

Bicycle Access to Downtown Montreal: Investing in a Better Future

Marc Jolicoeur, P.E.
Research Coordinator
Vélo Québec, Montreal



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Abstract

The need to facilitate and encourage bicycle access to downtown Montréal has long been a concern expressed by the cycling community. The process that has been initiated by the municipality in cooperation with Vélo Québec responds to a specific need to improve safety for cyclists.

First, an analysis of the situation was conducted, including a portrait of the cycling situation downtown as well as a review of the best practices in ten comparable cities. Following this initial step, Vélo Québec detailed various scenarios for facilitating bicycle access and mobility downtown. This work is consistent with Montréal's Master Plan and the *Transportation Plan*, both of which aim to reduce dependence on cars by encouraging the increased use of mass transit, walking, and cycling.

The proposals formulated by Vélo Québec are based on guiding principles that include the comfort and safety of cyclists as well as respect for the priority of pedestrians and transit. The proposals include bike lanes on major arteries, wide bus/bike reserved lanes, and contra-flow bike lanes on residential one-way streets. To address the shortage of bicycle parking, the plan proposes that racks be installed in numerous locations, including on sidewalks, on streets and at public and private buildings.

The Bicycle: A Transportation Mode

In Canada, traffic officials are increasingly aware of the importance of bicycling as a transportation mode. This is happening in a context where governments and individuals understand the benefits of active transportation: combining physical activity and transportation is one of the most efficient ways to stay healthy and to limit increases in healthcare costs. As a public health study conducted in Denmark over a 14-year period reveals, bicycling to work reduces mortality risks among workers by 40%!⁽¹⁾ At the same time, bicycling helps reduce pollution, again benefiting both individuals and society in general.

The best way to achieve higher modal shares of cycling is to invest in bicycle facilities, as more and more Canadian cities are doing. Our presentation will highlight the case of Montréal. In 2002, a few months after the 29 municipalities of Montréal island merged into an entity with a population of 1.8 million, the mayor launched Montréal's Summit to determine the priorities of the new city. Vélo Québec, a non-profit organization, was instrumental in promoting cycling as a top transportation priority. This led to the adoption of two actions to implement: completing the bikeways that circle the island along the river's edge; and making downtown accessible by bicycle.

A Unique Approach

The need to facilitate and encourage bicycle access to downtown Montréal has long been a concern expressed by the cycling community. The process that was initiated by the municipality in cooperation with Vélo Québec, following Montréal's Summit, responds to a specific need to improve safety for these users of public roadways and also reflects a growing concern about promoting the use of modes of transportation other than the single-passenger automobile. The work that led to the proposals made in the study *Accessibilité et mobilité à vélo au centre-ville de Montréal* (Bicycle Accessibility and Mobility in Downtown Montréal) is based on the combination of the unique expertise of Vélo Québec (technical and consensus-building) and that of the technical services of the City. First, an analysis of the situation was conducted by Vélo Québec, and the results were submitted to the City in April 2004. This included a qualitative and quantitative portrait of the cycling situation in downtown Montréal as well as a review of the best practices in ten comparable cities in Canada, the United States, and Europe.

Following this initial step, Vélo Québec detailed the various scenarios for facilitating bicycle access and mobility downtown. This work is consistent with Montréal's Master Plan, adopted in December 2004, and the *Plan stratégique de développement durable* (Strategic Plan for Sustainable Development) that the Montréal administration is about to approve. Lastly, it goes without saying that this action plan is entirely in keeping with the vision of the *Transportation Plan* currently in preparation, which is designed to reduce dependence on cars by encouraging the increased use of public transportation and active modes of transportation (walking and cycling).

The proposals formulated by Vélo Québec are based on standards and principles recognized throughout Québec and are inspired by best practices that have proven to be effective in comparable cities in Canada, the United States, and Europe. They introduce a brand-new conception of the bicycle network in Montréal.

The *Plan d'accessibilité et de mobilité à vélo au centre-ville de Montréal* is based on the following six guiding principles:

- improving the comfort and safety of cyclists;
- making cyclists a legitimate presence downtown;
- ensuring the continuity, homogeneity, and efficiency of bicycle routes;
- respecting the priority of pedestrians;
- respecting the priority of public transportation; and
- minimizing the impact on automobile traffic and parking.

