

DANFORTH STUDY

RP&C



BIKE LANES, ON-STREET PARKING, AND BUSINESS

A STUDY OF DANFORTH AVENUE IN TORONTO DANFORTH
NEIGHBOURHOOD

TEAM

Ryerson Planning and Consulting

RP&C

Emilie Taillon

Luke Stephens

Mays Masud

Arin Mardirossian

Sarah Mater

Jessica Leung

Joyce Lau

Iris Lau

Evan Kataoka

Kaylan Bubeloff

Nour Abu Qubu

Faculty Supervisor: Raktim Mitra (raktim.mittra@ryerson.ca)

**RYERSON
UNIVERSITY**

TABLE OF CONTENTS

Table of Contents.....	5
List of Tables.....	7
List of Maps.....	7
List of Figures.....	7
Executive Summary.....	9
1. Introduction.....	11
1.1 Study Purpose.....	12
1.3 Existing Literature.....	13
2. Context.....	15
2.1 Background.....	15
2.2 Bike Plan.....	17
3. Methodology.....	18
3.1 Existing Precedent.....	18
3.2 Surveys.....	18
3.2.1 Merchant Surveys.....	18
3.2.2 Pedestrian Surveys.....	19
3.3 Limitation of Study.....	20
4. Findings.....	21
4.1 Merchants' Perceived Customer Travel Habits.....	21
4.2 Merchants' Personal Travel Habits.....	21
4.3 Merchants' Perceived Effect of Potential Changes.....	22
4.4 Merchants' Preferences in Potential Changes.....	23
4.5 Visitor Survey Respondents.....	24
4.6 Visitor Habits and Consumption.....	24
5. Discussion.....	29
5.1 Comparison to previous TCAT studies.....	31
6. Summary.....	35
7. References.....	37
8. Appendices.....	39
9.1 Merchant Survey.....	39
9.2 Pedestrian Survey.....	41

LIST OF TABLES

- Table 1. Survey Respond by Quadrant
- Table 2. Visitor's Number of Days per Month Visiting the Danforth
- Table 3. Money Spent in the Area per Month for Visitors
- Table 4. Preference in Change to Street use Allocation by Transportation Mode and Residents
- Table 5. Summary of TCAT Comparisons

LIST OF FIGURES

- Figure 1. Pedestrian Realm
- Figure 2. Current Danforth Street Scape
- Figure 3. Types of Businesses on Danforth
- Figure 4. Types of Businesses that Responded to the Surveys
- Figure 5. Merchant Perceived Customers – Weekday
- Figure 6. Merchant Perceived Customer – Weekend
- Figure 7. Merchants' Perception of Customer Travel Mode
- Figure 8. Merchants' Personal Travel Mode
- Figure 9. Would Merchants' travel mode stay the same in the summer?
- Figure 10. Merchants' Preferred Potential Street Needs
- Figure 11. Visitor's Travel Modes (Live/Work in the Area and Total)
- Figure 12. Would Visitor's Travel Mode Change in the Summer
- Figure 13. Visitor's Purpose for Visiting
- Figure 14. Visitors Preferred Street Change Compare to Money Spent
- Figure 15. Visitor's Change in Travel Mode Base on Potential Street Changes
- Figure 16. Merchants' perception versus actual visitor's travel mode
- Figure 17. Visitor's preferred potential street change
- Figure 18. Scenario A
- Figure 19. Scenario B
- Figure 20. Scenario C
- Figure 21. Scenario D/E
- Figure 22. Scenario F

LIST OF MAPS

- Map 1. Boundaries of the Danforth Avenue
- Map 2. Existing Transit Routes
- Map 3. Green P's (Off-Street Parking Lot)
- Map 4. Survey Quadrant
- Map 5. Visitor's Residences Location Within the Surrounding Danforth Area

EXECUTIVE SUMMARY

The following report has been prepared for the Toronto Centre for Active Transportation by the Ryerson University Urban and Regional Planning studio group Ryerson Planning and Consulting. The purpose of this study is to understand the current perceptions of visitors and merchants on Danforth Avenue regarding the presence of on-street parking as it relates to businesses. The study examines visitors' and merchants' opinions about potential changes to street use allocation, including implementation of active transit.

The study – conducted in March 2014 – includes responses from 62 merchants and 152 visitors to the Danforth. Some of the key findings are:

- Less than 1 out of 5 visitors to Danforth Avenue claimed a personal vehicle as their chosen mode of transportation to the area
- Those that drove to the Danforth spent less money than people who used other modes of transportation
- Visitors to the Danforth would prefer to see widened sidewalks, bike lanes, less on-street parking and an increase in off-street parking. Merchants, however, generally preferred no changes to the current street allocation, or an increase in parking.

The results from this study will be made publicly available through the website for the Toronto Centre for Active Transportation (TCAT). It is hoped that the study will be used to inform further discussion of the relationship between parking, active transportation and business.

1 INTRODUCTION

This report has been prepared based on surveys conducted by the Ryerson Planning Studio Group *Ryerson Planning & Consulting*. We have been presented with the challenge of undertaking a comprehensive survey along the “Greektown” stretch of Danforth Avenue in Toronto. The general boundaries of the study area fall between Broadview Avenue at the Westernmost point to Pape Avenue at the Easternmost point. This commercial strip is widely considered to contain the heart of Greektown, a lively cultural hub for visitors and residents alike. High levels of pedestrian activity on the strip has encouraged investigation into the possibility of developing infrastructure geared towards pedestrians and cyclists.

Our study has been modelled after two surveys previously conducted by the Toronto Centre for Active Transportation (TCAT), one on Bloor Street in the Annex, and the other in Bloor West Village. Their purpose, as outlined by TCAT director Nancy Smith Lea is to gather information in order to understand current pedestrian and merchant perceptions surrounding the presence of on-street parking. Specifically, the survey explores how on-street parking was perceived to affect business in the area. The question is raised if converting this parking into bike lanes and/or widened sidewalks will have a perceived negative, neutral, or positive impact on the success of local businesses. The methodology for this survey is modelled after previous studies of a similar subject matter undertaken by TCAT (TCAT, 2009, 2010). To illustrate the relevance of active transportation in planning practice, Ontario’s Places to Grow Act: Growth Plan for the Greater Golden emphasizes that municipalities must:

- “Ensure that pedestrian and bicycle networks are integrated into transportation planning to
- a) provide safe, comfortable travel for pedestrians and bicyclists within existing communities and new development
 - b) provide linkages between intensification areas, adjacent neighbourhoods, and transit stations, including dedicated lane space for bicyclists on the major street network where feasible (Places to Grow, 2005). ”

This goal of providing safe, comfortable travel networks for pedestrians and cyclists served as a guiding principle for undertaking surveys surrounding issues of active transportation along Danforth Avenue. The surveys were completed and presented from an unbiased, objective standpoint. Special attention was given to survey methods and content to ensure that they were conducted in an ethical manner.

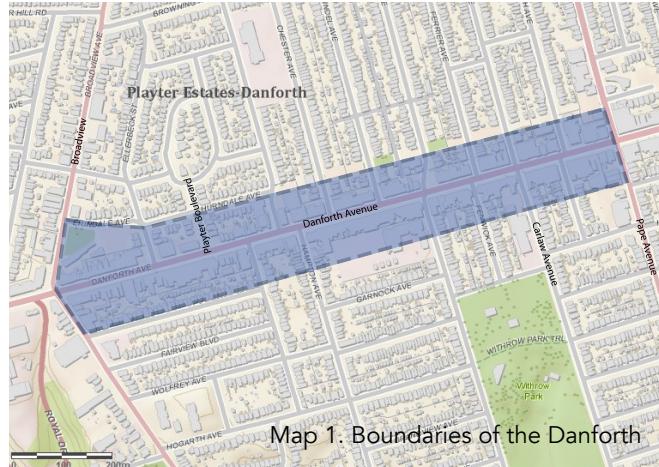
1.1 STUDY PURPOSE

The purpose of the study is to understand the current perception of visitors and merchants regarding the presence of on-street parking as it relates to businesses in the Bloor-Danforth area. The potential economic impacts of replacing on street parking with bike lanes and widened sidewalk will be further explored in this study. Five scenarios were created with the purpose of determining the change that is the most desirable for both visitors and merchants. Merchants and a random sample of pedestrians were to choose one of the following options for improvement that they would like to see be implemented on the Danforth Avenue:

- a) Widened sidewalks on Danforth Avenue even if that means less on-street parking;
- b) A bike lane on Danforth Avenue even if that means less on-street parking;
- c) More off-street parking, less on-street parking; widened sidewalks, and bike lane;
- d) More off-street parking, no change in on-street parking, widened sidewalks and bike lane;
- e) No change.

