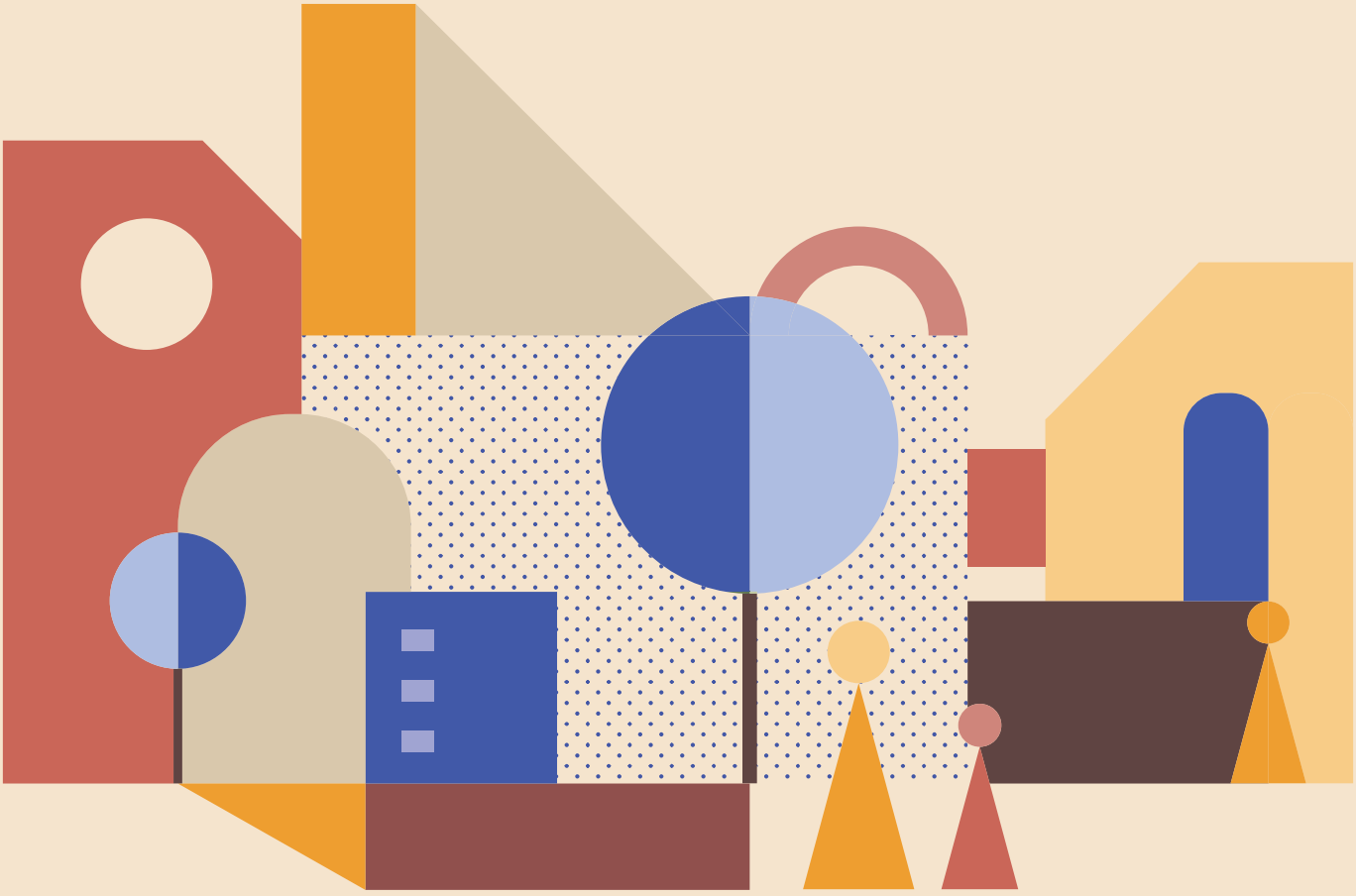
north york at the centre

Phase 1 Background Report: Appendix A - Mobility Review

October 2024



TORONTO

Appendix A: Mobility Review

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01. INTRODUCTION

1.1 Project Overview

The City of Toronto is undertaking a review of the North York Centre Secondary Plan (NYCSP) to refresh the vision for the Centre and develop new policy directions to shape the area as an inclusive, resilient, and complete community. The project, known as 'North York at the Centre', includes engagement with the community and interested parties to identify aspirations, determine priorities, and recommend updates to the planning policies that guide growth and investment in the area. This report documents the existing mobility conditions review undertaken as part of the NYCSP Review. This document has been prepared as a supporting document appended to the Phase 1 Background Report.

1.2 Additional Detailed Analysis

The purpose of this report is to provide more in-depth documentation and discussion of the mobility context and traffic assessment under the main Phase 1 Background Report. The following aspects have been discussed within this document:

- Travel characteristics of residents, employees, and other travellers to and from North York Centre;
- Additional details to the main report of select aspects of the existing street, pedestrian, cycling, and transit networks, including transit utilization of local and regional transit services;
- A review of freight and goods movement;
- Existing traffic operations at study intersections (Synchro);
- A safety review, including a collision analysis, focusing on Killed or Seriously Injured (KSI) and Vulnerable Road User (VRU) collisions; and
- Multi-modal level of service (MMLOS) analysis at study intersections and roadway segments.

Area planning-level transportation modelling (EMME) is also part of the existing conditions review scope and is addressed under separate cover. The study area assessed in this study is detailed in the following section.

1.3 Study Area

The Mobility review scope of the NYCSP Review project involves three main study areas, including the *Primary Study Area, Boundary Expansion Study Areas*, and *Mobility Study Area*.

The *Primary Study Area* (PSA) aligns with the boundaries of the NYCSP. The PSA is located generally along Yonge Street as well as the parallel roadways, including Beecroft Road and Doris Avenue, from north of the Highway 401 interchange to north of Finch Avenue at Cummer Drive/Drewry Avenue.

The *Boundary Expansion Study Areas* (BESA) are lands located within the 500-metre to 800-metre radius of the three existing subway stations in the PSA.

The Mobility Study Area (MSA) is bounded to the north and south by Steeles Avenue and Wilson Avenue/ York Mills Road, and to the east and west by Bayview Avenue and Bathurst Street. This is the study area for planning-level transportation modelling that is addressed in a separate cover.

Vehicular traffic assessment focuses on the signalized intersections within the PSA as well as the ones outside of the PSA but within or adjacent to the BESA boundaries.

The multi-modal level of service assessment completed in this study focuses on key segments of major arterials within the PSA (i.e., Yonge Street, Sheppard Avenue, Finch Avenue) and at key intersections of these major arterials with other streets. Minor arterials and collector street within the PSA have also been considered as part of the assessment.

Goods movement review in this study have been completed for the PSA, and historical collision data has been broadly reviewed for the MSA with a more detailed focus on collisions within PSA and BESA within its 800-metre radius boundaries.

The PSA and BESA, and study intersections and roadway segments are illustrated in **Figure 1-1**.

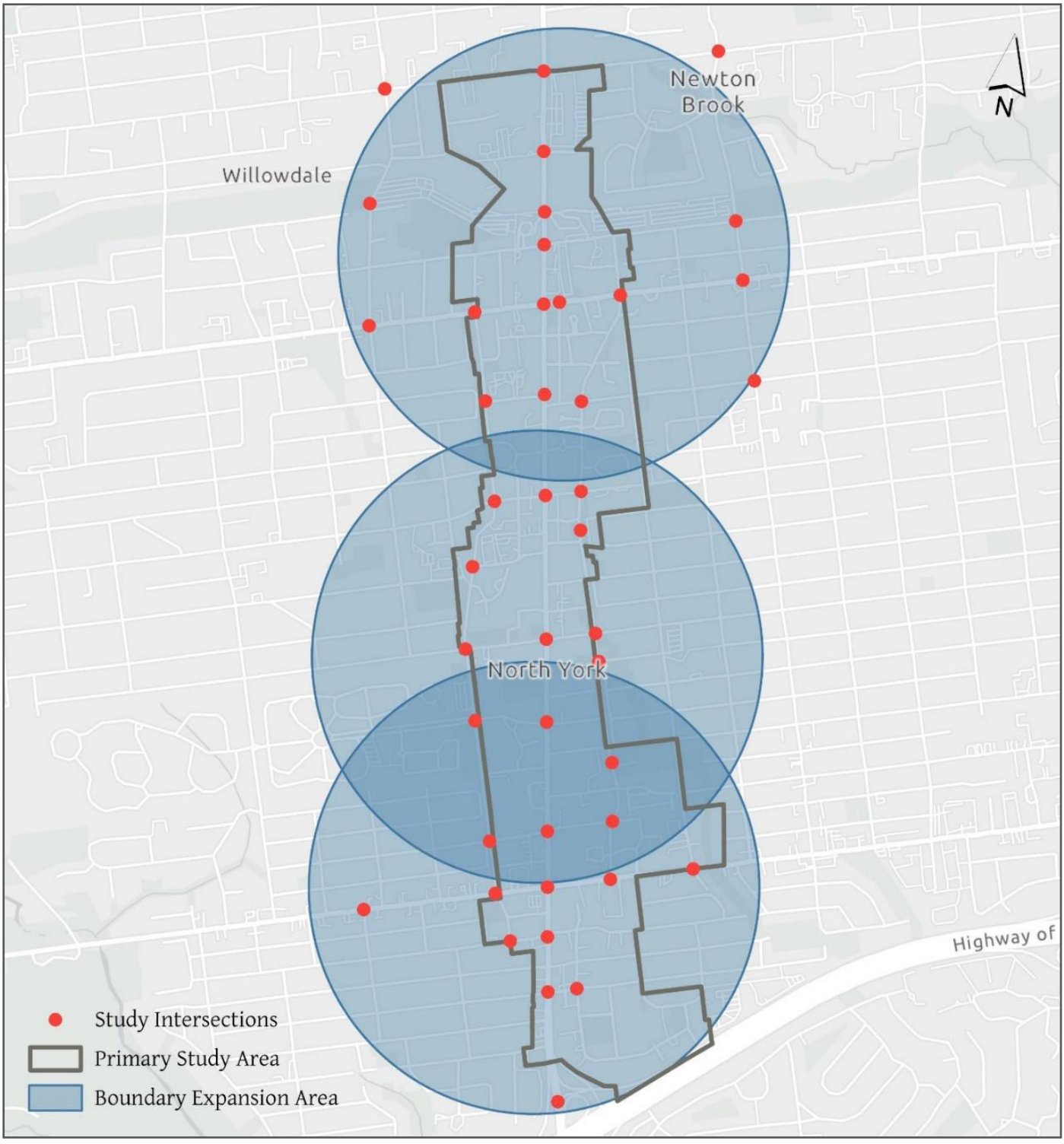

Figure 1-1: Study Area

02. NYCSP TRAVEL CHARACTERISTICS

This chapter provides demographic and travel pattern changes within the NYCSP area based on the Transportation Tomorrow Survey (TTS). The 2006, 2011 and 2016 TTS data was used to provide the summaries below (unless explicitly stated otherwise), as the 2022 TTS data was not yet made available at the writing of this report. The 2022 data will be incorporated once it becomes available. The TTS data has its limitations as the survey methods and response rates for different demographic groups have changed over the years. However, it is one of the more data rich surveys available for analysis.

Statistics Canada Census (*Journey to Work*) data was used to supplement the TTS analysis for residential commuting trips.

2.1 Auto Ownership

The importance of auto ownership is evident in the outsized role it plays when deciding mode choice, activity location, and activity frequency. Vehicle ownership is also one of the most expensive decisions a household makes and has repercussions across individual and joint travel decisions made by individuals and households. It is a well understood fact that an increase in the number of adults in a household and the presence of young children is positively correlated to the number of cars owned by the household. Therefore, in addition to showing the distribution of auto ownership by households (as can be seen in **Figure 2-1**), it is important to normalize auto ownership by the number of drivers in the household. This normalization is undertaken by cross tabulating the number of drivers in a household to the number of cars owned in a household:

- Zero car Household: Households with zero cars (irrespective of the number of drivers)
- Auto Deficit Household: Households with more licensed drivers than cars.
- Auto Parity Household: Households with equal number of cars to licensed drivers.
- Auto Excess Household: Households with higher number of cars than licensed drivers.

In *zero car household*, the person(s) relies on using transit, active transportation, and/or vehicles-for-hire to complete their trips, which can limit the range of their trips and activities. *Auto deficit households* indicate that the persons within the households have to discuss and plan their interaction and usage of the vehicle(s), as not every driver will have access to a vehicle throughout the day. The people in auto deficit households have to decide things such as which of the workers/students get the car(s) for the day, does the car remain at home in case of emergencies/errands for the stay-at-home parents and child, etc. For *auto parity* and *auto excess households* every driver has access to at least one vehicle, for this reason these two auto ownership groups will be combined under the “auto parity”.

The household investments in automobiles are driven by complex dynamics of travel behaviour, socioeconomic conditions, and changes in household composition. Therefore, it is difficult to isolate changes witnessed in auto ownership and access to a single set of policy, infrastructure or land use events, but rather it must be recognized as the aggregate effect of several factors. Factors known to decrease likelihood of car ownership include:

- Decrease in household size
- Increase in the cost of parking
- Decrease in residential parking mandates for new developments
- Increase in proximity to higher order transit

Figure 2-1 indicates that since 2006, the 2+ car households is decreasing, while 0 and 1 car households are increasing. **Figure 2-2** shows that the 0 car households are increasing at the expense of auto deficit households. Similarly, the number of 0 car households has slowly increased, but the auto parity households has remained the same. When compared to the city-wide data for Toronto, the Centre area has a lower percentage of zero car households, and a higher percentage of auto deficit households.

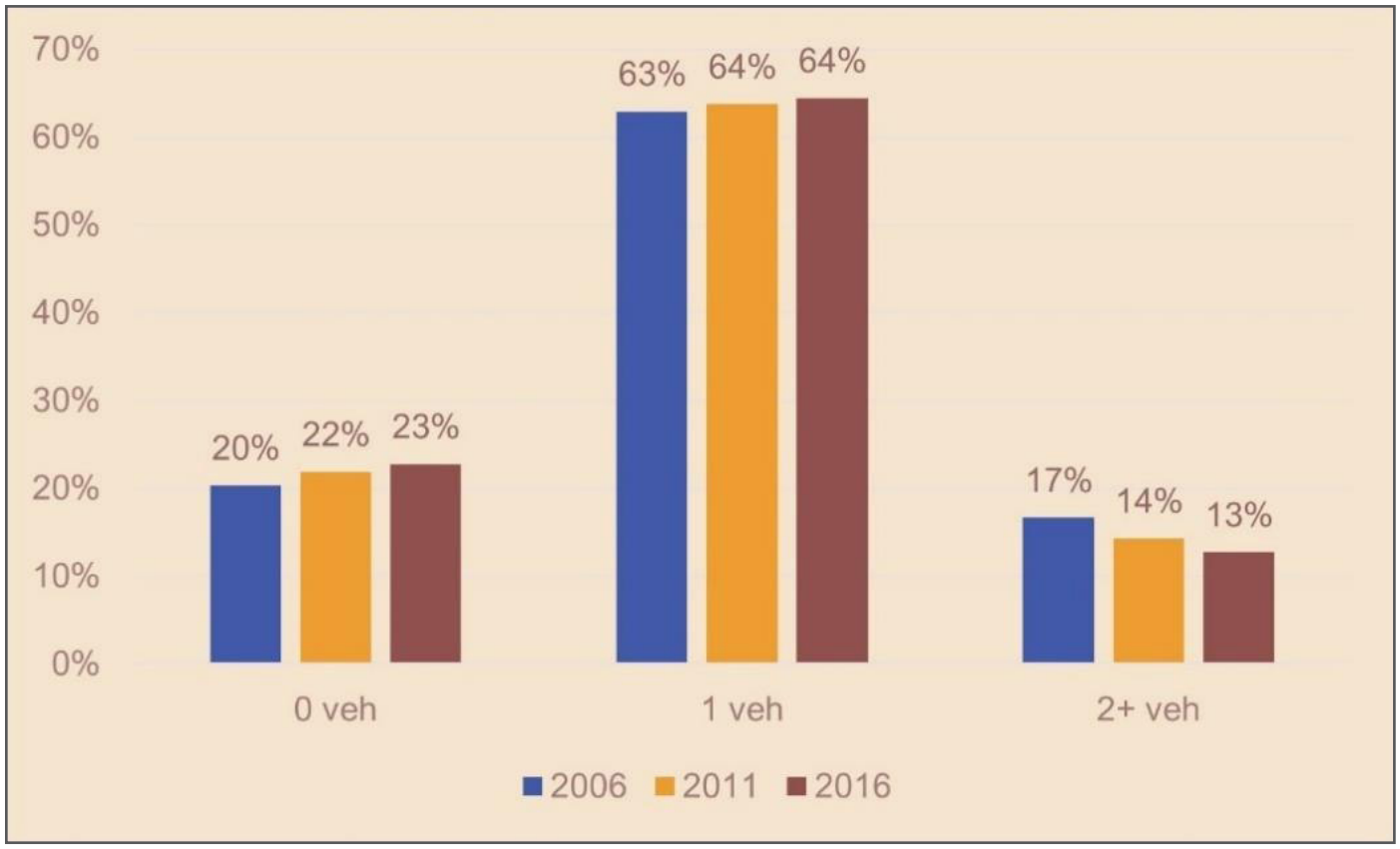

Figure 2-1: Household Vehicle Ownership 2006 to 2016 within the Centre

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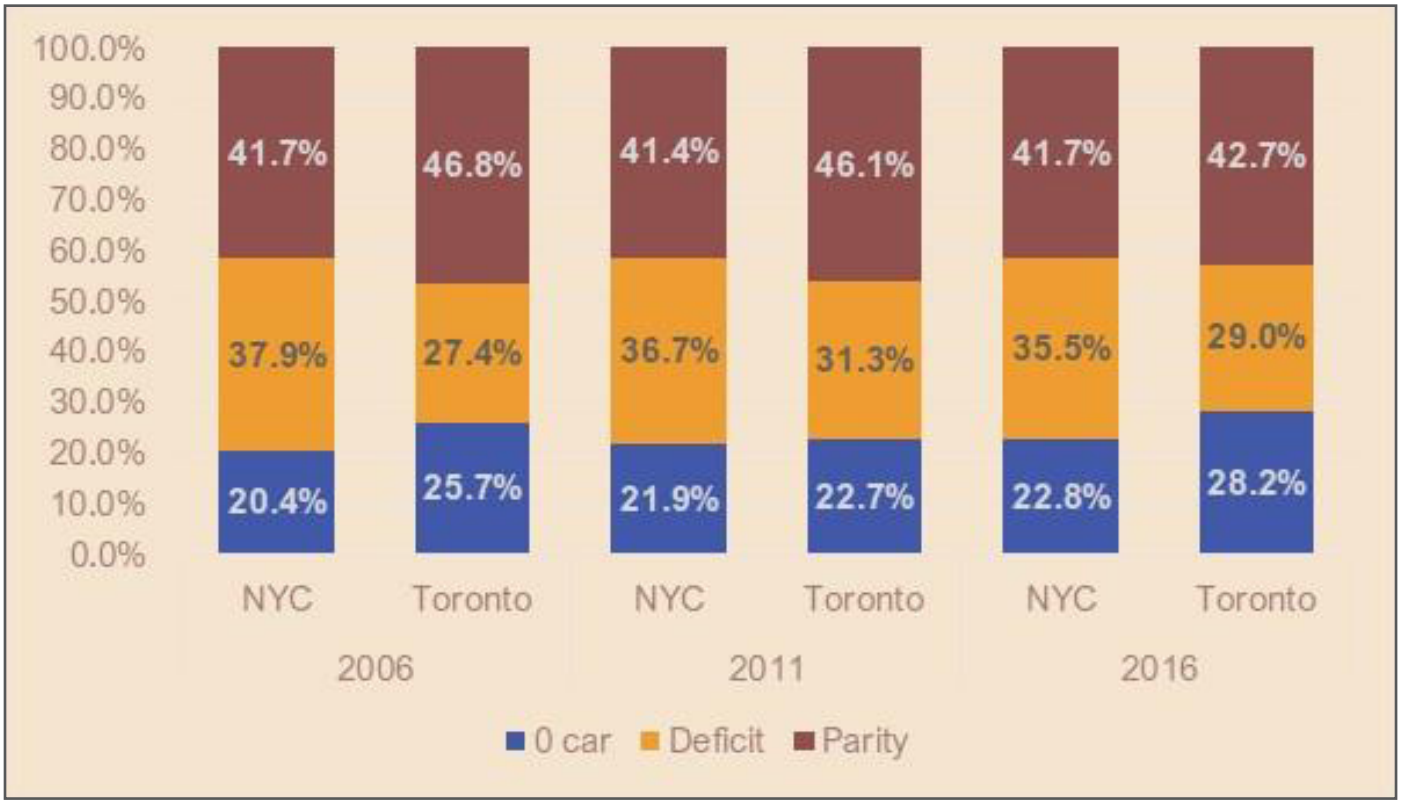

Figure 2-2: Household Car Availability

2.2 Historical Daily Trip Trends

Table 2-1 shows the changes in total daily trips originating in the Centre area (note: daily trips are often symmetrical, meaning that the number of trips originating in an area is the same as the number of trips destined to the area).

Table 2-1: Total Daily Trips in the Centre Area

Year	Total Trips (% Growth*)	Population (% Growth*)	Employment (% Growth*)	Trips Per (Pop +Emp)
2006	101,510 (–)	41,575 (–)	36,157 (–)	1.31
2011	109,331 (8%)	48,214 (16%)	42,217 (17%)	1.21
2016	120,156 (10%)	62,913 (30%)	42,329 (–)	1.14

Note: * % Growth calculated from the previous horizon.

The trips have increased at a slower rate than the population and employment growth within the Centre area; this indicates that a lower number of trips are being made per resident and job.

Figure 2-3 shows the travel time profile of all the trips originating in the Centre during a weekday. In 2016, during the A.M. period (6 A.M. to 9 A.M.) and P.M. periods (3 P.M. to 7 P.M.), there has been an increase in peak demand (as seen by the highest points during the two periods), and the duration of the peak

(indicated by the increase in the widths of the time profiles). The increase in demand and duration, could be attributed to the increase in population (51% increase form 2006). During the midday period (9 A.M. to 3 P.M.) the demand between 2006 and 2016 has remained relatively unchanged. Note: the evening period is between 7 P.M. and midnight, and the overnight period is between midnight and 6 A.M.

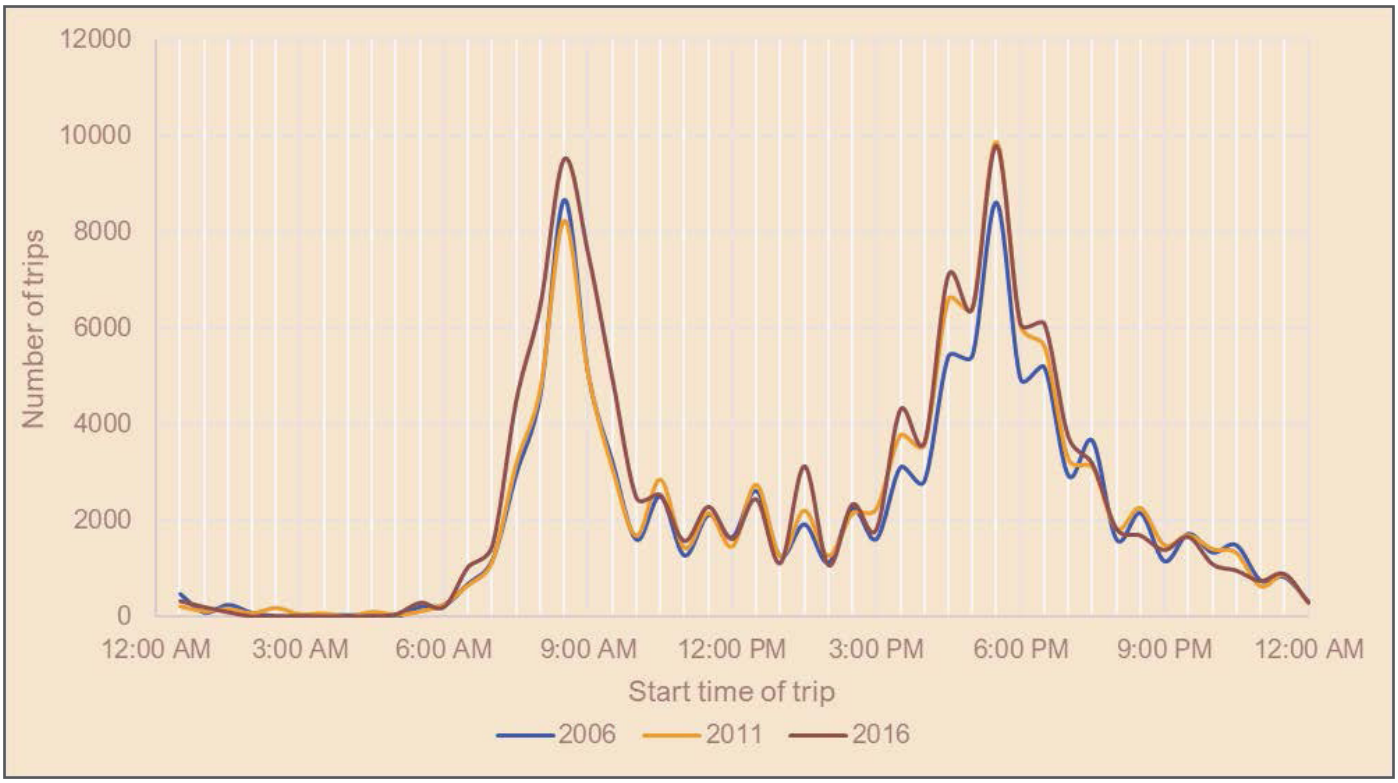

Figure 2-3: Travel Time Profile of Trips Originating in the Centre

Figure 2-4 shows the changes in modal splits between 2006 and 2016. In 2016, auto and passenger usage continues to dominate, making up more than 55% of the mode split, however, this number is drastically down from 68% in 2006. In recent years auto trips have been shifting to transit (8% increase from 2006) and active transportation (AT) (5% increase from 2006). Most of the gains in active transportation have been through walking trips, as cycling remains a very low usage mode.

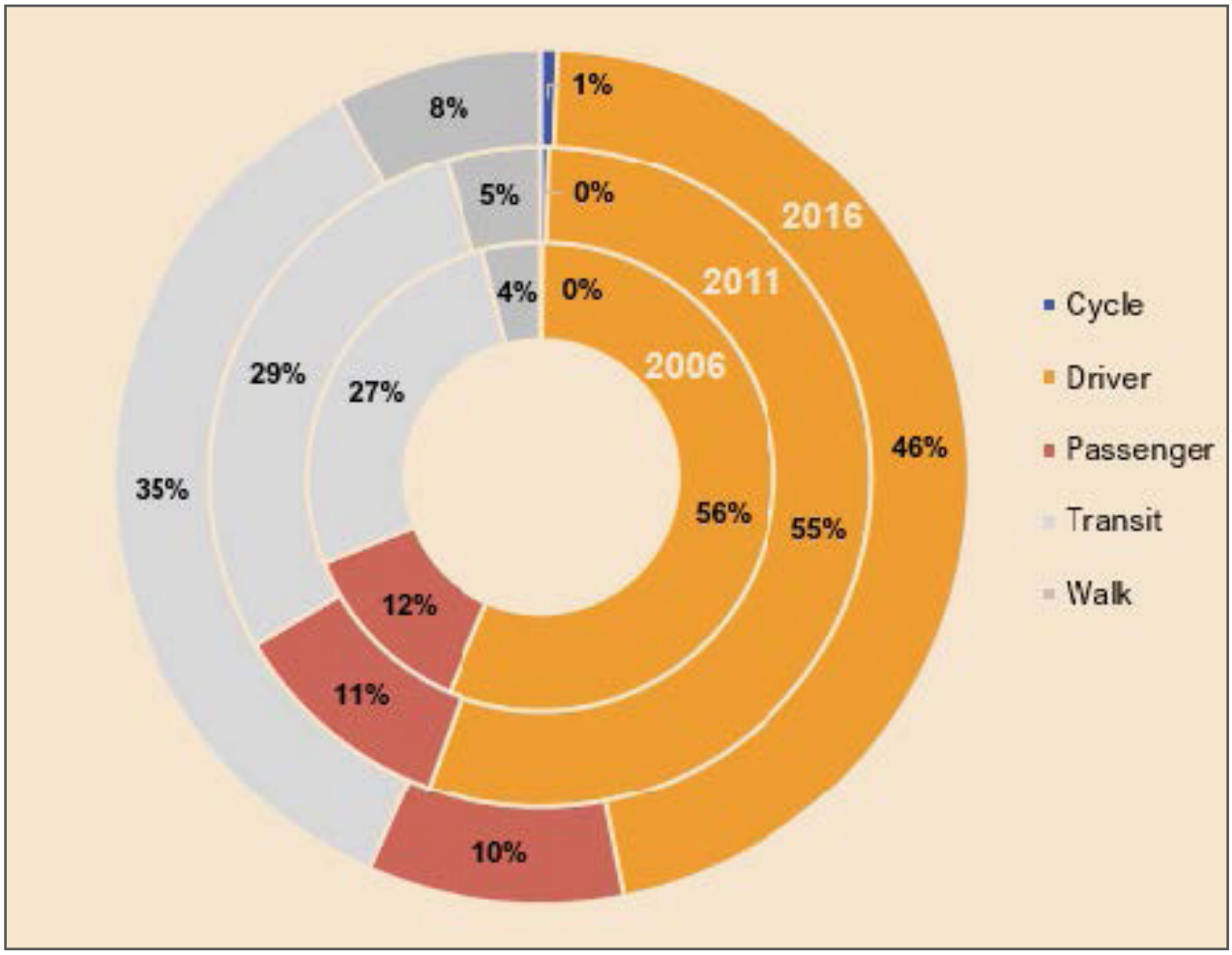

Figure 2-4: Weekday Modal Split for Trips Between 2006 and 2016

Table 2-2 shows the top five destinations of the trips starting in the Centre area while **Figure 2-5** shows the total daily destinations, and their mode share, for trips starting in the Centre area.

Table 2-2: Top Five Destinations for Daily Trips Originating in the Centre

Destinations	Trips (% of Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Change in Commute Transit / AT Modal %, 2006 to 2016
North York Area (Outside North York Centre Area)	30,764 (25.7%)	64% / 26% / 9%	1,954 (6.8%)	5% / 4%
Downtown Toronto	18,399 (15.3%)	10% / 89% / 1%	7,240 (64.9%)	8% / 1%
North York Centre Area	14,361 (12.0%)	36% / 17% / 46%	3,992 (38.5%)	12% / 22%
Midtown Toronto	7,722 (6.4%)	42% / 56% / 2%	1,051 (15.7%)	15% / 2%
Vaughan	7,702 (6.4%)	89% / 10% / 1%	2,351 (43.9%)	-1% / 1%

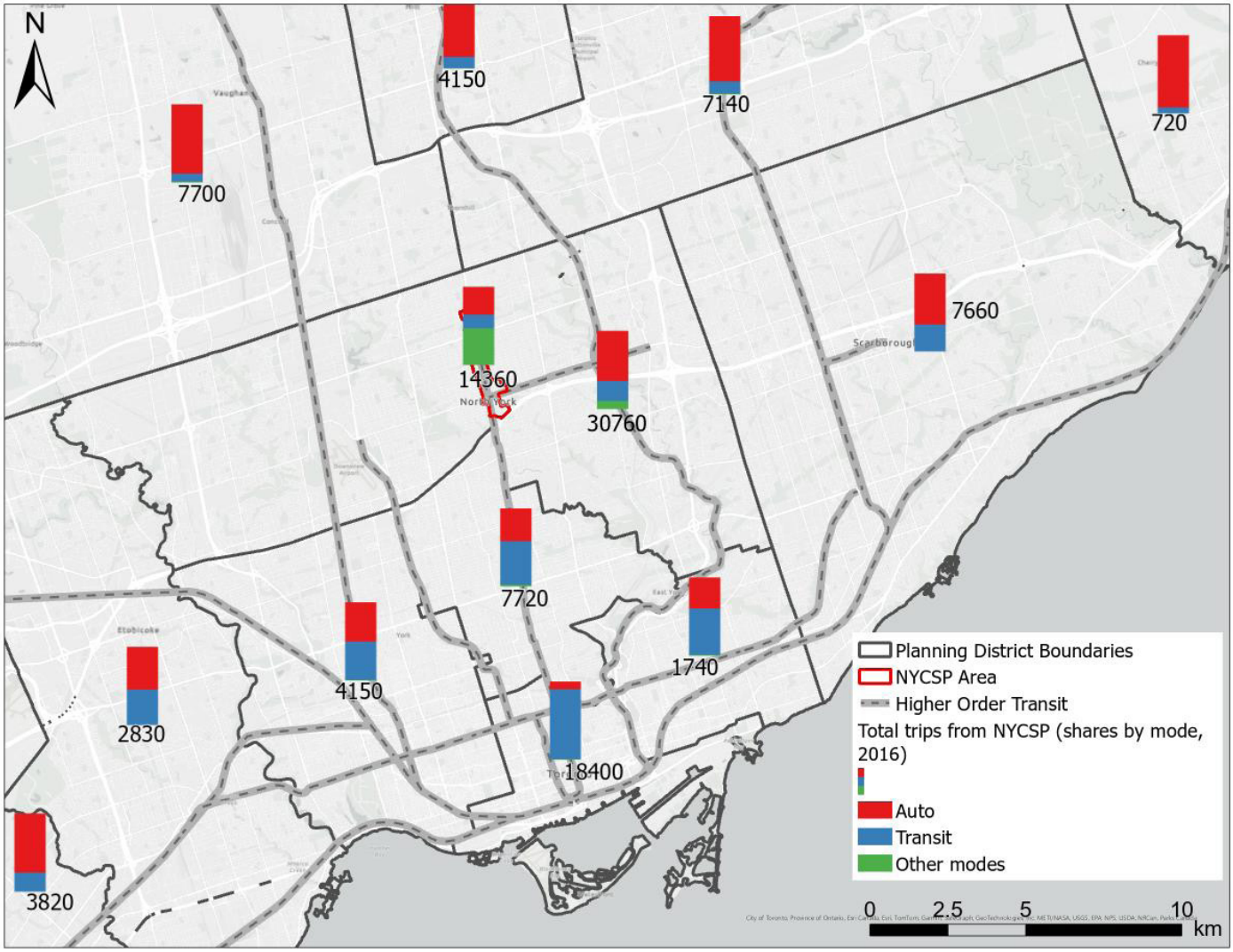

Figure 2-5: Destination of Total Daily Trips Originating in the Centre

The top five destinations make up 65% of all the outbound trips. Among these, four of the top five destinations have experienced an increase in transit and/or active transportation mode shares since 2006, while the fifth destination has remained relatively unchanged. The intra-Centre area travel has seen a drastic improvement in transit and active transportation mode share.

Figure 2-6 shows the typical weekday trip totals by trip distance and mode in 2016, while **Table 2-3** summarizes the same data while adding a comparison to 2006. The general distribution of trip distances has remained relatively unchanged. The total number of trips increased across all distance ranges between 2006 and 2016. There was a decrease in the auto mode share for trips less than 20 km between the two horizons. For short trips (0-2 km) there was a shift from autos to active transportation.

Active transportation accounts for a sizable mode share (42%, made up of 41% walking and 1% cycling) of trips under 2 km, however auto and passenger modes (46% combined) still dominate this distance range. Between 2 km and 6 km, transit starts to pick up mostly at the expense of walking and cycling, auto drivers and passengers remains the main mode through this distance range. Beyond 6 km, active transportation modes become almost non-existent, and trips are made using either auto or transit. Transit accounts for a strong share of trips beyond 2 km, particularly for trips 6 to 16 km in length, where transit mode share matches or exceeds driving mode share.

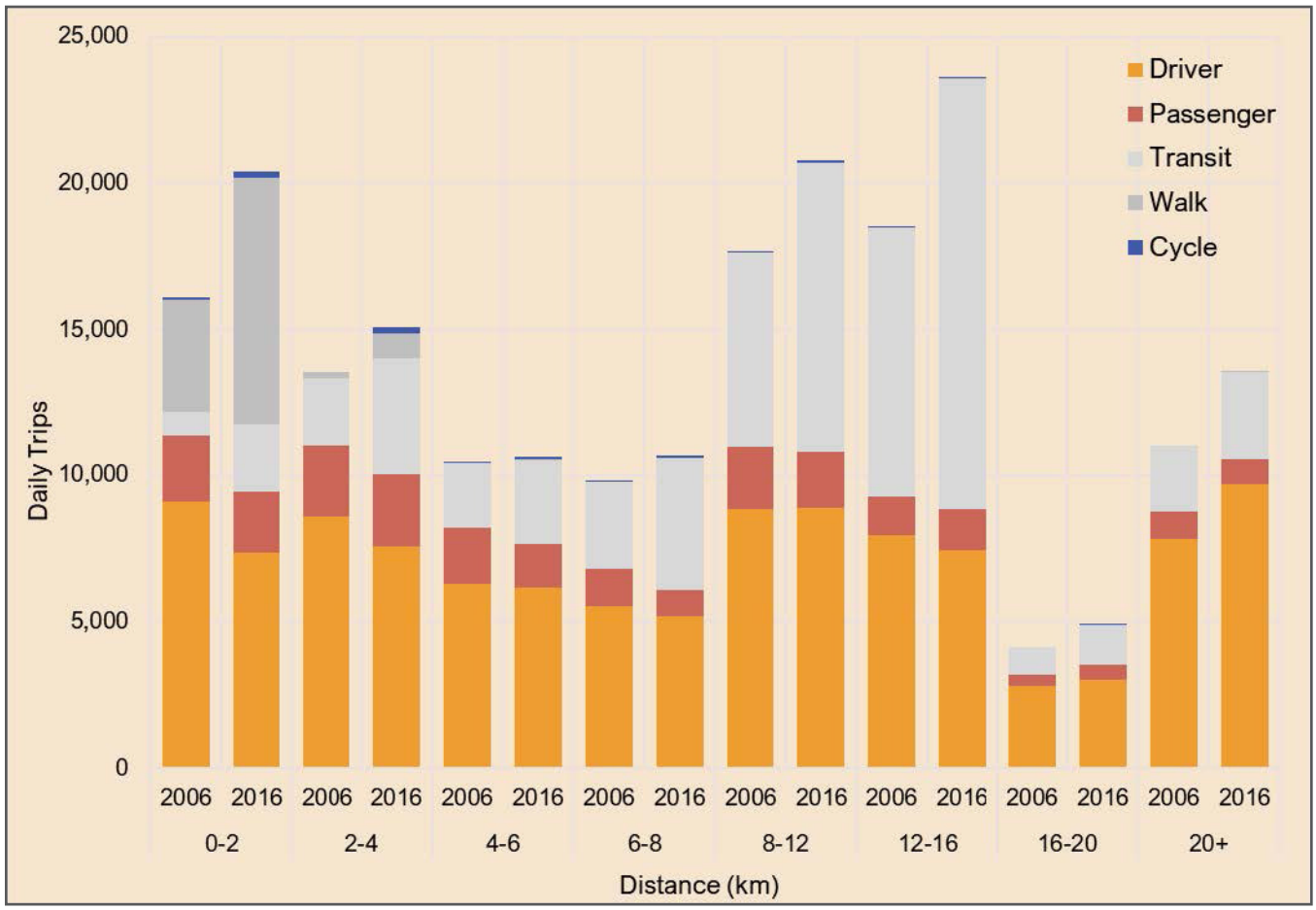

Figure 2-6: Total Trips (2016) by Distance and Mode

Table 2-3: Total Weekday Trips by Distance and Mode

Distance	Year	Driver	Passenger	Transit	Walk	Cycle	Total (% by Distance)
0-2 km	2006	9,108 (56.6%)	2,271 (14.1%)	832 (5.2%)	3,819 (23.7%)	57 (0.4%)	16,087 (15.9%)
	2016	7,339 (36.0%)	2,081 (10.2%)	2,341 (11.5%)	8,412 (41.3%)	214 (1.0%)	20,386 (17.0%)
2-4 km	2006	8,593 (63.3%)	2,443 (18.0%)	2,294 (16.9%)	238 (1.8%)	0 (0.0%)	13,568 (13.4%)
	2016	7,574 (50.2%)	2,457 (16.3%)	3,978 (26.4%)	877 (5.8%)	203 (1.3%)	15,087 (12.6%)

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Distance	Year	Driver	Passenger	Transit	Walk	Cycle	Total (% by Distance)
4-6 km	2006	6,290 (60.2%)	1,905 (18.2%)	2,210 (21.2%)	24 (0.2%)	15 (0.1%)	10,444 (10.3%)
	2016	6,165 (58.0%)	1,483 (13.9%)	2,855 (26.8%)	42 (0.4%)	92 (0.9%)	10,637 (8.9%)
6-8 km	2006	5,521 (56.3%)	1,276 (13.0%)	2,962 (30.2%)	0 (0.0%)	44 (0.5%)	9,804 (9.7%)
	2016	5,208 (48.7%)	867 (8.1%)	4,489 (42.0%)	0 (0.0%)	129 (1.2%)	10,692 (8.9%)
8-12 km	2006	8,858 (50.2%)	2,144 (12.1%)	6,636 (37.6%)	0 (0.0%)	24 (0.1%)	17,662 (17.4%)
	2016	8,871 (42.6%)	1,959 (9.4%)	9,849 (47.3%)	34 (0.2%)	88 (0.4%)	20,802 (17.4%)
12-16 km	2006	7,955 (43.0%)	1,318 (7.1%)	9,194 (49.7%)	0 (0.0%)	36 (0.2%)	18,503 (18.3%)
	2016	7,432 (31.5%)	1,413 (6.0%)	14,716 (62.3%)	20 (0.1%)	44 (0.2%)	23,625 (19.7%)
16-20 km	2006	2,826 (68.7%)	352 (8.6%)	935 (22.7%)	0 (0.0%)	0 (0.0%)	4,113 (4.1%)
	2016	3,034 (62.2%)	495 (10.1%)	1,340 (27.5%)	0 (0.0%)	11 (0.2%)	4,881 (4.1%)
20+ km	2006	7,816 (70.7%)	959 (8.7%)	2,275 (20.6%)	0 (0.0%)	0 (0.0%)	11,049 (10.9%)
	2016	9,708 (71.6%)	846 (6.2%)	2,992 (22.1%)	9 (0.1%)	0 (0.0%)	13,554 (11.3%)
Total	**2006**	**56,966 (56.3%)**	**12,669 (12.5%)**	**27,337 (27.0%)**	**4,080 (4.0%)**	**176 (0.2%)**	**101,229**
	2016	**55,331 (46.2%)**	**11,600 (9.7%)**	**42,559 (35.6%)**	**9,394 (7.8%)**	**780 (0.7%)**	**119,665**

Close to 40% of the weekday trips to North York Centre are 6 km or less, which is considered a suitable distance for cycling (approximately 20 minutes) as a mode of transportation. As shown in **Figure 2-7**, within this distance, cycling makes up 1% of the total trips, while auto drivers and passenger makes up 59%. This demonstrates a significant potential to convert local driving trips to active modes.

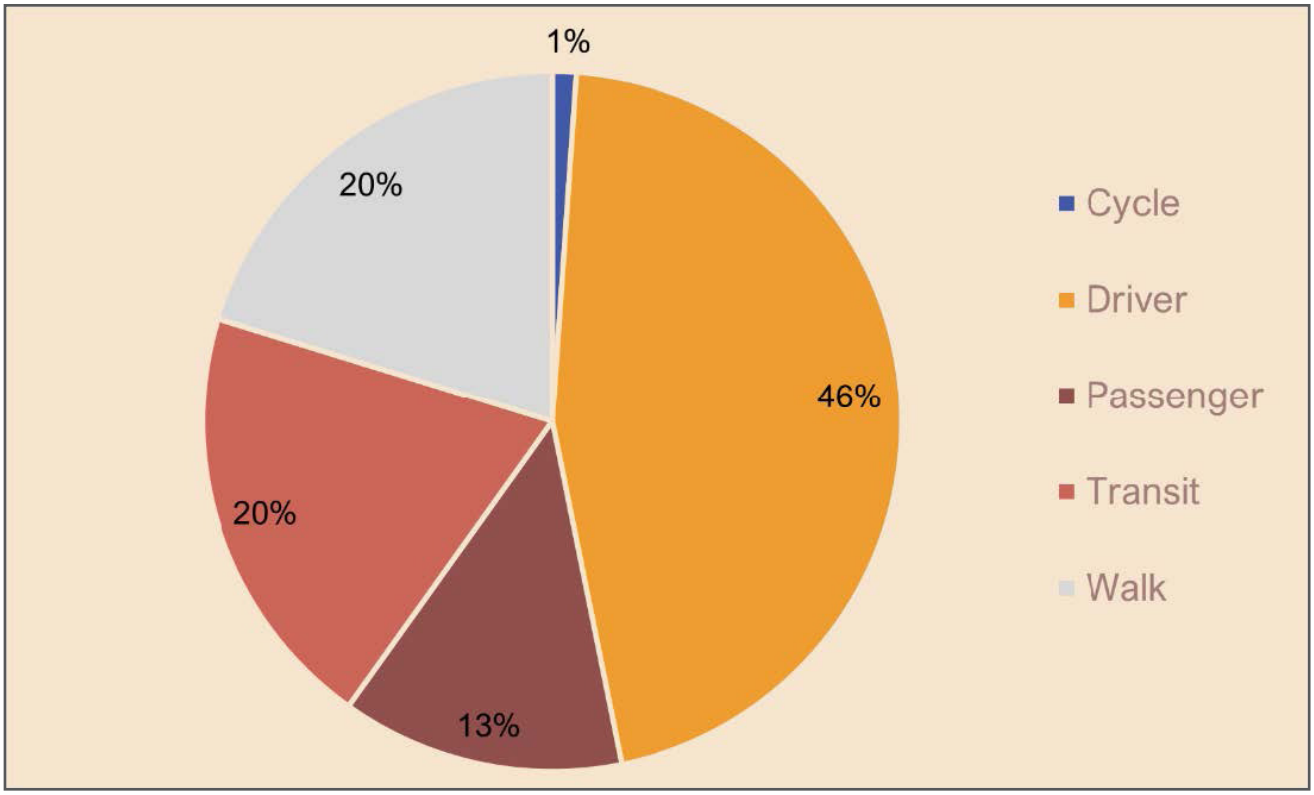

Figure 2-7: Modal Split for Weekday Trip <6km to the Centre, 2016

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2.3 NYCSP Residents

The “Centre Residents” are defined as any person living in the Primary Study Area. **Figure 2-8** shows the stating time of the trips originating in the Centre area by Centre Residents in 2006 and 2016. 2016 has a significantly higher number of commuter and non-commuter trips than 2006. During the A.M. peak period, 2016 has a higher and wider magnitude of commuter trips, indicating that both the level of demand and duration have increased since 2006.

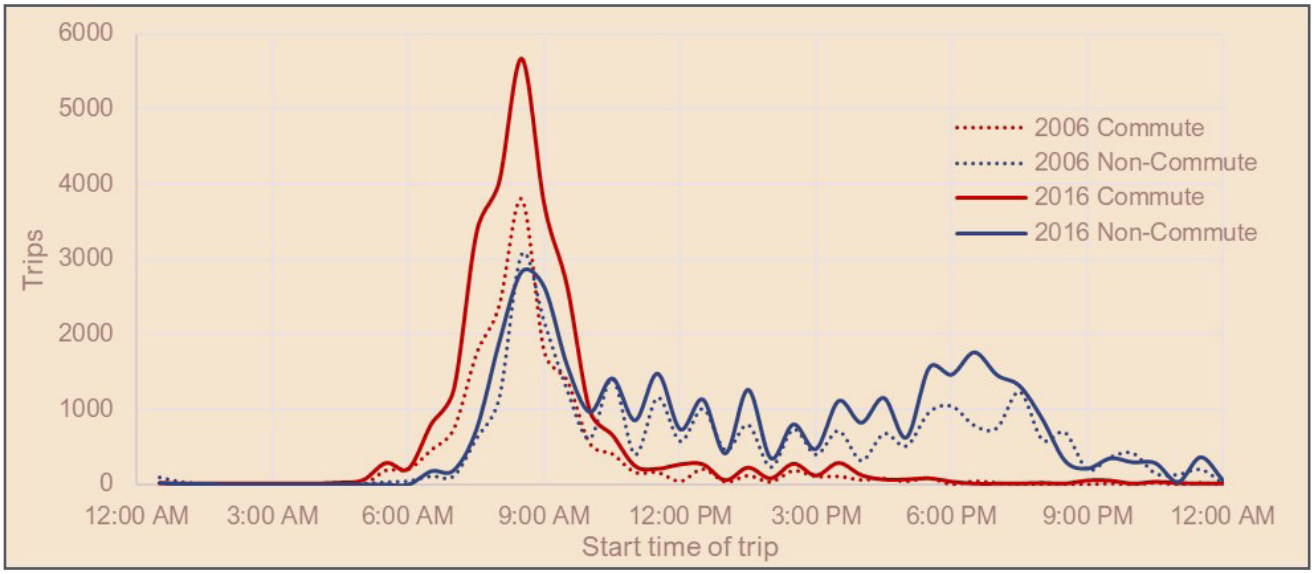

Figure 2-8: Trips Made by Centre Residents Originating in the Centre Area in 2006 and 2016

Based on Journey to Work data from Statistics Canada, between 2001 and 2016 the commuter trips by residents grew by about 160% (from 8,800 to 23,100). However, in 2021, due to COVID, there were only 13,500 commuter trips by NYCSP residents dropping well below the 2006 levels. Between 2001 and 2016 the transit mode share and that active transportation mode shares have has been steadily increasing (growing from a combined 50% to 57%) at the expense of autos. In 2021, AT mode shares saw a slight increase, however that was overshadowed by a drastic decrease in transit mode share. In 2021, auto became the dominant mode with 56% of the mode share. **Figure 2-9** illustrates the changes in commuter trips and mode splits between 2001 and 2021.

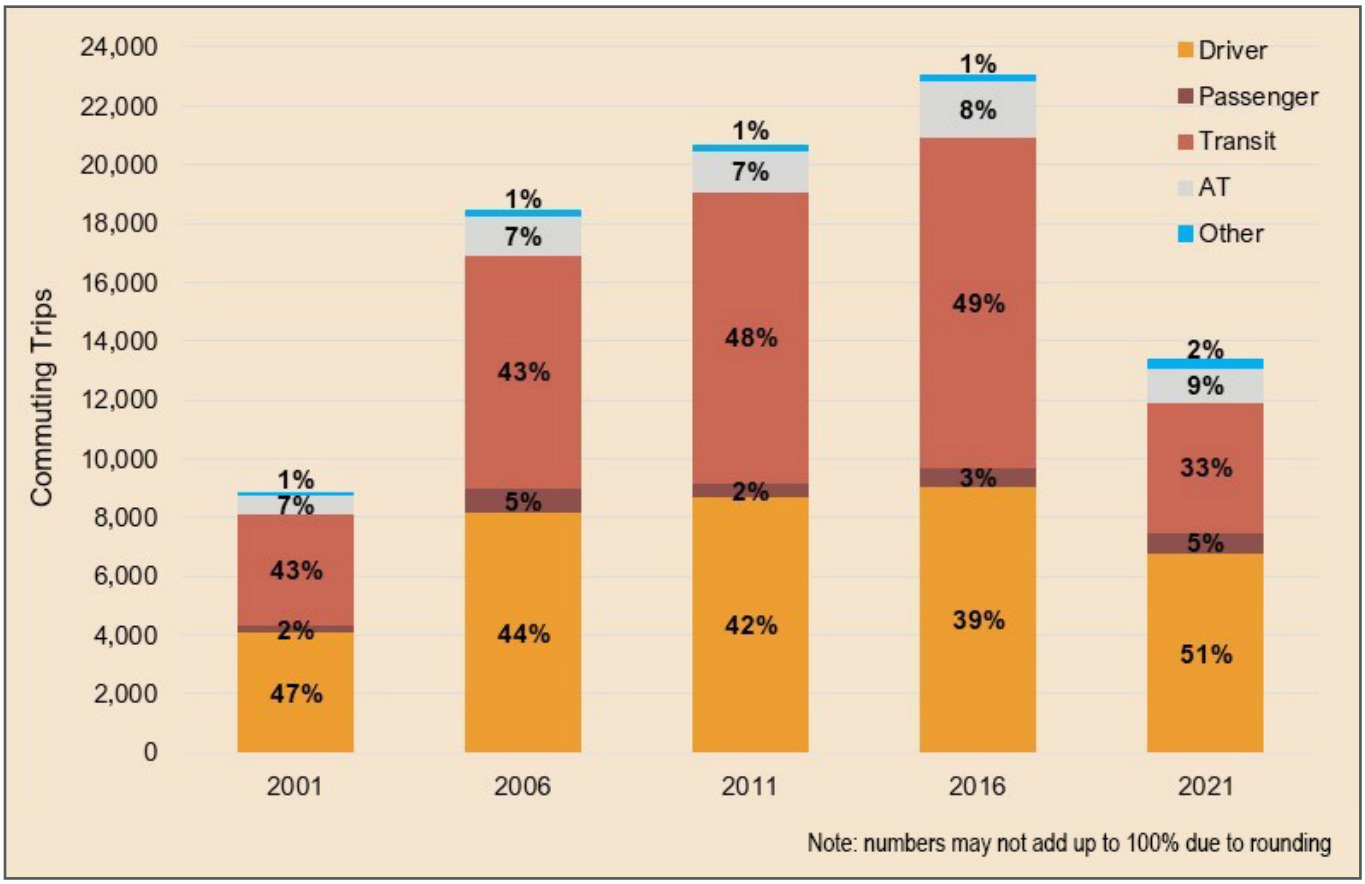

Figure 2-9: Commuter Rrips and Mode Split by Centre Residents Based on Census

Based on TTS data, **Table 2-4** shows the total trips by period by mode and changes from 2006 for commuter trips originating in the Centre area by Centre residents. The table was disaggregated by time of day to confirm potential changes in mode choice (especially transit which might vary significantly in the off-peak periods).

