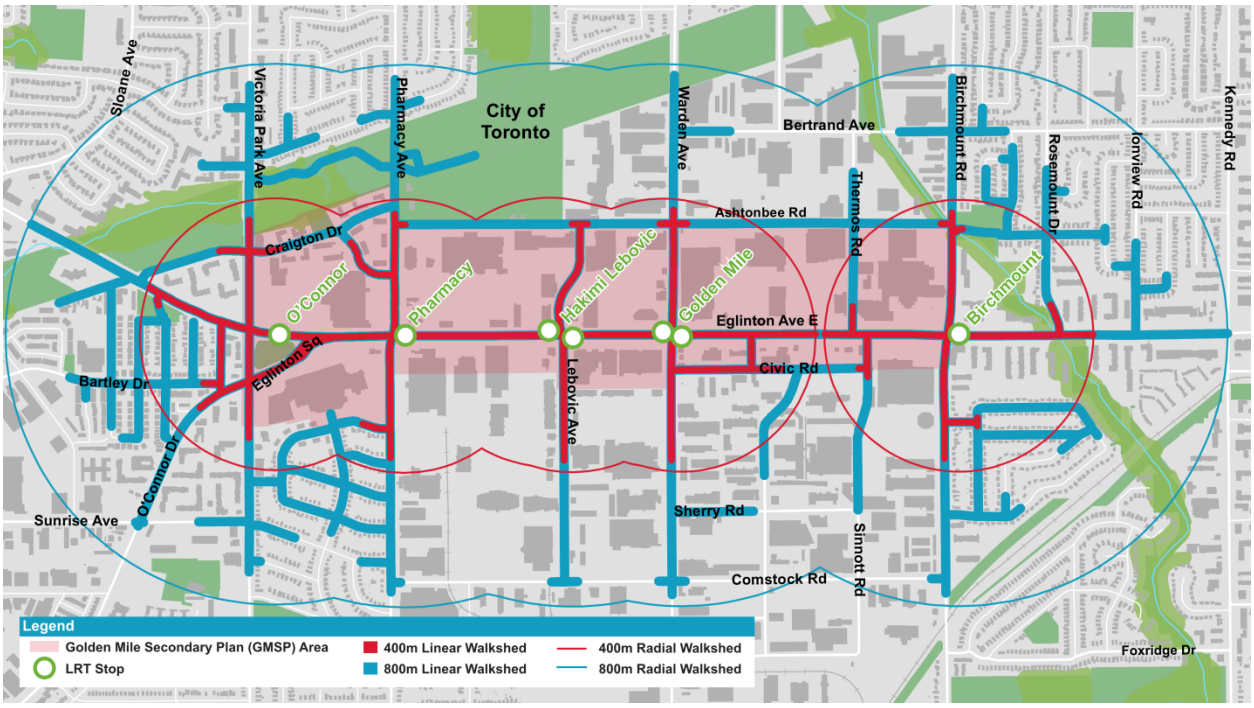
Figure 4-31. Pedestrian Walkshed Analysis for ECLRT Stops



4.7 Vehicular Movement

4.7.1 Intersection Operations

Existing traffic operations were assessed using turning movement count data and existing signal timing plans provided to HDR by the City of Toronto and through additional counts conducted in June 2017 to supplement missing data. Some of the turning movement count data was extracted from Traffic Impact Studies within the study area where the City did not have recent data (within the last 2 years).

Synchro Model Calibration

Weekday AM peak hour traffic volumes were not available for the intersection of Eglinton Avenue and Prudham Gate. Since the weekday PM peak hour volumes were available, AM volumes were derived by referencing the Institute of Transportation Engineers publication Trip Generation Manual 9th Edition and factoring the driveway volumes according to the land uses to the north (shopping centre) and to the south (light industrial), while through volumes were balanced with adjacent intersections.

Individual peak hours were used for each study intersection. This approach was taken because:

1. Detailed data for some intersections was not available and a global peak hour could not be calculated;
2. Using the individual peak hours results in a more conservative analysis of peak (worst case) conditions for each intersection in isolation; and

3. Balancing of volumes was not performed. This is because it is known that the peak hours of traffic were not always consistent and because of the high number of driveways in the study area which would make balancing futile and most likely not an accurate representation of actual conditions. Signal coordination for the Eglinton Avenue corridor is not being reviewed for this study. Furthermore, most study intersections along the Eglinton Avenue corridor are operating under adaptive SCOOT control and thus only the typical timings have been entered (these intersections are not traditionally coordinated).

The existing lane configuration is based on existing conditions (aerial review) as well as reviews of other traffic studies provided to HDR as previously mentioned.

Additional adjustments were made to the Synchro model to ensure existing conditions were accurately reproduced. The first adjustment was made to the Lane Utilization (LU) factor in the Synchro model for through lanes along Eglinton Avenue. LU factors adjust the distribution of traffic across a lane grouping; for example, an LU factor of 1.00 means that each lane within the lane group carries the same amount of traffic. The LU factor was adjusted to account for the presence of High Occupancy Vehicle (HOV) lanes in both directions along Eglinton Avenue (in the curb lane).

The LU factor was adjusted to 0.77 for both directions. This factor was taken from the report *Traffic Impact Study Proposed Mixed-Use Residential Development 1891 Eglinton Avenue* (MMM Group, December 2011). The report used field data to calculate this factor from 2011. This effectively reduces the distribution of traffic such that one of the lanes carries a lower amount of traffic and the other two lanes are more heavily used.

After preparing the Synchro model using default values consistent with the *City of Toronto Traffic Management Centre Intelligent Transportation Systems (Operations) Guidelines for Using Synchro 9 (Including SimTraffic 9) dated 18 March 2016*, as well as adjusting lane utilization to account for the HOV lanes, it was found that several movements were reported as operating with volume to capacity (v/c) ratios greater than 1.0. This is theoretically impossible since the demand was served. The Synchro model is likely underestimating the capacity for specific movements or other components of the model may have changed since the counts were performed (i.e. timings could have changed). The model was therefore calibrated to allow movements to operate at capacity with v/c ratios in the range of 0.95 to 0.99, where possible, by following the maximum thresholds for parameters as listed in the City's Synchro Guidelines.