This study utilized two surveys to determine: a) current perceptions of merchants regarding the existing streetscape and how they believe changes to the street would affect their business and b) how important on street-parking is to visitors of the area, and how they perceive potential changes to the allocation of space of the existing streetscape. For this purpose, data were collected using two different sources, merchant surveys as well as visitor surveys.

Through surveying merchants and pedestrians, we have gained insight on their perceptions of the existing streetscape and proposed changes for the area. While merchants may be concerned about the changes negatively affecting their business, pedestrians may have a different perception and may want to see different changes be made to the area. The study also determines a relationship between travel modes and spending behaviour. This study will help determine whether opposition towards bike lanes reflects the opinions of the majority and whether skepticism surrounding the loss of business deriving from reduction of on street parking is justifiable. For the purpose of this Study, the study area will be defined by a five block area between Playter Boulevard to the West and Carlaw Avenue to the East.



Map 1. Boundaries of the Danforth

1.2 EXISTING LITERATURE

Most existing studies and reports on the subject of parking, transportation and business focus on the relationship between transportation mode of visitors/pedestrians to an area, the importance of parking to commercial areas, and the perceptions of merchants surrounding travel choices. Many reports are reinforced by common findings, which are relevant to our study on Danforth Avenue. Notably, it has been found that cyclists, pedestrians, and transit riders are competitive customers who tend to spend more money on average than those who drive. Pedestrians who use transit, walk or ride a bike reportedly visit more often, and spend more money than those who drive (Arancibia, 2013; Clean Air Partnership, 2009, 2010; New York Department of Transportation, 2013; OTREC, 2013). This point is illustrated well by D Arancibia in a report titled *Cyclists, Bike Lanes and On-Street Parking: Economic Impacts*. In this report, the author states that cyclists "are skilled, selective, loyal, and spend more money where they shop than their driving counterparts. Cycling infrastructure is important to them, and therefore important for businesses who want to attract them (both as customers and as employees). Bicycle lanes and bicycle parking can increase the capacity of roads and the ability of people to shop simultaneously, all while improving various social and environmental aspects of a neighbourhood"(Arancibia, 2013).

With this in mind, an important factor to consider when planning for cyclists and pedestrians is the availability and accessibility of appropriate infrastructure. It has been found that if the streetscape is built to accommodate alternative transportation (bike lanes, bike parking, transit stops) there is a higher likelihood of visitors using non-automobile modes, and a likely increase in the number of new users attracted by said amenities. (Cervero & Kockelman, 1997; Clean Air Partnership, 2009, OTREC, 2013). A 1999 survey of Toronto cyclists found that only 18% of cyclists reported feeling comfortable biking on major roads without bike lanes, whereas 53% reported feeling comfortable cycling on major roads with bike lanes (Decima Research, 2000).

From a driver's perspective, parking availability is an important factor in determining whether or not to make a trip to a given area. It has been found that having only curbside parking lessens the number of trips to an area based on the amount of parking available. Garages and off-street parking create balance and efficiency by accommodating more vehicles without congesting streets. (Rowse & Arnott, 2009). From the perspective of local merchants, studies have indicated that many believe added bike lanes or widened sidewalks would make no difference to their level of business, or would actually increase business. In cases where bike lanes have already been implemented, merchants report increased business, or no significant change to business (Clean Air Partnership, 2009; Drennen 2003; Forkes, Smith Lea & Sztabinski, 2010).

A smaller portion of merchants surveyed are hesitant to support the construction of bike lanes and removal of on-street parking, as they feel it will negatively affect business/sales (Clean Air Partnership, 2009). By examining the literature surrounding active transportation, parking, and business, it can be seen that there is opportunity to become informed about public perceptions, and facilitate an educated dialogue about lifestyle and transportation choices. Evidence-based research made publicly available may be used to inform future policy and change attitudes about the optimal uses of streets and the public realm.

2 CONTEXT

2.1 BACKGROUND

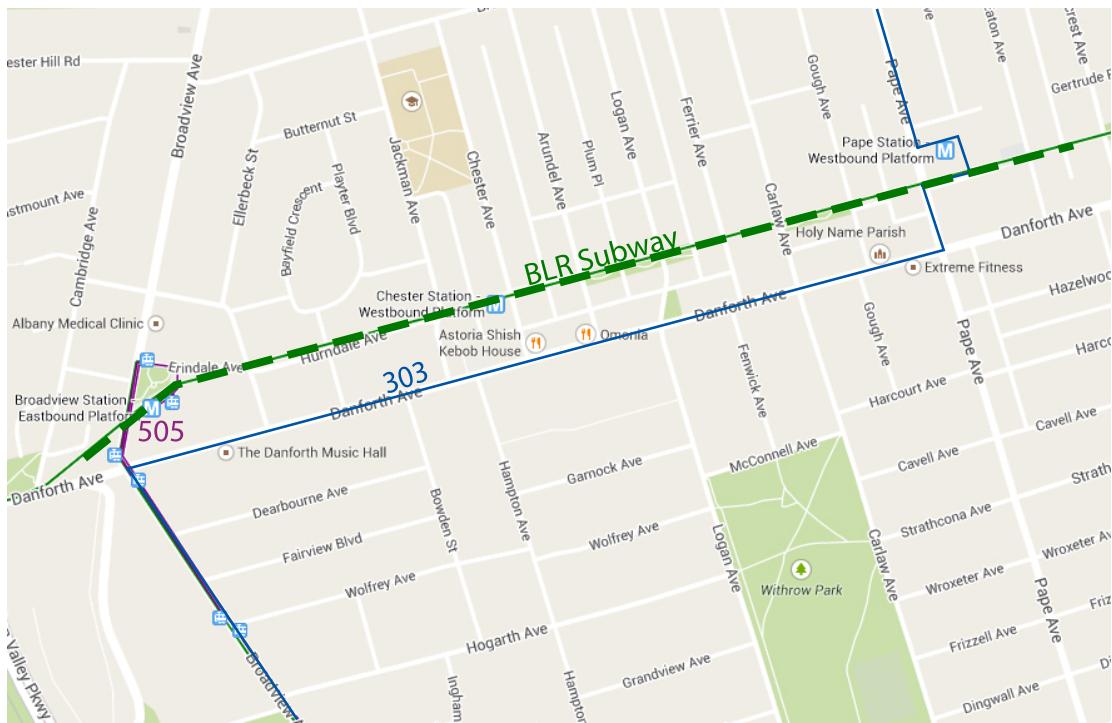
The Danforth Avenue is a vibrant neighbourhood consisting of a diverse population of students, lone parents, and families with children (City of Toronto, 2014). According to the City of Toronto Zoning By-law, the Danforth Avenue is allocated to residential and commercial residential land uses (City of Toronto, 2013). The Danforth is composed of hundreds of shops, restaurants and services. This is a destination

neighbourhood, a cultural hub with a wide variety of food, unique shopping, cafes, bars and theatres. The wide sidewalks of the Danforth provide ample room for visitors, facilitating a high level of pedestrian activity. The street layout is symmetrical along the avenue, with both sides of the street relatively similar with street level businesses, and residential units on the top floors of those businesses.



Figure 1. Pedestrian Realm

There are many ways to get to the Danforth Avenue which include driving, public transportation or using any active mode such as walking or cycling. There are subway stations that are in close proximity to the heart of the Danforth Avenue, most notable the Bloor-Danforth line that runs east to west on Danforth Avenue. These subway stations allow the Danforth neighbourhood to be connected with the rest of Toronto and allows for an alternative mode of transportation. For those who drive, there are two options available for parking: either on-street parking or the Green P Parking lots.

