ECONOMIC IMPACT STUDY

of Bike Lanes in Toronto's Bloor Annex and Korea Town Neighbourhoods: **Summary Report**

tcat
toronto centre for
active transportation

Clean Air
Partnership

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Table of Contents

INTRODUCTION

In 2016, the City of Toronto installed a bike lane as a pilot project along a 2.4 km stretch of Bloor Street, a busy downtown commercial street and east-west thoroughfare. One traffic lane and some on-street parking were removed.

The Toronto Centre for Active Transportation (TCAT) was commissioned by the City of Toronto, the Metcalf Foundation, the Bloor Annex BIA and Korea Town BIA to study the economic impacts of the bike lane, as well as its effect on the travel patterns and attitudes of merchants and visitors. See Figure 2 for a detailed timeline of the study.

METHODOLOGY

Four tools were used to collect data: visitor surveys, merchant surveys, bicycle counts and vacancy scans (see Figure 1). The study design incorporated the following elements to ensure the most reliable and objective information possible:

- **Vetted Study Protocol:**
  In 2015, before data collection began and before the installation of the bike lane, the research team worked together with the initial funding partners (the Korea Town BIA, the Bloor Annex BIA, and the Metcalf Foundation) to develop an evidence-based methodology. The City of Toronto approved the design when it joined as a study partner in 2016.
- **Before and after data:**
  Data was collected once before the bike lane's installation (fall 2015) and twice after (fall 2016, spring 2017).
- **Non-leading questions:**
  Surveys were introduced without mentioning the bike lane, and the economic impact questions were asked before questions about travel patterns or the bike lane.
- **Random and representative samples:**
  For the visitor surveys, every third person walking along the street was approached and asked if they would like to participate. For the merchant surveys, every street level business was approached. If the owner or manager was unavailable, up to three repeat visits were made and contact information was left for them to follow up.
- **A control site:**
  Data was also collected on Danforth Avenue, a comparable shopping street with no bike lane.
- **Third party data collection and analysis:**
  To ensure impartial data collection and analysis, TCAT partnered with researchers from the University of Toronto. Dr. Beth Savan, Inaugural Sustainability Director at the University of Toronto and past Research Director at the School of the Environment, was involved in the study design and led the 2015 pre-test data collection, supervising an 8-member team who conducted the surveys, bike counts and translation. Lee Vernich, Director of the Office of Research in the School of Public Health, led and supervised a 15-member team for the 2016 and 2017 post-test data collection. Dr. Steven Farber, a quantitative transportation geographer, led the data analysis and supervised all statistical tests.
- **Multiple data sources:**
  Multiple data sources were used to estimate economic impact, including estimated customer counts from the merchant surveys, estimated spending and visit frequency from the visitor surveys, and business vacancy counts from a street level scan.

Visitor Surveys	3,005
Merchant Surveys	525
Bicycle Counts	15
Vacancy Counts	2

Figure 1. Summary of data collected

2015

jun

jul

aug

sep

oct

nov

dec

2016

jan

feb

mar

apr

may

jun

jul

aug

sep

oct

nov

dec

2017

jan

feb

mar

apr

may

jun

jul

aug

sep

oct

The *Toronto Cycling Think & Do Tank* presents to the *Bloor Annex BIA*

The *Toronto Cycling Think & Do Tank* presents to the *Korea Town BIA*

Study proposal submitted

TCAT, in partnership with the Toronto Cycling Think & Do Tank, School of the Environment at the University of Toronto, submit a proposal to the Korea Town BIA, Bloor Annex BIA and Metcalf Foundation to measure the economic impacts and travel shifts from a pilot bike lane on Bloor Street.

First funding approved

Korea Town BIA and the Metcalf Foundation approve funding.

Second funding approved

Bloor Annex BIA approves funding.

Agreement on methodology

Korea Town BIA, Bloor Annex BIA and TCAT agree on methodology:

- *Data would be collected before and after the bike lane's installation*
- *Data would also be gathered from a control site*
- *Merchant and visitor survey questions agreed upon*
- *Economic impact would be measured through customer counts, visit frequency and reported spending*

FIRST ROUND OF DATA

First round of data is collected (merchant surveys, visitor surveys and bicycle counts). Undertaken by the Toronto Cycling Think & Do Tank, School of the Environment at the University of Toronto.

8 months before

Council approves Bloor bike lane pilot project

TCAT meets with the City

Initial meetings with the City of Toronto regarding economic evaluation of the bike lane pilot project

FIRST BUSINESS VACANCY COUNTS

The City becomes a partner

Bike lanes officially open

The City of Toronto becomes a study partner and the study design is reviewed by Transportation Services, the Economic Development Office and the BIA Office. The City also funds additional data collection:

- *Business vacancy data would be collected before and after the bike lane's installation*
- *Survey and bike count data would be collected a second time after the bike lane's installation, to increase robustness.*

3 months after

SECOND ROUND OF DATA

Photo: Martin Reis

Photo: Martin Reis

Photo: Yvonne Verlinden

Undertaken by the Office of Research, Dalla Lana School of Public Health at the University of Toronto

8 months after

THIRD ROUND OF DATA

Undertaken by Office of Research, Dalla Lana School of Public Health at the University of Toronto

SECOND BUSINESS VACANCY COUNTS

Data analyzed

Undertaken by the Department of Human Geography at the University of Toronto, Scarborough