In 2016, Centre area resident commuter trips were predominantly made by transit (54%) and active transportation (8%). Since 2006, there has been a significant shift from auto driver and passenger modes, as they have decreased by about 12%. The total number of commuter trips has increased since 2006, while the trip rate per employed labour force (ELF), i.e. Centre residents that have a job, has slightly decreased.

Table 2-4: Commuter Trips by Centre Residents Originating in Primary Study Area

Time Period of Day	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Trip Rates/ ELF 2016 (2006)	Change in Commuter Transit / AT Modal %, 2006 to 2016
A.M. Peak	18,782 (72.4%)	37% / 56% / 8%	7,917 (72.9%)	0.54 (0.54)	7% / 1%
Midday	5,902 (22.7%)	38% / 51% / 11%	2,502 (73.6%)	0.17 (0.17)	23% / 1%
P.M. Peak	597 (2.3%)	51% / 42% / 7%	145 (32.0%)	0.02 (0.02)	13% / -11%
Evening	124 (0.5%)	66% / 34% / 0%	61 (98.1%)	~0.0 (~0.0)	10% / 0%
Overnight	544 (2.1%)	42% / 59% / 0%	110 (25.4%)	0.02 (0.02)	19% / 0%
Total Daily	**25,949 (100.0%)**	**38% / 54% / 8%**	**10,735 (70.6%)**	**0.74 (0.75)**	**11% / 1%**

Table 2-5 shows the total daily trips by distance for Centre resident commuters. **Figure 2-10** shows the destination of the commuter trips originating in the NYCSP area by Centre area resident in a day.

Table 2-5: Breakdown by Distance of the Total Daily Commuter Trips by Centre Area Residents Originating in the Primary Study Area

Distance from the Centre Area	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Change in Commute Transit / AT Modal %, 2006 to 2016
0-2 km	2,178 (8.4%)	14% / 6% / 80%	555 (34.2%)	0% / 20%
2-4 km	1,454 (5.6%)	36% / 46% / 19%	468 (47.5%)	10% / 14%
4-6 km	1,883 (7.3%)	44% / 57% / 0%	543 (40.5%)	36% / -3%
6-8 km	2,590 (10.0%)	47% / 51% / 2%	1,329 (105.4%)	10% / -1%
8-12 km	5,612 (21.6%)	48% / 52% / 0%	2,148 (62.0%)	6% / 0%
12-16 km	9,157 (35.3%)	17% / 83% / 0%	4,463 (95.1%)	8% / 0%
16-20 km	911 (3.5%)	80% / 20% / 0%	351 (62.7%)	1% / 0%
20+ km	2,163 (8.3%)	87% / 13% / 0%	878 (68.4%)	4% / 0%

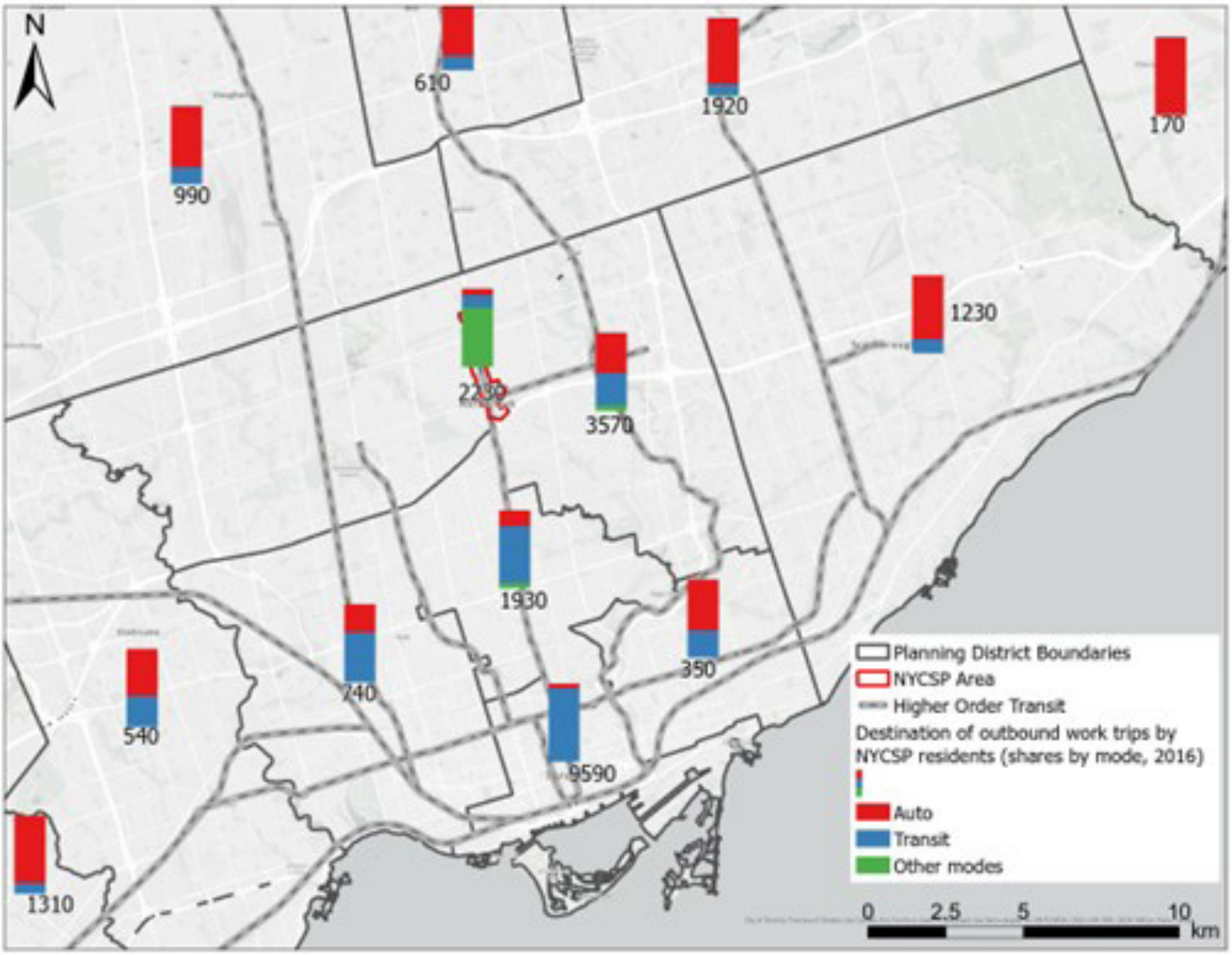

Figure 2-10: Destination of Centre area Resident Commuter Trips Originating in the Primary Study Area

A significant portion of the trips are destined to downtown Toronto (37% of trips), the rest of North York (13.5%), and within the Centre Area (8.5%).

Trips less than 2 km are dominated by active transportation, making up 80% of the mode share. This has significantly improved since 2006. For trips greater than 2 km, active transportation mode share drastically decreases and is replaced by transit and auto. Trips between 2 km and 6 km are made up of 8% active transportation, 52% transit and 40% auto driver and passenger. For the trips greater than 6 km, transit makes up a large portion of mode share.

Table 2-6 show the total trips by period, by mode and changes from 2006 for non-commuting trips originating in the Centre area by Centre residents

Table 2-6: Non-Commuter Trips by Centre Residents Originating in the Primary Study Area

Time Period of Day	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Trip Rates/ Pop 2016 (2006)	Change in Non-Commute Transit / AT Modal %, 2006 to 2016
A.M. Peak	8,421 (24.9%)	48% / 34% / 16%	1,273 (17.8%)	0.13 (0.17)	1% / 3%
Midday	11,415 (33.7%)	56% / 34% / 9%	2,505 (28.1%)	0.18 (0.21)	6% / 7%
P.M. Peak	9,904 (29.3%)	53% / 20% / 27%	4,216 (74.1%)	0.16 (0.14)	8% / 11%
Evening	4,069 (12.0%)	68% / 13% / 19%	178 (4.6%)	0.06 (0.09)	5% / 11%
Overnight	38 (0.1%)	65% / 16% / 19%	-127 (-76.9%)	~0.0 (~0.0)	16% / 19%
Total Daily	**33,847 (100.0%)**	**55% / 27% / 17%**	**8,044 (31.2%)**	**0.54 (0.62)**	**5% / 8%**

Even though there has been an increase in transit and active transportation mode shares since 2006, in 2016 Centre resident non-commuter trips were predominantly made by auto drivers and passengers (55%). Even though on average throughout the day active transportation accounted for 17%, during the midday period active transportation only account for 9% of mode share. Similarly, transit has an average mode share of 27%; however, in the P.M. period and afterwards the transit usage is well below that. The P.M. period shows an increase in trip making from 2006, as more people are living in the area and making more trips to the local establishments and/or visiting friends/relatives in the area, all of which is possible due to the growth of the area.

Table 2-7 shows the total daily trips by distance for Centre Area resident non-commuters. **Figure 2-11** shows the destination of the Centre area resident non-commuter trips, in a day.

Table 2-7: Breakdown by Distance of Total Daily Non-Commuter Trips by Centre Area Residents Originating in the Primary Study Area

Distance from the Centre Area	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Change in Commute Transit / AT Modal %, 2006 to 2016
0-2 km	12,851 (38.0%)	46% / 11% / 41%	4,209 (48.7%)	8% / 16%
2-4 km	6,389 (18.9%)	65% / 27% / 6%	2,068 (47.8%)	10% / 4%
4-6 km	3,337 (9.9%)	78% / 21% / 1%	252 (8.2%)	2% / 1%
6-8 km	2,550 (7.5%)	62% / 37% / 2%	405 (18.9%)	0% / 2%
8-12 km	3,692 (10.9%)	51% / 48% / 1%	355 (10.6%)	12% / 0%
12-16 km	3,754 (11.1%)	30% / 70% / 0%	363 (10.7%)	6% / 0%
16-20 km	336 (1.0%)	85% / 15% / 0%	96 (40.2%)	-1% / 0%
20+ km	937 (2.8%)	97% / 3% / 0%	296 (46.1%)	-7% / 0%

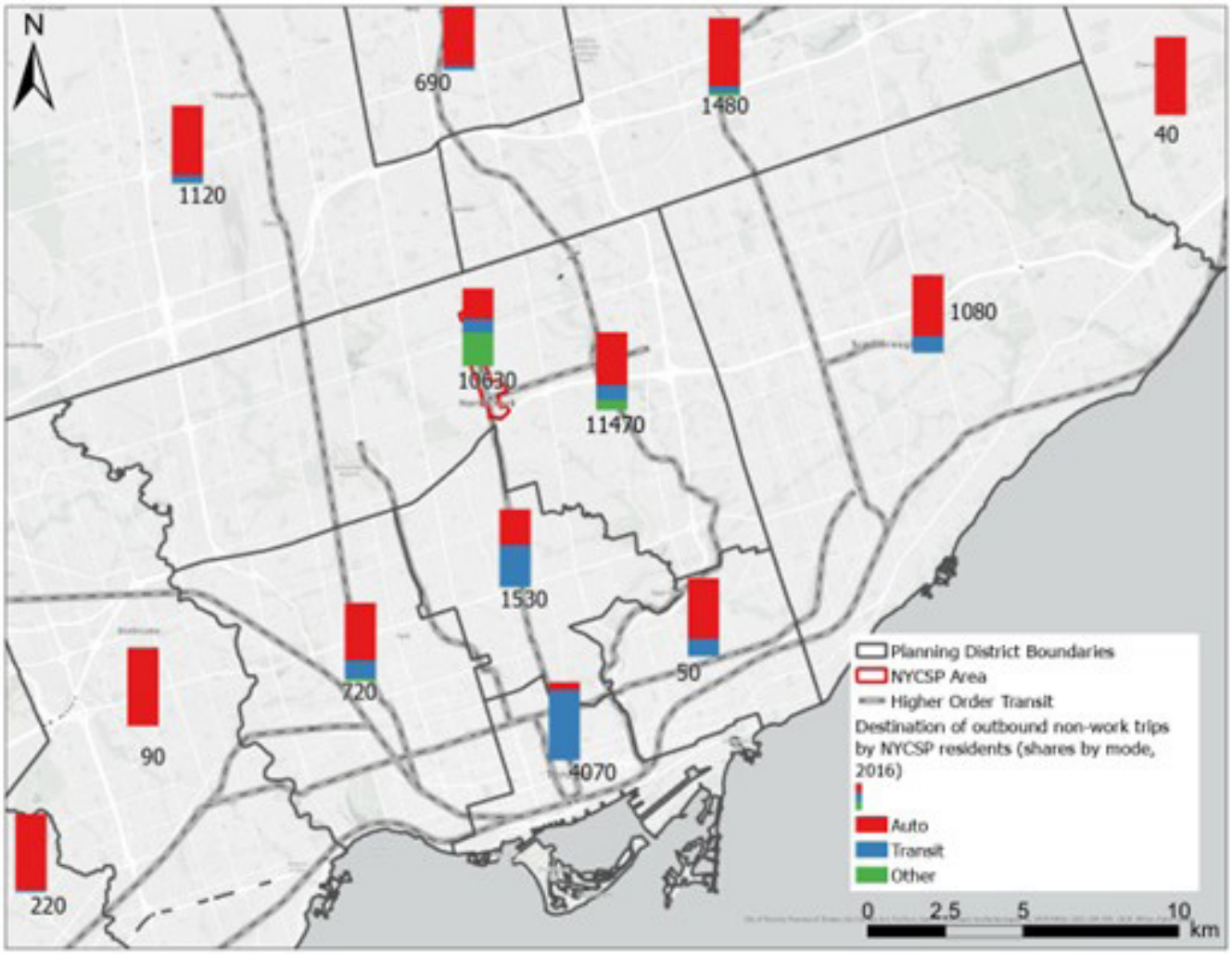

Figure 2-11: Destination of Centre area Resident Non-Commuter Trips Originating in Primary Study Area

Across most trip distances, auto drivers and passengers are the dominant mode. Even for trips less than 6 km, the auto mode share accounts for close to 60%.

2.4 NYCSP Employees

Centre employees are defined as any person that is employed within the Centre area. Note there is an overlap with the Centre resident commuter trips from the section above, as some people live and work in the same area. In 2016, the number of people living and working in the same area was 4,870 (14% of the labour force), while in 2006 that nubmer was 3,139 (15.5% of the labour force). **Figure 2-12**, shows the time-of-day trips destined to the Centre area by Centre employees in 2006 and 2016, for both commuting and non-commuting purposes.

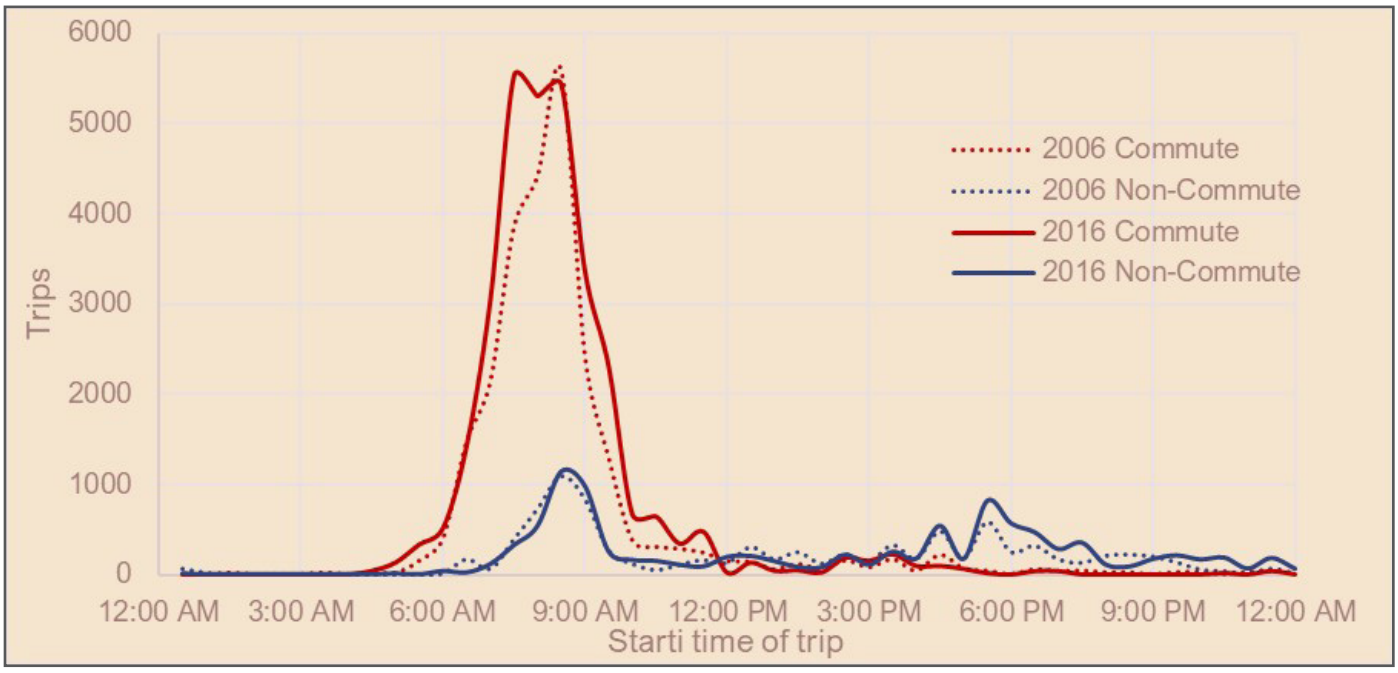

Figure 2-12: Trips Made by People Employed in the Centre Area Destined to the Primary Study Area in 2006 and 2016

Although the peak number of commuting trips in 2016 is similar to 2006, the duration of demand is longer in 2016. The non-commuting trips seem to be predominantly in the morning (as people get their coffees and breakfasts) and after work, presumably as they stop by the store on their way home.

Table 2-8 show the total trips by period, by mode and changes from 2006 for commuters' trips destined to the Centre area by Centre employees

Table 2-8: Commuter Trips by Centre Employees Destined for the Primary Study Area

Time Period of Day	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Trip Rates/ EMP 2016 (2006)	Change in Commute Transit / AT Modal %, 2006 to 2016
A.M. Peak	24,091 (78.3%)	52% / 41% / 7%	4,216 (21.2%)	0.57 (0.55)	3% / 2%
Midday	5,026 (16.3%)	51% / 35% / 14%	1,811 (56.3%)	0.12 (0.09)	2% / 1%
P.M. Peak	562 (1.8%)	59% / 34% / 8%	-41 (-6.8%)	0.01 (0.02)	-11% / -5%
Evening	52 (0.2%)	55% / 45% / 0%	-132 (-71.7%)	~0.0 (0.01)	33% / 0%
Overnight	1,018 (3.3%)	61% / 39% / 0%	406 (66.2%)	0.02 (0.02)	-7% / 0%
Total Daily	**30,749 (100.0%)**	**52% / 40% / 8%**	**6,260 (25.6%)**	**0.73 (0.68)**	**3% / 2%**

Although there has been a slight shift away from the use of autos between 2006 and 2016, the auto mode share continues to dominate the Centre employee commutes. The employees commuting to the Centre for work rely more heavily on autos (52%) than the residents in the Centre do for their commuting trips (38%). Transit accounts for 40% of the daily travel and is consistent throughout the day. The total number of trips and the trip rate per job in the Centre have increased between 2006 and 2016. Note: the significant changes in historical mode splits for P.M. Peak, Evening and Overnight periods are due to small number of trips in those periods.

Table 2-9 shows the total daily trips by distance for Centre area employee commutes.

Table 2-9: Breakdown by Distance Daily Commuter Trips for Centre Employees Destined to the Primary Study Area

Distance from the Centre Area	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Change in Commute Transit / AT Modal %, 2006 to 2016
0-2 km	2,469 (8.0%)	12% / 5% / 83%	450 (22.3%)	-1% / 19%
2-4 km	2,430 (7.9%)	51% / 43% / 5%	735 (43.4%)	8% / 1%
4-6 km	1,614 (5.2%)	48% / 46% / 6%	20 (1.2%)	-2% / 6%
6-8 km	2,556 (8.3%)	40% / 59% / 1%	290 (12.8%)	10% / 1%
8-12 km	5,351 (17.4%)	52% / 47% / 1%	350 (7.0%)	-3% / 1%
12-16 km	6,462 (21.0%)	51% / 48% / 1%	1,717 (36.2%)	10% / 0%
16-20 km	2,347 (7.6%)	60% / 40% / 0%	462 (24.5%)	11% / 0%
20+ km	7,519 (24.5%)	70% / 30% / 0%	1,777 (30.9%)	0% / 0%

Figure 2-13 shows the origin of the Centre area employees commuter trips in a day.

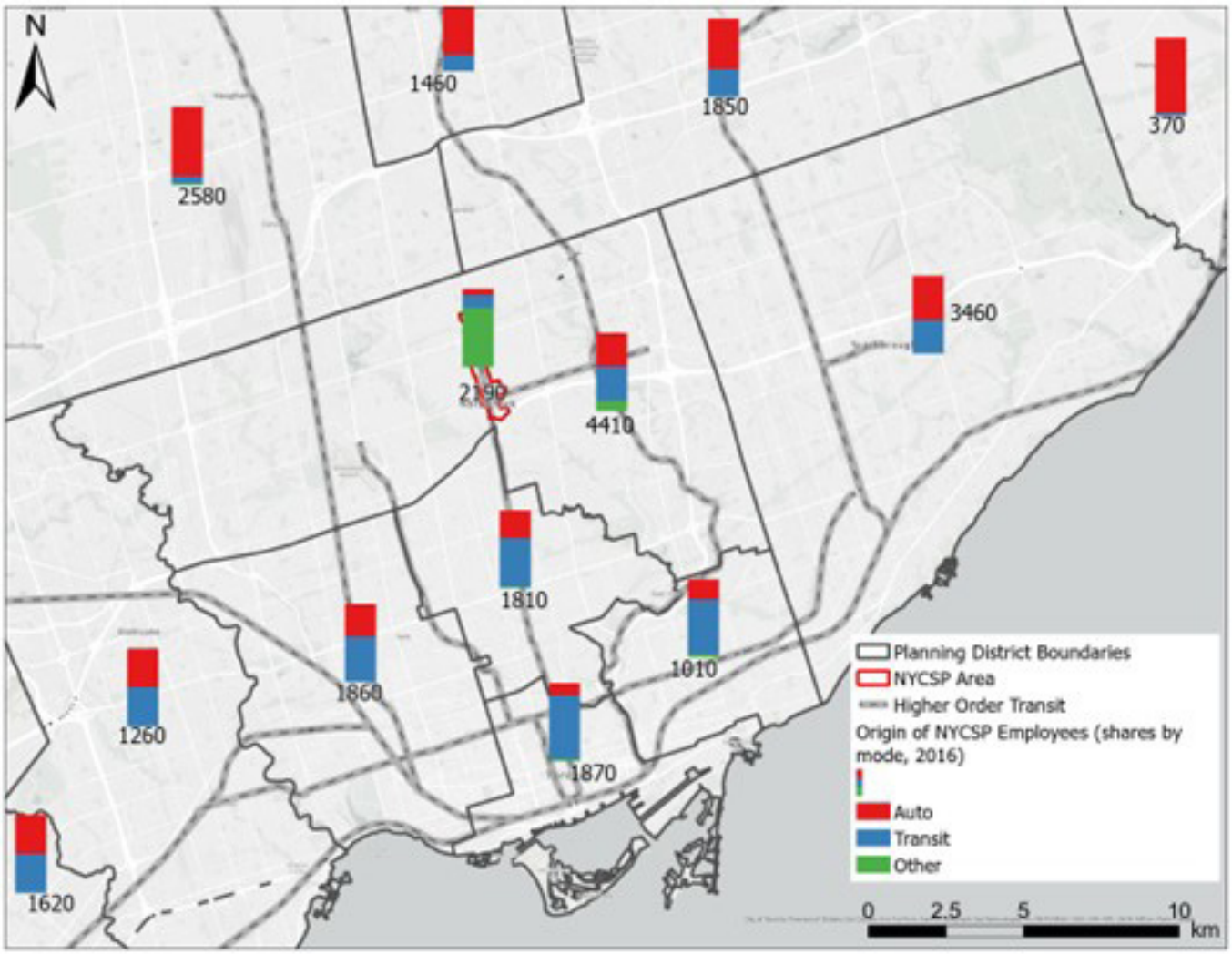

Figure 2-13: Origin of Commuter Trips for Centre Employees Destined to the Primary Study Area

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A significant portion of the commuting trips are originating in the rest of North York (14% of trips), Scarborough (11%), and Vaughan (8%). Employees commuting to Centre are more dispersed than Centre residents commuting; for Centre residents, the top three commuting destination locations account for approximately 60% of trips, while for Centre employees the top three account for only 33%.

Trips less than 2 km are dominated by active transportation, making up over 80% of the mode share. This has significantly improved since 2006. However, for trips between 2 and 6 km, the active transportation mode share is only 5% with auto becomes more prevalent. Majority (52%) of the commuting trips to the Centre come from over 12 km. With trip lengths greater than 16 km auto becomes the dominant mode.

2.5 Other Travellers to NYCSP

Others are defined as anyone that does not live in the Centre area and does not work in the Centre area. These people most likely stopped by in the area to make a discretionary trip. **Figure 2-14**, shows the time-of-day trips destined to the Centre area by Others in 2006 and 2016. **Table 2-10** shows the total trips by period, by mode and changes from 2006 for commuters' trips destined to the Centre area by Centre employees.

The time-of-day travel patterns remained similar between 2006 and 2016, with 2006 having higher demand.

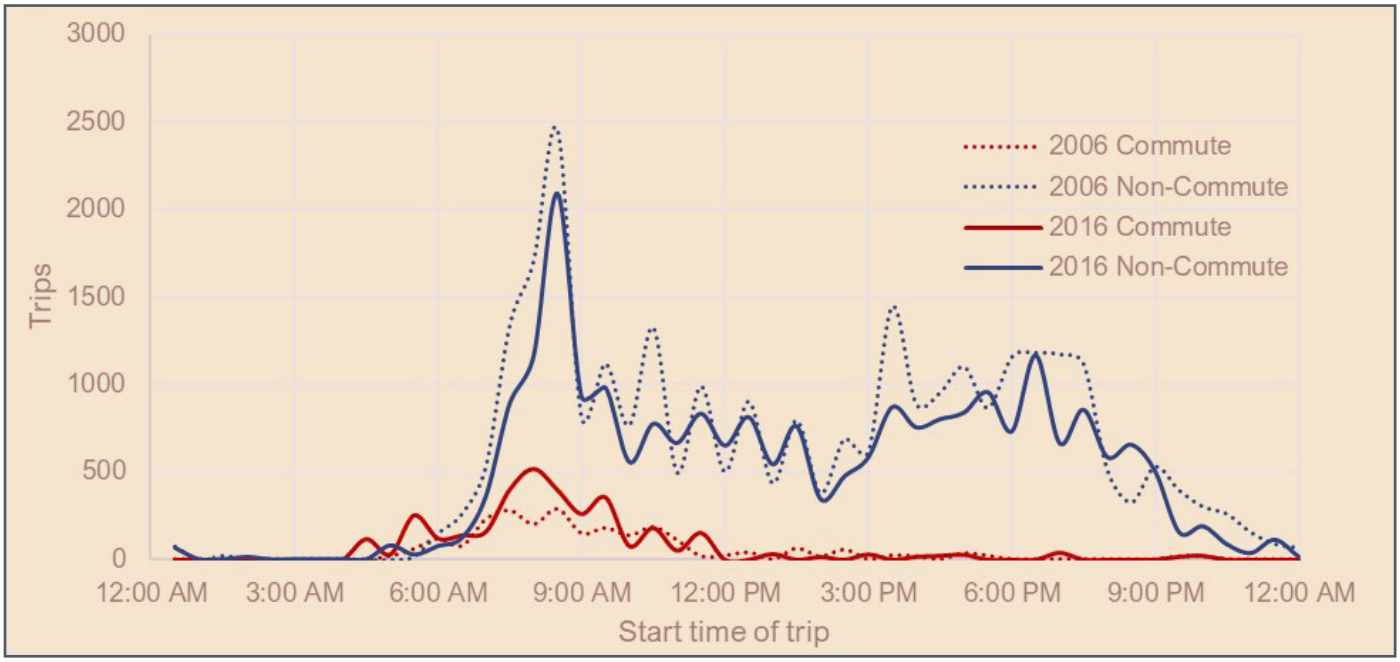

Figure 2-14: Trips Made by Other People Destined to the Primary Study Area in 2006 and 2016

Table 2-10: Non-commuter Trips by Others Destined for the Primary Study Area

Time Period of Day	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Change in Transit / AT Modal %, 2006 to 2016
A.M. Peak	5,569 (23.4%)	78% / 16% / 5%	-1,549 (-21.8%)	1% / 4%
Midday	7,987 (33.6%)	64% / 31% / 6%	-1,056 (-11.7%)	12% / 5%
P.M. Peak	6,788 (28.5%)	69% / 27% / 3%	-1,994 (-22.7%)	9% / 1%
Evening	3,186 (13.4%)	81% / 16% / 4%	-586 (-15.5%)	10% / 4%
Overnight	258 (1.1%)	95% / 5% / 0%	-11 (-4.3%)	5% / -7%
Total Daily	**23,789 (100.0%)**	**71% / 24% / 4%**	**5,196 (-17.9%)**	**8% / 3%**

There was a general decrease in non-commuter trips between 2006 and 2016. Even though there has been some shifting away from the auto mode since 2006, auto is still the dominant mode share for these individuals accounting for 71% of the trips. It is interesting that the A.M. peak period has a low transit usage (even though transit service is highest during the peak periods). **Table 2-11** shows the total daily trips by distance for non-commuter trips made by Others.

Table 2-11: Breakdown by Distance, Daily Trips by Others Destined to the Primary Study Area

Distance from the Centre Area	Trips (% of Daily Total)	Auto / Transit / AT Mode Share	2006 to 2016 Trip Growth (% Growth)	Change in Commute Transit / AT Modal %, 2006 to 2016
0-2 km	3,804 (16.0%)	68% / 11% / 21%	-481 (-11.2%)	6% / 16%
2-4 km	4,262 (17.9%)	83% / 13% / 5%	-1,124 (-20.9%)	3% / 4%
4-6 km	3,261 (13.7%)	83% / 17% / 0%	-585 (-15.2%)	7% / 0%
6-8 km	2,587 (10.9%)	75% / 24% / 0%	-681 (-20.8%)	7% / 0%
8-12 km	4,464 (18.8%)	60% / 40% / 0%	-641 (-12.6%)	21% / 0%
12-16 km	3,158 (13.3%)	54% / 44% / 1%	-1,021 (-24.4%)	8% / 1%
16-20 km	893 (3.8%)	77% / 21% / 0%	-87 (-8.9%)	10% / 0%
20+ km	1,360 (5.7%)	84% / 16% / 0%	-577 (-29.8%)	3% / 0%

The largest portion of trips originates in the rest of North York (40% of the trips), followed by Vaughan (8.5%), and downtown Toronto (8.4%).

Auto is the dominant mode for these users. Even for short trips (< 6 km) the auto mode percentage is over 60%. Some of these trips might be one segment of a longer trip chain (i.e., the person was running errands and happen to stop in the area) therefore the trip distances could be deceiving. As such, shifting these trips

from auto to active transportation or transit might prove challenging as AT and transit would need to be improved along the entire trip chain to shift to these modes.

2.6 Demographic Trends

Mobility trends were captured using data from the Transportation Tomorrow Survey (TTS), as such some demographic data presented in this section might differ from data presented in earlier sections of this. Given the mobility trend data came from the TTS, which has its own set of assumed population, household and employment data (which might be different from the Statistics Canada data presented earlier), we thought it was important to present these trends for completion purposes. For the purposes of the analysis, the Study Area used TTS zones 441, 442, 443, 444, 448, 450, 452, and 454, visualized below in **Figure 2-15**.

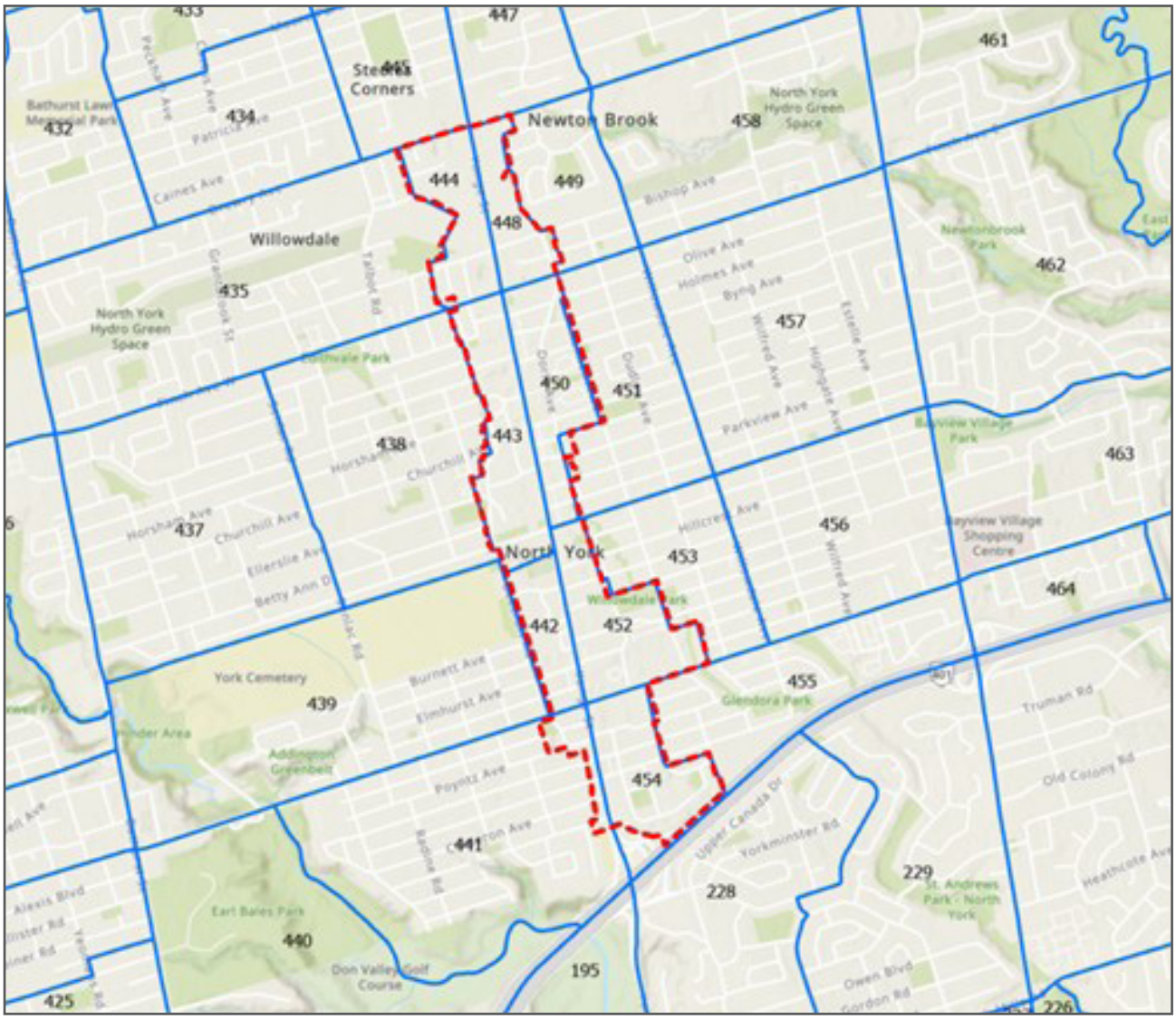

Figure 2-15: TTS Zones within the Primary Study Area

Note that while only part of zone 441 falls within the Secondary Plan Area, it represents a significant amount of population and density, and was therefore included. In addition, there was no simple way to extract the information for a portion of zone 441.

2.6.1 Person and Households

Figure 2-16 and **Figure 2-17** show the population change and the age distribution changes, respectively, within the NYCSP area based on TTS data.

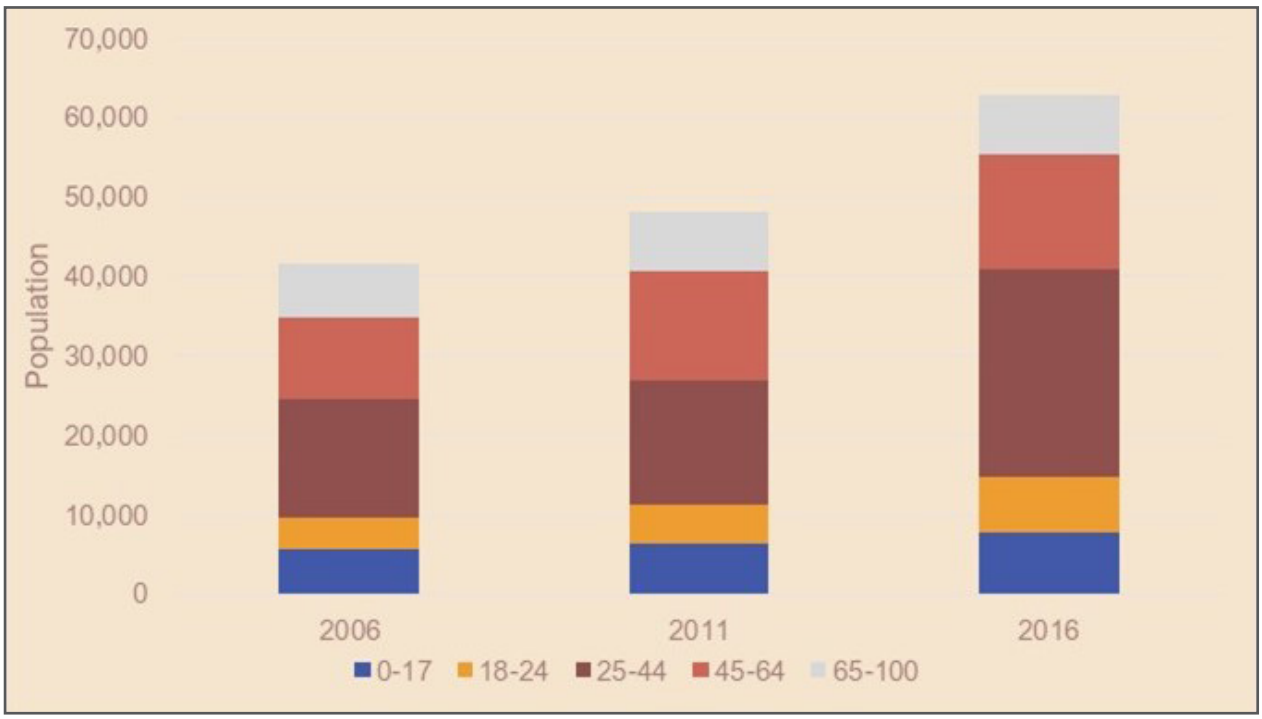

Figure 2-16: Changes in Population by Age Groups 2006-2016

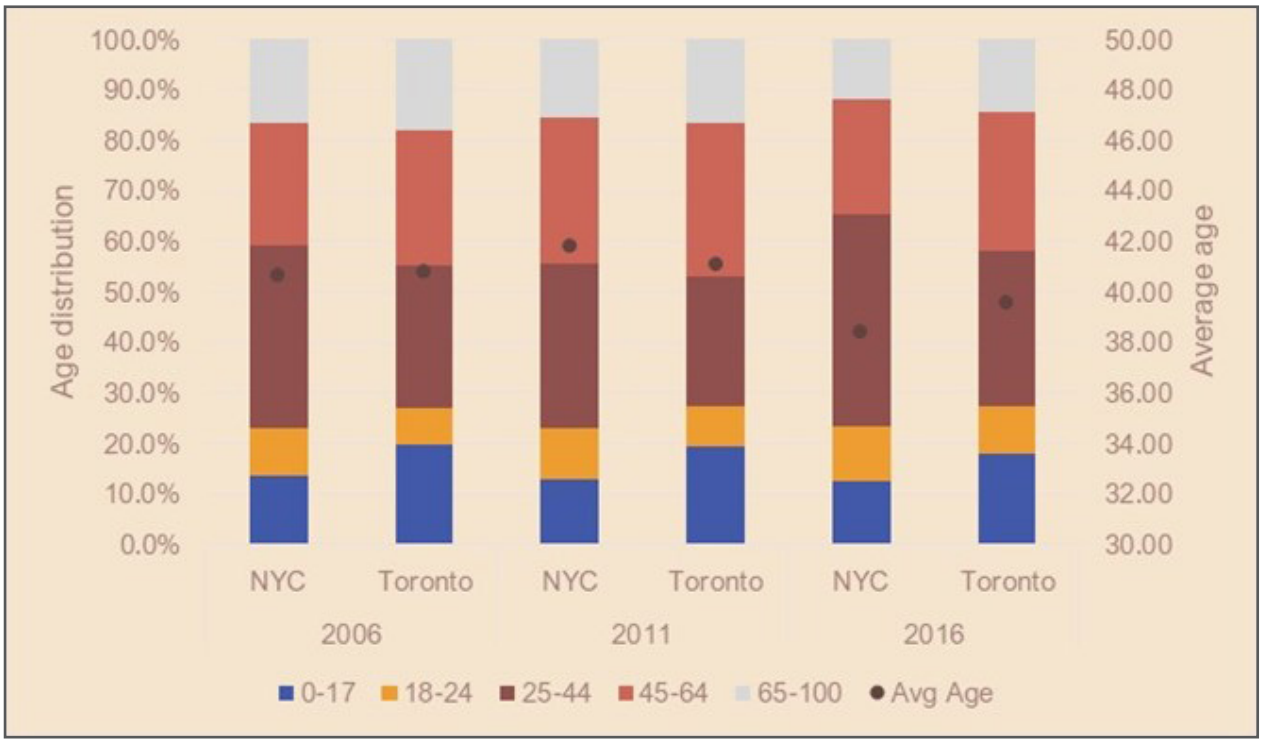

Figure 2-17: Age Distribution within Toronto and North York Centre

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Between 2006 and 2016, the population of the North York Centre area has increased by over 50%, with majority of the growth (30%) occurring between 2011 and 2016. As a comparison, the City of Toronto during the same 10-year stretch has grown by 9%. The Centre has seen slight decreases in people aged 0 to 17 and people over the age of 65 (both of which are lower than Toronto), with the average age decreasing from 40.7 years in 2006 to 38.4 years in 2016. The % of people who own a driver's license has remained unchanged at about 80% of the eligible population.

Figure 2-18 illustrates the growth in number of households and the distribution of household sizes within the NYCSP area. Between 2011 and 2016, the number of households in the NYCSP area increased by 8,900 (41%). As a comparison, the number of households in Toronto grew by approximately 10% during the same timeframe. Approximately 55% of these new households in the Centre are a single-person households, with another 37% accounting for 2 person households. This change has drastically reduced the average household size in the area, declining from 2.24 in 2006, to 2.2 in 2011 and further to 2.04 in 2016. This trend could be indicative of the types of homes being constructed in the area (i.e., condominiums bachelor or single bedrooms).

Figure 2-18: Household Size Distribution 2006-2016

Table 2-12 shows that between 2006 and 2016, 13,500 new apartments were constructed, leading to an almost 11% increase in the composition of apartment dwellings during the same time period. In addition to more apartments being built, **Table 2-13** indicates a decrease in the number of people residing in each apartment, dropping from 2.15 people in 2006 to 1.98 in 2016. This shift in housing dynamics has implications for mobility, affecting the number, the type, and time of day the trips are being made by residents. This shift is evident in the fluctuation of the trip rate per NYCSP resident between 2006 and 2016.

In 2006, there was 0.99 trips made by NYCSP residents from NYCSP zones, which dropped to 0.90 trips per resident in 2011, only to increase to 0.95 in 2016. This fluctuation appears to be influenced by changes in trips per dwelling for houses and townhouses.

Table 2-12: Dwelling Type Composition in Primary Study Area

Year	House	Apartment	Townhouse
2006	1,827 (9.8%)	15,327 (82.5%)	1,432 (7.7%)
2011	1,735 (7.9%)	18,656 (85.2%)	1,503 (6.9%)
2016	1,131 (3.7%)	28,778 (93.4%)	919 (3.0%)

Table 2-13: Person and Trip Rates by Dwelling Type within Primary Study Area

Dwelling Type	2006			2011			2016		
	Pers./ Dwell.	Trips/ Dwell.	Normal. Trips*	Pers./ Dwell.	Trips/ Dwell.	Normal. Trips*	Pers./ Dwell.	Trips/ Dwell.	Normal. Trips*
House	2.68	3.23	1.20	2.94	3.12	1.06	3.01	3.62	1.20
Apartment	2.15	2.06	0.96	2.09	1.86	0.89	1.98	1.85	0.94
Townhouse	2.60	2.51	0.96	2.68	2.14	0.80	2.73	2.61	0.96
Total	**2.24**	**2.21**	**0.99**	**2.2**	**1.97**	**0.90**	**2.04**	**1.94**	**0.95**

Note: * Normalized trips is trips per dwelling type per person

2.6.2 Labour Force and Employment

The employment labour force describes the workers that reside within the Centre area, while the employment (EMP) describes the jobs available within the Centre area.

Table 2-14, **Table 2-15**, and **Table 2-16** show the ELF statistics for the Centre area and Toronto, where the rates between the two geographies are fairly consistent. Within the Centre, the number and percentage of people employed has risen substantially in 2016 from the prior years. The No-Fixed Place of Worker (NFPW) have increased between 2006 and 2016 both in the Centre area and within the City of Toronto. Work-At-Home (WAH) represents people that are permanently working from home. In 2011 the WAH rate increased fairly drastically (both in the Centre and Toronto), but by 2016 the rates were closer to the 2006 rates around 6.5%. Similarly, the rate of Part-Time workers spiked in 2011, while the 2006 and 2016 rates are fairly consistent at about 14%. It is important to look at the labour force in order to get an understanding of how and when residents of this area might be travelling. Full-Time workers often have a more consistent travel pattern (both temporally and in frequency), while an increase to WAH rates would decrease commuting trips and could increase local discretionary trips as people might walk to the nearby coffee shop or store. Once the 2023 TTS survey is available, the impact of COVID on WAH will be analyzed and discussed.

Table 2-14: Employment Labour Force

Year	North York Centre		Toronto	
	Unemployed*	Employed	Unemployed*	Employed
2006	21,356 (51.4%)	20,219 (48.6%)	1,283,028 (52.5%)	1,162,909 (47.5%)
2011	24,855 (51.6%)	23,359 (48.4%)	1,358,347 (51.9%)	1,258,420 (48.1%)
2016	27,916 (44.4%)	34,996 (55.6%)	1,263,961 (47.3%)	1,407,530 (52.7%)

Note: * Unemployed encompasses everyone that is not employed.

Table 2-15: Work-At-Home Versus Work In-Person

Year	North York Centre			Toronto		
	In-Person		WAH	In-Person		WAH
	Usual Place of Work	No-Fixed Place of Work		Usual Place of Work	No-Fixed Place of Work	
2006	18,423 (91.1%)	439 (2.2%)	1,358 (6.7%)	1,017,312 (87.5%)	48,886 (4.2%)	96,711 (8.3%)
2011	20,336 (87.1%)	874 (3.7%)	2,150 (9.2%)	1,063,500 (84.5%)	77,163 (6.1%)	117,757 (9.4%)
2016	29,547 (84.4%)	3,215 (9.2%)	2,234 (6.4%)	1,156,463 (82.2%)	147,983 (10.5%)	103,084 (7.3%)

Note: Work-At-Home (WAH) are people that are permanently working at home (e.g., their permanent office is their home)

Table 2-16: Employment Labour Force

Year	North York Centre		Toronto	
	Full-Time	Part-Time	Full-Time	Employed
2006	17,311 (85.6%)	2,908 (14.4%)	952,353 (81.9%)	210,556 (18.1%)
2011	18,987 (81.3%)	4,373 (18.7%)	1,010,968 (80.3%)	247,452 (19.7%)
2016	30,044 (85.8%)	4,953 (14.2%)	1,146,085 (81.4%)	261,445 (18.6%)

Table 2-17 and **Figure 2-19** summarize the job types and job status within the Centre. The total number of jobs have remained relatively constant between 2011 and 2016. While general office and manufacturing remain relatively unchanged, in 2016 a large portion of the sales and service jobs has been replaced by professional jobs. In addition, for both manufacturing and sales and services jobs there has been an increase in part-time jobs.

Table 2-17: Type of Jobs and Job Status in the Centre

Year	General Office (FT) {PT}	Manufacturing (FT) {PT}	Professional (FT) {PT}	Sales and Services (FT) {PT}	Total (FT) {PT}
2006	8,556 (89.4%) {10.6%}	1,210 (94.2%) {5.8%}	16,368 (93.2%) {6.8%}	10,024 (79.1%) {20.9%}	36,158 (88.4%) {11.6%}
2011	11,284 (90.6%) {9.4%}	1,279 (91.6%) {8.4%}	18,425 (93.0%) {7.0%}	11,229 (77.4%) {22.6%}	42,217 (88.2%) {11.8%}
2016	9,837 (90.6%) {9.4%}	802 (88.7%) {11.3%}	25,350 (94.9%) {5.1%}	6,339 (70.2%) {29.8%}	42,328 (90.1%) {9.9%}

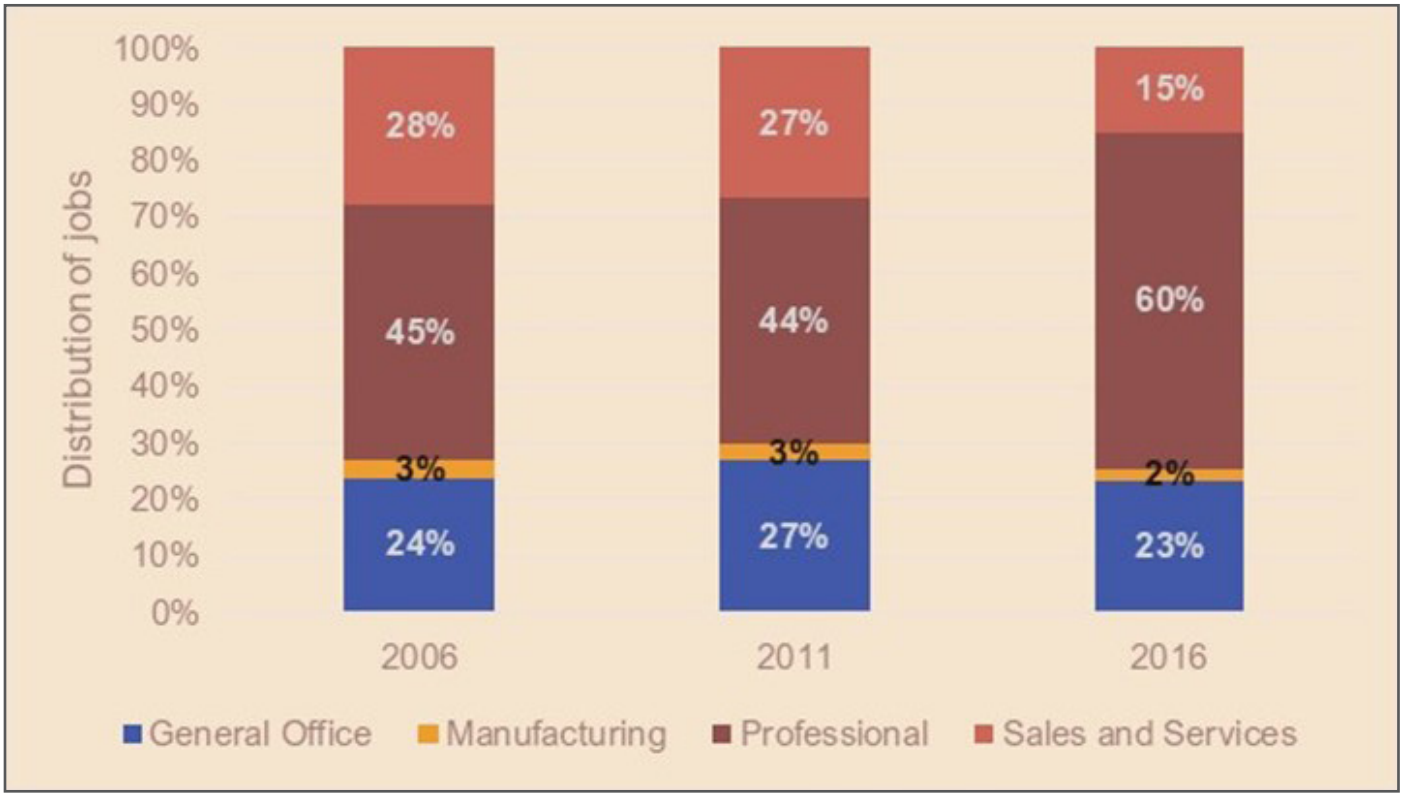

Figure 2-19: Distribution of Job Types within the Centre

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03. STREET NETWORK AND PUBLIC REALM

3.1 Existing and Planned Mobility Network

3.1.1 Historical Context

The streets and block network within the Study Area finds its roots in the colonial survey of Ontario (**Figure 3-1**). The concession grid, including Lawrence, Sheppard Avenue, Finch and Steeles Avenues in the east-west direction and Bathurst Street, Yonge Street and Bayview Avenue, in the north-south direction was surveyed at 5/4 of a mile, or approximately a two-kilometre grid. This grid was divided into five 200 acre lots (approximately 400 m by 2,000 m), oriented to face Yonge Street on the short dimension, ensuring access to the main route to and from Toronto (**Figure 3-2**). Many of the farms in this area were further sub-divided into two 100-acre parcels (400 m by 1,000 m), resulting in the eventual alignments of Senlac Road in the west and Willowdale Avenue in the east. When the farms were sub-divided again for residential uses, they were very uniformly divided into four 100 m deep blocks, resulting in the 20 blocks between Sheppard Avenue and Finch Avenue. The east-west division varies more but blocks are generally 250 m in length.

