Montreal – bike city

Organization
City of Montreal

Status
Undergoing expansion

Overview
Montreal and its population have characteristics that are conducive to the non-recreational use of bicycles. The City of Montreal's transportation plan seeks to encourage more bicycle trips and fewer trips by car. The City wants to double the bike network, establish new services for cyclists and improve existing services.

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Resources

City of Montreal
http://ville.montreal.qc.ca/portal/page?_pageid=5957,40443575&_dad=portal&_schema=PORTAL

État du vélo au Québec en 2005, by Vélo Québec
www.veloquebec.info/documents/etatduvelo2005-complet.pdf
[available only in French]

Borough of Plateau Mont-Royal
http://ville.montreal.qc.ca/portal/page?_pageid=98,6647632&_dad=portal&_schema=PORTAL
[available only in French]

Background

According to a study of Canadians by the bicycle industry, 44% of Quebeckers were cyclists in 2002, the highest percentage in Canada—10% higher than the Prairie Provinces, and one and a half times the figure for Ontario and British Columbia.

Studies in the U.S. show that the percentage of cyclists in Quebec is far higher than in the United States. In 2005, 37% of adults cycled 6 times or more over the course of the year in Quebec, while the corresponding U.S. figure was just 11%[1].

Quebec has 760 adult bicycles for every 1000 adults.

Characteristics of Montreal

With 3600 people per square kilometre, Montreal has the densest urbanization among Canadian and U.S. cities compared in the plan, and it has a density comparable to certain European cities. At the same time, there are only 0.4 cars per inhabitant, one of the lowest figures for North American cities, but equal to the higher rates of European cities[2].

The combination of the above three factors makes Montreal a city that is conducive to non-recreational cycling.

For some 20 years, the City of Montreal maintained a stable 400 km bike network. In 1999, the city was named the most bike-friendly city in North America. Recently, in response to citizen requests and observed changes in bicycle use, the municipality has taken a clear position in favour of the bicycle as a means of transportation.

Over the past 15 years, bicycle use has changed in Montreal and in Quebec as a whole. A province-wide survey in 2005 found that one adult in six (16%), or 900,000 people, were using a bicycle as a means of transportations.[3] The study also showed

[1] Trendex Sports Vision (2002), www.sportsvision.info. Quoted in État du vélo au Québec en 2005, with the following clarification: "The methodology used differs from that of the present study, which may explain the small difference in results. "
[2] Montreal Transportation Plan, 2008
[3] État du vélo au Québec en 2005

that one cyclist in three (34%) uses his or her bicycle as a means of transportation (far more than the 19% found in 2000) and 13% of cyclists use their bicycle as their principal means of transportation in summer (again an increase over the 6% found in 2000). Furthermore, this increase in cycling was observed before improvements were made in the bike network.

The vision behind an ambitious plan

Recently, in response to citizen requests and observed changes in bicycle use, the municipality has taken a clear position in favour of the bicycle as a means of transportation.

During the Montreal Summit in 2002, participants agreed on the need for Montreal to have a transportation plan as a key component of the city's first strategic plan for sustainable development (2005-2009). In 2008, the city adopted a transportation plan that received broad endorsement during consultations with major partners, transportation stakeholders and the public.

The vision behind Montreal's transportation plan is to "meet the mobility needs of all Montrealers, making the city a great place to live and an economic centre that is both prosperous and environmentally responsible. To this end, Montreal wants to reduce dependency on cars, through massive investment in active and collective modes of transportation such as streetcars, subways, green buses, trains, bicycles and walking …".

Implementing the plan will involve 21 projects over 10 years and contributions from many parties, including the city's boroughs. Project #13 seeks to double the bike network in seven years.

Problems

Growing vehicular traffic is having an ever greater impact on Montreal's quiet neighbourhoods, the quality of life for families and the safety and health of residents. Two-thirds of polluting emissions from vehicles are found in the urban areas where three-quarters of Canadians reside. Many cities have taken measures to reduce greenhouse gases and other pollutants through increased use of bicycles.

In Montreal, episodes of smog are more and more frequent, even in winter.

A number of studies show that in urban areas, cycling is the fastest way to travel distances under 5-8 km.

Travel habits and cyclists' needs have changed, and, as a result, significant modifications of infrastructure are required.

Rationale and objectives

Overall reduction of 30% in GHG emissions in Montreal by 2020.

Montreal wishes to increase bicycle use for all types of travel (work, school, recreation, etc.) and become the 'most bikeable city' through bold and forward-looking measures. More specifically, the objectives are:

- Double the bike network in 7 years.
- Establish a system of self-serve bicycles.
- Achieve a fivefold increase in the number of bicycle parking spots.

Actions

As part of the implementation of its transportation plan, the city has taken a variety of actions to encourage cycling. We present here seven of these actions across the City and aspects of the intervention plan at the scale of a district.

1- BIXI: self-serve bicycles

In May 2009, Montreal inaugurated the first large-scale public bicycle sharing system in North America. BIXI, one of the most innovative projects in the city's transportation plan, is increasing the use of bicycles and serving as a complement to the public transit system for short trips. In 2010, BIXI is providing 5,000 bikes from 400 stations located an average of 300 metres apart and strategically positioned in central parts of the city.