Results released

Figure 2. Timeline of the Study

CUSTOMER COUNTS

The first data source used to estimate economic impact was customer counts from the merchant surveys. On Bloor Street in 2015, approximately half (46%) of merchants reported seeing 100 or more customers on a Saturday; by 2017, this number had grown to 62% (see Figure 3). Customer counts on Danforth Avenue also increased, and the growth appears to be stronger than on Bloor Street. On Danforth in 2015, only one quarter (25%) of merchants reported 100 customers or more on a Saturday; by 2017, 81% of merchants reported they had reached or surpassed this threshold. Because of the smaller sample size on Danforth Avenue, it is possible that the significant increase is not representative of changes on the street overall, or had already begun to occur in 2016 but was not captured, and became more readily apparent in 2017.

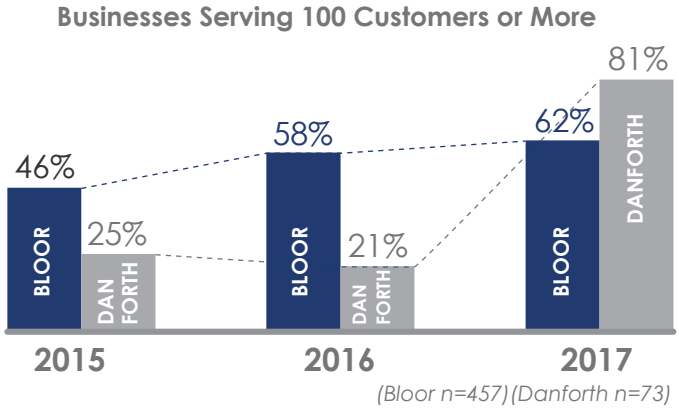
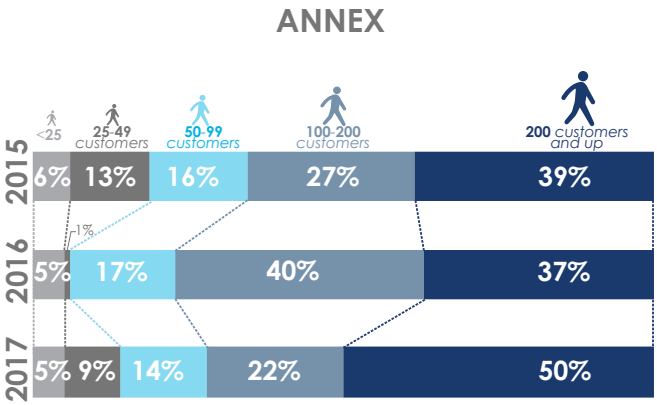
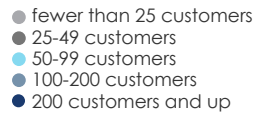
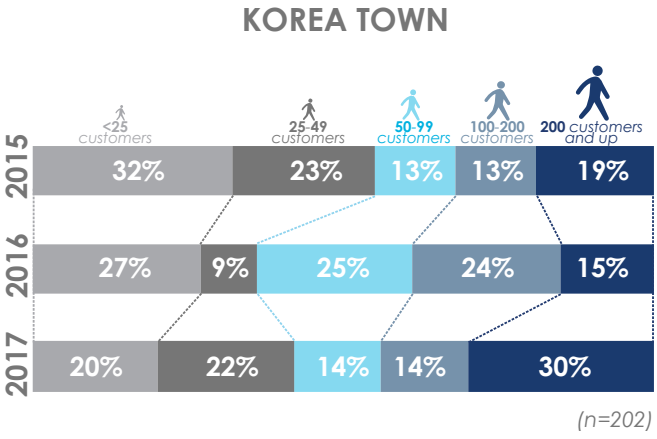


Figure 3. Changes in Businesses Serving 100 Customers or More on a Saturday
Question: On average, about how many customers do you serve per day? 1) Weekday 2) Saturday







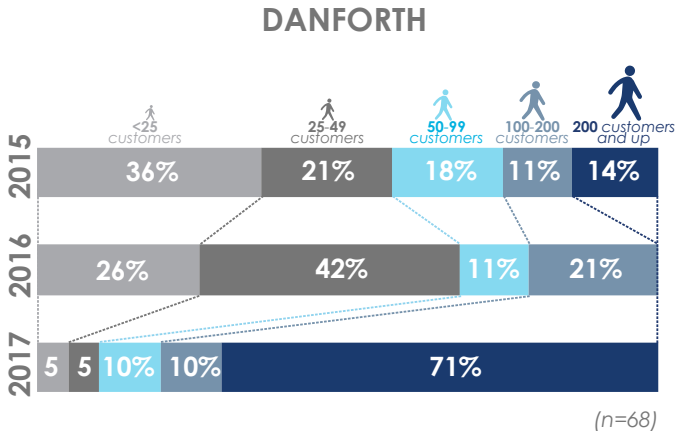


Figure 4. Changes in Saturday Customer Counts, Bloor Annex, Korea Town and Danforth
Question: On average, about how many customers do you serve per day? 1) Weekday 2) Saturday

Looking more closely at the change in businesses reporting the most customers on a Saturday, there was substantial growth between 2015 and 2017 in the number of merchants reporting 200 customers or more in all locations (see Figure 4), but most dramatically on Danforth (from 39% to 50% in Bloor Annex, from 19% to 30% in Korea Town, and from 14% to 71% on the Danforth).