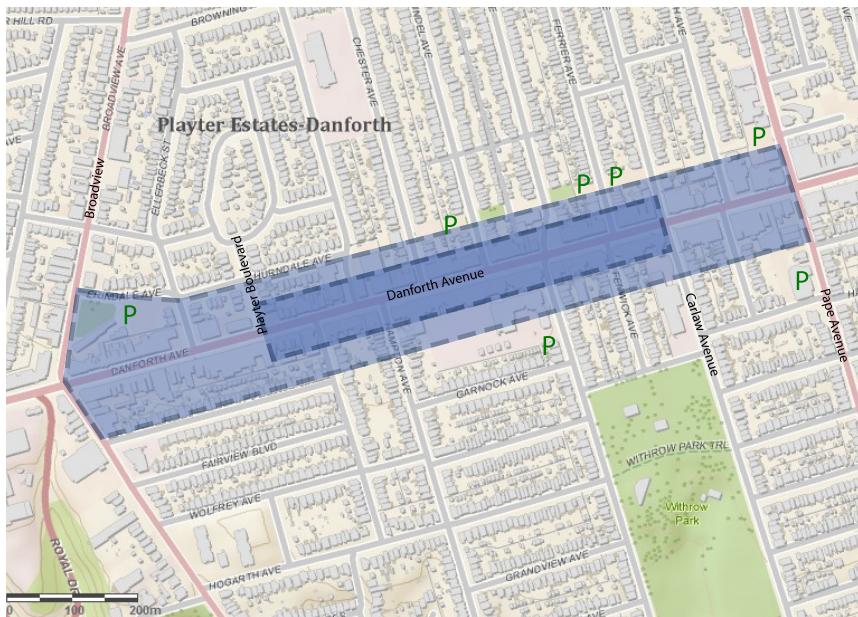


Map 2. Existing Transit Routes

The Green P is Toronto's parking Authority, which exists to provide safe and convenient off-street and on-street Public Parking (Toronto Parking Authority, 2014). Metered on-street parallel parking is available on both sides of the street at set times throughout the day to prevent congestion during peak hours.



Figure 2. Current Danforth Streetscape



Map 3. Green P's (Off Street Parking)

The schedule for on-street parking with ticket purchase fluctuates. The schedule permits a 2 or 3-hour maximum parking period during certain hours, which change every day of the week. There are seven 'Green P' parking lots along the length of the study area from Broadview to Pape, as well as on-street parking spaces provided on both sides of the street. The map below shows the Green P parking lots and their locations along the Danforth Avenue.

2.2 BIKE PLAN

As this is a study on parking and potential for active transportation and adding a bike lane is a proposed option in the report it is important to study the City of Toronto's Bike Plan to know what it entails. The Toronto Bike Plan initiative has the vision of creating a safe, comfortable and bicycle friendly environment with the emphasis on doubling the number of bike lanes in the city and reducing the number of collisions and injuries. (Bike Plan, 2001). With the proposed option of adding a bike lane it is important to note that this will reduce a lane of traffic or on-street parking along the Danforth which is an issue of interest to the merchants concerned with customer accessibility to their businesses. With accessibility remaining the major issue, the Bike Plan wants to better integrate public transit and cycling. This process could be achieved by adding a sufficient number of bike parking facilities to most major transit hubs and ensuring that most modes of public transportation; subways, busses and streetcars, are fitted to allow bikes.(Bike Plan, 2001) At this time there are no plans of adding bike lanes along the Danforth however some advocates and city hall representatives are striving to find the best options for implementing an entire bicycle corridor along the Bloor-Danforth arterial. Ferrier Avenue and Gough Avenue are the closest bike lanes by Danforth Avenue, but they do not maintain connectivity.

3 METHODOLOGY

3.1 EXISTING PRECEDENT

The methodology for this report was based off the two previous reports conducted by The Clean Air Partnership and TCAT in 2008 and 2009 (TCAT, 2008, 2009). The two study's focus was to "determine the public acceptability and economic impact of reallocating road space." (TCAT, 2009). Although there can be many limitations to a study focused on merchant "perceptions" of visitor travel patterns, like the previous studies done by TCAT, we endeavour to critically analyze the behaviour patterns and interpret findings of

3.2 SURVEYS

Data collection for the Danforth study area was conducted over 7 days during a two-week period from March 6 to March 21 2014 by a group of 11 student surveyors. The study area is the portion of Danforth Avenue between Playter Boulevard and Carlaw Avenue. We chose this portion of the Danforth as we felt it characterizes the "heart" of the neighbourhood. A merchant survey was conducted of ground level businesses in the study area of Danforth Avenue as well as a survey of visitors to the area

3.2.1 MERCHANT SURVEYS

Merchants were asked what their perceived customer count was per weekdays and weekends; what is the typical modal share of their customers; what their own travel mode was, and what they would prefer in terms of potential changes. They were given a variety of options each focusing on different transportation options, i.e. widened pedestrian realm, cycling, or auto-centricity. These options were used to understand current perceptions that merchants may have regarding the existing streetscape. This information will give insight to what changes they would like to see on the Avenue.

During the surveying process, all merchants located between Carlaw and Playter were surveyed (n=116). They were approached on the north and south side of Danforth Avenue. Merchants were visited at least twice if they were unavailable in the first visit. Some merchants had to be called at a later date to complete their survey.

The studio group conducted the surveys on a door-to-door basis over the two-week period. In total, 62 out of the 116 merchants (53%) responded to the survey. Out of all the businesses located within the boundaries, 40% of those who responded were retailers. One reason why more respondents were retailers as opposed to restaurants could be due to the fact that restaurants tended to be much busier, presumably with less time available to be surveyed (Figure 3 &4).

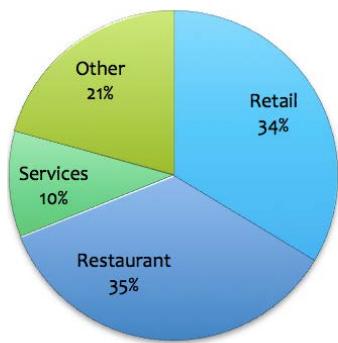


Figure 3. Types of Businesses on Danforth

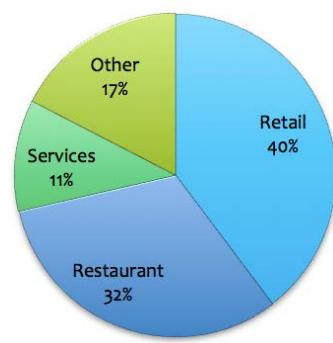


Figure 4. Types of Businesses that responded

3.2.2 VISITOR SURVEYS

Surveyors randomly selected people walking along Danforth Avenue between the times of 10:00am and 5:00pm on different days of the week. A total of 152 people completed the visitor survey. The area was divided into four 'quadrants' labeled A,B,C and D (See Map 4). This was done to keep track of where pedestrian surveys were collected to ensure that respondents were intercepted throughout the study area and not too concentrated in one section. Surveys conducted in quadrant C accounted for the lowest proportion (9%) while quadrant B had the highest (41%) (See Appendix for the complete Survey).



Map 4. Survey Quadrants

Distribution of survey respondents by survey location		
Quadrant A	39	26%
Quadrant B	62	41%
Quadrant C	14	9%
Quadrant D	37	24%
Total	152	100%

Table 1. Survey Response by Quadrant

Surveying was done on a Monday, Tuesday, Thursday, Friday and Saturday with varying rates of information collected (See Table 1.) The goal was to collect data during different days of the week to account for different behaviours that could be attributed to them (i.e. weekends vs. weekdays).

3.3 LIMITATIONS OF STUDY

Several limitations were found while conducting the survey. The first was that the study was conducted within a two week time period that took place during a very cold winter season, which left some days too cold or windy to survey successfully (between -15 degrees celsius and 0 degrees celsius). During these winter months the modes of transportation a person takes may be different than in the summer months. The short period of time to conduct the surveys was another limitation. If there was more time, then we may have had a better response rate. Because only two cyclists were surveyed, the results presented in this report do not necessarily represent the perceptions or preferences of cyclists.

4 FINDINGS

4.1 INTRODUCTION TO MERCHANT

The main focus of this merchant survey is to investigate what the current perception and preference is towards reallocating existing parking space to widen sidewalks or additional bike lanes. Through collected results it is apparent that merchants were more in favour of auto-centricity versus improving the active transportation environment.

4.2 MERCHANTS' PERCEIVED CUSTOMER TRAVEL HABITS

Danforth Avenue is a diverse and vibrant avenue that acts as a social hub for the City of Toronto. High concentration of retail and restaurants provide a draw for many visitors, and there is a high level of pedestrian activity at street-level. Out of the merchants we surveyed, 40% of the respondents were retailers. One reason why more respondents were retailers could be due to the fact that restaurants tended to be much busier, presumably with less time available to be surveyed. In reflecting on the results collected, an observation arose regarding merchants' perception on their estimated customer count per weekend and weekday. 46% of businesses serve more than 50 customers per weekday, and 71% of businesses serve more than 50 customers per weekend day. This illustrates a 25% increase in customer activities on the weekend.

