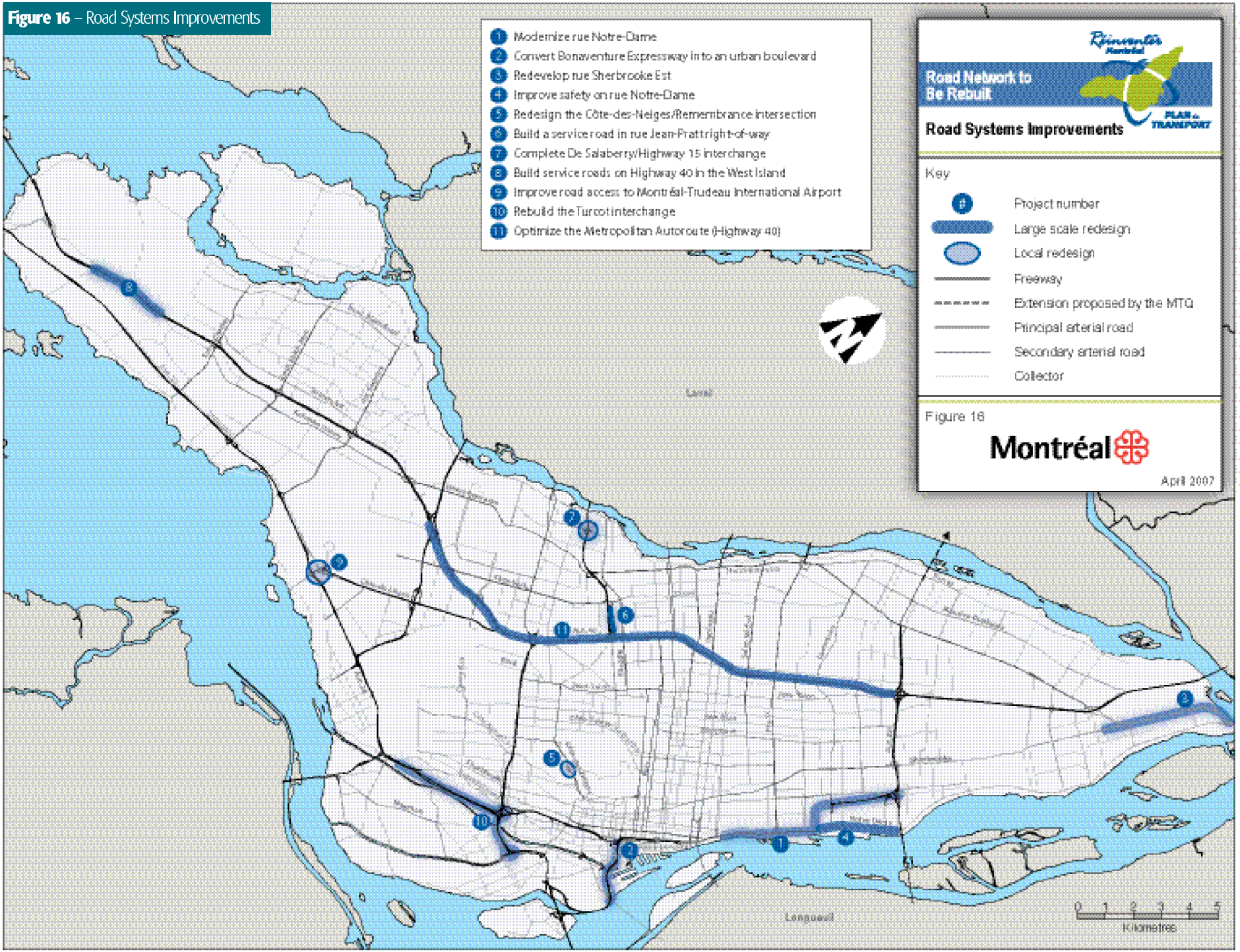
→ Rebuild the Turcot Interchange

The Turcot interchange infrastructure needs a complete overhaul as it is reaching the end of its useful life. The MTQ purchased the Turcot railroad yard a few years ago and is currently working on redevelopment scenarios for Turcot, Montréal-Ouest, Angrignon and De la Vérendrye interchanges. The project cost is estimated at $1 billion and, according to information provided by the MTQ, construction schedule would span a period of seven years from 2010 to 2017. The preliminary design proposal is underway and environmental impact studies should start in 2007. This project will offer the opportunity to review and improve public transit services on this axis and would facilitate the redevelopment of the Turcot yard.

→ Optimize the Metropolitan Autoroute (Highway 40)

The MTQ is working on an optimization scenario for Highway 40 between highways 13 and 25. The changes under consideration would include a series of initiatives, such as geometric course corrections, a review of the entrance/exit patterns and the rebuilding of the Décarie interchange and Côte-de-Liesse roundabout. The various initiatives on this axis would be regrouped by phases and would span a timeline that is yet to be determined.

Figure 16 – Road Systems Improvements



2.5 Completing the Road Network

The Master Plan, in its chapter covering transportation, recommends to strategically link the various sectors of the city through the completions of the road network. This recommendation refers to the breaks in the arterial grid and also to the fact that this grid is incomplete. The ensuing problems are numerous:

- enclaved neighbourhoods;
- longer itineraries for motorists;
- non-viable bus services;
- difficulty in developing less accessible sectors;
- incomplete road hierarchy (local traffic on highways and through traffic on local access streets).

Completing the road grid would ease the access to the highway system from sectors where freight transportation originates, such as industrial and commercial zones and freight transportation terminals.

The Transportation Plan forecasts an increase of 138,000 households and 110,000 jobs on the island of Montréal between 2001 and 2021. A large portion of these new residents and jobs will be located in sectors already built and densely populated. Nonetheless, the completion of the road grid in the east and west end of the island is essential to support development in these areas. This particularly holds true for the Rivière-des-Prairies/Pointe-aux-Trembles and Pierrefonds-Roxboro boroughs.

The component regarding the support of economic development with the road network includes other aspects:

- the rebuilding of a road is an opportunity to enhance the urban network;
- the arterial network is a powerful tool to structure the urban space;
- local accessibility makes it possible for retailers to expand their markets;
- the highway and arterial road systems make it possible to efficiently channel freight transportation and trade vehicles.

So that the road network may, on one hand, support economic activities and, on the other hand, encourage public transit use, Montréal is proposing a number of projects to complete it by creating links where there are breaks and where some functionalities could be improved. A number of these initiatives concern the east and the west end of the island where the arterial road network is incomplete. Of course, the prioritization of these projects will need to be reviewed on a regular basis.

Montréal proposes the implementation of a number of projects to complete the road grid (Figure 17):

→ Connect boulevard Cavendish

With this project, the north and south segments of boulevard Cavendish respectively located in the Saint-Laurent borough and in the town of Côte-Saint-Luc would be connected. In addition, a link towards the east and boulevard Jean-Talon will be built. The project will include a reserved lane for public transit and will enable the redirection of buses originating in the west to Namur metro station which is currently underutilized compared to other stations further north. The project could also include a shuttle, with guaranteed travel time, between the Namur station and the airport. This project will open up the sector and will provide an easier access to Notre-Dame-de-Grâce, Hampstead, Côte-Saint-Luc, Saint-Laurent and Mont-Royal. Total cost for this project is in the order of $140 million.

→ Extend boulevard Rodolphe-Forget (Bourget)

An axial highway of more than four kilometres between boulevard Henri-Bourassa and rue Sherbrooke will be built on the axis of boulevard Rodolphe-Forget (RDP) and rue George-V. This project will be implemented concurrently with urban developments in this sector. It will enable the redirection of feeder roads, improve bus services through better itineraries and contribute to the development of the arterial road grid in the east. A budget of around $50 million is required to implement this project.

→ Extend boulevard de l'Assomption

Building boulevard de l'Assomption's missing segment, between Hochelaga and Notre-Dame streets, will enable the diverting of heavy traffic from rue Dickson and the running of bus routes without connections on the Notre-Dame/Lacordaire corridor. This project is linked to the modernization of rue Notre-Dame.

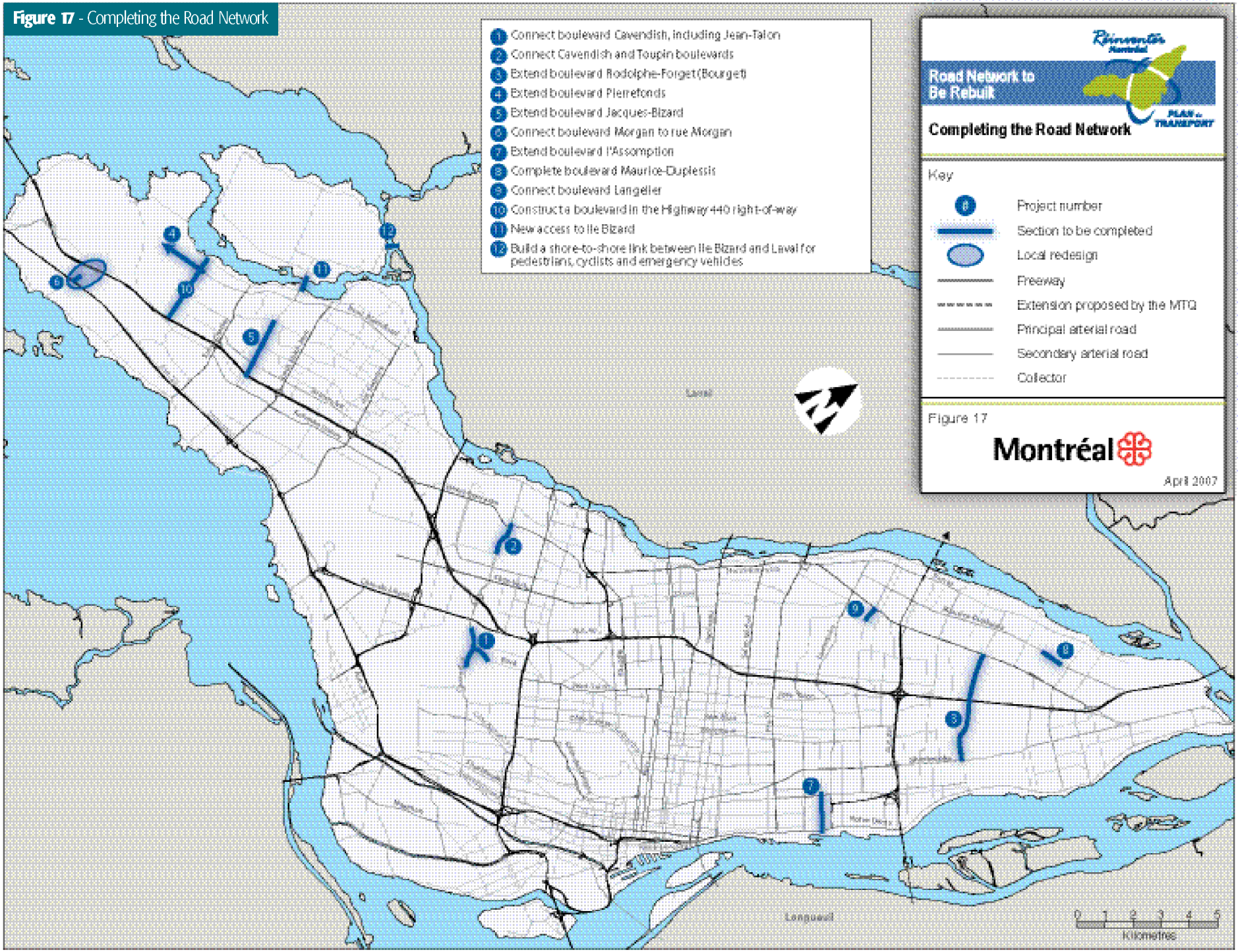
→ Complete boulevard Maurice-Duplessis

There is only a short segment missing, between Rivière-des-Prairies and Saint-Jean-Baptiste boulevards, to make boulevard Maurice-Duplessis a continuous arterial road. Implementation of this project will follow and support urban developments in this sector. It will also enable the development of bus routes without connections. The project cost is in the order of $12 million.

→ Connect boulevard Langelier

The CN railway line – that will be used by the East Island Commuter Train – interrupts boulevard Langelier between des Grandes-Prairies and Henri-Bourassa. The proposed link will make transiting between Saint-Léonard and Montréal-Nord easier and will enable uninterrupted bus routes.

Figure 17 - Completing the Road Network



→ Connect Cavendish and Toupin Boulevards

The project aims at completing the arterial grid of this developing sector by building the 800-metre missing link between boulevard Henri-Bourassa and avenue Ernest-Hemingway. The project will be realized at a cost of $10 million.

→ Extend boulevard Pierrefonds

The West Island arterial road grid will be expanded with the extension of boulevard Pierrefonds west of boulevard Château-Pierrefonds. This extension will follow urban development in the sector. It will also come in support of new residential projects in Pierrefonds Ouest and in the north part of Sainte-Anne-de-Bellevue. The project's total cost is in the order of $40 million.

→ Extend boulevard Jacques-Bizard to Highway 40

This extension will link boulevard Pierrefonds and Highway 40 and encompasses a full highway interchange and a link with rue Stillview located south of the highway. This new development in the arterial road grid will enable a better distribution of traffic flows between the major corridor in the area. The cost of this project is estimated at $25 million.