As the number of customers grew overall between 2015 and 2017, there was a corresponding decrease in businesses reporting fewer than 25 customers on a Saturday, particularly on Danforth (from 6% to 5% in Bloor Annex, from 32% to 20% in Korea Town, and from 36% to 5% on Danforth).

Overall, merchants in Bloor Annex reported more customers than Korea Town, likely due to their different commercial compositions. Nearly half (49%) of the businesses in Bloor Annex are restaurants, bars and cafés, while in Korea Town, one third (35%) are small service providers (Toronto Employment Survey, 2015).

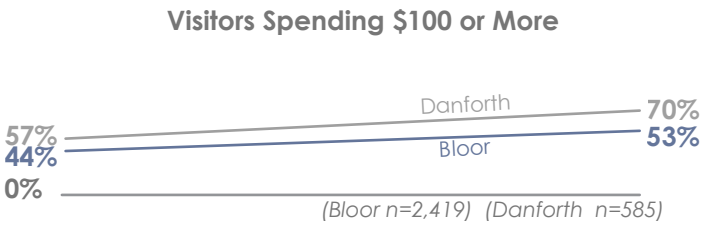


Figure 5. Changes in the percentage of visitors spending $100 or more per month on Bloor and Danforth

SPENDING

The second data source used to estimate economic impact was monthly spending from the visitor surveys. In 2015, approximately half (44%) of visitors reported spending at least $100, and so this amount was used as a threshold of comparison for the data analysis. Reported spending increased on Bloor Street and Danforth Avenue at a similar rate (see Figure 5). Spending was higher on Danforth Avenue than on Bloor Street, both before and after the bike lane's installation. Increases in spending were found across all transportation choices except transit (see Figure 6). Both before and after the bike lane's installation, customers who arrive by foot or on bike reported the highest levels of spending on Bloor Street. On Danforth Avenue, where no bike lane was installed, the top spenders remain people arriving on foot. Spending by people on bikes increased only slightly on the Danforth and was surpassed by people in cars.

On both streets, spending was found to increase with proximity and visit frequency. Using a regression model, the research team determined that people who are local (they live or work in the area) were 2.6 times more likely than those who live or work further away to spend at least $100 per month, and for each additional day per month visited, the likelihood of spending $100 or more increased by 7.3%.

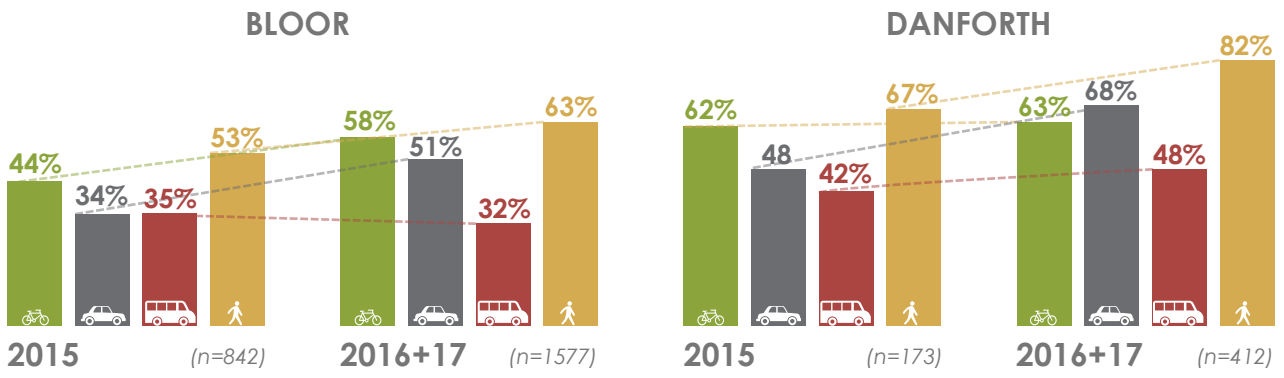


Figure 6. Changes in the Percentage of Visitors Spending $100 or More, by Travel Choice on Bloor and Danforth
Questions: How did you get here today? & About how much money do you spend in [the Annex, Korea Town, the Danforth] in a typical month?

VISIT FREQUENCY

The third data source used to estimate economic impact was visit frequency from the visitor surveys. Visitors reported coming to Bloor Street three days more per month after the bike lane was installed, and increases in frequency occurred across all transportation choices. On Danforth, analysis showed that visit frequency was unchanged, after the influences of other differences in the samples (age, gender, proximity, etc.) were removed.

People who arrived on foot or on bike visited Bloor Street the most often, at an average of 19.7 and 21.3 days per month respectively after the bike lane was installed (see Figure 7). Using a regression analysis, the research team found that people who drove or took transit visited nearly four days per month less than those who walked. These findings are closely related to proximity, as the analysis also found that those who live or work locally visited 13 days per month more than those who live or work further away, and people who biked or walked made up the highest percent of local respondents.

The research team also investigated customers only (i.e. those survey respondents who reported that the purpose of their trip that day included shopping, visiting a restaurant, café or bar, or receiving a service), and found that they visited with a frequency similar to visitors overall.