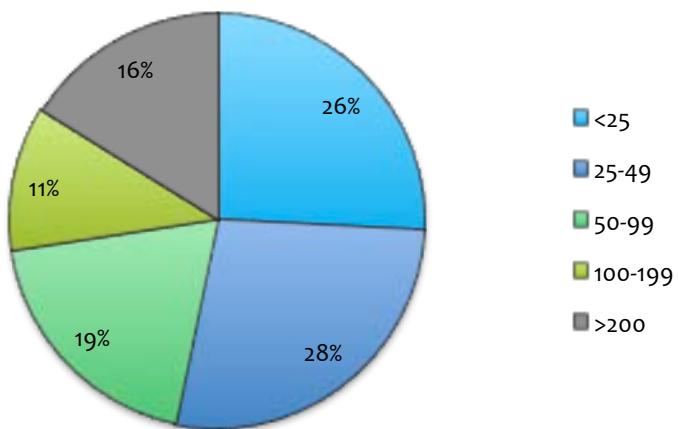


Figure 5. Merchants' Perceived Customers - Weekday

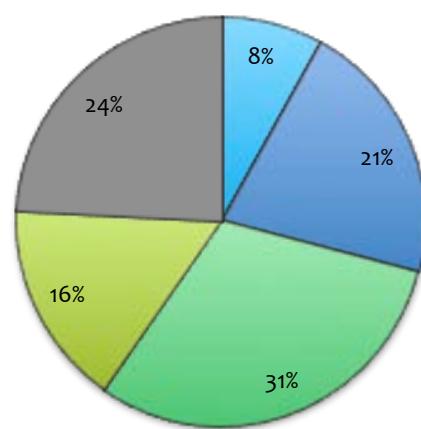


Figure 6. Merchants' Perceived Customers - Weekend

In conducting the survey, merchants were asked to give an estimation of what percentage of their customers use which travel mode. I.e In their opinion, what percentage of their customers drive to visit their establishment. Responses indicated a large majority of merchants believe that less than 24% of their customers are cyclists. This is reflective of what the current attitude is towards cyclists. Many merchants are not receptive to the possibility of adding more bicycle lanes. Almost half of the merchants surveyed believe that 35% of their customers are drivers which is consistent with findings in previous TCAT studies.

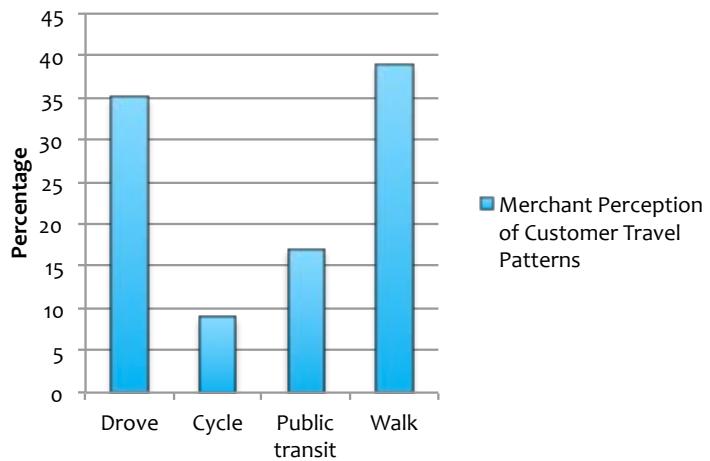


Figure 7. Merchants' Perception of Customer Travel Mode

By finding the average of perceived customer travel patterns from all 62 merchant surveys, we found that on average merchants believed that 35% of their customers drove, 9 % of their customers cycled, 17% took public transit and 39% of their customers travelled by walking.

4.3 MERCHANTS' PERSONAL TRAVEL HABITS

A majority of business owners drive to the Danforth, with 44% of the merchants being drivers. Perhaps this is reflected in the auto-centric view/mindset of many of the merchants surveyed. The survey also asked if the merchants' travel mode would change during the summer time. 77% of merchants responded that they would remain using the same travel mode, i.e. answering yes in response to would (merchants') travel mode change in the summer? This shows that many of the merchants are regular drivers at all times of the year.

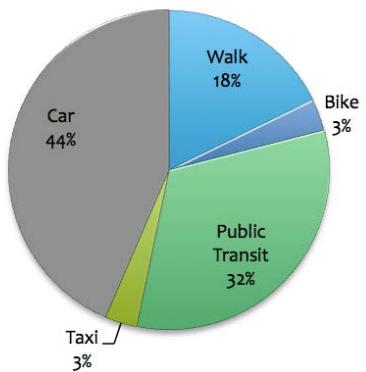


Figure 8. Merchants' Personal Travel Mode

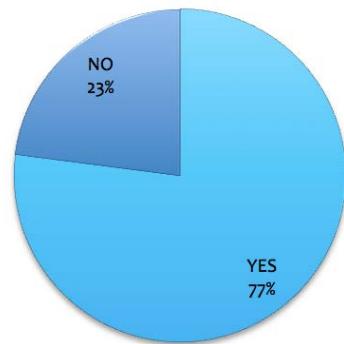


Figure 9. Would merchants' Travel Mode stay the same in Summer?

4.4 MERCHANTS' PREFERENCES IN POTENTIAL CHANGES



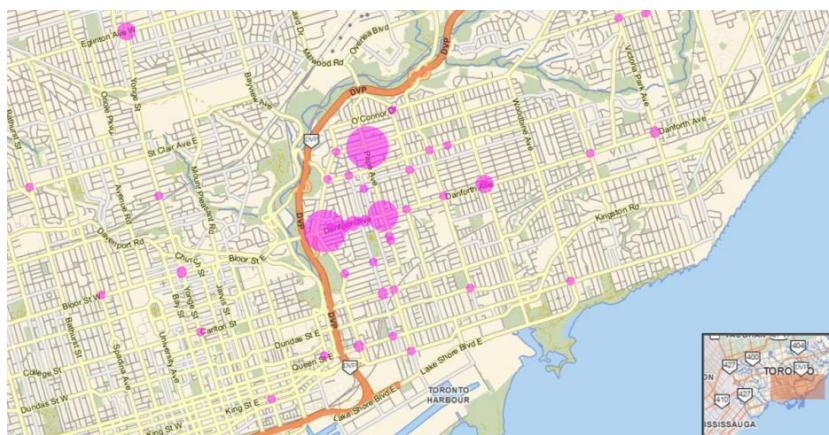
Figure 10. Merchants' Preferred Potential Street Changes

In relations to the preliminary/previous data, the last question of the survey is about potential changes that can be implemented on the Danforth. These potential options will be addressed in the final chapter. In the questionnaire, the merchants were asked which of four of five options (Appendix) they preferred the most regarding on-street design. The most popular option was D, which describes Danforth Avenue as it currently looks, plus additional off street

4.5 VISITOR SURVEY RESPONDENTS

The purpose of the visitor survey is to collect data about the behaviour and preferences among visitors to the Danforth.

Respondents were asked specifically where they live (either nearest intersection and/or postal code). The map below (map 5) shows where survey respondents live and illustrates that the majority of respondents live fairly near to the Danforth. However, there were also several respondents that came from outside of Toronto, from as far away as Oakville and Pickering.



Map 5. Visitor residence locations within the surrounding Danforth area

4.6 VISITORS' HABITS AND CONSUMPTION

Survey respondents were asked how they usually get to the Danforth area, to better understand the significance of the various modes of transportation. Most visitors walk to the Danforth (46%), followed by public transit (32%), and then car (19%). Of those who live or work in the area, 68% walk, 19% take public transit, and 10% drive. Of the visitors who do not live or work in the area, 56% take public transit, 35% drive, and 7% walk (Figure 11).

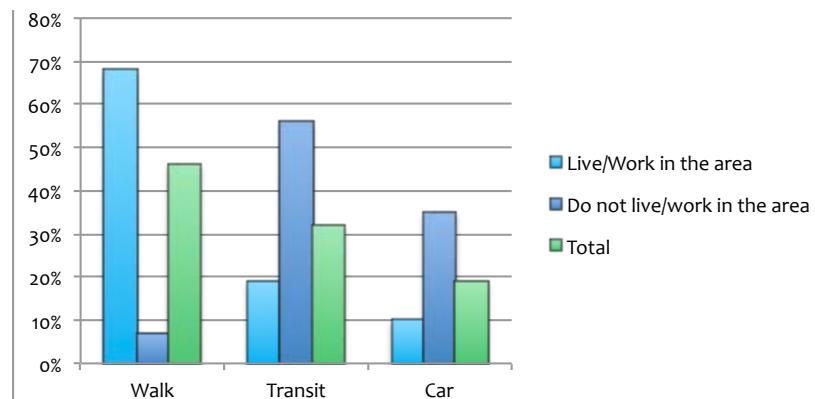


Figure 11. Visitor Travel Modes (who live/work in the area and who don't)

Respondents were also asked if their mode of transportation to the Danforth would be different if it was summer rather than winter. Of the respondents that said they would use a different mode of transportation in the summer, 45% would walk, 24% would take public transit, 17% would cycle and 13% would drive (Figure 12). Therefore the proportion of people who walk to the area would remain largely the same, though more people will likely cycle to the area in summer, as opposed to winter.