→ Construct a Boulevard on the Highway 440 Right-of-Way

In order to support residential developments in the west sector of Pierrefonds, a boulevard will be built on the Highway 440 right-of-way between boulevard Gouin Ouest and Highway 40 and will be connected to Pierrefonds and Antoine-Faucon boulevards. The project also includes the rebuilding of the Sainte-Marie/Anse-à-l'Orme interchange. By specifically proposing a boulevard, Montréal asserts its opposition to any highway building project in this corridor.

→ Connect boulevard Morgan to rue Morgan

The project has three objectives: improve access to the Baie d'Urfé industrial park, lessen the intrusion of heavy goods vehicle traffic in its residential sector and facilitate the access to the commuter train station. It involves rebuilding the Morgan interchanges on highways 20 and 40. This project will be implemented at a cost of $40 million.

→ New Access to Ile Bizard

- **Build a New Bridge between Ile Bizard and Montréal Island**

  This project would involve adding a structure to the existing bridge to double its capacity or building a new bridge running in a different corridor. This will ensure easy access to the island at all times, in particular in case of traffic accidents or while the existing bridge is under repair. This new structure will be built at a cost of about $28 million.

- **Build a Cross-River Link between Ile Bizard and Laval for Pedestrians, Cyclists and Emergency Vehicles.**

  The construction of an overcrossing for pedestrians and cyclists will provide an access to the commuter train station and could also accommodate emergency vehicles. The cost of this project is estimated at $10 million.

3. Summary

Montréal proposes improvements to the road network that are compatible with its goal of encouraging public transit use and active transportation modes. Furthermore, Montréal wants to optimize the use of the arterial street and road network by:

- enabling a fluidity on the arterial network that is sufficiently adequate to channel through traffic and divert it away from local access streets;
- controlling traffic congestion on the highway network.

Montréal also plans to use the road network as a means to structure and enhance the urban space. On one hand, some of the initiatives aim at making various city sectors more easily accessible. On the other hand, road rehabilitation or construction projects are part of more global initiatives relating to urban development and enhancing already developed city sectors.

Table 7

COST OF ROAD NETWORK PROJECTS PROPOSED BY THE GOVERNMENT OF QUÉBEC

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(millions $)*				ANNUAL OPERATING COST
	(MILLIONS $)	**0-5 YEARS**	**5-10 YEARS**	**10 YEARS+**	**TOTAL**	**(MILLIONS $)**
Improve road access to Montréal-Trudeau International Airport [1]		75.0	75.0		**150.0**	
Rebuilding the Turcot interchange			200.0	800.0	**1,000.0**	
Optimize the Metropolitan Autoroute (Highway 40)			*To be determined*			
TOTAL		**75.0**	**275.0**	**800.0**	**1,150.0**	

[1] City's contribution: $30M

Table 8

COST OF ROAD NETWORK PROJECTS PROPOSED BY MONTRÉAL

	CAPITAL COST *(millions $)*				ANNUAL OPERATING COST
	0-5 YEARS	**5-10 YEARS**	**10 YEARS+**	**TOTAL**	**(MILLIONS $)**
Right-of-Way Sharing					***4.0***
Traffic management	***42.0***			***41.0***	***7.0***
Upgrade traffic lights	30.0			**30.0**	
Install traffic responsive control systems for traffic lights	10.0			**10.0**	
Other traffic management measures	2.0			**1.0**	7.0
Redevelop the road network	***439.0***	***470.0***	***13.0***	***922.0***	
Modernize rue Notre-Dame	300.0	450.0		**750.0**	
Convert the Bonaventure Expressway into an urban boulevard	90.0			**90.0**	
Improve safety on rue Notre-Dame	9.0			**9.0**	
Redevelop rue Sherbrooke Est	40.0	20.0		**60.0**	
Redesign the Côte-des-Neiges/ Remembrance intersection			8.0	**8.0**	
Build a service road in rue Jean-Pratt right-of-way			1.0	**1.0**	
Complete the Salaberry/Highway 15 interchange			4.0	**4.0**	
Build service roads on Highway 40 in the West Island	*To be determined*				
Complete the road network	***94.0***	***179.0***	***150.0***	***423.0***	
Connect boulevard Cavendish		60.0	80.0	**140.0**	
Extend boulevard Rodolphe-Forget (Bourget)	20.0	30.0		**50.0**	
Extend boulevard de l'Assomption	*Included in the Notre-Dame project*				
Complete boulevard Maurice-Duplessis	6.0	6.0		**12.0**	
Connect boulevard Langelier	10.0	18.0		**28.0**	
Connect Cavendish and Toupin boulevards	10.0			**10.0**	
Extend boulevard Pierrefonds		20.0	20.0	**40.0**	
Extend boulevard Jacques-Bizard down to Highway 40	10.0	15.0		**25.0**	
Construct a boulevard in Highway 440 right-of-way	10.0	30.0		**40.0**	
Connect boulevard Morgan to rue Morgan			40.0	**40.0**	
New access to Ile Bizard	28.0			**28.0**	
Build a shore-to-shore link between Ile Bizard and Laval for pedestrians, cyclists and emergency vehicles			10.0	**10.0**	
TOTAL	**575.0**	**649.0**	**163.0**	**1,387.0**	**11.0**

Parking: a Means to Reduce Automobile Dependence

1. Orientations

The issue of parking in Montréal is a complex one due to a number of factors: the combination of a bustling city centre with a fairly sizeable resident population, densely populated central neighbourhoods, outlying neighbourhoods that were primarily designed around the car, industrial zones with abundant parking and, as a backdrop, a car culture that is gaining ground, though it is controlled better than in the rest of the metropolitan region.

In the past, in Montréal as elsewhere in the world, decisions regarding parking issues were too often made by addressing an ever-increasing demand with a more generous supply. In addition to compromising development potential, particularly in the city centre, this approach resulted in a tremendous increase in the number of commuters choosing the car over public transit.

Indeed, in order to accommodate the car, a large portion of the urban space that could have been used for more user-friendly or productive activities was sacrificed. The Master Plan recommends building over lots used for off-street parking. This would increase the city's tax base while contributing to the cohesiveness and the appeal of the city centre.

To achieve this, the Master Plan proposes to enact a by-law setting a maximum number of parking spaces serving retail places, office buildings, public facilities, institutions and industrial buildings and this, within a 500-metre radius of metro stations and commuter train stations that are designated as being suitable for activity intensification. The Master Plan also recommends that required parking spaces within the same radius be located inside buildings. In addition, the abundant supply of parking spaces in the downtown sector encourages the use of the car, which in turn affects air quality, noise levels and safety which are all determining factors for the quality of life.

Montréal's determination to significantly improve public transit, active transportation modes and alternatives to the individual use of the car translates into the will to not increase parking capacity over the next few years, particularly in the city centre and those sectors where there is abundant public transit infrastructure. Implementing this strategy implies that there will be a better public transit supply locally and at the metropolitan region level.

The proposals for encouraging different ways of using the automobile call for adapting the supply of parking spaces to these new ways, i.e. car sharing, carpooling, bimodal commuting (car and public transit) and new fuel-efficient cars.

As far as residential sectors are concerned, there must be a sufficient number of parking spaces to enable residents to leave their cars at home and use public transit or active transportation modes.

There is a need to review by-laws on street cleaning activities, in particular in those sectors with on-street parking reserved for residents, because they require that cars be moved frequently, which in turn encourages their use for commuting.

Moreover, a number of ground-level parking facilities were created in Montréal beyond any set of rules or governance. The city will pursue its efforts to eliminate these illegal practices and to simplify road signs regarding on-street parking.

Parking Facts and Figures

- More than 160,000 vehicles are parked downtown every day;
- 53% of the downtown parking spaces are used by Montrealers;
- Old neighbourhoods do not have a sufficient number of parking spaces for residents;
- The number of parking sticker holders increased from 16,000 to 36,000 between 1996 and 2002;
- Usage ratio of park-and-ride car parks is over 85%;
- 55% of park-and-ride users reside in Montréal;
- The shortage of parking spaces for car sharing vehicles curtails the expansion of this new transportation mode;
- 32 illegal parking lots were shut down in the borough of Ville-Marie, which eliminated more than 2,000 parking spaces;
- Ground-level parking lots account for a substantial loss of the city's tax base and revenues;
- Road signs on parking regulations are complex and difficult to understand;
- Monthly downtown parking fees in Montréal rank third in Canada ($372 for reserved spaces and $260 for non-reserved spaces).

According to the International Union of Public Transport (IUPT), a car is stationary for 95% of its useful life. Yet, parking is often neglected in transportation planning though it is an important asset in a mobility management strategy, given its position at the beginning and at the end of all motorized travels. In this context, the actions taken by Montréal to deal with parking issues are vital to giving concrete expression to the vision in the Transportation Plan.

2. Proposed Initiatives

In keeping with its own orientations, Montréal will intervene in the following areas:

2.1 The Strategic Management of Parking

According to the *2003 Origin-Destination Survey*, 161,000 vehicles park every day in the city centre. Of these, 53% belong to residents on the island of Montréal, of which 30% reside in central neighbourhoods.

In order to undertake a truly strategic management of parking issues Montréal intends to:

→ Adopt a Parking Policy

Montréal adopted its guiding principles on parking more than 12 years ago. Given the administrative reforms of past years and given the new preoccupations with respect to the environment, these principles need to be thoroughly reviewed.

The policy on parking needs to be a regional one (i.e. for the whole CMM territory); otherwise there is a risk of mortgaging the vitality of the city centre's for the benefit of surrounding areas. The parking policy will:

- put a cap on the number of parking spaces in those sectors that are well serviced by public transit;
- make parking easier for residents in order for them to make public transit and active transportation modes their first choice;
- decrease through traffic in residential neighbourhoods;
- encourage business and retail activities;
- lessen the thermal island effect;
- convert ground-level parking lots into underground parking lots;
- improve information for users;
- develop a network of park-and-ride car parks;
- ensure the delivery of goods;
- set up conditions that promote car sharing;
- make bicycle stands compulsory for all new projects.

Where short-term parking is concerned, the objective is to guarantee a minimum number of parking spaces to enable a sound competition with large shopping centres located on the island and off the island. This is to ensure the survival of commercial arteries that play a vital role in the heart of the city.

→ Amend Urban Planning Regulations with Respect to Parking Spaces

This project encompasses amending urban planning regulations to take into account the public transit supply when evaluating projects presented by developers. The objective is to reverse the current logic that imposes a minimum number of parking spaces in favour of a maximum number (ceiling) in those sectors that are well serviced by public transit. Elsewhere, similar changes were at the origin of a modal shift toward of public transit and active transportation. There should be a specific analysis in the case of projects located in residential sectors already experiencing a serious shortage of parking spaces to ensure that residents will not resort to on-street parking to offset limited off-street parking.

Particularly in the case of developments that generate large numbers of commutes, for example, businesses and large institutions, the success of this initiative is based on the preparation of mobility plans by the employers and institutions concerned. This includes a rigorous demonstration of parking needs that takes into account parking and public transit provided in the vicinity.

Montréal is also committed to helping employers and institutions in their preparation of mobility plans. The section concerning demand management provides more details on this topic.

→ Evaluate, in Cooperation with the Government of Québec and the *Communauté métropolitaine de Montréal* (CMM), the Opportunity of Requiring Employers who Provide Free Parking to Give their Employees a Choice between Free Parking or an Equivalent Cash Premium to Use Public Transit.

This proposal is inspired by the American "Parking Cash Out" concept. It consists of making it mandatory for employers who provide free parking to let all their employees choose between free parking and an equivalent cash premium to use public transit. Montréal wants to evaluate with the Government of Québec the opportunity for making such a measure mandatory for companies and institutions located in sectors that are well serviced by public transit.

To be effective and to ensure that it does not become an incentive for companies to move away from sectors that are well serviced by public transit (for instance, to industrial parks along the highways), this project will necessarily apply to the whole CMM territory.

Such a program would make the opportunity cost of parking more obvious and would put public transit users and motorists on an equal footing. In addition, it would help in reaching public transit growth objectives set at 8% by 2012 by the Government of Québec in its *Politique québécoise du transport collectif* [public transit policy] adopted in 2006.

→ Undertake a thorough Review of Parking Related Fringe Benefits that are Granted to Municipal Employees

Montréal is well aware of the importance of a strategic management of parking issues. Experience has demonstrated that it will never be possible to promote public transit use for home-work-home travel as long as there are no stringent constraints on the use of a private car.

As a responsible employer that abides by sustainable development principles, Montréal wants to contribute to decreasing individual use of cars on the part of its employees and will thus do its part in the fight against climate change. Consequently, Montréal will undertake a thorough review of employee benefits with respect to parking, in particular employees who receive a car allowance to park in the city centre, a sector that is well serviced by public transit.

This review must go forward in order to underline the importance of public transit for the city. All transportation specialists acknowledge indeed that easily accessible parking, available at all times and that is free or inexpensive inevitably encourages the car culture.

This project requires no investments and could even translate into savings for the city given that it must sometimes lease private land for employees to park on.

2.2 Adaptating the Parking Supply to Sustainable Transportation Practices

In order to adapt the parking supply to sustainable transportation practices, Montréal is committed to:

→ Building, Starting in 2007, Parking Facilities for Car Sharing, Clubs and Co-ops

Though this new transportation mode is in tune with the philosophy and vision of the Transportation Plan, no measures were planned until now to address the phenomenal growth in this commuting mode. In 2006, in Montréal, car sharing had 8,500 subscribers, a number that increases by about 30% annually. Based on statistics provided by *Communauto*, the number of subscribers could reach 18,000 users by 2009. This growth could even be more sustained thanks to a new partnership with the STM (see section on car sharing).