VACANCY RATES

The fourth and final data source used to estimate economic impact was changes in vacancies from a street level scan. Vacancy rates held nearly steady at just over 6% on Bloor Street within the Bloor Annex and Korea Town BIAs (see Figure 8).

	Pre July 2016	Post July 2017
Bloor, entire length of bicycle lane (Avenue Rd to Shaw St) *(n=345)*	7.0% *(24)*	7.2% *(25)*
Bloor in Korea Town and Bloor Annex (n=247)	6.5% *(16)*	6.1% *(15)*
Danforth (Broadview to Chester (n=116)	5.2% *(6)*	3.4% *(4)*

Figure 8. Changes in Vacancy Rates, Bloor and Danforth

PARKING

Parking difficulty increased on both streets, growing by four times on Bloor Street (from 8% to 33% of visitors who drove) and nearly doubling on Danforth Avenue (from 14% to 25% of visitors who drove), though this street did not have any of its on-street parking removed (see Figure 10).

The research team further investigated the changes in parking difficulty experienced by a subset of customers only. Those who came to Bloor Street by

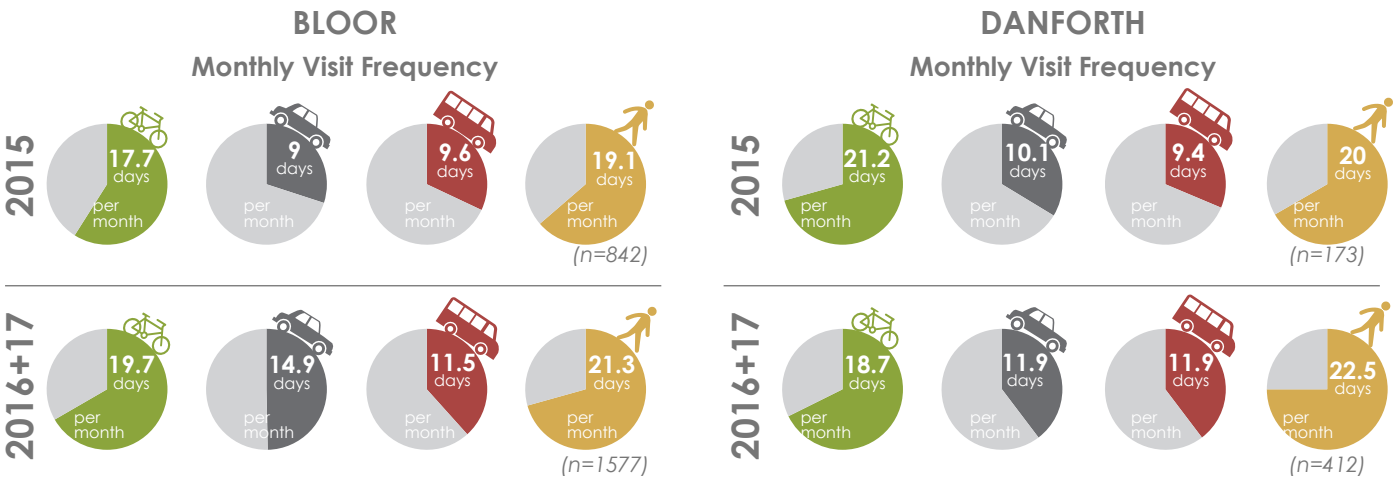


Figure 7. Changes in Average Days Visited Per Month on Bloor and Danforth, by Travel Choice
Questions: In a typical month, how many days do you visit this area of [Bloor Street, Danforth Avenue]?

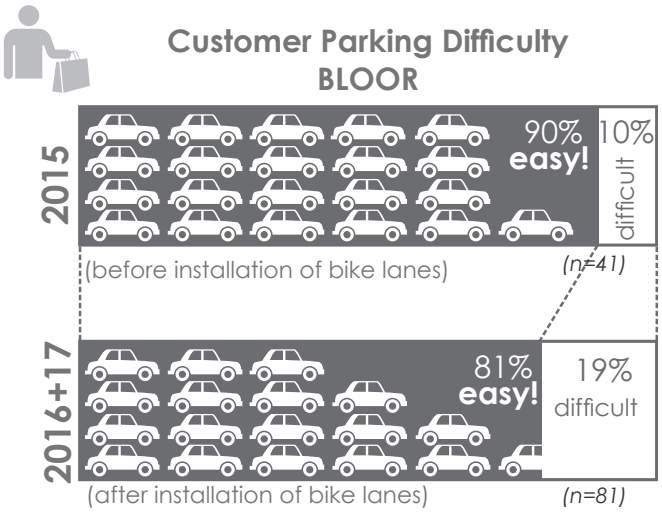
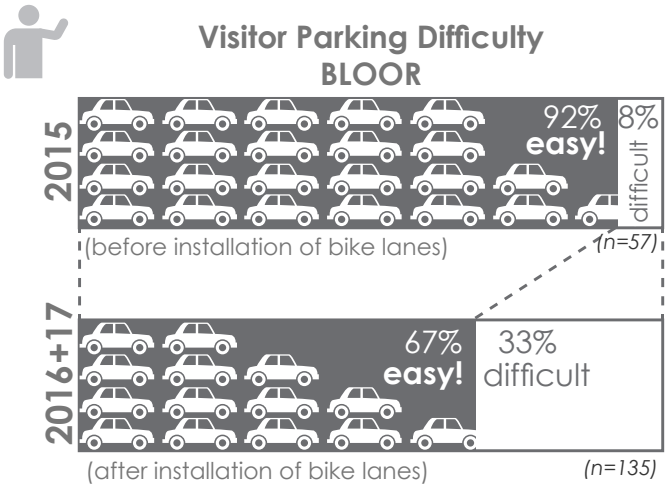