Given the relatively flat topography (when compared to a similar area surrounding Yonge Street and Eglinton Avenue), a very uniform and fine-grained street grid of approximately 100 m by 250 m blocks was developed. This results in a high intersection density, which is a proxy for connectivity and walkability. However, this grid is interrupted by major infrastructural elements like Highway 401 to the south of the Study Area, the Finch Hydro Corridor along the north of the Study Area and the two branches of the Don River to the east and west of the Study Area (**Figure 3-3**).

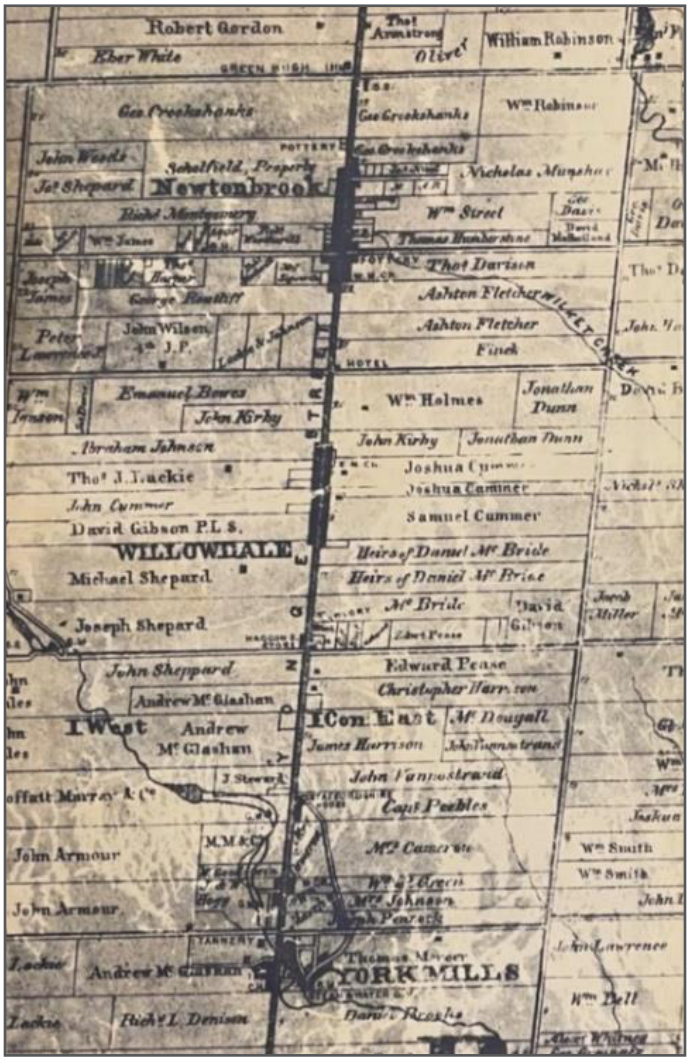

Figure 3-1: Tremaine's Map, 1860

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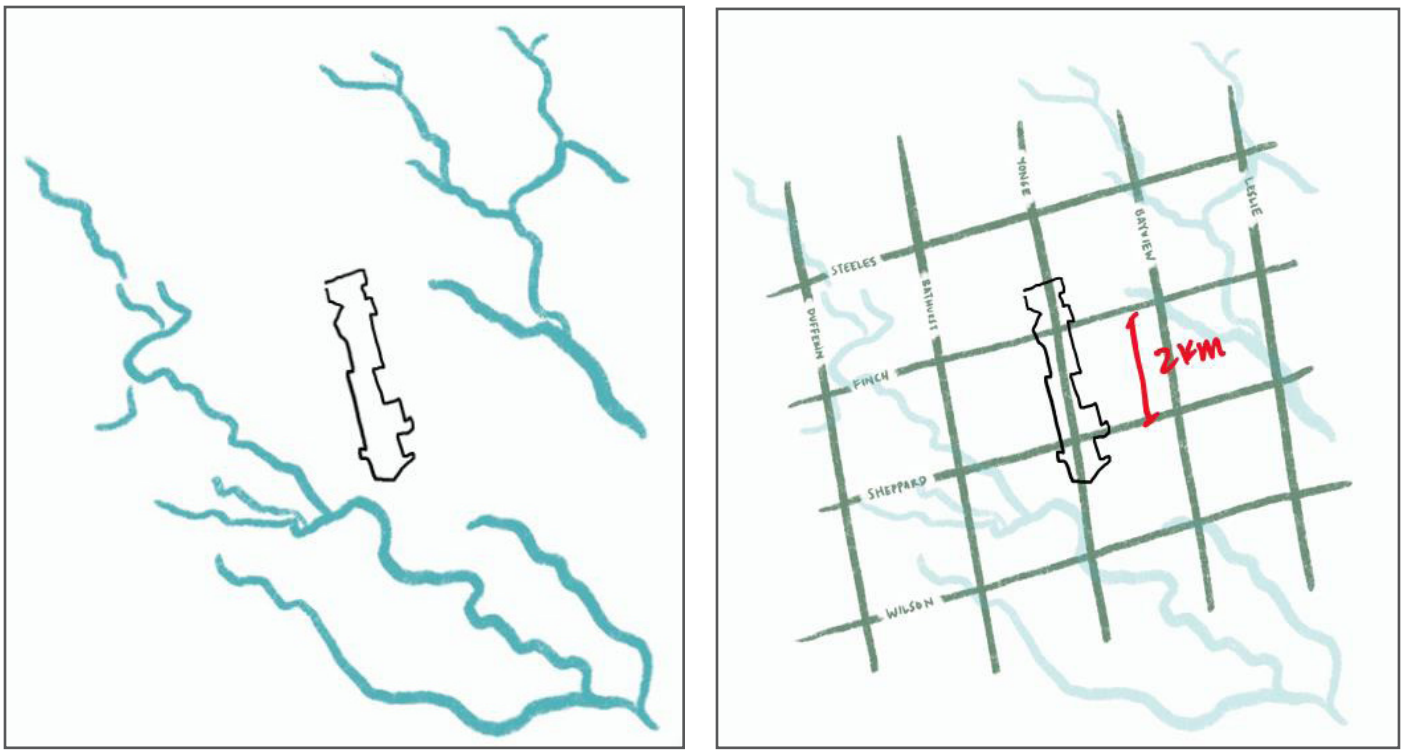


Figure 3-2: Topography of the Study Area Surrounded by the Ravines (Left), Two-kilometre Concession Grid (Right)

Figure 3-3: Subdivided Blocks Resulting in a Fine-Grained Grid (Left), The Study Area as it is Today (Right)

3.1.2 Street Network

Road Classifications

Key takeaways of the existing street network within the MSA and opportunities to improve connectivity are outlined below.

Major Arterials

The MSA is bounded by four existing major arterials: Steeles Avenue to the north, Bayview Avenue to the east, Wilson Avenue / York Mills Road to the south, and Bathurst Street to the west.

Yonge Street is a north-south major arterial that runs along the centre of North York Centre, providing access to primarily mixed-use areas located immediately adjacent to the corridor. In addition, Yonge Street provides key connections to the broader street network, which includes Highway 401 (a significant east-west regional route) and east-west major arterials within the study boundaries (including Finch Avenue and Sheppard Avenue) that extend beyond the MSA.

Minor Arterials

There are several minor arterial streets in the MSA which generally provide connections to other transportation corridors and a variety of land uses. These include the following:

- **Drewry Avenue/Cummer Avenue:** This east-west minor arterial has a two-lane cross-section (one travel lane per direction) with left turn lanes at select intersections. It spans across the entire MSA, primarily travelling through residential neighbourhoods and some mixed-use areas. It connects with arterials Bathurst Street, Yonge Street, Bayview Avenue, and Willowdale Avenue as well as collector street, providing access to other neighbourhoods, parks, and institutional uses. Along this street, there is a handful of signalized intersections and three locations with a Pedestrian Crossover (PXO). Beyond the MSA, it is a collector street.
- **Senlac Road:** This north-south street runs between Finch Avenue West (north terminus) and Sheppard Avenue West (south terminus). It has a three-lane cross-section that provides one travel lane per direction with a centre two-way left turn lane. It primarily provides access to neighbourhoods, schools, and a cemetery as well as a few collectors. Signalized intersections are provided at its terminuses and at Park Home Avenue (collector), as well as a PXO at the intersection with Burnett Avenue. Senlac Road is the only street to traverse the York Cemetery, increasing its importance for providing north-south movement.
- **Beecroft Road:** This is a north-south street with a four-lane cross-section (two travel lanes per direction) which runs parallel with Yonge Street, from Finch Avenue West (north terminus) and Poyntz Avenue (south terminus, which intersects with Yonge Street). It has left turn lanes at several intersections. This street, along with Doris Avenue, functions as a service road that forms a critical part of the North York Centre's street network. It facilitates traffic circulation and mitigates traffic constraints of Yonge Street, acting as a buffer to surrounding neighbourhoods from heavier traffic. It also creates a smoother transition between the high-density land uses along Yonge Street to the surrounding low-density neighbourhoods. There are several signalized intersections and a PXO north of the North York Boulevard (collector) intersection.

- **Doris Avenue:** This north-south street runs along the east side of Yonge Street between Finch Avenue East (north terminus) and Sheppard Avenue East (south terminus). It generally provides a four-lane cross-section (two travel lanes per direction) with left turn lanes at several intersections. Like Beecroft Road, this street also serves as a critical service road to support traffic circulation, transition in land use density, and local neighbourhoods with a buffer from heavy traffic flow. There are several signalized intersections with collectors or major arterials.
- **Willowdale Avenue:** This north-south street runs between Steeles Avenue East (north terminus) and Sheppard Avenue East (south terminus), to the east of Doris Avenue. North of Bishop Avenue, it generally provides a four-lane cross-section (two travel lanes per direction) with left turn lanes at select intersections. South of Bishop Avenue, it changes to a two-lane cross-section (one travel lane per direction) with left turn lanes at select intersections. Beyond each limit, this street terminates as a local neighbourhood street. There are several signalized intersections with major arterials, minor arterials, and collectors as well as three locations with a PXO.

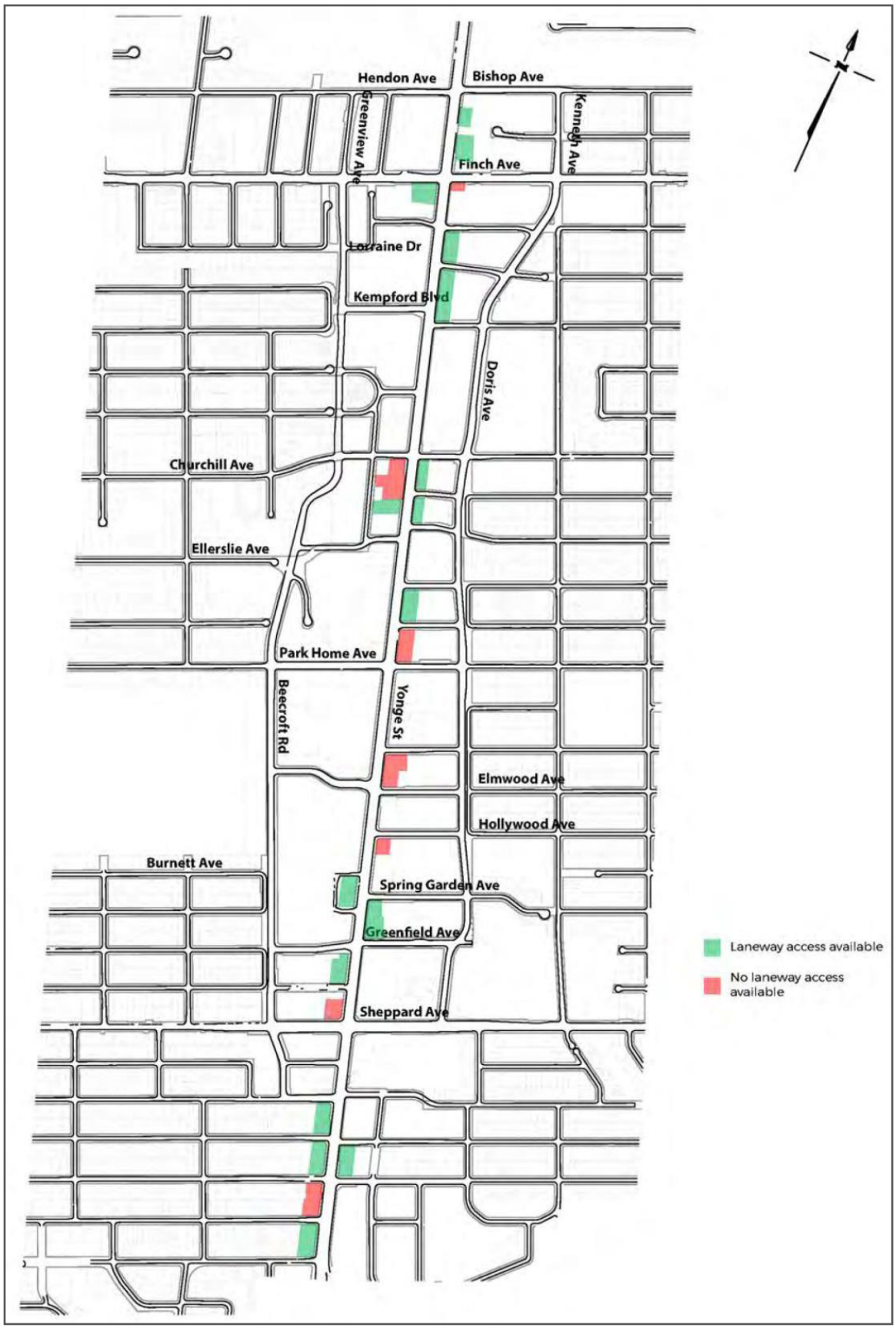
Collectors and Local streets

An intricate grid network of collector and local street generally provide good access and connections throughout the neighbourhoods and to local facilities. However, there are a few examples of discontinuous routes, including:

- **Ellerslie Avenue**, which extends east from Bathurst Street to Senlac Road, beyond which it becomes a local street that terminates at a cul-de-sac just west of Beecroft Road. Beyond that, there is a short segment that connects from a driveway on to Beecroft Road to an intersection with Yonge Street. To the east of Yonge Street, there is an offset intersection with Norton Avenue, which is a short segment that terminates at Doris Avenue. Further to the east are local street with no access to Yonge Street.
- **Hilda Avenue/Talbot Road/Tamworth Road**. Hilda Avenue runs north-south and becomes Talbot Road south of Newtonbrook Boulevard, terminating at a T-intersection with Lorraine Drive at a residential property. Tamworth Road begins on the other side of this property and extends to Park Home Avenue. Aside from this short discontinuity, the combination of these two corridors extends a total of 4.5 km, north to Clark Avenue in York Region. The corridor already includes full traffic signals at every major street intersection.
- **Segments of collectors that provide access to Yonge Street**, including Kempford Boulevard that terminates at Beecroft Road, North York Boulevard / Elmwood Avenue that runs between Beecroft Road and Doris Avenue, and Elmhurst Avenue / Greenfield Avenue that runs between Beecroft Road and Doris Avenue.
- Many local streets end in cul-de-sacs or run adjacent to Beecroft Road or Doris Avenue without providing access to either service roads.

Laneways

North York Centre's laneways are predominantly concentrated around Yonge Street and generally located behind traditional low-rise retail buildings. These laneways, typically accessed from the east-west streets which intersect Yonge, provide access to the adjacent properties. Existing rear laneway access is illustrated for the Boundary Expansion Study Areas in **Figure 3-4**. Note that the figure is from 2016.



(Source: REimagining Yonge Street Environmental Assessment, 2016)

Figure 3-4: Non-consolidated Parcels With or Without Rear Laneway

3.1.3 Pedestrian Network

North York Centre consists of a vast network of sidewalks, walkways, trails, and midblock connections, each playing a unique role in shaping the overall urban environment.

Sidewalks

The sidewalks in the street network form the primary pedestrian network within the North York Centre Study Area.

The existing sidewalk network in North York Centre is generally well-developed. Typically, sidewalks along all types of streets are separated from traffic by a grass strip that occasionally contains trees, or an asphalt buffer. The City of Toronto has a long-term goal to have sidewalks on both sides of arterials and collector street and at minimum on one side of local street.

Within the Mobility Study Area, all arterial streets are equipped with sidewalks on both sides, except for the Yonge Street segment at Highway 401, where a sidewalk is present on only one side. Most collector street also have sidewalks on both sides, but many have segments where the sidewalk is only on one side. These segments are listed in **Table 3-1**. Notably, Newton Drive is a collector and has a section with no sidewalks on either side of the street.

Table 3-1: Collector Street Missing One or More Sidewalks

Road	Segment	Side of Street Missing Sidewalk
North-South Streets		
Hilda Avenue	Moore Park Avenue to Connaught Avenue	West side
	Drewry Avenue to Newtonbrook Boulevard	East side
Grantbrook Street	Blake Avenue to Finch Avenue West	East side
Kenneth Avenue	Olive Avenue to Byng Avenue	East side
	Church Avenue to Empress Avenue	East side
	Hillcrest Avenue to Alfred Avenue	East side
Easton Road	Johnston Avenue to Florence Avenue	West Side
Armour Boulevard	Newbury Lane to Bombay Avenue	West Side
Upper Highland Crescent	Owen Boulevard to York Mills Road	East side
East-West Streets		
Patricia Avenue	Homewood Avenue to Chelmsford Avenue	North side
	Cactus Avenue to Yonge Street	North side

Road	Segment	Side of Street Missing Sidewalk
Newton Drive	Yonge Street to Lillian Street	South side
	Lillian Street to Conacher Drive	Both sides
Hendon Avenue	Carney Road to Eldora Avenue	South side
Bishop Avenue	Finch Station Parking Lot (150 m east of Yonge Street) to Maxome Avenue	North side
Churchill Avenue	Senlac Road to Beecroft Road	South side
Church Avenue	Dudley Avenue to Willowdale Avenue	North side
Ellerslie Avenue	Flook Lane to Senlac Avenue	North side
Park Home Avenue	Senlac Avenue to Beecroft Road	North side
North York Boulevard	Beecroft Road to North York Civic Centre	North side
Avondale Avenue	Tradewind Avenue to Burnwell Street	South side
Bombay Avenue	Armour Boulevard to Barwick Drive	South side
Upper Canada Drive	Oaken Gate Way to ton Drive	North side
Fifeshire Road	17 Fifeshire Road to Bayview Avenue	Both sides

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Local streets, in contrast, are required to have pedestrian facilities on at least one side. Generally, local street within the Centre have sidewalks on both sides. However, within the BESA, approximately only **25.6%** have a sidewalk on one side of the street and **18.8%** do not have any sidewalks. This deficiency directly impacts the walkability and overall pedestrian experience within the inner neighbourhoods. Addressing these shortcomings in sidewalk infrastructure is crucial for enhancing the overall pedestrian accessibility and safety within Study Area.

Additionally, it was observed that multiple streets (primarily local) in close proximity to schools lack sidewalks or any pedestrian infrastructure. Ensuring proper pedestrian facilities near schools is crucial for the safety of students, and to encourage physical activity like walking. These locations are listed in **Table 3-2**.

Table 3-2: Streets Nearby Schools with No Sidewalks

School(s)	Streets Nearby Without Sidewalks	
Lillian Public School, St. Agnes Catholic School, Brebeuf College School	• Whitman Street • Greenyards Drive • Monford Drive • Newton Drive • Llyodminser Crescent • Caswell Drive • Otonabee Avenue	• Michigan Drive • Madawaska Avenue • Pheasant Road • Pamcrest Drive • Cadmus Road • Gossamer Avenue
Cummer Valley Middle School	• Gustav Crescent • Revcoe Drive	• Harnish Crecent
Finch Public School	• Manorcrest Drive • Winlock Park • Kenneth Wood Crescent	• Laredo Court • Dunforest Avenue • Dunview Avenue
McKee Public School, Yorktown Montessori School	• Logandale Road/ Annapearl Court	• Charlemagne Drive
St. Cyril Catholic School	• Blakeley Road/ Lorraine Drive • Madeline Road • Talbot Road	• Holcolm Drive • Santa Barbara Road • Basswood Road
Yorkview Public School	• Muirkirk Road • Fleetwell Court • Finchurst Drive	• Elgin Road • Lurgan Drive
Churchill Public School, Willowdale Middle School	• Hazelglen Avenue • Abbotsford Road • Diagonal Road • Blenheim Street • Betty Ann Drive	• Elynhill Drive • Cobden Street • Elgin Road • Wynn Road
Cameron Public School, St. Edward Catholic School	• Gwendolen Crescent • Stuart Avenue • Gwendolen Avenue • Evan Road • Johnston Avenue	• Franklin Avenue • Walker Road • Bassano Road • Stuart Crescent • Botham Road
Hollywood Public School, St. Gabriel Catholic School	• Alfred Avenue • Princess Avenue	• Greenfield Avenue
Avondale Public School	• Burnwell Street • Dudley Avenue • Glendora Avenue	• Anndale Drive • Lyndale Drive • Craigmore Crescent

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School(s)	Streets Nearby Without Sidewalks	
Summit Heights Public School	• Westgate Boulevard • Lyonsgate Drive • Edinburgh Drive • Southgate Avenue • Sandringham Drive • Raeburn Avenue • Romney Road • Wendy Crescent	• Northmount Avenue • Yorkdowns Drive • Delhi Avenue • Ridely Boulevard • Armour Boulevard • Kirkton Road • Bideford Avenue • Tresillian Road
St. Andrew's Middle School, Owen Public School	• Fideshire Road • Gordon Road • Cedarwood Avenue	• Owen Boulevard • Munro Boulevard

In a few locations where sidewalks were missing, well-used informal paths, or desire paths, were also observed. Desire paths emerge when people choose more direct or convenient routes, especially in areas where the existing infrastructure does not meet their needs. These worn-down paths indicate where pathways may be necessary to better accommodate user's preferences. Desire lines were observed at:

- Bishop Avenue (north side), east of Yonge: there is a well-used footpath connecting to the Finch Station parking lot
- North York Boulevard (north side), from Beecroft Road to North York Civic Centre: there is a well-used footpath from the sidewalk at Beecroft Road leading to the Civic Centre
- Bales Avenue (west side), from Avondale Avenue to Glenora Avenue: a lack of redevelopment of the west side of the street has prevented the creation of a sidewalk, and the boulevard is highly worn from walking.

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3.1.4 Internal Walkways

Along Yonge Street are numerous public buildings with entrances directly accessible from the street level, connecting pedestrian to an interior pedestrian network of indoor walkways. These walkways connect podiums and atriums both above and underground to form a weather-protected network that serve as key connections within the broader pedestrian network, enhancing accessibility and connectivity in the area. Among the public buildings with internal walkways are the Empress Walk Mall, North York Centre, Meridian Hall, and Sheppard Centre.

Midblock Connections

There are several pedestrian midblock connections all along the PSA that connect Yonge Street with Beecroft Road and Doris Avenue, especially around North York Centre and Meridian Hall.

Privately Owned Public Spaces can also create tertiary pedestrian connections offering relief and alternative routes. These enhance pedestrian access throughout the area, contributing to a more dynamic and interconnected pedestrian experience, such as the POPS at 27 Bales Avenue.

Trails

The pedestrian network in North York is complemented by a series of trails that weave through parks and connect to the ravines. Currently there are two major trail systems in the Study Area: Finch Hydro Corridor Recreation Trail, and a continuous trail network within the parks and open spaces in the area following a former creek bed. Yet, the connectivity between these trails is notably lacking within the Centre. Notably, the Finch Hydro Corridor Trail has a gap in the trail from Duplex Avenue to Kenneth Avenue, which is planned to be addressed as part of the Beecroft Road Extension.

Efforts to enhance and establish trails connecting the urban centre with the nearby ravines could contribute to a more integrated and accessible pedestrian network that offers better access to the ravines.

Pedestrian walkways along private driveways and lanes

The pedestrian network in North York Centre also includes the pedestrian walkways along private driveways and lanes connecting public sidewalks in the public boulevard. Although these driveways are not public thoroughfares, the pedestrian walkways along them play a significant role in the overall connectivity of the pedestrian infrastructure.

3.1.5 Cycling Network

The following is a further expansion on the Near-Term Implementation Program discussed in the main report. It contains a list of the components that apply to the Mobility Study Area and candidate routes from this program, along with suggested additions from the public to improve routes and connections.

Near-Term Implementation Program of Toronto's Cycling Network Plan

The Near-Term Implementation Program is a component of the City's Cycling Network Plan. This is a rolling three-year implementation program, which is flexible and relies on coordinated planning and capital works.

The 2022-2024 Near-Term Implementation Program includes the following for the Mobility Study Area:

- Extension of the Willowdale Avenue cycle tracks north to Steeles Avenue and south to Sheppard Avenue
- Addition of cycle tracks on Sheppard Avenue East from Doris Avenue to east of Leslie Street
- Study of bikeways on Sheppard Avenue East from Yonge Street to Doris Avenue
- Study of bikeway closing the Finch Corridor Multi-Use Trail gap between Kenneth Avenue and Bishop Avenue
- Acknowledgement of Yonge Street between the Finch Corridor Multi-Use Trail and Avondale Avenue as "approved for future implementation"

Note that some projects from the 2022 - 2024 program have been delayed and will have implementation in 2025+.

The City is currently consulting on its 2025 - 2027 Near-Term Implementation Plan. Candidates for this plan are indicated in an online map on the City's website. Candidate routes for the Mobility Study Area include:

- An east-west bikeway on Churchill Avenue and Church Avenue between Senlac Road and Willowdale Avenue (with a public feedback comment that this route would provide a valuable connection to two grocery stores in North York Centre)
- An east-west bikeway on Ellerslie Avenue from Bathurst Street to Senlac Road
- Extending the Willowdale Avenue cycle tracks south to Avondale Avenue
- An east-west bikeway on Elmwood Avenue that connects through the York Cemetery
- An east-west bikeway on Sheppard Avenue West between Bathurst Street and Bonnington Place
- An east-west bikeway on Florence Avenue and Avondale Avenue between Easton Road and Willowdale Avenue
- A north-south bikeway on Easton Road from Sheppard Avenue West to Florence Avenue
- An east-west bikeway on Bogert Avenue from Easton Road to Beecroft Road
- An east-west bikeway on Drewry Avenue from Bathurst Street to Yonge Street
- A north-south bikeway on Grantbrook Street from Drewry Avenue to Finch Avenue West
- A north-south bikeway on Hilda Avenue from the Finch Corridor Multi-Use Trail to Steeles Avenue West
- A north-south bikeway on Yonge Street from Avondale Avenue to Davisville Avenue (crossing Highway 401)

Additions suggested by the public to improve routes and connections to work, school, shopping, or to explore the City which have received strong support from others in the online platform include:

- A multi-use pathway on the east side of Doris Avenue from Empress Avenue to Church Avenue to support active travel to McKee Public School
- Extending the REimagining Yonge EA plan north to Steeles Avenue to provide a connection to York Region
- A north-south bikeway on Senlac Road between Sheppard Avenue West and Finch Avenue West. This could provide connections to the candidate bike route proposed north-south on Senlac Road from Sheppard Avenue West to Bogert Avenue and adjacent candidate bike routes.
- Improved connections from the Finch Corridor Multi-Use Trail, particularly around Finch Station

3.1.6 Transit Network

This section provides a more in-depth overview of existing transit services and a detailed analysis of transit utilization. It also includes

Existing Transit Services

North York Centre is well served by public transit, including subway and bus. Within North York Centre, there are three Mobility Hubs along the Yonge Street Corridor (Sheppard-Yonge, North York Centre, and Finch Transit Hub) servicing two subway lines (Line 1: Yonge-University, and Line 4: Sheppard) and several TTC, YRT, and GO bus routes. The surface bus routes are another critical component of the public transit network in the area. Transit transfers in North York Centre are convenient and are an important part of inter-regional commute. Transit passengers in the area can benefit from the recently announced One Fare program where transfers between local transit agencies and GO transit will be at a discounted price.

These transit services are described in the subsequent sections.

TTC Services

Subway Line 1 Yonge-University has 38 stations and is a “U-shaped” route running generally in the north/south direction. The route operates from the northern area of Yonge Street and Finch Avenue East, south to Union Station in downtown Toronto, and then north again to the area of Highway 7 and Jane Street in the City of Vaughan. Line 1 connects with Line 2 at Bloor-Yonge, St. George and Spadina Stations, and it connects with Line 4 at Sheppard-Yonge Station. The trains run every two to three minutes during the rush hours and every four to five minutes outside the rush hours. All three subway stations within the North York Centre area provide access to Line 1.

Subway Line 4 Sheppard has five stations, running in an east-west direction along Sheppard Avenue East. The route operates from the area of Yonge Street and Sheppard Avenue, east to the area of Sheppard Avenue East and Don Mills Road. Line 4 connects with Line 1 at Sheppard-Yonge Station in North York Centre. The trains run daily every five to six minutes.

There are a number of TTC buses within the North York Centre area, which primarily provide services along the arterial corridors (i.e., Yonge Street, Sheppard Avenue, Finch Avenue, Drewry Avenue/Cummer Ave). A description of the existing TTC bus routes within North York Centre and their associated headways during weekday morning and afternoon rush hours are provided in **Table 3-3**. According to the TTC Blue Night Network, the following associated routes provide night service after 1:30 A.M.: 307, 336, 339, 353, 384 and 385.

Table 3-3: Mobility Study Area TTC Bus Routes

Route	Description	Service Headways (minutes)[1]	
		A.M. Peak Hour	P.M. Peak Hour
7: Bathurst	North/south along Bathurst St between Bathurst Station & Steeles Ave W	10 minutes or better	10 minutes or better
36: Finch West	East/west along Finch Ave between Finch & Finch West Stations	10 minutes or better	10 minutes or better
39: Finch East	East/west along Finch Ave between Finch Station & the Morningside Heights neighbourhood	Less frequent than every 10 minutes	Less frequent than every 10 minutes
939: Finch Express		10 minutes or better	Less frequent than every 10 minutes
42: Cummer	East/west along Cummer Ave between Finch Station & Middlefield Rd	10 minutes or better	10 minutes or better
53: Steeles East	East/west along Steeles Ave between Finch Station & Markham Rd	10 minutes or better	10 minutes or better
953: Steeles East Express		Less frequent than every 10 minutes	Less frequent than every 10 minutes
60: Steeles West	East/west along Steeles Ave between Finch & Pioneer Village Stations	10 minutes or better	10 minutes or better
960: Steeles West Express		10 minutes or better	10 minutes or better
61: Avenue Road North	North/south along Avenue Rd N between Eglinton Station & Highway 401	Less frequent than every 10 minutes	Less frequent than every 10 minutes
78: St. Andrews	East/west direction between York Mills Station & Bayview Avenue / Highway 401	Less frequent than every 10 minutes	Less frequent than every 10 minutes
84: Sheppard West	East/west along Sheppard Ave between Sheppard-Yonge and Pioneer Village Stations (regular), and Weston Rd (express)	Less frequent than every 10 minutes	Less frequent than every 10 minutes
984: Sheppard West Express		10 minutes or better	10 minutes or better
85: Sheppard East	East/west along Sheppard Ave between Don Mills Station & the Rouge Hill GO Station	Less frequent than every 10 minutes	Less frequent than every 10 minutes
97: Yonge	North/south along Yonge St between Steeles Ave & Front St	Less frequent than every 10 minutes	Less frequent than every 10 minutes

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Route	Description	Service Headways (minutes)[1]	
		A.M. Peak Hour	P.M. Peak Hour
98: Willowdale-Senlac	East/west along Senlac Rd and Willowdale Ave between Sheppard Ave & Steeles Ave E	Less frequent than every 10 minutes	Less frequent than every 10 minutes
125: Drewry	East/west along Drewry Ave between Finch Station & Bathurst St	10 minutes or better	10 minutes or better

1 Headways retrieved from the TTC Service Summary November 19, 2023 – December 23, 2023.

YRT & GO Transit Services

YRT buses in the area operate along Yonge Street and provide services between various terminals/areas in the York Region and the Finch GO Bus Terminal, connecting higher order transit and other TTC and GO bus services.

A description of these YRT routes and their associated headways during weekday morning and afternoon rush hours are provided in **Table 3-4**. Route 098|099 is a night route that services the area, operating between 8:30 P.M. and 2:30 A.M. the next day. Routes 2, 5, 77, 91/91A, and Viva Blue also offer service up to 2:30 A.M. the next day.

Table 3-4: Mobility Study Area YRT Bus Routes

Route	Description	Service Headways (minutes)[1]	
		A.M. Peak Hour	P.M. Peak Hour
2: Milliken	East/west between Finch GO Terminal and the Cornell Bus Terminal in Markham 002 WB continues to operate until 11:55 P.M.	Less frequent than every 20 minutes	Less frequent than every 20 minutes
5: Clark	East/west between Finch GO Terminal and Glen Shields Avenue west of Dufferin Street	Less frequent than every 20 minutes	Less frequent than every 20 minutes
23: Thornhill Woods	North/south between the Finch GO Terminal and Teston Road & Via Romano Boulevard	Less frequent than every 20 minutes	Less frequent than every 20 minutes
77: Highway 7	East/west between Finch GO Terminal and Vaughan Valley Boulevard & Highway 7	20 minutes or better	20 minutes or better
88: Bathurst	North/south mainly along Bathurst Street between Finch GO Terminal and the Seneca Polytechnic College King Campus	20 minutes or better	20 minutes or better

Route	Description	Service Headways (minutes)[1]	
		A.M. Peak Hour	P.M. Peak Hour
91/91A: Bayview	North/south mainly along Bayview Avenue between Steeles Avenue East and Subrisco Avenue (north of Elgin Mills Road) and the Finch GO Terminal	Less frequent than every 20 minutes	Less frequent than every 20 minutes
99: Yonge	North/south along Yonge Street between the Finch GO Terminal and Canyon Hill Road in Richmond Hill	Less frequent than every 20 minutes	Less frequent than every 20 minutes
098 | 099: Yonge	North/south along Yonge Street between the Finch GO Terminal and Green Lane Road in Newmarket	N/A	N/A
300: Business Express	North/south between Finch GO Terminal and Clegg Road	20 minutes or better	Less frequent than every 20 minutes
301: Markham Express	North/south between Mount Joy GO Station and Finch GO Terminal	Less frequent than every 20 minutes	Less frequent than every 20 minutes
302: Unionville Express	North/south between Finch GO Terminal and Warden Avenue at Highway 7	Less frequent than every 20 minutes	Less frequent than every 20 minutes
303: Bur Oak Express	North/south along Bur Oak Avenue between Finch GO Terminal and Mount Joy GO Station	20 minutes or better	20 minutes or better
304: Mount Joy Express	North/south along Bur Oak Avenue and Kennedy Road between Mount Joy GO Station and Finch GO Terminal	20 minutes or better	Less frequent than every 20 minutes
305: Box Grove Express	North/south between Finch GO Terminal and Markham Road	Less frequent than every 20 minutes	Less frequent than every 20 minutes
391: Bayview Express[2]	Southbound from Woodriver Street to Finch GO Terminal	20 minutes or better	N/A
360: Vaughn Mills / Wonderland	North/south between Finch GO Terminal and the Major Mackenzie West GO Terminal	Less frequent than every 20 minutes	Less frequent than every 20 minutes
Viva Blue	North/south along Yonge between Newmarket Terminal and Finch GO Terminal	20 minutes or better	20 minutes or better

1 Headways retrieved from YRT Service Schedules in January 2024.

2 Route 391 only operates during the weekday morning peak period.

GO buses in the area provide inter-regional transit service between the Finch GO Bus Terminal and GO terminals in other municipalities, including Brampton, Keswick, Milton, Mississauga, and Oshawa, which in

turn boost the connectivity between North York Centre and the rest of GTHA. These GO bus routes also have other stops along Yonge Street, accessible to more localized areas. The existing GO bus terminal at York Mills is a facility at ground level, separate from the TTC bus terminal which is located underground. GO bus currently serves on-street stops between Highway 401 and Finch Avenue and there is no GO bus off-street facility near Sheppard/Yonge.

A description of these GO bus routes and their associated headways during weekday morning and afternoon rush hours are provided in **Table 3-5**.

Table 3-5: Mobility Study Area GO Bus Routes

Route	Description	Service Headways (minutes)[1]	
		A.M. Peak Hour	P.M. Peak Hour
32/32B: Brampton Trinity Common/ North York	East/west between the York Mills Bus Terminal and Trinity Common Mall (Route 32) or the Bramalea Bus Terminal (Route 32B)	30 minutes or better	30 minutes or better (Route 32); Less frequent than every 30 minutes (Route 32 B)
67: Keswick/ North York	North/south between the Finch Bus Terminal and Woodbine Highway 404 Park & Ride	Less frequent than every 30 minutes	Less frequent than every 30 minutes
27A: Milton/ North York	East/west between Finch Bus Terminal and Milton GO	30 minutes or better	Less frequent than every 30 minutes
19: Mississauga/ North York	East/west between Finch Bus Terminal and Mississauga Square One	30 minutes or better	30 minutes or better
96B: Oshawa/ Finch Express	East/west between Durham College Oshawa GO and Finch Bus Terminal	Less frequent than every 30 minutes	Less frequent than every 30 minutes

1 Headways retrieved from GO website in January 2024

Existing Transit Connectivity Gaps And Opportunities

Under existing conditions, local TTC bus routes generally run along the arterial corridors within and near North York Centre and the BESA boundaries, and regional transit (YRT and GO) primarily runs on Yonge Street. There are no east-west transit routes between Sheppard Avenue and Finch Avenue in North York Centre and the broader area, which are spaced approximately two kilometres apart. Residents within these areas would rely on active transportation or bus transfers to access the east-west bus routes along Finch Avenue and Sheppard Avenue, and there are limited options for short-to-medium distance trips.

Based on this observation, there may be an opportunity to consider additional east-west bus routes in the area (e.g., a new branch of an existing bus route). This opportunity can be further explored based on the findings of planning area transit demand modelling that is to be addressed in a separate cover.

Transit Utilization

Subway Utilization

Historical subway platform usage data was obtained from the TTC for the three stations within the study area – Sheppard-Yonge, North York Centre, and Finch. The historical daily platform usage for Line 1 at the three stations is shown in **Figure 3-5**. Any year for which there was more than one daily total, an average of the two values was taken. Finch has the highest daily Line 1 passengers, likely due to its connection with many surface TTC routes as well as GO and YRT transit routes and its role as the terminal of the Line 1 branch. Line 1 at Sheppard-Yonge is the second most-utilized, with a notable increased in 2003 (after the opening of Line 4 which connects to the station). Line 4 at Sheppard-Yonge is third in terms of volume of passengers but has seen the highest compounded growth (64%) since its opening. Comparatively, the next highest is Finch which had growth of 39% between 1975 and 2019. North York Centre has the lowest daily totals, and the lowest compounded growth (27% between 1988 and 2019).

Figure 3-6, **Figure 3-7**, and **Figure 3-8** also show these daily totals, along with a breakdown of the number of passengers getting on versus getting off at Finch, Sheppard-Yonge, and North York Centre Stations, respectively.

It should be noted that the data is not indicative of the number of people on the subway at each station, but rather the number of people getting on and off the subway at each station.

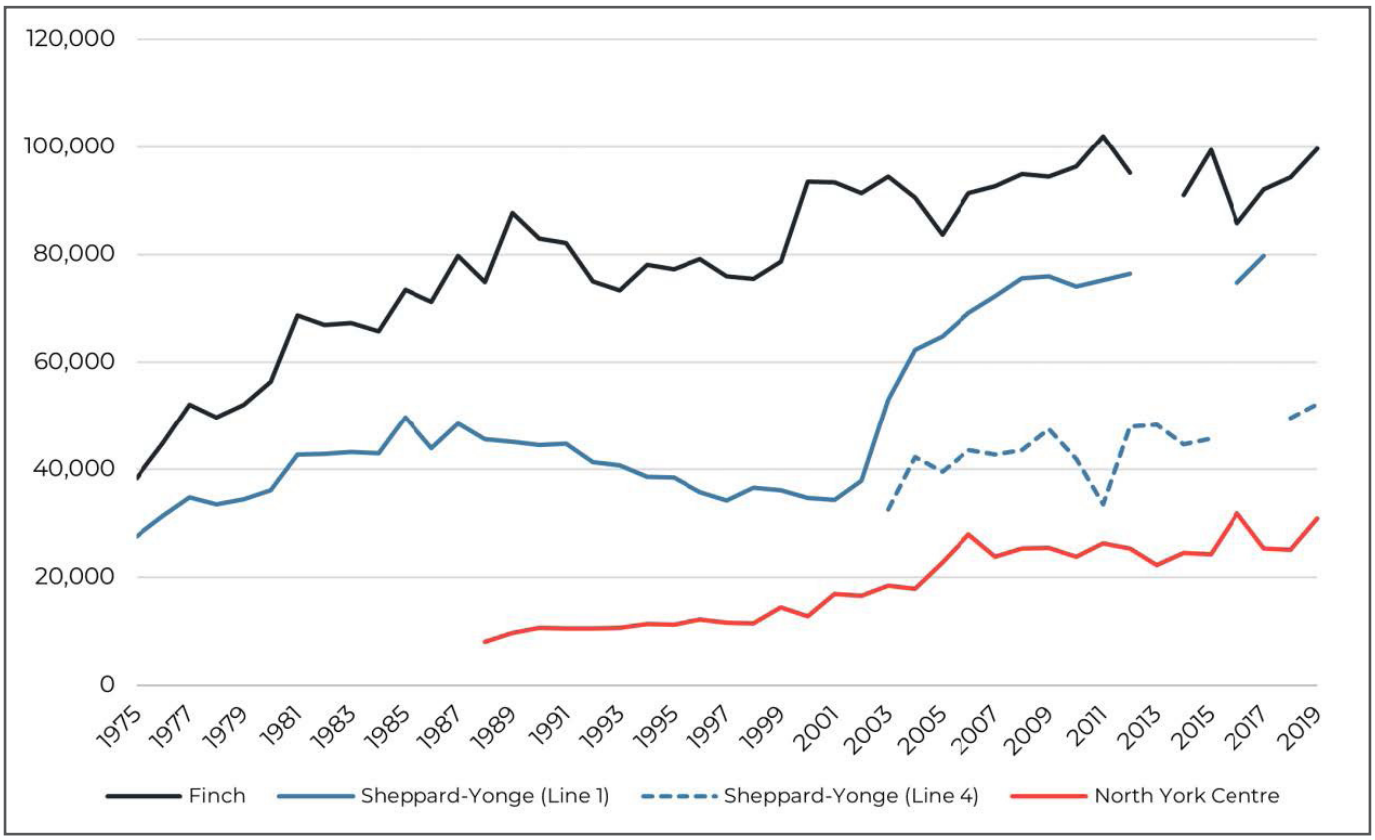

Figure 3-5: Historical Daily Total Passengers at TTC Stations in Study Area

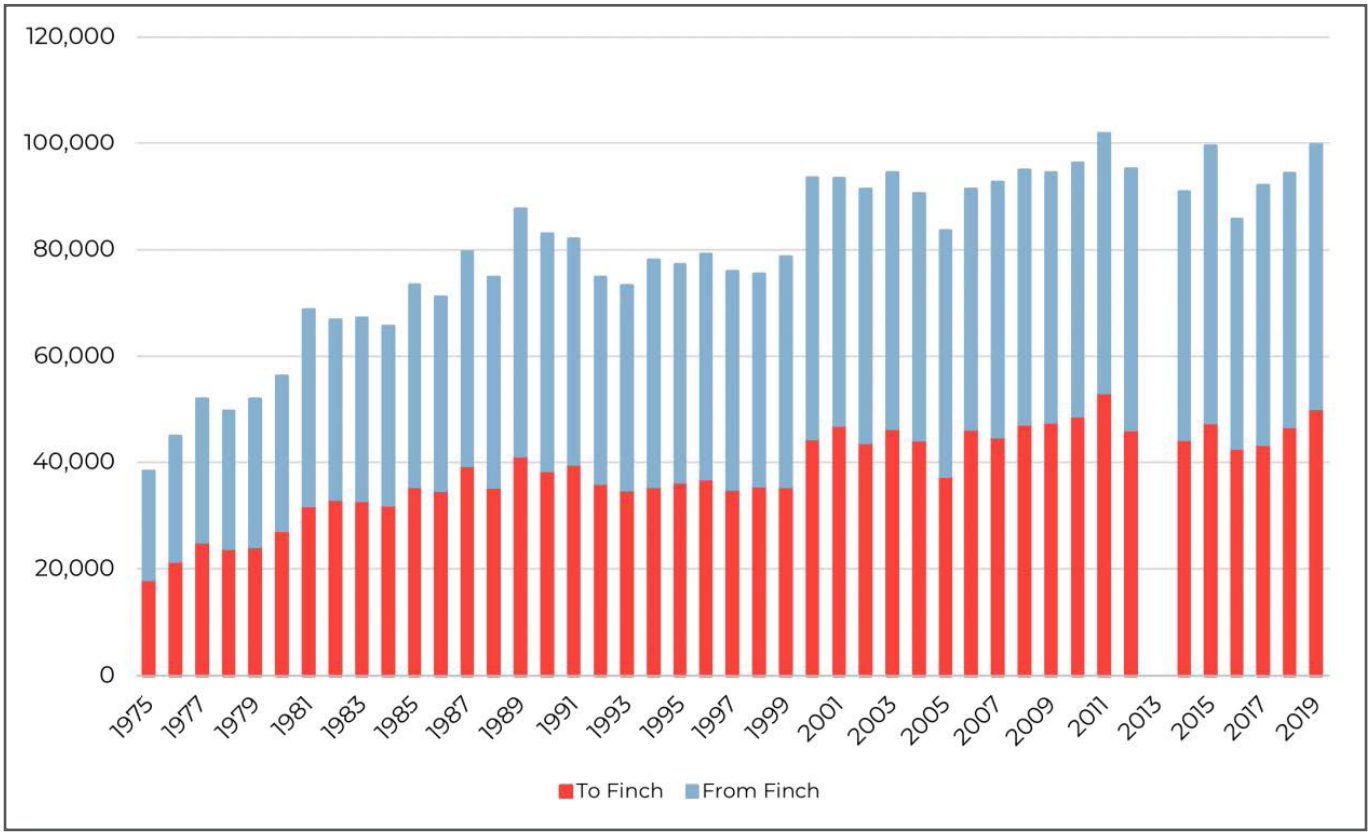

Figure 3-6: Historical Daily Passengers at Finch Station

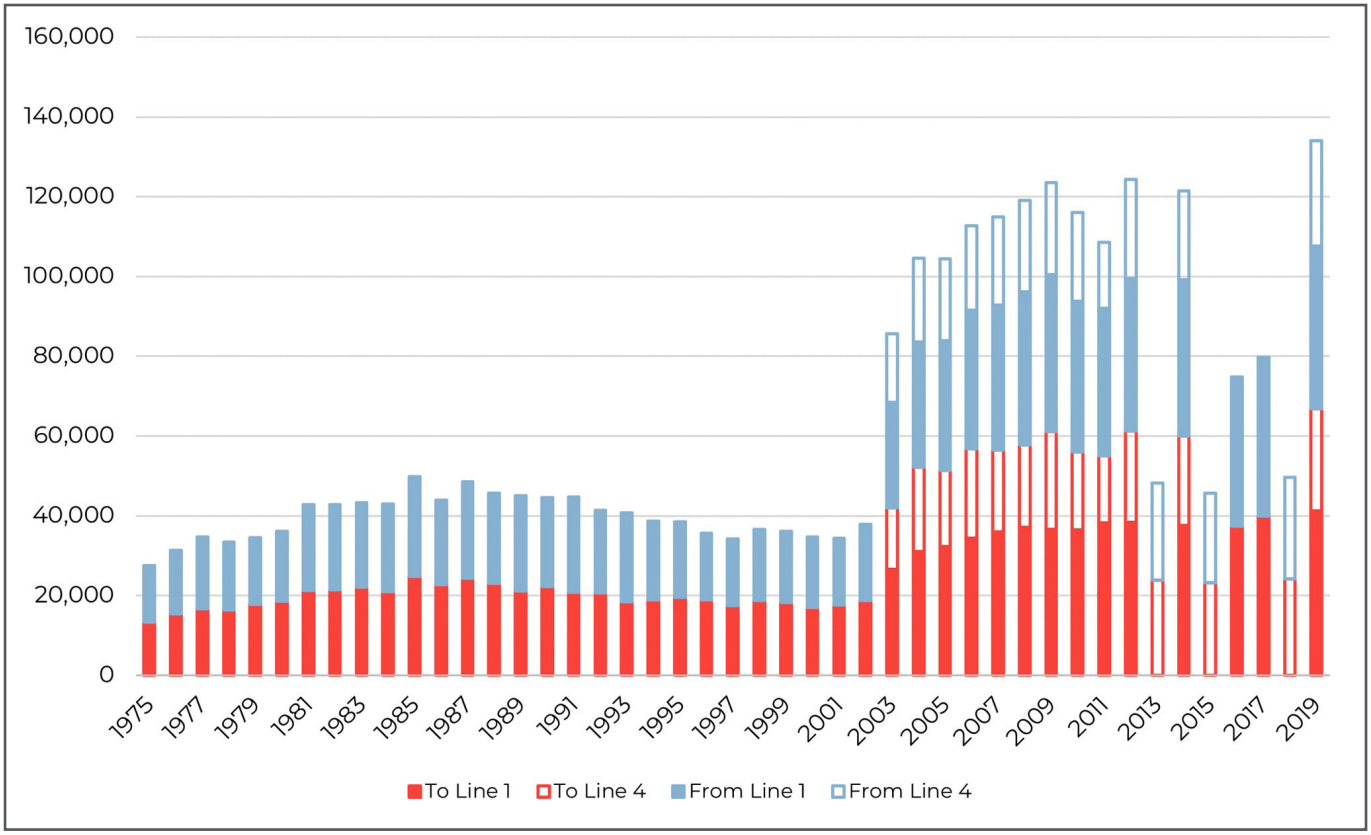

Figure 3-7: Historical Daily Passengers at Sheppard-Yonge Station

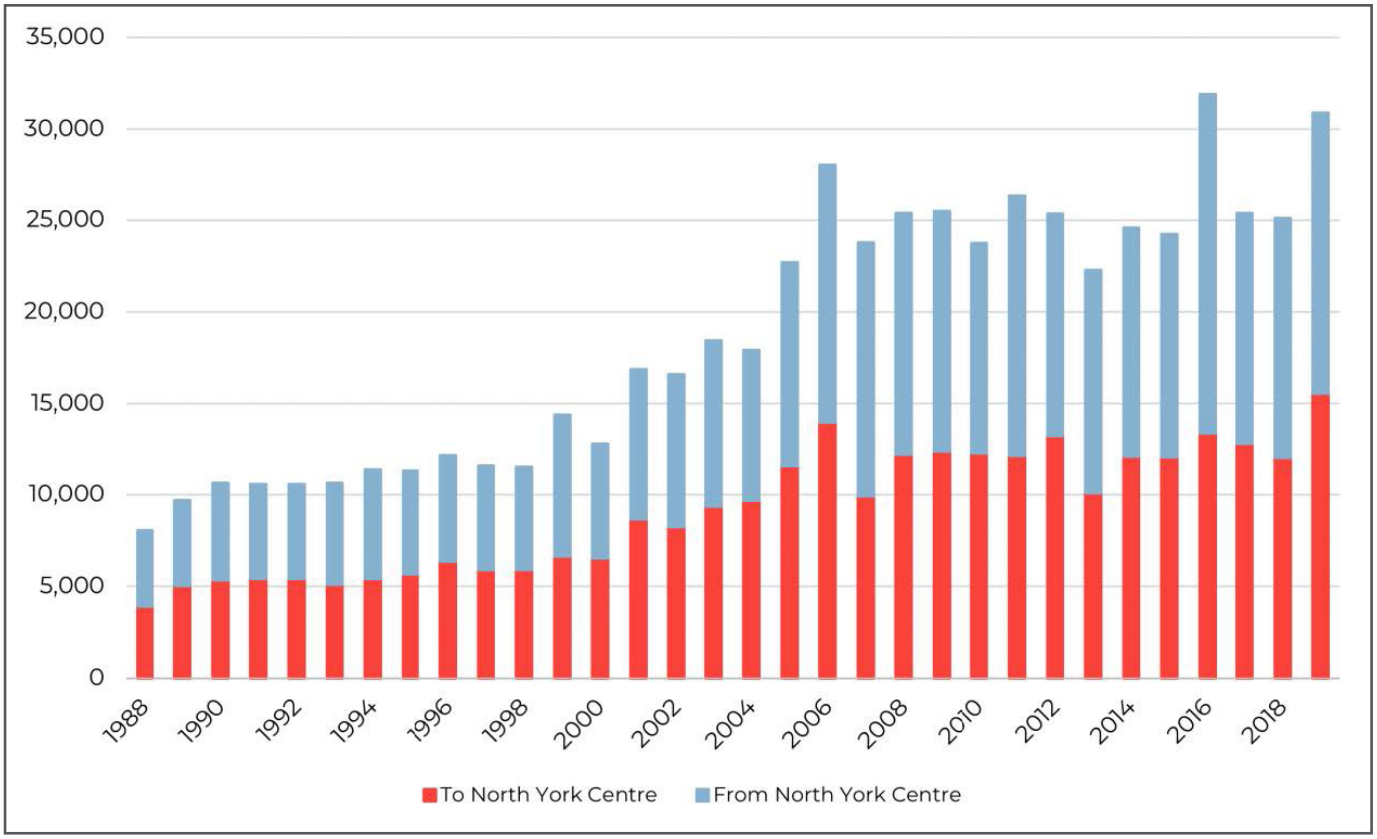

Figure 3-8: Historical Daily Passengers at North York Centre Station

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For Finch and Sheppard-Yonge Stations, Line 1 and Line 4 daily passenger volumes were also provided for year 2022. Given they are both terminal stations for their respective lines, the direction in which passengers were travelling could be determined from those getting on and off at each station. The volumes are shown graphically in **Figure 3-9** and **Figure 3-10** for Finch (Line 1) and Sheppard-Yonge (Line 4), respectively. The directional patterns show that the majority of Line 1 passengers travel southbound during the A.M. peak hour and northbound during the P.M. peak hour. The Line 4 passengers mostly travel westbound in the morning and eastbound in the afternoon. The patterns are consistent with the distribution of employment areas. It should be noted that even during the peak hours both lines at these stations have available capacity. Both lines are operating well within capacity at the stations analyzed, with average utilizations ranging from 2-32% in 2019 and 1-15% in 2022.