Existing Situation

Montréal's bicycle network comprises mostly on-road facilities, separated from cars by small medians or bollards, and off-road bike paths in parks, most of which are along the shores of the island. A major bikeway crosses the island from north to south and leads

to the eastern edge of downtown. Other bikeways radiate in neighboring districts, but none crosses downtown, where cycling is particularly difficult along the east-west axis.

Bicycle parking is also limited. About a thousand places are offered in 350 racks on sidewalks (fig. 2). Another 2,000 places are available at various buildings, mostly on university campuses. These numbers are very small considering the 300,000 jobs downtown and the six universities and colleges attended by 120,000 students. Parking meters, fences, signposts, and other fixtures are used extensively to supplement official bike racks (fig. 1).



Fig. 1 Bicycles locked to parking meters on Peel Street



Fig. 2 Bicycle rack on curb extension

Even with a limited bicycle network and insufficient parking facilities, downtown Montréal attracts over 5,000 trips by bicycle daily. And the potential is much higher considering that half the 600,000 daily trips to downtown cover a distance of less than 8 kilometers.⁽²⁾

In boroughs around downtown, numerous one-lane streets offer a good cycling environment off major arteries. Too often, however, these lack continuity because of interruptions at parks and one-way inversions to limit car traffic. Cyclists end up riding either against traffic or in pedestrian paths and streets to avoid heavy traffic and hills.

Proposed Interventions

The objective of the proposed interventions is two-fold: first, to officially recognize and legitimize the existing routes used by cyclists; second, to develop axes that meet transportation needs (expressed countless times by cyclists), some of which have already been identified in City planning documents. The maintenance and consolidation of the existing bicycle network are also key to the achievement of these objectives.

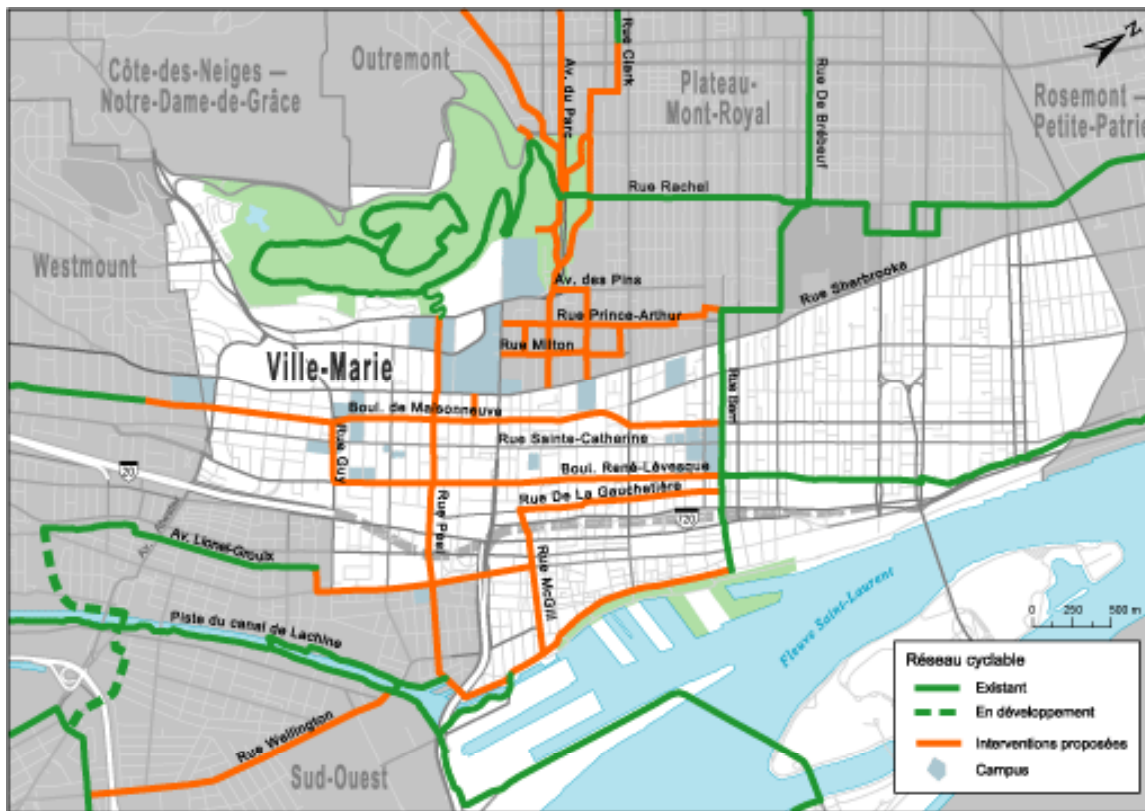


Fig. 3 Existing bicycle network (green) and proposed interventions (orange)