For signals operating under SCOOT control (an adaptive real-time control system), the typical timings were coded. The typical timings may not reflect the actual signal operations on the day of the count, therefore, the typical SCOOT timings were optimized prior to calibrating movements since that would provide a more accurate depiction of operating conditions prior to calibration.

Calibration (beyond LU factors and SCOOT split optimization) was performed by adjusting the assumptions on start-up lost times and extension of effective green times. The ideal saturated flow rates were maintained within the thresholds of the

City's guidelines for respective turning movement types. The calibration adjustments are summarized in **Appendix C.**

Performance Measurement

Intersection operation analysis, using the modeling software Synchro, is conducted with focus on the overall Level of Service (LOS) for each intersection, defined by the Highway Capacity Manual (HCM) for signalized and unsignalized intersections as a function of the average vehicle control delay. LOS definitions based on HCM are summarized in **Table 4-6.**

Table 4-6: Highway Capacity Manual Level of Service Definitions for Intersections

LOS	Signalized Intersection Average Vehicle Control Delay	Unsignalized Intersection Average Vehicle Control Delay	LOS Recommendation
A	≤10 sec	≤10 sec	Acceptable
B	10-20 sec	10-15 sec	Acceptable
C	20-35 sec	15-25 sec	Acceptable
D	35-55 sec	25-35 sec	Somewhat undesirable
E	55-80 sec	35-50 sec	Undesirable
F	≥80 sec	≥50 sec	Unacceptable

Existing Traffic Operations

Detailed existing traffic operations are summarized below in **Table 4-7** and a summary is provided **Figure 4-32** and **Figure 4-33**. For signalized intersections, the overall operations are shown along with movements operating with v/c ratios greater than 0.90 and any movements with LOS 'E' or 'F'. For unsignalized intersections, operations are only shown in **Table 4-7** if all v/c ratios and LOS are below the above thresholds for individual movements.

As shown in **Table 4-7**, eight (8) out of 16 signalized intersections have at least one movement operating at or near capacity during at least one peak hour. Out of those eight (8) intersections, six (6) of them have overall v/c ratios greater than 0.95 during at least one peak hour which does indicate that there is very little residual capacity.

Only two (2) out of seven (7) unsignalized intersections have movements operating with poor level of service but with residual capacity.

Synchro reports for existing conditions are provided in **Appendix C**.

Table 4-7: Detailed Existing Traffic Operations (Weekday)

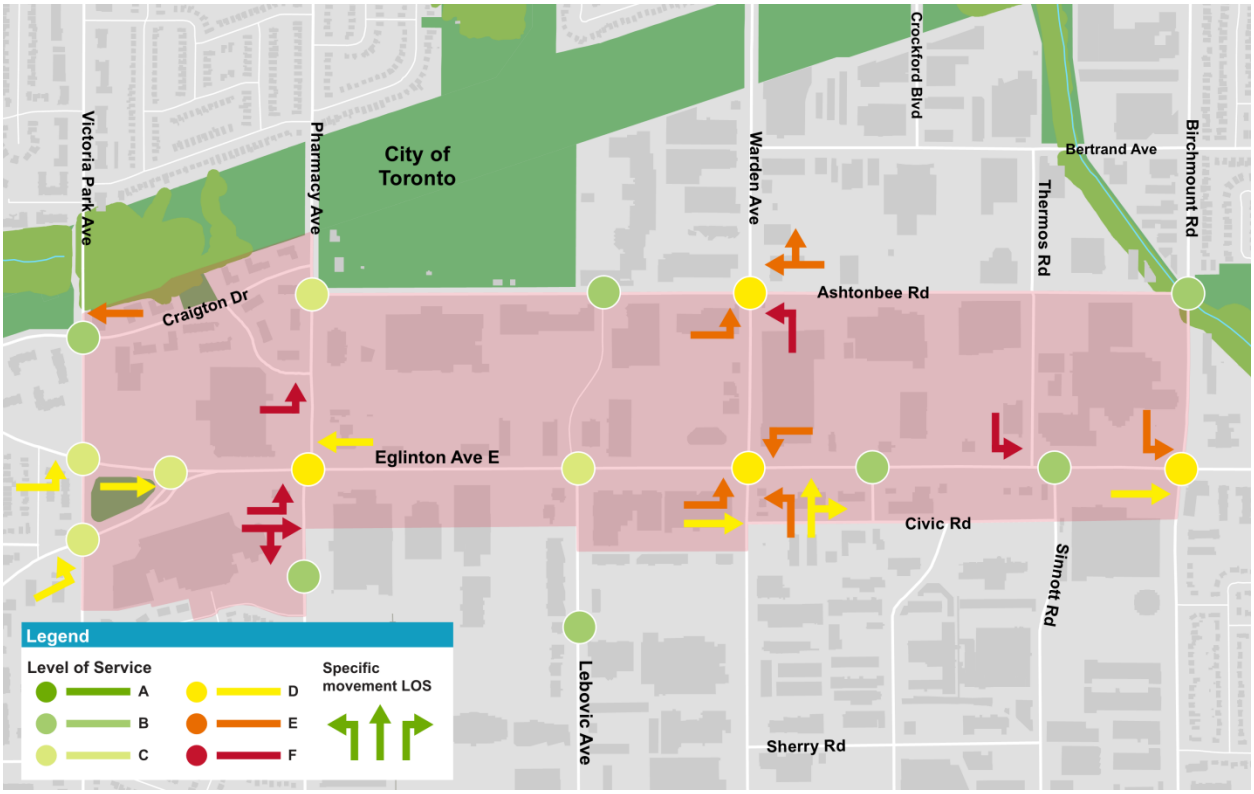
Intersection & Critical Movement	AM Peak Hour v/c	AM Peak Hour LOS	PM Peak Hour v/c	PM Peak Hour LOS
Eglinton Avenue at Eglinton Square	0.64	C	0.70	C
EBT	-	-	0.94	D
Victoria Park Avenue at Eglinton Square	0.71	C	0.96	C
EBL	-	-	0.96	E
Victoria Park Avenue at Eglinton Avenue	0.87	C	0.97	C
EBL	-	-	0.95	E
WBTR	0.94	D	-	-
Eglinton Avenue at Pharmacy Avenue	1.02	D	0.97	D
EBL	0.98	F	1.00	F
EBTR	-	-	1.09	F
WBT	-	-	0.93	D
NBL	0.95	E	-	-
Pharmacy Avenue at Eglinton Sq. Mall Entrance	0.27	A	0.43	B
Pharmacy Avenue at Ashtonbee Road	0.64	B	0.73	C
Eglinton Avenue at Hakimi Avenue	0.73	C	0.83	C
Victoria Park Avenue at Craigton Drive	0.51	B	0.59	B
WBLTR	0.67	E	0.76	E
Eglinton Avenue at Warden Avenue	1.00	D	0.98	D
EBL	0.97	F	0.96	E
EBT	-	-	0.94	D
WBL	-	-	0.94	E
WBT	0.99	E	-	-
NBL	-	-	0.92	E
NBTR	-	-	0.91	D
SBL	0.94	E	-	-
Eglinton Avenue at Prudham Gate	0.49	A	0.64	B
Eglinton Avenue at Sinnott Road	0.49	A	0.68	B
Eglinton Avenue at Birchmount Road	0.79	C	0.97	D
EBT	-	-	0.91	D
SBL	-	-	0.96	E