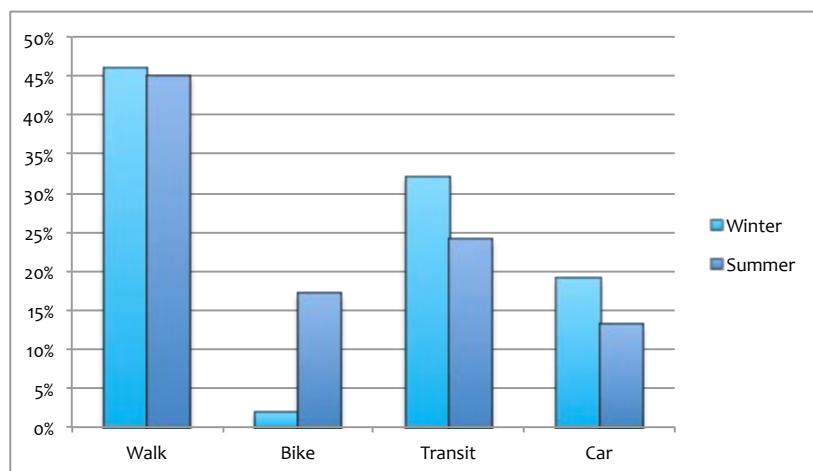


Figure 12. Would Visitors' Travel Mode Change in Summer?

Survey respondents were also asked the number of days they visited the Danforth area in a typical month. Half of the respondents visit the Danforth frequently, with 50% reporting that they visit more than ten times per month. Only 18% visit less than two times per month. The home or work locations of the respondents were directly correlated with the visit frequency data, and this outcome was expected. Those who live or work in the area visit the Danforth much more frequently than those who do not. For example, 78% of those who live or work in the area visit more than five times per month; whereas only 23% of those who do not live or work in the area visit more than five times per month. Conversely, 76% of those who do not live or work in the area visit five or fewer times per month; compared to only 21% of those who do live or work in the area.

Overall, pedestrians visit the area most often, with 79% visiting more than 5 times per month; followed by drivers, 48% of whom visit more than 5 times per month; and public transit users, 34% of people who visit more than 5 times per month. On the contrary, 66% of public transit users and 52% of drivers visit five or fewer times per month; compared to only 21% of walkers (Table 2).

Number of days per month visiting the Danforth

Number of Days	Live or Work in the Area (97)	Do Not Live or Work in the Area (55)	Walk (70)	Transit (49)	Car (29)	Total (152)
0 to 1	7%	38%	11%	23%	28%	18%
2 to 5	14%	38%	10%	43%	24%	23%
6 to 10	8%	9%	6%	10%	14%	9%
11 to 20	13%	7%	10%	12%	10%	11%
21 to 31	57%	7%	63%	12%	24%	39

Table 2. Visitors' Number of days per month visiting Danforth

Half of the visitor respondents stated that their purpose for visiting the Danforth was to shop (28%) and/or go to a restaurant (22%). The other categories of purposes all shared similar percentages, with the category of people who live there being slightly higher at 14% (Figure 13).

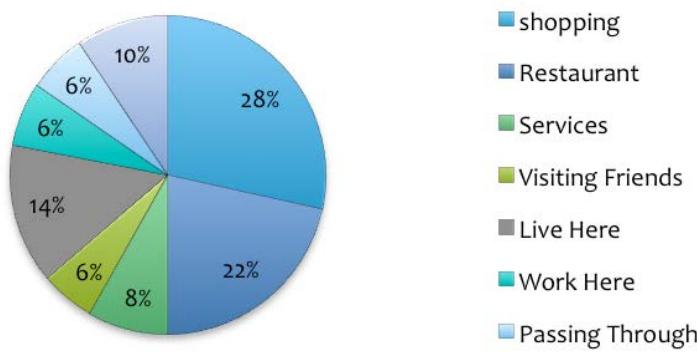


Figure 13. Visitors' purpose for visiting the Danforth

Survey respondents were also asked how much money they spend in the Danforth area in a typical month, with six spending ranges provided as options (Table 3). Overall, the greatest percentage of respondents report spending between \$25 and \$75 (26%). Among those who live or work in the area, 62% report spending over \$100 per month, compared to 9% of those who do not live or work in the area. Instead, the greatest percentage of those who do not live or work in the area, spend between \$0 and \$25 (40%).

MONEY SPENT IN THE AREA PER MONTH

Money Spent	Live or work in area (97)	Live and work outside of the area (55)	Walk (70)	Public Transit (49)	Car (29)	Total (152)
0-25	4%	40%	6%	33%	21%	17%
25-75	21%	35%	16%	37%	35%	26%
75-100	12%	16%	10%	16%	14%	14%
100-200	22%	6%	21%	6%	17%	16%
200-300	14%	4%	19%	6%	0%	11%
300+	26%	0%	27%	2%	14%	17%
NA	1%	0%	1%	0%	0%	0%

Table 3. Money spent in the area per month (for visitors)

Looking at spending categorized by the respondents' mode of travel, walkers tend to spend the most (defined as the greatest percentage spending more than \$100 per month), followed by drivers, then public transit users. The spending habits of car drivers and public transit users are similar, while walkers seem to spend considerably more than car drivers and public transit users.

	Live in area		Do not live in area		Walk		Car		Public Transit		Total	
Widened sidewalks & less on-street parking	13	13%	6	11%	9	13%	4	14%	6	12%	19	13%
Bike lanes & less on street parking	22	23%	9	16%	17	24%	4	14%	10	20%	31	20%
More off-street parking, less on-street parking, widened sidewalks, bike lanes	35	36%	23	42%	25	36%	9	31%	22	45%	58	38%
Subtotal (support for changes to the streetscape)	70	72%	38	69%	51	73%	17	59%	38	78%	108	71%
More off-street parking, no other changes	10	10%	7	13%	5	7%	7	24%	5	10%	17	11%
No change	17	18%	10	18%	14	20%	5	17%	6	12%	27	18%
Subtotal (support for no changes to the streetscape)	27	28%	17	31%	19	27%	12	41%	11	22%	44	29%
Total	97	100%	55	100%	70	100%	29	100%	49	100%	152	100%

Table 4. Preference in Change to Street Use Allocation by Transportation Mode and Residence

The researchers also wanted to know what possible changes to the street survey respondents would prefer, with no change as an option (Table 4). As in TCAT's previous studies, this study revealed some differences in survey respondents' preferences for changes to the street based on whether or not they live in the area and how they travel to the Danforth.

The highest percentage of the total sample of survey respondents (38%) were in favour of option three: "both an additional bike lane and wider sidewalks, as well as more off-street parking and less on-street parking". Responses were similar for both those who live and those who do not live in the area. While public transit users were most in favour of the above option (45%), all groups favoured this option the most including drivers (31%), and walkers (36%).

Of the five options provided to the respondents, three require a change to the streetscape, and two do not. So, in table 4 we divided the responses into two groups; those who prefer a change to the street in the first, and those who do not prefer changes in the second. Overall the majority of people surveyed (71%) preferred to see street use reallocated for widened sidewalks or a bike lane. Support was only slightly higher for those who live in the area (72%) than those who don't (69%). Looking at preference by mode of transportation, the highest support for change was found amongst people who take public transit to the Danforth (77%), followed by those who walk to the area (72%). Interestingly, even the majority of drivers (59%) would prefer streetscape changes.

We also compared the amount of money respondents spent in a typical month with their preferences in changes to the street (Figure 14). We found that option three (more off-street parking, less on-street parking, widened sidewalks and a bike lane), which was the dominant option overall, was especially desired in comparison to the other options amongst those who spent \$25-\$200 per month (43%). In addition, those who spent over \$300 per month favoured option two: bike lanes and less on-street parking, more than any other options at 36%.



Figure 14. Visitors preferred street change compared to money spent

The final question in the visitor survey asked for respondents' prospective frequency based on the following changes: wider sidewalks, an additional bike lane, more off-street parking, and no change (Figure 15). The majority of respondents stated that they would visit the Danforth area the same frequency no matter what the street change (80%). The bike lane option resulted in the highest percentage (27%) of visitor responses saying that they would come more frequently to the Danforth if a bike lane was implemented.