Figure 9. Changes in Difficulty of Finding Car Parking on Bloor Street, Customer Subset (shopping, food or service trips only) Questions: How did you get here today? & If you parked, what was your level of ease in finding parking today? What is the purpose of your trip to [the Annex, Korea Town]?

car to shop, visit a food establishment or receive a service reported a smaller increase in parking difficulty compared with all visitors who drove (from 10% to 19%, see Figure 9). On Danforth, the customer subset also had slightly more difficulty parking in the post-test (from 14% to 25%, subset not shown).

Merchants also found it more difficult to find parking (see Figure 11). On both streets, however, the majority of visitors and merchants who drove still found parking easily. It is important to note that on both streets, a small percentage of visitors arrive by car. When looking at visitors overall, the percentage who needed to find car parking and experienced difficulty is small: 3% of all visitors on Bloor and 4% of all visitors on Danforth.



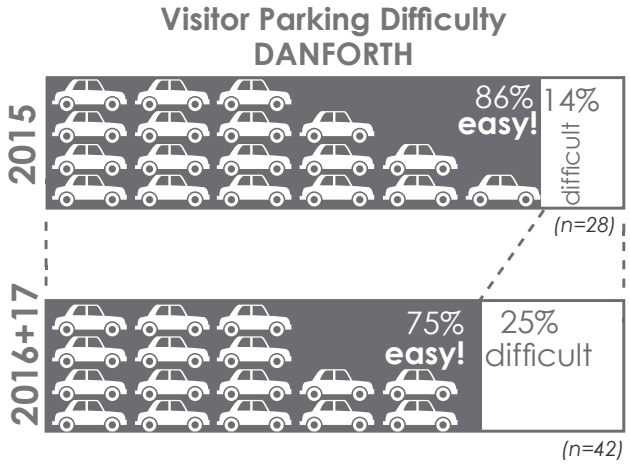
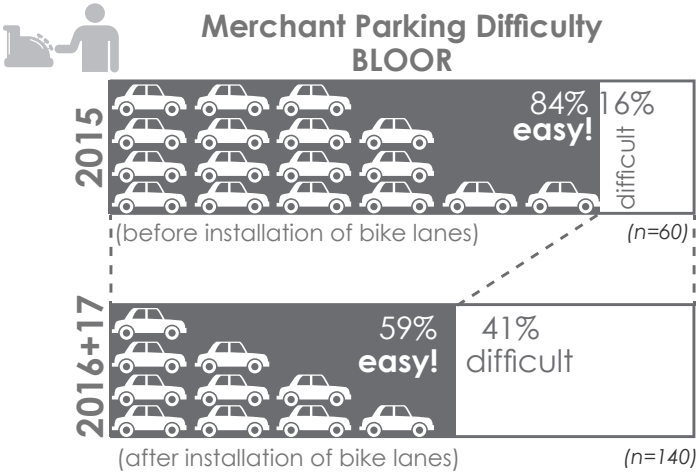


Figure 10. Changes in Visitors' Difficulty of Finding Car Parking on Bloor Street and Danforth Avenue (includes all trip purposes) Questions: How did you get here today? & If you parked, what was your level of ease in finding parking today?



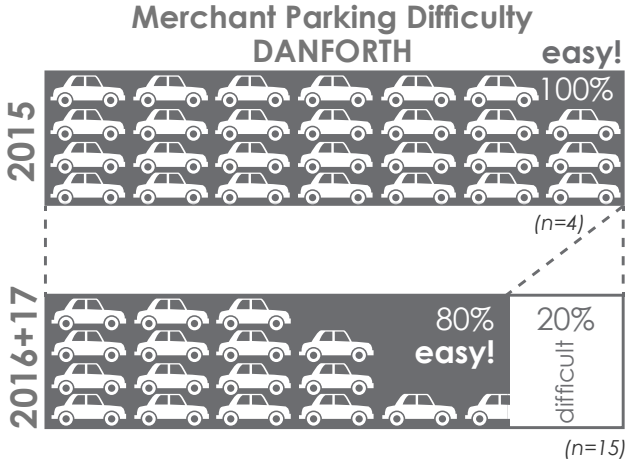


Figure 11. Changes in Merchants' Difficulty of Finding Car Parking on Bloor Street and Danforth Ave Questions: How did you get to work today? & If you parked, what was your level of ease in finding parking today?

TRAVEL PATTERNS

The percentage of visitors cycling to Bloor Street more than doubled (from 7% to 18%), a substantially higher increase than on Danforth Avenue (see Figure 12 and 13). Conversely, transit use declined. Almost half of visitors to Bloor Street walk, and driving is now the least popular choice (10%), even though car use grew slightly (from 8% to 10%). Among the subset of customers specifically (those visitors who came to Bloor Street to shop, visit a food establishment or receive a service), cycling nearly tripled (from 7% to 20%); otherwise customers traveled in very similar ways as visitors overall (see Figure 15). The research team further investigated the travel choices of shoppers alone, since the need to carry items purchased could mean they drive more. The results showed, however, that shoppers drive at a similar rate as other visitors and in fact have a higher likelihood of cycling.

