Converting On-Street Parking to Active Transportation in Toronto: Two Studies of Merchant and Patron Preferences

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Abstract

In 2008 and 2009, Clean Air Partnership (CAP) conducted two research studies on Bloor Street in Toronto, Ontario, Canada. These studies were designed to determine the public acceptability and potential economic implications of reallocating road space from on-street parking to widened sidewalks or bike lanes. CAP released two in-depth research reports (2009, 2010) about these studies. This paper summarizes the main findings of each.

In July of 2008, 61 merchants and 538 patrons on Bloor Street in the Annex neighbourhood of downtown Toronto were surveyed.

In July of 2009, the study was replicated on the same street but in a different location further from the downtown: 96 merchants and 510 patrons on Bloor Street in Bloor West Village were surveyed.

Overall support for changes in street use allocation was greater in the Bloor Annex neighbourhood than Bloor West Village. However in both neighbourhoods, the majority of merchants believed that changes to accommodate an increase in pedestrian or cyclist infrastructure would increase or would not change their daily number of customers.

In both neighbourhoods, walking was the dominant reported mode of travel to Bloor Street (46% of the patrons surveyed in both study areas). Bicycling was more common in the Annex, and driving was more common in Bloor West Village.

In terms of patron preferences for changes to street use allocation, bike lanes were preferred over widened sidewalks in both neighbourhoods. In Bloor West Village, there was almost equal patron preference of change and no change, whereas in the Bloor Annex neighbourhood, surveyed patrons indicated a preference for a change of the street use allocation by a ratio of nearly 4 to 1.

Biographies

Nancy Smith Lea is the Director of the Toronto Coalition for Active Transportation at Clean Air Partnership. Since 1993 she has held leadership positions in several cycling organizations in Toronto. She has a background in academic research and has published several articles on barriers and incentives to cycling and walking.

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Fred Sztabinski was the former Project Coordinator of the Toronto Coalition for Active Transportation at Clean Air Partnership, and has led a variety of active transportation research and planning studies. He is currently an Associate with the Ontario Growth Secretariat in Ontario's Ministry of Infrastructure.

Introduction

With 2.5 million residents, Toronto is Canada's largest city. It covers an area of 630 square kilometres. The vast majority of trips to work are made by motor vehicle (56%) or public transit (34%). While active transportation is on the rise, currently less than 10% of Toronto's work trips are made by bicycle (2%) or walking (7%). (City of Toronto, 2008). The majority of utilitarian walking and cycling trips are made in the downtown urban core, which has a land area of approximately 97 square kilometres.

Arterial roads are main streets in urban areas that must serve many different functions. Deciding on the best way to allocate space is a complex balancing act. From a transportation planning perspective in Toronto, traffic movement is considered to be the primary function of these streets. (City of Toronto, 2007a) On-street parking is also provided on most major arterials in Toronto.

There is a growing body of research to suggest that the importance of and desire for on-street parking has been overestimated. (Go for Green, 2004; Transportation Alternatives, 2006). Yet, many merchants and city residents still believe that on-street parking in commercial districts is vital to the economic success of business. Removing sections of on-street parking, however, would increase the amount of space available for active transportation infrastructure such as bike lanes, widened sidewalks and other amenities (e.g. benches, trees), and may have a positive impact on local businesses.

The City of Toronto's Bike Plan (City of Toronto, 2001) and Walking Strategy (City of Toronto, 2009a) are policy documents built upon the principle that encouraging residents to cycle and walk more often will contribute significantly to achieving Toronto's public health and greenhouse gas emission reduction targets and will improve the liveability of the City. "Achieving the vision will involve some difficult trade-offs, but will also yield significant environmental, economic, social equity and health benefits to individuals and to the City as a whole." (City of Toronto, 2001, 1-2).

An increase in the amount of space allocated for other forms of active transportation may also lead to increased comfort and safety for cyclists and pedestrians. In Toronto, there is a disproportionate representation of bicycles and pedestrians in traffic collisions relative to their numbers on the road. Between 1999 and 2009, 50% of the 729 people killed in traffic collisions were pedestrians and 3% were cyclists. (City of Toronto, 2010a).