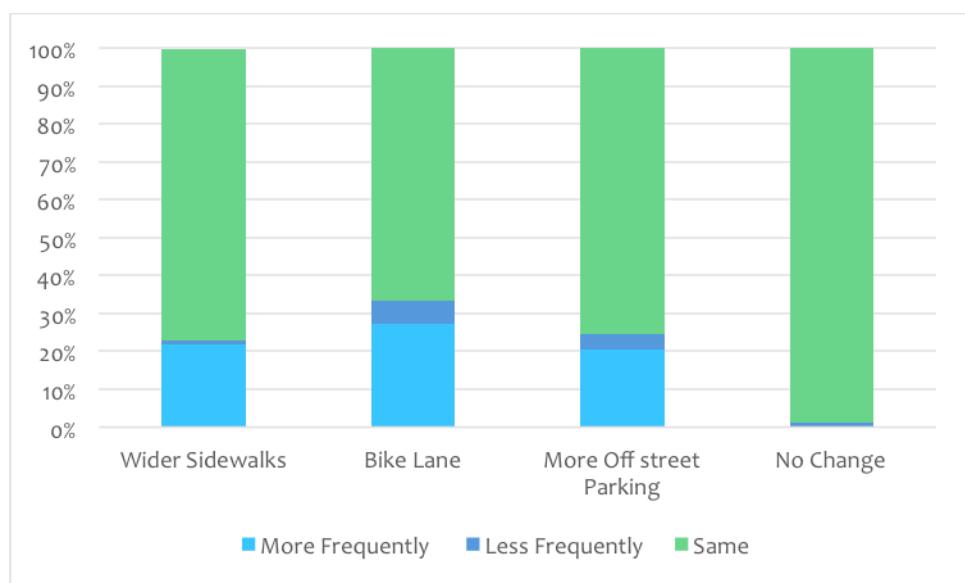


Figure 15. Visitors' change in travel mode based on potential street changes

5 DISCUSSION

The main purpose of this study is to better understand merchant and pedestrian perceptions surrounding the presence and importance of on street parking as it relates to business on Danforth Avenue. There are potential economic impacts of replacing on-street parking by widened sidewalks and a bike lane. The information gained in this study helps in understanding the spending habits of visitors to Danforth Avenue, and what types of changes to the street would be desired by residents, visitors and merchants in the area. With the information gathered and presented in this report, there is greater opportunity for educated dialogue surrounding the issues involved. This understanding may in turn lead to new policy directives and active transportation planning for the City of Toronto.

The results from the completed surveys show that merchants overestimate the number of people who drive to get to the Danforth. While merchants perceive that 34% of the customers drive to the Danforth (Figure 16), overall only 19% actually drive. Looking more closely at those survey respondents who drive to the Danforth, we see that for those who either live or work in the area, only 10% are driving as compared to 36% for those who do not live or work in the area. (Figure 11). Given that the survey also revealed that those who live or work in the area visit the most often (Table 2) and spend the most money (Table 3), the presence of on-street parking on the Danforth may be less important than merchants perceive it to be.

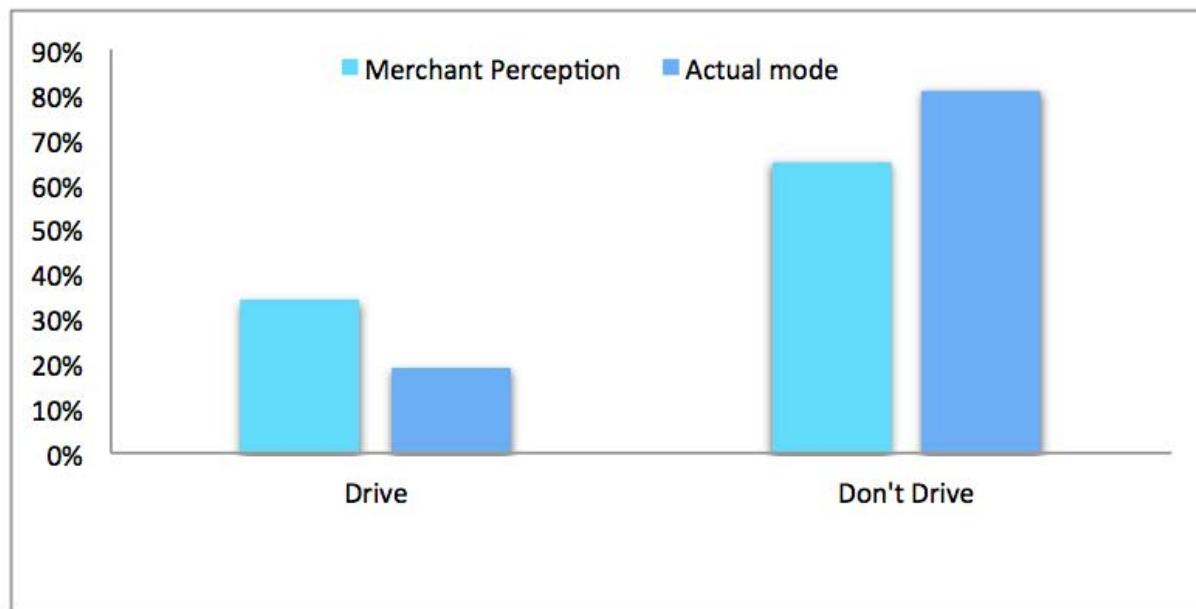


Figure 16. Merchant perception versus real visitors travel modes

Visitors who drive to the study area spend significantly less money and frequent the area less than pedestrians do. The largest portion of visitors (27%) who drive to get to Danforth Avenue spend an average of 0 to 1 day per month in the area, 24% of drivers spend 21-31 days on average per month in the area (Table 2).

The majority of visitors (63%) who walk to get to Danforth Avenue spend 21-31 days on average per month in the area, and 11% spend 0-1 day on average per month in the area, as seen in (Table 2).

From this, we can see that the percentage of visitors who spend the most days per month on Danforth Avenue are pedestrians. Pedestrians, on average, are on Danforth Avenue between 21 and 31 days per month 36% more than drivers are. 35% of drivers to the Danforth area spend an average of \$25-\$75 in the area monthly, followed by 20.7%, who only spend between \$0 and \$25 in the area per month (Table 3). In contrast, the average amount of money spent by 27% of visitors who walk to the area is above \$300, followed by 21.4% who spend a total of between \$100 and \$200 on average per month in the area (see Table 3).

The largest portion of merchants on Danforth Avenue drive to get to their place of employment (44%, as seen in Figure 8), and the largest portion of visitors are pedestrians, meaning they walk to get there (46%, as seen in Figure 11). It is interesting to note that merchant, on average, responded that they believe that 34% of their clients or customers' primary mode of transportation is walking; despite this, a lot of merchants chose Option D) in Question 5 of the merchant survey, which calls for not changing the layout of the street, while providing additional off-street parking, as seen in Figure 10. Merchants preferred the option of the survey that provides for the most amount of parking (Option D), whereas pedestrians preferred the option with widened sidewalks, bike lanes, reduced on street-parking and additional off-street parking (Option C).

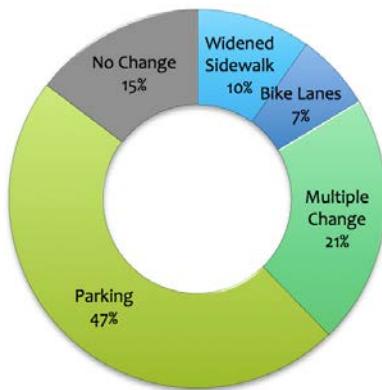


Figure 10 (see above). Merchants' Preferred Potential Street Changes



Figure 17. Visitor's Preferred Potential Street Changes

Merchants' choice of the optimal parking option may be due to their over-estimation of driving mode share among their customers. Figure 16 depicts the difference between merchants' estimation of their customers' travel patterns, compared to the findings of mode share from visitor survey respondents. It can be seen that merchants over-estimate the proportion of customers who drive and cycle to the Danforth, and underestimate the proportion of customers who walk and take transit. These perceptions could be based on the current assumption held by many business owners that more on-street parking is highly important for the convenience of patrons to an area, and is therefore vital for the success of the business (Arancibia, 2013).

In order to maximize the economic profit of merchants on Danforth Avenue it is important to understand and accommodate the needs and preferences of the residents and visitors who spend the most time and money in the area. The allocation of space on the street may be best determined by using this information, combined with the known travel modes used by visitors. Different transportation modes reported in our survey give an indication as to the preference of visitors to the area, and the modes of transportation that they use.