The 2022 volumes show significant decreases in comparison with the 2019 volumes. Line 1 daily total volumes at Finch saw a decrease of 61% and 55% for the southbound and northbound volumes respectively, as summarized in **Table 3-6**. Line 4 at Sheppard-Yonge saw decreases of 43% and 53% for eastbound and westbound passengers, respectively, as summarized in **Table 3-7**. This indicates that the COVID-19 pandemic had a significant impact on subway ridership as of 2022.

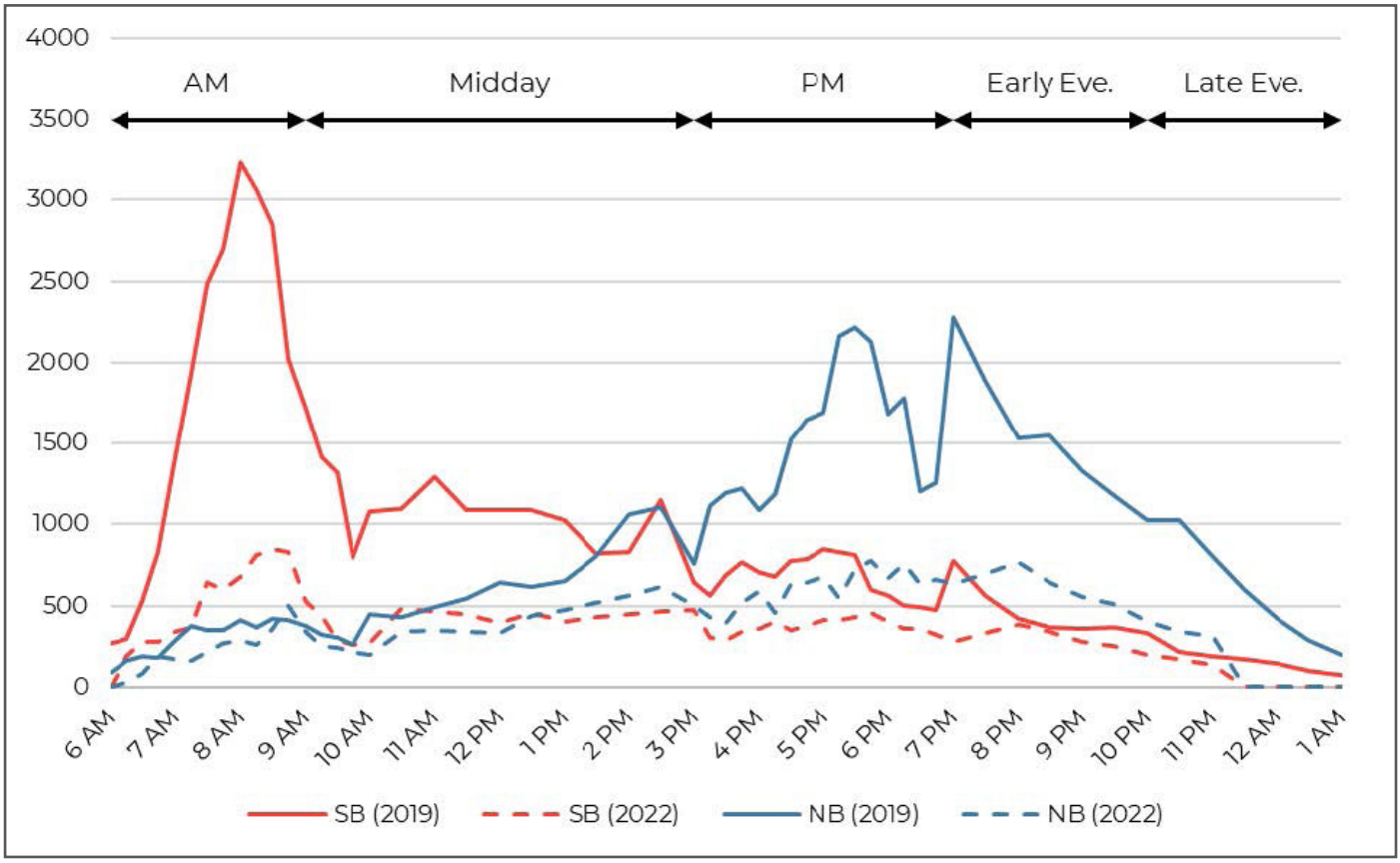

Figure 3-9: Finch Station (Line 1) 2019 vs. 2022 Daily Volumes

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Table 3-6: 2019 vs. 2022 Line 1 Daily Totals at Finch Station

Period	Southbound			Northbound		
	2019	2022	% Decrease	2019	2022	% Decrease
A.M	21,620	5,876	-73%	3,625	2,550	-30%
Midday	15,822	5,790	-63%	8,098	5,237	-35%
P.M.	10,751	6,088	-43%	23,877	9,643	-60%
Early Evening	2,858	1,872	-34%	9,760	3,810	-61%
Late Evening	1,240	511	-59%	4,374	1,064	-76%
Total	**52,291**	**20,137**	**-61%**	**49,734**	**22,304**	**-55%**

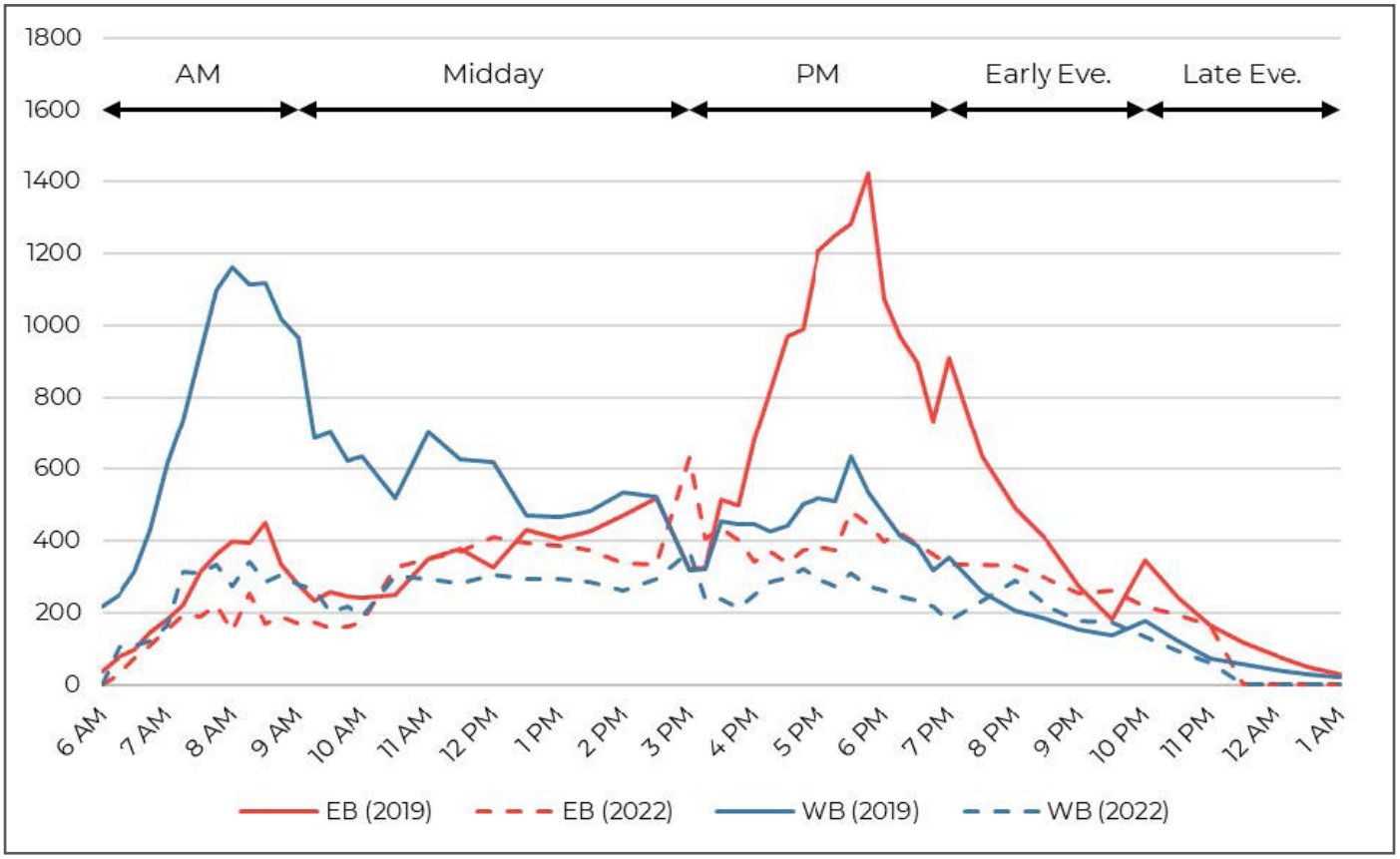

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Figure 3-10: Sheppard-Yonge Station (Line 4) 2019 vs. 2022 Daily Volumes

Table 3-7: 2019 vs. 2022 Line 4 Daily Totals at Sheppard-Yonge Station

Period	Eastbound			Westbound		
	2019	2022	% Decrease	2019	2022	% Decrease
A.M	3,014	1,730	-43%	8,997	2,668	-70%
Midday	4,804	4,110	-14%	8,539	3,766	-56%
P.M.	13,952	6,543	-53%	7,137	4,330	-39%
Early Evening	2,890	1,800	-38%	1,293	1,270	-2%
Late Evening	1,031	578	-44%	517	287	-44%
Total	**25,691**	**14,761**	**-43%**	**26,483**	**12,321**	**-53%**

Subway utilization was estimated using service headways from TTC service summaries from 2022 and 2019 (to determine the number of trains arriving during an interval of data collection). Assuming a capacity of each train of 1,080 passengers for a 6-car TTC Toronto Rocket Car (per the TTC website), the overall capacity for each interval of data collection was determined. For 2019, the service intervals for the period between June 23, 2019 and August 3, 2019 were used. For 2022, the service intervals for the period between June 19, 2022 and July 30, 2022 were used. The average utilization for each period is shown in **Table 3-8** for Finch Station and **Table 3-9** for Sheppard-Yonge. Additionally, the utilization over the course of the day is shown graphically in **Figure 3-11** and **Figure 3-12** for Finch and Sheppard-Yonge Stations, respectively. The results indicate that Line 1 and Line 4 at their terminal stations are operating well-below capacity.

Table 3-8: Finch Station (Line 1) 2019 vs. 2022 Daily Utilization Averages

Period	Service Interval (min)		Southbound		Northbound	
	2019	2022	2019	2022	2019	2022
A.M	2.35	3.5	28%	11%	5%	5%
Midday	3.82	3.5	19%	6%	8%	5%
P.M.	2.6	3.5	12%	9%	26%	14%
Early Evening	3.5	3.5	5%	3%	18%	7%
Late Evening	5	5	2%	1%	7%	2%
		Total	**15%**	**7%**	**15%**	**7%**

Table 3-9: Sheppard-Yonge Station (Line 4) 2019 vs. 2022 Daily Utilization Averages

Period	Service Interval (min)		Eastbound		Westbound	
	2019	2022	2019	2022	2019	2022
A.M	5.5	5.5	9%	5%	27%	8%
Midday	5.5	5.5	7%	6%	15%	6%
P.M.	5.5	5.5	32%	15%	16%	10%
Early Evening	5.5	5.5	8%	5%	4%	4%
Late Evening	5.5	5.5	2%	1%	1%	1%
		Total	**14%**	**7%**	**14%**	**8%**

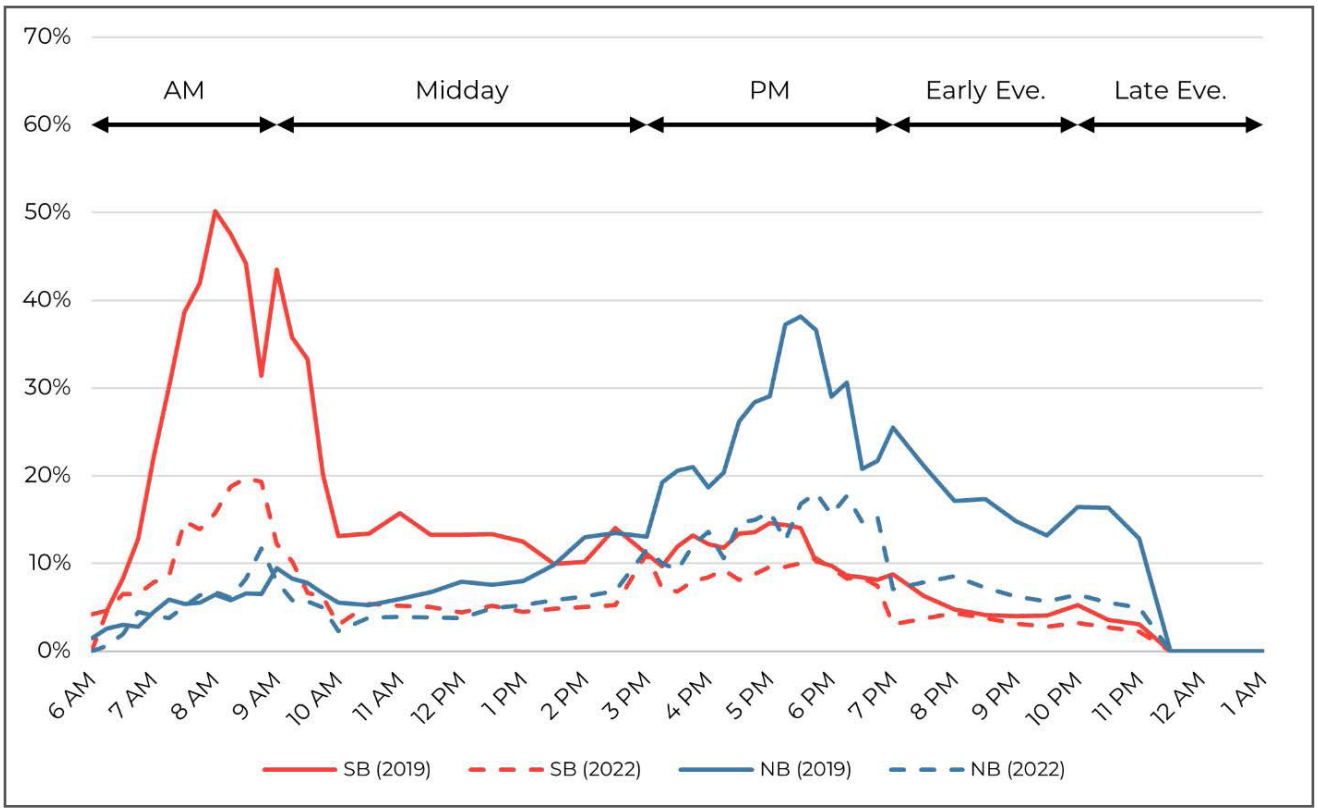

Figure 3-11: Finch Station (Line 1) 2019 vs. 2022 Daily Utilization

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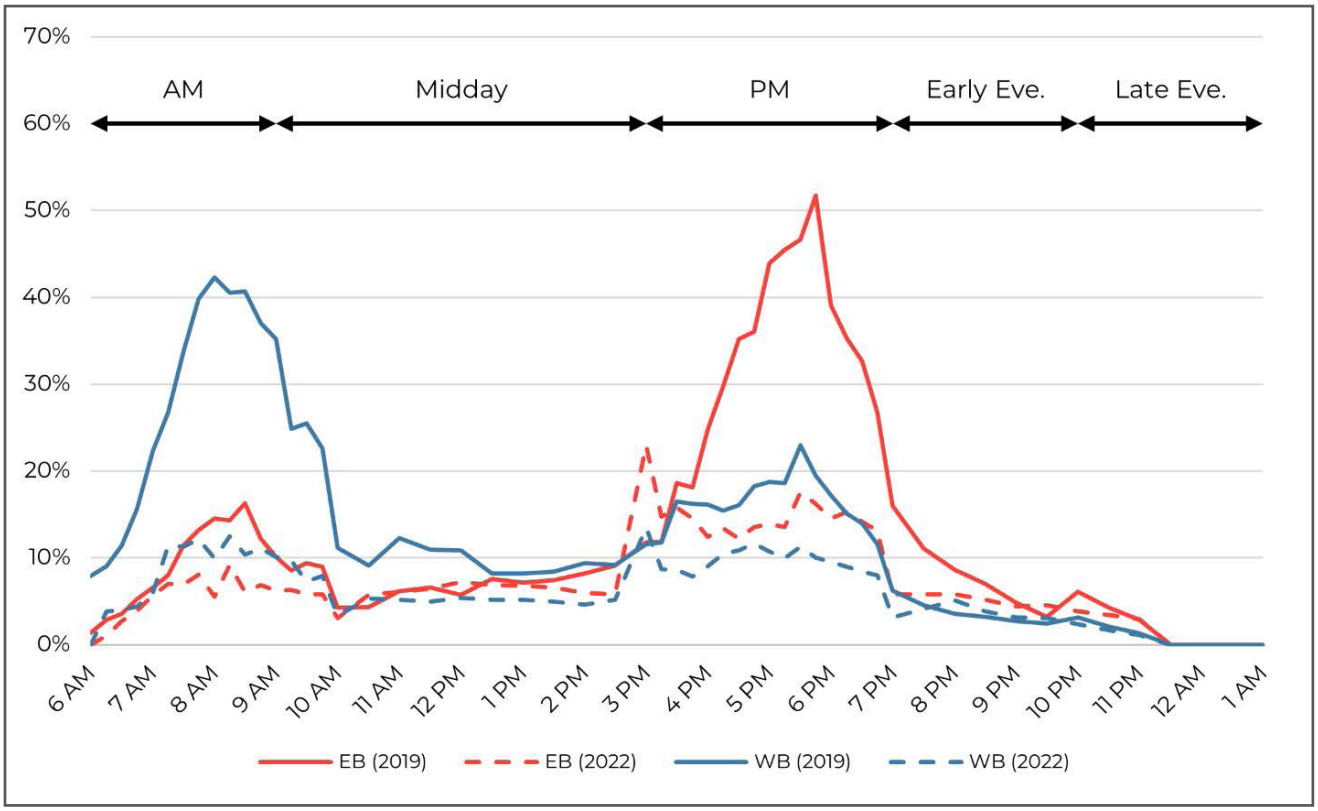

Figure 3-12: Sheppard-Yonge Station (Line 4) 2019 vs. 2022 Daily Utilization

Bus Route Utilization

Bus route utilization in the area has been established using the ridership data provided by TTC, YRT and Metrolinx. The utilization percentages were calculated based on the number of passengers on board and the capacity for the buses. TTC and YRT bus capacity were determined based on the associated crowding standards, and the GO bus capacity were determined based on the number of seats specified in the provided data.

Toronto Transit Commission

Toronto Transit Commission bus ridership data was obtained for all routes within the study area for both 2019 and 2023. The data was filtered to only consider stops within the study area. Using TTC Service Summaries provided along with the data which covered the periods each set of data was taken within, utilization for each peak period was calculated by comparing the overall number of passengers on each bus at each stop to the theoretical capacity within a specific time period. The A.M. peak period spanned from 6:00 A.M. to 9:00 A.M., and the P.M. peak period spanned from 3:00 P.M. to 7:00 P.M. The peak period capacities are summarized in **Table 3-10**, and the results of the utilization analysis are shown in **Table 3-11**.

The results show that TTC buses within the study area are operating within the capacity. In comparison with the subway utilization results, there is not as significant of a difference between the 2019 and 2023 volumes. In some cases, the 2023 utilization is actually higher. This is likely due to decreased bus service as opposed to increased ridership in 2023.

Table 3-10: TTC Bus Route Peak Period Capacities

Route	Bus Type (Capacity)	Service Interval (min)				Capacity			
		A.M. Peak Period		P.M. Peak Period		A.M. Peak Period		P.M. Peak Period	
		2019	2023	2019	2023	2019	2023	2019	2023
35	Bus (51)	5	6	7	7	1836	1669	1883	1883
139	Bus (51)	4	6	5	6	2538	1620	2532	2040
42	Bus (51)	7	9	8	9	1311	1020	1632	1360
53	Bus (51)	6	7	5	7	1669	1412	2295	1883
60	Bus (51)	4	8	4	9	2623	1224	2880	1360
84	Bus (51)	5	5	8	8	1836	1836	1632	1632
85	Bus (51)	15	16	17	24	612	574	720	510
97	Bus (51)	30	30	30	30	306	306	408	408
98	Bus (51)	15	20	15	20	612	459	816	612
125	Bus (51)	7	8	10	10	1412	1224	1224	1224
939	Bus (51)	3	4	4	6	3672	2160	3060	1958
953	Abus (77)	7	11	8	12	2053	1260	2464	1540
960	Bus (51)	10	7	15	8	918	1412	816	1597
984	Bus (51)	10	10	9	10	966	918	1360	1288

1 Bus capacity based on TTC Crowding Standards.

2 Service intervals were obtained from TTC Service Summaries for September 1st, 2019 to October 12th, 2019 and September 3rd, 2023 to October 7th, 2023 for the 2019 and 2023 years, respectively.

Table 3-11: TTC Bus Route Utilization Within the Mobility Study Area

Route		A.M. Peak Period						P.M. Peak Period					
		Total Capacity		Average		Maximum		Total Capacity		Average		Maximum	
		2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
36	E	1836	1669	50%	38%	68%	52%	1883	1883	46%	41%	67%	60%
	W			35%	30%	38%	32%			80%	53%	84%	55%
39	E	2538	1620	21%	27%	23%	30%	2532	2040	48%	61%	49%	61%
	W			55%	51%	77%	72%			39%	39%	53%	58%
42	E	1311	1020	30%	39%	34%	43%	1632	1360	70%	57%	71%	58%
	W			32%	41%	48%	63%			29%	31%	45%	49%
53	E	1669	1412	27%	34%	29%	37%	2295	1883	58%	64%	58%	65%
	W			45%	31%	68%	58%			34%	28%	51%	50%
60	E	2623	1224	39%	46%	59%	80%	2880	1360	36%	35%	55%	61%
	W			31%	38%	33%	42%			61%	64%	61%	66%
84	E	1836	1836	38%	13%	76%	27%	1632	1632	30%	17%	60%	33%
	W			39%	30%	39%	31%			77%	51%	78%	52%
85	E	612	574	16%	19%	17%	20%	720	510	39%	32%	42%	35%
	W			33%	21%	43%	28%			14%	20%	17%	26%
97	N	306	306	15%	14%	26%	18%	408	408	23%	15%	28%	20%
	S			15%	22%	28%	25%			21%	23%	27%	27%
98	E	612	459	10%	19%	48%	40%	816	612	16%	25%	22%	43%
	W			11%	16%	19%	29%			13%	19%	45%	41%
125	E	1412	1224	28%	38%	36%	48%	1224	1224	15%	22%	20%	29%
	W			7%	11%	8%	14%			66%	54%	68%	56%
939	E	3672	2160	36%	48%	36%	48%	3060	1958	76%	89%	76%	89%
	W			18%	33%	18%	33%			29%	42%	29%	42%
953	E	2053	1260	13%	17%	13%	17%	2464	1540	40%	39%	40%	39%
	W			N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A
960	E	918	1412	-	N/A	-	N/A	816	1597	-	N/A	-	N/A
	W			-	36%	-	36%			-	41%	-	41%
984	E	966	918	0%	0%	0%	0%	1360	1288	0%	0%	0%	0%
	W			30%	19%	30%	19%			70%	53%	70%	53%

1 No A.M. / P.M. data 2019 data available for Route 960

2 Route 960 EB and Route 953 WB Buses only unload at Finch Station, and Route 984 EB Buses only unload at Sheppard-Yonge Station within study area. Therefore, accumulation is 0 for all stops within study area for these routes.

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York Region Transit (YRT)

YRT bus ridership data was obtained for all routes within the study area for both 2019 and 2023. The data was filtered to only consider stops within the study area. The load of each bus was compared with the capacity (54 people for local service routes and 69 people for VIVA routes) to determine the utilization. The average and maximum utilizations during both the A.M. (6:00 A.M. to 9:00 A.M.) and P.M. (3:00 P.M. to 7:00 P.M.) periods are summarized in **Table 3-12**.

On average, all bus routes are operating within capacity. There were 3 instances (out of 2063 or 0.14%) of buses being overcapacity after leaving stops within the study area, and one instance of a bus being at capacity. All of these instances occurred during the P.M. peak hour. Route 601 in the northbound direction was overcapacity once in 2019 and once in 2023. Route 303 northbound in 2019 accounted for the remaining instances (with it being overcapacity once in 2019 and at capacity once in 2019). The number of additional people (above the available capacity) ranged from 1 to 14 people.

Table 3-12: YRT Bus Utilization within the Mobility Study Area

Route		A.M. Peak Period						P.M. Peak Period					
		Total Capacity		Average		Maximum		Total Capacity		Average		Maximum	
		2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
300		432	486	58%	54%	89%	83%	324	378	0%	0%	0%	0%
301		162	162	0%	0%	0%	0%	162	162	19%	24%	52%	41%
302		162	162	0%	0%	0%	0%	216	216	39%	33%	50%	39%
303		594	378	0%	0%	0%	0%	486	486	76%	30%	102%	61%
304		324	270	0%	0%	0%	0%	216	324	51%	27%	59%	33%
305		-	216	-	0%	-	0%	-	378	-	22%	-	35%
602		759	-	0%	-	0%	-	828	-	53%	-	90%	-
98E		-	-	-	-	-	-	54	54	39%	19%	39%	19%
2	EB	1296	1296	24%	23%	44%	41%	1296	1620	32%	26%	52%	43%
	WB	1080	1080	14%	7%	41%	28%	864	1080	9%	10%	41%	52%
23	NB	810	486	9%	9%	13%	11%	972	648	19%	14%	28%	30%
	SB	540	270	10%	6%	59%	20%	756	486	1%	5%	7%	19%
5	EB	1134	864	12%	9%	43%	33%	1512	1296	3%	4%	15%	11%
	WB	1782	1296	6%	8%	20%	26%	2268	1620	23%	21%	65%	39%
601	NB	1656	1794	17%	36%	57%	72%	2208	2208	38%	49%	90%	120%
	SB	1863	1449	0%	0%	0%	0%	2208	2208	0%	0%	0%	0%
604	NB	897	-	21%	-	33%	-	1242	-	26%	-	54%	-
	SB	966	-	0%	-	0%	-	1242	-	0%	-	0%	-
760	NB	-	162	-	24%	-	24%	810	810	13%	4%	30%	9%
	SB	-	-	-	-	-	-	648	540	14%	11%	57%	31%
77	EB	1404	1404	6%	4%	30%	20%	1728	1620	6%	9%	28%	41%
	WB	1674	2106	7%	9%	19%	26%	2592	2268	14%	21%	35%	48%

Route		A.M. Peak Period						P.M. Peak Period					
		Total Capacity		Average		Maximum		Total Capacity		Average		Maximum	
		2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
77A	EB	432	-	3%	-	15%	-	540	-	5%	-	20%	-
	WB	810	-	18%	-	41%	-	810	-	12%	-	24%	-
88	NB	1944	1944	11%	18%	26%	61%	2592	2592	22%	21%	56%	39%
	SB	1512	1296	12%	9%	56%	44%	1620	1836	6%	8%	30%	31%
91	NB	1134	1134	12%	20%	31%	39%	1620	1620	41%	22%	70%	50%
	SB	756	756	11%	7%	33%	33%	1188	1080	8%	8%	26%	26%
91A	NB	1134	1134	11%	26%	24%	46%	1620	1620	36%	30%	65%	50%
	SB	864	756	14%	12%	72%	31%	972	1080	6%	10%	37%	33%
99	NB	810	810	10%	6%	20%	15%	1296	1296	19%	11%	30%	19%
	SB	648	648	10%	4%	37%	22%	864	864	9%	11%	28%	39%

1 Service for Route 305 began in 2020.

2 Route 602 operates in southbound direction during A.M. peak period and northbound direction during P.M. peak period.

3 Route 760 is only operated during summer months.

4 Only one service operated for Route 98E, in the northbound direction, at 4:55 P.M.

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GO Transit

The GO Transit bus route ridership data included load and capacity information (which was used to determine utilization) for 21 stops within the study area. The results of this analysis are presented in **Table 3-13**. The peak periods were chosen to remain consistent across all analyses (TTC, YRT, and GO Transit).

Instances of overcapacity stops occurred only 0.08% (23 instances out of 28,0359) of the time. The number of additional passengers on board (above the available number of seats) ranged from 1 to 18, with the average being approximately 6 additional passengers. It should be noted that capacity on GO buses was assumed to be the number of seats on the bus. In general, the results show that GO buses within the study area are operating well within capacity. It should be noted that the data for GO Transit utilization was collected over the entirety of October 2019. As such the average of the daily capacities (over the course of the entire month) during each period for each route is shown.

Table 3-13: GO Transit Bus Route Utilization within the Mobility Study Area

Route	Direction	A.M. Peak Period			P.M. Peak Period		
		Average Capacity	Average	Maximum	Average Capacity	Average	Maximum
19	EB	5591	15%	72%	2571	17%	91%
	WB	3707	20%	80%	5393	25%	129%
27	EB	3698	14%	75%	2601	12%	53%
	WB	3904	17%	71%	5395	18%	105%
32	EB	6203	23%	98%	-	-	-
	WB	-	-	-	5105	31%	133%
67	NB	-	-	-	2408	14%	89%
	SB	1958	10%	53%	-	-	-
96	EB	3490	8%	27%	7332	15%	89%
	WB	5878	12%	111%	2675	8%	42%

3.1.7 Freight and Goods Network

Freight and Goods Movement is the network of transport infrastructure, businesses and supply chains that are responsible for the distribution and delivery of goods and services throughout the City. These interconnected supply chains allow goods to be delivered from manufacturers to storefronts, from shippers to producers, and from online vendors to consumers. This section provides an overview of the existing goods movement conditions within North York Centre.

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Area Goods Movement Context

Goods Movement Routes

Streets in the City of Toronto are classified into five categories: local, collector, minor arterial, major arterial, and expressway. The classification of roadways is one of the key factors to determine goods movement routes.

Typically, there are no limitations for trucks to travel on arterial street or expressways. Streets that are classified as local and collector often have restrictions in place and limit truck traffic if travel off of the arterial network is required. For example, trucks are typically permitted to travel on local and collector street when driving directly to a destination such as a last-kilometre delivery.

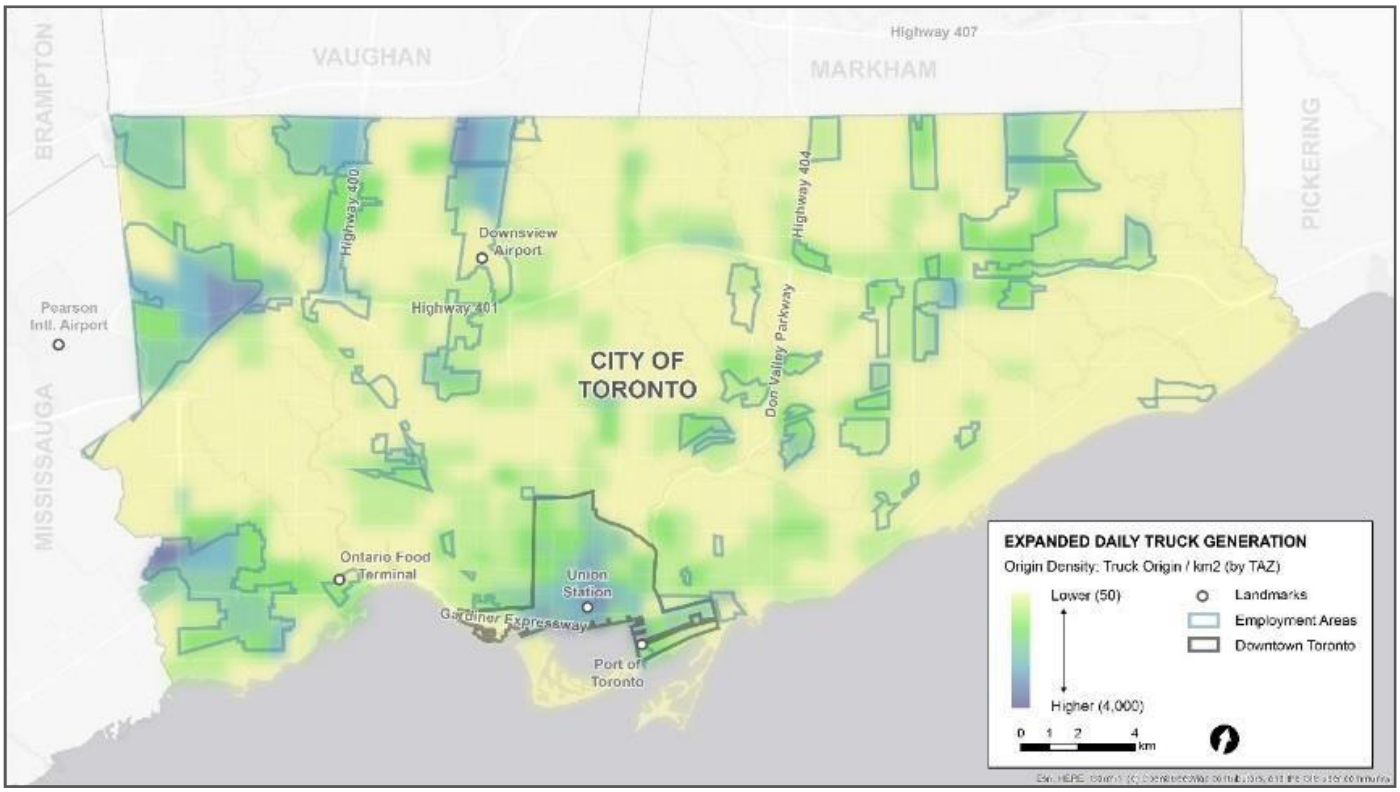
Within the study area, there are a number of major and minor arterial street, as listed below.

- Major arterial: Yonge Street, Finch Avenue, and Sheppard Avenue.
- Minor arterial: Drewry Avenue/Cummer Avenue, Beecroft Road, Doris Avenue, and Willowdale Avenue.

Impact of Land Uses

North York Centre has a high concentration of mixed-use areas, and the land uses within mainly consist of high-density residential, commercial (light retail and office), and parks. The main generators of commercial vehicle trips within the study are the major grocery stores such as Metro (20 Church Avenue), Loblaws (5095 Yonge Street), Food Basics (22 Poyntz Avenue), Longo's (4841 Yonge Street), and Whole Foods (4771 Yonge Street) which may require large trucks for deliveries. There are limited industrial or logistics land uses within North York Centre that would generate large truck trips. Within the MSA, there are more commercial vehicle trip generators, including the industrial/retail uses along Steeles Avenue, retail uses along Bathurst, and CenterPoint Mall. Overall, neither the MSA nor PSA has a high concentration of truck generators.

Figure 3-13 shows a heat map of the daily truck generation per unit area within the City's boundaries. It includes an excerpt of the *Freight and Goods Movement Strategy* (FGMS) study prepared by WSP for the City, dated December 2020. The FGMS study utilized processed GPS truck travel data for the month of October 2016 and truck turning movement counts collected within the City during Fall 2019 to estimate truck trips and volumes. The heat map suggests that freight trip generation within the study area leans towards the lower end as compared to the rest of the City. This is within expectations as there are limited truck trip generators in the area.



(Source: Freight and Goods Movement Strategy Figure 3.20)
Red box on map roughly identifies the boundary expansion study area.

Figure 3-13: Truck Trip Generation per km²

3.2 Network Continuity

This section uses various techniques to quantify and analyze the street network within the BESA. First, a continuity assessment is conducted to identify corridors most suitable for supporting higher levels of mobility. Second, a connectivity index and intersection density assessment are conducted to assess the compactness of the street network and the level of access it provides.

3.2.1 Network Constraints

The Centre's compact grid street network experiences several constraints and interruptions. Some examples include:

- Interruptions in north-south streets at the York Memorial Cemetery, which also do not provide motor vehicle access to Beecroft Road (**Figure 3-14**)
- Disconnected east-west streets where they would otherwise intersect the North York Centre service roads Doris Avenue and Beecroft Road (**Figure 3-15**)
- Interruptions in north-south streets at the Finch Hydro Corridor, with limited north-south connectivity to the streets on the opposite side.
- There are a number of irregular or jogged intersections due to the irregular directionality of Yonge Street, which is offset from adjacent concession roads in the area by approximately 10 degrees.
- Jogged intersections and discontinuous streets also exist in several other contexts throughout the area.

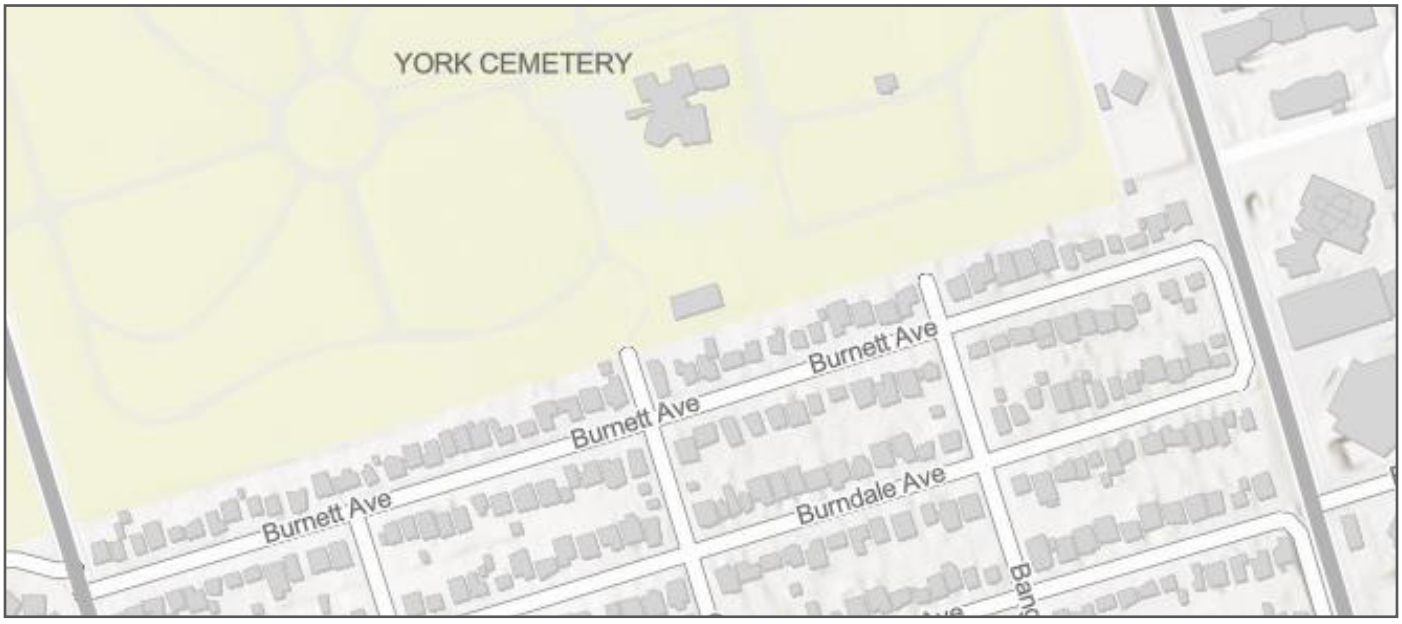


Figure 3-14: An Example of Discontinuous North-South Streets that Terminate at York Cemetery and Do Not Connect to Beecroft Road

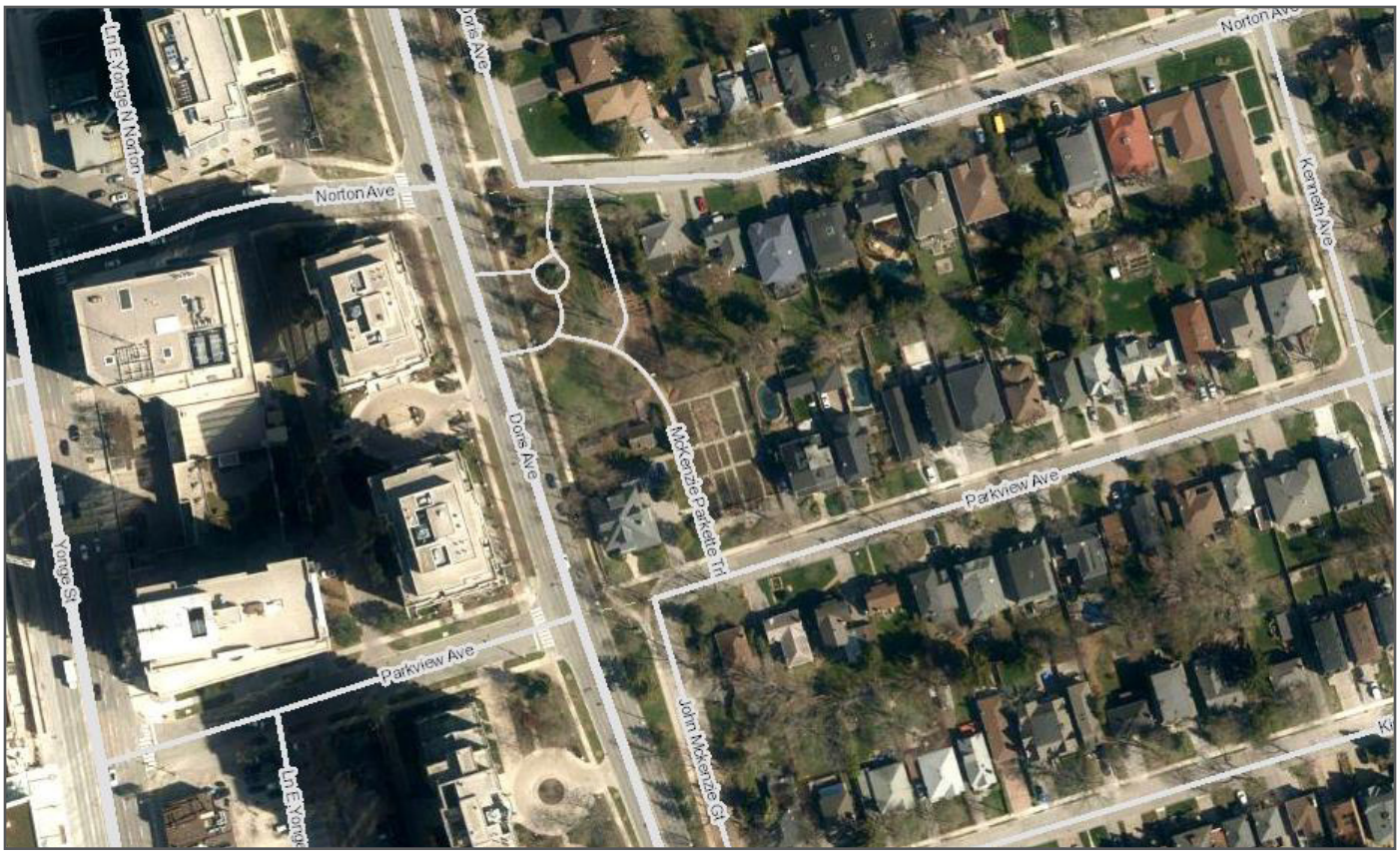


Figure 3-15: An Example of Discontinuous East-West Streets Parkview Avenue and Norton Avenue that Terminate at Doris Avenue

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3.2.2 Continuity Assessment

The continuity of each street travelling wholly or partially within the BESA was assessed and is quantified and visualized in **Figure 3-16**. Discontinuous segments of the same street were considered separately, and continuous streets having different names over the course of their length were treated as a single street for the analysis.

The streets with thicker and opaque lines are those that travel the furthest and are thus regarded as having the highest level of connectivity and the greatest potential for mobility, including transit and cycling network continuity. The streets with the greatest mobility potential based on street continuity include Yonge Street, Sheppard Avenue, Finch Avenue, Empress and Park Home Avenues, Willowdale Avenue, Senlac Road, Cummer Avenue and Drewry Avenue. Each of these streets is presently classified as a collector or arterial road, and all of them except for Empress and Park Home Avenues feature TTC service.

Other streets with moderate mobility potential include the North York Centre service roads (Doris Avenue and Beecroft Road) and collector roads such as Church and Churchill Avenues, and Hilda Avenue and Talbot Road. The mobility function of these streets—all of which are classified as arterial or collector roads—aligns with the potential they have from a mobility and connectivity perspective.

Figure 3-17 outlines locations where, despite the interruption of the road (such as by a cul-de-sac or jogged intersection), there is continuity in the City-owned Right-of-Way. This means that the City could establish a continuous street without needing to acquire additional land to expand the street's mobility

potential. Continuity in City-owned Right-of-Way, despite interruptions in the actual road network, was quantified by replicating the methodology described above for street continuity, but treating separate street segments as forming part of the same street if they were linked by contiguous pieces of Cityowned Right-of-Way. Distinct streets separated by a jogged intersection were also considered to comprise one street to demonstrate the improvements in connectivity which may be brought through alignment of these offset streets. In practice, this meant that streets interrupted at one of the service roads would be treated as one continuous street.

The BESA has a very compact and connected network of rights-of-way, indicating potential to repurpose or reconfigure the road network in such a way that takes greater advantage of the grid pattern that once existed in the area. Corridors which show significantly greater connectivity and potential for mobility in City-owned Right-of-Way than in street continuity include:

- Ellerslie and Norton Avenues (which will have a signalized intersection with Yonge Street introduced as part of the implementation of the REimagining Yonge EA)
- Byng Avenue and Kempford Boulevard (which also has a jogged intersection at Yonge Street,previously identified in the current NYCSP and original EA)
- North York Boulevard and Elmwood Avenues, which have potential to comprise an active transportation artery through the York Memorial Cemetery
- Spring Garden Avenue
- Elmhurst and Greenfield Avenue

Present and future signalized intersections and pedestrian crossovers may play a role in informing the hierarchy of streets ultimately chosen for upgrades to enhance mobility. This analysis, along with an evaluation of the key destinations along each street, as well as their potential for connectivity beyond the BESA and Mobility Study Area, will ultimately serve as the basis upon which the street network in the Centre is reconfigured and repurposed to support further intensification and growth in the area over the course of the coming decades.

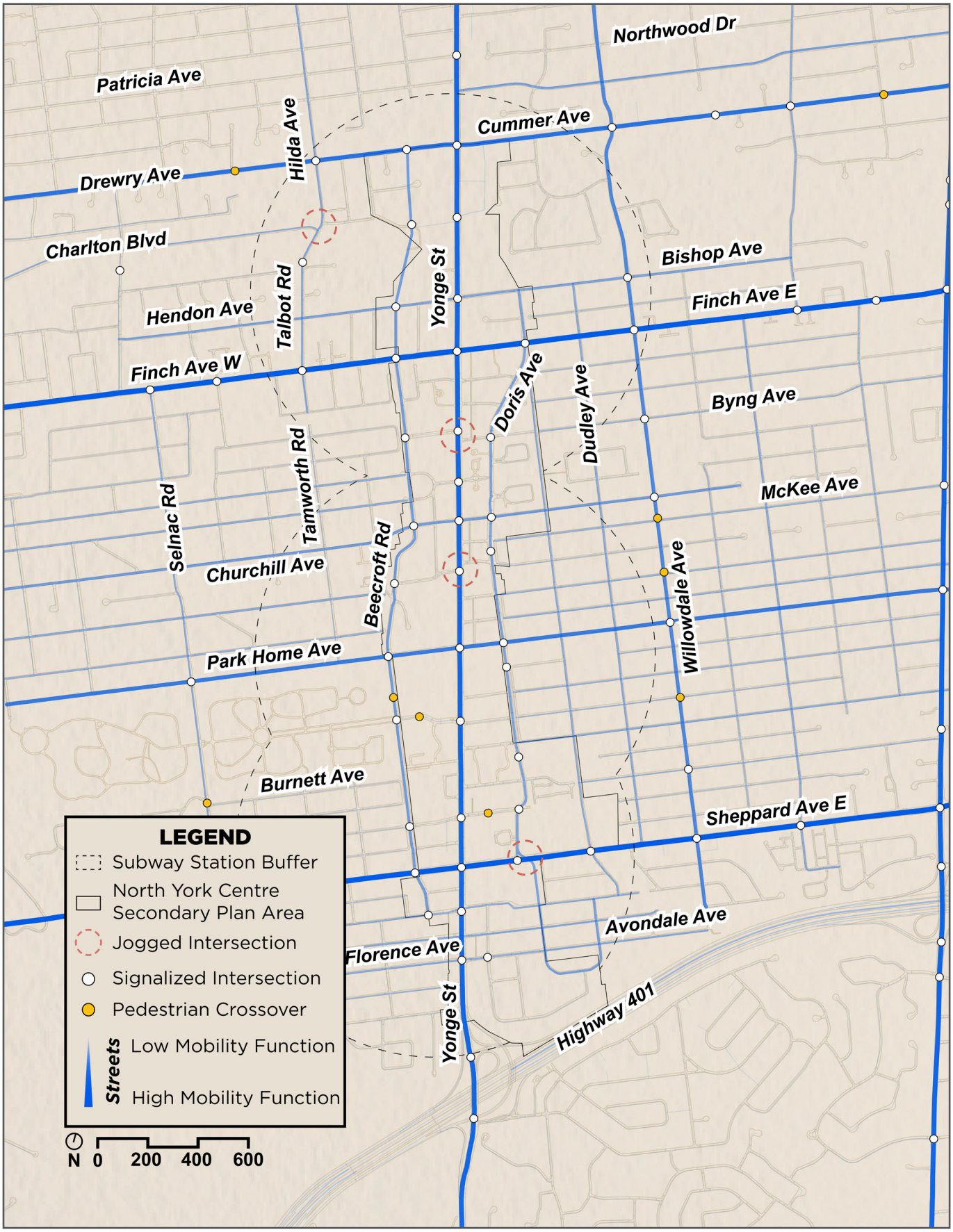

Figure 3-16: Network Continuity Based on Continuous Streets

Figure 3-17: Network Continuity Based on Continuous Right-of-Way

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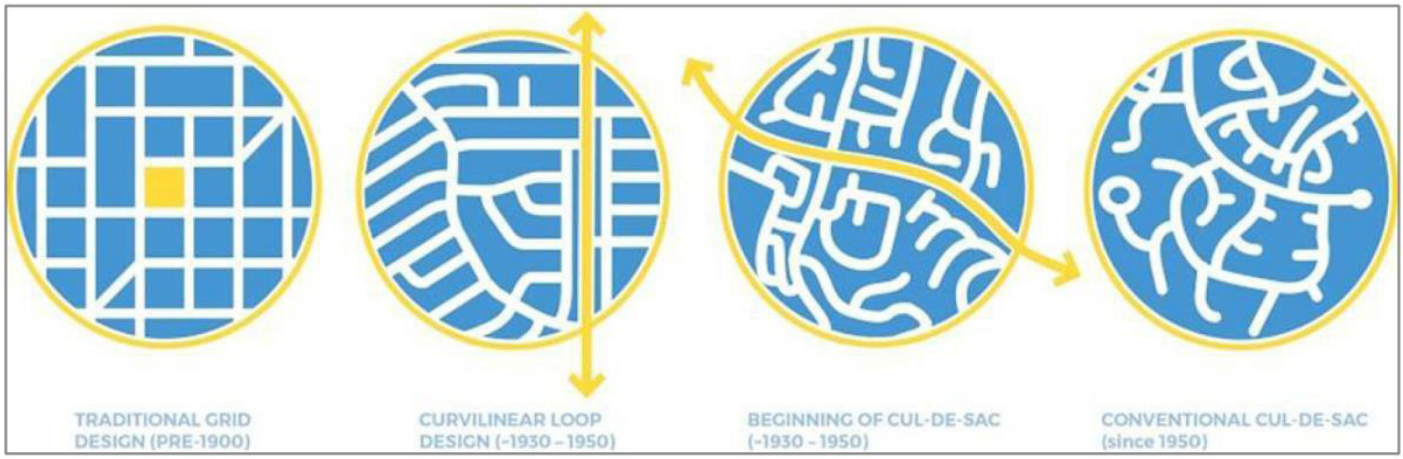
3.2.3 Street Connectivity Index

A transportation network is well-connected when it is designed to provide a variety of route options with direct access to destinations for people who use different travel modes, including walking, cycling, public transit, and driving. This is done by providing short links, numerous intersections, and a limited number of cul-de-sacs, which all help to shorten travel distances and establish direct travel paths, particularly for active transportation and transit users, for whom directness is important due to the slower speeds at which they travel.

Figure 3-18 illustrates four types of street network design ranging from the most to least connected neighbourhoods.



(Source: Neighbourhood Street Design Guidelines: A Recommended Practice of the Institute of Transportation Engineers, 2010)

Figure 3-18: Types of Street Network Design and Connectivity

Network connectivity can be quantified using the Connectivity Index (CI) based on the "Links and Nodes" method developed by the City of Calgary. This can either be in the context of street CI for vehicles or active CI for active transportation users (i.e. pedestrians and people cycling).