According to the City of Toronto's Pedestrian Collision Study (2007b) and the Toronto Bicycle/Motor-Vehicle Collision Study (2003) collisions involving pedestrians and cyclists are concentrated in the downtown core, particularly along arterial roads. Moreover, the most frequently reported type of bicycle/motor-vehicle collision in central Toronto involves a motorist opening a vehicle door into the path of a passing cyclist. Almost all cases of "dooring" occur on arterial east-west roads in central Toronto that have high-turnover curb-side parking. The resulting injuries sustained are often more severe than other bicycle/motor vehicle collisions (City of Toronto, 2003)

It is timely, therefore, to examine reallocating road space to active transportation on Toronto's most major east-west downtown arterial: Bloor Street and Danforth Avenue (referred to as the Bloor-Danforth corridor).

In 2008 and 2009, Clean Air Partnership (CAP) conducted two research studies on Bloor Street. With funding provided by Transport Canada, the Toronto Community Foundation and the City of Toronto, these studies were designed to determine the public acceptability and potential economic impact of

reallocating road space from on-street parking to widened sidewalks or bike lanes. CAP released two in-depth research reports (2009, 2010) about these studies. This paper summarizes the main findings of each.

Study Purpose

The purpose of the two studies was two-fold: first to determine the current assumptions of merchants in two areas on Bloor Street about the travel modes of their customers, and their perceptions of how changes in street use allocation might impact their business; and second, to determine the actual modal share and consumer behaviour of patrons, and their desire for and preference between changes in street use allocation in favour of widened sidewalks or a bike lane.

Study Description

The two studies followed an identical format, one year apart, involving a survey for merchants and another for patrons. The methodology was based on 2006 research documenting the importance of various modes of transportation on Prince Street in New York City (Transportation Alternatives & Schaller Consulting, 2006). Two surveys were used to collect data on Bloor Street from neighbourhood merchants and patrons:

1. The merchant survey was designed to investigate merchants' assumptions about the modes of transportation used by their customers, and their perceptions of the potential impact of changes in street use allocation to accommodate active transportation on their daily number of customers.

2. A pedestrian intercept survey was designed to determine the modes of travel that patrons use to access the area, their consumer behaviour in the neighbourhood, and their preferences for different types of street use allocations on Bloor Street in the area.

Additional data about merchants' business types and patrons' postal codes were also collected. In the first Bloor Street study, the Toronto Parking Authority (TPA) provided parking capacity data for pay-parking in the study area. On-street parking capacity and private parking capacity for the second Bloor Street study were estimated during a site visit in February 2010, and municipal pay-parking lot capacity data were retrieved from TPA's website.

Context

Background

With the exception of one bicycle lane installed in 1979, the construction of Toronto's bike lane network did not begin until the early 1990s. According to Andrew Macbeth, a City of Toronto transportation manager at the time, the introduction of these bike lanes in Toronto and other North American cities marked an important trend. "Perhaps for the first time in North America since the invention of the automobile, road space for motor vehicles is being reallocated to bicycles." (Macbeth, 1999, 39)

Macbeth noted that in Toronto, motor-vehicle traffic volumes are generally unaffected by the installation of bicycle lanes even when a reduction from four traffic lanes to two is required. Installing bike lanes by way of a "road diet" (reducing the number of travel lanes and/or roadway width) is preferable in order to simultaneously create opportunities for improving the pedestrian realm (seating, plantings, sufficient space for comfortable pedestrian movement, etc.) However, for many arterial roads in Toronto lane reduction is not considered feasible due to potential adverse impacts on motor-vehicle traffic and public transit.

Many of Toronto's east-west major arterials in the downtown core operate with three travel lanes during the peak period and two lanes during off-peak. Streetcars generally share the centre lane with motor vehicles. During non-peak periods, on-street parking is commonly permitted in the curb lanes while in peak periods on-street parking is prohibited in the peak direction curb lanes. Since roadway widths on most downtown arterials are typically 14 metres there is insufficient room to install a bicycle lane while maintaining this current traffic configuration. The removal of some on-street parking would be required.

However even on streets where motor-vehicle traffic would not be adversely affected the "impact on the on-street parking supply is usually the most controversial element of a bicycle-lane plan." (Macbeth, 1999, 45). To date, in 2010, with only a year remaining in the original timeline established for the implementation of the Toronto Bike Plan adopted by Council in 2001, less than 25% of the planned 495 km of on-street bike lanes have been built, in part due to opposition from businesses on streets where they are proposed. (City of Toronto, 2010b)

Only two of Toronto's major east-west downtown streets have bike lanes, and even these are discontinuous. The gaps in these bike lanes are sometimes the result of pressure from business owners. The most notable example happened in October 1993, when a 2.8 kilometre bike lane was installed on College/Carlton Streets, an east-west downtown arterial. Less than a year later, Toronto City Council responded to lobbying from businesses and approved the removal of 20% of the bike lane in order to reinstate parking meters.