5.1 TCAT STUDY COMPARISON

TCAT previously conducted two parking and active transportation surveys along Toronto's main street neighbourhoods: Bloor-Annex Neighbourhood, and the Bloor-West Village. This was a similar survey was conducted in this study along Danforth Avenue, also known as Greektown. The three study areas are somewhat similar in terms of streetscape and characteristics of the local population. In Bloor West Village, the width of Bloor Street is approximately 16.5 metres, this includes on-street parking in the curb side travel lane on the north side during off-peak hours (TCAT Bloor-West Report). 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 curb side travel lane (Cleanairpartnership.org). However, Danforth Avenue, is a major arterial road with a width of approximately 14.5 metres (Danforth Avenue, The City of Toronto), including on-street parking in the curbside travel lane during off-peak hours on the south side. The typical road width for arterial roads is of 12m according to (FHWA). This means that similar to Bloor-west, Danforth Avenue has the opportunity to create bike lanes or widen sidewalks without changing the current amount of on-street parking.

The population characteristics of the Annex (Ward 20), Bloor-West Village (Ward 13), and Danforth Avenue (Ward 29), are relatively different.

The average household income is the highest in Bloor-West Village (\$97,091), then the Annex (\$81,301), and the lowest in the area surrounding Danforth Avenue (\$71,326). Table 5 shows that Bloor-West Village and the Danforth Avenue area, have a higher number of respondents that use their automobile for work trips whereas the Annex has the least amount of respondents that use their automobile for work trips. A total of 71% non-work trips are made by automobile in Bloor-West Village, and 67% around Danforth Avenue, and only 45% in the Annex. It is assumed that households with higher income tend to have higher car ownership. This is revealed through the high numbers of respondents who depend on their automobile for work and non-work trips in Bloor-West Village (City of Toronto, 2006a,b,c).

One of the most interesting findings that emerged in comparing these studies was the difference between the merchants' perception of their customers travel modes and the actual travel modes reported by the visitors. In the Annex study, results show that nearly 75% of business owners/managers believe that less than 25% of customers drive to get to their business. Results of the Annex visitors' survey shows that only 10% of the respondents drove to the Annex (TCAT Annex Report). Bloor-West Village survey results show that 69% of the merchants surveyed believed that more than 20% of their customers drove. In actuality, according to their visitor survey data, 21% of visitors surveyed reported they do usually drive to Bloor West Village (TCAT Bloor-West Report).

Compared to our survey results, almost half of the merchants believed that less than 24% of their customers drive to get to their business. According to our visitor results, 19% of the respondents drove to Danforth Avenue. In all three studies merchants consented around an approximate margin that 20% of their customers drove to their businesses. In two of the three cases, the results showed that lower than 20% of visitors drove to area.

Another interesting finding is the visitor consumption patterns of the studies. For the Bloor-West Village study, results show that 88% of visitors came to the area for goods and services. As for the Danforth area, we found that 58% of survey respondents visited for goods and services. The Danforth results are 30% less than those of the Bloor-West Village, this could be justified by the fact that some visitors were residents of the area, and stated that they were at the Danforth simply because they lived there. The Annex study cannot be included in this category of comparison because they did not include this survey question in their report summary.

A summary of comparisons between merchant and visitor survey results of all three studies is displayed in Table 5 below. Visitors of the Danforth Avenue were more comprised of individuals who lived or worked in the area, compared to the results of the Annex Study and

the Bloor-West study. In terms of the Danforth study, 82% of visitors reported that they lived or worked in the area, while for the Bloor-West Village study it was 70% and the Annex was 55%. When comparing the marginal difference between visitors who reported they lived or worked in the area versus those who reported that they do not, the Danforth avenue has the biggest marginal difference between visitor responses. This shows that the majority of visitors in the Danforth area are people who live or work in the area, compared to the smaller percentage that do not.

To coincide with the data TCAT reported, we will only compare the percentages of people who work or live in the area, merchants and visitors' modes of travel, and their preferences in terms of proposed changes to street use allocation. It is important to note that our study added more proposed changes to street use allocations, as well as a taxi as an option for a mode of travel in the survey questions, which were not in the other two TCAT study surveys. According to the results of the mode of travel to the locations, the highest percentages are from respondents who walk to the locations which shows that majority of them are locals. Motor vehicle use is the second highest percentage in the Bloor West Village, and the third highest percentage in Danforth, but in the Annex it is the least used mode of travel. Transit is the second most used mode of travel in the Annex whereas it is the second most used mode of travel in Bloor West Village and the third most used mode of travel in Danforth. The Annex has the most cyclists compared to Bloor West Village and Danforth where it is the least. The additional mode of travel we added to our survey is taxi use which results show as the lowest used mode of travel next to cycling. Our data was collected during the winter, which could explain the low cycling rate.

	Annex	Bloor West Village	Danforth
Total Combined Number of Surveys	538	510	214
Live/Work in Area			
Yes	55%	70%	82%
No	45%	30%	18%
Mode of Travel to the Location(s)			
Walk	46%	46%	43%
Bicycle	12%	5%	2%
Transit	32%	24%	26%
Car	10%	21%	27%
Taxi	N/A	N/A	2%
Preferences in Changes to Street Use Allocation			
Widened sidewalks & less On-street Parking	16%	15%	11%
Bike lanes & less On-street parking	62%	43%	13%
More Off-street Parking, less On-street; Widened Sidewalk and additional Bike Lane	N/A	N/A	30%
More Off-street Parking, No Other Changes	N/A	N/A	29%
No Change	22%	42%	17%

Table 5. Summary of TCAT comparison

In terms of preferences in street allocation changes, both the Annex and Bloor West Village surveys by TCAT show that majority of respondents prefer bike lanes rather than widened sidewalks or having no changes at all. Danforth Avenue results show that the majority of people prefer no changes to street use on Danforth Avenue in comparison to TCAT's studies. We also added other options for preferences in changes to street use allocation such as: increased off-street parking which 29% of respondents preferred, and the option of having widened sidewalks, bike lane, more off street parking, and less on-street parking which 30% of respondents preferred. In general, a proposed change in street use allocation that would allow more walking and cycling infrastructure were received more positively in the Bloor Annex neighbourhood than in Bloor West Village and the Danforth Avenue.

6 SUMMARY

In the winter term of 2014 (Jan-Apr), TCAT acted as the client for an Advanced Urban and Regional Planning Studio class at Ryerson University. The study that the Ryerson students conducted on TCAT's behalf resulted in the report Bike Lanes, On-Street Parking and Business: A Study of Danforth Avenue in Toronto Danforth Neighbourhood.

This research report was designed to both replicate and extend the research methodology used for TCAT's previous reports: Bike Lanes, On-Street Parking and Business: A Study of Bloor Street in Toronto's Annex Neighbourhood and Bike Lanes, On-Street Parking and Business Year 2 Report: A Study of Bloor Street in Toronto's Bloor West Village. The Danforth was chosen as an ideal study area to complement TCAT's previous studies since it comprises the eastern section of the same street, and has both similarities to the Bloor Annex and Bloor West Village, as well as some distinct characteristics.

A summary of the findings:

- Less than 1 out of 5 visitors drive to the Danforth
- Merchants overestimate the number of people who drive to get to the Danforth: while merchants perceive that 34% drive to get to the Danforth, overall only 19% drive and for those who live or work in the area only 10% drive
- Those who live or work in the area visit the Danforth more frequently than those who do not: 78% of those who live in the area visit more than five times per month whereas only 23% of those who do not live or work in the area visit more than five times per month
- Those who live or work in the area spend more money than those who do not: 62% of those who live in the area spend over \$100 per month whereas only 10% of those who do not live or work in the area spend over \$100 per month
- Those who walk to the Danforth are much more likely to spend more money than those who drive or take public transit: 67% of those who walk spend over \$100 per month whereas only 14% of those who take public transit and 31% of those who drive spend over \$100 per month
- The difference between the infrastructure merchants want for visitors, and what visitors say they want is substantial; merchants favour increased parking, but more parking was their customers' lowest priority

- Survey respondents who reported spending over \$300 or more in a typical month in the neighbourhood preferred street changes that included bike lanes and reduced on street parking
- Overall the majority of people surveyed (71%) preferred to see street use reallocated for widened sidewalks or a bike lane. Support was only slightly higher for those who live in the area (72%) than those who don't (69%). Looking at preference by mode of transportation, the highest support for change was found amongst people who take public transit to the Danforth (77%), followed by those who walk to the area (72%). Interestingly, even the majority of drivers (59%) would prefer streetscape changes.