Using the "Links and Nodes" methodology, the CI is the ratio between links and nodes within and crossing the analysis area boundary. The methodology is slightly different for the street CI versus active CI due to the way that links and nodes are defines, as follows:

- **Street CI:** The number of streets (links) is the sum of all links inside the boundary and crossing the boundary to provide access inside, which excludes alleys and private driveways. The number of intersections (nodes) is the sum of all intersections inside the boundary and any just outside of the boundary that have a link providing access inside.
- **Active CI:** This is calculated in a similar way as the street CI for vehicles, with the key distinction being what is considered as a link for active transportation users (individuals walking or cycling). In the context of active transportation, a link can include streets with a sidewalk on one side as well as multi-use pathways, walkways, and other pathways. A street is counted as one link at most, even if it has multiple active transportation facilities within its Right-of-Way, such as a sidewalk and a bike lane. Also, only intersections where two links with active transportation facilities meet is counted as a node.

Desirable ranges for street CI and active CI are outlined below:

- **Street CI:** The lowest possible street CI is 1.00, indicating no connectivity, and the maximum possible street CI is 2.00 for complete connectivity. According to the Roadway Connectivity: Creating More Connected Roadway and Pathway Networks (2017) paper by the Victoria Transportation Policy Institute, a desirable street CI falls within the range of 1.4 to 1.7.
- **Active CI:** Based on the Roadway Connectivity: Creating More Connected Roadway and Pathway Networks (2017) paper by the Victoria Transportation Policy Institute, a desirable active CI falls within the range of 1.5 to 1.8.

Figure 3-20 presents the Street Connectivity Index nodes within the BESA used in the analysis. The street CI was calculated based on 418 links and 271 nodes within the street CI analysis area. This yields a street CI of 1.54, which falls within the desirable range and indicates a fused-grid network. However, it is important to note that—due to the specific nature of the street network in North York Centre, in which there are several jogged intersections, discontinuous streets, and parallel streets running immediately adjacent to one another—the number of both links and nodes is likely to be somewhat inflated (as illustrated in **Figure 3-19** below), in the sense that what may effectively function for pedestrians as one node or one link is counted more than once due to the unique street configuration in the area.

Figure 3-19 Example Demonstrating Unique Street Configuration within North York Centre (Doris Avenue between north of Hillcrest Avenue and Hollywood Avenue)

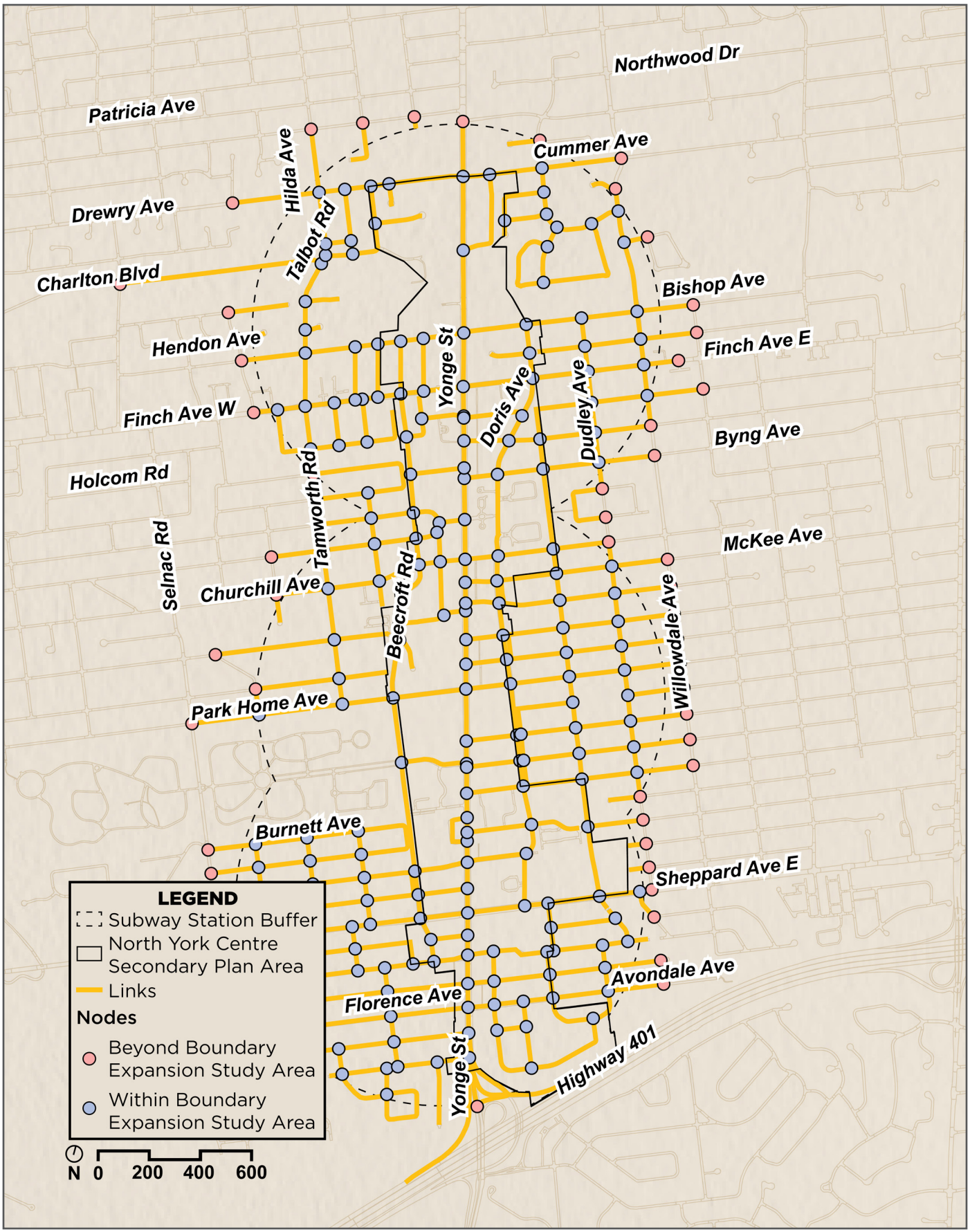


Figure 3-20 Links and Nodes Used to Calculate the Street Connectivity Index for the Boundary Expansion Study Areas

Figure 3-21 presents the Street Connectivity Index nodes within the BESA used in the analysis. Active CI was calculated based on 394 links and 256 nodes within the active CI analysis area. This yields an Active CI of 1.54, which falls on the lower end of the desirable range. This reflects the importance of enhancing connectivity for active transportation with more facilities that are designed to be safe and comfortable for all ages and abilities and are well connected throughout the network.

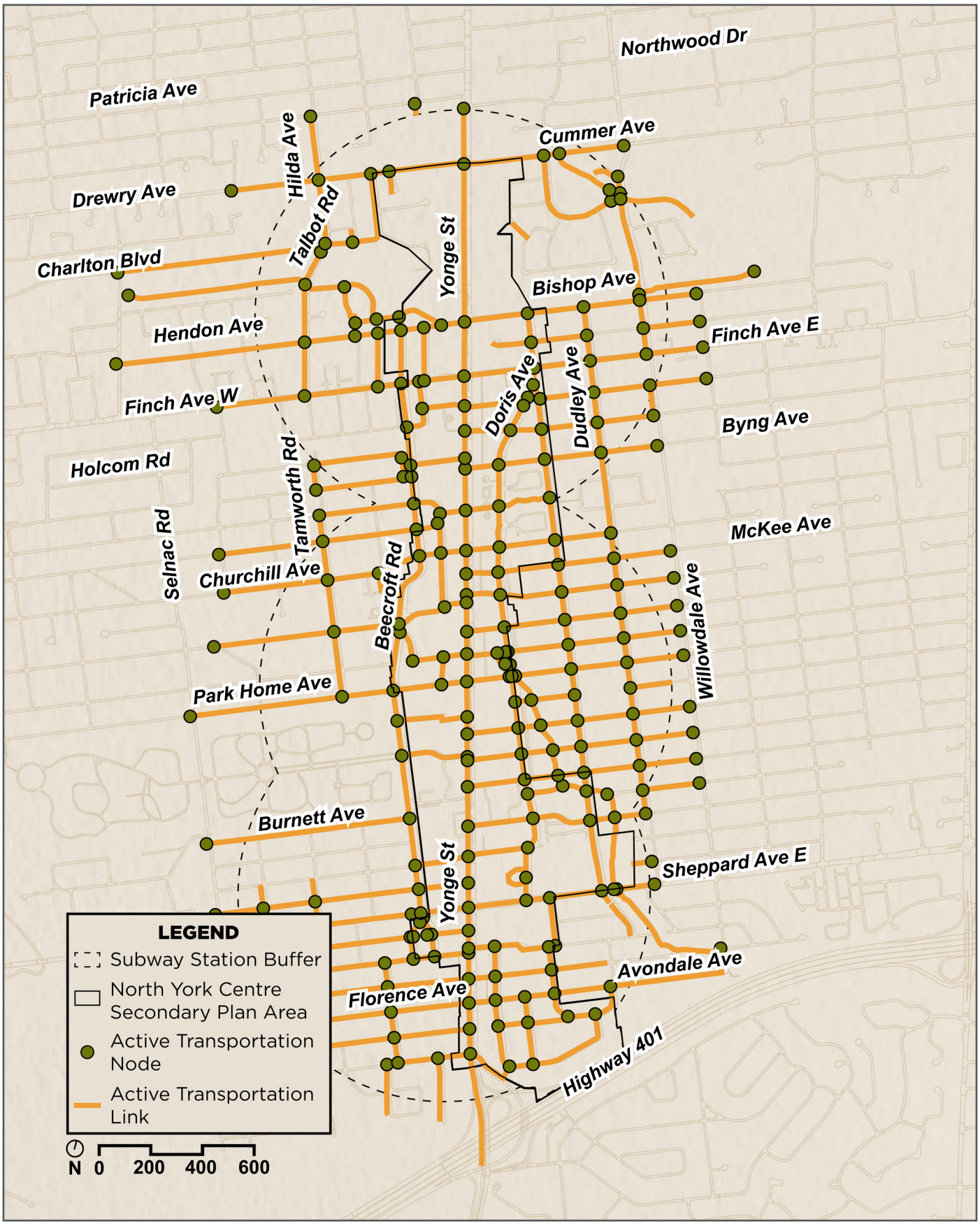


Figure 3-21 Active Transportation Nodes and Links Used to Calculate the Active Connectivity Index for the Boundary Expansion Study Areas

3.2.4 Intersection Density

A secondary methodology for quantifying street connectivity is intersection density, which is the number of intersections (controlled and uncontrolled) per hectare. According to the Ministry of Transportation's Transit-Supportive Guidelines (2012), an intersection density of 0.6 intersections per hectare (iph) or greater is desirable because this creates mixed-used nodes and corridors that provide multiple options to access destinations with minimal travel times for pedestrians, people cycling, and transit users.

Figure 3-22 presents the intersection density for the BESA. There is a total of 212 intersections, covering approximately 522 hectares. Based on this, the calculated intersection density is 0.41 iph, which is lower than the desired intersection density and reflects that the BESA includes several large undeveloped areas without street network connectivity (utility corridor, cemetery, surface parking lots).

Figure 3-22: Intersections Used to Calculate the Intersection Density for the Boundary Expansion Study Areas

3.3 Street Typologies

Every street in every context must strike a balance between mobility functions (the movement of people and goods) with public realm functions (amenity and quality of public spaces). While some streets orient more towards mobility (such as a freeway), others orient more towards placemaking (such as a downtown shopping street). Still, others must provide a healthy mix of both functions, supporting the movement of multiple modes while providing a quality public realm.

The City of Toronto Complete Streets Guidelines provide an approach to balance the interests and needs of all street users to facilitate a transition to a more sustainable modal split and promote accessibility for street users of all ages and abilities (**Figure 3-23**). The guidelines build on many of the City's existing policies, guidelines and recent successful street design and construction projects. Among the matters dealt with in the Complete Streets Guidelines are street design for pedestrians, cycling, transit, green infrastructure, roadways and intersections, as well as the steps in the street design process.

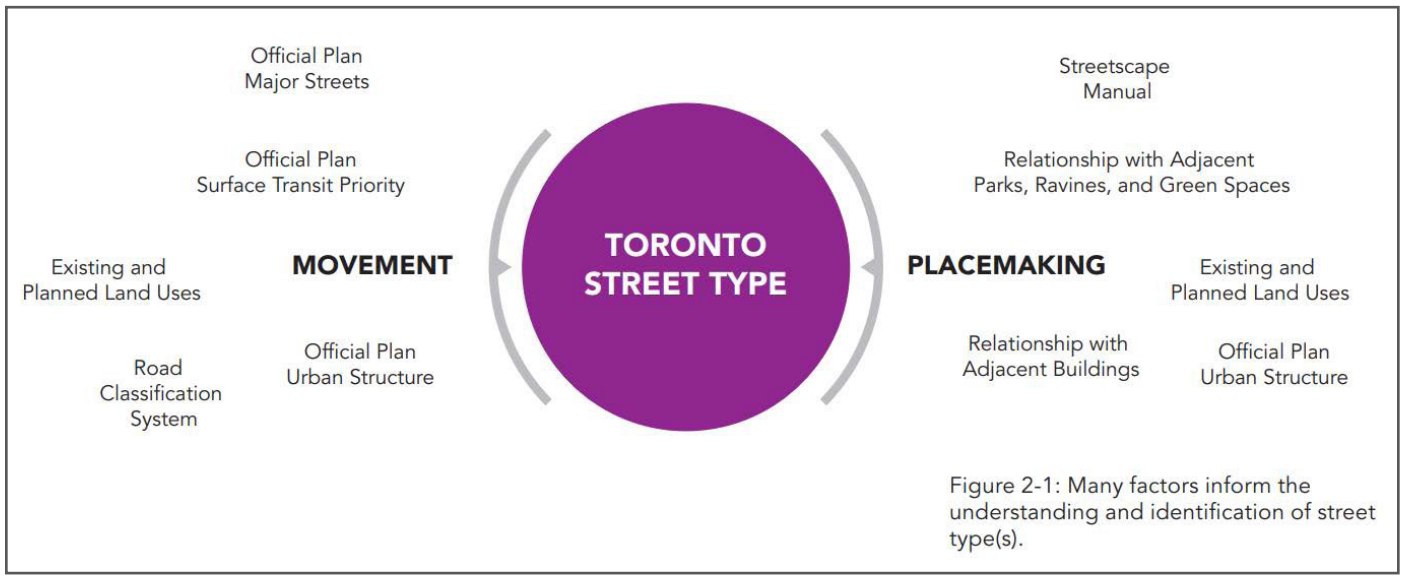


Figure 3-23: Contributing Factors to the City's Complete Street Types

A comparable framework that has been successfully implemented in the Australian context is **Movement and Place**, established by New South Wales for planning and managing streets across the province. The framework aims to create successful streets by balancing the movement of people and goods with the amenity and quality of places. The framework includes four street environments (**Figure 3-24**): **Main Roads, Main Streets, Local Streets**, and **Civic Spaces** to classify the main contexts a roadway designer encounters. Within each environment are several road and street types.

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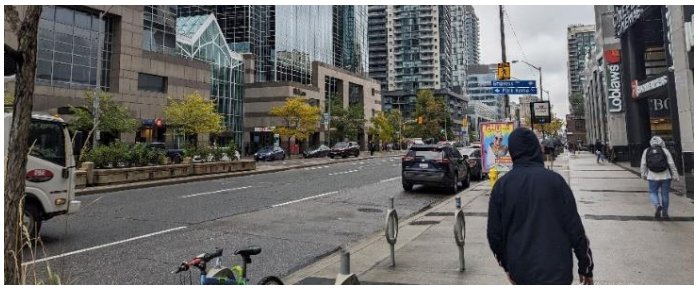
Figure 3-24: Street Environments in the New South Wales Movement and Place Framework (2023)

Table 3-14 introduces an example of each of the four environments in the context of North York Centre. Applying the Movement and Place framework to North York Centre can allow each street's priorities to be better articulated, and support policy and design changes that reflect those priorities in the street's design.

Table 3-14: Examples of Street Environment Types in North York Centre

Road Type	Function
Main Roads (e.g., Beecroft Road) 	Designed for moderate speed movement of vehicles, where buildings generally do not interact with the street and are set back with landscaped buffers.
Main Streets (e.g., Yonge Street) 	The priority of efficient movement of goods and people is balanced with a peopleoriented street environment with mixed land uses.
Local Streets (e.g., Holmes Avenue) 	Designed to support low to moderate speeds and volumes of vehicles, are easy to cross mid-block, and are highly amenable for people to stay and enjoy local activities including active street frontages.
Civic Spaces (e.g., Northtown Way) 	Designed to prioritize walking, cycling, and access to public transit; supports a wide range of informal activities, and hosts many destinations.

Given the above-listed classifications, an opportunity exists to combine objectives for mobility (movement, access) with placemaking (public realm). This is commonly referred to as Complete Streets “typologies”. The six Complete Streets typologies proposed below build upon the Toronto Complete Streets Guidelines while incorporating latest best practices and the local context of North York Centre.

Main Street

These are the most important streets for all modes. From a movement perspective, facilitate the rapid movement of people via transit (surface or underground) and support regional vehicular travel as major arterial streets with 2-3 travel lanes per direction, while supporting high levels of pedestrian activity and a desire to accommodate dedicated cycling facilities in future. The abutting land are mixed-uses with generally continuous ground floor retail and generous pedestrian realms. While historical developments may have vehicular accesses (driveways) fronting these streets, newer developments prioritize access on side streets where possible instead.

North-South Service Road

These streets exist to help with north-south vehicular circulation and movement around and through the North York Centre as minor arterials with two travel lanes per direction. They provide access to some commercial entrances while also facilitating vehicle circulation between local, collector, and arterial streets. Placemaking on these streets is currently mostly in the form of softscaping, with some parks abutting them. Today, these streets typically form the boundary between mixed-use/urban core and neighbourhoods.

East-West Circulator

These streets prioritize vehicular circulation east-west across North York Centre as collector streetways with 2-4 total travel lanes, crossing major north-south streets at signalized intersections. Vehicular speeds are slower due to short blocks and curb lanes commonly serving as on-street parking. They facilitate access to private properties, while also supporting circulation and connections to major streets. These streets are focal point in the pedestrian network due to their signalized crossings of major streets. In some cases, ground floor retail extends along these streets for a short distance off Yonge Street. Beyond the urban core area, many of these streets become Residential Connectors.

Urban Local Street

These streets are functionally classified as “local” and typically run east-west within the urban core area, intersecting major north-south streets at unsignalized intersections. The 9 m to 11 m pavement width provides enough width for two-way vehicle travel and on-street parking on one or both sides of the street but no distinct centreline is provided. They accommodate circulation into and out of private accesses, and do not accommodate through traffic.

Residential Connector

This classification applies to streets outside of the urban core area that perform a collector function from a mobility perspective, providing some movement across neighbourhoods while still providing access to mainly single-family home driveways. These routes typically provide good east-west connectivity for 1–4-kilometre trips to, from, and through North York Centre.

Neighbourhood Local Street

This classification applies to streets in low-density neighbourhood areas that perform a local mobility function and are intended to mainly provide access to properties along the street. Abutting land uses are generally low-density residential. Many of these streets are intentionally discontinuous to discourage their use by through traffic and carry very low volumes of vehicle traffic.

3.3.1 Streetscape Manual

The City of Toronto Streetscape Manual is a reference tool developed to guide the design, construction and maintenance of sidewalk and boulevard improvements on Toronto's arterial street network and it follows a hierarchy of streetscape types and assigns a set of standard or specialized design treatments for paving, trees, medians, lighting and street furniture. Streetscape in this context refers to the boulevard space between the edge of the roadway to the building face. Streetscape treatments play a key role in moving people within the neighbourhood.

The Streetscape Manual defines the streetscape types for existing streets in the BESA, presented in the main report. Each of these streetscape types are described further in the following sections.

Figure 3-25 presents the boulevard widths that will be discussed under each streetscape type.

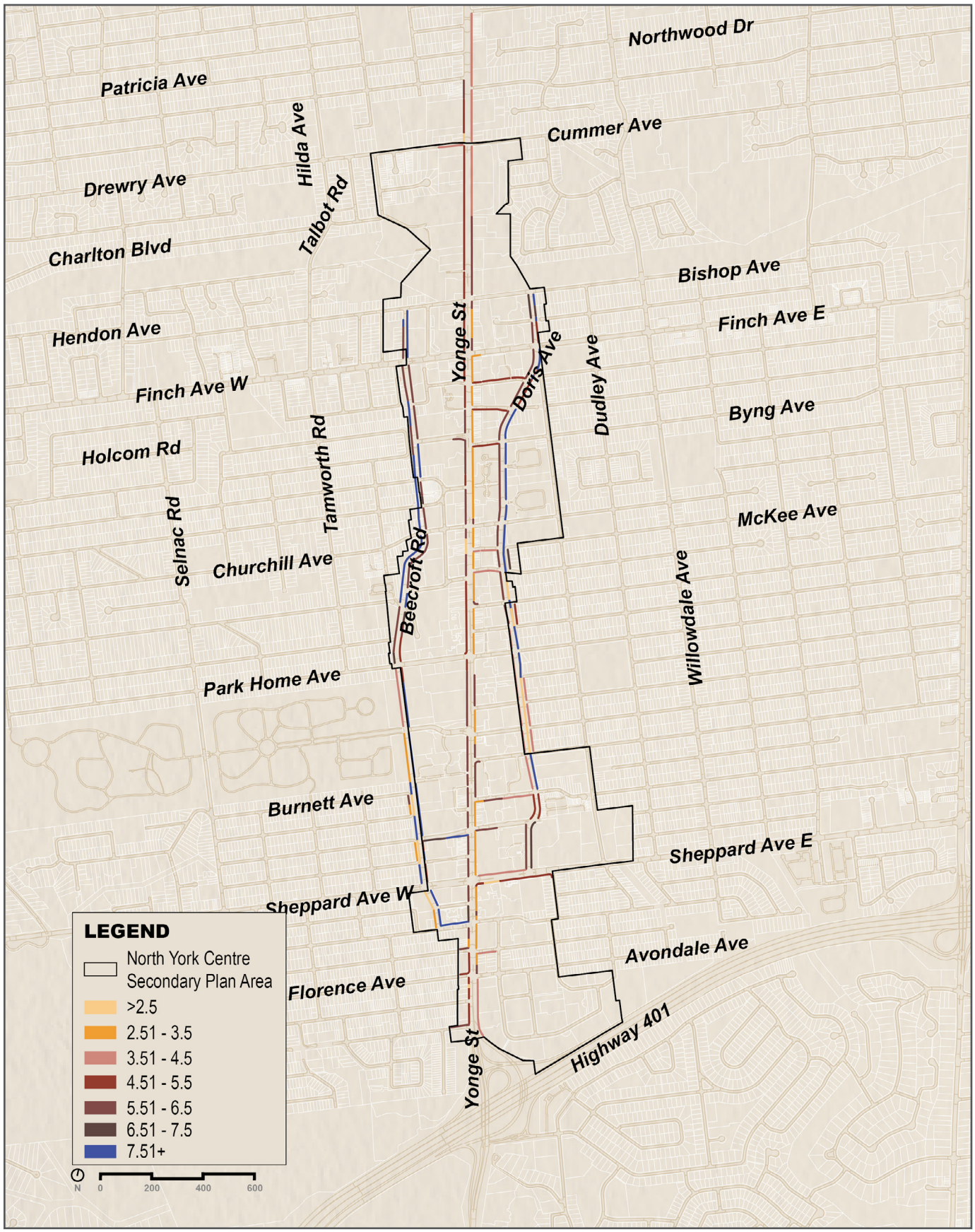


Figure 3-25: Boulevard Widths within the Primary Study Area

Special Streets Type – Yonge Street

According to the Streetscape Manual, Special Streets are distinguished by their high level of importance for the city resulting from historical, cultural, physical and/ or functional characteristics. These streets are often used as ceremonial routes and they are recognized provincially, nationally and even internationally as making significant contributions to the character of Toronto. Special Streets are typically lined with important public and institutional buildings. These streets support high volumes of pedestrian movement as well as vehicular traffic. They are well-connected via public transportation. The distinct identities of Special Streets should be complemented with customized design elements and the highest quality materials.

Yonge Street is identified as a Special Type of Main Street as it plays a significant cultural role in the city as a central spine and it plays a civic role with public buildings such as North York Centre, Federal office building and home to three TTC subway stations.

- Currently Yonge Street has moderately wide boulevards ranging from 2.5 m to 7 m. The wider portions with over 5 m wide boulevards currently have a wide pedestrian clearway zone with dedicated Furnishing and Planting Zone with benches, information pillars, and litter bins in some locations. These segments also have a well-articulated Frontage and Marketing zone that can accommodate patios.
- The narrow boulevards under 5 m wide have a dedicated Pedestrian Zone and they lack Furnishing and Planting Zone and a Frontage Zone. Patios and signages sometimes spill on to the sidewalk zone in locations with small businesses.
- REimagining Yonge, a planned streetscape improvement project imagines Yonge Street as a pedestrian friendly street with and dedicated active transportation infrastructure, continuous street canopy and a central landscaped median that helps enhance the Special Street characteristics of Yonge Street.

Emerging Main Streets Type - Sheppard Avenue and Parts of Finch Avenue

According to the Streetscape Manual, *Emerging Main Streets* are predominantly commercial in nature. They have suburban characteristics and are undergoing both commercial and residential intensification. Although the existing businesses may be less established than those on Existing Main Streets, they are still important contributors to the local community. Therefore, Emerging Main Streets can also often be the most important street in the neighbourhood. Emerging Main Streets are supported by public transportation, usually in the form of a network of bus routes. With significantly wider pavement widths than Existing Main Streets, vehicles have a strong presence on these streets with substantial parking areas frequently located adjacent to businesses along the street. Although the Emerging Main Street type does not tend to provide significant pedestrian amenities, the extra width presents opportunities for improved pedestrian environments such as grassy boulevards and street tree planting.

Portions of Sheppard Avenue and Finch Avenue are identified as Emerging Main Street types in the Streetscape Manual. Sheppard Avenue features a mix of commercial and office spaces within the Secondary Plan Area and hosts residences and other small retail establishments within the expansion area. The presence of the existing TTC Line 4 subway on Sheppard Avenue and a potential westward extension makes Sheppard Avenue a primary receptor for intensification a potential transit priority street with wide pedestrian boulevards and cycling routes.

Finch Avenue has similar land use characteristics to Sheppard Avenue. The presence of the subway terminal at Finch along with GO bus connectivity makes it a major transit interchange demanding wide boulevards with active transportation infrastructure, landscaping and street furniture designed for both movement and waiting, catering to the commuters in the area.

Despite the current wide Right-of-Way of 36.6 m on both these streets, the streetscape is currently substandard with narrow sidewalks and lacking bike infrastructure, planting and street furniture (**Figure 3-26**). The average boulevard on Sheppard Avenue and Finch Avenue is between 3 to 5 m.

Figure 3-26: Current Substandard Streetscape Along Finch Avenue

Intermediate Street Type – Willowdale Avenue, Senlac Road and Parts of Finch Avenue

According to the Streetscape Manual, Intermediate Streets have a stronger built form presence than Scenic Streets and therefore the edge, or streetwall, is better defined. Although the buildings found along this street type tend to be predominantly residential, there are often mixed-use buildings as well. Intermediate Streets exhibit suburban characteristics such as: wide setbacks; substantial parking areas; and reverse residential lots with rear gardens and privacy fences facing the street. These reverse lot conditions offer no connection to adjacent buildings and limited vehicular or pedestrian access. Intermediate Streets connect important places in a neighbourhood, such as schools and community facilities. They provide an uninterrupted flow of vehicular traffic and are connected by public transportation, most often in the form of buses. Given the wide setbacks, Intermediate Streets will often have significant street tree plantings or opportunities for such. Any reverse lot conditions can benefit from screen planting along privacy fences

to soften the boundary to the street. Similar to Emerging Main Streets, Intermediate Streets support opportunities for intensification.

Willowdale Avenue and Senlac Road are identified as Intermediate Streets and they act as an essential part of the street network where they connect essential amenities such as schools, hospitals, and parks with the neighbourhood. Characterized by wide setbacks, these streets can accommodate a continuous row of trees with active infrastructure. Recently, cycle tracks were implemented all along Willowdale Avenue. These streets currently have a narrow 1.5 m sidewalk on either side of the street with landscape buffers in some sections.

Special Area Type

The Streetscape Manual identifies additional Special Area street designations to acknowledge that special planning circumstances exist for certain local or collector neighbourhood streets as well. These circumstances can include streets that are located within:

- A historically significant area;
- A Centre;
- A special district;
- A business improvement area (BIA); or
- An educational campus.

Special Area streetscapes can be either Main Streets or Green Streets. Design treatments on these streets include enhanced paving, lighting, or other design features that reinforce the history or character of the surrounding area.

The remainder of streets in the urban core are primarily identified as a Special Area Type in the Streetscape Manual.

Beecroft Road and Doris Avenue have a linear network of open spaces made of wide setbacks, parks, and parkettes, continuous tree planting and open spaces surrounding apartment buildings. These streets can potentially act as alternative active transportation routes to Yonge Street connecting inner neighbourhoods.

East-west streets such as Church Avenue, Churchill Avenue, Park Home Avenue, and Empress Avenue are wide streets with two lanes of traffic in both directions. They are flanked by residential uses such as towers, apartments, and single detached homes. These are primary east-west connections that connect Yonge Street with that of the neighbourhood streets. These are currently characterized by continuous tree-lined boulevards with parks and open spaces serving as green nodes along their path.

Many local streets in the neighbourhood currently lack sidewalks on one or both sides of the street, as seen in **Figure 3-27**, which hinders pedestrian connectivity. Therefore, establishment of continuous sidewalk network with active transportation routes must be prioritized on these streets improving last mile connectivity within the neighbourhood. These are also streets that could potentially have slower traffic, volume management and avoid traffic conflicts to ensure a safe and more accessible environment.

Figure 3-27: Neighbourhood Street with Sidewalk on Only One Side of the Street

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3.4 Right-of-Way

3.4.1 Pavement Widths

A review of pavement widths for major streets within the BESA was completed, comparing the pavement width to a typical width for a new street based on the City's Lane Widths Guideline. The travel width of a street is the width between existing curb faces (inclusive of gutter) intended to facilitate vehicle travel. Major streets are interpreted as those with four or more travel lanes. Travel widths were measured at mid-block locations and are not necessarily reflective of intersections where widths may be wider to accommodate auxiliary lanes. For simplicity, the target lane width values are assumed to be 3.3 metres for curb lanes and 3.0 metres for through and turning lanes.

Table 3-15 compares existing pavement width of major streets to the typical width based on targets above and identifies the potential excess pavement width. Within the MSA, almost all major streets exceed the target pavement width. Narrowing the pavement width when opportunities arise can encourage slower vehicle travel and create more space in the cross section for other street elements. Travel widths with an asterisk in the table indicate that the width varies considerably along the corridor.

Table 3-15: Existing and Planned Rights-of-Way Along Major Streets

Major Street	Existing ROW / Planned ROW	Travel Width / Number of Lanes	Typical Width for New Street based on Number of Lanes	Excess Pavement Width
Bishop Avenue (Yonge Street to Maxome Avenue)	23 m / 23 m	14.2* m / 4 lanes	12.6 m	1.6 m
Church Avenue (Yonge Street to Doris Avenue)	30 m / 30 m	12.7 m / 4 lanes	12.6 m	0.1 m
Beecroft Road (Ellerslie Avenue to Park Home Avenue)	30 m / 30 m	16.9* m / 5 lanes	15.6 m	1.3 m
Beecroft Road (Park Home Avenue to 200 m north of Elmhurst Avenue)	27 m / 27 m	16.2* m / 5 lanes	15.6 m	0.6 m
Beecroft Road (200 m north of Elmhurst Avenue to Sheppard Avenue West)	36 m / 36 m	16.5* m / 5 lanes	15.6 m	0.9 m
Beecroft Road (Sheppard Avenue West to Poyntz Avenue)	27 m / 27 m	13.3* m / 4* lanes	12.6 m	0.7 m
Park Home Avenue (Beecroft Road to Yonge Street)	27 m / 27 m	18.1 m / 5 lanes	15.6 m	2.5 m

Major Street	Existing ROW / Planned ROW	Travel Width / Number of Lanes	Typical Width for New Street based on Number of Lanes	Excess Pavement Width
North York Boulevard (Beecroft Road to Yonge Street)	30 m / 30 m	12.6* m / 4 lanes	12.6 m	0 m
Elmhurst Avenue (Beecroft Road to Yonge Street)	27 m / 27 m	12.9 m / 4 lanes	12.6 m	0.3 m
Poyntz Avenue (Beecroft Road to Yonge Street)	30 m / 30 m	14.3 m / 4 lanes	12.6 m	1.7 m
Doris Avenue (Norton Avenue to Hollywood Avenue)	36 m / 36 m	13.2 m / 4 lanes	12.6 m	0.6 m
Doris Avenue (Hollywood Avenue to Sheppard Avenue East)	27 m / 27 m	13.2 m / 4 lanes	12.6 m	0.6 m
Greenfield Avenue (Yonge Street to Doris Avenue)	27 m / 27 m	12.8 m / 4 lanes	12.6 m	0.2 m
Avondale Avenue (Yonge Street to South Downtown Service Road)	27 m / 27 m	13.8 m / 4 lanes	12.6 m	1.2 m
Finch Avenue West (west of Yonge Street)	36 m / 36 m	17.5* m / 5 lanes	15.6 m	1.9 m
Finch Avenue East (east of Yonge Street)	36 m / 36 m	17.2* m / 5 lanes	15.6 m	1.6 m
Sheppard Avenue East (Yonge Street to Bonnington Place)	36 m / 36 m	25.6* m / 7 lanes	21.6 m	4.0 m
Sheppard Avenue East (east of Bonnington Place)	36 m / 36 m	17.6* m / 5 lanes	15.6 m	2.0 m
Sheppard Avenue West (Yonge Street to Beecroft Road)	36 m / 36 m	25.3* m / 7 lanes	21.6 m	3.7 m
Sheppard Avenue West (west of Beecroft Road)	36 m / 36 m	17.6* m / 5 lanes	15.6 m	2.0 m

3.4.2 Assessing Pedestrian Clearway

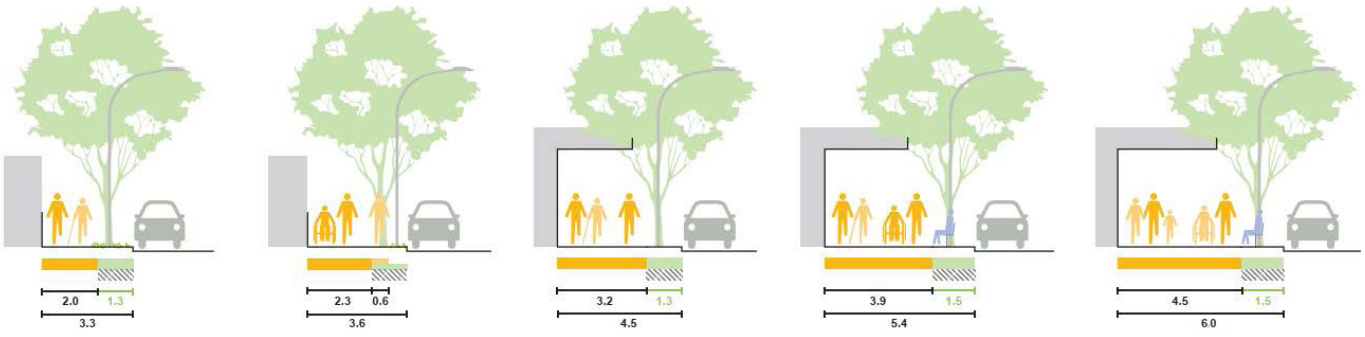
The OTC Multimodal Level of Service Guide assigns scores to different sidewalk widths and assigns a “C” to widths of 2.1 to 2.5 m, a “B” to widths of 2.6 to 3.0 m, and an “A” to widths exceeding 3.0 m.

Another comparable guide for benchmarking in the context of North York Centre is the *Walking Space Guide* published by Transport for New South Wales in Australia. The *Walking Space Guide* provides guidance based on research on Australian walking comfort norms. It sets standards that ensure that a comfortable amount of walking space is provided on streets which will encourage people to walk (**Figure 3-28**). The required amount of space in the guide is determined relative to the number of people using (or predicted to use) the sidewalk and provides consideration for a wide range of users including people with disabilities, older adults, families with young children, adults using strollers, and people walking dogs.

The guide provides minimum sidewalk clearway for a variety of contexts ranging from low-activity local streets to main streets with very high levels of activity.

Walking Space Guide Summary

Footpath Type 1	Type 2	Type 3	Type 4	Type 5
Typical description: Local footpath – Low activity	Local footpath – Medium activity	Main street footpath – Medium activity / Local footpath – High activity	Main street footpath – High activity	Main street footpath – Very high activity
Short walk interaction: Unlikely to pass someone	Likely to pass someone	Virtually certain to pass someone	Virtually certain to meet multiple groups of people	Busy
Peak hour maximum use: Very few people per hour	7 or more people per hour	70 or more people per hour	400 or more people per hour	More than 2,000 people per hour
MINIMUM TARGET Walking Space: 2.0m	**2.3m + 0.6m** Passing Zone	**3.2m (3.0m** not adjacent to active shopfronts)	**3.9m (3.7m)**	**less than or equal to 9.5 People Per Metre / Minute**
Intervention Trigger (less than): 1.3m*	1.6m + 0.6m Passing Zone	2.3m (2.2m)	2.9m (2.7m)	greater than 18.0 People Per Metre / Minute



(Source: The Walking Space Guide by Transport for NSW)

Figure 3-28: Sidewalk Width Guidance by Context as Presented in the New South Wales’ Walking Space Guide

Contrasting the *Walking Space Guide* methodology to existing sidewalk widths in North York Centre reveals that there is significant opportunity to improve pedestrian equity and comfort by standardizing wider pedestrian clearways, particularly in the Centre and along key walking routes outside the urban core area. The North York Centre Secondary Plan Update presents an opportunity to identify context specific targets for new development and reconstruction projects.

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3.4.3 Pavement Conditions

The City of Toronto evaluates current roadway condition and classifies each roadway as Good, Fair, or Poor, based on the pavement quality and the street classification (meaning that a higher pavement quality is needed for an arterial street to receive a score of “good”, compared to a local street).

Pavement quality ratings can be used to infer which street segments are more likely to be programmed for road work in the near-term, presenting opportunities to bundle other roadway improvements such as narrowing, addition of green infrastructure, sidewalks, or cycling facilities. **Table 3-16**, **Table 3-17**, and **Table 3-18** document street segments with lower ratings and the specific opportunities available for each street section

Table 3-16: Arterial Streets Identified as “Fair” or “Poor”

Street	Segment	Condition	Opportunity
Yonge Street	43 m south of Franklin Avenue to Finch Avenue East	Fair	Implement the REimagining Yonge cross section and associated improvements.
	Cummer Avenue to Steeles Avenue East	Fair	Yonge Street North TMP includes reconfiguration of this segment similar to REimagining Yonge; opportunity to bundle with future work.
Sheppard Avenue East	Yonge Street to Bonnington Place	Fair	Segment from Yonge Street to Bonnington Place is to be bundled with planned Doris Avenue Extension and will include extending cycle tracks to Yonge Street.
	Bonnington Place to Bayview Avenue	Fair	Major street resurfacing underway to be completed in 2024 from Bonnington Place to Bayview Avenue includes addition of cycle tracks and sidewalk repairs.
Sheppard Avenue West	Bathurst Street to Yonge Street	Fair	Narrow existing lanes, widen existing sidewalks where under 2.1 m, add cycle tracks, potential early works to support future Sheppard Subway Extension.
Finch Avenue West	Bathurst Street to Yonge Street	Poor	Narrow existing lanes, widen existing sidewalks where under 2.1 m, consider priority measures for surface transit, consider cycling facilities or streetscaping, potential early works to support future Finch West LRT Extension.
Finch Avenue East	Yonge Street to Bayview Avenue	Fair	Narrow existing lanes, widen existing sidewalks where under 2.1 m, consider priority measures for surface transit, consider cycling facilities or streetscaping, consider road diet.

Street	Segment	Condition	Opportunity
Doris Avenue	Church Avenue to Byng Avenue	Fair	Narrow existing lanes, widen existing sidewalks where under 2.1 m, consider new pedestrian crossing(s), consider cycling facilities, consider road diet.
Beecroft Road	Park Home Avenue to Poyntz Avenue	Fair	Narrow existing lanes, widen existing sidewalks where under 2.1 m, consider new pedestrian crossing(s), consider cycling facilities, consider road diet, consider a wider boulevard.
Steeles Avenue West	Bathurst Street to Yonge Street	Fair	Narrow existing lanes, widen existing sidewalks where under 2.1 m, consider conversion of curb lanes to bus lanes, add cycling facilities.
Steeles Avenue East	Yonge Street to Bayview Avenue N	Poor	Narrow existing lanes, widen existing sidewalks where under 2.1 m, consider conversion of curb lanes to bus lanes, add cycling facilities.
Bathurst Street	Wilson Avenue to Sheppard Avenue East	Poor	Narrow existing lanes, widen existing sidewalks where under 2.1 m, implement the cycling facility included in the City's Near- Term Implementation Plan.
	Sheppard Avenue East to Ellerslie Avenue	Fair	
	Ellerslie Avenue to Finch Avenue West	Poor	
Poyntz Avenue	Beecroft Road to Yonge Street	Fair	Narrow existing lanes, enhance pedestrian realm with buffer on south side.
Senlac Road	Finch Avenue to Sheppard Avenue East	Fair	Retrofit cycle tracks or bike lanes within existing roadway.
Willowdale Avenue	Empress Avenue to Sheppard Avenue East	Fair	Consider new pedestrian crossing(s), widen sidewalks, enhance pedestrian realm with landscaping.
	Cummer Avenue to Bishop Avenue	Fair	Widen existing sidewalks where under 2.1 m, extend existing cycling tracks south of Bishop Avenue north to Steeles Avenue, enhance pedestrian realm with landscaping.

Table 3-17: Collector Streets in the Mobility Study Area Classified as "Fair" and "Poor"

Street	Segment	Condition	Opportunity
Norton Avenue	Yonge Street to Doris Avenue	Poor	Narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
Bishop Avenue	Maxome Avenue to Willowdale Avenue	Fair	Build a pedestrian facility on the north side, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
Cactus Avenue	Peckham Avenue to Moore Park Avenue	Fair	Enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
Churchill Avenue	Senlac Road to Tamworth Road	Fair	Build a pedestrian facility on the south side, narrow lanes, widen existing sidewalk, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
Grantbrook Street	Finch Avenue to Drewry Avenue	Fair	Build a pedestrian facility on the east side, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
Hilda Avenue	Pleasant Avenue to Drewry Avenue	Fair	Fill in gaps in the pedestrian network on the west side, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures, consider cycling lanes.
Kenneth Avenue	Finch Avenue to Sheppard Avenue East	Fair	Fill in gaps in the pedestrian network on the west side, widen existing sidewalks, narrow lanes, enhance pedestrian realm with a wider buffer, landscaping and amenities (benches etc.), implement traffic calming measures, consider cycling facilities.
Maxome Avenue	Steeles Avenue to Newton Drive	Fair	Narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures, consider cycling facilities.
	Cummer Avenue to Finch Avenue	Fair	Widen existing sidewalks, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures, consider cycling facilities

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Street	Segment	Condition	Opportunity
Newton Drive	Yonge Street to Dumont Street	Fair	Build a sidewalk on the south side, widen existing sidewalk, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
	Willowdale Avenue to Bayview Avenue	Fair	Fill in gaps in the pedestrian network on the west side, widen existing sidewalks, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures, consider cycling facilities.
Park Home Avenue	Beecroft Road to Yonge Street	Fair	Widen existing sidewalk, narrow lanes, enhance pedestrian realm with wider buffer on south side, landscaping and amenities (benches etc.), implement traffic calming measures.
Patricia Avenue	Chelmsford Avenue to Peckham Avenue	Fair	Widen existing sidewalk, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
	Peckham Avenue to Cactus Avenue	Poor	Widen existing sidewalk, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
	Cactus Avenue to Hilda Avenue	Fair	Build a sidewalk on the north side, widen existing sidewalk, narrow lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
Talbot Road	Newtonbrook Boulevard to Fairchild Avenue	Poor	Narrow vehicle lanes, widen sidewalks, consider bicycle lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
	Fairchild Avenue to Lorraine Drive	Fair	Narrow vehicle lanes, widen sidewalks, consider bicycle lanes, enhance pedestrian realm with landscaping and amenities (benches etc.), implement traffic calming measures.
Wilfred Avenue	Finch Avenue to Sheppard Avenue East	Fair	Narrow vehicle lanes, widen sidewalks, enhance pedestrian realm with a greater buffer on the east side and amenities (benches etc.), implement traffic calming measures.

Table 3-18: Local Streets in the Boundary Expansion Study Areas Classified as "Poor"

Road	Segment	Opportunity
Byng Avenue	Yonge Street to Kenneth Avenue	Widen existing sidewalks where under 2.1 m, enhance pedestrian realm with landscaping and amenities (benches etc.)
Kingsdale Avenue	Doris Avenue to Kenneth Avenue	Narrowing vehicle lanes, Enhance pedestrian realm with landscaping and amenities (benches etc.)
Parkview Avenue	Yonge Street to Doris Avenue	Enhance pedestrian realm with green buffer, landscaping and amenities (benches etc.)
Burndale Avenue	Bangor Road to Burnett Avenue	Build pedestrian facility
Elmhurst Avenue	Senlac Road to Quilter Road	Build pedestrian facility
Harlandale Avenue	Senlac Road to Elmhurst Avenue	Enhance pedestrian realm with landscaping
Duplex Avenue	Hendon Avenue to Finch Avenue	Enhance pedestrian realm with green buffer, landscaping and amenities (benches etc.), potential for cycling facility (connections to Finch Recreational Trail)
Cushenale Drive	Silverview Drive to Bowerbank Drive	Build pedestrian facility
Bowerbank Drive	Silverview Drive to Deering Crescent	Build pedestrian facility
Bonnington Place/ Tradewind Avenue	Sheppard Avenue E to Avondale Avenue	Enhance pedestrian realm with green buffer, landscaping and amenities (benches etc.),
Glendora Avenue	Burnwell Street to Dudley Avenue	Build pedestrian facility
Basswood Road	100 m north of Churchill Avenue	Build pedestrian facility
Basil Hall Court	Beecroft Road	Widen existing sidewalk

3.4.4 Subsurface Utility Considerations

As part of the background data collection, the City assembled mapping data in CAD format identifying subsurface municipal servicing infrastructure within the BESA. **Table 3-19** identifies the approximate locations of the subsurface municipal servicing infrastructure along Yonge Street within the BESA.

Table 3-19: Approximate Locations of Subsurface Municipal Servicing Infrastructure Along Yonge Street

Utility	Approximate Locations
Watermain	• Under the west boulevard from Franklin Ave. to Florence Ave./Avondale Ave. • Under the east and west boulevards from Florence Ave. / Avondale Ave. to Johnston Ave. / Glendora Ave. • Under the west boulevard/curb lane from Johnston Ave. / Glendora Ave. to Elmhurst Ave. • Under the east and west boulevard/curb lane from Elmhurst Ave. to Norton Ave. • Under the west boulevard from Norton Ave. to Byng Ave. • Under the east and west boulevard from Byng Ave. to Tolman St. / Olive Ave. • Under the west boulevard/curb lane from Tolman St. / Olive Ave. to Finch Ave. • Under the east and west boulevard/curb lane from Finch Ave. to Hendon Ave. / Bishop Ave. • Under the west boulevard from Hendon Ave. / Bishop Ave. to Drewry Ave. / Cummer Ave.
Storm Sewer	• Under the middle of the St. at a section near Franklin Ave. and from north of Avondale Ave. to Bogert Ave. • Under the west curb lane from Sheppard Ave. West to Upper Madison Ave. • Under the east curb lane from Upper Madison Ave. to Elmwood Ave. • Under the east and west curb lanes from Elmwood Ave. to Kingsdale Ave. • Under the east and west boulevards/curb lanes from Kingsdale Ave. to Finch Ave. • Under the west curb lane from Finch Ave. to north of Hendon Ave. / Bishop Ave. • Under the middle of the St. and under the east curb lane from north of Hendon Ave. / Bishop Ave. to Drewry Ave. / Cummer Ave.
Sanitary Sewer	• Under the east boulevard from Franklin Ave. to Florence Ave. / Avondale Ave. • Under the west boulevard/curb lane from Cameron Ave. to north of Poyntz Ave. / Anndale Dr. • Under the west and east boulevards/curb lanes from north of Sheppard Ave. to Spring Garden Ave. • Under the west boulevard from Spring Garden Ave. to south of Park Home Ave. / Empress Ave. • Under the middle of the St. from Park Home Ave. / Empress Ave. to Norton Ave. • Under the east boulevard/curb lane from Norton Ave. to Horsham Ave. • Under the west and east boulevards/curb lanes from Horsham Ave. to Holmes Ave. • Under the east boulevard/curb lane from Holmes Ave. to Hendon Ave. / Bishop Ave. • Under the middle of the St. and under the east curb lane from north of Hendon Ave. / Bishop Ave. to Drewry Ave. / Cummer Ave.

The data was used to document major utility locations and proactively identify potential utility conflicts related to road works considered as part of mobility options. Notable subsurface municipal servicing infrastructure within the BESA include:

- A storm sewer and a sanitary sewer located within the City easement along the recently constructed Olympic Garden Drive, on the southeast side of the Yonge Street and Drewry Avenue / Cummer Avenue intersection
- Storm sewers and sanitary sewers located within the City easement into the Finch Station parking lot and PUDO area on the northwest side of the Yonge Street and Hendon Avenue / Bishop Avenue intersection
- Storm sewer located within the City easement into the Finch Station bus terminal area on the northeast side of the Yonge Street and Hendon Avenue / Bishop Avenue intersection
- Storm sewer and watermains located underneath the bus terminal area on the southeast side of the Yonge Street and Hendon Avenue / Bishop Avenue intersection
- Sanitary sewer located within the City easement between private properties to the west of Yonge Street, between Kempford Boulevard and Finch Avenue West
- Sanitary sewers located within the City easements between private properties to the east of Yonge Street, between Church Avenue to south of Byng Avenue; the sanitary sewer continues north to Finch Avenue East and south to Norton Avenue along a laneway approximately 40 m east of Yonge Street
- Sanitary sewers located within the City easements on private properties fronting Hounslow Avenue and properties to the east of Canterbury Place
- Sanitary sewer located within the City easement to the west and continuing to the east of Beecroft Road and a storm sewer located within the City easement to the west of Beecroft Road, north of the Ellerslie Avenue intersection
- A storm sewer and a sanitary sewer located within the City easement between private properties to the west of Yonge Street, between the City easement across from the Kingsdale Avenue intersection and Ellerslie Avenue
- Several City easements with watermains, storm sewers, and a sanitary sewer between Yonge Street and Basil Hall Court
- Junction point in the storm sewer system underneath a private property at the southwest corner of the Doris Avenue and Kingsdale Avenue intersection
- A storm sewer and a sanitary sewer located underneath the laneway between Empress Avenue and Parkview Avenue, approximately 40 m east of Yonge Street
- A watermain and a sanitary sewer located between Empress Avenue and Hillcrest Avenue, running east-west between Yonge Street and Doris Avenue, within an easement that was transferred to Bell; a north-south sanitary sewer connects from Hillcrest Avenue within a City easement
- A storm sewer and a sanitary sewer located within a City easement that runs between private properties on the west side of Yonge Street north of Upper Madison Avenue
- A storm sewer located within a City easement that runs between private properties between Greenfield Avenue and Kenneth Avenue
- Sanitary sewers and storm sewers within City easements located between private properties on the northeast side of the Sheppard Avenue East and Kenneth Avenue intersection

- A storm sewer and a sanitary sewer that run within City easements on the south side of Sheppard Avenue East, with the storm sewer crossing to the west side of Yonge Street
- A storm sewer located underneath the laneway between Harlandale Avenue and Elmhurst Avenue, approximately 40 m west of Yonge Street
- A storm sewer located underneath the laneway between Johnston Avenue and Poyntz Avenue, approximately 40 m west of Yonge Street
- A sanitary sewer located underneath the laneway between Avondale Avenue and Glendora Avenue, approximately 40 m east of Yonge Street

3.4.5 Planned Road Work

Capital Plan

Table 3-20 includes a list of major road work targeted for the next two years within the BESA.

Table 3-20: Capital Plan Roadworks

Street Segment	Planned Work and Year	Additional Opportunities
Beecroft Road Extension, from Finch Avenue to Drewry Avenue	New street including cycle tracks, sidewalks and traffic signals 2026-2027	Green infrastructure
Bonnington Place, Anndale Drive to Sheppard Avenue	Local street rehabilitation: Replacement of partial street pavement structure or entire street pavement structure for either partial lane width, full lane width or full street width 2026-2027	Widened sidewalks, green infrastructure
Doris Avenue, Greenfield Avenue to Avondale Avenue	New street including sidewalks and an upgraded intersection at Sheppard Avenue East 2026-2027	Green infrastructure
Glendora Avenue, Bales Avenue to Yonge Street	Local street resurfacing: Replacement of old asphalt surface with new asphalt surface, including repairs of any damaged sidewalks and curbs Q2 2024 – Q3 2025	Road narrowing, widened sidewalks, green infrastructure, traffic calming

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Street Segment	Planned Work and Year	Additional Opportunities
Glendora Avenue, Tradewind Avenue to Bales Avenue	Local street resurfacing: Replacement of old asphalt surface with new asphalt surface, including repairs of any damaged sidewalks and curbs Q2 2024 – Q3 2025	Widened sidewalks, green infrastructure
McKee Avenue, from Kenneth Avenue to Doris Avenue	Local street resurfacing: Replacement of old asphalt surface with new asphalt surface, including repairs of any damaged sidewalks and curbs Green streets: Implementation of Green Infrastructure/Low Impact Development in the Right-of-Way to preserve/enhance the natural hydrological and ecological function of the area 2025	Widened sidewalk, new sidewalk on south side
Sheppard Avenue East, Bayview Avenue to Bonnington Place	Major street resurfacing: Replacement of old asphalt surface with new asphalt surface, including repairs of any damaged sidewalks and curbs On-street bikeway construction: Construction of various cycling infrastructure, including cycle tracks, bike lanes, contra-flow lanes, raised platforms, intersection improvements Q2 2024 – Q4 2024	Improved signage and wayfinding for people cycling
Sheppard Avenue East, Bonnington Place to Yonge Street	Major street resurfacing: Replacement of old asphalt surface with new asphalt surface, including repairs of any damaged sidewalks and curbs. Includes new cycle tracks 2026-2027	No additional opportunities (work is imminent)

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3.5 Parking

Parking within the BESA includes publicly operated off-street parking lots, privately operated off-street parking lots, and on-street parking.