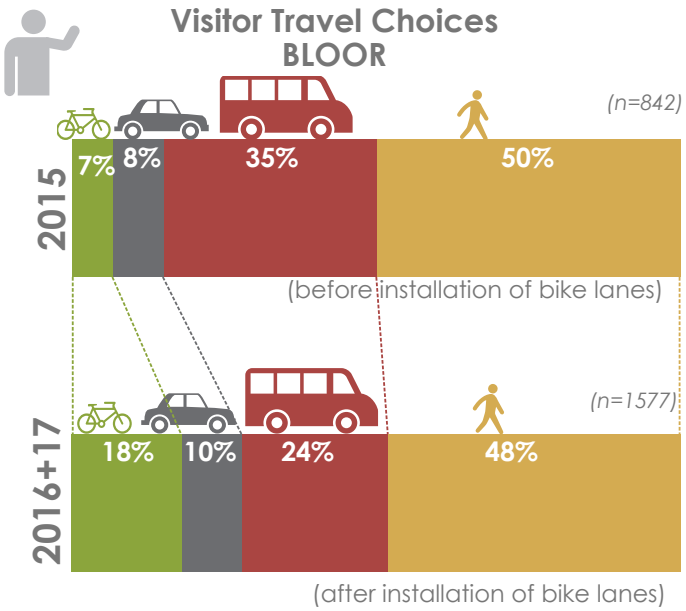


Figure 12. Changes in Visitor Travel Choices on Bloor (includes all trip purposes) Question: How did you get here today?

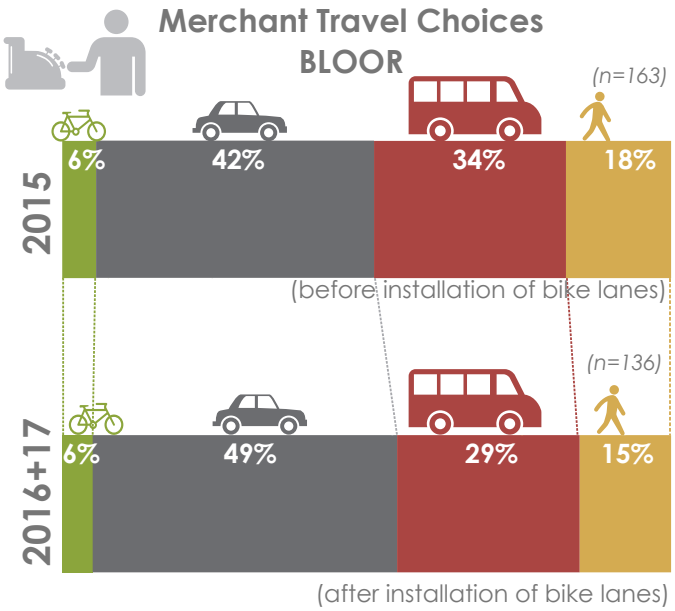


Figure 14. Changes in Merchant Travel Choices on Bloor Question: How did you get to work today?

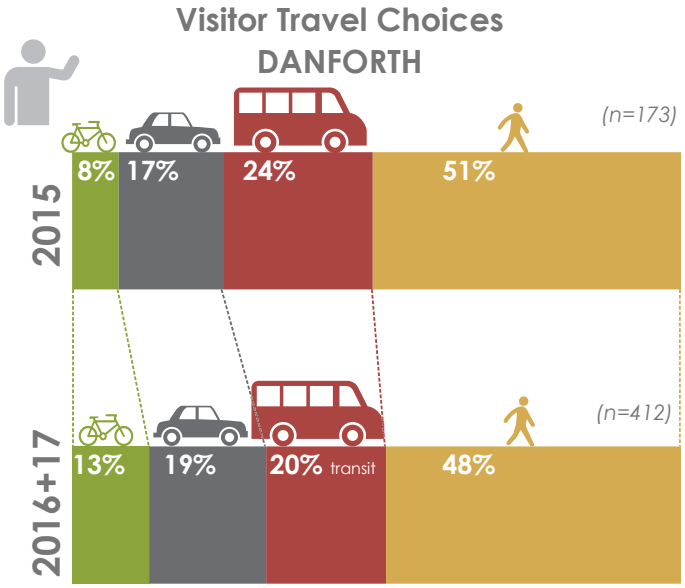


Figure 13. Changes in Visitor Travel Choices on Danforth (includes all trip purposes) Question: How did you get here today?

Merchants on Bloor Street preferred to drive (49%) or take transit (29%). Few chose to walk (15%) or cycle (6%). Merchants' travel patterns changed in the same direction as visitors', except for cycling, which did not increase (see Figure 14).

Merchants were also asked to estimate the travel choices of their customers. The majority believed

Over half of merchants believe that 25% or more of their customers drive to Bloor Street.

Fewer than 10% of visitors who came to shop, visit a restaurant or receive a service reported arriving by car.

that at least 25% of their customers are driving to Bloor Street. However, in the visitor surveys, fewer than 10% of visitors who came to shop, visit a restaurant or receive a service reported arriving by car.