REFERENCES

- Arancibia, D. (2011). Cyclists, Bike Lanes and On-Street Parking: Economics Impacts. Retrieved From: http://www.torontocycling.org/uploads/1/3/1/3/13138411/daniel_arancibia_ce_report_bike_lanes_december_10.pdf
- Arnott, R. & Rowse, J. (2009). Downtown Parking in Auto City. *Regional Science and Urban Economics*. 39(1), 1-14.
- Bent, E. & Singa, K. (2008). Modal Choice and Spending Patterns of Travelers to Downtown San Francisco: Impacts of Congestion Pricing on Retail Trade. Retrieved From: http://sf.streetsblog.org/wp-content/upload1/SFModalChoicesSpendingPatterns_RevisedFinal.pdf
- Cervero, R. & Kockelman, K. (1997). Travel Demand and the 3Ds: Density, Diversity, and Design. *Transportation Research Part D: Transport and Environment*. 2(3), 199-219.
- City of Toronto. (2006). City of Toronto Ward Profiles Ward 13. Retrieved From: http://www1.toronto.ca/city_of_toronto/city_planning/wards/files/pdf/ward13_2006profiles.pdf
- City of Toronto. (2006). City of Toronto Ward Profiles Ward 20. Retrieved From: http://www1.toronto.ca/city_of_toronto/city_planning/wards/files/pdf/ward20_2006profiles.pdf
- City of Toronto. (2006). City of Toronto Ward Profiles Ward 29. Retrieved From: http://www1.toronto.ca/city_of_toronto/city_planning/wards/files/pdf/ward29_2006profiles.pdf
- City of Toronto. (2013). City of Toronto Zoning By-Law. Retrieved From: http://map.toronto.ca/maps/map.jsp?app=ZBL_CONSULT
- City of Toronto. (2012). Loading Zone – No.811-815 Danforth Avenue. Retrieved From: <http://www.toronto.ca/legdocs/mmis/2012/te/bgrd/backgroundfile-47486.pdf>
- Clean Air Partnership. (2009). Bike Lanes, On-Street Parking and Business. A Study of Bloor Street in Toronto's Annex Neighbourhood. Retrieved From: <http://www.cleanairpartnership.org/pdf/bike-lanes-parking.pdf>
- Clean Air Partnership. (2010). Bike Lanes, On-Street Parking and Business, Year 2 Report. A Study of Bloor Street in Toronto's Bloor West Village. Retrieved from: <http://www.cleanairpartnership.org/files/bikelanes-parking-business-bloorwestvillage.pdf>
- Clifton, K. & Currans, K. & Muhs, C. & Ritter, C. & Morrissey, S. & Roughton, C. (2012). Consumer Behavior and Travel Choices: A Focus on Cyclist and Pedestrians. Retrieved From: http://otrec.us/files/OTS2012_Morrissey-Poster.pdf
- De Jong, J. (2013). The Importance of On-Street Parking to Business Vitality. A Study of Agricola Street. Dalhousie University School of Planning: 1-35.
- Drennen, E. (2003). Economic Effects of Traffic Calming on Urban Small Businesses. Retrieved From: <http://www.sfbike.org/download/bikeplan/bikelanes.pdf>
- Lowber, K. (2013). Outdoor Cafes/ Widened Sidewalks. Nacto: 1-7.
- NACTO. (n.d.). Urban Bikeway Design Guide. Retrieved From: <http://nacto.org/cities-for-cycling/design-guide/>
- NACTO. (n.d.). Urban Street Design Guide. Retrieved From: <http://nacto.org/usdg/>

REFERENCES

New York Department of Transportation. (2013). The Economic Benefits of Sustainable Streets. Retrieved From: <http://www.ssti.us/wp/wp-content/uploads/2014/01/dot-economic-benefits-of-sustainable-streets.pdf>

SF Better Streets. (2012). New Street in Major Development Areas. Retrieved From: <http://www.sfbetterstreets.org/design-guidelines/new-streets-in-major-development-areas/>

Smith Lea, N. & Forkes, J. & Sztabinski, F. (2010.). Converting On-Street Parking to Active Transportation in Toronto: Two Studies of Merchant and Patron Preferences. Retrieved From: http://www.cleanairpartnership.org/files/SmithLea_Walk21_ConvertingOn-StreetParkingtoAT.pdf

Toronto Parking Authority. (2014). Parking Information. Retrieved From: <http://parking.greenn.com/>

U.S. Department of Transportation. (n.d). Chapter 3 – The 13 Controlling Criteria. Retrieved From: http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter3/3_lanewidth.htm

FIGURE LIST REFERENCES

Saari, R. (Photographer). Greektown on Danforth Avenue [Print Photo]. Retrieved From: <http://www.ronsaari.com/stockImages/canada/TorontoGreektownDanforthAvenue.php>

Toronto Home Guide. (Producer). (2010). Dynamic Danforth Avenue [Print Photo]. Retrieved From: <http://torontoomeguide.wordpress.com/2010/01/12/just-listed-280-gowan-ave/>

APPENDIX

APPENDIX A: MERCHANT SURVEY

1. On average, about how many customers do you serve per day? (Choose one option per column)

Weekday	Weekend
a) Less than 25	a) Less than 25
b) 25-49	b) 25-49
c) 50-99	c) 50-99
d) 100-199	d) 100-199
e) 200 or more	e) 200 or more

For the purpose of this survey, the Danforth neighborhood is defined as the area along Danforth Avenue between Pape Avenue and Broadview Avenue

2. What percentage of your customers or clients would you estimate used the following modes to get to the Danforth Area?

____ % drove to the Danforth Area

____ % Biked to the Danforth Area

____ % Used Public Transportation to get to the Danforth Area

3. How do you usually get to the Danforth area? (Choose one)

a) Walk

b) Bicycle

c) Public Transit

d) Taxi

e) Car: Where did you park? (intersection/block or Green P lot) _____

f) Other _____

4. Would your usual travel mode be the same during the summertime as it is now? If not, what mode would you opt to use?

- a) Yes
- b) No : Other mode_____

5. If the City of Toronto was considering changes to the street, which of the following would you prefer? (Choose one only)

- a) Widened sidewalks on Danforth Avenue even if that means fewer on-street parking;
- b) A bike lane on Danforth Avenue even if that means fewer on-street parking
- c) More off street parking and fewer on-street parking; widened sidewalks, and a bike lane.
- d) More off street parking and no change in the number of on-street parking, sidewalks or bike lanes
- e) No change

Date: _____, 2014

Day of the week:

Time: __:__

Name of business & property number: _____

Type of Business: Circle an option

- a) Retail
- b) Restaurant/Bar
- c) Services
- d) Other (Specify: _____)

Interviewer(s): _____

APPENDIX B: VISTIOR SURVEY

1. Do you live or work in the area?

- a) Yes
- b) No

2. In a month, how many days approximately do you visit the Danforth Avenue?

3. On average, approximately how much money do you spend in a month in the Danforth area?

- a) Less than \$25
- b) \$25-\$75
- c) \$75-\$100
- d) \$100-200
- e) \$200-300
- f) \$300 or more

4. What is the purpose of your trip to the Danforth today? (Circle all the options that apply)

- a) Shopping
- b) Restaurant/Bar
- c) Services (e.g., copy centre, medical or legal)
- d) Visiting friends
- e) I live here
- f) I work here
- g) I'm just passing through
- h) Other _____

5. How do you usually get to the Danforth area? (Choose one)

- a) Walk
- b) Bicycle
- c) Public Transit
- d) Taxi
- e) Car: Where did you park? (intersection/block or Green P lot) _____
- f) Other _____

6. Would your travel mode be the same during the summertime as it is now? If not, what mode would you opt to use?

- a) Yes
- b) No : Other mode_____

7. If the City of Toronto was considering changes to the street, which of the following would you prefer? (Choose one only)

- a) Widened sidewalks on Danforth Avenue even if that means fewer on-street parking;
- b) A bike lane on Danforth Avenue even if that means fewer on-street parking
- c) More off street parking and fewer on-street parking; widened sidewalks, and a bike lane.
- d) More off street parking and no change in the number of on-street parking, sidewalks or bike lanes
- e) No change

8. Would you expect to come to the Danforth more frequently, less frequently, or the same based on these possible changes: (Check the applicable box)

Possible Change	More Frequently	Less Frequently	Same
Wider Sidewalks			
An addition of a bike lane			
More off street parking			
No change			

9. Where do you live?

a) Nearest intersection: _____

b) Postal Code _____

Date: _____, 2014

Day of the week

Time: ___:___

Survey Location: _____

Interviewer: _____