Intersection & Critical Movement	AM Peak Hour v/c	AM Peak Hour LOS	PM Peak Hour v/c	PM Peak Hour LOS
Ashtonbee Road at Birchmount Road	0.47	A	0.54	B
Ashtonbee Road at Warden Avenue	0.84	C	0.97	D
EBL	0.94	F	0. 91	E
WBTR	-	-	0.98	E
NBL	-	-	0.97	F
Ashtonbee Road at Hakimi Avenue	0.31	A	0.48	B
Lebovic Avenue at Private Access	0.08	A	0.26	B
Pharmacy Avenue at Craigton Drive (unsignalized)*	-	A	-	A
EBL	-	-	0.52	F
Eglinton Avenue at Thermos Road (unsignalized)*	-	A	-	A
SBL	0.30	F	-	-
Warden Ave at Civic Road (unsignalized)*	-	A	-	A
Civic Road at Prudham Gate (unsignalized)*	-	A	-	A
Thermos Road at Ashtonbee Road (unsignalized)*	-	A	-	B
Sinnott Road at Civic Road (unsignalized)*	-	A	-	A
Manville Road at Civic Road (unsignalized)*	-	A	-	A

*Unsignalized intersection LOS uses Intersection Capacity Utilization from the HCM 2000 reports

Figure 4-32. Intersection LOS (AM Peak Hour)

Figure 4-33. Intersection LOS (PM Peak Hour)



Post-LRT Conditions

With the construction of the ECLRT, vehicular traffic conditions will be impacted with the reduction of through-travel lanes on Eglinton Avenue from three (3) lanes per direction to two (2) lanes; as well as the closure of certain movements such as at Victoria Park Avenue and Pharmacy Avenue intersections.

Section 2.4.3 details the traffic impacts as a result of the implementation of the ECLRT.

Intersection Demand

As shown in **Figure 4-34** and **Figure 4-35**, the highest concentration of vehicle trips within the GMSP study area is along Eglinton Avenue, likely because Eglinton Avenue is the only east-west collector between St. Clair and Lawrence Avenues. In contrast, north-south arterials collectively accommodate significant volume, but it is distributed among Victoria Park Avenue, Pharmacy Avenue, Warden Avenue, and Birchmount Road. The volume of intersection movements is generally consistent with the LOS previously shown.

Figure 4-34. Vehicular Intersection Demand (8 Hour Period)