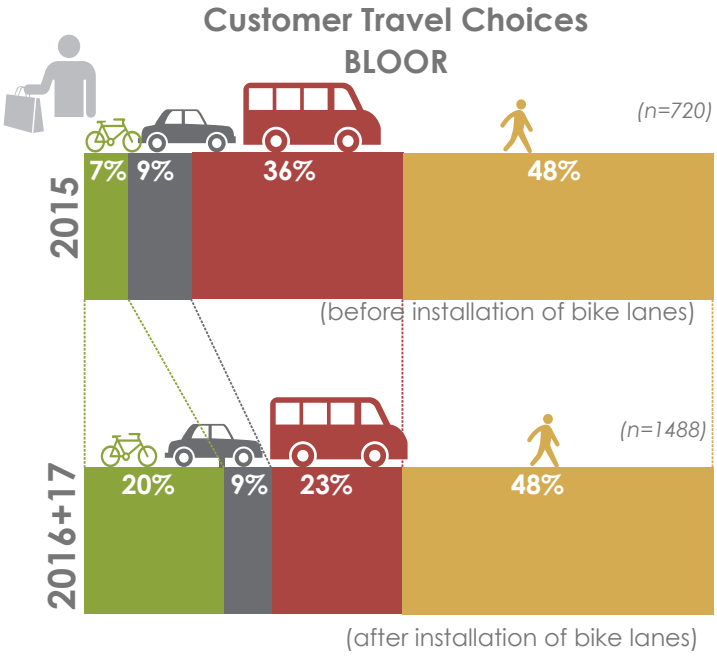


Figure 15. Changes in Travel Choices on Bloor, Customer Subset (shopping, food or service trips only)
Questions: How did you get here today? & What is the purpose of your trip to [the Annex, Korea Town]?

PERCEPTIONS OF SAFETY

After the installation of the bike lane on Bloor, the proportion of visitors who perceived Bloor Street as safe for cycling more than tripled (from 17% to 61%) and doubled among merchants (from 13% to 27%, see Figure 16). The percentage of women who reported they now feel safe cycling on Bloor increased significantly more than men, from 12% to 58%. Perceptions of cycling safety decreased on Danforth Avenue, although this street underwent no change in configuration.

Our visitor survey results correspond closely to the City of Toronto public perception survey results, released in June 2017. With feedback from over 14,000 members of the public, 58% strongly agreed that Bloor Street now provides a safer and more comfortable environment for cyclists. The City's survey also found that the driving experience on Bloor Street is more comfortable after the installation of the bike lane and the walking experience is about the same or better (City of Toronto, 2017). The City has also undertaken an analysis of near-misses to further evaluate safety.

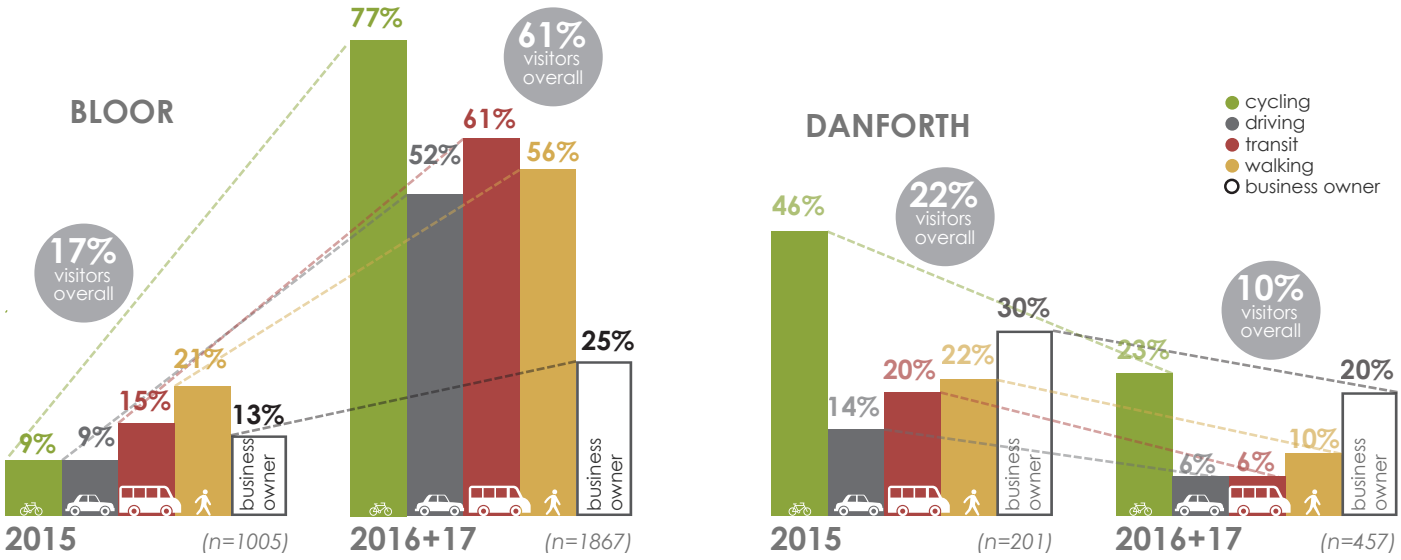


Figure 16. Changes in Perceptions of Cycling as Safe on Bloor and Danforth
Questions: How did you get here today? & With the current street configuration, how safe do you feel (or would you feel) riding a bicycle on [Bloor St, Danforth]?