Given that the growth for this new transportation mode is closely linked to the availability of parking, Montréal will make all the necessary efforts to support the development of car sharing including:

- officially recognizing car sharing companies as public interest corporations;
- asking the boroughs to factor in their mobility plans the needs of car sharing transportation;
- ensuring the replacement of parking spaces dedicated to car sharing vehicles when public parking lots are closed down;
- designating off-street public parking spaces in partnership with the *Société en commandite Stationnement de Montréal* and the boroughs;

The Centre for Sustainable Transportation (CST) defines sustainable transportation as follows:

"A system that allows the basic access needs of individuals to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations. The system must be affordable and efficient in addition to offering a choice of transport modes and supporting a vibrant economy. It must limit emissions and waste within the planet's ability to absorb them, minimize consumption of non-renewable resources, limit consumption of renewable resources to the sustainable yield level, reuse and recycle its components, and minimize the use of land and the production of noise."

- reserving on-street parking spaces for car sharing users;
- developing management procedures to facilitate cleaning and snow removal for parking spaces reserved for car sharing users;
- allocating universal parking stickers.

The objective is to make available to car sharing users several hundred new parking spaces to encourage the development of this new transportation mode.

→ Providing Dedicated Parking Spaces for Carpooling

The occupancy ratio in cars travelling to Montréal is 1.27 persons per vehicle. Montréal wants to encourage residents to carpool, whether they live in the city centre or in outlying areas. To achieve this, parking spaces for carpools will be provided and well identified with signage.

Starting in 2008, when occupancy permits are up for renewal, Montréal will negotiate with parking lot operators the possibility of reserving at least 10% of the spaces for carpooling. A management mechanism will be developed with industry representatives.

→ Extend the Network of Park-and-Ride Car Parks

Most of the large cities that have banked on public transit have developed a network of park-and-ride car parks. There are such car parks on the island of Montréal, mainly near commuter train stations, providing more than 7,000 spaces. Park-and-ride car parks on the island are an asset for Montréal because they encourage commuters to combine the car and public transit. They attract up to 6% of motorists travelling to the city centre to which can be added the people who leave their car in park-and-ride car parks off the island.

Montréal wants to increase the number of park-and-ride car parks on the island to be located well ahead of traffic congestion. These car parks will be primarily dedicated to subscribers of the public transit loyalty program that was developed by the AMT and its partners.

Developing these car parks in partnership with the private sector is under consideration, given that lots could be easily incorporated into the construction of office or commercial buildings, thus providing an opportunity to build these car parks indoors in keeping with the Master Plan's orientations. This project will encourage a number of island residents who park downtown during morning peak period (53%) to use public transit. It would also considerably decrease through traffic in residential sectors thus improving residents' quality of life.

Montréal also encourages the Government of Québec to pursue the construction of park-and-ride car parks off the island. Park-and-ride car parks provide a viable compromise between the car and public transit for nearby suburbs and North and South Shore residents. If some consider these car parks an unfair advantage for suburban residents because they are free, we must acknowledge in return that they considerably curtail the daily invasion of Montréal's old neighbourhoods by commuter car traffic.

This structuring project for the future of public transit will require considerable investments in the order of $25 million. A study to determine potential locations and management mechanisms will be launched starting 2008 for the purpose of progressively supplying more parking spaces starting in 2010.

→ Encouraging the Use of Parking Lots at Large Institutions and Shopping Centres by Transit Riders and Carpoolers

It could be worthwhile, in a number of areas in Montréal, to allow public transit users and carpool commuters to leave their vehicles in the parking lots of shopping centres, large institutional buildings or sports facilities such as the Olympic Stadium. Rather than paving more land for parking purposes and mortgaging more productive developments near public transit facilities, Montréal will target those car parks offering such opportunities and will negotiate with their owners. The project is inspired by the "Shop and Ride" American concept. It consists in sending a monthly bill to users who can then convert it into purchases from participating merchants. The formula is of interest to both users and merchants.

Moreover, using part of the Olympic Park car park, which has 4,000 spaces, can be another avenue for the development of park-and-ride car parks. Indeed, its strategic location near Pie-IX metro and the projected BRT offers a potential worth evaluating.

→ Eliminating Illegal Parking Lots and Illegal Parking Practices

The progressive and significant improvements of public transit and active transportation modes to the city centre will be matched by the city's will to decrease excess parking capacity in the downtown core and to ban the development of new parking facilities.

Anyone visiting the city centre can easily see that car park operators overfill their lots. Montréal wants to bring some order to off-street parking practices and will do an inventory of the legal status of parking lots. Eliminating illegal car parks will enhance the city centre's image and will encourage development. This measure will, of course, decrease the supply of parking spaces. From an economic viewpoint, space used for parking generates substantial losses for the city both in revenues and in the value of its tax base.

A few years ago, the borough of Ville-Marie started a bold program fostering the development of vacant land. Already, more than 38,000 square metres of illegal car parks have been shut down on 32 different sites for a total of 2,000 parking spaces. Montréal wants to pursue this course and will support the boroughs in this type of endeavour.

2.3 Information for Users

In order to improve information for users, Montréal wants to:

→ Simplify Signage for On-Street Parking

Road signage related to parking is a problem in Montréal. By trying to adapt city regulations to each potential situation, signposts have multiplied to the point where motorists are unable to understand what is required of them. Montréal is committed to standardizing the content of signposts across the island while respecting the jurisdiction of boroughs and reconstituted cities. Montréal was granted harmonizing powers at the metropolitan level and will use them to set standards to facilitate parking signpost comprehensibility.

→ Display Information on Parking Availability

Montréal proposes the installation of information systems to advertise the numerous indoor parking spaces that are available around the city. This initiative will optimize the current parking space supply and deter the construction of new lots.

Better signage for these available spaces will keep motorists from wandering around needlessly in search of parking and from being aggressively solicited by car park operators. It will also curtail the proliferation of unsightly hand-made signposts which spoil the image of the city centre.

→ Provide Parking Spaces for Energy Efficient Vehicles and Micro Cars

To encourage its residents to buy energy efficient vehicles, Montréal will offer, starting in 2008, specially designated parking spaces at a reduced fee for electric and hybrid vehicles as well as for micro cars (less than three metres). Montréal will also work in cooperation with car park operators so they offer similar benefits for this category of vehicles.

Charging stations for electric vehicles will gradually be installed in strategic locations as soon as electric vehicles certified by Transport Canada and authorized on the public roadway are available on the market. Installing these charging stations is not an immediate priority given that the auto industry is not currently producing vehicles that are solely fuelled by electricity. This initiative will make Montréal a leader in North America where the use of electric vehicles is concerned.

3. Summary

Back in the 1970s and the 1980s, in Montréal and elsewhere, decisions on parking management were made with the purpose of bettering the supply to address an incessantly increasing demand. The result was the spreading of the car culture to the detriment of public transit.

Things must change. We now know that parking has been neglected for too long within the planning of public transit though it is one of its crucial components. In this context, the initiatives that are put forward with respect to parking in the Transportation Plan are a decisive means to make Montréal's vision become a reality.

Table 9

COST OF PARKING PROJECTS

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	**0-5 YEARS**	**5-10 YEARS**	**10 YEARS+**	**TOTAL**	**(THOUSANDS $)**
Adopt a parking policy	500					
Amend planning regulations with respect to parking	*To be determined*					
Evaluate the opportunity of requiring that employers who provide free parking give their employees a choice between free parking or an equivalent cash premium to use public transit	100					
Undertake a thorough review of parking related fringe benefits that are granted tomunicipal employees	*To be determined*					
Build, starting in 2007, parking facilities for car sharing	50	100			**100**	
Provide parking spaces for carpooling	50					
Extent the network of park-and-ride car parks	200	25,000			**25,000**	
Encourage the use of parking lots at large institutions and shopping centres by transit riders and carpoolers	250					
Eliminate illegal car parks and illegal parking practices	250					
Simplify signage for on-street parking	100					
Display information on parking availability		1,000			**1,000**	
Provide parking spaces for energy efficient vehicles and micro cars	50		100		**100**	
TOTAL	**1,550**	**26,100**	**100**		**26,200**	

C

Transportation Safety and Quality of Life

Transportation Safety and Quality of Life – Non-Negotiable!

1. Orientations

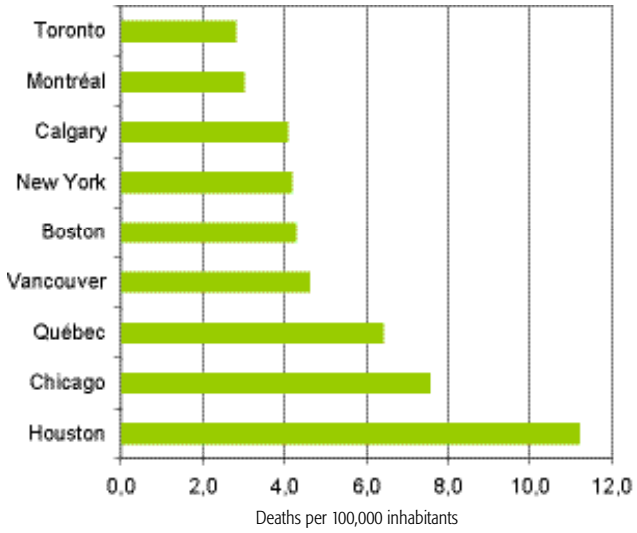
Transportation generates nuisances that directly affect Montrealers' health and quality of life. Montréal is well aware of this issue and its strategic plans like the Master Plan and Montréal's First Strategic Plan for Sustainable Development have already set out guidelines and means for carrying out actions to reduce these nuisances. Transportation safety plays a crucial role in quality of life and is a determining factor in public health.

The actions taken with regard to travel safety in the territory have allowed Montréal to figure prominently among the safest cities in North America (Figure 18). Montréal has always been preoccupied with the safety of its streets, especially for pedestrians and cyclists: some examples are safety programs around schools and parks, programs to make intersections more secure, banning of right turns on red lights, the program to improve street lighting, the significant increase in the presence of police officers dedicated to traffic safety, standardization of traffic lights and the installation of pedestrian crossing lights with digital timer displays, etc. But there are still too many victims on our roads. Each year, more than 12,000 people are injured and 50 to 70 are killed in road accidents in the territory of Montréal, and, since 1997, the number of injuries has risen.

To make Montréal a place where it is possible to travel in complete safety, where delinquent behaviour is not tolerated, Montréal will take more action to reduce the number of accidents over the next ten years by 40%, the first step in a "zero accident" vision for the city.

Additional and more stringent efforts than those already employed are needed to attain our objectives. These efforts must be part of a strategic approach planned with the main stakeholders in the field of transportation safety and in collaboration with all Montrealers.

Figure 18 – Average Rate of Fatalities Related to Road Accidents



2. Proposed Initiatives

The measures already in place to promote safety, such as the banning of right turns on red lights, will be maintained. The strategy of the Transportation Plan to increase the modal share of public and active modes of transportation and to decrease the use of automobiles is in itself propitious to personal travel safety as a whole and to the improvement of Montrealers' quality of life.

To support this strategy, Montréal will act on four fronts:

- create "Green Neighbourhoods";
- adapt street design;
- change behaviour;
- establish an office of transportation safety.

2.1 Creating "Green Neighbourhoods"

In accordance with the *Charte des milieux de vie montréalais* [Montréal living environments charter] and the public land development principles in the Master Plan, Montréal will establish "Green Neighbourhoods" to increase safety for pedestrians and cyclists and quality of life in neighbourhoods.

The concept of "Green Neighbourhoods" is inspired by the *Plan de déplacement de Paris* [Paris mobility plan], which proposes the development of Green Neighbourhoods. A Green Neighbourhood is a sector designated by signage and the redesign of public spaces (roads, sidewalks, squares, parks) to promote walking and cycling and make these modes of transportation enjoyable for everyone. Access to public transit from these zones is facilitated and, within their perimeters, automobile circulation is restricted to local traffic at low speeds to address the problem of through traffic. This concept is applicable to residential neighbourhoods and to areas surrounding schools, hospitals and other public establishments, as well as to certain commercial or tourist sectors.

The actions taken so far by the city contribute to the development of Green Neighbourhoods:

- in 1992, Montréal implemented a 30 km/h speed limit around schools and parks;
- in 1999, Montréal elaborated a trucking network with the main objective of enhancing the tranquility of residential neighbourhoods. Its implementation includes the control and sometimes the banning of truck traffic in residential neighbourhoods, while ensuring an efficient flow of merchandise in the city;
- for several years now, the boroughs and reconstituted municipalities have realized projects to moderate the flow of traffic.

The definition of Green Neighbourhoods in the territory will be included in local transportation plans created by cities and boroughs. To ensure a harmonious approach, the implementation criteria will be defined to take into account the hierarchy of the road network and to protect the integrating transportation corridors. Montréal will ask the Government of Québec to officially recognize the concept of Green Neighbourhoods in the standardization documents used in Québec, like the Highway Safety Code, and in the road signage and design standards of the *ministère des Transports du Québec*.

Green Neighbourhoods will be characterized by the implementation of measures such as:

- specific signage indicating when users are entering a Green Neighbourhood;
- the deployment of traffic-related initiatives to discourage through traffic and reduce automobile speeds;
- the permanent or temporary closing of streets or laneways to automobile traffic;
- increased vegetation cover and enhancement of neighbourhoods, which could be coordinated with design changes to decrease through traffic;
- increasing road markings at street crossings and adjust street lighting;
- reducing the speed limit from 50 km/h to 40 km/h on all streets within the zone;
- including 30 km/h zones around schools, parks and other sectors, requiring a significant reduction in traffic speeds;
- modifying parking regulations and the traffic directions.