3.5.1 Publicly Operated Off-Street Parking Lots

Table 3-21 outlines the sizes and average daily peak occupancy rates based on 2023 data provided by the Toronto Parking Authority for the publicly operated off-street parking lots in the BESA, except for the TTC Finch Station surface commuter parking lots which are discussed separately below.

Table 3-21: Lot Size and Utilization of Publicly Operated Off-Street Parking Lots for the BESA

Car Park/Address	Spaces	Average Daily Peak Occupancy
309: 5162 Yonge Street	175	Not available yet as this is a new lot
400: 10 Kingsdale Avenue	53	45%
402: 10 Empress Avenue	67	95%
403: 10 Harlandale Avenue[1]	116	71%
404: 95 Beecroft Road	386	16%
410: 180 Beecroft Road	176	52%
412: 11 Finch Avenue West	62	97%
418: 68 Sheppard Avenue West	30	64%
419: 5667 Yonge Street[2]	23	48%

(Source: Toronto Parking Authority, 2023)

1 A portion of Car Park 403 is being occupied by the TTC for a project.
2 The City owned portion of Car Park 419 is closing early March 2024 to ensure operational efficiency.

In addition, there are two TTC Finch Station surface commuter parking lots: Finch East (890 Willowdale Avenue) and Finch West (18 Hendon Avenue). Altogether, these lots provide a total of 3,227 parking spaces that are primarily occupied by commuters during weekdays. Parking is paid from 5:00 A.M. to 2:00 A.M. on weekdays at rates ranging from $2.00 up to $5.00, and parking is free on weekends and statutory holidays. Based on TTC's transaction-level data, the total number of post-pandemic (2023) parking transactions remains lower than pre-pandemic (2019) by about 43% at the Finch East Lot and 27% at the Finch West Lot.

3.5.2 Privately Operated Off-Street Parking Lots

Information on privately operated off-street parking lots was sourced from the Yonge Street Parking Memo conducted as part of the REimagining Yonge Street Environmental Assessment with data from 2016.

There are a total of 29 privately operated off-street lots located within private developments with either surface or significant underground parking facilities. Large parking facilities are available within walking distance to employment and retail uses, and users may park within these lots to access other nearby developments. In addition to underground parking, some private operators also operate paid parking facilities for general use. The hourly cost varies from $2.00 up to $8.00, with significantly lower rates for overnight periods.

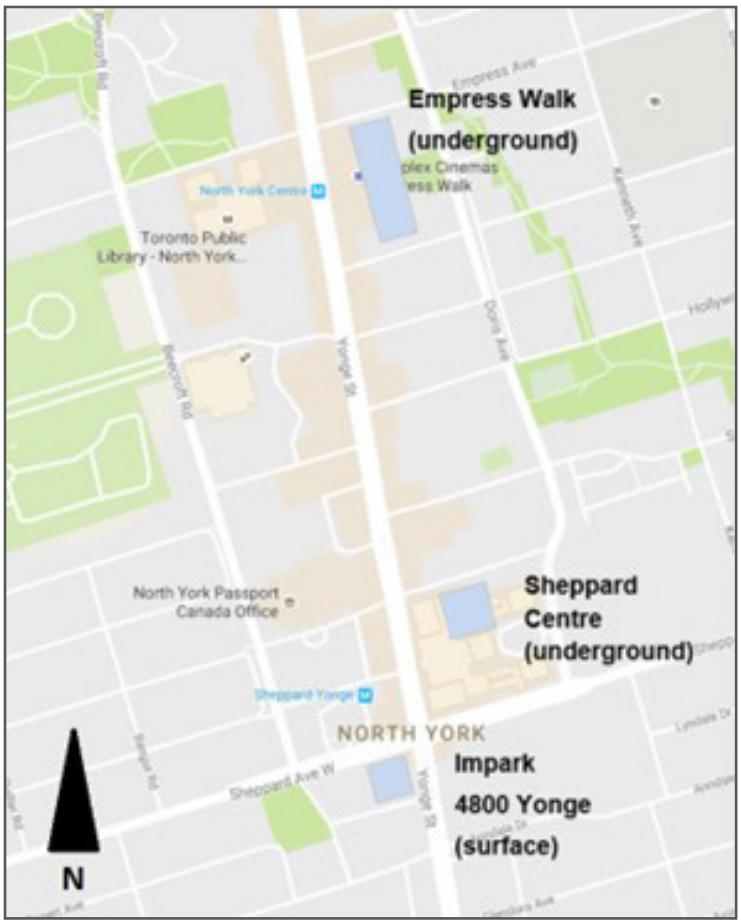
Three of these privately operated off-street parking lots were selected for surveys to determine the utilization and occupancy, as they were representative of the range of conditions within the BESA and were identified by Toronto Parking Authority as generating lots of interest. The three lots (outlined in **Figure 3-29**) were surveyed during the week of June 20, 2016 on either a Wednesday or Thursday between the hours of 10:00 A.M. and 2:00 P.M. Results of the three detailed parking utilization lot surveys are summarized in **Table 3-22**.

Table 3-22: Detailed Surveys for Selected Privately Operated Off-Street Parking Lots

Car Park/Address	Spaces	Available Spaces	Peak Occupancy
Impark – 4800 Yonge Street (surface parking lot)	140	1	99% (morning)
Sheppard Centre (parking garage)	1023[1]	235	75% (afternoon)
Empress Walk (parking garage)	220	21	88% (morning)

(Source: Yonge Street Parking Memo, REimagining Yonge Street Environmental Assessment, 2016)

1 One floor of parking was closed during time of survey.



(Source: Yonge Street Parking Memo, REimagining Yonge Street Environmental Assessment, 2016)

Figure 3-29: Locations of Selected Privately Operated Off-Street Parking Lots

The detailed results from each respective surveyed location are outlined in **Table 3-23** to **Table 3-25** below.

Table 3-23: Detailed Survey Results for Impark – 4800 Yonge Street Parking Lot Conducted on June 22, 2016

Starting Time	Total Spaces	Total Used Spaces	Available Spaces	Occupancy	Average Occupancy
10:00 A.M.	140	140	0	100.0%	99.3%
10:30 A.M.	140	139	1	99.3%	
11:00 A.M.	140	138	2	98.6%	
11:30 A.M.	140	139	1	99.3%	
12:00 P.M.	140	136	4	97.1%	95.2%
12:30 P.M.	140	133	7	95.0%	
1:00 P.M.	140	131	9	93.6%	
1:30 P.M.	140	133	7	95.0%	

(Source: Yonge Street Parking Memo, REimagining Yonge Street Environmental Assessment, 2016)

Table 3-24: Detailed Survey Results for Sheppard Centre Parking Lot Conducted on June 23, 2016

Starting Time	Total Spaces	Total Used Spaces	Available Spaces[1]	Occupancy	Average Occupancy
10:00 A.M.	1023	-	-	-	-
10:30 A.M.	1023	-	-	-	
11:00 A.M.	1023	754	269	73.7%	
11:30 A.M.	1023	759	264	74.2%	
12:00 P.M.	1023	758	265	74.1%	75.5%
12:30 P.M.	1023	763	260	74.6%	
1:00 P.M.	1023	779	244	76.1%	
1:30 P.M.	1023	788	235	77.0%	

(Source: Yonge Street Parking Memo, REimagining Yonge Street Environmental Assessment, 2016)

1 Values were back calculated using the number of vehicles coming in and out of the facility from a total of 237 unused spaces at 2:00 P.M.

Table 3-25: Detailed Survey Results for Empress Walk Parking Lot Conducted on June 23, 2016

Starting Time	Total Spaces	Total Used Spaces	Available Spaces	Occupancy	Average Occupancy
10:00 A.M.	220	199	21	90.5%	87.5%
10:30 A.M.	220	188	32	85.5%	
11:00 A.M.	220	186	24	84.5%	
11:30 A.M.	220	197	23	89.5%	
12:00 P.M.	220	184	36	83.6%	75.5%
12:30 P.M.	220	200	20	90.9%	
1:00 P.M.	220	189	39	85.9%	
1:30 P.M.	220	172	48	78.2%	

(Source: Yonge Street Parking Memo, REimagining Yonge Street Environmental Assessment, 2016)

In addition, spot surveys (i.e. a single time point in time) were completed for the remaining privately operated off-street lots in 2016.

The lot size and utilization data for all privately operated off-street parking lots from 2016 as sourced from the Yonge Street Parking Memo of the REimagining Yonge Street EA are outlined in **Table 3-26**.

Table 3-26: Lot Size and Utilization of Privately Operated Off-Street Parking Lots for the BESA

Description	Approximate Address	Location	Number of Spaces	Surface/ Underground	Midday Occupancy[1]
Private Lot Behind TD	18 Avondale Ave	NE Corner Yonge/Avondale	32	Surface	-
Emerald Park Development	4726-4750 Yonge St	NW Corner Poyntz/Yonge	181	Underground	62%
ServiceOntario Complex	45 Sheppard Ave E	South side Doris/Sheppard	421	Both	-
Nestle Canada - Vinci parking	25 Sheppard Ave W	SE Corner Beecroft/ Sheppard	400	Underground	55%
Impark Lot	4800 Yonge St	SW Corner Yonge/Sheppard	140	Surface	-
Hullmark Building	4773 Yonge St	SE Corner Yonge/Sheppard	305	Underground	76%
Standard Life Centre (E of Yonge)	100 Sheppard Ave E	NW Corner Kenneth/ Sheppard	330	Underground	-
Sheppard Centre	4881 Yonge St	SE Corner Yonge/Greenfield	1639	Underground	-
Joseph Sheppard Building	4900 Yonge St	NE Corner Beecroft/Elmhurst	29	Surface	93%
Madison Centre	4950 Yonge St	NW Corner Yonge/Upper Madison	403	Underground	89%
Office building shared with Centre for the Arts	5000 Yonge St	SW Corner Yonge/North York	574	Underground	-
Gilliland Gold Young Consulting	5001 Yonge St	NE Corner Yonge/Hollywood	388	Underground	86%
Private Lot Behind Jack Astor's	5061 Yonge St	NE Corner Yonge/Elmwood	36	Surface	59%
Scotiabank at Empress Walk	5075 Yonge St	NE Corner Yonge/Hillcrest	168	Underground	91%
Empress Walk	5075 Yonge St	NE Corner Yonge/Hillcrest	330	Underground	-

Description	Approximate Address	Location	Number of Spaces	Surface/ Underground	Midday Occupancy[1]
Loblaws at Empress Walk	5095 Yonge St	SE Corner Yonge/Empress	220	Underground	79%
North York Centre	5160 Yonge St	SW Corner Yonge/Park Home	850	Underground	84%
Gibson Park	26 Park Home Ave	NW Corner Yonge/Park Home	175	Underground	51%
Private Lot	11 Parkview Ave	SE Corner Yonge/Parkview	27	Surface	67%
Yonge Norton Centre	5255 Yonge St	SE Corner Yonge/Norton	301	Underground	74%
Northtown Way Towers	5 Northtown Way	SE Corner Yonge/Northtown	Not available	Underground	-
Private Lot	541 Horsham Ave	SW Corner Yonge/Horsham	38	Surface	45%
Private Lot behind Shoppers	5576 Yonge St	NW Corner Yonge/Tolman	55	Surface	95%
Private Lot	15 Finch Ave W	SW Corner Yonge/Finch	7	Surface	-
Xerox Towers	2 Finch Ave W	NW Corner Yonge/Finch	1630	Underground	-
5775 Yonge St	5775 Yonge St	SE Corner Yonge/Turnberry	371	Underground	-
Food Basics Plaza	5915 Yonge St	SE Corner Yonge/Cummer	632	Surface	-
Private Plaza Parking	5906 Yonge St	SW Corner Yonge/Drewry	63	Surface	-
Private Plaza Parking	5928 Yonge St	NW Corner Yonge/Drewry	49	Surface	-

(Source: Yonge Street Parking Memo, (REimagining Yonge Street Environmental Assessment, 2016)

1 Note: Midday occupancies were not determined for all facilities in the study area, "-" indicates no occupancy was calculated

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3.5.3 On-Street Parking

The latest available on-street parking inventory and utilization data was provided by Toronto Parking Authority. **Table 3-27** provides a detailed overview of the on-street parking inventory for the BESA, while **Table 3-28** provides a detailed overview of the on-street parking utilization.

A summary of the key findings is provided below:

- There are a total of 900 on-street parking spaces available well distributed within the BESA located along Yonge Street, Beecroft Road, and other connecting streets. A map of all available on-street parking locations with categories of parking restrictions is provided in the body of the report. Yonge Street (with 333 spaces available) and Beecroft Road (with 157 spaces available) account for most of the on-street parking availability. Hourly parking rates vary between $2.75 to $5.25. Most locations restrict parking to off-peak hours during weekdays and to weekends with a 3-hour maximum.
- The on-street parking is moderately to well utilized throughout the day.
    - Ten sections are identified with average daily peak occupancy rates above 85%, which is the industry standard used for effective capacity. Two of these locations are noted with average daily peak occupancy rates above 100%, likely due to illegal parking.
    - The peak occupancy utilization ranges from 63% to 300%, with the portions above 100% likely due to an overlap in the parking turnover.
    - Although the data was not broken down by time of day, Toronto Parking Authority has indicated that the peak times typically range between 8:00 A.M. to 12:00 P.M.
    - Most of the demand for on-street parking is within the southern portion of the BESA, south of Empress Avenue.

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Table 3-27: On-Street Parking Inventory for the Boundary Expansion Study Areas

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
6901	Beecroft Rd.	East and West	McBride Lane/ Basil Hall Ct.	Park Home Ave.	$2.75	48	**Monday to Friday** 10:00 AM to 3:30 PM 3-hour maximum 6:30 PM to 9:00 PM 2.5 hour maximum **NO PARKING** 7:00 AM TO 10:00 AM 3:30 PM TO 6:30 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3-hour maximum

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
6902	Park Home Ave.	North	Beecroft Rd.	Yonge St.	$2.75	53	**Monday to Friday** 9:00 AM to 4:00 PM 3-hour maximum 6:00 PM to 9:00 PM 3 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3-hour maximum
6903	Beecroft Rd.	West	Park Home Ave.	Sheppard Ave. W.	$2.75	95	**Monday to Friday** 10:00 AM to 3:30 PM 4-hour maximum 6:30 PM to 9:00 PM 2.5 hour maximum **NO PARKING** 7:00 AM TO 10:00 AM 3:30 PM TO 6:30 PM **Saturday** 8:00 AM to 9:00 PM 4 hour maximum **Sunday** 1:00 PM to 9:00 PM 4 hour maximum
6904	Beecroft Rd.	East	Harlandale Ave.	Sheppard Ave. W.	$2.75	4	**Monday to Friday** 10:00 AM to 3:30 PM 3 hour maximum 6:30 PM to 9:00 PM 2.5 hour maximum **NO PARKING** 7:00 AM TO 10:00 AM 3:30 PM TO 6:30 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
6905	Beecroft Rd.	East	Sheppard Ave. W.	Poyntz Ave.	$2.75	10	**Monday to Friday** 10:00 AM to 3:30 PM 3 hour maximum 6:30 PM to 9:00 PM 2.5 hour maximum **NO PARKING** 7:00 AM TO 10:00 AM 3:30 PM TO 6:30 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7004	Kenneth Ave.	East	North End	Sheppard Ave. W.	$2.75	4	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7401	Yonge St.	East	Cummer Ave.	Bishop Ave.	$4.00	7	**Monday to Friday** 10:00 AM to 3:00 PM 3 hour maximum 7:00 PM to 9:00 PM 2 hour maximum **NO PARKING** 7:00 AM TO 10:00 AM 3:00 PM TO 7:00 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7402	Yonge St.	North	Yonge St.	Opp. Kenneth Ave.	$2.75	16	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
7403	Yonge St.	East	Bishop Ave.	Finch Ave.	$4.00	11	**Monday to Friday** 9:00 AM to 4:00 PM 3 hour maximum 6:00 PM to 9:00 PM 3 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7404	Duplex Ave.	East	Bishop Ave.	Finch Ave.	$4.00	24	**Monday to Saturday** 8:00 AM to 6:00 PM 3 hour maximum
7405	Yonge St.	East and West	Finch Ave./ Olive Ave.	Churchhill Ave./ Church St.	$4.00	88	**Monday to Friday** 9:00 AM to 4:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 6:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum
7406	Yonge St.	East and West	Churchhill Ave./ Church Ave.	Empress Ave.	$4.00	97	**Monday to Friday** 9:00 AM to 4:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 6:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
7407	Yonge St.	East and West	Empress Ave.	Elmhurst Ave./ Greenfield Ave.	$5.25	114	**Monday to Friday** 9:00 AM to 4:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 6:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum
7408	Olive Ave.	South	Yonge St.	Kenneth Ave.	$4.00	7	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7409	Holmes Ave.	North and South	Yonge St.	Kenneth Ave.	$4.00	13	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7410	Kempford Blvd.	South	Yonge St.	Barbara Rd.	$4.00	15	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7411	Byng Ave.	South	Yonge St.	Doris Ave.	$4.00	14	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7412	Horsham Ave.	South	Hounslow Ave.	Yonge St.	$4.00	9	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
7414	Mckee Ave.	North	Yonge St.	Doris Ave.	$4.00	13	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7415	Ellerslie Ave.	North and South	Canterbury Pl.	Yonge St.	$4.00	11	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7416	Norton Ave.	South	Yonge St.	Doris Ave.	$4.00	10	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7417	Parkview Ave.	North	Yonge St.	Doris Ave.	$4.00	10	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7418	Kingsdale Ave.	North and South	Yonge St.	Doris Ave.	$4.00	16	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7419	Empress Ave.	South	Yonge St.	Doris Ave.	$5.25	3	**Monday to Friday** 9:00 AM to 4:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 6:00 PM 3 hour maximum 6:00 PM to 10:00 PM 4 hour maximum

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
7420	Hillcrest Ave.	South	Yonge St.	Doris Ave.	$5.25	9	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7421	Elmwood Ave.	North and South	Yonge St.	Doris Ave.	$5.25	31	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7422	Hollywood Ave.	North and South	Yonge St.	Doris Ave.	$5.25	26	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7423	Upper Madison Ave	North and South	West Limit of Roadway	Yonge St.	$5.25	10	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7424	Spring Garden Ave.	North and South	Yonge St.	Doris Ave.	$5.25	42	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7425	Elmhurst Ave.	North and South	Beecroft Rd.	Yonge St.	$5.25	36	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7426	Greenfield Ave.	South	Yonge St.	Doris Ave.	$5.25	12	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum

Location ID	Street	Side of Street	From	To	Rate/Hr	Number of Spaces	Hours of Operation
7427	Doris Ave.	East	Greenfield Ave.	Sheppard Ave.	$5.25	16	**Monday to Friday** 9:00 AM to 4:00 PM 3 hour maximum 6:00 PM to 9:00 PM 3 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7428	Harlandale Ave.	North and South	Beecroft Rd.	Yonge St.	$5.25	8	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7429	Johnston Ave.	North	West End	Yonge St.	$4.00	2	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7430	19 Glendora Ave	South	22.1 m east of Yonge Street	34.1 m east of Yonge Street	$4.00	See above	**Monday to Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum
7434	Church Ave.	North	41.5 metres east of Yonge St.	Doris Ave.	$4.00	5	**Monday to Friday** 9:00 AM to 4:00 PM 3 hour maximum 6:00 PM to 9:00 PM 3 hour maximum **NO PARKING** 7:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM **Saturday** 8:00 AM to 9:00 PM 3 hour maximum **Sunday** 1:00 PM to 9:00 PM 3 hour maximum

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Table 3-28: On-Street Parking Utilization Data for the Boundary Expansion Study Areas

Location ID	Street	Side of Street	From	To	Peak Overall Capacity	Capacity	Peak Occupancy %	Avg Daily Peak Occupancy %
6901	Beecroft Rd.	East and West	McBride Lane/ Basil Hall Ct.	Park Home Ave.	43	48	89.60%	12.40%
6902	Park Home Ave.	North	Beecroft Rd.	Yonge St.	44	53	83.00%	45.10%
6903	Beecroft Rd.	West	Park Home Ave.	Sheppard Ave. W.	75	95	78.90%	36.40%
6904	Beecroft Rd.	East	Harlandale Ave.	Sheppard Ave. W.	8	4	200.00%	96.30%
6905	Beecroft Rd.	East	Sheppard Ave. W.	Poyntz Ave.	14	10	140.00%	92.90%
7004	Kenneth Ave.	East	North End	Sheppard Ave. W.	8	4	200.00%	93.30%
7401	Yonge St.	East	Cummer Ave.	Bishop Ave.	8	7	114.00%	40.50%
7402	Yonge St.	North	Yonge St.	Opp. Kenneth Ave.	10	16	63.00%	19.70%
7403	Yonge St.	East	Bishop Ave.	Finch Ave.	10	11	91.00%	51.20%
7404	Duplex Ave.	East	Bishop Ave.	Finch Ave.	20	24	83.00%	49.80%
7405	Yonge St.	East and West	Finch Ave./ Olive Ave.	Churchhill Ave./ Church St.	67	88	76.10%	46.30%
7406	Yonge St.	East and West	Churchhill Ave./ Church Ave.	Empress Ave.	No data available	97	No data available	No data available
7407	Yonge St.	East and West	Empress Ave.	Elmhurst Ave./ Greenfield Ave.	90	114	78.90%	54.40%
7408	Olive Ave.	South	Yonge St.	Kenneth Ave.	15	7	214.30%	96.00%
7409	Holmes Ave.	North and South	Yonge St.	Kenneth Ave.	19	13	146.20%	82.40%
7410	Kempford Blvd.	South	Yonge St.	Barbara Rd.	14	15	93.30%	46.50%
7411	Byng Ave.	South	Yonge St.	Doris Ave.	17	14	121.40%	81.60%
7412	Horsham Ave.	South	Hounslow Ave.	Yonge St.	12	9	133.30%	56.40%

Location ID	Street	Side of Street	From	To	Peak Overall Capacity	Capacity	Peak Occupancy %	Avg Daily Peak Occupancy %
7414	Mckee Ave.	North	Yonge St.	Doris Ave.	13	13	100.00%	64.80%
7415	Ellerslie Ave.	North and South	Canterbury Pl.	Yonge St.	13	11	118.20%	61.90%
7416	Norton Ave.	South	Yonge St.	Doris Ave.	12	10	120.00%	71.10%
7417	Parkview Ave.	North	Yonge St.	Doris Ave.	11	10	110.00%	49.10%
7418	Kingsdale Ave.	North and South	Yonge St.	Doris Ave.	23	16	143.80%	38.90%
7419	Empress Ave.	South	Yonge St.	Doris Ave.	9	3	300.00%	142.20%
7420	Hillcrest Ave.	South	Yonge St.	Doris Ave.	14	9	155.60%	87.20%
7421	Elmwood Ave.	North and South	Yonge St.	Doris Ave.	33	31	106.50%	74.80%
7422	Hollywood Ave.	North and South	Yonge St.	Doris Ave.	27	26	103.80%	54.50%
7423	Upper Madison Ave	North and South	West Limit of Roadway	Yonge St.	16	10	160.00%	89.20%
7424	Spring Garden Ave.	North and South	Yonge St.	Doris Ave.	43	42	102.40%	68.20%
7425	Elmhurst Ave.	North and South	Beecroft Rd.	Yonge St.	48	36	133.30%	85.10%
7425	33 Elmhurst Ave	South	66.3 m east of Beecroft Rd	78.3 m east of Beecroft Rd	See above	See above	See above	See above
7426	Greenfield Ave.	South	Yonge St.	Doris Ave.	18	12	150.00%	78.90%
7427	Doris Ave.	East	Greenfield Ave.	Sheppard Ave.	19	16	118.80%	71.20%
7428	Harlandale Ave.	North and South	Beecroft Rd.	Yonge St.	13	8	162.50%	95.50%
7429	Johnston Ave.	North	West End	Yonge St.	5	2	250.00%	114.00%
7430	Glendora Ave.	North	Yonge St.	Bales Ave.	11	11	100.00%	45.60%
7430	19 Glendora Ave	South	22.1 m east of Yonge Street	34.1 m east of Yonge Street	See above	See above	See above	See above
7434	Church Ave.	North	41.5 metres east of Yonge St.	Doris Ave.	No data available	5	No data available	No data available

(Source: Toronto Parking Authority, 2023)

04. SAFETY REVIEW

4.1 Mobility Study Area Collision Overview

4.1.1 All Collisions

Intersection- and segment-related collision data within the MSA that occurred between 2013 and 2023 (as of October 19 when the analysis commenced) was provided by the City of Toronto and was used for this collision review. Duplicate entries have been filtered out from the raw data. It is noted that there were 10 collisions for which the date had been entered incorrectly (i.e., dated beyond 2025), which were excluded from the analysis. None of them were noted as Killed or Seriously Injured (KSI) or Vulnerable Road Users (VRU) collisions.

Major intersections involving two arterial street and their surrounding areas generally had a higher concentration of collisions. This is within expectations as there are more interactions between different travel modes at those locations. Between 2013 and 2023, the intersections of Yonge Street with Sheppard Avenue and Finch Avenue and surrounding areas had considerably larger numbers of collisions (over 700), when compared with the other study intersections. For reference, the intersection of Yonge Street and Drewry Avenue / Cummer Avenue, had the third highest number of collisions with approximately 270 (almost 500 fewer collisions in comparison with Yonge Street and Sheppard Avenue). The intersection of Sheppard Avenue and Bayview Avenue was also a notable hotspot with approximately 120 collisions. The Yonge Street intersections with Sheppard Avenue and Finch Avenue are both within the PSA.

There were a total of 156 KSI collisions within MSA between 2013 and 2023, which is approximately 0.54% of the total number of collisions (29,046). Most of these KSI collisions occurred near or at where an arterial intersects another street or driveway. Arterials typically have more traffic, more lanes and higher travel speeds than other streets, which are the potential contributors to more serious collisions. Yonge Street had more KSI collisions than other arterial street within the PSA, and there is a higher concentration along the middle segment between Finch Avenue and Steeles Avenue, and the segment at and south of Sheppard Avenue.

4.1.2 Vulnerable Road User (VRU) Collisions

There was a total of 1,597 VRU collisions within the MSA between 2013 and 2023, accounting for approximately 5.5% of the total collisions. The patterns generally align with the hotspots identified for the overall collisions with the highest density areas being the intersections of Sheppard Avenue and Finch Avenue with Yonge Street. The intersections of Yonge Street and Steeles Avenue and Sheppard Avenue East and Bayview Avenue are still hotspots, but not to the same degree as when considering all collisions. However, it is noteworthy that that Yonge Street and Finch Avenue had the most VRU collisions, whereas Yonge Street and Sheppard Avenue had the most overall collisions. This indicates that there was a relatively higher level of VRU-vehicle interactions at the intersection of Yonge Street and Finch Avenue.

Vulnerable road users are notably more prone to serious or fatal injuries in a collision than motorists. Out of the 1,597 VRU collisions, 83 or approximately 5.2% involved fatal or serious injuries. More than half of the total KSI collisions (83 out of 156) involved pedestrians or people cycling.

Most KSI collisions that involved vulnerable road users within the MSA occurred along a major arterial street or where two major arterials intersect (especially along Yonge Street), which is similar to the distribution pattern of KSI collisions in general.

4.1.3 Collision Hot Spots

KSI collisions predominantly occurred at intersections of arterial roads. The intersections with the highest concentration of collisions included Yonge Street with Sheppard Avenue, Finch Avenue, and Steeles Avenue, as well as Sheppard Avenue East at Bayview Avenue.

The intersections of Yonge Street with Sheppard Avenue and Finch Avenue had the highest concentration of KSI collisions involving VRUs.

The Phase 1 Background Report contains greater details on collision hot spots, as well as the heat maps for KSI collisions within the MSA and for VRUs.

4.2 Collisions Within Primary Study Area and Boundary Expansion Study Areas

A further collision review for the study area of the PSA and BESA within its 800-metre radius boundaries has been completed. The following sections involve a quantitative discussion of collision statistics in the study area and an overview of the hot spots. Based on the statistics, there were a total of 9,205 collisions in the study area between 2013 and 2023.

4.2.1 Impact Type

Figure 4-1 provides a breakdown of the collision data by impact type within the study area between 2013 and 2023. The most prominent impact type within the study area is vehicle rear-ended collision that constitute approximately 30% of the total collisions. There were 564 collisions that involved either pedestrians or people cycling, constituting approximately 6.1% of the total collisions. The proportion of VRU collisions within the study area is slightly higher than that of the MSA (5.5%).

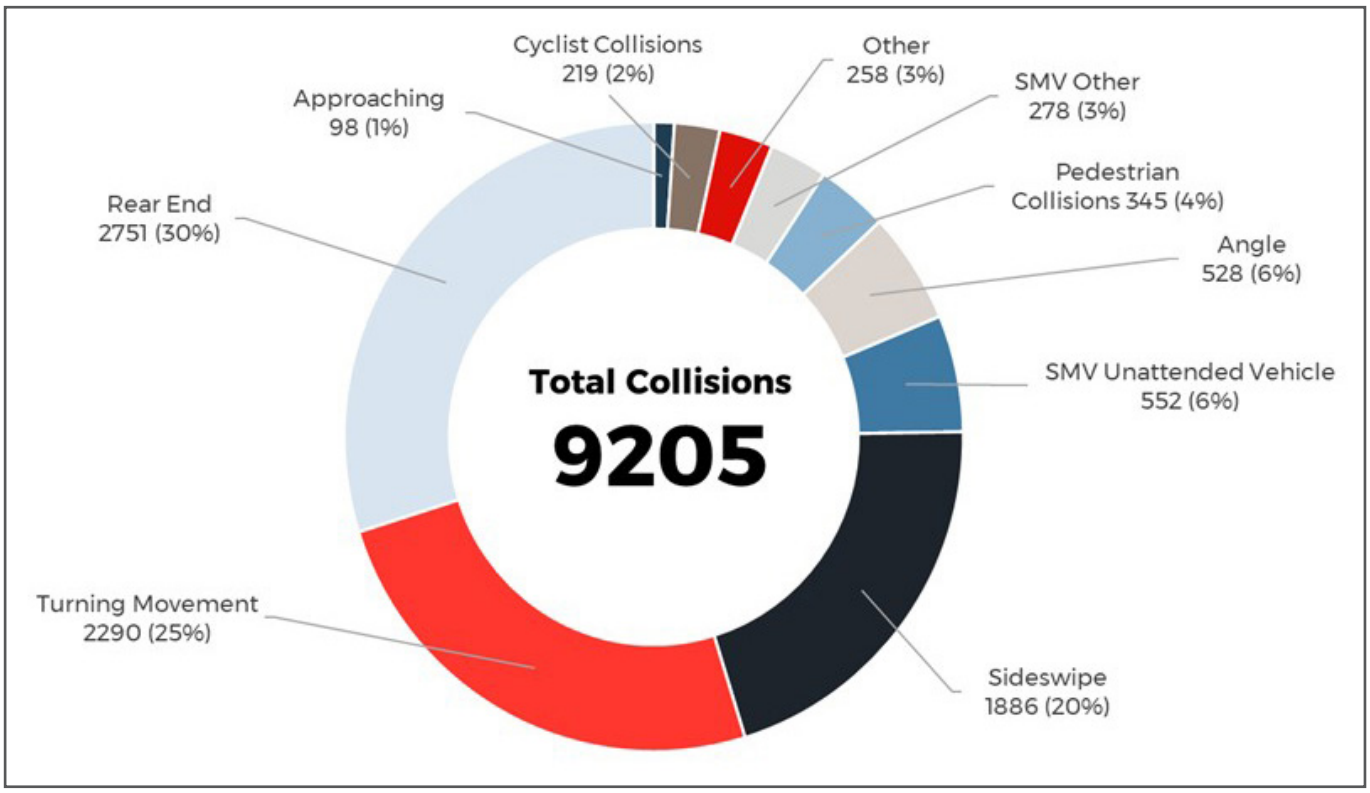

Figure 4-1: Study Area Collision Breakdown by Impact Type

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4.2.2 Injury Type

As indicated in **Figure 4-2**, over 80% of the collisions that occurred between 2013 and 2023 within the study area did not result in injury. 48 KSI injuries were identified among all collisions (approximately 0.52%) in the study area and the proportion is very similar to the that of the MSA (0.54%). 25 of the 48 collisions were related to Yonge Street, either at an intersection or along the street segment. By contrast, there were 6 KSI collisions along Beecroft Road and Doris Avenue. In addition, more KSI collisions related to Yonge Street occurred on the mid-block segments between the upstream and downstream arterial intersections than the area surrounding the intersections. The highest concentration occurred along the middle segment between Finch Avenue and Steeles Avenue and the segment at and south of Sheppard Avenue.

Vulnerable road users were involved in 31 of the 48 KSI collisions within the study area, constituting approximately 65% of the total KSI collisions, which is higher than the MSA average of 53%.

The above observations indicate that there are opportunities to enhance safety for pedestrians and people cycling along Yonge Street and other arterial street within the study area. An overview of planned safety improvements in the study area based on the relevant Environmental Assessment studies is provided in the following section.

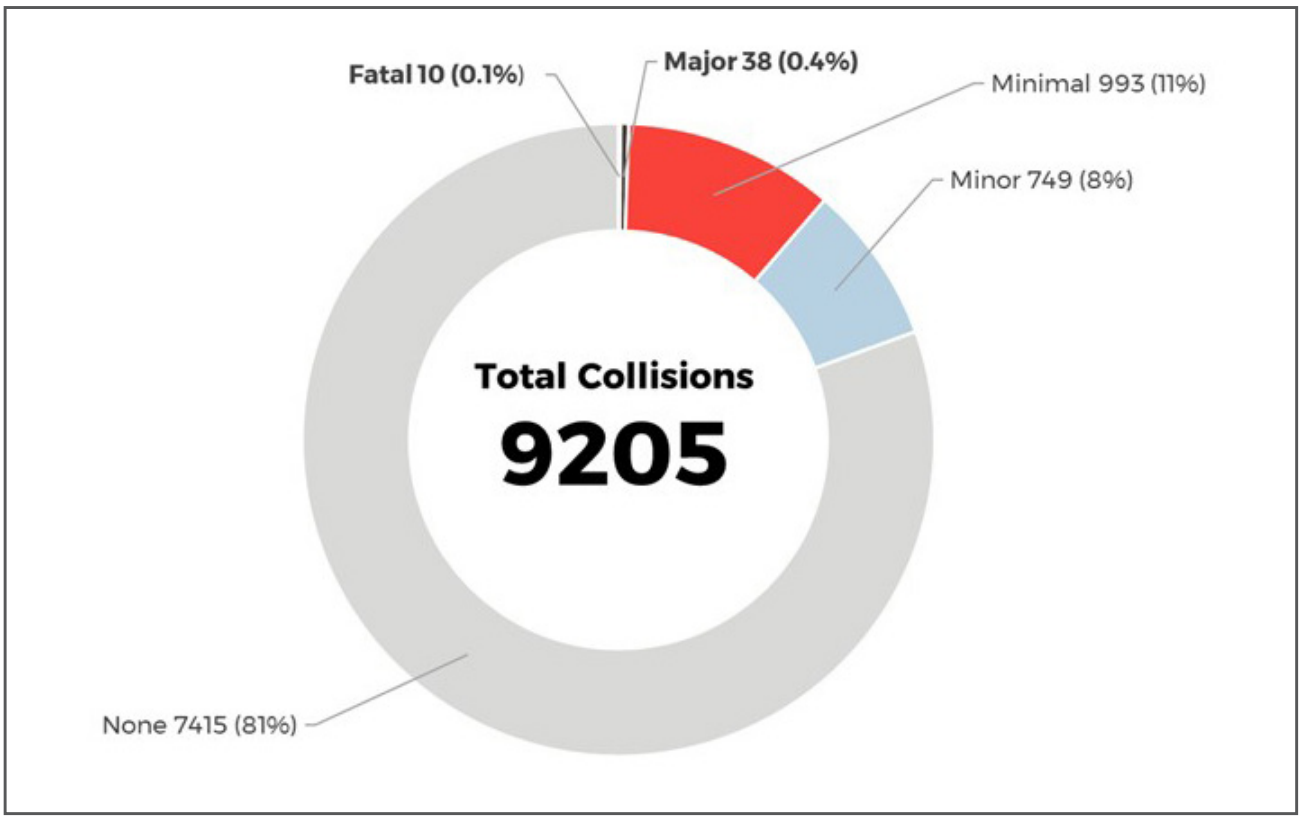

Figure 4-2: Study Area Collision Breakdown by Injury Type

4.2.3 Collision Trend by Year

Figure 4-3 and **Figure 4-4** respectively show the total collision and KSI collision trends within the study area by year. The years 2016 to 2019 had the most collisions over the study period with around 1,100 cases per annum. The number of collisions drastically decreased since 2020. This is likely due to the travel restrictions placed during the COVID-19 pandemic and fewer collisions occurred with lower level of traffic activities. In addition, the City's Vision Zero safety measures may have also contributed to the decrease in collisions. For example, as per the City's Vision Zero Mapping Tool, speed limit reductions to 50 km/h were applied to Sheppard Avenue and Finch Avenue by the end of 2019, which could reduce the risk of collision along these corridors.

The number of collisions notably increased in 2022 when compared to the previous year but was still much lower than the pre-pandemic level. It is possibly because most of the pandemic-related travel restrictions were lifted in 2022 but many businesses/academic institutions continued to allow hybrid or remote work/ study arrangement. However, though traffic volumes were gradually returning to pre-pandemic level, there was the least number of collisions in 2023 over the study period. Other than the fact that the 2023 collision data was only analyzed up to October 19, the Vision Zero safe measures implemented within the study area may have attributed to the lower number of collisions in general.

Based on **Figure 4-4**, there appears to be no direct correlation between the number of KSI collisions and overall collisions in each year. For example, years 2016 and 2019 had a similar number of total collisions to 2018 and 2019 but the respective KSI cases were significantly lower. As another example, year 2022 had the most collisions since the pandemic and yet the number of KSI collisions in 2022 was the lowest. Therefore, there is no obvious trend in KSI collisions, which is likely due to the small sample size (i.e., 48 KSI collisions occurred over a 10-year period).

Figure 4-4 also shows the number of KSI collisions related to pedestrians or people cycling, and the trend over time is generally consistent with the total number of KSI collisions. Half or more of the KSI collisions involved vulnerable road users in 9 out of the 11 data years as they are prone to more serious injuries.

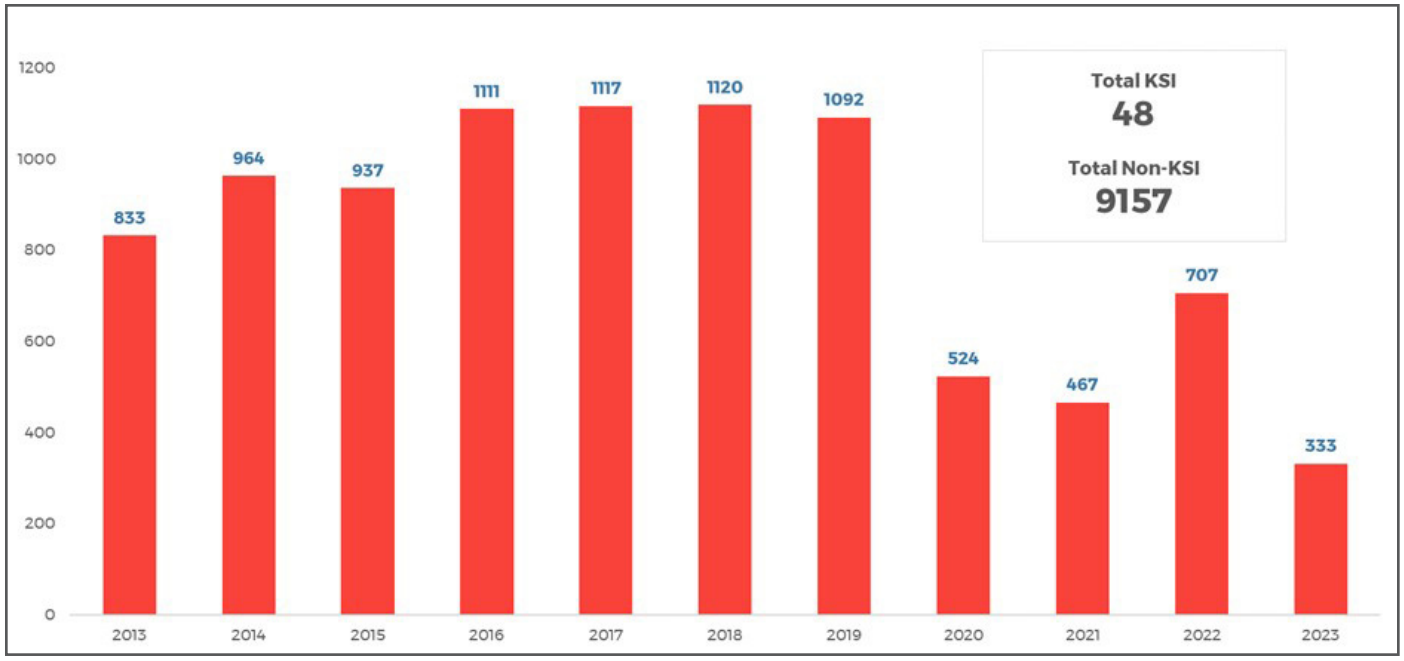

Figure 4-3: Study Area Collisions by Year

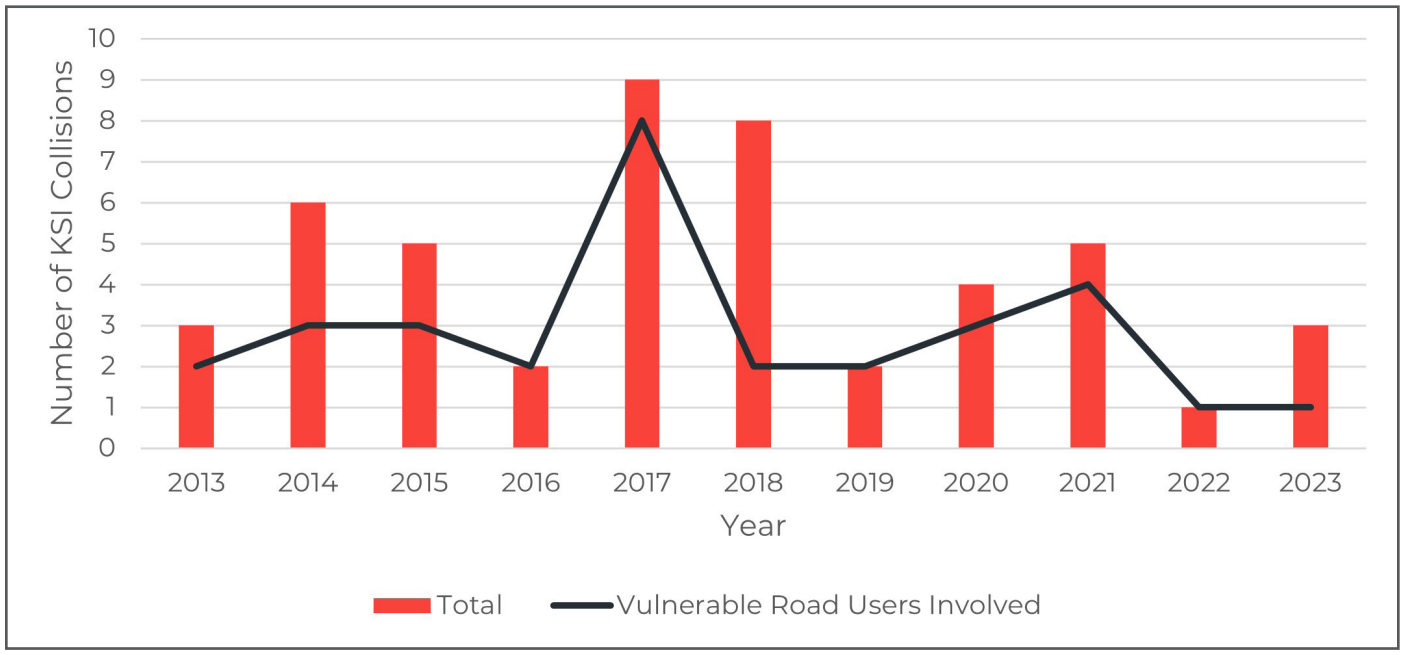

Figure 4-4: Study Area KSI Collisions by Year

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4.2 Safety Improvements

4.2.1 Existing Safety Measures

Table 4-1 lists the Vision Zero safety measures implemented in the overall MSA.

Table 4-1: Vision Zero Road Safety Measures within North York Centre

Installation Date	Improvement	Location
2018	New sidewalk	• Ellerslie Ave., north side from Senlac Rd. to Willowdale Middle School
2018	New sidewalk	• Franklin Ave., from Botham Rd. to [50 m W] Bassano Rd.
2022	Red light camera	• Yonge St. and Empress Ave./Park Home Ave.
Unknown	Automated Speed Enforcement Cameras	• Beecroft Rd. Near Lorraine Dr.
Unknown	Automated Speed Enforcement Cameras	• Drewry Ave. Near Norwin St.
Unknown	Automated Speed Enforcement Cameras	• Hilda Ave. Near Crossen Dr.
2016	Red light camera	• Bathurst St. and Sheppard Ave. W • Bayview Ave. and Truman Rd. / Fifeshire Rd • Steeles Ave. W and Hilda Ave • Bayview Ave. and Cummer Ave • Steeles Ave. W and Carpenter Rd. / Private Access @ Shopping Centre
2017	Red light camera	• Bayview Ave. and Sheppard Ave. E • Yonge St. and Steeles Ave
2021	Red light camera	• Bathurst St. and Wilson Ave • Bathurst St. and Finch Ave. W • Steeles Ave. W and Bathurst St • Willowdale Ave. and Bishop Ave • Cummer Ave. and Willowdale Ave
2022	Red light camera	• Yonge St. and Athabaska Ave. / Private Access at Centrepoint Mall • Yonge St. and Empress Ave. / Park Home Ave • Finch Ave. E and Kenneth Ave. • Bayview Ave. and Finch Ave. E
2016	Speed Limit Reductions - 30 km/h	• Wedgewood Drive (Yonge St. to Willowdale Ave.)
2016	Speed Limit Reductions - 60 km/h	• Finch Ave. West (Islington Ave. to Yonge St.)
2017	Speed Limit Reductions - 40 km/h	• Pleasant Ave. (Chelmsford Ave. to Crossen Dr.) • Avondale Ave. (Yonge St. to Willowdale Ave.)

Installation Date	Improvement	Location
2019	Speed Limit Reductions - 50 km/h	• Steeles Ave. W (Yonge St. to Keele St.)
2019	Speed Limit Reductions - 50 km/h	• Bathurst St. (Delhi Ave. to Steeles Ave. W) • Sheppard Ave. W (Weston Rd. to Yonge St.) • Steeles Ave. W (Yonge St. to Keele St.)
2020	Speed Limit Reductions - 40 km/h	• Ellerslie Ave. (Bathurst St. to Senlac Rd.) • Ellerslie Ave. (Beecroft Rd. to Yonge St.) • Norton Ave. (Yonge St. to Doris Ave.) • Patricia Ave. (Bathurst St. to Yonge St.) • York Downs Dr. (Yeomans Rd. to Armour Blvd.) • Grantbrook St. (Finch Ave. West to Drewry Ave.) • Cactus Ave. (a point 150 m South of Pleasant Ave. to Drewry Ave.) • Greenwin Village Rd. (Bathurst St. to Peckham Ave.) • Village Gate (Steeles Ave. West to Greenwin Village Rd.) • Hilda Ave. (Steeles Ave. W to Patricia Ave.) • Newton Dr. (Yonge St. to Lillian St.) • Maxome Ave. (Finch Ave. E to a Point 30 m North of Bishop Ave.) • Maxome Ave. (A Point 15 m South of Cummer Ave. to a point 150 m South of Otonabee Ave.) • Maxome Ave. (Steeles Ave. East to a Point 150 m North of Otonabee Ave.) • Hendon Ave. (Yonge St. to Talbot Rd.) • Tamworth Rd. (Park Home Ave. to Holcolm Rd.) • Churchill Ave. (Yonge St. to Beecroft Rd.) • Empress Ave. (Yonge St. to Doris Ave.) • North York Blvd. (Yonge St. to Beecroft Rd.) • Elmhurst Ave. (Beecroft Rd. to Yonge St.) • William Carson Cres. (Yonge St. to north end of William Carson Cres.) • The Links Rd. (Lord Seaton Rd. to Tournament Dr.) • Tournament Drive (The Links Rd. to Upper Highland Cres.) • Upper Highland Cres. (York Mills Rd. to Fenn Ave.) • Fenn Ave. (Upper Highland Cres. to Medalist Rd.) • Fenn Ave. (York Mills Rd. to Gordon Rd.) • Medalist Rd. (Fenn Ave. to Knollwood St.) • Knollwood St. (Medalist Rd. to Fifeshire Rd.) • Fifeshire Rd. (Bayview Ave. (North Intersection) to Toba Dr.) • Fifeshire Rd. (Bayview Ave. (South Intersection) to Knollwood St.) • Kenneth Ave. (Olive Ave. to a Point 150 m North of Church Ave.) • Kenneth Ave. (Parkview Ave. to Sheppard Ave. E)

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Installation Date	Improvement	Location
2017	Safety Zones	**Senior Safety Zones** • Bathurst St. and Steeles Ave. W **Pedestrian Safety Corridors** • Bayview Ave. (Post Rd. to Cummer Ave.) • Yonge St. (Donwoods Dr. to Franklin Ave.)
2018	Safety Zones	**Community Safety Zones** • Yorkview Dr. (Bevdale Rd. to Muirkirk Rd.) • Cactus Ave. (Pleasant Ave. to Green Bush Rd.) • Otonabee Ave. (280 Otonabee Ave. to Michigan Dr.) • Maxome Ave. (Cummer Ave. to 100 m north of Laredo Crt.) • Finch Ave. E (Bayview Ave. to 100 m west of Estelle Ave.) • Finch Ave. W (Grantbrook St. to Edithvale Dr.) • Churchill Ave. (Senlac Rd. to Tamworth Rd.) • Senlac Rd. (Churchill Ave. to Ellerslie Ave.) • Ellerslie Ave. (Senlac Rd. to Tamworth Rd.) • Claywood Rd. (Horsham Ave. to Churchill Ave.) • Kempford Blvd. (Beecroft Rd. to Yonge St.) • Doris Ave. (Empress Ave. to Sheppard Ave. E) • Spring Garden Ave. (Wilfred Ave. to Bayview Ave.) • Wilson Ave. (Ave. Rd. to Yonge Blvd.) **School Safety Zone** • RJ Lang Elementary and Middle School • Mckee Public School **Senior Safety Zones** • Sheppard Place (4455 Bathurst St.) • The Kempford (5430 Yonge St.) • Yonge St. and Park Home Ave.

Installation Date	Improvement	Location
2019	Safety Zones	**School Safety Zone** • Fisherville Senior Public School • Pleasant Ave. Public School • St. Paschal Baylon Catholic Elementary School • Finch Public School • St. Antoine Daniel Catholic Elementary School • Churchill Public School • Willowdale Middle School • Hollywood Public School • Summit Heights Public School • Cameron Public School **Community Safety Zones** • Patricia Ave. (Chelmsford Ave. to Bathurst St.) • Lillian St. (Nipigon Ave. to Newton Dr.) • Greenfield Ave. (Yonge St. to Doris Ave.) • Fenn Ave. (Owen Blvd. to Upper Highland Cres.) • Owen Blvd. (Upper Highland Cres. to Fenn Ave.) • Gordon Rd. (Upper Highland Cres. to Fenn Ave.) • Armour Blvd. (Ridley Blvd. to Westgate Blvd.) • Delhi Ave. (Ridley Blvd. to Bathurst St.)
2020	Safety Zones	**Community Safety Zones** • Ancona St. (Finch Ave. West to Devondale Ave.) • Drewry Ave. (Grantbrook St. to Yonge St.) • Hilda Ave. (Steeles Ave. W to Pleasant Ave.) • Hilda Ave. (Newtonbrook Blvd to Patricia Ave.) • Bayview Ave. (Garnier Crt to Argonne Cres) • Spring Garden Ave. (Dudley Ave. to Longmore St.) • Willowdale Ave. (Greenfield Ave. to Hollywood Ave.) • Northmount Ave. (Southbourne Ave. to Delhi Ave.) • Southbourne Ave. (Bathurst St. to Northmount Ave.) **School Safety Zone** • St. Edward Catholic Elementary School
2021	Safety Zones	**School Safety Zone** • St. Agnes Catholic Elementary School • Yorkview Public School • St. Cyril Catholic Elementary School • St. Gabriel Catholic Elementary School • Armour Heights Public School **Community Safety Zones** • Burnwell St. (Anndale Dr. to Avondale Ave.) • Oakburn Cres. (Harrison Garden Blvd. to Avondale Ave.) • Avodale Ave. (Oakburn Cres. to Willowdale Ave.)