Mobility in the Downtown Core

The proposed bikeway on De Maisonneuve Boulevard is the cornerstone of the downtown network. It links four university campuses, crosses downtown from east to west, and connects at both ends with existing bike paths.

One of the options to be assessed as part of the redevelopment of De Maisonneuve Boulevard comprises a westbound bike lane and an eastbound sidewalk-level path (fig. 4). This will create a two-way axis for cyclists on a one-way street for cars. Adding curb extensions and concrete pedestrian crosswalks at the same time would facilitate pedestrian traffic and minimize conflicts at intersections.

Another solution that should be considered is to reinstate two-way traffic on this boulevard, with bike lanes in both directions.



Fig. 4 Proposed interventions on De Maisonneuve Boulevard

A second east-west axis is proposed on René-Lévesque Boulevard, where the existing reserved lanes for buses and taxis would be widened and opened to cyclists. Such bus/bike lanes are now in use in several North American cities, including Toronto and Vancouver. Paris is leading the way in this regard: since 2001, over 200 kilometres of lanes have been opened in the French capital.

The proposed widening of the reserved lane to 4.5 meters would allow cyclists to travel more easily and more comfortably. On the one hand, buses could pass cyclists without entering the adjacent lane while still leaving enough space to ensure cyclists' safety. On the other hand, at peak hours, ten times fewer vehicles use the reserved lane than the adjacent lane, and these vehicles are driven by professional drivers.

The enlargement of the reserved lane would also benefit users of public transportation. The reduction in interactions between buses and cyclists and between buses and cars would allow buses to travel at greater speeds. Passenger comfort would be enhanced by keeping buses away from manhole covers, and pedestrians would be less likely to be splashed since buses would not pass through puddles at the side of the road.

Accessibility to Downtown

Many improvements have been proposed to facilitate accessibility to downtown from neighboring districts. These involve building off-road paths and implementing bike lanes to ensure continuous routes. Two innovations will be introduced in Montréal in the course of this plan.

Contraflow bike lanes (fig. 5) will allow cyclists to travel in both directions on some low-traffic, one-way streets that connect major destinations. In this type of bikeway, cyclists travelling in the same direction as the automobile traffic use either a designated shared roadway (without a separate lane) or a bike lane on the right-hand side of the road, between the parked cars and the traffic lane. Cyclists travelling in the opposite direction use a well-marked bike lane on the left-hand side of the road. The moving cars are thus always to the left of the cyclists. Facilities of this kind comply with Québec standards. They are common in some European countries and are being introduced in Canada.