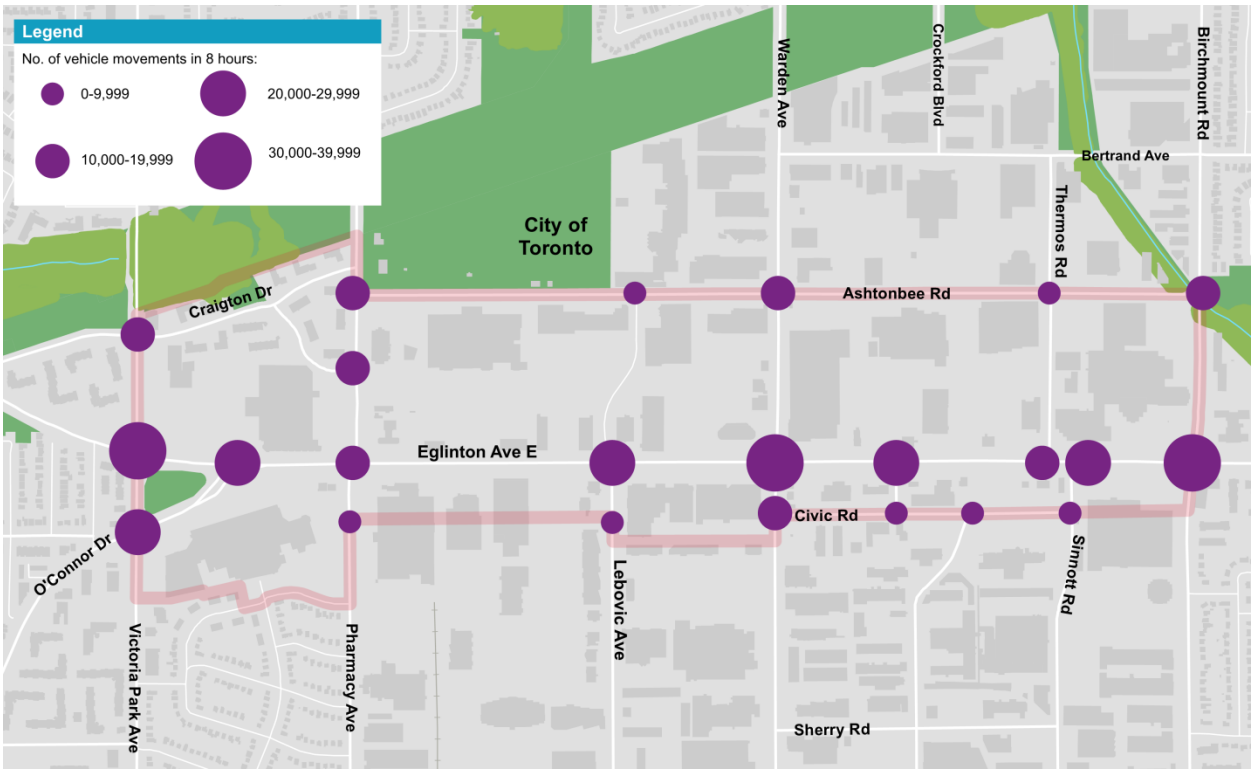


Figure 4-35. Vehicular Intersection Demand (AM and PM Peak Hour)

4.7.2 Collision Analysis

A safety assessment and collision review was completed for the GMSP study area. The analysis is based on intersection-related and segment-related collision records from the City of Toronto's Traffic Safety Unit (TSU). The collision records are for the years between 2006 and 2017 (as of February 10th, 2017).

There were 9,795 collisions reported between 2006 and February 2017 in the study area; 7,730 were classified as Property Damage Only (PDO), 2,053non-fatal injury, and 12 fatal injury collisions. Of these collisions, 6,592 occurred along segments while 3,203 collisions are intersection-related, as summarized in **Table 4-8**. Significantly higher numbers of collisions occur along segments than at intersections.

Table 4-8: Collisions based on Location Types

Location Type	PDO	Non-Fatal Injury	Fatal	Total
Segment	5,365	1,221	6	6,592
Intersection	2,365	832	6	3,203
Total	7,730	2,053	12	9,795

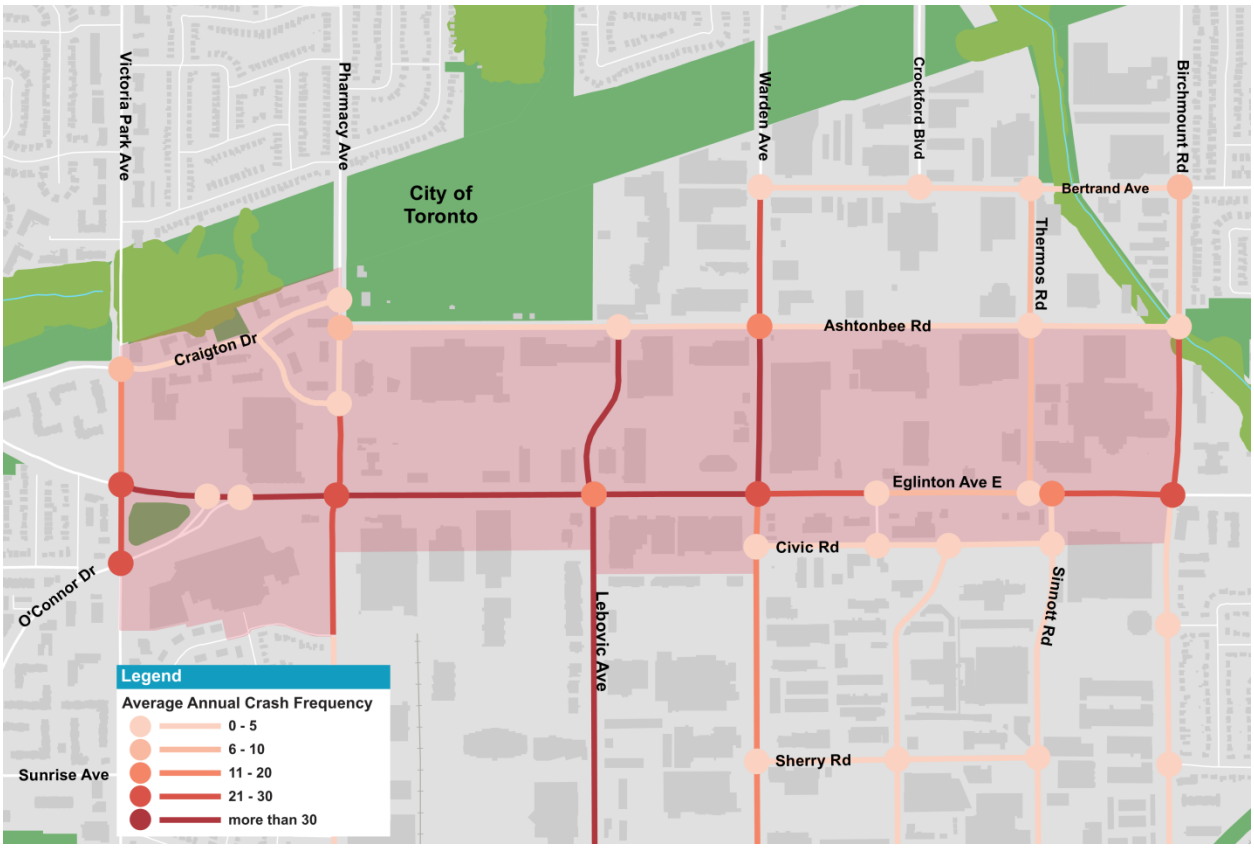
Figure 4-36 illustrates the approximate number of the segment and intersection collisions in the GMSP study area. It is clear that the majority of collisions occur along Eglinton Avenue and Lebovic Avenue.