Dating back to at least 1990, cycling advocates have identified the Bloor-Danforth east-west corridor as a high priority for a bike lane. Stretching almost 20 kilometres across the city, the Bloor-Danforth corridor is characterized by vibrant retail/commercial areas, a relatively high cycling mode share, a high incidence of car-bike collisions, no streetcar tracks, and is served by a subway underneath the street. The City did not include this route in its 2001 Bikeway Network plan, though a 1992 consultant's report to the City of Toronto recommended it as an "ideal route" (Marshall Macklin Monaghan, 1992).

In 2007 City Council directed Transportation Services to undertake a report on the feasibility of establishing a bikeway on Bloor Street and Danforth Avenue. In 2009 City staff reported back to Council "it is not feasible to accommodate a consistent bikeway design along the entire corridor and maintain the existing parking supply and traffic capacity." (City of Toronto, 2009b). In 2010 the City retained professional services to undertake a Class Environmental Assessment Study for the establishment of a new bikeway in the Bloor-Danforth corridor. However, "one of the seven alternative solutions the consultant is instructed to explore is "do-nothing" (City of Toronto, 2010c, 12).

While progress toward a Bloor-Danforth bike lane is slow, improvements to the pedestrian environment are more advanced. In 2005, Toronto City Council approved a Bloor Street Transformation Project and a Bloor Corridor Visioning Study. Key elements of both of these ambitious projects are to beautify and improve the public realm in the central shopping sections of the corridor. In December 2009, City Council adopted an Official Plan Amendment that included new active transportation guidelines for the area that "recognize and enhance the primacy of pedestrian safety and movement" (City of Toronto, 2009c, 7).

Study Areas

Bloor Annex

The Bloor Annex neighbourhood is a diverse neighbourhood, with a large student and young professional population. The area also has a strong commercial and entertainment character, with Bloor Street as the focus. The boundary of the study area was a 600-metre section of Bloor Street between Spadina Avenue and Bathurst Street. The city's main east-west subway line runs underneath Bloor Street, with an interchange to the north-south University-Spadina subway line at the intersection of Bloor Street and Spadina Avenue. Two subway stations, Spadina and Bathurst, as well as three bus routes and one streetcar route provide transit access to the study area.

The typical layout of Bloor Street within the study area is symmetrical, with sidewalks fronting the buildings on each side, a parking/travel lane, and then another travel lane. From building face to building face on the opposite side of the street, Bloor Street's typical width in the Annex is 20.5 metres, of which 12.2 metres are the roadway.

Within the study area, there are 168 on-street paid parking spaces and 267 spaces in three off-street municipal parking lots within easy walking distance of Bloor Street.

Bloor West Village

The Bloor West Village study area was defined as an 800-metre section of Bloor Street between Kennedy Avenue and Jane Street. Described by the local Business Improvement Association as "A Small Village in a Big City", Bloor West Village is a diverse neighbourhood with Central and Eastern European immigrant roots. The street-level businesses are a mix of retail stores, services and restaurants. Bloor West Village is located on Toronto's main east-west subway line. Two subway stations, Jane and Runnymede, as well as seven bus routes provide transit access to the study area.

The typical layout of Bloor Street in the study area, from north to south, is composed of a sidewalk fronting the buildings, a westbound travel/parking lane, a westbound travel lane, an eastbound travel lane, an eastbound travel/parking lane, a parking bay (in some sections), and a sidewalk fronting the buildings. The typical street width (including the parking bays on the south side) is 16.5 metres.

The maximum on-street paid parking capacity in the study area is approximately 100 spaces and there are 447 spaces in four off-street municipal parking lots. There are also private parking lots in the area.

Methodology

Surveys

Data collection for the Bloor Annex study was conducted in a two-week period from July 8 to 19, 2008, and employed two surveys: a survey of ground floor merchants along Bloor Street between Spadina Avenue and Bathurst Street; and a survey of pedestrians approached at one of eight locations throughout the study area on both sides of the street.