In addition to the orientations contained in the Pedestrian Charter, in the short term, Montréal will equip itself with a series of tools to support cities and boroughs in establishing Green Neighbourhoods:

→ a pedestrian-friendly design guide, including criteria for universal access;

→ a master plan for mobility management;

→ a revised hierarchy of the road network;

→ a plan for truck transport for the territory of the agglomeration;

→ a technical support office.

In addition, to ensure that the application of systematic traffic calming measures are considered in the development of Green Neighbourhoods, Montréal will use a process including harmonization policies and rules to provide a framework and implementation principles. Montréal will also conjointly produce a design guide for traffic reduction for the agglomeration.

2.2 Adapting Street Design

The safety of people on the city's streets depends on a street design that allows for the coexistence of various modes of travel (walking, cycling, driving), especially one that manages conflicts between these modes. It is worth noting that 65% of traffic accidents occur at intersections, 63% of pedestrian injuries occur at intersections and 55% of pedestrian injuries occur on major arteries. Montréal will continue to adapt street design to improve safety for all users, taking into consideration, first and foremost, pedestrians and cyclists.

As mentioned in previous sections the plan, as of 2007, Montréal will:

- review all pedestrian crossings to make them more visible for motorists and safer for pedestrians ($4 million in 2007);
- implement phase III of safety measures for rue Notre-Dame ($9 million in 2007);
- deploy pedestrian-friendly measures in areas surrounding metro stations.

In addition to streets located in Green Neighbourhoods, Montréal will also take action throughout the entire road network, particularly along structuring transportation corridors. To do so, the following projects will be realized:

→ Improve Safety at 50 Intersections per Year

This safety program will allow for the systematic yearly targeting of 50 intersections that pose safety problems, especially for pedestrians, and the implementation of simple and effective physical measures, such as opening up the fields of vision (which may necessitate a ban on parking), installing pedestrian traffic lights, modifying the cycles and timing of traffic lights, adding to street lighting, reinforcing or modifying road markings at pedestrian crosswalks and reducing the crossing width of roadways.

Making intersections more secure will be the subject of a systematic evaluation process. Safety measures will be deployed throughout the island of Montréal.

Figure 19 shows the intersections to be targeted in priority and the areas surrounding metro stations to be made more secure. Work will begin as of 2007.

Over 10 years, this program will review some 500 intersections. The safety improvement program implemented in 1994 at 12 intersections resulted in an average cost/benefit ratio (social cost of accidents versus engineering costs of execution) of 14 to 1.

→ Reduce the Speed Limit from 50 km/h to 40 km/h

This involves reducing the speed limit to 40 km/h on all local access streets and in Green Neighbourhoods. In general, speeds on main arteries would remain unchanged, except on certain sections, such as the length of rue Sainte-Catherine downtown which, depending on the time period, the nature of activities or the concentration of pedestrians, could also benefit from a reduction in the speed of motor vehicle traffic.

This initiative will have little impact on travel times for motorists compared with the environmental and safety benefits for Montrealers. The measure will also reduce the risk of accidents and the seriousness of injuries. The probability of death for a pedestrian struck by an automobile at 50 km/h is 70% compared with a 25% for a pedestrian struck at a speed of 40 km/h.

Certain boroughs already apply this speed limit and others are in the process of adopting new regulations on posted speeds. To harmonize this new regulation and have global, rather than fragmented, regulations, Montréal is asking the Government of Québec to modify the Highway Safety Code accordingly.

This project will be accompanied by an implementation program with traffic abating measures to ensure a not only a substantive reduction of traffic speeds in Green Neighbourhoods, but also to discourage the use of local access roads for travel that should be made using main arteries.

Figure 19 – Intersections Safety Improvements

→ Make Construction Zones Safer

Montréal will develop a set of measures and tools to make construction zones (on- or off-street) more secure at all times for pedestrians and cyclists and to ensure the continuity of travel routes. This project will also reduce the risk of automobile accidents. The short-term actions will:

- include master specification standards, with signage and design standards, in calls for tenders for roadwork;
- equip boroughs and reconstituted cities with a process for granting street obstruction permits;
- evaluate the pertinence of increasing fines;
- add or modify standards to better take into account the maintenance of pedestrian and bicycle routes in urban areas;
- hire and train inspectors in the boroughs and reconstituted cities to guarantee that street obstruction permits are respected;
- review, in collaboration with the *Régie du bâtiment du Québec*, the building code to reinforce certain requirements with regard to public protection in areas surrounding work sites and to adapt the information and training given to inspectors and partners accordingly;
- elaborate a "clean work site" code of conduct, which could lead to agreements between Montréal and its partners in the field of construction.

The expected results of these actions are:

- accommodations for pedestrian and bicycle traffic in construction zones;
- accommodations for people with reduced mobility in construction zones;
- the maintaining of public transit services;
- the reduction of the overflow of automobile traffic in residential areas and Green Neighbourhoods;
- a reduction of the number of accident victims in the areas surrounding construction sites;
- greater public support for Montréal construction projects on the roadways.

As of 2007, within the framework of major construction work like the rehabilitation of boulevard Saint-Laurent, Montréal will require contractors to have specific provisions in place to protect pedestrians in the areas surrounding work sites.

2.3 Changing Behaviours

We continue to see far too many violations of the Highway Safety Code on the Montréal road network. According to studies by the *Société de l'assurance automobile du Québec* [SAAQ or Québec automobile insurance board], we see that:

- more than one in two drivers do not respect the speed limits in urban areas;
- one motorist in four reports that they often or very often accelerate to go through a yellow light;
- 28% of pedestrians do not always respect traffic lights;
- 45% of pedestrians questioned say that they cross streets at places other than intersections.

Lapses of attention, distractions and the lack of respect for the Highway Safety Code are often listed as contributing factors:

- in 2005 in Montréal, 4,542 people were victims of a collision caused by a lapse of attention by the driver or driver distraction;
- "burning" red lights or driving at reckless speeds are recognized as the main contributing factors in 20% to 25% of accidents.

These violations increase the risk of accidents. Montréal will take decisive action to change this behaviour.

→ Increasing the Police Presence to Enforce the Highway Safety Code

In 2006, Montréal hired 133 police officers dedicated to traffic safety. The added surveillance by these new officers will increase the likelihood, or perceived likelihood, that violators of traffic laws will be caught and will contribute to the enforcement of the Highway Safety Code. Currently, the SPVM is undergoing a reorganization of neighbourhood police stations to improve its ability to act and to have a greater presence in the field.

→ Banning the Use of Cellular Telephones while Driving

Operating a vehicle requires the full attention of the driver, especially in an urban environment where speeds, movements and conflicts are

varied and numerous. Lapses of attention and distractions are recognized as contributing factors in accidents. Montréal favours the introduction of new legislation to ban the use of cellular telephones when driving and will ask the government to make legislative changes to allow it to ban the use of cellular telephones behind the wheel within its territory. In the short term, Montréal will regulate their use in municipal vehicles.

→ Campaigns to Increase Public Awareness Highway Safety Code

To encourage the respect of the Highway Safety Code and more courteous relations between pedestrians, cyclists and motorists, Montréal will intensify awareness campaigns and police surveillance. For greater effectiveness, these two activities will be carried out simultaneously in accordance with global strategies involving all partners (the city, the boroughs, the SAAQ, the MTQ, *Direction de santé publique de Montréal*, school boards, CAA Québec, etc.). The goal is to change behaviours that puts the population at risk and to establish, over the long term, a social consensus on the respect of the Highway Safety Code and the sharing of the roads.

In addition to control and prevention measures, Montréal will produce several campaigns to sensitize the population and to make transportation safety a social issue. In 2007, Montréal produced two campaigns on pedestrian safety and one campaign on bicycle safety. The office of transportation safety will have the responsibility for scheduling the campaigns with the Government of Québec.

→ Implementing Electronic Enforcement (photo-radar)

Many Canadian provinces and European countries have already seen impressive results from the use of electronic enforcement methods, commonly known as photo-radar. Montréal considers this method a viable solution to change driver behaviour so that they will respect speed limits. A pilot project by the Government of Québec to install photo-radar as part of the project to modernize rue Notre-Dame would provide constant surveillance, rendering the possibility of unchecked delinquent behaviour virtually impossible.

Montréal will also study other possibilities offered by new automated control technologies, such as red light cameras at intersections.

These automated devices will not only allow for the control of problematic locations but, as with an increased police presence, can increase the likelihood, or perceived likelihood, that violators of traffic laws will be caught. These devices do not replace the police presence in the field, but rather complement their operations.

In the short term, Montréal will estimate the impact these tools will have on transportation safety in Montréal and, with the Government of Québec, will establish the installation process of automated systems. As needed, Montréal will ask the government for changes to legislation to allow for these automated control systems.

2.4 Establishing an Office of Transportation Safety

The establishment of an office of transportation safety is a priority for the Ville de Montréal. This office would be the municipal authority for all issues related to personal travel safety in the territory of the agglomeration. Reporting to the city, the office would be a permanent committee for joint discussions with partners on the elaboration, implementation and tracking of strategies to reduce the number of injuries and fatalities.

The office would have the responsibility of developing and exploiting the management tools on accident data, producing diagnostics, proposing targeted or general programs or projects, designing analysis and evaluation tools, preparing triennial action plans, evaluating the efficacy of measures, carrying out economic analyses and periodically communicating actions and results.

Montréal will ask the Government of Québec to contribute financially to the operating costs of the office. The office will develop specific agreements with government agencies such as the *ministère des Transports* and the *Société d'assurance automobile du Québec*, as well as with other organizations like the Insurance Bureau of Canada (IBC), for financing and strategies.

The *Table de concertation provinciale sur les piétons* [provincial round table on pedestrians], established and coordinated by the *Service de police de la Ville de Montréal* since 2005, is a good example of a project that could be run under the responsibility of the office. To date, 17 organizations have joined this round table to document issues and submit recommendations to reduce the number of accidents involving pedestrians. The transportation safety office would encourage an approach in which action management would be coordinated among stakeholders to ensure the greatest efficacy in safety investments in Montréal.

Considering the cost of accidents ($432,600 – victim killed; $114,425 – victim seriously injured; $12,900 – victim slightly injured; $7,355 – accident with property damage only) on an annualization of 10 years, the objective of reducing accidents by 40% would mean that accidents avoided in Montréal would allow for a savings of about one billion dollars for Québec society, or $100 million per year over 10 years.

This office will maintain strong ties with research institutions and universities to systematically assess and evaluate techniques and emerging technologies that respond to current and future transportation safety issues.

Through this office, Montréal will collaborate with the government and support all steps toward better protecting road users, whether through a reworking of the Highway Safety Code, banning the use of cellular telephones while driving, the installation of automated control measures, the introduction of new policies for embedded systems, actions taken to enforce speed limits or against impaired driving, or even discussions on broader subjects like winter driving conditions.

To create this new office, a technical team was set up at the Ville de Montréal in 2007.

3. Summary

Montréal is committed to taking new steps to improving transportation safety in its territory. The projects are part of a "zero accident" vision to eliminate road accidents in Montréal in the long term. In this vision, the first goal is to reduce accidents by 40% over the next ten years, in particular, by improving safety on the road networks, by first making pedestrian and bicycle travel safer and ensuring that the Highway Safety Code is respected.

Table 10

COSTS OF TRANSPORTATION SAFETY AND QUALITY OF LIFE PROJECTS

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	**0-5 YEARS**	**5-10 YEARS**	**10 YEARS +**	**TOTAL**	**(THOUSANDS $)**
Creation of Green Neighbourhoods		*To be determined*				
Adapting street design	5,200	30,000	30,000		**60,000**	450
Changing behaviour	700					200
Establishing an office of transportation safety						1,450
TOTAL	**5,900**	**30,000**	**30,000**		**60,000**	**2,100**

D

Travel Derived from Economic Output and the Transportation of Merchandise

Transportation: an Essential Foundation for Montréal's Economy

1. Orientations

The Montréal region is by far the principal economic centre in Québec and accounts for more than half of the province's GDP. The diversity of the metropolitan region's economy is based on its numerous manufacturing, commercial, financial, education and cultural establishments. These establishments have multiple exchanges outside the region, be it across Québec, elsewhere in Canada or at the international level.

Montréal is also a hub for cross-continent freight transportation. The agglomeration wishes to improve the performance of strategic transportation infrastructures such as the port, the airports, the railroad and the highway networks. Easier access to these facilities and better intermodal integration will create favourable conditions for trade between the Montréal region and the rest of the world. These orientations are in keeping with those of Montréal's Master Plan.

The proposals outlined in the Transportation Plan aim at supporting Montréal's competitiveness and attractive force by creating favourable conditions for established companies as well as for new investors. These proposals are taking into account the current context of the globalization of trade, new production methods as well as the sustained economic growth that is forecasted.[15] Montréal continues to collaborate with the transportation industry stakeholders through its participation on the *Comité interrégional pour le transport des marchandises* (CITM), whose mission is to consolidate Greater Montréal's position as a hub for freight transportation.

Furthermore, Montréal is well equipped with a diversified people transportation system whose quality and numerous connection possibilities more than adequately address the mobility needs of a number of clienteles. This system is a fundamental component of Montréal's international reputation and of its tourist vocation.