As shown in **Figure 4-36**, there is a relatively high annual frequency of collisions on Lebovic Avenue between Comstock Road and Eglinton Avenue. Since 2006, there have been 131 collisions involving personal injury and 567 involving property damage. The highest frequency of collisions was in the afternoon, peaking between 4 and 5 pm, which may relate to the area's function as an auto-oriented retail hub.

The majority of collisions involved drivers travelling eastbound (473) and westbound (326) out of driveways and onto Lebovic Avenue between Comstock Road and Eglinton Avenue. Most collisions along this segment occurred at sites with no traffic control device (554), 102 at traffic control signals, and 37 at stop sign controls. A total of 44 charges were laid for careless driving, 29 for failure to yield from a driveway, and 25 for a turn or lane change not in safety. Most involved only motor vehicles, however cyclists and pedestrians were each involved in eight (8) collisions.

Taken together, these data indicate an issue with vehicles exiting or crossing between retail and industrial sites on either side of Lebovic Avenue, primarily at private driveways, but also at the traffic control signal located approximately 320 metres south of Eglinton Avenue. Improvements to private driveways (e.g. control devices, left turn restrictions, etc.) and the existing signalized intersection should be investigated. These collisions are not obviously correlated with weather conditions, nor does driver condition seem to be a significant factor.

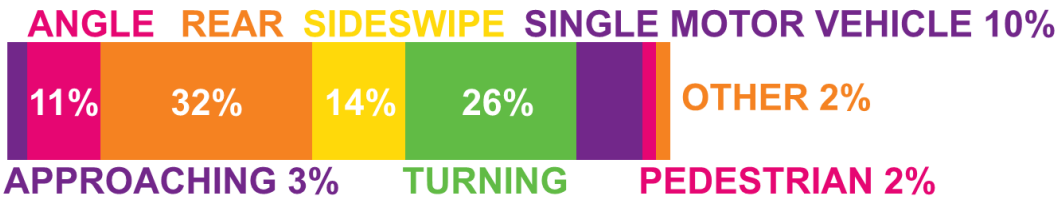
Figure 4-36. Collision Review



Collision by Initial Impact Type

The distribution of collisions by initial impact type is illustrated in **Figure 4-37** with detailed analysis by location available in **Appendix D**. Rear end collisions (32%) account for the highest percentage of all collisions, followed by turning collisions (26%), sideswipe (14%), angle (11%), single motor vehicle (10%), approaching (3%), pedestrian (2%), and other (2%).

Figure 4-37. Collisions by Initial Impact Type



Severe Collisions

Between 2006 and February 2017 there were 12 fatal collisions reported in the GMSP study area[5]. Of these collisions, one (1) involved a single motor vehicle where the driver had been drinking and lost control of the vehicle near Pharmacy Avenue and Eglinton Avenue intersection. Another involved a driver disobeying a traffic control at Warden Avenue and Comstock Road intersection resulting in a two (2) vehicle angle collisions. **Table 4-9** illustrates the details of the fatal collisions in the GMSP study area.

The remaining collisions involved pedestrians and a cyclist struck by motor vehicles. The majority of these collisions (8) are concentrated in the vicinity of the Eglinton Avenue, Eglinton Square, and Victoria Park Avenue Triangle, highlighting the urgent need for improvements to pedestrian and cycling infrastructure in the area. Two (2) deaths, one (1) cyclist, and one (1) pedestrian involved turning movements at the intersection of Victoria Park Avenue and Eglinton Square / O'Connor Drive due to failing to yield right of way and making an improper turn, respectively. Changes to this intersection, such as advance pedestrian walk lights or prohibited right turns on red should be considered to mitigate this risk.

While all pedestrian deaths along segments involved drivers "driving properly", changes should be considered to enhance the convenience and safety of pedestrian crossings in the area to discourage dangerous crossing situations (e.g. midblock crossings and reduced speed limits).

[5] Number of fatal collisions involving pedestrians should be confirmed as there are four with near-identical characteristics (e.g. date, pavement condition, driver condition, similar location, etc.)

Table 4-9: Detailing of Fatal Collisions within GMSP Study Area

Location (between)	No. of Collisions	Date	Road Surface	Class	Traffic control device	Apparent Driver Condition	Apparent Driver Action
Eglinton Ave & Sinnott Rd (Intersection)	1	Jan-13	Dry	Pedestrian Collision	Traffic signal	Inattentive	Disobeyed traffic control
Eglinton Ave & Victoria Park Ave (Intersection)	1	Mar-15	Dry	Pedestrian Collision	No control	Normal	Driving properly
Pharmacy Ave & Eglinton Ave (Intersection)	1	Oct-16	Dry	SMV other	No control	Had been drinking	Lost control
Victoria Park Ave & Eglinton Sq (Intersection)	2	Aug-14 & Oct-14	Dry	Pedestrian Collision; Cyclist Collision	Traffic signal	Inattentive	Failed to yield right of way; Improper turn
Warden Ave & Comstock Rd (Intersection)	1	Apr-06	Dry	Angle	Traffic signal	Normal; unknown	Driving properly; disobeyed traffic control
Victoria Park Ave (Eglinton Ave and Eglinton Square) (Segment)	3	Mar-13, Oct-13, Nov-13 (2) & 2014	Dry (1), Wet (2)	Pedestrian Collision (3)	No control (2); stop sign	Normal (2); Inattentive	Driving properly

Location (between)	No. of Collisions	Date	Road Surface	Class	Traffic control device	Apparent Driver Condition	Apparent Driver Action
Victoria Park Ave (Eglinton Ave & Craigton Dr) (Segment)	1	Oct-14	Wet	Pedestrian Collision	No control	Normal	Driving properly
Eglinton Ave (Victoria Park Ave and Pharmacy Ave) (Segment)	1	Oct-14	Wet	Pedestrian Collision	No control	Normal	Driving properly
Craigton Dr (Victoria Park Ave and Pharmacy Ave) (Segment)	1	Oct-14	Wet	Pedestrian collision	No control	Normal	Driving properly

Collision by Environmental Conditions

As shown in **Figure 4-38**, the majority of collisions occurred under clear conditions (81%), followed by rain (15%), snow (2%), and other (2%). This distribution does not indicate a potential for safety improvements based on environmental conditions.

