

Velorution: On the Right Path

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Figure 1.

IMAGINE THE PROSPECT of having a subway network that served everything around, but nothing *within* downtown Montreal. Or, what if cars and buses were limited to the edge of the city centre? People would have to park at the corner of Berri and Sherbrooke and then hoof it over to their destination fifteen blocks away at Peel and René-Lévesque.

Robert Silverman, co-president and founder of the lobby group *Le Monde à Bicyclette*, argues that this is exactly what cyclists face each time they try to make their way into Montreal's central business district (CBD). He calls it *cyclo-frustration*. It is, in effect, a problem of safe access. From the west, cyclists arriving into downtown must choose one of three routes: the fast-moving and bus-riddled Sherbrooke Street, the chaotic St. Catherine Street, or the one-way (west-bound) de Maisonneuve. Coming west from the Plateau, students and officeworkers face the same problem. There have been countless near-misses, and, in fact, full-fledged accidents along Milton street, where eastbound cyclists from the McGill University campus come head-on with one-way westbound traffic.

Despite these problems, Montreal was recently voted the most cycle-friendly city in North America. In many ways, the honour is deserved. Greater Montreal is home to one of the most extensive cycling networks on the continent. Bicycle lanes criss-cross the entire island, including the Lachine Canal bicycle path, the north-south artery along rue Brebeuf, and the Circuit Gilles-Villeneuve on Saint Helen's island.

Enter the problem: if a cyclist should choose to enter the cultural, economic, and institutional heart of the city, he or she is considered *persona non grata*. Save very few exceptions, almost all streets in downtown Montreal pose a threat to cyclists, be it for lack of lane-width, speed of automobile traffic, conflicts with trucks and buses, or physical obstacles such as grade.

Consider an area downtown bordered by Berri to the east, Sherbrooke to the north, Atwater to the west, and René-Lévesque to the south. There are five bike lanes here, but all are *outside* this theoretical area (fig. 2): they run along the Canal, Berri, René-Lévesque (east of Berri), Rachel, and de Maisonneuve (west of Greene). Using these paths and other means, more than 9,000 people enter downtown Montreal on two wheels on a given weekday. (This estimate is based on 1996 MUCTC origin/destination data.) Additionally, 2,000 cycling trips are made within the central business district itself. These numbers do not include the trips of bicycle courriers.

The City of Montreal and the Province of Quebec have hinted strongly that they want to rectify the situation. Both have recognized, in the past five years, the value of proper bicycle mobility. Serge Lefebvre, project manager at the city, indicates that there are three target groups of cyclists they want to attract: work-bound, school-bound, and tourists. Both the city and the province have recognized that cyclo-tourism can be big business in Quebec, hence the province-wide *route verte* program underway, bringing cyclists out of the city, between small towns, through rural terrain.

Still, the need for an efficient bike path network in downtown Montreal has yet to be addressed by the city. Our project, a collaboration between the McGill School of Urban Planning and *Le Monde à Bicyclette*, proposes a plan to connect existing bicycle lanes in the downtown area, and to reach all major destination points, while minimizing conflicts with pedestrians, automobiles, and buses.

Studies across North America and Europe have demonstrated that travel safety and parking security are the two greatest deterrants to cycling to work. Developed over the course of three months, our report, called "On the Right Path: A Utilitarian Cycling Plan for Central Montreal," used these studies to seek solutions within an expected budget of \$5 million. Background research and consultation with *Le Monde à Bicyclette* showed that wherever possible, painted, separate laneways are the safest and most efficient method of providing bicycle access to downtown. The provision of different types of lanes and paths was the central focus of this report.

We looked at raw data on the number of cyclists who travel to and from the centre of the city to selected neighbourhoods and mapping the major destinations in downtown Montreal, in order to build a rough framework for new bicycle routes. We found that the Plateau Mont Royal is, by far, the area with the highest bicycle usage in Montreal.

The cultural, educational, corporate and commercial institutions in downtown Montreal can all be considered as cyclist destinations. However, in order to provide an efficient system of transportation, bicycle paths and lanes have to follow a limited number of centralized routes. It's the same problem that city bus administrators face: how do we decide which streets will best support bike lanes, given that only certain routes will be bike-designated?

There are two steps to the solution (fig. 5):

1. Find the most important destinations in the



Figure 2.



Figure 3.



Figure 4.

