<u>Policy Brief:</u> Sustainable Transportation in the East End of Montreal

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Abstract

The East End of Montreal is a microcosm of Canada's environmental crisis of automobile dependence, with high rates of car ownership and air pollution due to a dearth of appealing alternative transport options. In an era of sustained investment in new infrastructure for Montreal, the East End could benefit significantly from the creation of fast and reliable public transit options. This policy brief aims to outline a new approach towards ecologically and socially sustainable transportation options for the benefit of Greater Montreal decision-makers at the regional level, i.e. at the Autorité régionale de transport métropolitain (ARTM) and Montreal Metropolitan Community (MMC), and suggests that fluvial ferries, improved cycling infrastructure and the East End light rail project are all promising options to consider.

Context

Transportation is one of the largest sources of air pollution in Canada.[1] Although a common problem globally, it is especially prevalent in the Canadian context due to high rates of automobile dependency: surveys suggest that 87% of Canadians own a personal automobile[2] and that 78% of car-owners rate their vehicle as indispensable.[3] As a result, a high proportion of air particulate matter in Canada comes from the direct tailpipe emissions of personal automobiles.

Although Montreal has been ranked as one of Canada's most walkable and bikeable cities, automobile ownership and its associated environmental costs remain high on the island. Despite city and provincial efforts to promote alternative transportation, the number of cars on the island of Montreal continues to stubbornly rise.[4] This is especially true in the city's East End,[5] which is poorly served by public transit in the form of overcrowded local bus services and an infrequent commuter train. As a testament to the poor state of local transit, STM data suggests that many of the city's most perennially overcrowded bus routes serve East End axes, such as Henri-Bourassa Blvd. East and Sherbrooke St. East. Conversely, the area is well-served by automotive infrastructure, bisected by three expressways (A20, A25 and A40) and a provincial highway (Route 138) which lead throughout the city. As a result of

1. Canada, Environment and Climate Change Canada, *Sources of air pollution: transportation*, Ottawa, ON, canada.ca/en/environment-climate-change/services/air-pollution/sources/transportation.html.

2. Dennis DesRosiers, "Millennial Ownership of Vehicles in Canada," *CIPMA*, Apr. 12, 2018, cipma.org/2018/04/12/millennial-ownership-of-vehicles-in-canada/.

3. Brad Bennett, "78% of Canadians couldn't live without their car despite high costs: poll," *News 1130*, Apr. 4, 2019, citynews1130.com/2019/04/04/car-ownership-costs/.

4. Jeaenne Corriveau, "Le nombre de voitures grimpe sur l'île de Montréal", *Le Devoir*, Nov. 20, 2018, ledevoir.com/societe/environnement/541776/le-nombre-de-voitures-grimpe-sur-l-ile-de-montreal.

5. Defined for the purposes of this policy brief as the boroughs of Anjou and Rivière-des-Prairies–Pointe-aux-Trembles and the city of Montreal East.

its relative convenience, car usage in the East End has risen sharply in recent years at the expense of public transit.[6]

The status quo poses a significant environmental problem because personal automobiles are responsible for significantly greater air pollution than public transit, as both buses and trains are associated with lower overall road tailpipe emissions.[7] The effects are not merely theoretical: the East End has the worst air pollution in Montreal and its air quality crisis has received significant media attention.[8] Action on automotive emissions aimed at reducing emissions can help alleviate this public health emergency.

In recent years, shifting public policy priorities and a favourable economic climate have resulted in record investments into new transportation infrastructure on the island of Montreal, with construction ongoing on a Metro Blue Line extension to Anjou and the new REM light rail system, along with the recent reconstructions of the Champlain Bridge and Turcot Interchange. This presents an unprecedented opportunity to develop sustainable transportation options in the East End with important environmental, economic and equity benefits.

Policy Options

Current policies towards the development of alternative transport options in the East End have been scattershot and insufficient. The construction of the Train de l'Est commuter rail line to Mascouche was heavily promoted as providing benefits for the East End, but service is infrequent, with only seven trains in each direction on an average weekday.[9] Moreover, poor north-south transit connections means that the stations, which are located in the north of the East End, do not adequately serve residents of more southerly neighbourhoods. The ongoing project to extend the Metro Blue Line into Anjou is likewise flawed, because its only station in the East End, at the Galeries d'Anjou shopping centre, will be located at the very western edge of a vast 68 km^2 area of Montreal and suffer from accessibility issues for distant communities. Finally, active transportation options are also inconsistent, with no protected bicycle lanes east of Autoroute 25 and only twelve Bixi bikeshare stations —none of which serve communities north of A40.[10]

6. Olivier Faucher, "Le transport collectif perd du terrain dans certains secteurs de l'Est de Montréal," *Métro*, Aug. 4, 2020, journalmetro.com/local/montreal-nord/2493120/le-transport-collectif-perd-du-terrain-dans-certains-secteurs-de-lest-de-montreal/.

7. Daniel L. Mendoza, et al., 2019, "Modeling net effects of transit operations on vehicle miles traveled, fuel consumption, carbon dioxide, and criteria air pollutant emissions in a mid-size US metro area: findings from Salt Lake City, UT," *Environmental Research Communications* 1(9), doi.org/ 10.1088/2515-7620/ab3ca7.