Figure 4-38. Collisions based on Environmental Conditions

4.7.3 Pedestrian Level of Service (PLOS)

As noted in **Section 4.5.2**, the methodology employed for this study is based on the City of Ottawa Multi-Modal Level of Service (MMLOS) Guidelines for pedestrian and cyclist quality of service analysis.

Similar to BLOS, pedestrian Level of Service (PLOS) is calculated at the intersection and mid-block in recognition that, unlike vehicular LOS, pedestrian's experience is determined by both conditions, between crossings and at the crossing itself.

The methodology for the evaluation of segment PLOS utilizes a look-up table approach based on cross-section and roadway characteristics (e.g., sidewalk and boulevard width, traffic volumes, presence of on-street parking, and operating speed). Intersection PLOS uses the Pedestrian Exposure to Traffic at Signalized Intersections (PETSI) and assigns points based on a number of crossing characteristics (e.g., crossing distance, presence of a median, presence of a crossing refuge, turning restrictions, right hand turn characteristics, curb radii, etc.). The average score of each intersection approach is averaged to determine the overall intersection PLOS. Scoring ranges as follows:

- **PLOS 'A' to 'C'** – Attractive to most pedestrians, including locations where lower speeds and volumes, wider sidewalks, and larger boulevards with ample separation from moving traffic are present. Crosswalks are provided on all four legs of the intersections and with shorter crossing distances at intersections.
- **PLOS 'D' to 'E'** – Elements may not appeal to pedestrians due to narrow sidewalks, lack of separation from traffic, longer crossing distances, etc.
- **PLOS 'F'** –locations without any facility or where no buffer is provided adjacent to high speed and high volume traffic. No crosswalks provided and long crossing distances at intersections.

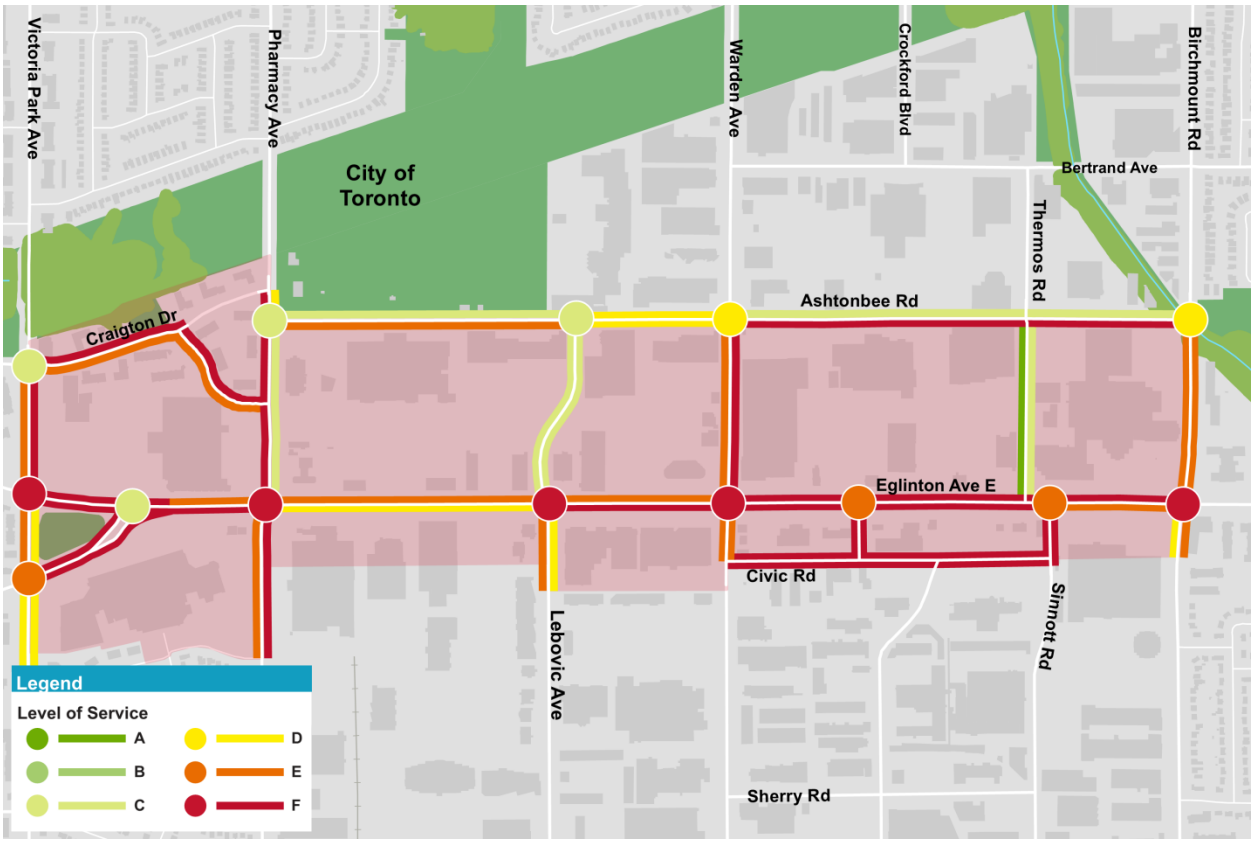
Higher segment scores are characterized by locations where lower vehicle speeds and volumes, wider sidewalks, and larger boulevards with ample separation from moving traffic are present. Lower segment scores are observed in locations where

high vehicle speeds, narrow sidewalks, and minimal separation from traffic are present.