2. Proposed Initiatives

Bearing in mind the importance of supporting its economy, Montréal is deliberately choosing to intervene and improve overland access to freight transportation strategic infrastructures (Figure 20). At first, there will be improvements to the road network. These are in keeping with the Transportation Plan's other objectives and will address the transportation industry's needs and the needs of other business activities that depend on it.

Though the port and the railway network are not within municipal jurisdiction, Montréal wants to ensure their durability. Through its urban planning and development activities, Montréal is aiming at an improved coexistence of urban functions, port facilities and the railway network.

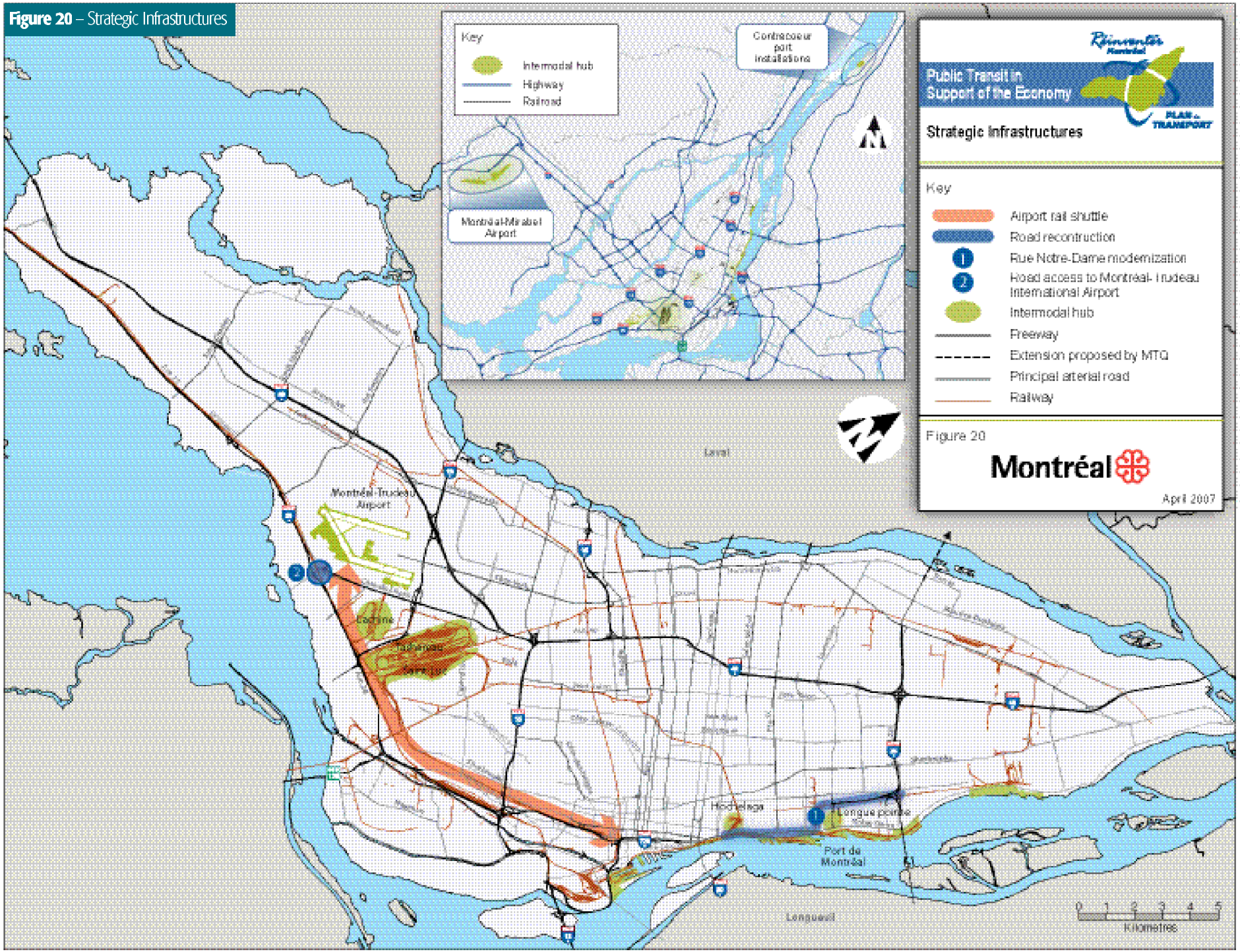
2.1 Improve Road Access to the Port of Montréal

Montréal's history is closely linked to the history of its port which, over the years has become one the busiest inland ports in the world and one of the major maritime gateways to North America. In 2006, the Port of Montréal handled more than 25 million tons of merchandise. The 22 kilometres of port facilities distinguish themselves by their versatility and their high-level intermodal integration, particularly where railway and road transportation is concerned. These facilities are very competitive to the point where Montréal is today a leader in the North Atlantic market, competing with the major ports on the east coast of the United States.

Given that the port is a structuring element in merchandise transportation in the territory and given its economic impact, Montréal aims at facilitating overland access to it, especially considering that the port's competitiveness largely depends on this access. Hence, Montréal is currently making the segment of rue Notre-Dame that runs along the port more secure. This rehabilitation of the segment between Dickson and Highway 25 affects the major entrances to the port, which will be redesigned to enable easier and safer truck manoeuvres.

Port activities generate 2,000 truck movements every day. For reasons of safety, accessibility and coexistence with the urban environment, Montréal will substantially improve road access to the port while protecting surrounding living environments with the following projects:

Figure 20 – Strategic Infrastructures



→ Modernize rue Notre-Dame[16]

The complete rehabilitation of the segment of rue Notre-Dame between the Ville-Marie Expressway and rue Dickson will improve its efficiency, ease the manoeuvring and movements of heavy goods vehicles and will provide an opportunity to rehabilitate road accesses to the port. It will also improve connections with the highway network.

→ Maintain Existing Rail Facilities and Infrastructures within the Port and Leading to it

Given that 55% of goods shipped by containers are transhipped onto trains, and given that this lessens trucking activities in the urban environment, Montréal promotes railway services to and from the port and is committed to cooperate with Port of Montréal management and railroad companies to preserve right-of-ways and railway accesses to the port. This initiative will enable the Port to maintain the competitiveness of its services to remote continental markets. Furthermore, Montréal wishes to discuss with the organizations concerned the possible abandonment of the railway spur in the Old Port as part of ongoing improvements in this sector.

2.2 Support the Growth of the Airport System

The two airports in the region – Pierre-Elliott-Trudeau and Mirabel – act as the anchoring points of Montréal with the rest of the world. The Montréal airport system is in constant state of progress with 11 million passengers and 275,000 tons of freight handled in 2006 alone, not to mention the addition of more than $1 billion of investments since 2000. Montréal supports the growth of Montréal-Trudeau Airport and participates with other partners in the following projects:

→ Build a Rail Shuttle between Montréal-Trudeau Airport and Montréal's Downtown[17]

The purpose of this project is to supply travellers, Montrealers and visitors alike, an alternative mode of transportation to the airport that is quick and comfortable. This railroad link is, for Montréal, a priority over improving road access to the airport. This shuttle service will be adapted to the particular needs of tourists and business travellers and will be part of their Montréal discovery experience. Currently, public transit service to the airport remains limited and rests essentially on a road network that is already fairly congested. The proposed train shuttle will guarantee a 20-minute travel time between downtown and the airport. The airport modernization project has already factored in the building of a railway station.

In 2007, in cooperation with the *Aéroports de Montréal* (ADM), the AMT, the MTQ and Transport Canada, Montréal agreed to conduct studies leading to the project's implementation. These studies will look at a scenario where the shuttle is connected to Lucien-L'Allier commuter train station and compare it to the one proposed in the Master Plan where the shuttle is connected to *gare Centrale* [Central Station]. Work on this metropolitan-scale project will be completed in 2012 and its cost is estimated at $475 million or $575 million, depending on which scenario will ultimately be accepted.

→ Rebuild the Dorval Interchange[18]

Though the airport train shuttle is considered a priority, the rebuilding of the Dorval interchange will enable an uninterrupted highway link to the airport and its integration to the local arterial grid. In addition, the image of one of the strategic gateways to Montréal will be enhanced and the airport will have improved and more user-friendly access for travellers. The rebuilt interchange will also contribute to the development of sectors offering considerable job creation potential. It will also be an opportunity to redesign the local road grid, to integrate bus and commuter train services and to address the needs of pedestrians and cyclists. The project aims at globally improving road access to the airport while establishing a truly intermodal facility.

2.3 Preserve the Strategic Positioning of Montreal's Railway System

As a large industrial and commercial centre, the Montréal region benefits from two transcontinental railways on its territory which gives strategic access to all major North American markets. The railway network also contributes to the intermodal competitiveness of Montréal's port. Montréal wants to preserve this favourable position and is committed to:

➞ Preserving Existing Rail Infrastructure

Railway corridors in an urban environment are "non renewable assets" that are invaluable for transportation of merchandise, passenger trains as well as commuter trains. A well balanced coexistence between the railway network and adjacent urban activities is an essential factor in the preservation of the railway system.

➞ Improving Montréal-Toronto Passenger Train Service

Montréal is the corporate headquarters of Via Rail, the most important passenger train operator in Canada. Located in the heart of the Québec-Windsor corridor, the country's most important passenger train market, Montréal is also at the junction of train lines servicing the Maritimes and north-eastern United States. The number of passenger train travels from Montréal is estimated at two million per year, chiefly to and from Toronto, Québec, Ottawa and Halifax. Montréal considers it important to improve these intercity connections, particularly the connection with Ontario's capital, which is the most important passenger railway line in Canada, though it is often slowed down by priority freight train convoys. Montréal is asking the Government of Canada, Via Rail and the major railway networks to see that passenger trains are able to supply better travel times by benefiting from a priority treatment. Given that the corridor has two railroad lines, Montréal advocates that one of the two be reserved for passenger trains.

For instance, the level of service on the Montréal-Ottawa line was considerably improved after Via Rail was able to acquire a portion of the railroad linking the two cities. Improvements to the infrastructure and railroad crossings have enabled the trains to travel at a faster speed and to supply more reliable schedules.

2.4 Pursue the Implementation of Measures Supporting Interurban Coach Travel

Travelling between cities by interurban coach takes place on relatively well developed highways and arterial road networks. However, the interurban coach must deal with the same constraints that affect motor traffic in general, especially when approaching Montréal. They usually have access to lanes reserved for public transit except for those running against the traffic current.

In Montréal, the interurban coach terminal is the *Terminus Voyageur,* which is located in the city centre and is directly connected to Berri-UQAM metro station, the main transfer point of the metro network (lines 1, 2 and 4). There are some 1.9 million travels by interurban coach annually between Montréal and major destinations in Québec, Ontario and the north-eastern United States.

Some of the proposed measures to promote public transit, chiefly preferential treatment including reserved lanes, will encourage interurban coaches as they approach the metropolitan region.

2.5 Ensure Efficient Truck Transportation

Industry and trade mostly rely on transportation by truck both for getting their supplies and distributing their products. The truck plays a key role in all intermodal chains of transportation and usually is the means used for local deliveries.

However, whether trucks are travelling locally or to and from other regions, they are regularly delayed by chronic traffic congestion on the Montréal highway network. A number of issues, including breaks in this network, the fact that some port terminals are located in the city and a trucking network that remains incomplete are all factors that hinder transportation by truck and make it somewhat inefficient.

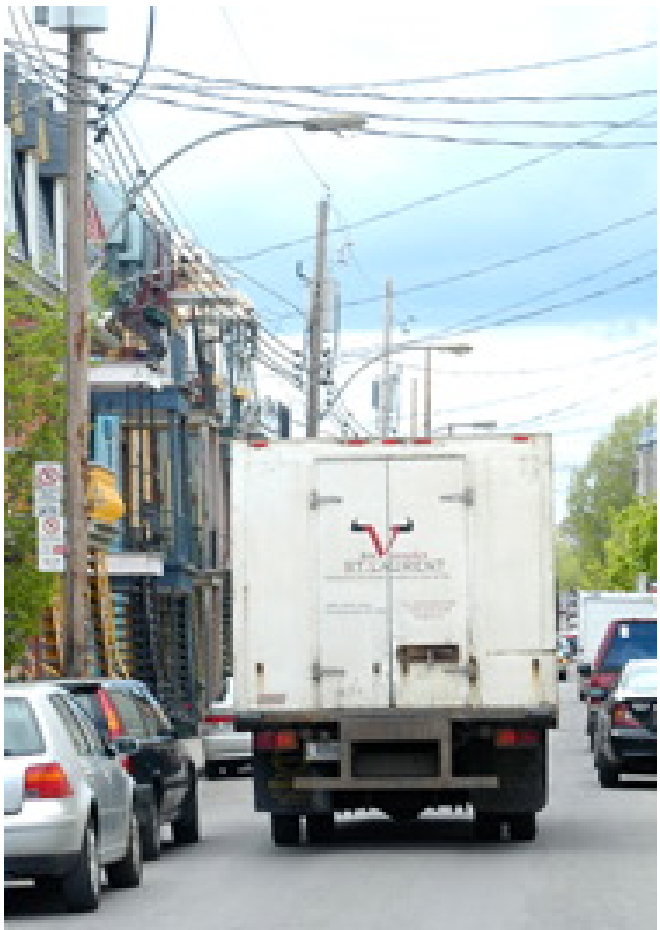
The island of Montréal is a focal point for truck transport for the whole of Québec. The concentration of industries and commercial establishments in Montréal, as well as the fact that the Québec highway network converges here, make for considerable heavy goods vehicle traffic in Montréal's territory. A recent survey revealed that 63% of heavy goods vehicles in Québec come within the limits of the metropolitan region and the majority of those – five out of six – use the road network on the island of Montréal.[19]

The trucking network is important to Montréal's economy. To ensure that it can operate efficiently in all sectors Montréal proposes to:

→ Extend the Trucking Network troughout the Agglomeration[20]

This project entails the development of a truck transport network to be planned and managed at the level of the Montréal agglomeration. Montréal thus acknowledges the importance and the necessity of globally managing truck transport in a coordinated fashion. With this new approach, all borough and reconstituted city regulations on truck traffic will be harmonized and a new map on trucking roads on the island will be produced. This new management approach will also include a global policy with respect to the on-street parking of trucks and the standardization, across the territory, of rules on non-standard vehicle licensing.