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Installation Date	Improvement	Location
2022	Safety Zones	**School Safety Zone** • Cummer Valley Middle School • Avondale Public School **Community Safety Zones** • Beecroft Rd. (Hounslow Ave. to Finch Ave. W)
2023	Safety Zones	**School Safety Zone** • Claude Watson School for the Arts
Unknown	School Crossing Guard	• Bayview Ave. & Bayview Mews Ln. • Cactus Ave. & Moore Park Ave. • Bathurst St. & Patricia Ave. • Drewry Ave. & Norwin St. • Bayview Ave. & Cummer Ave. • Bayview Ave. & Ruddington Dr. • Bayview Ave. & Finch Ave. E • Estelle Ave. & Finch Ave. E • Finch Ave. E & Maxome Ave. • Finch Ave. W & Ancona St • Bathurst St. & Finch Ave. W • Yonge St. & Kempford Blvd. • Yorkview Dr. & Wynn Rd. • Churchill Ave. & Senlac Rd. • Church Ave. & Doris Ave. • Church Ave. & Kenneth Ave. • Kenneth Ave. & Mckee Ave. • Kenneth Ave. & Norton Ave. • Empress Ave. & Bayview Ave. • Empress Ave. & Kenneth Ave. • Spring Garden Ave. & Doris Ave. • Sheppard Ave. East & Doris Ave. • Sheppard Ave. Ave. W & Senlac Rd. • Sheppard Ave. Ave. E & Wilfred Ave. • Burnwell St. & Avondale Ave. • York Mills Rd. & Fenn Ave. • Birchwood Ave. & York Mills Rd. • Bathurst St. & Laurelcrest Ave. • Armour Blvd & Bombay Ave. • Belgrave. Ave. & Wilson Ave. • Avenue Rd. & Wilson Ave.

05. MULTI-MODAL ANALYSIS

A multi-modal level of service (MMLOS) analysis was conducted following the methodology of the *Ontario Traffic Council (OTC) Multi-Modal Level of Service Guidelines*, dated February 2022.

All intersections evaluated as part of the traffic analysis were included (with the exception of the intersection of Yonge Street and the Highway 401 Westbound Off-Ramp and signalized pedestrian crossings), and segments were chosen to correspond with the streets that connected two intersections under evaluation. Pedestrian and bicycle level of service analyses were conducted for all intersections and segments. A transit level of service analysis was only conducted for intersections and/or segments where transit vehicles were present.

5.1 Motor Vehicles & Trucks Volumes and Movements

This section describes the approach used to develop existing traffic volumes and discusses the findings of the existing traffic operations assessment. The study area of the traffic analysis is documented in Section 5 Multi-Modal Analysis.

5.1.1 Development of Existing Traffic Volumes

Turning movement counts (TMCs) for weekday A.M. and P.M. peak periods were obtained from a variety of sources including Toronto Open Data and transportation impact studies associated with developments in the vicinity of the study area.

Pre-COVID-19 signal timing plans (STPs) were provided by the City of Toronto. Where pre-COVID STPs were unavailable (for example at intersections that were signalized after 2019), more recent STPs were used.

Table 5-1 summarizes the date of both the TMCs and STPs used in the analysis at each intersection and includes notes on the source and any specific assumptions made regarding the traffic counts. Any TMCs which were taken prior to the implementation of the STP which was analyzed are indicated in **bolded red**. Of the 43 study intersections, 26 were analyzed using STPs which were not in place at the time the counts were taken. These intersections are also highlighted by yellow circles on **Figure 5-1**.

Historical TMCs at the intersections of Finch Avenue, Steeles Avenue, and Sheppard Avenue with Yonge Street were all analyzed to estimate annual traffic growth within the study area. The analysis found an overall negative growth trend along major streets in the study area, as such no growth factors were applied to historical TMCs. Where volume imbalances of greater than 10% existed, in accordance with the Toronto Synchro Guidelines, balancing was applied where deemed appropriate.

The TMC for the intersection of Beecroft Road and Ellerslie Avenue was taken prior to the addition of the west leg, which connects with the Residences of Dempsey Park (a 1-storey condo containing 49 units). To estimate volumes at the west leg, trip generation for this condo was completed using ITE rates for Single-Family Attached Housing.

The balanced existing traffic volumes at the study intersections are shown in **Figure 5-2**, **Figure 5-3**, and **Figure 5-4**. These volumes (which include heavy vehicles and passenger vehicles) were used in the subsequent Synchro analysis.

Table 5-1: Summary of Data Used in Analysis

Intersection	STP Date	TMC Date	Notes
Sheppard Ave & Kenneth Ave / Leona Dr	20-Aug-14	**30-Apr-13**	Toronto Open Data
Beecroft Rd & Elmhurst Ave	25-Jun-14	**02-May-13**	Toronto Open Data
Doris Ave & Empress Ave	23-Oct-19	**02-May-13**	Toronto Open Data
Doris Ave & Pedestrian Crosswalk Approx. 90 m. South of Empress Ave	19-Dec-19	**02-May-13**	Volumes estimated by balancing with Doris Ave. & Empress Aven.
Beecroft Rd & Park Home Ave	06-Sep-19	**13-May-13**	Toronto Open Data
Doris Ave & Greenfield Ave	20-May-18	**13-May-13**	Toronto Open Data
Yonge St & Avondale Ave / Florence Ave	07-Mar-16	**02-Dec-15**	Toronto Open Data
Finch Ave & TTC Finch Terminal Driveway	09-Jul-18	**18-Mar-16**	Background Development
Beecroft Rd & Churchill Ave	20-Nov-15	22-Mar-16	Background Development
Doris Ave & Byng Ave	20-Feb-18	**22-Mar-16**	Background Development
Doris Ave & Midblock Crossing - Multi-Use Path (50 m. S of Hollywood)	26-Apr-18	**22-Mar-16**	Background Development
Beecroft Rd & Ellerslie Ave	26-Jun-19	**22-Mar-16**	Background Development + Volume Estimation for West Leg
Talbot Rd & Midblock Crossing - Multi-Use Path (22 m. N of Blake Ave)	28-Nov-16	**30-Mar-16**	Background Development
Beecroft Rd & Kempford Blvd	17-Dec-15	18-May-16	Toronto Open Data
Yonge St & Church Ave / Churchill Ave	20-Aug-19	**18-May-16**	Toronto Open Data
Yonge St & Empress Ave / Park Home Ave	04-Oct-19	**18-May-16**	Toronto Open Data
Yonge St & Elmhurst Ave / Greenfield Ave	23-Jul-13	18-May-16	Toronto Open Data
Doris Ave & Church Ave	15-Oct-18	**18-May-16**	Toronto Open Data
Yonge St & Poyntz Ave / Anndale Dr	01-Dec-17	**08-Feb-17**	Background Development
Yonge St & Kempford Blvd	19-Aug-19	**30-Mar-17**	Toronto Open Data
Sheppard Ave & Beecroft Rd	30-Sep-16	30-Jan-18	Toronto Open Data
Willowdale Ave & Bishop Ave	16-Mar-18	**28-Feb-18**	Toronto Open Data
Willowdale Ave & Byng Ave	21-Nov-16	28-Feb-18	Toronto Open Data

Intersection	STP Date	TMC Date	Notes
Sheppard Ave & Pewter Rd	03-Sep-21	**28-Nov-18**	Toronto Open Data This TMC was collected prior to the intersection being signalized.
Drewry Ave & Hilda Ave	13-Oct-10	23-Jan-19	Toronto Open Data
Finch Ave & Talbot Rd	16-Feb-18	21-Mar-19	Toronto Open Data
Finch Ave & Greenview Ave / Beecroft Rd	22-Aug-19	**21-Mar-19**	Toronto Open Data
Yonge St & Finch Ave	31-Oct-19	**21-Mar-19**	Toronto Open Data
Finch Ave & Kenneth Ave / Doris Ave	15-Nov-18	21-Mar-19	Toronto Open Data
Finch Ave & Willowdale Ave	27-Feb-19	21-Mar-19	Toronto Open Data
Avondale Ave & Bales Ave / Harrison Garden Blvd	05-Jan-21	**27-Mar-19**	Toronto Open Data
Yonge St & Transit Driveway - Finch Terminal	07-Nov-17	10-Apr-19	Toronto Open Data
Yonge St & Hwy 401 WB Off-Ramp	13-May-20	**13-Jun-19**	Toronto Open Data
Willowdale Ave & Cummer Ave	21-Nov-16	04-Sep-19	Background Development
Yonge St & Sheppard Ave	06-Apr-16	26-Nov-19	Toronto Open Data
Beecroft Rd & North York Blvd / Private Access	21-Jan-16	03-Dec-19	Toronto Open Data
Yonge St & Cummer Ave / Drewry Ave	19-Jul-23	**11-Dec-19**	Background Development
Yonge St & Turnberry Crt	06-Oct-09	11-Dec-19	Background Development
Yonge St & Bishop Ave / Hendon Ave	05-Aug-19	11-Dec-19	Background Development
Yonge St & North York Blvd / Elmwood Ave	31-Jul-19	**23-Sep-20**	Background Development
Doris Ave & Pedestrian Crosswalk Approx. 45 m North of Norton Ave	23-Sep-22	**03-Nov-21**	Toronto Open Data The TMC used to estimate these volumes was for the intersection of Doris Avenue and Norton Avenue.
Beecroft Rd & Poyntz Ave	14-Nov-19	10-Jan-23	Background Development
Sheppard Ave & Doris Ave	30-Dec-13	08-Feb-23	Toronto Open Data

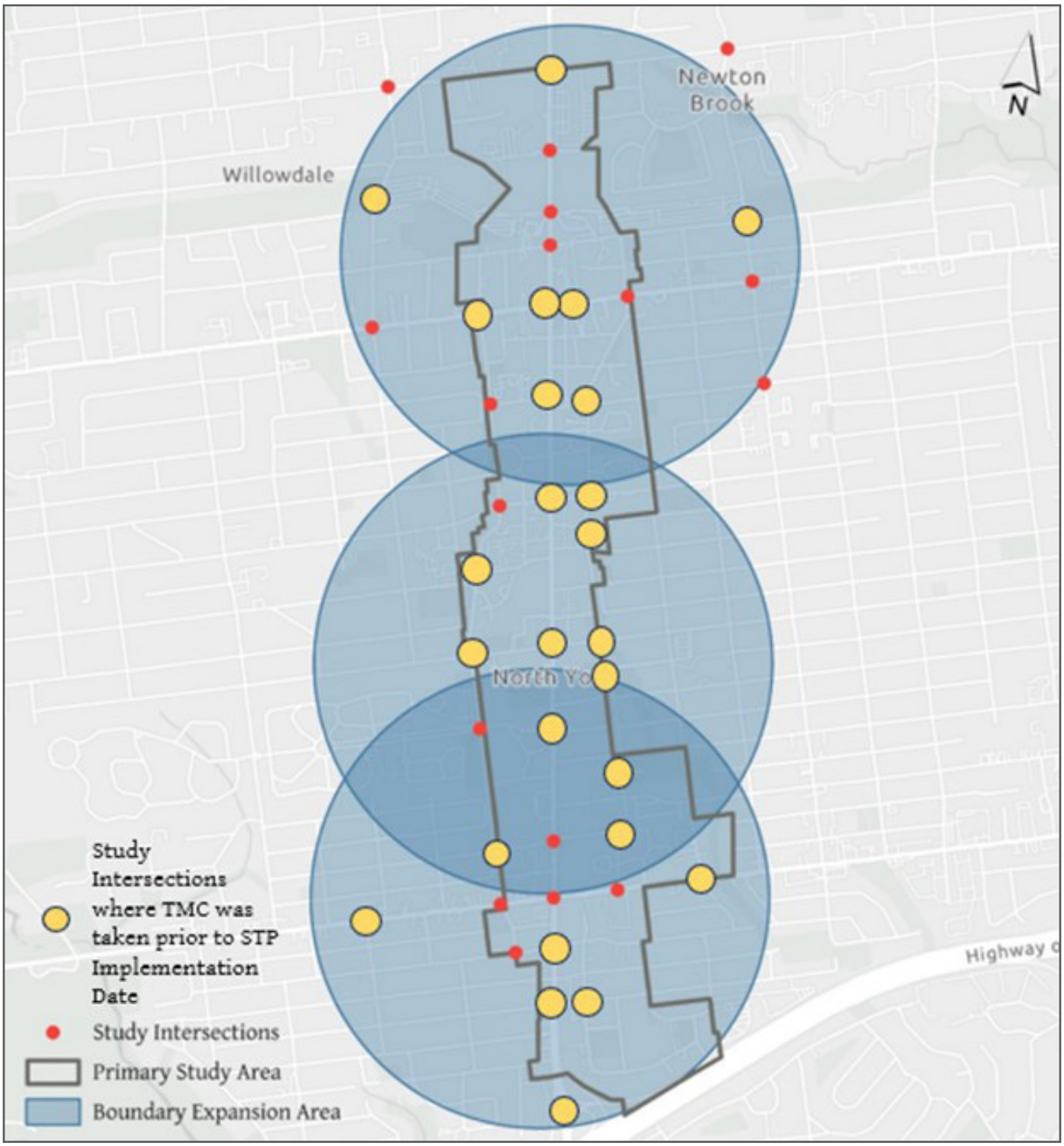

Figure 5-1: Study Intersections Where Turning Movement Counts were Collected Prior to Signal Timing Plans Implementation Date

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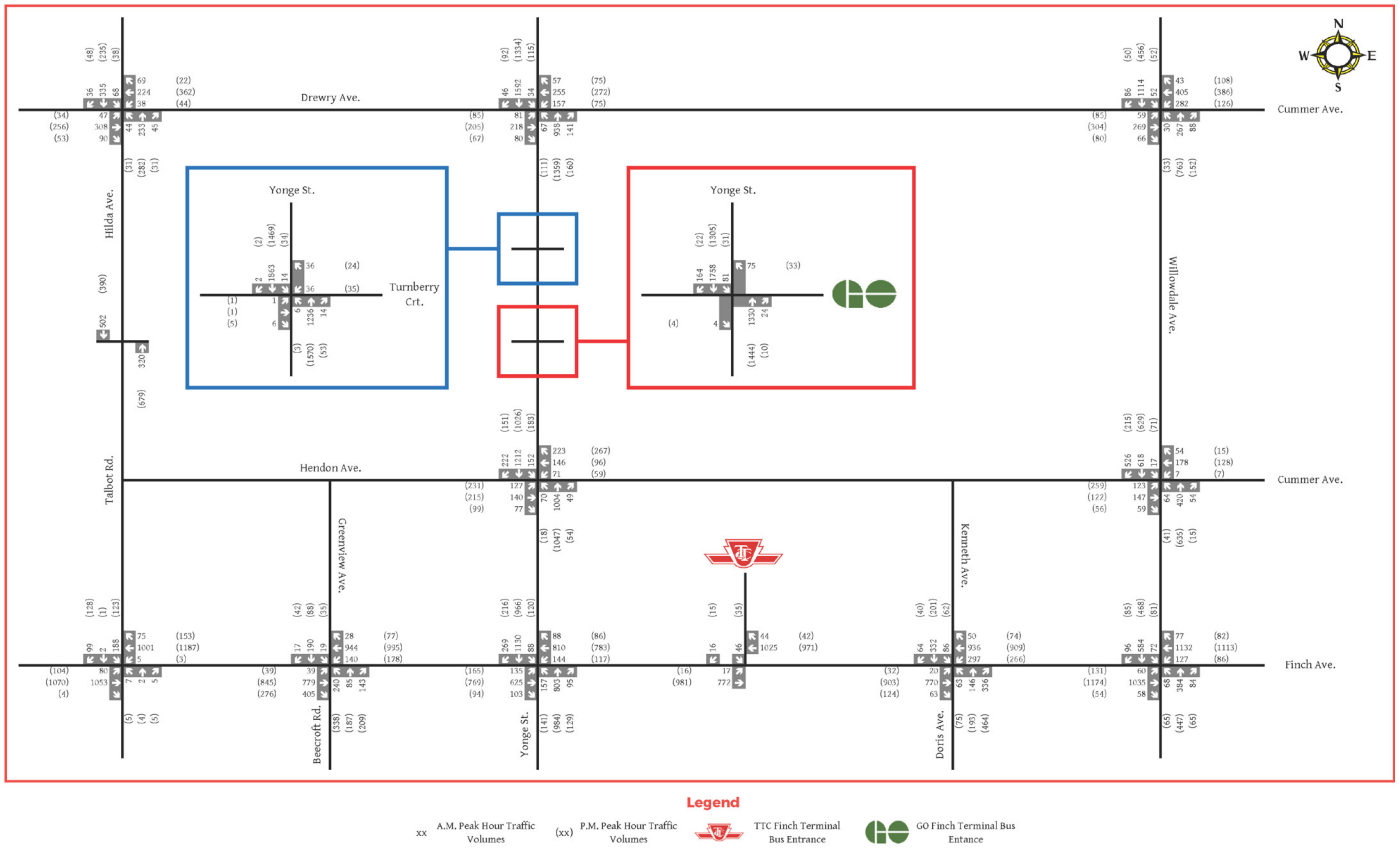

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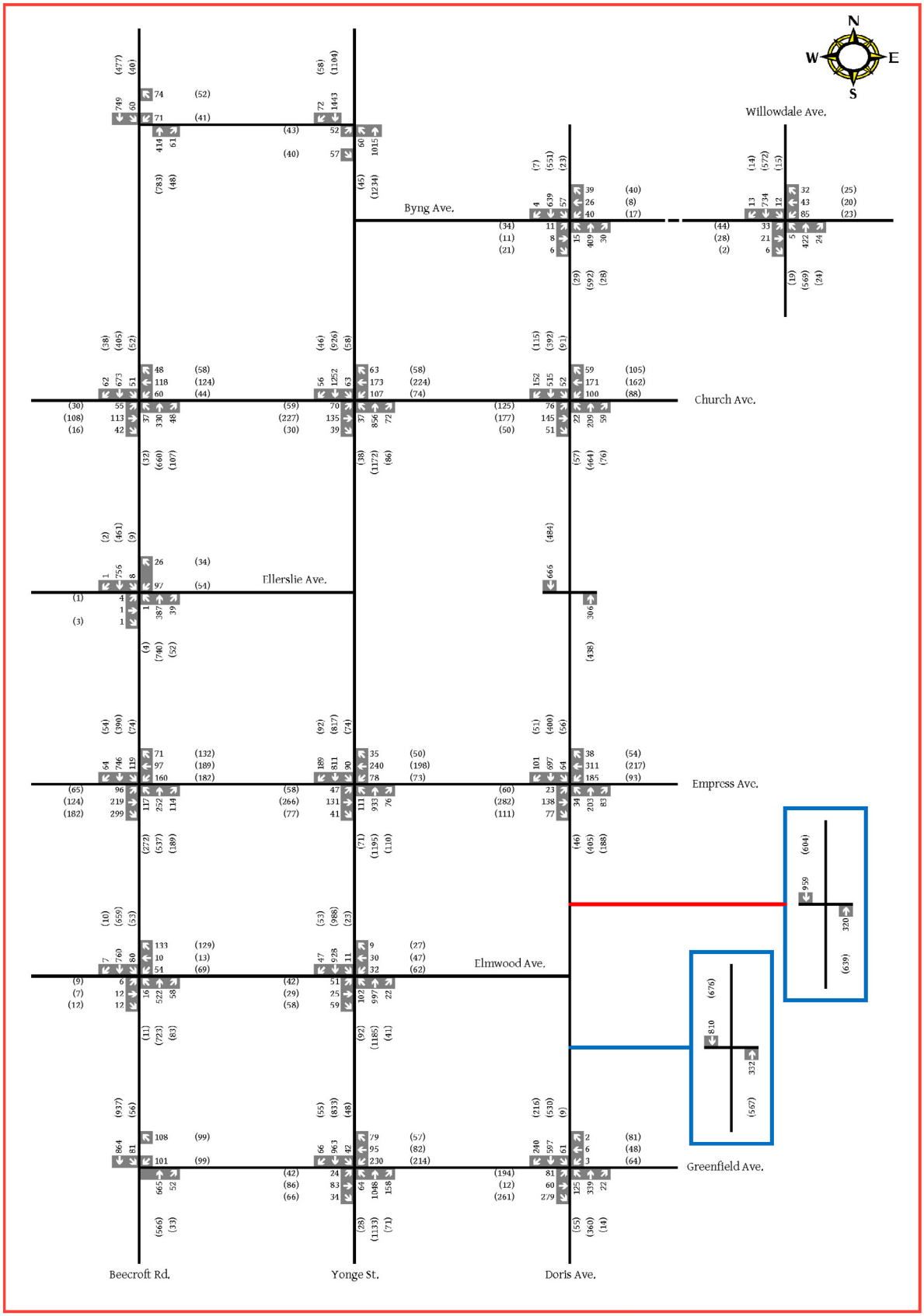
Figure 5-2: Balanced Existing Volumes – Part 1



Legend

xx A.M. Peak Hour Traffic Volumes

(xx) P.M. Peak Hour Traffic Volumes

Figure 5-3: Balanced Existing Volumes – Part 2

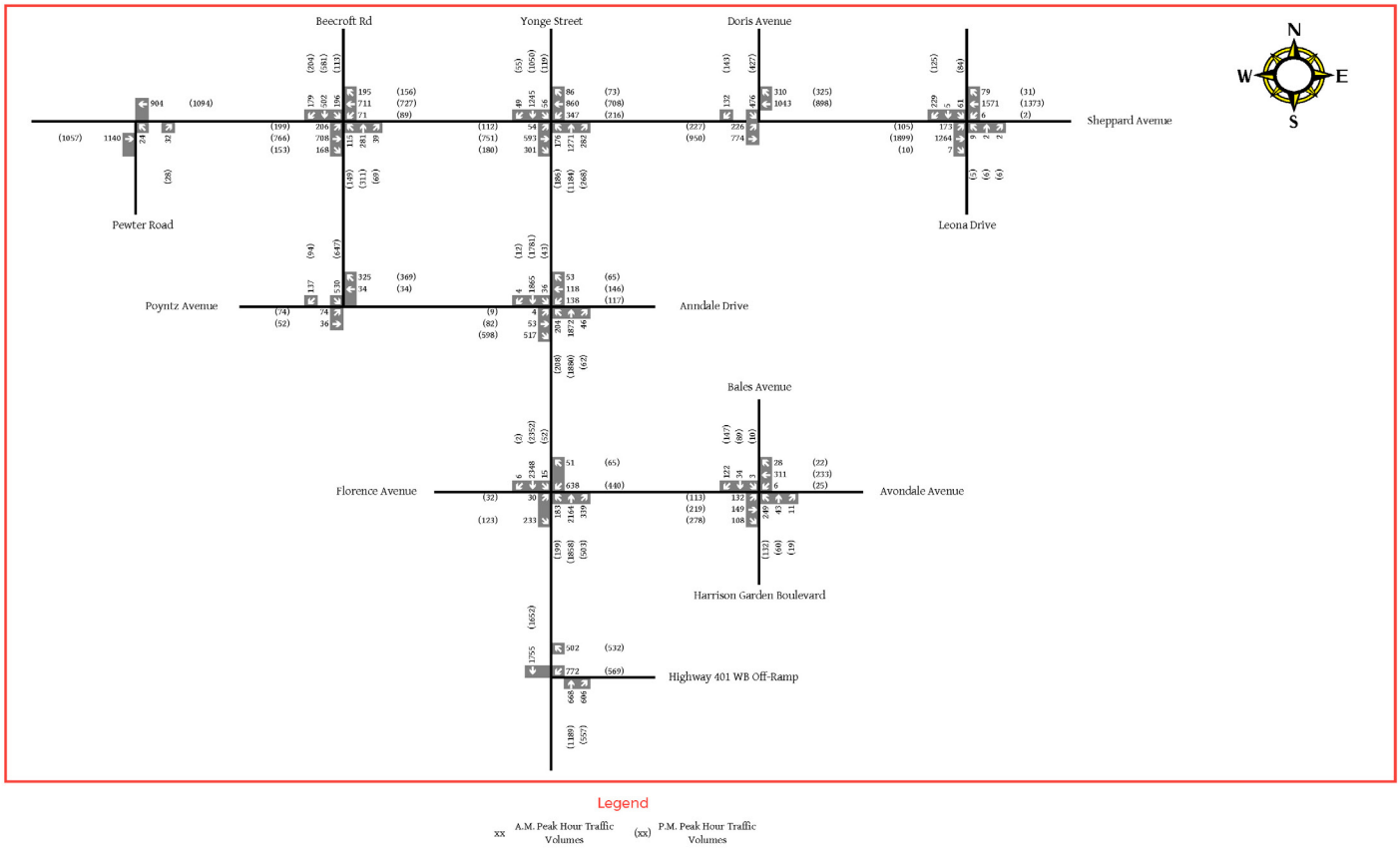


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Figure 5-4: Balanced Existing Volumes – Part 3

Vehicular intersection demand recorded for the BESA is mapped out in **Figure 5-5** for the A.M. peak period and in **Figure 5-6** for the P.M. peak period. Similar patterns were noted for the A.M. and P.M. peak periods, as follows:

- The highest intersection vehicle volumes were recorded along Yonge Street south of Sheppard Avenue during each of the peak periods, ranging from approximately 4,900 to 6,000 vehicles.
- Moderate intersection volumes ranging from approximately 2,400 to 4,600 vehicles were recorded during each peak period along other major arterial street segments, including Yonge Street (north of Finch Avenue), Sheppard Avenue, and Finch Avenue.
- Between Sheppard Avenue and Finch Avenue, intersection volumes were recorded within the lowest range of approximately 1,000 to 3,000 vehicles along Yonge Street and along connecting streets to the east and west of Yonge Street.

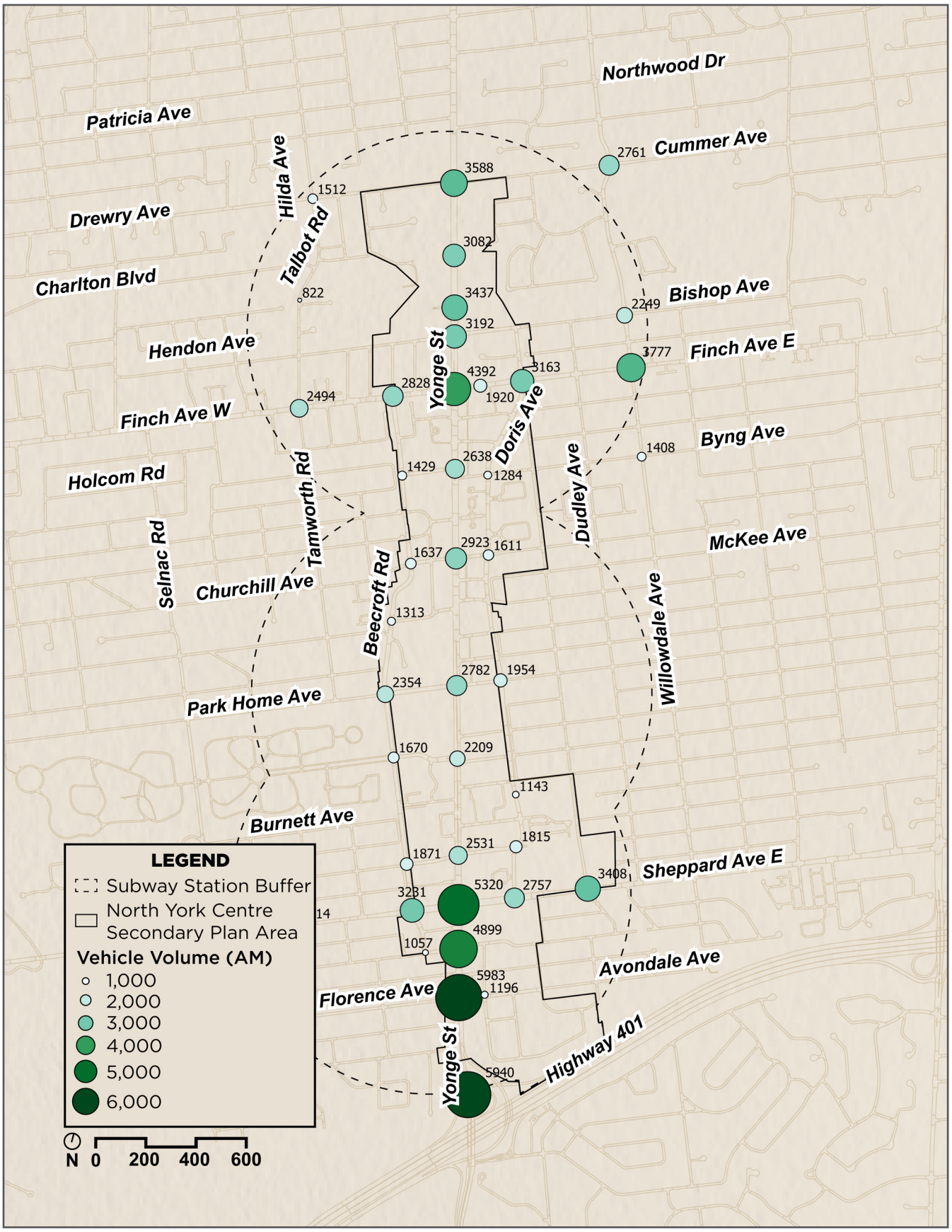

Figure 5-5: Vehicular Intersection Demand for A.M. Peak Period within the BESA

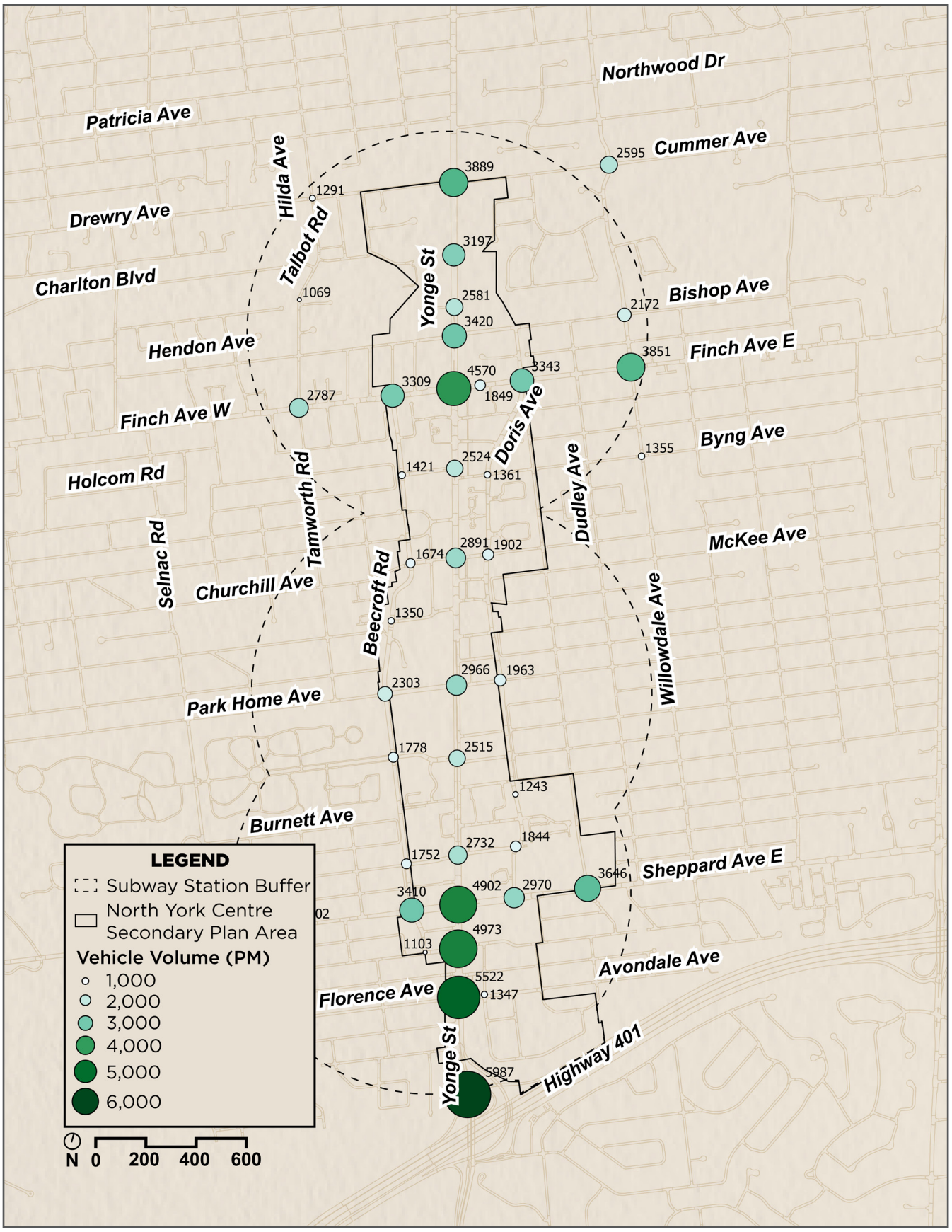

Figure 5-6: Vehicular Intersection Demand for P.M. Peak Period within the BESA

5.1.2 Synchro Parameters

The existing conditions Synchro models incorporate parameter inputs consistent with the City's *Guidelines for Using Synchro 11*, dated January 15th, 2021, which include:

- Lost time adjustments of -1;
- City default lane widths (3.5 metres for through-lanes, 3.0 metres for exclusive turning lanes);
- Bus blockages based on TTC, GO and YRT arrival data for all near-side bus stops, as further discussed in Section 0;
- Conflicting pedestrian volumes taken from turning movement counts. For signalized pedestrian crossings where through volumes were estimated using TMCs for upstream or downstream intersections, the number of pedestrian calls assumed to be equal to that which allowed the 70th percentile green time to be equal to the green time;
- Heavy vehicle percentages and intersection peak hour factors (PHF) taken from turning movement counts;
- Standard detector and signal input settings; and
- Pedestrian minimum crossing times.

As noted above, PHFs were calculated using the TMCs at each intersection as described in the City's Synchro Guidelines. For intersections where volumes were estimated using the TMC of an adjacent intersection – the pedestrian crosswalks on Doris Avenue that are 90 metres south of Empress Avenue and 45 metres north of Norton Avenue – the City default PHFs were applied (0.90 in the A.M. and for left-turns, and 0.95 in the P.M.).

A comparison of traffic operations results at the intersection of Yonge Street and Sheppard Avenue considering the PHF recommended by the Toronto Synchro Guidelines versus the PHF calculated using TMC data is summarized in **Table 5-2**. As shown in **Table 5-2**, the application of the TMC PHF has a significant impact during the A.M. peak hour with a decrease in overall intersection delay of over 15 seconds.

Table 5-2: Impact of TMC PHF on Traffic Operations Results at Yonge St & Sheppard Ave

Movement	A.M. Peak Hour						P.M. Peak Hour					
	Synchro Guide PHF			TMC PHF			Synchro Guide PHF			TMC PHF		
	LOS	Delay	v/c Ratio	LOS	Delay	v/c Ratio	LOS	Delay	v/c Ratio	LOS	Delay	v/c Ratio
Overall	E	67.3	-	D	52.1	-	D	50.9	-	D	48.5	-
EB-L	C	24.2	0.29	C	23.6	0.27	C	27.5	0.47	C	27.4	0.46
EB-TR	E	60.5	0.94	D	52.9	0.87	D	45.6	0.77	D	45.9	0.78
WB-L	F	107.7	1.08	E	79.4	0.98	E	62.3	0.89	E	61.1	0.88
WB-TR	C	33.5	0.58	C	32.4	0.54	D	37.4	0.55	D	37.4	0.56
NB-L	F	248.4	1.41	F	175.6	1.23	F	187.6	1.27	F	98.2	1.03
NB-TR	F	85.7	0.99	E	46.2	0.92	D	45.4	0.91	E	47.2	0.92
SB-L	C	29.3	0.45	C	28.1	0.42	E	57.5	0.80	D	54.6	0.78
SB-TR	D	42.5	0.84	D	39.7	0.78	D	39.0	0.79	D	35.3	0.67

Bus Blockages

There are multiple TTC, GO, and YRT bus routes within the study area as described in **Section 3**. TTC and GO Transit GTFS arrivals data, and YRT online schedules were used to estimate the peak period bus blockages at all near-side bus stops within the study area. To be conservative, the highest one-hour arrivals for each near-side stop during each peak period was applied.

5.1.3 Model Calibration and Validation

Based on the results of existing conditions traffic assessment, some movements were found to be over-capacity during the weekday A.M. and/or P.M. peak hours, which are identified in **Table 5-3**. This is theoretically impossible under existing conditions as the TMCs account for vehicles that cleared the intersections. However, this is not uncommon since Synchro does not always accurately reflect the prevailing traffic conditions (e.g., more aggressive driving behaviours in an urban environment). In the case of this study, another possible contributing factor to the theoretically impossible capacity deficiencies under existing conditions is the inconsistency between STP and TMC dates. As noted in **Table 5-3**, the adopted TMCs at certain intersections were collected prior to the implementation of the STPs used in the analysis, and the traffic patterns may not reflect the signal timings. In addition, some study intersections have SCOOT signal timings, and the 'typical' timing splits in the STPs may not reflect the actual green time in field.

Nevertheless, the existing Synchro model was calibrated to reflect a more realistic operating condition. Any movements that were found operating above capacity under existing conditions were calibrated to bring them just within capacity. **Table 5-3** summarizes the movements in both the A.M. and P.M. models that were calibrated, and the techniques applied. In general, the following steps were taken:

- Application of surveyed movement- and/or approach-specific peak hour factors was considered first;
- For left-turn movements, lost time adjustments were then decreased incrementally by -0.1 seconds (to a maximum of -3 per the Toronto Synchro Guidelines) until the v/c was just within capacity; and
- Ideal saturation flow rates were adjusted to bring movements just within capacity (the resulting saturated flow rates were within the maximum values listed in the Toronto Synchro Guidelines).

Following the order identified above (i.e. if step 1 solved the capacity issue, the calibration process stopped), the calibration process for each movement would stop as soon as the capacity deficiency was mitigated.

Table 5-3: Summary of Model Calibration

Period	Intersection	Movement	v/c Ratio		Notes on Calibration
			Uncalibrated	Calibrated	
AM	Yonge St & Finch Ave[1,2]	WB-TR	1.01	0.99	Ideal sat. flow to 1923
AM	Finch Ave & Willowdale Ave	WB-TR	1.02	0.97	Applied WB-T Movement PHF (0.98)
AM	Doris Ave & Greenfield Ave[1]	SB-LTR	1.07	0.99	Ideal sat. flow to 2037
AM	Yonge St & Sheppard Ave[2]	NB-L	1.23	0.99	LTA to -3, brought v/c ratio down to 1.03. Ideal sat flow to 1966.
AM	Yonge St & Avondale Ave / Florence Ave[1, 2]	NB-L	1.01	0.99	LTA to -1.2
PM	Yonge St & Cummer Ave / Drewry Ave[1]	NB-TR	1.00	0.99	Ideal sat. flow to 1920.
PM	Yonge St & Sheppard Ave[2]	NB-L	1.03	0.99	LTA to -1.5
PM	Yonge St & Poyntz Ave / Anndale Dr[1, 2]	NB-L	1.03	0.99	LTA to -1.6

1 TMC used to estimate volumes at this intersection was taken prior to the implementation of the STP used in Synchro analysis.
2 Intersections with SCOOT traffic signal system.

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The calibrated existing Synchro models are used to establish baseline the analysis and the applied calibrations will be carried forward to future scenario analyses.

5.1.4 Traffic Analysis

Intersection Capacity Analysis

The resulting existing calibrated intersection level of service (LOS) values for all study intersections are illustrated in **Figure 5-7** and **Figure 5-8** for the A.M. and P.M. peak hours, respectively. The LOS criteria for signalized intersections are provided below.

Level of Service (LOS)	Control Delay per Vehicle (S)
A	≤10
B	> 10 and ≤ 20
C	> 20 and ≤ 20
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

The study intersections operate at an acceptable overall LOS 'D' or better during the weekday A.M. and P.M. peak hours under existing conditions. A summary table of the overall traffic assessment results, and the detailed Synchro output reports for the pre- and post-calibration (for those affected intersections) models are provided in **Appendix A**.

Critical movements with v/c at or above 0.90 are identified at some of the study intersections as summarized in **Table 5-4**. It is noted that of the 15 intersections with critical movements, 9 were analyzed with STPs implemented after when the adopted TMCs were surveyed, and 7 of them have SCOOT traffic signal system. Therefore, the signal timings coded in Synchro may not accurately reflect the traffic volume patterns at certain intersections and may have resulted in a decrease in intersection capacity.

Table 5-4: Critical Movements at Study Intersections

Intersection	Critical Movement (v/c Ratio)	
	A.M. Peak Hour	P.M. Peak Hour
Yonge St & Cummer Ave / Drewry Ave[1]	SB-TR (0.94)	NB-TR (0.99)
Willowdale Ave & Cummer Ave	SB-LTR (0.93)	-
Finch Ave & Greenview Ave / Beecroft Rd[1]	NB-L (0.90)	-
Yonge St & Finch Ave[1, 2]	WB-TR (0.99)	-
Finch Ave & Kenneth Ave / Doris Ave	WB-L (0.94)	WB-L (0.90) NB-R (0.92)
Finch Ave & Willowdale Ave	EB-TR (0.98) WB-TR (0.97)	EB-TR (0.92) WB-TR (0.97)
Yonge St & Elmhurst Ave / Greenfield Ave[2]	WB-L (0.96	-
Doris Ave & Empress Ave[1]	-	WB-LTR (0.91)
Doris Ave & Greenfield Ave[1]	SB-LTR (0.99)	-
Yonge St & Sheppard Ave[2]	WB-L (0.98) NB-L (0.99) NB-TR (0.92)	NB-L (0.99) NB-TR (0.92)
Sheppard Ave & Doris Ave [2]	EB-L (0.94)	-
Yonge St & Poyntz Ave / Anndale Dr[1, 2]	NB-L (0.96)	NB-L (0.99)
Yonge St & Avondale Ave / Florence Ave[1, 2]	NB-L (0.99) SB-TR (0.91)	NB-L (0.96) SB-TR (0.92)
Yonge St & Hwy 401 WB Off-Ramp[1, 2]	-	NB-T (0.91)
Avondale Ave & Bales Ave / Harrison Garden Blvd[1]	NB-L (0.91)	-

1 TMC used to estimate volumes at this intersection was taken prior to the implementation of the STP used in Synchro analysis.
2 Intersections with SCOOT traffic signal system.

The study area has a high concentration of high-rise residential and office towers, retail/entertainment complexes, and major transit stations that are significant trip generators during the weekday peak hours. Hence it is within expectations for an urban core like this that certain movements at the study would approach near capacity. Furthermore, Yonge Street, Sheppard Avenue, and Finch Avenue are major arterial street that carry a significant amount of traffic (compared to other streets in the study area). Yonge Street is particularly busy as it is the gateway to Highway 401. Another potential contributor to the capacity constraints are the bus volumes. As described in Section 0, there are numerous surface transit routes operating in the study area, which results in many bus blockages at near-side bus stops at certain intersections. For example, the northbound and southbound curb lanes at Yonge Street & Cummer Avenue / Drewry Avenue are affected by 20 and 53 bus blockages per hour during the A.M. peak hour, reducing the capacity of the through-right movements. YRT buses at these stops, for example, only stop for alighting, and do not pick-up any passengers. For the purpose of conservative analysis, it was assumed that all scheduled buses would stop at these stops, although it is likely that some buses skip these bus stops when there is no onboarding and alighting demands.

In general, the study intersections and individual movements currently operate in acceptable conditions from an intersection capacity perspective. The intersections with critical movements are identified as intersections of interest and their traffic operations will be monitored in future traffic analysis. The need for mitigation measures will be investigated as part of the future scenarios review.

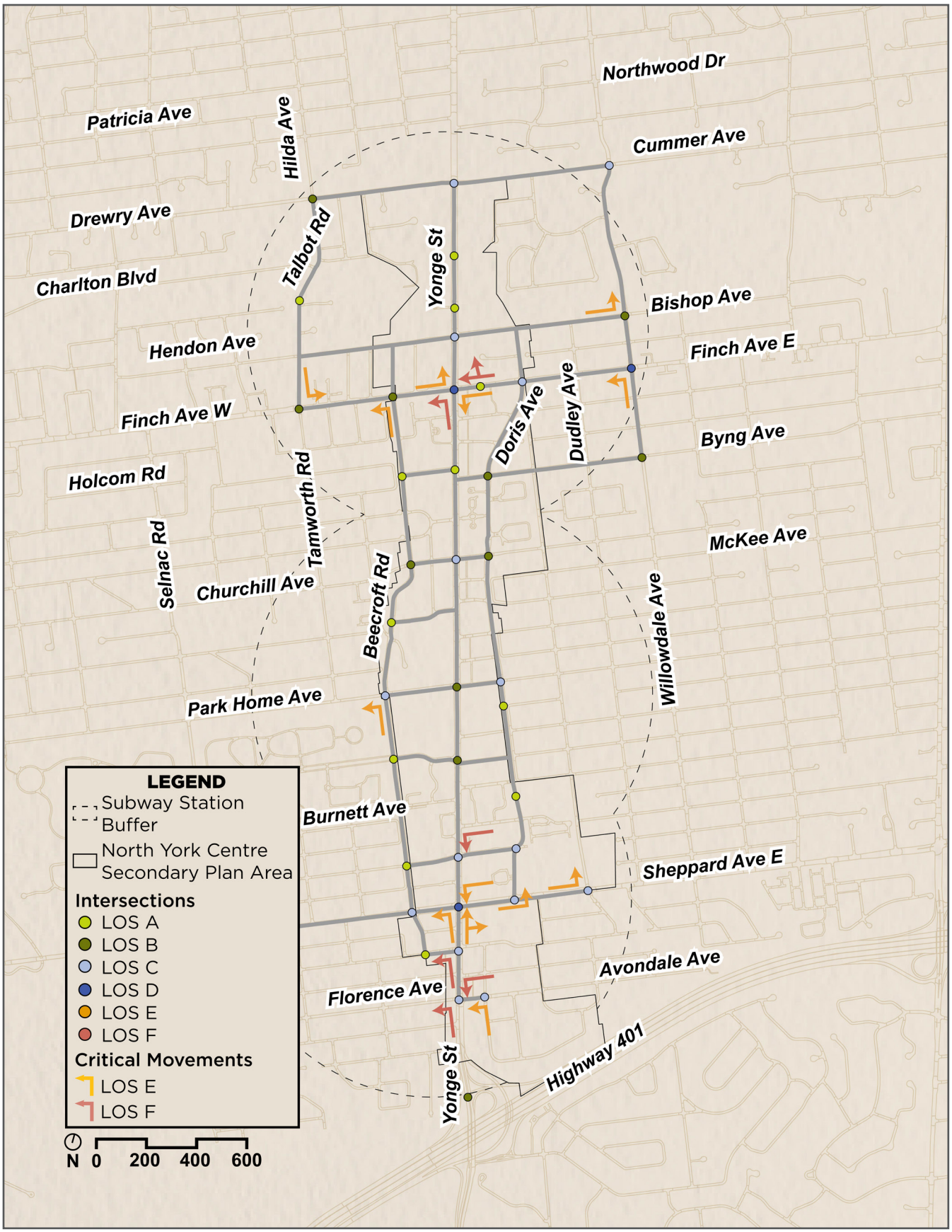

Figure 5-7: A.M. Intersection Level of Service

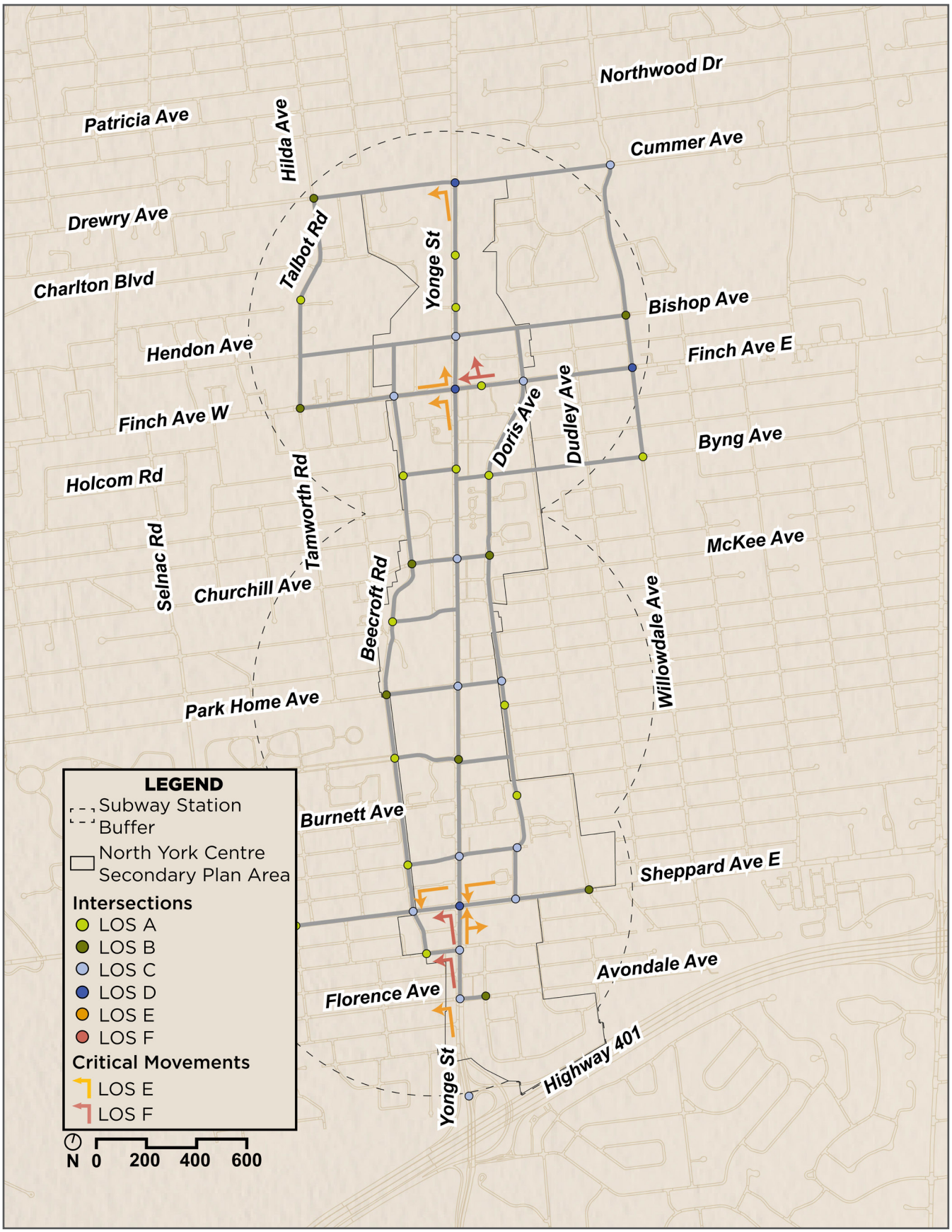

Figure 5-8: P.M. Intersection Level of Service

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Queuing Analysis

Based on the results of the existing Synchro analysis, **Table 5-5** summarizes the 50th and 95th percentile queues for exclusive turning lanes for which the estimated 95th percentile queues are exceeding the currently available storage lengths. The 95th percentile queue lengths represent the 'worst-case' scenarios that would only occur 5 percent of the time, while 50th percentile queues represent the maximum back of the queue in a typical cycle, which is typically more meaningful for storage length planning.

Table 5-5: Existing Queueing Analysis

Intersection	Movement	Storage Length (m)	95th Percentile Queue (m) [50th Percentile Queue (m)][1]	
			AM	PM
Yonge St & Cummer Ave / Drewry Ave[2]	EB-L	25	32 [16]	36 [19]
	NB-L	40	N/A	41 [16]
Yonge St & Turnberry Crt[3]	WB-L	15	16 [7]	16 [9]
Yonge St & Bishop Ave / Hendon Ave[3]	EB-L	40	52 [29]	**68 [45]**
Willowdale Ave & Cummer Ave	WB-L	70	78 [35]	N/A
Willowdale Ave & Bishop Ave[2]	EB-L	30	40 [22]	**81 [43]**
Finch Ave & Talbot Rd	EB-L	25	N/A	49 [9]
	SB-L	30	**61 [41]**	33 [22]
Finch Ave & Greenview Ave / Beecroft Rd[2]	WB-L	25	N/A	35 [19]
	NB-L	75	80 [41]	N/A
Yonge St & Finch Ave[2, 3]	EB-L	50	55 [22]	58 [25]
	WB-L	35	48 [24]	N/A
	NB-L	55	56 [33]	63 [32]
Finch Ave & Willowdale Ave	NB-L	20	37 [12]	22 [9]
Beecroft Rd & Park Home Ave[2]	WB-L	20	23 [13]	**56 [25]**
	NB-L	45	51 [20]	69 [39]
Yonge St & Kempford Blvd[2, 3]	NB-L	15	15 [3]	N/A
Doris Ave & Church Ave[2]	SB-L	30	N/A	31 [0]
Sheppard Ave & Beecroft Rd[3]	WB-L	30	30 [14]	50 [20]
	SB-L	45	48 [30]	N/A
Yonge St & Sheppard Ave[3]	WB-L	115	145 [80]	N/A
	SB-L	35	N/A	50 [18]

Intersection	Movement	Storage Length (m)	95th Percentile Queue (m) [50th Percentile Queue (m)][1]	
			AM	PM
Sheppard Ave & Doris Ave[3]	EB-L	45	73 [26]	64 [20]
Yonge St & Poyntz Ave / Anndale Dr[2, 3]	WB-L	50	52 [31]	N/A
	NB-L	40	**90 [43]**	90 [39]
Avondale Ave & Bales Ave / Harrison Garden Blvd[2]	EB-L	15	22 [11]	16 [11]
	NB-L	25	**69 [29]**	35 [14]

1 All queues have been rounded to the nearest whole number.
2 TMC used to estimate volumes at this intersection was taken prior to the implementation of the STP used in Synchro analysis.
3 Intersections with SCOOT traffic signal system.