A total of 217 pedestrians were involved in collisions throughout the intersections and segments in the study area, demonstrating a clear need to improve pedestrian safety throughout the GMSP study area. As illustrated **Figure 4-39** (PLOS), many intersections and segments operate at a LOS of 'E' or worse due to high vehicle speeds, narrow sidewalks, and little to no separation from vehicular traffic in the GMSP study area (see **Section 4.7.3** for more detailed analysis).

Figure 4-39 illustrates the existing PLOS in the GMSP study area. The majority of intersections and segments operating with a PLOS of 'D' or worse. The segment analysis shows that the majority of arterials experience a PLOS of 'E' or 'F' due to high vehicle operating speeds, narrow sidewalks, and little to no separation from vehicular traffic.

Figure 4-39. Pedestrian Intersection and Segment Level of Service



4.7.4 Goods Movement

As shown in **Figure 4-40** and **Figure 4-41**, Eglinton Avenue is the most heavily travelled corridor for trucks, likely because of its function as a key east-west arterial for the wider area. Most north-south truck traffic uses Victoria Park Avenue or Warden Avenue. Truck volumes are significantly higher at nearly all intersections in the GMSP study area during the morning peak than the afternoon.

Figure 4-40: Truck Intersection Demand (8 Hour Period)

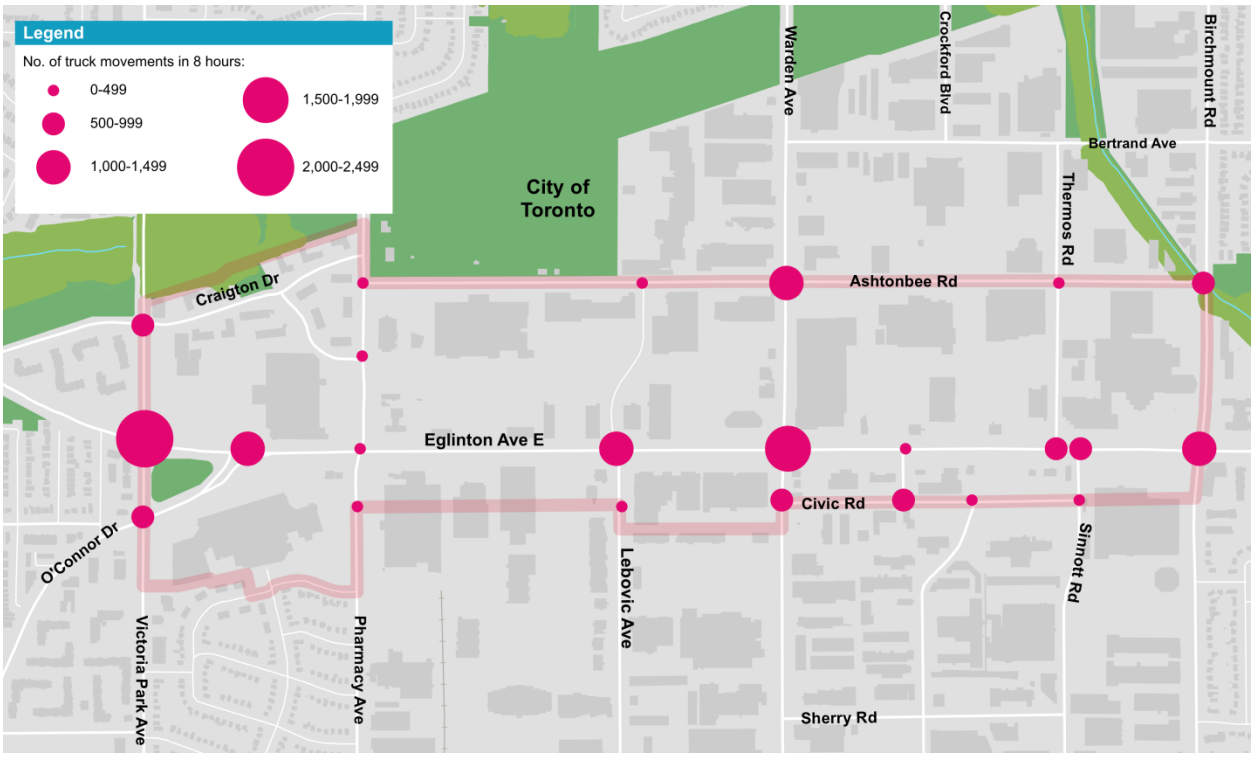


Figure 4-41: Truck Intersection Demand (AM and PM Peak Hour)

Commercial Vehicle Survey (CVS)

The Ministry of Transportation of Ontario (MTO) conducts a Commercial Vehicle Survey (CVS) throughout Ontario every five to six years to collect information about goods movement within the province. The inventory contains information including truck volumes, origin and destination addresses, cargo value, cargo weight, and kilometres travelled in different areas.

The GMSP study area encompasses a large industrial area where commercial vehicle traffic is prevalent. According to the CVS, commercial vehicles travel 21,100 kilometre in the Golden Mile area. **Table 4-10** displays the daily and weekday trips, as well as cargo value for commercial vehicles for the Golden Mile and for the City of Toronto. Commercial vehicle trips to/from the Golden Mile account for 1.6% of the City's total. It is important to note that the CVS does not account for through trips.

Table 4-10: Commercial Vehicle Survey Results for Golden Mile

	Daily Trips To/ From[a]	Weekday Trips To / From[a]	Daily Cargo Value ($)	Weekday Cargo Value ($)
Trips with O/D in Golden Mile	712	954	16,850,333	22,579,446
Trips with Travel in City of Toronto[b]	44,237	59,278	1,066,613,202	1,429,261,691

Source: 2012 Commercial Vehicle Survey

[a] Excludes through trips

[b] To / From

4.8 Travel Demand Management (TDM)

This section provides an overview of existing travel patterns, programs that currently offer TDM services or promote transit, active transportation and ridesharing in Scarborough, relevant city-wide policies that encourage TDM, and infrastructure projects and plans that support the use and promotion of transportation options in and around the study area going forward.