Location of stations BIXI, downtown area. 2010.

The BIXI system is technologically advanced; its originality lies in both the design of the bicycles and the way the system works.

- Users pay by credit card and receive a code that allows them to unlock a BIXI bike 24 hours a day, 7 days a week, from May to November.
- A rental entitles the user to an unlimited number of trips over a 24-hour period.
- On each trip, the first 30 minutes are included in the base rate of $ 5.
- The bike can be returned to any BIXI station. The BIXI Internet site tells users how many bikes and how many parking spots are currently available at a station: www.bixi.com

Designed for urban travel, BIXI offers a luggage rack, mudguards and a chain-integrated chain-wall prevents clothes get dirty or jam.

It is entirely designed and manufactured in Quebec.

BIXI is designed for short trips. The price scale encourages frequent but brief usage.

2- Consolidation of the bike network

The initial 400 km network needs updating in terms of comfort and safety. Each year, shortcomings and anomalies are corrected, as parts of the network are restored based on technical parameters recognized in Quebec.

3- Development of the bike network

The addition of new bike lanes and paths has begun, the plan being to double the network in 5 years – from 400 to 800 km! The network will reach new parts of the city, connect existing paths and create a continuous biking belt around the edge of Montreal Island.

The network includes three kinds of paths, as seen in the photographs below: A, B and C.

A- Bike paths are completely separated from automobile traffic, either within the road's right-of-way or within an independent right-of-way. Mainly found in parks.

B- Bike lanes are lanes reserved for bicycles to the right of the automobile lanes. Easy to maintain.

C- Designated biking streets are officially recognized as bikeways to be shared by drivers and cyclists.

4- Winter network

During the winter, the city maintains a portion of its bike paths, clearing the snow and spreading a mixture of abrasives and ice melters. This is the 'réseau blanc' (white network), which enables adventurous cyclists to use their bikes year round. Eventually there will be 63 km of winter bikeways.

With winters becoming warmer, cycling is gaining in popularity during the cold season. The City maintains a portion of the cycle network in the winter.

In addition to the official winter network, bike paths next to roadways are also kept clear of snow, but without the use of abrasives and melters. In years with little snow, these paths are accessible on many winter days.

Cycling in winter in Montreal does of course bring with it certain requirements:

- Cyclists must accept that risk will be higher and comfort lower than in summer.
- Cyclists must use winter tires, have proper lights and wear brightly coloured clothing, and they must adapt their riding, such as avoiding sudden manoeuvres and allowing for a longer braking distance.

5- Pedestrian charter

In 2008, Montreal adopted a pedestrian's charter, which recognizes the primacy of pedestrians in urban space. Several features of the charter are conducive to safe cycling, such as the management of intersections:

- Keep the prohibition on turning right on a red light everywhere in the city (such right turns have become permissible elsewhere in Quebec).
- Create sidewalk extensions
- During the first few seconds of a green light, cars are prevented from turning right so as to allow pedestrians and cyclists to pass.

Safe intersection (simulated) The projection of sidewalk protects pedestrians and cyclists, as well as sidewalk markings and signal sequence at the traffic light.

Also worth mentioning is the pilot project to reduce car speeds from 50 to 40 km/h on local roads.

6- Bicycle parking

There is a planned fivefold increase in the number of parking spots for bicycles, especially downtown where demand is greatest. The city plans to share this responsibility with partners, owners and institutions.

It has been shown that access to safe parking encourages the use of bicycles as a method of travel, and greatly reduces theft and vandalism.

Bike parking has been installed near subway stations to encourage people to use multiple modes of travel.

7- Internal practices

The city is also changing its internal practices, such as:

- Joint land use and transportation planning so that each will get the benefit of the other.
- Designing public space to allow safe and healthy coexistence of pedestrian, bicycle and motorized traffic.
- The city is a major partner of the climate challenge program www.deficlimat.qc.ca

A CASE IN POINT: LE PLATEAU-MONT-ROYAL

Le Plateau-Mont-Royal is one of the boroughs of Montreal, where cycling accounts for 6.5% of travel, which is five times the Montreal average. This is an innovative borough with a very high population density, and the local council was the first to adopt a travel plan (covering the years 2009-2024) that encourages active transportation (walking, cycling, etc.) and public transportation. The plan seeks to reduce travel in single occupant cars and to improve safety through 50 innovative actions, including:

- Adopting measures affecting or constraining car movements: close medians, prohibit left turns, reverse directions on one-way streets, etc.
- Setting the default speed limit at 30 km/h on non-arterial roads.
- Creating public areas where people can mix on a portion of the road system, rather than on a pedestrian mall. This would complement pedestrian zones and zones with 30 km/h speed limits.
- Establishing a local bike network made up of short stretches leading to children's destinations.
- Continuing to implement traffic-calming measures.
- Holding forums to develop new transportation initiatives every two years.
- Improving signage at approaches to bike paths and lanes.
- Making bike stands and parking areas consistent.