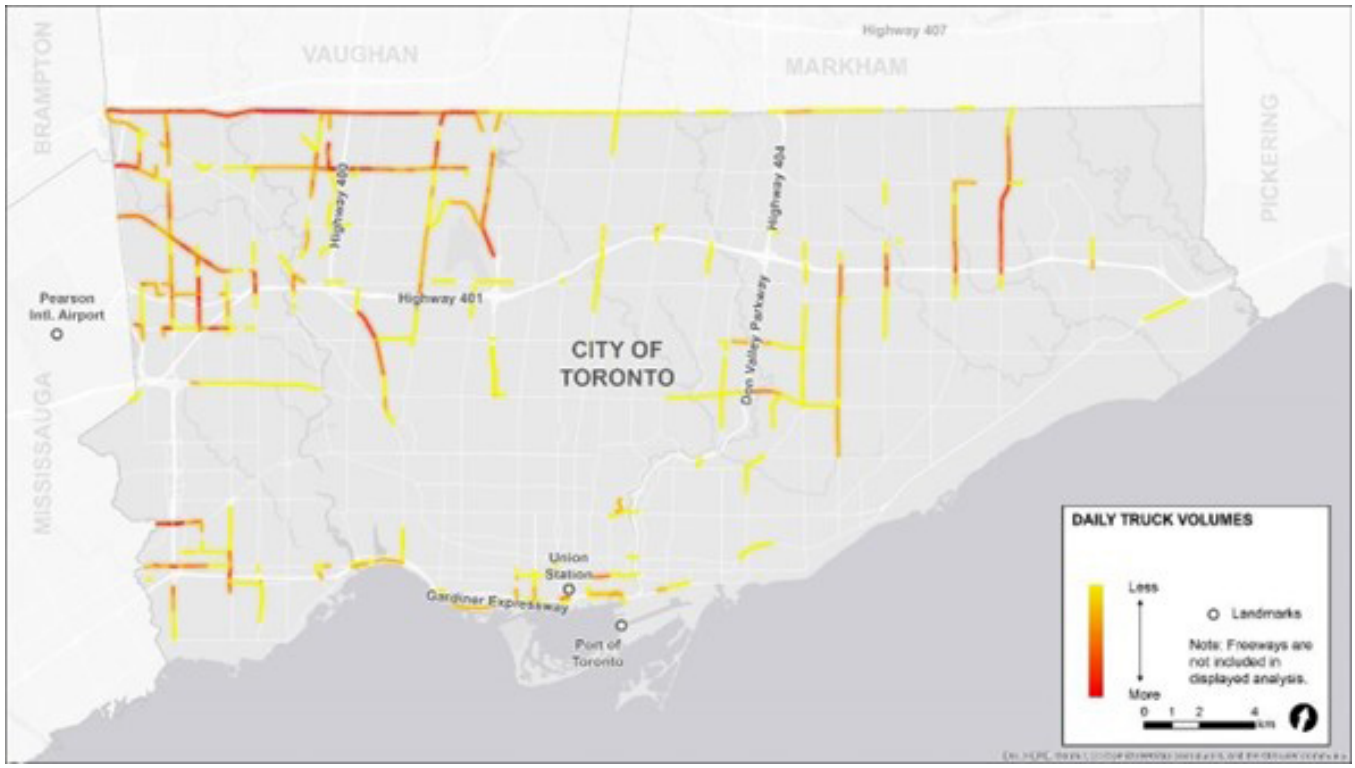
For the majority of movements where the 95th percentile queue length exceeds the available storage length, the 50th percentile queue length is contained within the available storage, the exceptions being the following:

- The southbound-left movement at the intersection of Finch Avenue & Talbot Road during the A.M. peak hour;
- The northbound-left movement at the intersection of Yonge Street & Poyntz Avenue / Anndale Drive during the A.M. peak hour;
- The northbound-left movement at the intersection of Avondale Avenue & Bales Avenue / Harrison Garden Boulevard during the A.M. peak hour;
- The eastbound-left movement at the intersection of Yonge Street & Bishop Avenue / Hendon Avenue during the P.M. peak hour;
- The eastbound-left movement at the intersection of Willowdale Avenue & Bishop Avenue during the P.M. peak hour; and
- The westbound-left movement at the intersection of Beecroft Road & Park Home Avenue during the P.M. peak hour.

The 50th percentile queues for most of the above-identified movements only exceed the storage length by less than a passenger car's length (i.e., 5 to 6 metres), which can potentially be accommodated within the taper. Queues for these identified movements will be monitored in future traffic analysis, and mitigation measures may be considered as part of the future scenarios review if needed and feasible.

5.1.5 Truck Volumes and Turning Frequency

Figure 5-9 is an excerpt of the City of Toronto FGMS study and shows a heat map of the estimated daily truck volumes along the major corridors within the City's boundaries (excluding freeways). As the figure suggests, there are limited truck volumes along the major arterials in North York Centre. Compared to Sheppard Avenue and Finch Avenue, Yonge Street carries relatively more truck volumes, particularly south of Sheppard Avenue and near the Highway 401 interchange. This is likely because commercial vehicles travel on Yonge Street after exiting Highway 401 and then disperse to adjacent streets to make last kilometre deliveries.



(Source: FGMS Figure 5.1)
Red box on map roughly identifies the boundary expansion study area.

Figure 5-9: Estimated Daily Truck Volumes

The City of Toronto *Road Engineering Design Guidelines Curb Radii Guidelines Version 1.1.1* (dated May 2018) classifies the frequency of large trucks making right-turns at intersections as summarized in **Table 5-6**.

Table 5-6: Truck Turn Type Classification

Truck Turn Type	Right-Turning Large Truck Peak Hour Volume
Frequent Truck Turns	5.00+
Occasional Truck Turns	3.00-4.99
Infrequent Truck Turns	0.01-2.99
Non-Truck Turns	0.00

Peak-hour large truck right-turning volumes were reviewed for the study intersections from the City of Toronto *Road Engineering Curb Radii Guideline Truck Turn Type* map for the North York district. Large trucks are defined as trucks greater than 11.0 metres in length such as tractor semi-trailers (WB-20) or heavy single unit trucks (HSU). These volumes are illustrated in **Figure 5-10** and the raw data is included in **Appendix B**. For the purpose of further discussion, intersections with large truck turning frequencies classified as 'frequent' or 'occasional' were focused on. Within the study area, there are two intersections with right-turning truck frequencies that meets the City's definition of 'frequent', and two intersections with frequencies defined as 'occasional'. A summary of the movements which meet these definitions is included in **Table 5-7**.

Table 5-7: Summary of Intersections with Frequent or Occasional Large Truck Right-Turns

Intersection	Turn Type	Large Truck Turning Frequency	Peak Hour Start Time
Yonge Street & Highway 401 WB Off-Ramp	NBR	7.02 (Frequent)	11:00 AM
	SBR	12.96 (Frequent)	1:45 PM
	WBR	10.53 (Frequent)	1:00 PM
Yonge Street & Avondale Avenue / Florence Avenue	NBR	5.40 (Frequent)	2:00 PM
Yonge Street & Cummer Avenue / Drewry Avenue	SBR	3.51 (Occasional)	1:45 PM
	EBR	3.24 (Occasional)	11:00 AM
	WBR	3.24 (Occasional)	1:30 PM
Yonge Street & Sheppard Avenue	NBR	3.24 (Occasional)	8:15 AM
	EBR	4.05 (Occasional)	4:15 PM

As shown in **Table 5-7**, The intersection of Yonge Street and Highway 401 westbound off-ramp has the highest heavy vehicle right turning volumes since it is the gateway to provincial freeways. The intersections of Yonge Street with Sheppard Avenue and Drewry Avenue/ Cummer Avenue also have relatively high right-turning truck volumes.

Figure 5-10 also shows the major grocery store locations in the area (i.e., Metro, Loblaws, Food Basics, Longo's and Whole Foods). As indicated in this figure, most intersection approaches within the study area currently accommodate infrequent truck turns. Only all movements at Yonge Street and Highway 401 westbound off-ramp and the northbound right-turn movement at Yonge Street and Avondale Avenue are classified as frequent truck turns type. Given that there are no major truck generators immediately east of Yonge Street and Avondale Avenue, and that Avondale Avenue, which terminates approximately 1 km east of Yonge Street, is not a cut-through truck route, there is no rational explanation for the frequent northbound-right truck turns at this intersection.

Overall, North York Centre is not a major generator of heavy vehicle trips and the roadways and intersections within currently do not accommodate a significant amount of truck traffic.

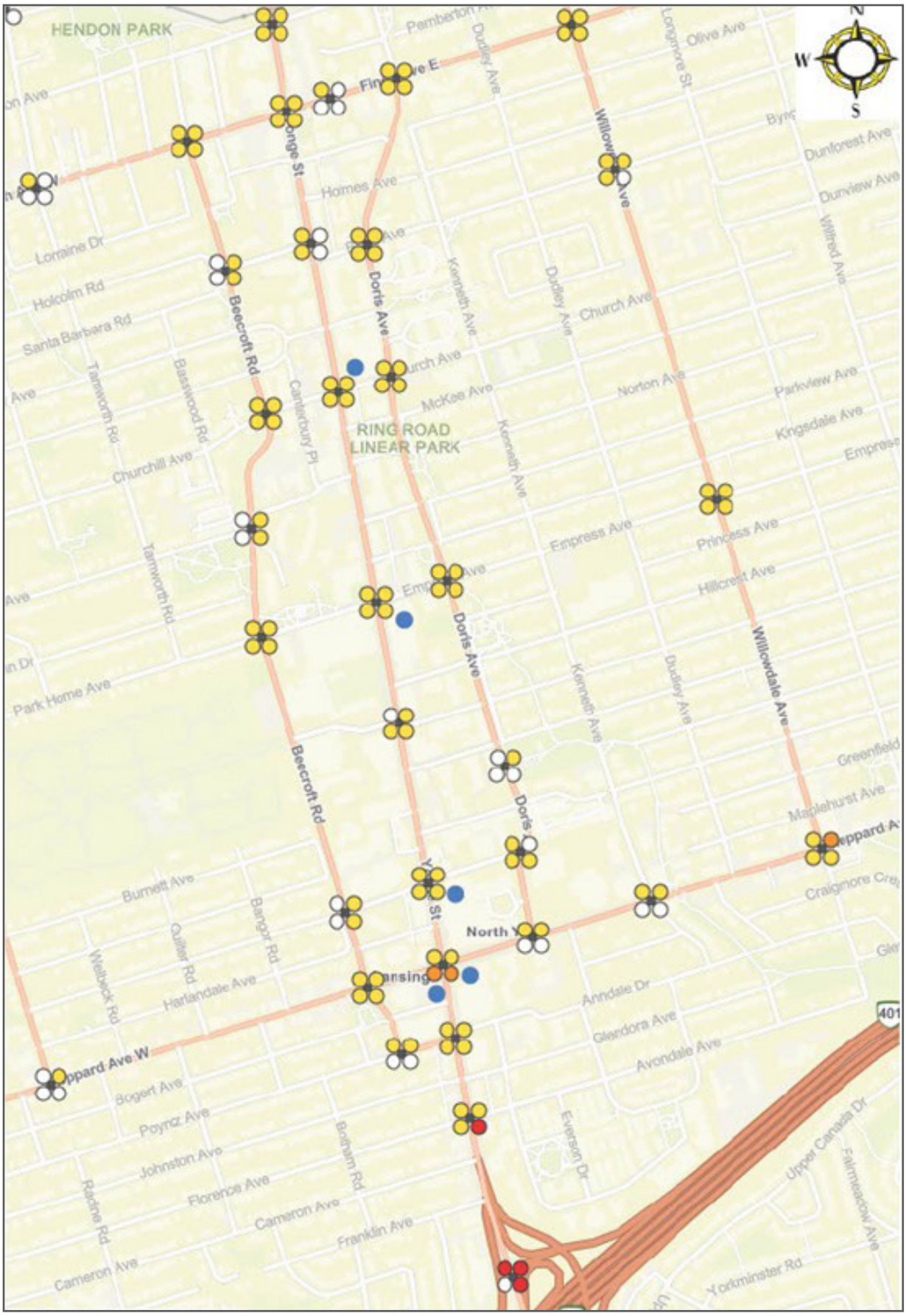


Figure 5-10: Intersection Large Truck Right-Turn Frequency and Grocery Store Locations

5.2 Pedestrians, Bicycle, and Transit Level of Service

5.2.1 OTC MMLOS Methodology

The OTC MMLOS guidelines assist in identifying design or operational elements that can be modified to improve user experience for different modes of travel on street segments and at intersections to align with municipal goals and network strategies. The methods for evaluating LOS use both time-based (i.e., operational) measures and non-time-based (i.e., design) measures. The LOS, denoted by the letters 'A' to 'F', represents the optimum condition to the least favourable condition for each mode.

The grading scales as found in the guideline are summarized in **Table 5-8**, **Table 5-9**, and **Table 5-10**, for pedestrians, people cycling, and transit, respectively.

The guidelines allow for users to apply a certain level of discretion when determining the rating to give a particular measure. For example, in the case of pedestrian and people cycling LOS, the guidelines provide examples of what could be considered an "enhanced measure" in relation to those modes. However, it is emphasized that the examples provided are not an exhaustive list. Any instances where measures outside of those listed in the guide being considered are noted, and further descriptions on key parameters are provided in **Table 5-11** and **Table 5-12**, for the intersection-related and segment-related measures, respectively.

Table 5-8: Pedestrian Level of Service Criteria

LOS	Segment Criteria[1]			Signalized Intersection Criteria[2]			
	Facility Width (m)	Buffer Width (m)	Max Distance between Controlled Crossings (m)	Enhanced Pedestrian Measures	Average Turning Radius (m)	Cycle Length (s)	No. of Uncontrolled Conflicts per Approach
A	>3.0	>2.5	200	>1.0	<9.0	<60	1
B	2.6-3.0	2.1-2.5	201-230	0.76-1.0	9.0-10.9	61-75	1.1-1.5
C	2.1-2.5	1.6-2.0	231-260	0.51-0.75	11.0-12.9	76-90	1.6-2.0
D	1.8-2.0	1.3-1.5	261-290	0.26-0.50	13.0-14.9	91-105	2.1-2.5
E	1.5-1.7	1.0-1.2	291-320	0.01-0.25	15.0-17.9	106-120	2.6-3.0
F	<1.5	<1.0	>320	0	≥18	>120	>3.0

1 Source: OTC MMLOS Guidelines Table 6.1.
2 Source: OTC MMLOS Guidelines Table 6.2.

Table 5-9: Bicycle Level of Service Criteria

LOS	Segment Criteria[1]			Signalized Intersection Criteria[2]			
	Facility Width (m)	Buffer Width (m)	Conflicts with Other Modes	Enhanced Bicycle Measures	Average Turning Radius (m)	Cycle Length (s)	No. of Uncontrolled Conflicts per Approach
A	>2.4	Has physical measures & width is >1.0	2 Low indicators	>1.0	<9.0	<60	1
B	2.2-2.4	Has physical measures & width is 0.50-1.0	1 Low & 1 Moderate indicator	0.76-1.0	9.0-10.9	61-75	1.1-1.5
C	1.9-2.1	N/A	2 Moderate indicators	0.51-0.75	11.0-12.9	76-90	1.6-2.0
D	1.6-1.8	Has physical measures & width is 0.30-0.49 OR Has no physical measures & width is ≥0.50	1 Low & 1 High indicator	0.26-0.50	13.0-14.9	91-105	2.1-2.5
E	1.2-1.5	N/A	1 Moderate & 1 High indicator	0.01-0.25	15.0-17.9	106-120	2.6-3.0
F	<1.2	No physical measures & width is <0.50	2 High indicators	0	≥18	>120	>3.0

1 Source: OTC MMLOS Guidelines Table 6.1.
2 Source: OTC MMLOS Guidelines Table 6.2.

Table 5-10: Transit Level of Service Criteria

LOS	Segment Criteria[1]			Signalized Intersection Criteria[2]		
	Transit Facility Type	Transit Passenger Amenities	Pedestrian LOS	Transit Priority Measures?	Transit Movement Delay (s)	Pedestrian LOS
A	Dedicated lanes	Abundance of passenger amenities	A	At all approaches	0-10	A
B	Intersection priority measures	Moderate presence of passenger amenities	B	N/A	11-20	B
C	N/A	N/A	C	At minimum of one approach	21-35	C
D	Mixed traffic with >1 lane/ direction	Low presence of passenger amenities	D	N/A	36-55	D
E	N/A	N/A	E	N/A	56-80	E
F	Mixed traffic with 1 lane	None	F	None	>80	F

1 Source: OTC MMLOS Guidelines Table 6.1.
2 Source: OTC MMLOS Guidelines Table 6.2.

Table 5-11: Notes on Segment Measures

Mode	Measure	Notes
Pedestrian	Maximum Distance Between Controlled Crossings	• Considered signalized crossings and all-way stop controlled crossings to be controlled. • There were only a couple segments in which the closest controlled crossing was not the subsequent signalized study intersection (for example Hilda Avenue/Talbot Road between Drewry Avenue and Finch Avenue included a pedestrian crossing).
Bicycles	In-Lane Conflicts	• In-lane conflict volumes were calculated by taking the average volume of vehicles travelling along the segment by looking at the two intersections that bounded the segment. Using Segment No. 1 as an example, the south side in-lane conflicts were the average of the vehicles entering the east leg at Yonge Street & Avondale Avenue, and arriving at the west leg of Avondale Avenue & Harrison Garden Boulevard/Bales Avenue for both the A.M. and P.M. peak hours. For segments which were not bounded by two study intersections (i.e. Elmwood Avenue between Yonge Street and Doris Avenue), the average volumes at the one study intersection connected to said segment were considered. • If people cycling had a dedicated facility (as was the case with many segments along Willowdale Avenue), the in-lane conflicts were assumed to be 0.
Bicycles	Crossing Points	• Example of crossing points considered include intersections, driveways, pedestrian crossings.
Transit	Presence of Passenger Amenities	• All transit stops along each segment were identified. Each stop was given a score (out of four), with 1 point being given for having each of the following: shelter, seating, a live Estimated Time of Arrival (ETA) message board, trees/shade. The average score for all transit stops along each segment was calculated and used to determine whether the presence of passenger amenities along the segment was none (score of 0), low (score below 0.25), medium (score of 0.26 – 0.99), or high (score of 1.0). • **Figure 5-11** shows an example of a transit stop (located on the northwest corner of the intersection of Willowdale Avenue and Finch Avenue), which had no passenger amenities. • **Figure 5-12** shows an example of a transit stop (located on the south side of Finch Avenue just west of Dudley Avenue), with a moderate amount of passenger amenities, including a shelter, seating, and shade (in the summer). • For segments that had transit vehicles travelled along, but for which there were no transit stops, the metric was assumed to be an LOS 'F'

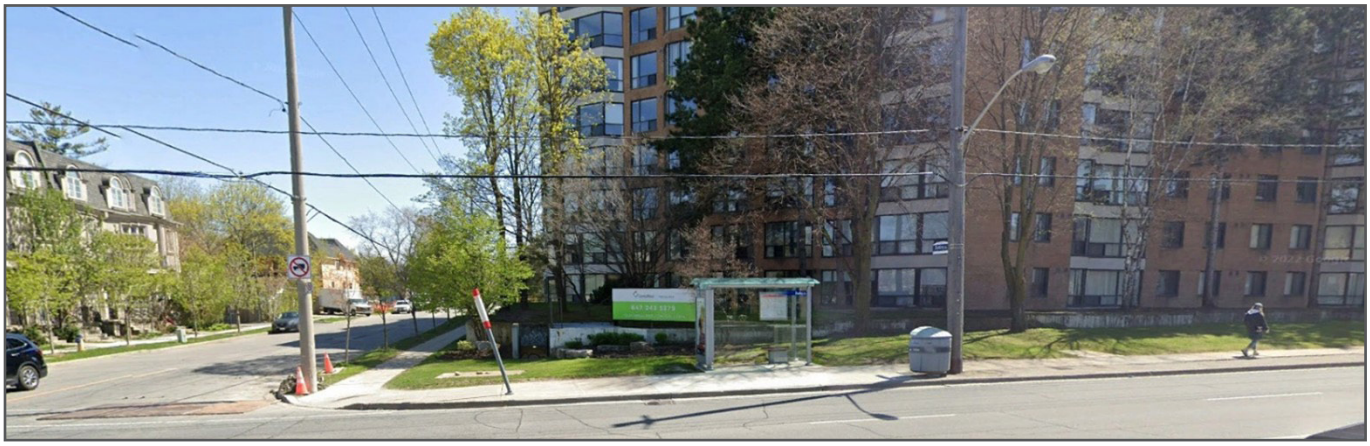
A

Table 5-12: Notes on Intersection Measures

Mode	Measure	Notes
Pedestrian & Bicycles	Cycle Length	• Maximum cycle length between A.M. and P.M. periods considered. • Where cycle length was “FREE”, the minimum cycle length was calculated.
Bicycle	Enhanced Bicycle Measures	• Included crossrides, green conflict markings, dedicated intersection features, protected intersection features, bicycle signal heads
Pedestrian	Enhanced Pedestrian Measures	• Included refuge islands, pedestrian storage space, raised intersections, leading pedestrian interval (LPIs) and protected phases, and calming measures. • The number of intersections with LPI was determined by reviewing the Traffic Signals file available on Toronto Open Data.

(Photo Source: Google Streetview)

Figure 5-11: Transit Stop with No Passenger Amenities



(Photo Source: Google Streetview)

Figure 5-12: Transit Stop with Moderate Amount of Passenger Amenities

5.2.2 MMLOS Results

A summary of the number of segments and intersections that achieved each LOS is shown in **Table 5-13**. The majority of street segments were evaluated at an LOS of C and D. There are very few instances of LOS 'A' and 'F' (with the notable exception being the bicycle LOS results for the segments). This is in line with the approach of the OTC Guidelines which state:

"Targets and scores of LOS of A and F should be infrequent. The upper gradations in this tool (LOS A) have been calibrated to represent truly top-level experience for each mode. This LOS is likely to be rare and reserved for streets that place the highest priority on that given mode (and often do not include any emphasis on conflicting or competing modes). An LOS A is unlikely to occur in a "balanced" scenario, but rather ones that heavily favour certain modes. Conversely, LOS F represents a facility that does not meet industry accepted minimum standards for a variety of potential factors (e.g. safety, comfort, access, capacity, delay, etc.) and should typically not be targeted except in carefully considered circumstances."

The pedestrian, bicycle, and transit LOS results are mapped in **Figure 5-13**, **Figure 5-14**, and **Figure 5-15** respectively. For each segment, a separate LOS was calculated for each side of the segment. For example, each segment along Beecroft Road has an LOS rating for the east side of the streetway and the west side of the streetway. The overall segment rating was chosen as the worst rating between the two sides. Segment results for each side are included in **Appendix B**.

Yonge Street, Beecroft Road, and Doris Avenue are arterial street that run through the most segments and intersections within the study area, and thus they are the key roadways of the MMLOS analysis.

A

Table 5-13: Summary of Overall Results

LOS	Intersection Results			Segment Results		
	Pedestrian	Bicycle	Transit	Pedestrian	Bicycle	Transit
A	0 (0%)	0 (0%)	0 (0%)	6 (5%)	0 (0%)	0 (0%)
B	8 (21%)	1 (3%)	1 (4%)	18 (15%)	0 (0%)	3 (6%)
C	10 (26%)	14 (37%)	8 (31%)	35 (30%)	2 (2%)	17 (33%)
D	18 (47%)	17 (45%)	13 (50%)	44 (37%)	3 (3%)	24 (46%)
E	2 (5%)	6 (16%)	4 (15%)	14 (12%)	19 (16%)	8 (15%)
F	0 (0%)	0 (0%)	0 (0%)	1 (1%)	94 (80%)	0 (0%)
Total	**38 (100%)**	**38 (100%)**	**26 (100%)**	**118 (100%)**	**118 (100%)**	**52 (100%)**

Pedestrian LOS

The analysis of Pedestrian Level of Service (PLOS) considered both segments and signalized / unsignalized intersections within the Primary Study Area. The distribution of PLOS results within the study area for both segments and intersections are summarized in **Table 5-14** and **Table 5-16**, respectively.

Pedestrian Level of Service was evaluated using a letter-based methodology ranging from 'A' to 'F'. A 'LOS A' signifies the highest quality pedestrian experience, where pedestrian facilities take priority over other competing modes. Conversely, a 'LOS F' suggests suboptimal conditions for pedestrians and indicates that the facility falls below the province's minimum standards due to various factors, including safety, comfort, access, and capacity. These factors collectively impact pedestrian movements and the overall walkability of the network. In a well-balanced pedestrian system, results typically fall within the middle range of the scale.

Street Segments

PLOS values for segments are determined based on sidewalk width, buffer from traffic, and distance between controlled crossings. The majority (76%) of segments examined exhibit a PLOS rating of C and D, indicating an acceptable condition where pedestrians typically have sufficient space to walk or roll that is adequately separated from traffic. There are, however, some segments with a PLOS E and one segment with a PLOS F (13%). These segments and the key contributors to their poor PLOS scores are listed in **Table 5-15**.

Along Yonge Street, the pedestrian levels of service range from 'A' to 'D' for most segments, with two exceptions that are at LOS 'E': east side of Yonge Street between Drewry Avenue and Turnberry Court, and west side of Yonge Street between Kempford Boulevard and Churchill Avenue. The segment rated PLOS F is located along Beecroft Road from Elmhurst Avenue to North York Boulevard, and its low rating is due to conditions on the west side of the street. These lower ratings are primarily due to greater distances between controlled crossings, narrow sidewalks, and narrow buffer between the sidewalk and traffic lanes. Doris Avenue also has a few segments at PLOS 'E' and one at 'F'.

Under existing conditions, 59% of segments are rated PLOS 'E' or 'F' in relation to pedestrian facility width. Additionally, 40% of segments have distances between controlled crossings that are considered LOS 'E' or 'F'. Increasing the provided pedestrian facility widths, and decreasing the distances pedestrians need to walk in order to safely cross will improve pedestrian segment LOS results.

Table 5-14: Pedestrian Level of Service Results for Road Segments

LOS	Measure 1 Pedestrian Facility Width	Measure 2 Pedestrian Buffer Width	Measure 3 Distance Between Controlled Crossings	Segment LOS
A	13 (11%)	63 (53%)	30 (25%)	6 (5%)
B	9 (8%)	17 (14%)	24 (20%)	18 (15%)
C	12 (10%)	8 (7%)	8 (7%)	35 (30%)
D	14 (12%)	8 (7%)	8 (7%)	44 (37%)
E	63 (53%)	5 (4%)	10 (8%)	14 (12%)
F	7 (6%)	17 (14%)	38 (32%)	1 (1%)

Table 5-15: Road Segments with Pedestrian Level of Service E and F

Segment	Contributors to Poor PLOS Score		
	Narrow pedestrian facility (1.5 m or less)	Narrow pedestrian buffer width (1.2 m or less)	Long distance between controlled crossings (>290 m)
PLOS E (Overall)			
Beecroft Road, Kempford Boulevard to Churchill Avenue	X (west side)	X (east side)	X
Bishop Avenue, Yonge Street to Willowdale Avenue	X (south side)	X (north side)	
Byng Avenue, Kenneth Avenue to Willowdale Avenue	X (both sides)	X (north side)	
Doris Avenue, Empress Avenue to Greenfield Avenue	X (both sides)		X
Drewry Avenue, Hilda Avenue to Yonge Street	X (south side)	X (north side)	X
Finch Avenue East, Kenneth Avenue / Doris Avenue to Willowdale Avenue	X (both sides)		X
Finch Avenue West, Talbot Road to Greenview Avenue / Beecroft Road	X (both sides)		X
Greenview Avenue, Hendon Avenue to Finch Avenue	X (south side)	X (south side)	
Sheppard Avenue East, Doris Avenue to Kenneth Avenue	X (both sides)		X
Sheppard Avenue West, Pewter Road to Beecroft Road	X (both sides)		X
Yonge Street, Drewry Avenue / Cummer Avenue to Turnberry Court	X (both sides)		
Yonge Street, Kempford Boulevard to Churchill Avenue / Church Avenue		X (west side)	X
PLOS F (Overall)			
Beecroft Road, North York Boulevard to Elmhurst Avenue	X (west side)	X (west side)	X

Intersections

The assessment of PLOS at intersections considered presence of enhanced safety measures, effective turning radius, signal cycle length, and the number of uncontrolled conflicts. Within the Primary Study Area, the majority of intersections achieved a PLOS ranging from 'B' to 'D'. Intersections scoring a PLOS of 'B' to 'C' generally performed well across all categories, although some exhibited lower scores in the number of uncontrolled conflicts.

Intersections with a PLOS of 'D' or 'E' typically feature smaller effective turning radii but lack enhanced pedestrian measures, have longer cycle lengths, and have a higher number of uncontrolled conflicts. Notably, the intersections of Yonge Street with Empress Avenue/Park Home Avenue, and Yonge Street and Sheppard Avenue received the lowest scores with a PLOS of E, primarily due to low scores in all categories except for effective turning radius.

Most signalized intersections along Yonge Street are also at LOS 'D' or better except for its intersections with the Empress Avenue and Sheppard Avenue, which are mostly due to the lack of enhanced pedestrian measures and long cycle lengths. Beecroft Road and Doris Avenue have intersection PLOS ratings at 'D' or better.

Intersection PLOS results show that the number of enhanced pedestrian measures (Measure 1) and the number of uncontrolled conflicts (Measure 4) are the worst performing measures for study intersections, with 74% and 53% of intersections, respectively, being considered PLOS 'E' or 'F'. The addition of LPI at all legs of all study intersections would bring the LOS results for this measure to a minimum of LOS 'B' for all intersections. Currently, the City of Toronto's standard practice related to LPI is that when signal timing plans are being modified, LPI should be added to all legs where it is feasible. Therefore, as STPs are modified overtime throughout the study area, the results of this measure will improve. Turning movements at intersections are the primary source of uncontrolled conflicts for pedestrians per the OTC Methodology. The implementation of turning restrictions and protected phasing at intersections would improve the results of this measure.

Active transportation enhancements have been planned along Yonge Street and Beecroft Road within North York Centre, which will improve pedestrian LOS along segments of these corridors. Gaps in PLOS in future baseline conditions will be reviewed at a later stage.

Table 5-16: Pedestrian Level of Service Results for Intersections

LOS	Measure 1 Enhanced Pedestrian Measures	Measure 2 Effective Turning Radius	Measure 3 Cycle Length	Measure 4 No. of Uncontrolled Conflicts	Intersection LOS
A	4 (10%)	24 (63%)	2 (5%)	0 (0%)	0 (0%)
B	8 (21%)	14 (37%)	6 (16%)	0 (0%)	8 (21%)
C	0 (0%)	0 (0%)	11 (29%)	8 (21%)	10 (26%)
D	6 (16%)	0 (0%)	3 (8%)	2 (5%)	18 (47%)
E	0 (0%)	0 (0%)	13 (34%)	**28 (74%)**	2 (5%)
F	**20 (53%)**	0 (0%)	3 (8%)	0 (0%)	0 (0%)

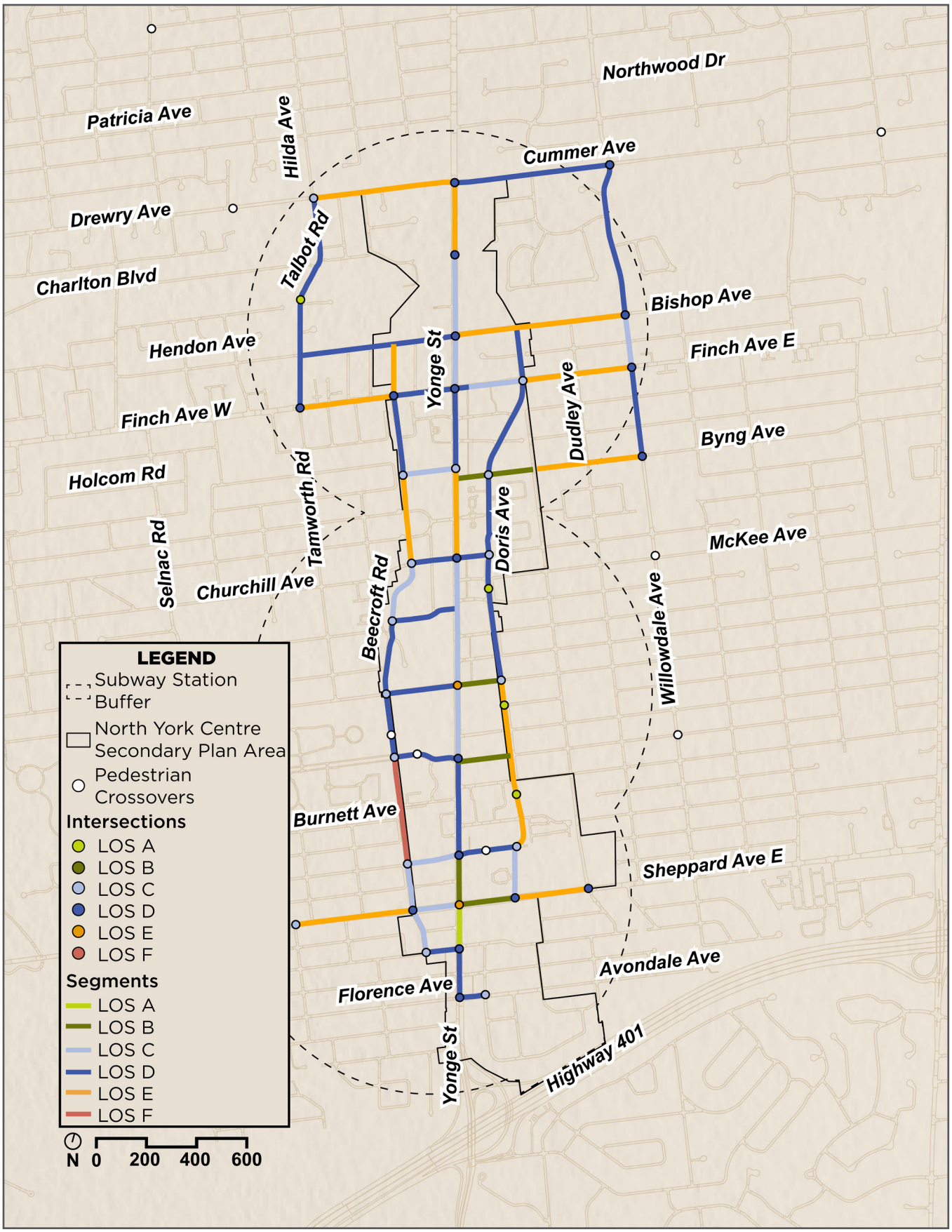


Figure 5-13: Pedestrian Level of Service for Road Segments and Intersections

Bicycle Level of Service (LOS)

The distribution of BLOS results for both segments and intersections are summarized in **Table 5-17** and **Table 5-18**, respectively.

Street Segments

Most segments (80%) are considered BLOS 'F', due to the lack of cycling infrastructure within the study area. The addition of cycling facilities within the area will greatly improve segment results.

Table 5-17: Bicycle Level of Service Results for Road Segments

LOS	Measure 1 Bike Facility Width	Measure 2 Bike Buffer	Measure 3 Conflicts with Other Modes	Segment LOS
A	0 (0%)	2 (2%)	1 (1%)	0 (0%)
B	0 (0%)	2 (2%)	3 (3%)	0 (0%)
C	2 (2%)	N/A	1 (1%)	2 (2%)
D	0 (0%)	0 (0%)	19 (16%)	3 (3%)
E	2 (2%)	N/A	39 (33%)	19 (16%)
F	114 (97%)	114 (97%)	55 (47%)	94 (80%)

Intersections

Intersections, in comparison to segments, are mostly adequate, with 85% being at BLOS 'B', 'C', or 'D' as a result of the relatively small turning radius and reasonable signal cycle lengths at most locations. This indicates there is room for cycling improvements along most segments of the study roadways.

Intersection BLOS results show that the number of enhanced bicycle measures (Measure 1) are the worst performing measures for study intersections. The addition of enhanced bicycle measures (i.e. crossrides, green conflict markings, dedicated or protected intersection features, and bicycle signal heads) would significantly improve results, as 95% of intersections are currently considered BLOS 'F' under this measure. Moreover, 58% of intersections are BLOS 'E' or 'F' in relation to the number of uncontrolled conflicts experienced by people cycling. Similarly to pedestrians, this measure can be improved by implementing protected left-turns. Other ways to improve the measure include the removal of exclusive right-turning lanes and reducing the overall number of lanes.

Active transportation enhancements have been planned along Yonge Street and Beecroft Road within North York Centre, which will improve BLOS along segments of these corridors. Gaps in BLOS in future baseline conditions will be reviewed at a later stage.

Table 5-18: Bicycle Level of Service Results for Intersections

LOS	Measure 1 Enhanced Bicycle Measures	Measure 2 Effective Turning Radius	Measure 3 Cycle Length	Measure 4 No. of Uncontrolled Conflicts	Intersection LOS
A	0 (0%)	24 (63%)	2 (5%)	1 (3%)	0 (0%)
B	2 (5%)	14 (37%)	6 (16%)	1 (3%)	1 (3%)
C	0 (0%)	0 (0%)	11 (29%)	6 (16%)	14 (37%)
D	0 (0%)	0 (0%)	3 (8%)	8 (21%)	17 (45%)
E	0 (0%)	0 (0%)	13 (34%)	13 (34%)	6 (16%)
F	36 (95%)	0 (0%)	3 (8%)	9 (24%)	0 (0%)

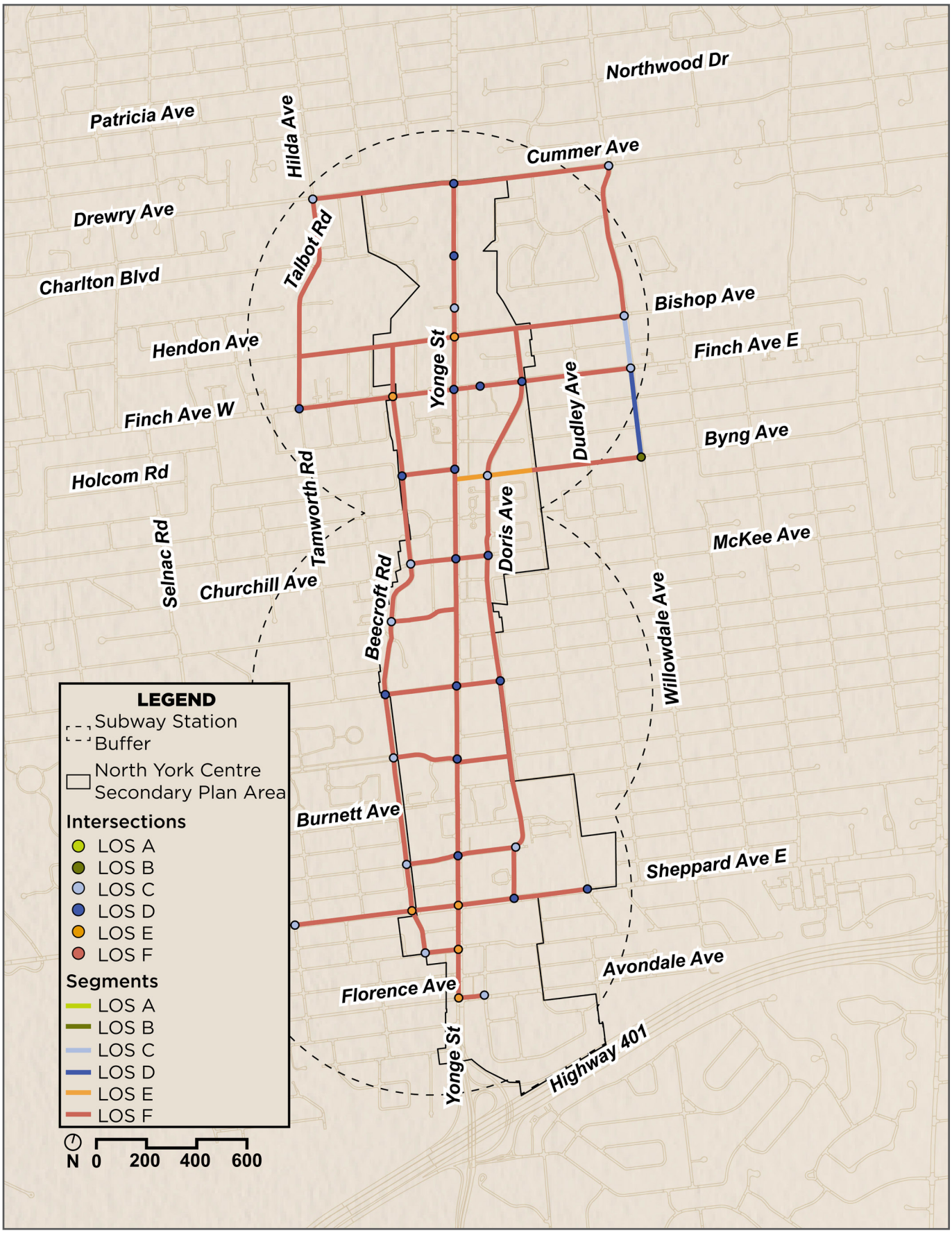


Figure 5-14: Bicycle Level of Service for Road Segments and Intersections

Transit Level of Service (LOS)

The distribution of transit LOS results within the study area for both segments and intersections are summarized in **Table 5-19** and **Table 5-20**, respectively. Most segments (85%) and intersections (85%) are considered LOS 'D' or better which indicates the surface transit operation is generally acceptable under existing conditions.

The overall pedestrian LOS is a factor that influences both the segment and intersection transit LOS results. Therefore, improving pedestrian LOS results will simultaneously improve transit LOS results. Both the transit facility type measure for segments, and the transit priority measures for intersections can be improved through the addition of dedicated transit lanes or signal priority at intersections.

For segments, the presence of passenger amenities can be improved by upgrading transit stops along the segment. The addition of shelters, seating, trees providing shade, or live ETA message boards would all improve the resulting LOS for this measure.

Table 5-19: Transit Level of Service Results for Road Segments

LOS	Measure 1 Transit Facility Type	Measure 2 Presence of Passenger Amenities	Measure 3 Pedestrian LOS	Segment LOS
A	3 (6%)	0 (0%)	5 (10%)	0 (0%)
B	10 (19%)	21 (40%)	4 (8%)	3 (6%)
C	N/A	N/A	19 (37%)	17 (33%)
D	32 (62%)	11 (21%)	15 (29%)	24 (46%)
E	N/A	N/A	9 (17%)	8 (15%)
F	7 (13%)	20 (38%)	0 (0%)	0 (0%)

Table 5-20: Transit Level of Service Results for Intersections

LOS	Measure 1 Transit Priority Measures	Measure 2 Transit Movement Delay	Measure 3 Pedestrian LOS	Segment LOS
A	1 (4%)	3 (12%)	0 (0%)	0 (0%)
B	N/A	7 (27%)	2 (8%)	1 (4%)
C	6 (23%)	12 (46%)	4 (15%)	8 (31%)
D	N/A	4 (15%)	18 (69%)	13 (50%)
E	N/A	0 (0%)	2 (8%)	4 (15%)
F	19 (73%)	0 (0%)	0 (0%)	0 (0%)

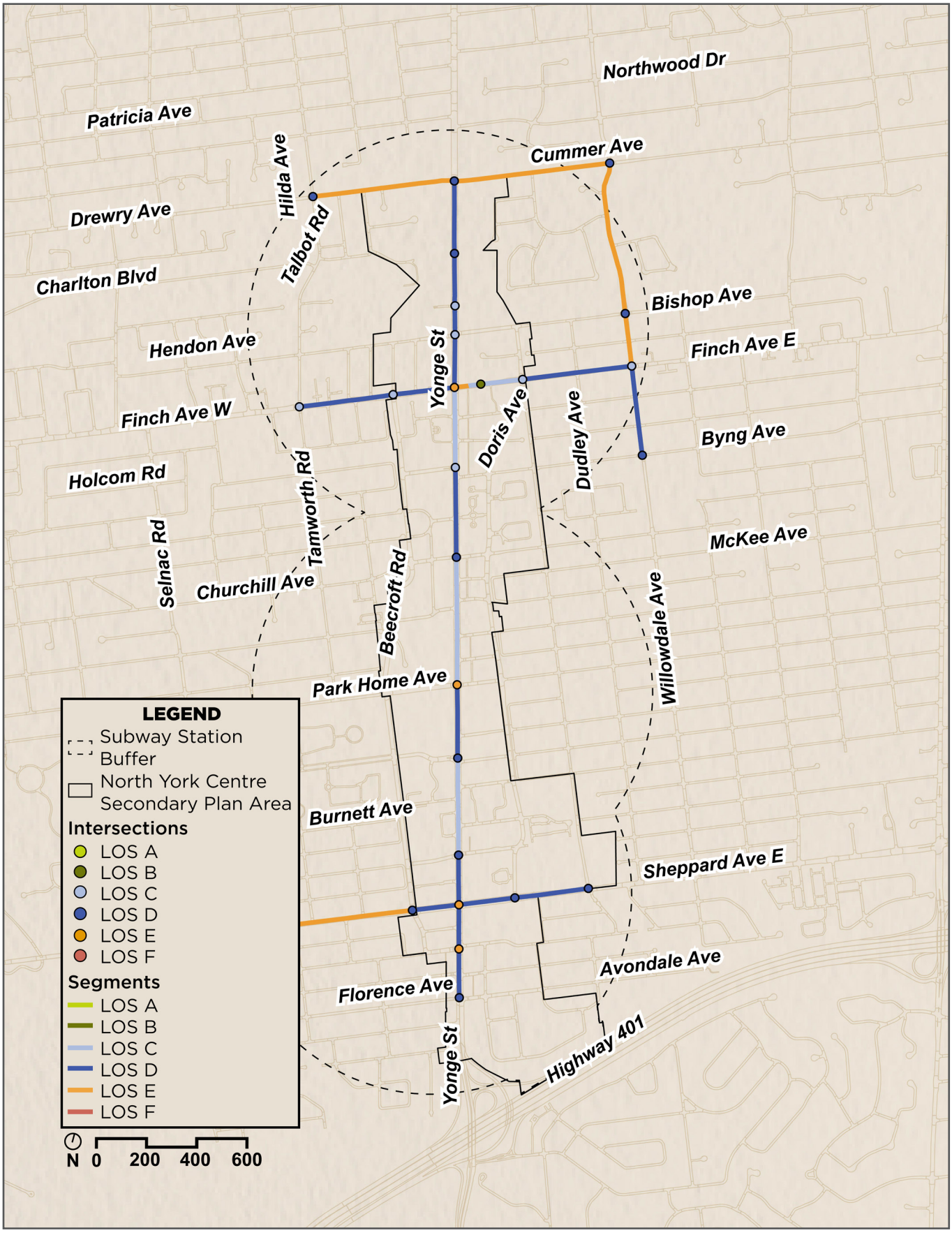


Figure 5-15: Transit Level of Service for Road Segments and Intersections

A

5.2.3 Potential Areas of Improvement

Potential areas of improvement for pedestrian, bicycle, and transit LOS results for both segments and intersections are discussed within this section. These areas of improvement were determined based on the overall LOS results for the individual measures that were evaluated to determine the overall LOS.

Crossing Latent Demand Assessment

To assess the additional locations with the greatest opportunity for new midblock crossings, WSP conducted a desktop review and site visits within the boundary study expansion area. Desktop reviews were used to identify trip attractors as well as evidence of pedestrian "desire paths", where the boulevard space is worn in a way that indicates a frequently travelled pedestrian route. Site visits were conducted to qualitatively assess crossing demand at pre-identified locations.

When formally evaluating the potential for new pedestrian crossing locations, it is important to follow a more detailed assessment and warrant review as laid out in OTM Book 15, OTM Book 12, and the Transportation Association of Canada (TAC) Pedestrian Crossing Control Guide (PCCG). These guidelines must be supported by engineering judgement and consideration of the local context for justifying new pedestrian crossings. This is particularly relevant in cases where the minimum distance between controlled crossings from these guidelines may not be met but a site may still be a candidate for a pedestrian crossing due to factors such as the need for system connectivity, connection to a pedestrian desire line due to the presence of key generators or attractors on either side of the street, and the need to serve vulnerable pedestrian groups that may have difficulty crossing the street (such as children, older pedestrians, and pedestrians with disabilities).

City staff follow OTM Book 12 to determine when a traffic signal is necessary. The City's stated policy considers pedestrian crossovers (PXO's) on roadways with posted speeds of 60 km/h or less and traffic volumes of less than 35,000 vehicles per day. PXO's should not be considered on streets with heavy volumes of turning traffic, or where there are more than four lanes of two-way traffic or three lanes of one-way traffic. PXOs should not be installed within 200 m of other signal-protected pedestrian crossings, and parking and other sight obstructions should be prohibited within at least 30 m of the crossings. The City also has a formal process for reviewing whether an existing PXO should be replaced with a traffic signal based on exposure factors.

Table 5-21 identifies locations where demand for crossings likely exists based on distance to the nearest crossing, evidence of potential crossing demand, and nearby walking trip attractors, and provides a preliminary assessment to the feasibility of a crossing at each site. Field observations at these locations were completed during the typical morning peak hours (7:00 A.M. to 10:00 A.M.) on a weekday (January 24, 2024).

Table 5-21: Locations Where Demand for Crossings is Likely

Location	Evidence of Crossing Demand	Nearby Walking Trip Attractors	Field Observations	Preliminary Assessment
Doris Ave./ Northtown Way	Pedestrian "desire path" leading to the street in the east boulevard. 150 m to nearest pedestrian crossing.	Northtown Park (east side), Northtown Way Square and Shops (west side)	Little to no mid-block crossing demand during the observed period. Most pedestrian activities related to dog walking in Northtown Park.	• With the planned addition of new signal at Yonge St./ Northtown Way, this location is expected to have a higher demand for pedestrian crossings, especially related to the park. • The intersection is ~150 m from the nearest controlled crossing. • A crossing may be considered at this location from a connectivity perspective.
Bishop Ave./ Kenneth Ave.	Pedestrian "desire path" on the north side of the intersection, heading west to the bus terminal. 230 m to nearest pedestrian crossing.	Bishop Park (east side), YRT Bus Terminal (west side)	Relatively high crossing demand observed mid-block on Bishop between Yonge St. and Kenneth Road. Lower demand at Bishop / Kenneth due to the lack of sidewalks on north side. Demand mostly related to the YRT terminal. Plenty of gaps in traffic.	• The removal of the YRT terminal in the medium term will soften this desire line, though demand will likely still exist to access the Finch Corridor Trail but to a lesser extent. • The intersection is >200 m from the nearest controlled crossing. • A crossing may be considered at this location based on demand with the provision of sidewalks on north side.
Doris Ave./ Elmwood Ave.	Pedestrian "desire path" leading to Gladys Allision Place and Elmwood Ave. on the east side. 205 m to the nearest pedestrian crossing.	Lee Lifeson Art Park (east side), Willowdale Park (east side), connectivity to school in the east	Little to no mid-block crossing demand during the observed period. Many pedestrians (students) crossed at the signalized crossing further south. Busier street with fewer gaps.	• There is little indication of existing mid-block crossing demand. With a potential crossing, demand related to school may slightly increase as it provides a more direct path for some buildings. • The intersection is ~150 m from the nearest controlled crossing. • A crossing may not need to be considered at this location given the demand. Further assessment may be required.

Location	Evidence of Crossing Demand	Nearby Walking Trip Attractors	Field Observations	Preliminary Assessment
Park Home Ave./ Beecroft Rd./ Yonge St.	Pedestrian "desire path" on the south side of Park Home Ave. east to North York Centre station. 130 m from the middle point to the nearest pedestrian crossing.	North York Centre TTC Station (south side), Gibson Park (north side)	High mid-block crossing demand observed, originating from Gibson Park. Most pedestrians would cross at Yonge St.. Plenty of gaps.	• High-rise developments north of Gibson Park likely contributed to the mid-block crossing demand. • The location would be ~120 m to existing controlled crossings. • A crossing may be considered at this location due to demand. Further assessment and engineering judgement is required.
Doris Ave./ Olive Ave./ Holmes Ave.	Pedestrian "desire path" leading to Yonge St. in the west and Holmes Ave./Olive Ave. in the east. 200 m from the middle point to the nearest pedestrian crossing.	Connectivity between Yonge St. and east side of Doris	Low mid-block crossing demand during the observed period. Plenty of gaps.	• Existing crossing demand is low. • The middle point of the stretch is ~200 m from the nearest controlled crossing. • A crossing may not need to be considered at this location given the demand.
Beecroft Rd./ Horsham Ave./ Hounslow Ave.	Pedestrian "desire path" leading to Yonge St. in the east and Horsham / Hounslow Ave. in the west. 140 m from the middle point to the nearest pedestrian crossing.	Connectivity between Yonge St. and west of Beecroft Rd.	Little to no mid-block crossing demand during the observed period. Plenty of gaps.	• There is little indication of existing mid-block crossing demand. • The middle point of the stretch is <200 m from the nearest controlled crossing. • Pedestrian demand to cross at this location may increase with the planned signal at Yonge St./Horsham Ave./ Northtown Way. If future intensification extends west of Beecroft Rd., crossing should be considered.

Location	Evidence of Crossing Demand	Nearby Walking Trip Attractors	Field Observations	Preliminary Assessment
Beecroft Rd./ Lorraine Dr.	Pedestrian “desire path” leading to Yonge St. in the east and Lorraine Dr. in the west. 140 m to the nearest pedestrian crossing	High-rise buildings and Lorraine Drive Park (east side), Edithvale Community Centre (west side)	Little to no mid-block crossing demand during the observed period. Plenty of gaps	• There is some evidence of existing mid-block crossing demand. • The middle point of the stretch is <200 m from the nearest controlled crossing. • Given the presence of child pedestrian trip attractors (community centre, park), a crossing should be considered from an equity perspective.
Beecroft Rd./ Harlandale Ave.	Pedestrian “desire path” on Harlandale Ave. leading to Sheppard-Yonge Station. 80 m to the nearest pedestrian crossing.	Sheppard-Yonge TTC Station entrance (east side)	Low mid-block crossing demand. More demand observed at the protected crossing further north.	• Existing crossing demand is low. • This intersection is <100 m to the nearest controlled crossing. • A crossing may not need to be considered at this location given the demand.