Route Options Evaluation - Based on Cyclist Preferences

Route	Street Option	Section	Continuity/ Directness	Connection to Existing Bike Routes	Max. Grade	Conflict with other All modes	Overlap with Existing Network	Access to Trip Generators	Acceptable Route Option?
North-South (West)	Abster	Sherbrooke to Lachine Canal	Good	To Lachine Canal Path	5%	Moderate	NO	Moderate	YES
North-South (West-Central)	Guy	Sherbrooke to Lachine Canal	Good	To Lachine Canal Path	5%	Moderate	NO	Moderate	YES
	Richmond de la Montagne	St. Antoine to Lachine Canal Sherbrooke to Lachine Canal	Moderate Good	To Lachine Canal Path NONE	3% 8%	Low Moderate	NO NO	Moderate Moderate	YES NO
North-South (East-Central)	Pine	Sherbrooke to Lachine Canal	Good	To Lachine Canal Path	3%	Moderate*	NO	Good	YES
	University	Pine to The Lachine Canal	Moderate	NONE	7%	High	NO	Good	NO
	Beaver Hall/McGill	St. Catherine to Lachine Canal	Moderate	NONE	10%	Moderate	NO	Good	NO
North-South (East)	Jeanne Mance du Parc	Pine to Rene Levesque	Good	NONE	5%	Moderate	NO	Good	YES
	St. Urbain	Rachel to Rene Levesque	Good	To Rachel Path	7%	Moderate	NO	Good	YES
	St. Denis	Rachel to St. Antoine	Good	To Rachel Path	5%	Moderate	NO	Good	YES
	St. Denis	Rachel to Rene Levesque	Good	To Rachel Path	5%	Moderate	YES	Good	NO
	St. Laurent	Rachel to de la Commune	Good	To Rachel Path	8%	High	NO	Moderate	NO
East-West (South)	Rene Levesque de la Guichetiere	Abster to Berni Montagne to Berni	Good Poor	Berni Path Berni Path	4% 0%	Moderate Moderate	NO NO	Good Good	YES NO
	East-West (North)	De Maisonneuve	Abster to Berni	Good	Berni and De Maisonneuve Path	1%	Moderate	NO	Good
President Kennedy/Ontario		Manfield to Berni	Moderate	Berni Path	1%	Moderate	NO	Good	NO
Sherbrooke		Abster to Berni	Good	Berni Path	1%	High	NO	Good	NO
St. Catherine		Abster to Berni	Good	Berni Path	1%	High	NO	Good	NO
East-West (Special Case)	Prince Arzur	University to St. Laurent	Moderate	NONE	0%	Low	NO	Good	YES
	Milton	University to St. Urbain	Moderate	NONE	0%	Low	NO	Good	YES

* Intersection with St. Catherine has a high level of congestion

Figure 5.



Proposed Network
Existing Network

Figure 6.

central area, paying attention to cyclists' population demographics.

2. Look at individual road geometry and figure out which streets will best accommodate the new bicycle lane additions.

Step one is straight forward, so long as the typical cycling demographic is known. Studies have shown that people who bicycle to work or school tend to be between the ages of 20 and 34, and in either relatively low or relatively high income groups. The age factor is especially important: whereas in an office tower three to four percent of employees may cycle to work, a university (of which there are three downtown) will host a much greater percentage of cyclists.

Major trip generators are, then:

1. Universities: McGill, Concordia, and UQAM
2. Office buildings: IBM Marathon, Hydro-Quebec, Place Ville Marie.

The second issue is more complex. Street widths, parking provisions, bus frequency, commercial activity, and grade all play important roles in determining the route for a bike lane. But the most important factor is efficiency: bikers will only use the path if it is convenient for them to do so. A route that seems logistically feasible will not be a practical option if, in the end, it does not serve the needs of its users.

Research, and discussions with members of *Le Monde à Bicyclette* revealed that the best routes would run through downtown in an east-west direction (connecting with existing paths) and connect to at least two separate north-south links.

Given all of the factors mentioned above, the final route selection was identified as follows:

1. De Maisonneuve (Greene to Berri): This route would connect existing paths through all of downtown with fewest physical problems.

2. René-Lévesque (Peel to Berri): Despite the need to change some street geometry, this route serves too many important buildings to be left out.

3. Atwater (Lachine Canal to de Maisonneuve): This route would connect to the Canal and serve residents in St. Henri and Point St. Charles, leading to Plaza Alexis Nihon.

4. Peel/Metcalf (Lachine Canal to de Maisonneuve): Often used by tourists, this route would connect de la Commune Street and the Old Port to downtown via the new tunnel at the base of Peel. The switchback over to Metcalf avoids the extremely busy Peel & St. Catherine interchange.

5. Jeanne Mance/Parc (René-Lévesque to Rachel): This would be the primary north-south axis into down-

town, serving the Plateau Mont Royal and connecting the high-traffic route along Rachel to the centre-city. The switchback to Jeanne Mance diverts the paths away from the reserved bus lane on Parc south of des Pins.

6. Milton/Prince Arthur (University to St. Laurent): This link is already heavily used by McGill students but presents the most difficult problems of all six proposed links. Prince Arthur, to the north, is wide enough to accommodate a two-way bike lane its entire length from University to St. Laurent without removing parking and, as such, is the intuitive choice. Using Milton, the southern option, would involve the elimination of parking for most of its length along one side. In the interest of minimizing conflict between cyclists and local residents, the best choice was Prince Arthur. A closer look, however, revealed a more complex problem. Over half of the students in the McGill Ghetto live south of Prince Arthur; it follows that for the sake of saving time, they use Milton as their main cycling route. The result is a heavy volume of contra-flow riding. An alternative path on Prince Arthur would present two disadvantages: bikers would have to climb the University Street hill, and follow a roundabout route home. And so the decision to implement a bike path along Prince Arthur — to save parking and enforce bike safety — would ignore the likelihood that students will continue to travel along Milton. The final route, then, is proposed to start on Milton and to switch to Prince Arthur at Jeanne Mance, finally connecting with the pedestrian mall at St. Laurent.

Together, the six links would cost an expected \$4.6 million (for paint, signage, and appropriate barriers) and would cover 14.7 kilometers. A related project, not discussed here, looked at bicycle parking at various destinations.

The proposal meets the present needs of Montreal's central cyclers and anticipates continued bicycle use in the downtown area (fig. 3). The links established over the coming years would begin to redefine Montreal as a city wary of automobile dependency and in favor of pedestrian-friendly streets.

Twenty years ago, people wanted a city based on cars, highways, and concrete mazes. But society has changed. We now live in a world that has begun to learn from its errors, one in which people want to have walkable streets and healthy lifestyles. In that light, \$5 million for bike paths is a small amount to pay.

Paul Conner, Dennis Kar, and Erik Karinen received Master's degrees in urban planning from McGill University in 2000.