This extension and harmonization initiative will make it possible to establish uninterrupted trucking routes on the island, to strategically link some sectors in the territory, improve truck transportation services in industrial and commercial zones and standardize road signs related to truck traffic. In addition, as provided for in the city's Master Plan, this project will protect residential sectors from truck traffic disturbances and will consequently avoid conflicts between industrial and residential functions by lessening heavy goods vehicle traffic on local access streets.



Finally, Montréal wants to control the weight and the size of trucks as well as delivery zones and schedules within certain pre-determined perimeters including the city centre. These measures will require amendments to provincial laws and regulations.

→ Improve the Enforcement of Trucking Regulations

In the agglomeration of Montréal, enforcement of regulations on transportation of merchandise by road is the responsibility of the *Service de police de la Ville de Montréal* (SPVM) and of the *section du contrôle routier* [highway control division] of the *Société de l'assurance automobile du Québec* (SAAQ). A shortage of weighing stations and highway controllers is behind the difficulties experienced in regulating certain aspects of truck transport. At the same time, police officers find it difficult to construe the differences between the various regulations and, as a result, to properly enforce them.

In this context, Montréal wants to increase control and surveillance of activities related to the transportation of merchandise on its road network. Montréal will also ask the Government of Québec to improve its own control measures. In addition to protecting the population's tranquility and quality of life through improved enforcement, this initiative will enable the targeting of issues that may arise in the truck transport network and act quickly to deal with them.

→ Study the Opportunity of Establishing Intermodal Transport Centres off the Island of Montréal

Montréal wants to reduce pressure on the road network, protect road infrastructures, shield the population from constraints and nuisances and ensure tranquility for residents. This proposal has already been outlined in the city's Master Plan and encompasses the evaluation and analysis of the impacts of establishing intermodal transport centres outside the Montréal territory.

This redeployment of the distribution system should be part of a planning process at the metropolitan level to which the CMM and CITM are invited to participate. On one hand, it aims at reviewing the merchandise distribution logistics on the island in order to lessen the impact of truck traffic on the urban environment. In short, establishing intermodal transport centres encompasses first, decisions about where transit points should be located. Merchandise is shipped to these points to be consolidated and distributed across the metropolitan region. On the other hand, this initiative needs to factor in both the reality that some companies are dependent on cross-continental supply chains and the strategic positioning of Montréal as a hub for the transportation of merchandise.

2.6 Reduce the Risks Associated with the Transportation by Road of Hazardous Material

The Montréal agglomeration is a nerve centre for the transportation by road of hazardous material. Large quantities of hazardous products that present risks for the population, the environment and the infrastructures, are shipped to and from Montréal or transit through it.

It is estimated that 6% of truck shipping in the metropolitan region is of hazardous material.[21] According to MTQ data, between 1999 and 2002, only a few of the traffic accidents that took place in the territory involved trucks carrying hazardous material. During that period, 43% of traffic accidents happened on the highway network while 57% happened on the municipal road network.[22] The data also indicates that traffic accidents involving trucks with hazardous material on the municipal road network mostly happen during morning peak period.

A quantitative evaluation of the consequences of traffic accidents involving hazardous material[23] has demonstrated that, though unlikely, such accidents can have serious repercussions on the population, on the infrastructures and on the environment as well as on the ability of emergency rescue teams to intervene.

Road transportation of hazardous material comes under the purview of the Transportation of Dangerous Substances Regulation of the *ministère des Transports du Québec*, and is allowed in the same way as other types of goods transportation on the entire regional road network except in the L. H.- Lafontaine and Ville-Marie tunnels. At the same time, Montréal has developed, to ensure the safety of its residents, emergency plans in case of accidents involving hazardous material and has set up teams specialized and trained in these matters.[24] The city administration is currently focused on more preventive action and plans to review some practices to lessen the risks at their source and protect the tranquility of living environments.

In this regard Montréal intends to:

→ Integrate a "Hazardous Material Transportation" Component to the Agglomeration's Truck Transport Network

The project consists of including a "Hazardous Material Transportation" (HMT) component in the truck transport network in order to develop, for the benefit of users, a global vision of road transportation of goods. It entails the production of an HMT map indicating where hazardous material transport is banned as well the prescribed itineraries for this type of transportation.

In order to ensure coherence between the various prescribed itineraries for HMT, this project must be a global one, and must therefore be developed in cooperation with industry partners within the framework of a comprehensive plan for transportation of merchandise across CMM territory.

→ Impose Operating Hours Restrictions on the Road Transportation of Hazardous Material

Montréal will complete, by September 2008, consultations with the transportation industry, hazardous material producers and other stakeholders for the purpose of restricting operating hours for hazardous material transportation in the agglomeration's territory, more specifically category 6 toxic and infectious substances.

Such restrictions would improve the safety of the population, the environment and the infrastructures by lessening the risks of traffic accidents involving hazardous material.

To ensure its cohesiveness, this project must be part of a global vision and be implemented in a multidisciplinary context. Montréal therefore proposes that the project be realized in close cooperation with the various industry partners and, in particular, as part of CITM's activity program.

3. Summary

The initiatives that are proposed in this subsection aim at supporting Montréal's economy. Some come directly under the agglomeration's jurisdiction, like the proposed changes to the municipal road network, which is the principal access to national and international strategic transport infrastructures for both passenger and goods transportation.


E
Innovation

Innovation: toward Better Services for Montrealers

The transportation sector abounds with possibilities in terms of technological innovations. The use of these many innovations means greater mobility for Montrealers, notably via:

- an optimal management of the road network;
- improved public transit services;
- greater dissemination of information to users;
- a choice of travel routes or modes of transportation, based on information transmitted to users in real time.

Aware of the important stakes involved, the Ville de Montréal and its partners are committed to remaining at the forefront of the various technologies available in many fields (see the textbox).

Many projects using intelligent transportation systems (ITS) are underway, for example, the standardisation of traffic lights (city), parking terminals, ticket sales and collection system (STM) and the priority transit network in Montréal (STM).

Even though it is already equipped with several intelligent transportation system (ITS) applications, Montréal would like to pursue its efforts in this field. As such, it is committed to:

➞ Transportation Technology Monitoring

The Ville of Montréal will continue to provide a technology watch and will focus its attention on the following areas:

Vehicles

- buses (clean technology);
- fleet vehicles (clean technology);
- taxis (navigation, clean technology).

Maintenance

- optimization of snow and ice clearing operations;
- garbage collection (clean technology);
- road marking (development of permanent products).

Network management and user safety

- surveillance systems to ensure that public transit schedules are respected;
- red light cameras;
- photo-radar;
- parking terminals (parking permit dispensers);
- traffic responsive control (TRC) systems for traffic lights;
- reserved lanes for high occupancy vehicles;
- information for road and public transit users in real time;
- traffic management centres;
- detection systems;
- sales and fare collection system;
- public transit passenger management;
- tracking of public transit vehicles;
- public transit security;
- surveillance of vehicular traffic.

An amount of $50,000 per year is planned to provide a technology watch for these different points.

→ Adopting a Plan for Intelligent Transportation Systems (ITS)

The term "intelligent transportation system" (ITS) refers to a wide range of techniques applied to transportation to make the networks more secure, more efficient, more reliable and more environmentally-friendly without necessarily having to materially modify the existing infrastructure.[25]

Intelligent transportation systems allow for improved management and operations, as well as better service for users.

The range of technologies considered include all telematic applications in the field of transportation, especially using embedded or stationary systems, telecommunications, databases, traffic regulation systems and electronic payment.

An ITS plan would optimize the city's investments and ensure the maximum spin-off benefits as a result of using new technologies applied to transportation.

Montréal would also like to provide leadership in this field, notably in terms of research and development, and affirm its presence in the development of integrated ITS technologies on a provincial, North American and international scale.

The field of transportation is in a constant state of flux. Montréal has no choice but to develop a plan for intelligent transportation systems (ITS) if it wants to remain competitive with other major cities in North America and world wide. To develop this plan, an amount of $100,000 is planned. The city gives itself two years to submit its first plan.

→ Implementing an Industry Driven Advanced Ground Transportation Centre of Excellence [26]

Montréal's economic development strategy encourages the development of the transportation sector, both in terms of personal travel and the movement of merchandise, and aims to promote the various developing markets. Therefore, Montréal will evaluate the feasibility of establishing a cluster dedicated to the transportation sector, particularly with regard to advanced ground transportation.

The sectors under consideration for this cluster are:

- new propulsion methods and new fuels;
- telecommunications and information technologies;
- vehicle design;
- production of transportation equipment.

For the *Communauté métropolitaine de Montréal* (CMM), this would be a cluster of emerging technologies with a high growth potential. A cluster in this sector would mean:

- ensuring a better dialogue among all stakeholders;
- positioning the region of Montréal;
- ensuring project development through sources of financing;
- supporting initiatives to attain the objectives of the Kyoto Protocol.

The implementation of the advanced ground transportation cluster would require initial investments in the order of $100,000. It would begin as the first phase of a project with much more ambitious goals for subsequent phases. This first phase would consist of bringing together the stakeholders to establish an action plan for maximizing the spin-off benefits in this field for the region of Montréal.

An annual amount of $500,000 is planned to ensure the operation of the advanced ground transportation cluster. Higher-level governments will be called upon to participate financially so that Montréal can become a world leader in this cutting-edge field whose future market is estimated at several billion dollars.

Réinventer Montréal

SECTION IV

Costs and Financing

Costs and Financing

Introduction

The complexity of financing transportation systems is an indisputable reality. The Transportation Plan does not address this complexity. It proposes the development of transportation and identifies additional needs. This exercise aims at an accurate assessment of the financial efforts to be made collectively to attain the objectives of the plan.

Each of the projects and operations coming from the plan have been the subject of evaluation and use existing information or parameters generally recognized in the field of transportation.

The implementation of these projects will necessitate significant financial resources coming from provincial and federal governments, the agglomeration of Montréal, the *Communauté métropolitaine de Montréal*, businesses and from users of the transportation system. A portion of the proposed projects could be financed by current programs.

In general, however, the resources allocated to the transportation system are presently insufficient to meet demand, particularly if we wish to attain the goal of a significant increase in the use of public transit. The building of the necessary infrastructures for public and active modes of transportation would indeed require considerable financial means as well as additional investments.

It should be noted that these projects would have the effect of reducing expenses in security, health, the environment and the operation of the transportation system itself. The operators of public transit systems could also convert the gains made in productivity into other services. A mechanism should also be created to transform the savings into revenue to finance the projects.

Current Transportation System Financing

The current modalities for transportation financing (before the 2005 Canada-Québec Agreement on the transfer of revenue from a portion of the federal excise tax on gasoline) have generally been established in the following way:

- the financing of capital and operation costs of the major road network (highways and bridges) is fully assumed by the Government of Québec (*ministère des Transports du Québec*) and the federal government (the Jacques Cartier and Champlain Bridges Incorporated) from consolidated funds; many sources of revenue are drawn from the transportation sector and contribute significantly to this consolidated revenue;
- the financing of capital and operation costs of the local road network (arteries, local roads, bicycle paths, sidewalks and paths) is fully assumed by Montréal out of consolidated revenue financed by property taxes; the city created a fund targeting the road network that is financed through a property surtax; in addition, the city collects a minor subsidy from the Government of Québec for the operation of the local road network; the agglomeration collects various revenue associated with parking and fines, which are, however, largely insufficient to compensate for transportation expenditures in the agglomeration;
- the financing of capital costs of the public transit system is covered mainly by subsidy programs of the MTQ (2007), according to the following general rate:
  - 50% for the purchase of city buses;
  - 75% for the construction of buildings and for the setting up of park-and-ride facilities and reserved lanes;
  - 75% for the replacement or refurbishment of the rail-based networks (metro, train, LRT);
  - 100% for the construction of rail networks (metro, train, LRT);
  - the balance is absorbed by the organizing authority.
- the financing of the operation of local public transit comes from users and municipalities, to which is added a share of metropolitan revenues (which come from users) and amounts for reduced fares (passes, students);
- for the financing of regional public transit, the AMT finances suburban commuter train services and metropolitan buses with the aid of a fund supplied by regional sources (gas and registration tax), municipal contributions and fare-generated revenues; within the framework of CMM's approach, municipalities have agreed to finance a portion of the metro deficit (the so-called "*métropolisable*" deficit).

The 2005 Canada-Québec Agreement provided for the transfer of a portion of the federal excise tax for municipal infrastructure work including drinking water, waste water, the road network and public transit.