The Bloor West Village study employed two surveys administered over a ten-day period, from July 20 through August 01, 2009. A merchant survey was conducted with the ground level businesses along Bloor Street between Kennedy Avenue and Jane Street. A pedestrian survey was conducted in eight locations on Bloor Street between Kennedy Avenue and Jane Street.

Surveyors from the University of Toronto were hired and trained to carry out the surveys.

Study Limitations

Several limitations were detailed in CAP's research reports (2009, 2010). The most noteworthy were:

1. The studies were conducted during the summer months, the most popular months for walking and cycling.
2. Not all of the questions on the two surveys were identical, making the two sets of data more difficult to compare or pool.
3. In the pedestrian survey, the question that asks about preference for a bike lane or wider sidewalk could have included a more detailed description of the inferred street layout. While a bike lane inherently suggests improved conditions for cycling, a wider sidewalk doesn't necessarily result in pedestrian amenities such as benches and trees. While the implication was that enhancements to the pedestrian environment would be provided, unfortunately this may not have been conveyed in the survey question. Also since removing on-street parking eliminates a buffer zone from motorized traffic, this can dilute the potential benefit to pedestrians of a widened sidewalk.
4. Collecting accurate capacity and usage parking data was challenging for both studies since time-intensive field work (i.e. for repeated counts to ascertain parking turnover and duration) were beyond the scope and budget of this project. For the Bloor Annex study the Toronto Parking Authority (TPA) provided parking data extracted from the Pay and Display Usage Summary reports. This data only tracks payment and not actual usage so misses levels of unpaid parking usage. Despite its inadequacies it is the primary source of data that the TPA uses for capacity analysis. However due to a reduction in staff resources, the TPA was unable to provide equivalent data for the Bloor West study. Therefore, conclusions about the capacity of side street and pay parking lots to accommodate the demand for parking in the case of the removal of on-street parking were not made for Bloor West Village.

Summary of Findings

Bloor Annex

- Only 10% of 538 patrons surveyed drive to the Bloor Annex neighbourhood;
- Even during peak periods no more than about 80% of paid parking spaces are paid for;
- People arriving by foot and bicycle visit the most often and spend the most money per month;
- More of the 61 merchants surveyed believe that a bike lane or widened sidewalk would increase business than those who think those changes would reduce business;
- The majority (78%) of people surveyed preferred to see street use reallocated for widened sidewalks or a bike lane, even if on-street parking were reduced by 50%
- Of the 417 respondents who prefer a street change allocation, 79% would prefer a bike lane while 21% prefer widened sidewalks; and
- The reduction in on-street parking supply from a bike lane or widened sidewalk could be accommodated in the area's off-street municipal parking lots.

Bloor West Village

- Only 21% of the 510 patrons surveyed drive to the Bloor West Village;
- Merchants overestimated the percentage of people who drive to Bloor West Village and yet more than half of the 96 merchants surveyed believed that reducing on-street parking by 50% and adding a bike lane or widening sidewalks would either increase or have no impact on their daily number of customers;
- People who arrive by transit, foot, and bicycle visit more often and report spending more money than those who drive;

- Patrons who preferred to see street use reallocated for widened sidewalks or a bike lane were significantly more likely to spend more than $100 per month than those who preferred no change; and
- The majority (58%) of people surveyed preferred to see street use reallocated for widened sidewalks or a bike lane, even if on-street parking were reduced by 50%.
- Of the respondents who prefer a street change allocation, 74% prefer a bike lane while 26% prefer a widened sidewalk.

Similarities and Differences of Findings in Two Study Areas

The two study areas are notably different in terms of streetscape and characteristics of the local population.

In the Bloor Annex neighbourhood, the width of Bloor Street is typically 12.2 metres, and on-street parking is provided during off-peak hours and in the off-peak direction at peak hours in the curbside travel lane. Reallocating street use for widened sidewalks or a bike lane in this section of Bloor Street would require the removal of some on-street parking.

In the Bloor West Village, the width of Bloor Street is typically 16.5 metres, and on-street parking is provided during off-peak hours in the curbside travel lane on the north side, and in curbside parking bays on the south side. Widening sidewalks or adding a bike lane would not necessarily require the removal on on-street parking, although in order to maintain parking, travel lanes would be impacted.

The population characteristics of the two Wards in which the study areas are located are also different. Average household income, percentage of work and non-work trips made by automobile are higher in Bloor West Village, and household density is lower (City of Toronto, 2006a,b)

A summary of similarities and differences of merchant and pedestrian survey results is presented in Tables 1 and 2.