The plan has been tailored to fit in with major projects being implemented under Montreal's transportation plan.

Results

During public consultations, broad support was expressed for the city's transportation plan, including support from the cycling organization Vélo Québec.

The plan includes follow-up in the form of an annual review and a five-year review synchronized with the metropolitan area's origin-destination survey. The City says that the prime indicator will be changes in the 'market share' of the various modes of people transportation.

A variety of safety awareness campaigns along with improved physical arrangements for cycling has already helped reduce the number of accidents involving bicycles, despite a marked increase in bicycle trips. The number of fatal cycling accidents dropped from five in 2006 to two in 2008. In the same period, there was also a 25% reduction in pedestrian deaths and a 28% reduction in accidents leading to serious injury.

The broad regional survey of 2008 Origin-Destination measured 145 391 non-motorized travel in the morning peak, an increase of 14.9% compared to 2003, the survey does not specify the share of cycling versus other active modes.

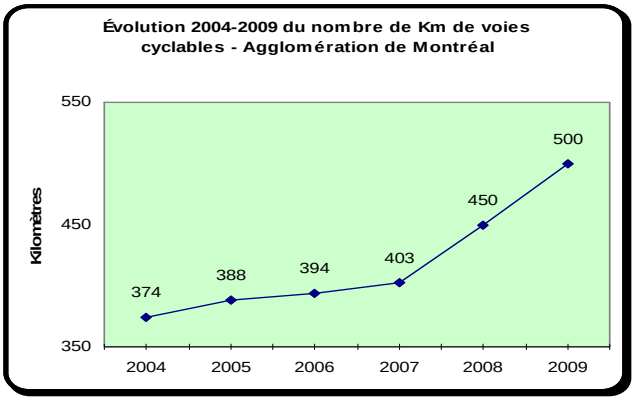
On August 13, 2009 (before the end of its first operating season), BIXI provided the following results:

8,419 BIXI members
77,070 occasional users
278 installed stations
87 times the circumference of the Earth
3,612,799 km travelled
909,053 kg reduction in greenhouse gases

On October 26, 2009, the system logged its millionth trip. BIXI in Montreal has proved to be an instant success with the public, and it has received several prestigious awards as well as huge media coverage, both at home and abroad.

The biking arrangements established in the strategic corridors of the downtown area make it possible for cyclists to access most parts of the city's business district. The permanent counter for bikes, since 2008, will provide statistics on attendance bike paths.

The following graph illustrates the rapid development of bike lanes since the adoption of the Transportation Plan in 2008.



Participants / Partners

Vélo Québec, the Agence métropolitaine de transport, the Société de transport de Montréal, Allégo, and Transportation Management Centres.

The city also has one-off partners for local projects at neighbourhood level, such as major educational institutions.

Resources

The active transportation division has a full-time staff of 14. The following table shows expected capital costs, only for the creation of equipment.

Capital costs (millions of $)

	0- 5 yrs	5-10 yrs
Doubling the bike network	30	20
Achieving compliance with standards	8	7.5
Developing the winter network	To be determined	
Setting up the BIXI system	15	
Achieving fivefold increase in bike parking	13	15
Total	**66**	**42.5**

Source: Montreal transportation Plan, 2008

Timetable

2002 • Montreal Summit
2003 • Consultations with major partners on vision and objectives
2005 • Description and diagnosis
• Strategic plan for sustainable development of Montreal
• Downtown bicycle access and mobility plan
2007 • Consultation on the transportation plan project
• Winter bike network starts
2008 • Transportation plan adopted
2009 • BIXI system created
• 2008-2009 review of results
2010 • 2009-2010 review of results

Lessons learned

The presence of cyclists in winter has a positive effect on safety because drivers see a year-round bicycle presence in the streets. Drivers do not need to relearn each spring how to drive in a way that keeps cyclists safe, because they have been driving with cyclists during the winter.

Development of System BIXI involved several technical challenges including the presence of snow. BIXI stations are therefore designed to move easily, without excavation or anchor, and they run on solar power and transmit data using wireless wave. These features provide great flexibility to managers, which adjust supply to demand only a few days or even hours.

The appearance of BIXI gives reason to believe that there will be permanent changes in residents' travel habits.

During the first weeks of operation, there were some cases of vandalism that have been fixed by replacing a part of the anchoring system.

The addition of a bike path creates fears, among shop owners, residents and sometimes even among cyclists. The city explained its plans and used a proven approach, and the fears dissipated.

The presence of an organization like Vélo Québec has certainly contributed to the expansion of bicycle use in Montreal.

The creation of new bikeways brings a new dynamic to streets, making them more welcoming, more user friendly and safer.

Next steps

- Continue with the expansion and consolidation of the bike network.
- Export System BIXI worldwide
- Review the transportation plan in 2012-2013
- Establish a travel safety office with the goal of reducing accidents by 40%.
- Educate businesses so that they install facilities that will encourage their employees to cycle.
- Develop municipal standards for new bike paths.
- Origin-destination survey in 2013

BIXI