BIKE LANE FEEDBACK

The majority of visitors (82%) and merchants (88%) provided feedback in response to an open-ended question soliciting thoughts or comments about the bike lane. The feedback was categorized according to the most common themes that emerged: safety (concerns and benefits), business (concerns, benefits and unaffected), traffic/congestion, parking (for self and others), deliveries, and bike lane configuration. The remaining feedback was categorized as positive non-specific, negative non-specific, other/unsure. Some respondents' feedback was multi-layered and covered more than one category. In these cases, the feedback was counted more than once.

While visitor comments were generally positive, many also raised concerns or gave suggestions of how the bike lanes could be improved. The most common feedback related to the bike lane's configuration and the safety of the street. Traffic and parking concerns were raised less often. The research team also looked at comments from a subset of customers specifically (those reporting a trip for the purpose of shopping, visiting a food establishment, or receiving a service), and found their comments to be similar to those of visitors overall.

Merchants raised more concerns than visitors, the most common being over impacts to their own business or to businesses on the street in general. Retailers in particular voiced the most concerns in this category. Many merchants, however, were also concerned about safety and the bike lane's configuration, and parking and traffic were important issues for them as well.

Some visitors said:

"Love them. Keep the bike lanes."

"As a cyclist and pedestrian, love the bike lanes. But as a driver, it's hard to drive on Bloor Street and make turns. You can't see the cyclists when turning."

"The bike lanes need divisions between the street and the lane."

Some merchants said:

"Not a good idea. Congestion is worse. Pedestrians are being struck."

"Average sales down 5-8% since the bike lanes were installed. That's a significant drop and sales were up the year previously."

"Ever since there was a bike lane, customers complain about finding parking on the streets, which is cheaper than the lots or underground parking."

Conclusion

This study set out to investigate the economic impacts – positive, negative or neutral – of installing a bike lane on Bloor Street, as compared to a similar street with no bike lane (Danforth Avenue), and to understand the roles played by shifts in travel patterns and attitudes of both visitors and merchants.

Four different sources of data were used to estimate economic impact before and twice after the installation of the bike lane (after three months, and again after eight months): 1) estimated customer counts from merchant surveys, 2) estimated spending from visitor surveys, 3) visit frequency from visitor surveys, and 4) business vacancy counts from a street level scan. Overall, these four indicators point to increased economic activity on Bloor Street. Most merchants reported a higher number of customers than before the bike lane's installation, visitors gave higher estimates of spending and visit frequency, and vacancy rates were stable.

However, these four indicators also showed similar growth on the Danforth, so the positive outcomes may be attributable to other factors, and not the bike lane. Nevertheless, these early indicators point to a positive, or at least neutral, economic impact of the bike lane.

Among customers to Bloor Street, cycling almost tripled as a travel choice (from 7% to 20%). Walking remained the most popular travel choice (48%) and driving is now the least (10%). Merchants, on the other hand, preferred to drive (49%) and there was no increase in cycling, which remained the least preferred travel choice (6%).

After the installation of the bike lane, the proportion of visitors who perceived Bloor Street as safe for cycling more than tripled (from 17% to 61%) and doubled among merchants (from 13% to 27%). However, safety remained a paramount concern of both visitors and merchants, and many made suggestions for how to improve the bike lane's configuration.

There is a discrepancy between the number of specific concerns raised among merchants and the overall positive economic indicators found in this study. Merchants raised many more concerns than visitors, the most common being over impacts to business, but safety, parking and traffic congestion were also important issues.

Additional Considerations

1. **Review third party payment platform data.**
Independent sales data from third party payment platforms, such as Visa, Moneris or Apple Pay, would help to provide a fuller picture of sales trends, and the City is currently working to attain this type of data. The City may also wish to investigate other sources of data which were not yet available at the time of this study's publication, for example the Centre for the Study of Commercial Activity's Toronto database and the Planning Division's Toronto Employment Survey. These sources could be used to explore shifts in retail composition and sizes of business, in addition to vacancies. Both of these datasets should be available in early 2018.

2. **Consider all factors.**
It is important that the economic impact be considered in context with other benefits. Economic analysis is just one of a number of study tools available to planners and politicians when measuring the benefits of a new street design. The findings should be weighed carefully against the City's priorities, particularly the 2017-2021 Vision Zero Road Safety plan, along with all available evidence.

3. **Extend economic impact tracking.**
While the bike lane itself was installed in a matter of weeks, it takes time for the street to respond. Particularly from the perspective of economic impact, it will likely take longer than one year for the full effect (positive or negative) of the bike lane to be felt. The Department of Transportation in New York City, a leader in this field, recommends tracking economic vitality for two to three years after a significant change has been made, and comparing the findings against neighbouring streets and the district as a whole (NYC DOT, 2013).

4. **Review bike lane design configuration.**
The study revealed the high priority Torontonians place on safety and found evidence that while the majority of visitors feel it is now safer to ride a bicycle on Bloor Street, some visitors (women and older adults in particular), still feel unsafe in the bike lane. The current design is a pilot and uses temporary materials, such as paint and flexi-posts. Many of these issues could be addressed through an enhanced design, and the safety analysis conducted by the City for the pilot project could be used to identify specific problem areas.