Overall support for changes in street use allocation was greater in the Bloor Annex neighbourhood than Bloor West Village. However in both neighbourhoods, the majority of merchants believed that changes to accommodate an increase in pedestrian or cyclist infrastructure would increase or would not change their daily number of customers.

A smaller percentage of Bloor West Village merchants expected that the removal of on-street parking in order to widen sidewalks or to add a bike lane would increase their daily number of customers than in the Annex neighbourhood. This difference is not unexpected, given that 25% of Bloor West Village merchants believe that more than 50% of their customers drive to the area, as compared to only 4% of Annex merchants.

A few differences and similarities between the results of the pedestrian surveys conducted in the two neighbourhoods stand out (Table 2). First, in both neighbourhoods, walking is the dominant mode of travel (46% of the pedestrians surveyed in both study areas). Bicycling and transit use are more common in the Annex, and driving is more common in Bloor West Village.

Table 1: Comparison of Annex and Bloor West Village Merchant Perceptions of the Impacts of Street Use Allocation Changes on Number of Customers Served (reported as

percent merchant response)		
	Annex	**Bloor West Village**
Number of Completed Surveys	61	96
Widen Sidewalks		
Increase Customers	35%	13%
No Change	40%	41%
Decrease Customers	25%	46%
Bike Lane		
Increase Customers	30%	11%
No Change	44%	44%
Decrease Customers	25%	46%

In terms of preferences in street use allocation changes, bike lanes were preferred over widened sidewalks in both neighbourhoods. In Bloor West Village, the preference of change or no change was almost equal, whereas in the Bloor Annex neighbourhood, surveyed visitors preferred change by a ratio of nearly 4 to1.

Table 2: Comparison of Annex and Bloor West Village Pedestrian Survey Results (reported as percent response)		
	Annex	**Bloor West Village**
Number of Surveys	538	510
Live or Work in Area		
Yes	55%	70%
No	45%	30%
Mode of Travel		
Walk	46%	46%
Bicycle	12%	5%
Public Transit	32%	24%
Car	10%	21%
Preferences in Changes to Street Use Allocation		
Widen Sidewalks	16%	15%
Bike Lane	62%	43%
No Change	22%	42%

Conclusions

This study was initiated in two areas of Bloor Street in Toronto, Ontario, Canada to understand the potential impacts of reallocating road space from on-street parking to active transportation. The assumptions of merchants were tested about the travel modes of their customers and the potential impacts of changes in street use allocation on their businesses. The preferences of merchants and patrons for change or no change were also examined.

The data presented in this report indicate that in these two neighbourhoods there is both patron and merchant support for changes in street use allocation to support active transportation. In fact, the majority (78% in Bloor Annex and 58% in Bloor West Village) supported removing on-street parking for either widened sidewalks or a bike lane. Furthermore, the data indicates that such changes are unlikely to negatively impact commercial activity.

The dominant mode of transportation in both neighbourhoods was walking, followed by public transit. Only 1 in 10 patrons surveyed in Bloor Annex and 1 in 5 in Bloor West Village reported driving to the neighbourhood and parking there. Curiously, cycling is the least frequent mode of transportation in Bloor West Village (5%) and the second least in Bloor Annex (12%), yet an overwhelming majority (74% in Bloor West Village and 79% in Bloor Annex) of those respondents who preferred a change in street use allocation would prefer the addition of a bike lane.

In both neighbourhoods, survey respondents who reported that they usually drive were found to visit less frequently and spend significantly less money per month in the neighbourhood than those who did not drive. Patrons who preferred changes in street use allocation also spend significantly more in the neighbourhood than those who prefer no change.

In terms of merchant perceptions of the impacts of changes in street use allocation, 75% of merchants in Bloor Annex and 54% in Bloor West Village indicated that they would expect no change or an increase in their number of daily customers as a result of either a bike lane or widened sidewalks, even if half of the on-street parking were to be removed in order to accommodate the changes.

The results of these studies suggest that the assumption that reducing on-street parking to accommodate active transportation is "bad for business" may not be true for at least two different neighbourhoods along the Bloor-Danforth corridor.

Afternote: The authors have made several presentations about the findings of these studies in webinars, at conferences, public meetings and to various committees of Toronto City Council in order to influence decision-making about Bloor Street. The reports have received considerable media attention in local and international press.

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