8. Quebec, Institut national de santé publique, "Pollution de l'air dans l'est de l'île de Montréal : des études à venir," *Bulletin d'information en santé environnementale*, Apr. 3, 2019, inspq.qc.ca/bise/pollution-de-l-air-dans-l-est-de-l-ile-de-montreal-des-etudes-venir.

9. Exo, "exo5 Mascouche," Jun. 22, 2020, exo.quebec/Media/Default/z/lignes/train/TRAINS/MA/exo5-20200612_21001231.pdf.

10. Bixi, "Carte des stations," secure.bixi.com/map/. Accessed Oct. 20, 2020.

Without a coherent transport system in mind that is competitive with highways, the East End will continue to lack appealing alternatives to the personal automobile. As such, the development of an alternative transport policy should achieve the following objectives:

1) serving the needs of all communities throughout the area, unlike existing active and public transport infrastructure;
2) ensuring fast and reliable access to the entire city of Montreal, akin to the area's network of autoroutes; and
3) achieving significant reductions in tailpipe pollution and improvements in air quality through the replacement of personal automobiles on East End roads.

However, important constraints also persist. Because of the low population density and large area of the East End, it is difficult for a single piece of transport infrastructure to effectively serve the entire region, thereby necessitating secondary investments to bridge the last-mile problem. More importantly, the financial cost of any investment is a significant limitation, as a high price tag associated with infrastructure would make it hard to secure financing from the federal and provincial governments and semi-governmental actors like the Caisse de dépôt et placement du Québec (Caisse).

Several policy options are possible to develop alternatives to personal automobiles in the East End, and the following options are fairly prominent ones in the public discourse and drawn from various proposals by municipal and provincial political parties and other non-governmental actors:

1) the extension of the under-construction REM light metro system or the construction of a new tramway system eastward along the shore of the St. Lawrence River (on Notre-Dame St.) towards Montreal East and Pointe-aux-Trembles;
2) the creation of a shuttle ferry on the St. Lawrence River linking Pointe-aux-Trembles with Downtown Montreal by leveraging existing bus terminals along the riverside along with the piers of the Old Port; and
3) the construction of protected bicycle infrastructure along more arterial roads in the East End and the rollout of the Bixi bikeshare system in the remainder of Anjou and Rivière-des-Prairies–Pointe-aux-Trembles.

Although this is by no means an exhaustive list of possible policy interventions, they reflect a diversity of modes of transportation and philosophies and represent both public and active transport methods. They also reflect a consideration for cost, as the ferry and bike systems are both relatively low-cost interventions, while a REM extension would be heavily subsidized by the semi-public Caisse.

Recommendations

Each of the recommended policies to concerns comes with distinct advantages and drawbacks in terms of each of the three criteria previously identified. A summary of the main evaluation discussion is presented in the following table:

Table 1: Evaluation of recommended policy options

NB: A plus (+) sign at the beginning of each point indicates a perceived pro and a minus (-) sign indicates a perceived con.

Policy to consider	Criterion 1: Serving the needs of communities	Criterion 2: Ensuring fast & reliable access	Criterion 3: Reductions in air pollution
East End light rail system	+ Creates a united link across all southern communities of the East End that bridges terrain obstacles such as quarries and oil refineries - Limited to a single axis and fails to serve the parts of the East End which are distant from the St. Lawrence River	+ Segregated from road traffic + Allows for high frequency and volume + Connections to the Metro, REM and bus terminals - Requires slower local buses to bridge the last-mile problem	+ High capacity can remove more cars from the road + Electric trains do not pollute - Requires diesel buses to link stations to more distant East End communities, contributing to air pollution
Fluvial downtown ferries	+ Responds to an urgent need for a rapid downtown connection + Serves the heavily underserved Pointe-aux-Trembles area - Does not serve Anjou, Montreal East or Rivière-des-Prairies	+ Unimpeded right of way along the river + Very rapid access to downtown - Only goes downtown - Last-mile problem exists at both terminals (in the Old Port and in Pointe-aux-Trembles)	+ Ferries are a low-polluting alternative to cars + No pollution associated with construction since infrastructure already exists
Improved cycling infra-structure	+ Can be scaled up to reach all communities and does not rely on density for viability + Allows for presence on multiple rights-of-way and better coverage than other options	+ Can leverage citywide Bixi network + Routes are flexible and not disrupted by roadwork or interruptions of service - Access to downtown by bike is slow due to the long distance and	+ Zero emissions + Replacement of driving lanes with bike lanes also reduces car traffic volume through reverse induced demand - Cycling is the least accessible of the three options and may thus

	- Not accessible to families, people with disabilities, and others	numerous signal-controlled intersections - Obstacles along the way (quarries, slopes, oil refineries, sunken highways)	lead to the smallest reduction in air pollution

Ultimately, the success or failure of any of these policy recommendations will depend on the degree of public consultation involved, as the siting of stations (whether Bixi, ferry or train) near people's homes and local community hubs will be essential in ensuring their appeal to the greatest number of prospective passengers. For the two public transport options, solving the last-mile problem (e.g. with local buses, park-and-rides, etc.) is also essential, as inaccessible transportation options will fail to convince many people to leave their cars.

However, the most important takeaway remains that any of these interventions—or perhaps, multiple of them in tandem—would provide a marked improvement over the current transportation situation in the East End of the island of Montreal and could contribute to a significant decrease in atmospheric pollution associated with private automobile use. Their urgent consideration while Montreal's current political climate in favour of infrastructure investment continues is a necessity.