The agreement provides for instalment payments from the federal government of $1.3 billion for all of Québec for the period of 2005-2010, or five years. More than one-quarter of these funds are earmarked for public transit, according to ridership. The average annual financing, including the contribution of the

Government of Québec, is $330 million. Drinking water and waster water projects have priority over local roadway projects (*ministère des Affaires municipales et des Régions*, 2006). Revenue from the excise tax and the contribution from the Government of Québec are paid to the *Société de financement des infrastructures locales du Québec* [SOFIL or Québec local infrastructure financing board]. The amount allocated to the STM is equivalent to $73.1 million per year for five years.

In addition, the Government of Québec added an important component to its public transit policy within the framework of the *Fonds vert* [Green Fund]. This policy includes a subsidy program for the development of public transit services, at the rate of 50% of the costs. The annual budget for the next five years amounts to $120 million for public transit for the province as a whole and $10 million for active transportation and managing demand.

The Cost of Proposed Projects

The Total Cost of the Transportation Plan

The global cost of the infrastructure projects proposed in the Transportation Plan involves an investment in the order of almost $8.1 billion in a time frame of 20 years. Appendix A provides the detailed costs of all the projects presented in the Transportation Plan.

Table 11 presents the costs per period, grouping together public and active modes of transportation with security on the one hand, and the road network and parking on the other.

Cost of Montréal's 21 Major Initiatives

The 21 initiatives represent a total capital cost of $5.1 billion over ten years (Table 12). These costs would mainly serve to ensure the implementation of public and active transportation projects.

The distribution of the costs between the various authorities was made by maintaining the current division of financial responsibilities, assuming that the sources of financing already in place would be maintained and that Montreal would have access to new sources of financing.

To realize the 21 major initiatives over ten years, the agglomeration of Montreal would be responsible for investments of about $1.6 billion, to which would be added the cumulative operating expenditures estimated at approximately $0.8 billion, for a total sum of $2.4 billion.

Financial Contributions Required

The various projects that would be realized within the framework of the 21 major initiatives will necessitate a considerable financial outlay over a period of ten years to implement and run the projects.

Table 13 presents the average annual financial outlay by the agglomeration of Montréal and its partners per five year period.

The financial requirements of the 21 major initiatives represent an average expenditure (capital costs and operations) in the order of $240 million per year, which would be added to the current transportation budgets of the agglomeration and the Ville de Montréal.

In the first five years, the financial requirements will be less than in the following five years because many projects will be the subject of assessment studies as part of the normal production process. Thus, the costs of implementation and operation will be greater in the 5-10 year period.

For 2007, the current expenditures of the agglomeration and the cities for transportation are $1.8 billion (Table 14). These include operating and capital costs. The additional expenditures in the order of $240 million are therefore approximately 13% more per year than current expenditures.

Possible Avenues of Financing Complementary to the Current Structure

Many approaches have been suggested to establish additional financing over the course of the following three years.

Table 11

TOTAL COST OF PROJECTS IN THE PLAN BY MAJOR CATEGORY
(in millions of dollars)

	0-5 year Period	5-10 year Period	10-20 year Period	TOTAL
Collective and active transportation	1,760	2,240	2,720	6,720
Road network	600	650	160	1,410
TOTAL	**2,360**	**2,890**	**2,890**	**8,130**

Table 12

CAPITAL COSTS OF THE 21 MAJOR INITIATIVES

	CAPITAL COST			COST SHARING	
MAJOR INITIATIVE	**0-5 YEARS**	**5-10 YEARS**	**TOTAL 10 YEARS**	**AGGLOMERATION OF MONTRÉAL**	**PARTNERS**
1st Major initiative – Build a Light Rail Transit (LRT) network in the downtown core	260,000	725,000	985,000	344,750	640,250
2nd Major initiative – Build a rail shuttle between downtown and Montréal-Trudeau airport	550,000	0	550,000	0	550,000
3rd Major initiative – Modernize the Montréal Metro's rolling stock and other equipment	0	1,140,000	1,140,000	285,000	855,000
4th Major initiative – Extend the metro system eastward	170,000	0	170,000	0	170,000
5th Major initiative – Improve STM's services to increase ridership by 8% over five years	220,000	160,000	380,000	140,000	240,000
6th Major initiative – Promote ride sharing	-	-	-	-	-
7th Major initiative – Provide for greater public transit capacity in the Champlain Bridge – Bonaventure corridor	90,000	30,000	120,000	90,000	30,000
8th Major initiative – Implement a Bus Rapid Transit network with exclusive right-of-way lanes	55,000	70,000	125,000	0	125,000
9th Major initiative – Implement priority measures for buses on 240 kilometres of roads	30,000	30,000	60,000	60,000	
10th Major initiative – Implement mobility management plans	-	-	-	-	-
11th Major initiative – Modernize rue Notre-Dame	300,000	450,000	750,000	250,000	500,000
12th Major initiative – Implement the East Island Commuter Train	300,000	0	300,000	0	300,000
13th Major initiative – Double the extent of Montréal's bicycle path	66,000	42,500	108,500	65,500	43,000(1)
14th Major initiative – Implement the Pedestrian Charter	33,550	0	33,550	33,550	0
15th Major initiative – Strengthen the pedestrian character of the downtown core and central neighbourhoods	2,650	10,000	12,650	12,650	0
16th Major initiative – Give back to Montréal neighbourhood residents the quality of life they deserve	-	-	-	-	-
17th Major initiative – Improve transportation safety	30,000	30,000	60,000	60,000	0
18th Major initiative – Maintain and complete the road network on the island	127,000	173,000	300,000	230,000	70,000
19th Major initiative – Facilitate the transportation of merchandise and travel derived from economic output	-	-	-	-	-
20th Major initiative – Review governance	-	-	-	-	-
21st Major initiative – Give ourselves means that are commensurate with our ambitions	-	-	-	-	-
TOTAL 21 MAJOR INITIATIVES	**2,234,000**	**2,860,500**	**5,094,700**	**1,571,450**	**3,523,250**

Note: a dash (-) indicates the cost has not been evaluated

(1) Partnerships according to a business plan

Table 13

ANNUAL FINANCIAL REQUIREMENTS

(in millions of dollars)

	AGGLOMERATION OF MONTRÉAL	OTHER PARTNERS	TOTAL
21 Major initiatives *(average 0-5 years)*	155	330	485
21 Major initiatives *(average 5-10 years)*	315	375	690
21 Major initiatives *(average 0-10 years)*	240	355	595
Other measures in the Plan 10-20 years	185	240	425
TOTAL (average 0-20 years)	**215**	**300**	**515**

Table 14

OPERATING EXPENSES AND FIXED CAPITAL EXPENDITURES IN TRANSPORTATION VILLE DE MONTRÉAL AND AGGLOMERATION – YEAR 2007

(in millions of dollars)

Agglomeration of Montréal	1,464
Ville de Montréal	332
TOTAL	**1,796**

The establishment of new methods of transportation financing in Montréal should be based on the following principles:

- transportation should be regarded as a whole and the sources of overall financing should make it possible to meet the needs for all modes of transportation;
- all economic agents and social partners must participate in transportation financing;
- the user-payer principle should be applied wherever possible;
- government contributions, whether federal or provincial, must promote the most ecological modes of transportation in order to correct market failure in this area; in addition, after having taken into account the polluting effects, the subsidy per trip, including capital costs and operations, should be identical regardless of the mode or network;
- mechanisms to allow for the management of demand toward environmentally-friendly modes should be established.

Government of Québec

The current contribution of the Government of Québec addresses primarily capital costs. The rates are different according to the type of equipment (buses versus trains) and the nature of the work (replacement versus development). These different rates introduce an economic distortion between users in different corridors. This practice gives preferential weight to modes that are capital intensive (trains) compared with those that are labour intensive (buses), thus benefiting modes where the average cost per trip is higher. A harmonization of subsidy rate for capital costs would be desirable.

In the current structure, the Government of Québec contributes little to the operation of major public transit networks, unlike provinces like Ontario, British Columbia and Manitoba. The Government of Québec does contribute, however, to the operation of CITs [Intermunicipal Transport Councils] and OMITs [Municipal or Intermunicipal Transport Organizations], according to a lump sum amount established in 1996. Before the Ryan reform in 1992, Québec subsidized public transit organizations according to operating deficits, which did little to encourage efficiency. Aid given for the operation of public transit could be made on the basis of the number of trips provided, which would have the advantage of promoting more economically efficient solutions. Citizens of municipalities would receive the advantage of choosing methods that reduce the average cost per trip, either by their modal choice or by their choice of location and land-use planning. In the current situation, operation assistance per trip varies greatly depending on the mode and the network used; for example, $0.47 for a trip on the STM network and $2.35 for a trip on a suburban commuter train.

In addition, this contribution by the Government of Québec could apply not only to public transit but to active modes of transportation as well. Applying a methodology of results rather than means, communities promoting these modes of transportation would be rewarded for their contribution to reducing both the costs of the road networks and the undesirable effects of automobile use.

The current financing system creates an inequity between the road network and public transit. Thus, the annual operating cost of the road network in the region of Montreal, including the bridges and excluding all capital costs, is currently entirely the responsibility of the governments.

The annual cost is estimated at $248 million. The Government of Québec could establish a form of assistance as a guideline for the operation of public and active modes of transportation on the basis of equivalency with the road network.

Finally, let us recall that Montreal has undertaken discussions with the Government of Québec to determine new tax bases that would enable the city to have access to sources of income tied to the deployment of economic activity and grant the permissive powers necessary for Montréal to assume its role as the central metropolis.

Government of Canada

According to Fulton (1999), Canada is the only country in the Organization for Economic Co-operation and Development (OECD) where the central government does not supply support for public transit. The CMM proposed in 2005 bringing the federal government contribution to public transit to 9.5%, primarily by allocating a portion of 25% of the excise tax on gasoline. With the 2005 agreement, the federal government contributes a total of $46.9 million, or 5.1% of the cost of public transit on the island of Montreal.

Over the past few months, cities have called upon the Canadian government on a number of occasions to ensure the continuity of all federal funds earmarked for public transit (percentage of the gas tax and C-66) and the establishment of a national public transit plan. According to estimates by the Canadian Urban Transit Association, the transportation networks are in need of an annual injection of $4.2 billion, of which 44% is necessary to maintain existing equipment and 56% is needed for development. The Public Transit Capital Trust currently provides $300 million annually. The caucus of major cities proposes, as a first step, the annual financing of $2 billion, in addition to the maintenance of existing funds. These new funds would be distributed according to ridership and population. The money would be available to cities with integrated transportation plans promoting public transit as the primary mode to respond to increasing mobility demands in the future. Let us recall that Canada's Big City Mayors Caucus also asked the federal government to share the equivalent of one cent of the GST with municipalities so that they could have a solid financial base to respond to urban growth. This would represent additional revenue of $275 million for the city.

Communauté métropolitaine de Montréal

The municipalities outside the island of Montréal have already agreed to contribute to sharing a portion of the cost of the metro deficit.

Transportation System Users

If the total ridership does not increase in real terms (that is, more than inflation), it is possible that fare adjustments between users would be exercised. For example, it is possible to modify fares for users in the central parts of the island compared with those in neighbourhoods further away where travel distances are much longer, notably in the West Island. Thus, the STM could apply a higher fare to zone 2 (which already exists for the commuter train run by the AMT).

A tax on off-street long-term parking could be levied. This tax could take the form of a specific property tax per parking space or one according to the surface measure of the parking lot, which would avoid the problem of differentiating between paid-for and free parking spaces in a given lot. According to Lemelin and Hamel (2000), barely 10% of parking in the Montréal region is paid parking. At a rate of $1 per parking space per day, Lemelin and Hamel (2000) estimate the annual revenue at $120 million for the region. The annual revenue for the off-street parking industry is estimated at $193 million per year on the island of Montréal according to Tecsult (2006). Montréal has already asked to tax paid parking in the order of $40 million.

Tolls on the bridges encircling the island of Montreal could generate net revenues estimated at $300 million per year on the basis of annual average daily traffic volume. Tolls for car travel on the highway network of the island of Montreal would be also possible. The amounts collected could be paid into a transportation fund. Existing technology makes it possible to install these tolls without a noticeable effect on traffic congestion.

A portion of the gas and registration taxes is paid toward public transit. The special 1.5 cent per litre gasoline tax currently generates annual revenues of $51 million, paid to the AMT (2005). The government also remits $49 million to the AMT from registration fees. These revenue sources have not been indexed to the cost of living since their introduction in 1996. Just the indexing of contributions from the special tax on gasoline and registration would represent additional income.

A portion of transportation financing could come from raising the rate of the special tax on gasoline, which is currently 1.5 cents per litre. In Vancouver, the rate is 15 cents per litre. Based on a tax of 10 cents per litre, the revenue generated for the Montréal region would rise to an additional $270 million per year. Even though this level of taxation seems high, it is worth noting that gas prices fluctuate in much greater proportions; thus, in 2005, the price varied by 30 cents compared with the average price, according to data from the *Régie de l'énergie du Québec* [Québec energy board] (2005).

The Economic Sector

Transportation remittance is a practice used to finance public transit in France. It is a tax paid out of the total payroll of companies with nine employees and more. The rates vary from 1.4% to 2.6% of the total payroll in Île-de-France, according to the *Syndicat des transports d'Ile-de-France* (2007). For the region of Paris, the revenue is 2.6 billion euros ($3.9 billion). This amount finances the cost of public transit, to the tune of 71% of the cost of public transit. The results vary greatly according to the agglomeration; for example, in Lyon, the transportation payment covers 31% of the cost of public transit; it covers 68% in Rennes. If the situation in Paris were transposed onto the Montréal region, with the same amount per capita, $1.2 billion in funds would be generated per year.