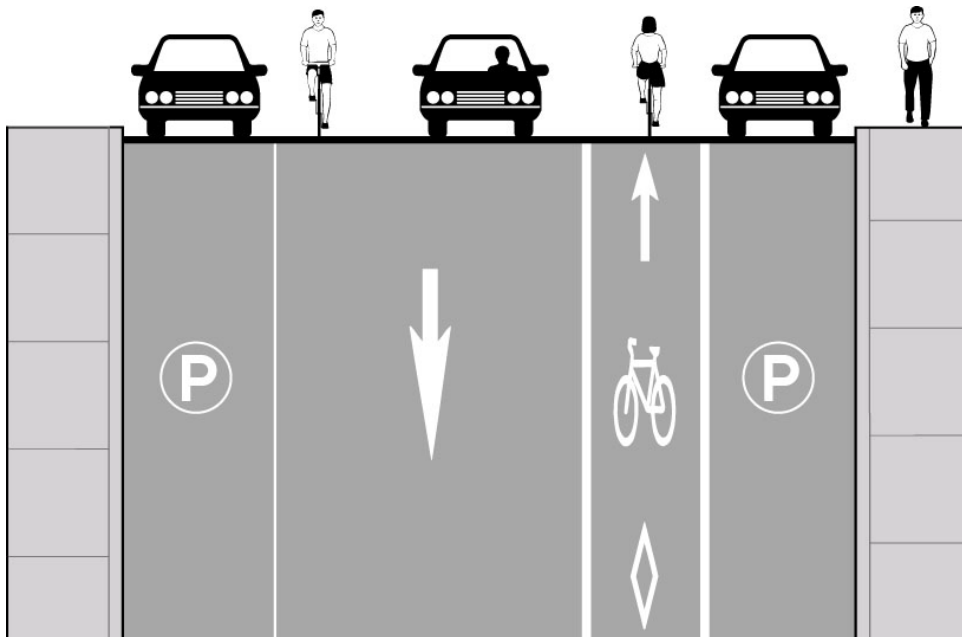


Fig. 5 Contraflow bike lane (Technical Handbook of Bikeway Design, Vélo Québec, 2003)

Chevron and bicycle markings will be used to indicate the route to be followed by cyclists in intersections and will emphasize bicycle crossings, especially for contraflow bike lanes (fig. 6). Originating in Paris, this type of marking is also used in some locations in Chicago. It is also the new standard for designated shared roadways in San Francisco and will soon be adopted by the state of California. Its use in Montréal will start as a pilot project to assess the feasibility of making such roadway markings standard in Québec.



Fig. 6 Proposed interventions on Milton Street

Contraflow bike lanes and chevron and bicycle markings will be used on Milton Street. They will legitimize bicycle traffic in this corridor that connects McGill University and the Plateau Mont-Royal borough where many students live.

Bikeways will also be integrated into major roadworks. For example, when the Park/Pine interchange is replaced with at-grade intersections, bicycle paths will be added on both sides of Park Avenue. With these paths, cyclists travelling from the Outremont and Plateau Mont-Royal boroughs will have access to a pleasant route through Jeanne-Mance and Mont-Royal parks that will take them to quiet streets leading downtown.

Parking

The availability of parking plays a key role in determining whether people adopt cycling as a means of transportation. To address the shortage of bicycle parking in downtown Montréal, the plan proposes that racks be installed in numerous locations.

Sidewalks, Streets, and Public Spaces

Most sidewalks are too congested to add racks, but there are numerous curb extensions where parking spaces could be offered (fig. 2). Many squares could also accommodate parking spots. All of the proposed racks would be either post-and-ring or inverted U, permanently installed.

On-street parking is also proposed. Since one automobile parking space can accommodate up to 10 bicycles in high-density racks, hundreds of spaces similar to those at the Maison des cyclistes (fig. 7) could be added. The racks could be used from the spring to the fall, and removed in winter to allow for snow removal. The same solution applies to above-ground parking lots, many of which are operated by the City.



Fig. 7 On street bicycle parking at La Maison des cyclistes (Vélo Québec offices)

Buildings

Bicycle racks at buildings fill the needs of employees and students for day-long parking. It is proposed to

- increase the number of bicycle parking spaces at City buildings to at least one for every 50 employees;
- enforce the bylaw requirements for bicycle parking in new or renovated buildings;
- create incentives encouraging managers of private buildings to add new bicycle parking spaces; and
- create bike stations offering not only protected parking spaces but also services such as a repair shop, bicycle rentals or self-service, showers, a café, etc.

Conclusion

The proposals made by Vélo Québec and adopted by the city of Montreal demonstrate that, with political will, it is possible to make the downtown core of a North-American city accessible by bicycle. By combining different solutions, a continuous network is proposed here.

Work has already started on some segments, such as introducing contra-flow bike lanes. Wide bus/bike reserved lanes and bike lanes will complete the network, which could not have been realized using only a single type of facility. All these solutions have been tried successfully in other, comparable cities. None is new in Canada, and only small adjustments to standards are required to put them in place. The greatest challenge lies in changing our attitudes towards the bicycle as a mode of transportation.

References

1. ANDERSEN, Lars Bo, et al. (2000). All-Cause Mortality Associated with Physical Activity During Leisure Time, Work, Sports, and Cycling to Work.
2. AGENCE MÉTROPOLITAINE DE TRANSPORT (2001), Enquête Origine-Destination 1998, Mobilité des personnes dans la région de Montréal, 170 pp.