Trucks, or those who use trucking services, could contribute more equitably to financing the premature wear on the road network caused by these vehicles.

Conclusion

The final decisions regarding the financing of the Transportation Plan, and on which source or combination of sources of revenue will be used, will be made in December 2007 at the completion of consultations on the plan, taking into account the results of requests made by Montréal to the governments.

Appendix

Detailed Costs of the Projects in the Transportation Plan

This appendix compiles all of the tables presented at the end of each of the chapters in Section III. The proposed infrastructure projects would cost a total of approximately $8.1 billion over a time frame of 20 years.

Most of the projects identified in the 0- to 10-year period are part of the 21 major initiatives. There are some exceptions, such as those that are part of programs already underway; for example, the renovation of MR-73 metro cars and projects to standardize and implement dynamic management of traffic lights.

Table A.1

COST OF PUBLIC TRANSIT PROJECTS PROPOSED BY MONTRÉAL

	CAPITAL COST *(in millions $)*				ANNUAL OPERATING COST
	0-5 YEARS	5-10 YEARS	10 YEARS+	TOTAL	(MILLIONS $)
Metro	***207.0***	***1,140.0***	***2,525.0***	***3,872.0***	***33.1***
MR-63 car replacement		1,140.0		**1,140.0**	
MR-73 car replacement			1,410.0	**1,410.0**	
Metro network extension					
line 5 (blue) from Saint-Michel to Pie-IX	170.0			**170.0**	2.9
line 5 (blue) from Pie-IX to Anjou			775.0	**775.0**	13.0
line 2 (orange) from Côte-Vertu to Bois-Franc			340.0	**340.0**	5.7
Other initiatives	37.0				11.5
LRT (Light Rail Transit)	***260.0***	***725.0***		***985.0***	***38.0***
Downtown/Old Montreal LRT	260.0			**260.0**	13.0
Avenue du Parc and boulevard René-Lévesque LRT line		475.0		**475.0**	13.4
Chemin de la Côte-des-Neiges LRT line		250.0		**250.0**	11.6
Other LRT services	*To be determined*				
Bus Rapid Transit System (BRT)	***55.0***	***70.0***		***125.0***	***20.0***
BRT line in boulevard Pie-IX/centre-ville corridors	55.0	45.0		**100.0**	15.0
BRT line on boulevard Henri-Bourassa		25.0		**25.0**	5.0
BRT lines on abandoned railway right-of-ways	*To be determined*				
Bus network	***214.0***	***166.0***	***94.0***	***464.0***	***50.0***
Bus fleet expansion (500 buses)	132.0	84.0	84.0	**300.0**	
Preferential measures for buses on arterial roads	30.0	30.0		**60.0**	
Express service					25.0
Line operating modes	47.0	47.0		**94.0**	
Service quality and accessibility	5.0	5.0	10.0	**20.0**	25.0
Environmental measures	*STM internal costs*				
Metropolitan-scale projects prioritized by Montréal	***850.0***	***33.0***	***15.0***	***898.0***	
East Island Commuter Train	300.0			**300.0**	
Rail shuttle between Montréal-Trudeau Airport and downtown Montréal	550.0			**550.0**	
Regional bus services		33.0	15.0	**48.0**	
TOTAL	**1,586.0**	**2,134.0**	**2,634.0**	**6,344.0**	**141.1**

Table A.2

COST OF PEDESTRIAN PROJECTS

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	0-5 YEARS	5-10 YEARS	+10 YEARS	TOTAL	(THOUSANDS $)
Implement action plans set out in the Pedestrian Charter	1,000					
Identify and promote best practices	100					50
Create a pedestrian guide, including universal access criteria	100					
Adapt traffic lights to the pedestrians needs		600			**600**	
Install traffic lights with digital countdown displays		1,800			**1,800**	
Ensure that pedestrians and pedestrian crosswalks are respected at intersections	100	4,300			**4,300**	100
Freeing up intersections	50	250			**250**	
Make areas around educational institutions safer	500	3,000			**3,000**	
Establish a systematic program to repair sidewalks	500	25,000			**25,000**	
Make snow and ice removal on sidewalks a priority	100					
Deploy pedestrian-friendly measures at major access points to the public transit network	250	1,000			**1,000**	
Make pedestrian-only streets			10 000			
Continue the development of the indoor pedestrian network and improve signage	50	250			**250**	
Annual elaboration of an action plan for universal access						50
TOTAL	**3,750**	**36,200**	**10,000**		**46,200**	**200**

Table A.3

COST OF BICYCLE PROJECTS

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	0-5 YEARS	5-10 YEARS	+10 YEARS	TOTAL	(THOUSANDS $)
Double the bicycle network size	6,000	30,000	20,000		**50,000**	
Applying normes and standard		8,000	7,500	7,500	**23,000**	
Develop the Winter Network	*To be determined*					
Implement a self-serve bicycle system [1]					**15,000**	
Quintuple the number of parking spaces for bicycles [1]		13,000	15,000	15,000	**43,000**	
Equip STM buses and taxis with bicycle racks		2,500	250	250	**3,000**	
Review regulations concerning bicycle access on metro and commuter trains	*To be determined*					
TOTAL	**6,000**	**68,500**	**42,750**	**22,750**	**134,000**	**-**

[1] *Partnerships according to a business plan*

Table A.4

COST OF ROAD NETWORK PROJECTS PROPOSED BY THE GOVERNMENT OF QUÉBEC

	STUDIES AND OTHER START-UP COST *(in millions $)*	CAPITAL COST				ANNUAL OPERATING COST
	(MILLIONS $)	0-5 YEARS	5-10 YEARS	10 YEARS+	TOTAL	(MILLIONS $)
Improve road access to Montréal-Trudeau International Airport [1]		75.0	75.0		150.0	
Rebuilding the Turcot interchange			200.0	800.0	1,000.0	
Optimize the Metropolitan Autoroute (Highway 40)			*To be determined*			
TOTAL		75.0	275.0	800.0	1,150.0	

(1) City's contribution: $30M

Table A.5

COST OF ROAD NETWORK PROJECTS PROPOSED BY MONTRÉAL

	CAPITAL COST *(in millions $)*				ANNUAL OPERATING COST
	0-5 YEARS	**5-10 YEARS**	**10 YEARS+**	**TOTAL**	**(MILLIONS $)**
Right-of-way sharing					***4.0***
Traffic management	***42.0***			***41.0***	***7.0***
Upgrade traffic lights	30.0			**30.0**	
Install traffic responsive control systems for traffic lights	10.0			**10.0**	
Other traffic management measures	2.0			**1.0**	7.0
Redevelop the road network	***439.0***	***470.0***	***13.0***	***922.0***	
Modernize rue Notre-Dame	300.0	450.0		**750.0**	
Convert the Bonaventure Expressway into an urban boulevard	90.0			**90.0**	
Improve safety on rue Notre-Dame	9.0			**9.0**	
Redevelop rue Sherbrooke Est	40.0	20.0		**60.0**	
Redevelop the Côte-des-Neiges/ Remembrance intersection			8.0	**8.0**	
Build a service road in rue Jean-Pratt right-of-way			1.0	**1.0**	
Complete the Salaberry/Highway 15 interchange			4.0	**4.0**	
Build service roads on Highway 40 in the West Island	*To be determined*				
Complete the road network	***94.0***	***179.0***	***150.0***	***423.0***	
Connect boulevard Cavendish		60.0	80.0	**140.0**	
Extend boulevard Rodolphe-Forget (Bourget)	20.0	30.0		**50.0**	
Extend boulevard de l'Assomption	*Included in the Notre-Dame project*				
Complete boulevard Maurice-Duplessis	6.0	6.0		**12.0**	
Connect boulevard Langelier	10.0	18.0		**28.0**	
Connect Cavendish and Toupin boulevards	10.0			**10.0**	
Extend boulevard Pierrefonds		20.0	20.0	**40.0**	
Extend boulevard Jacques-Bizard to Highway 40	10.0	15.0		**25.0**	
Construct a boulevard in Highway 440 right-of-way	10.0	30.0		**40.0**	
Connect boulevard Morgan to rue Morgan			40.0	**40.0**	
New access to Ile Bizard	28.0			**28.0**	
Build a shore-to-shore link between Ile Bizard and Laval for pedestrians, cyclists and emergency vehicles			10.0	**10.0**	
TOTAL	**575.0**	**649.0**	**163.0**	**1,387.0**	**11.0**

Table A.6

COST OF PARKING PROJECTS

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	**0-5 YEARS**	**5-10 YEARS**	**10 YEARS+**	**TOTAL**	**(THOUSANDS $)**
Adopt a parking policy	500					
Amend urban planning regulations with respect to parking spaces	*To be determined*					
Evaluate the opportunity of requiring that employers who provide free parking give their employees a choice between free parking or an equivalent cash premium to use public transit	100					
Undertake a thorough review of parking related fringe that are granted to municipal employees	*To be determined*					
Build, starting in 2007, parking facilities for car sharing	50	100			**100**	
Provide parking spaces for carpooling	50					
Extent the network of park-and-ride car parks	200	25,000			**25,000**	
Encourage the use of parking lots at large institutions and shopping centres by transit riders and carpoolers	250					
Eliminate illegal car parks and illegal parking practices	250					
Simplify signage for on-street parking	100					
Display information on parking availability		1,000			**1,000**	
Provide parking spaces for energy efficient vehicles and micro cars	50		100		**100**	
TOTAL	**1,550**	**26,100**	**100**		**26,200**	

Table A.7

COSTS OF TRANSPORTATION SAFETY AND QUALITY OF LIFE PROJECTS

	STUDIES AND OTHER START-UP COST	CAPITAL COST *(in thousands $)*				ANNUAL OPERATING COST
	(THOUSANDS $)	**0-5 YEARS**	**5-10 YEARS**	**10 YEARS +**	**TOTAL**	**(THOUSANDS $)**
Creation of Green Neighbourhoods		*To be determined*				
Adapting street design	5,200	30,000	30,000		**60,000**	450
Changing behaviour	700					200
Establishing an office of transportation safety						1,450
TOTAL	**5,900**	**30,000**	**30,000**		**60,000**	**2,100**

Endnotes

1 The year 2021 corresponds to an ultimate time frame in terms of the creation of households on the island Montréal, based on objectives for growth and capacity established in the Master Plan.

2 The numbers come from a regional origin-destination survey conducted by the AMT and its partners, which collected information on daily trips made by residents of the region of Montréal. It excludes region-to-region passenger travel and commercial travel (freight, deliveries, service vehicles, etc.) which can be estimated at approximately 30% of the daily travel made in the Montréal region.

3 The growth forecasts in travel demand are based on the assumption of the status quo in terms of mobility per person.

4 Board of Trade of Metropolitan Montréal, *Public transit: a powerful economic development engine for the metropolitan Montréal region,* December 2004.

5 In absolute terms, it is an additional 84,000 commutes which represents an annual increase of roughly 1.55% between 2006 and 2021, equivalent to the annual increase proposed in the *Politique québécoise du transport collectif.*

6 Based on the actual costs of the metro extension to Laval.

7 Preliminary estimates.

8 The analysis of LRT projects around the world enables us to determine a budgetary implementation cost of $40M/km. These costs do not include those associated to urban redevelopment.

9 Unit cost of $5M/km.

10 An eighth station was added in the territory of Montréal after the initial project was made public.

11 Source: Origin/Destination Survey 2003

12 The mission of *Québec en Forme* is to support communities that commit to the development of a common vision and the implementation of sustainable actions with the goal of encouraging a healthy and active lifestyle in children aged four to twelve, especially those coming from disadvantaged neighbourhoods, primarily through physical and sporting activities.

13 Geographic distribution of road injuries on the island of Montréal (1999-2003).

14 Yves Bussière, Paul Lewis, Marie-Hélène Vandersmissen and Paul-Y. Villeneuve, *Transport collectif et gestion de la demande : examen de l'impact sur la mobilité entre Montréal et la Rive-Sud*, 2002, 122 pages.

15 Since 1990, around the world, the growth rate of trade in goods is 2.5 higher than the growth rate in goods production.

16 This project is outlined in the section on the road network.

17 This project is outlined in the section on public transit.

18 This project is outlined in the section on the road network.

19 Ministère des transports du Québec, *Les déplacements interurbains de véhicules lourds au Québec, Enquête sur le camionnage de 1999,* April 2003. [Trucking activity survey]

20 This project is outlined in the section on the road network.

21 Ministère des transports du Québec, *Les déplacements interurbains de véhicules lourds au Québec, Enquête sur le camionnage de 1999*, April 2003. [Trucking activity survey]

22 Ministère des Transports du Québec, *Accidents impliquant un camion transportant des matières dangereuses - Document de travail présenté au Comité sur le transport des matières dangereuses de la Ville de Montréal,* June 2004. [Discussion paper on accidents involving trucks transporting hazardous material]

23 Study carried out in 2006 by the *Centre de sécurité civile de la Ville de Montréal* as part of the work of its committee on hazardous material transportation.

24 HAZMAT team of the *Service de sécurité incendie de Montréal* [Fire Department].

25 Taken from the Transport Canada Web site, http://www.its-sti.gc.ca/en/what_is_its.htm

26 The notion of advanced transportation is based on alternative propulsion systems and modes of travel that contribute to the reduction of pollution (greenhouse gases, noise) and traffic congestion, and to better quality of life and energy savings. (Source: *Centre d'expérimentation des véhicules électriques du Québec* (CEVEQ)).