4.8.1 Auto Occupancy

As mentioned in **Section 4.2.1**, the 2011 TTS provides mode split, providing insight into current travel behavior in and surrounding area.

The majority of trips to the Golden Mile TMP study area are by single occupancy vehicles (59%). According to TTS data for trips destined to the TMP study area, the share of carpool trips have increased from 16% to 18% between 2001 and 2011. By encouraging high occupancy vehicles through Smart Commute initiatives and TDM policies, the share of carpool trips for the TMP study area can further increase.

4.8.2 Smart Commute Initiatives

Smart Commute Scarborough, a program of the City of Toronto and Metrolinx, is the Transportation Management Association (TMA) serving Scarborough. Working with 15 leading employers that represent more than 18,000 employees, the program provides and promotes alternative commute solutions such as carpooling, transit use and active transportation throughout Scarborough, including the Golden Mile study area.

Employers can join Smart Commute Scarborough as a basic member for an annual membership fee of $1,000 or as a premium member starting at $2,500 based on number of employees. The following services and assistance are offered to employer partners:

- Workplace commuter programs. Smart Commute offers travel surveys and site assessments, which provide the basis for targeted TDM programs for each participating work site, including:
    - Employee workshops and campaigns, such as Bike to Work Day, Carpool Week and Smart Commute Month; and
    - Customized marketing materials, such as posters, newsletter copy and email blasts.
- Access to their own network on the integrated Smart Commute online ridematching and trip tracking tool;
- Assistance with implementation of preferred carpool parking and cycling infrastructure and support (Premium Membership);
- Assistance with shuttles and vanpools (Premium Membership);
- Assistance with developing telework and flexible work schedule policies as well as reimbursement policies for business-travel (Premium Membership); and
- Assistance with achieving green building status, for example LEED credits (Premium Membership).

In addition, the program provides information and resources directly to commuters, including the trip planning and ridematching tool, bike maps, and communications showcasing the benefits of not driving to work. The program has been in operation since 2011, and continues to drive travel behaviour change at member worksites. In 2016 survey, Smart Commute Scarborough member employers reported an active transportation mode share of 14% and a transit mode share of 36%, both higher than the average for the wider population. Smart Commute Scarborough members within the Golden Mile include manufacturing firm Armstrong Fluid Technology and property management company Dream.

4.8.3 Scarborough Cycles

Scarborough Cycles is a collaborative project led by the Toronto Centre for Active Transportation (TCAT), in partnership with CultureLink Settlement and Community Services, the Toronto Cycling Think & Do Tank and Cycle Toronto.

The project goals are:

- Create and disseminate knowledge about cycling in the suburbs;
- Build capacity among local agencies and individuals to support cycling;
- Address barriers to cycling; and
- Engage with residents and stakeholders about the benefits of improved cycling infrastructure.

At this point, the focus of activity for Scarborough Cycles is south of the Golden Mile study area - Scarborough Cycles primarily offers events and programs at its hubs at Birchmount Bluffs Neighborhood Centre and Access Point at Danforth, but the organization can offer services across all of Scarborough.

4.8.4 City of Toronto TDM Policies for New Development

The primary mechanism by which the City of Toronto can influence the provision of TDM measures and parking policies is through Transportation Impact Studies (TIS), which provide the city with information on the transportation impacts of a new development project. The Guidelines for Preparation of TISs describe the City's requirements, applicability and methodologies for assessing and mitigating those impacts. Mitigation can include transportation infrastructure investments and TDM programs and strategies designed to reduce drive alone rates and encourage walking, cycling, transit use and other alternatives to driving alone.

A TIS is required if the proposed development adds more than 100 peak-hour, peak-direction vehicle trips. In addition, a TIS might be required for new developments that fall under the threshold, if any of the following apply:

- The traffic generated is expected to trigger a critical capacity or LOS condition at one or more of the surrounding intersections;
- The development proposal is in an area with significant traffic congestion and/or high rate of employment or population growth;
- The proposal incorporates direct vehicle access to a major or minor arterial road;
- The proposal is not captured in local land use/transportation plans; and
- The proposal requires an amendment to the Official Plan.

The TIS encourages all proposals to take steps to promote non-automobile transportation, but stops short of requiring a TDM plan, unless city policies require one, based on type and scale of the development. Projected impacts of TDM strategies can be factored into the basic travel demand estimates as adjustments. In

addition, cyclists and pedestrians should be accounted for when considering future traffic operations. In areas where significant pedestrian volumes are expected, pedestrian flow should be analyzed in addition to qualitative factors. In areas where significant cycling volumes are projected, LOS for cyclists should be addressed.

Parking reductions can be achieved through shared parking, payment-in-lieu, off-site parking and other strategies that have to be detailed in a parking study to be submitted in conjunction with the development application.

4.8.5 Toronto Green Standard

The Toronto Green Standard (TGS) is Toronto's sustainable design requirements for new private and city-owned developments. The Standard consists of tiers (Tiers 1 to 4) of performance measures with supporting guidelines that promote sustainable site and building design. Tier 1 of the TGS is a mandatory requirement of the planning approval process while financial incentives are offered for achieving higher green standards through Tiers 2 to 4.

Numerous relevant goals are identified in the TGS for mid to high rise and non-residential development which support the TDM objectives for the Golden Mile Secondary Plan. These include:

- AQ 1.1 Single-Occupant Auto Vehicle Trips: Reduce single occupancy auto vehicle trips generated by the proposed development by 15% through a variety of multimodal infrastructure strategies and TDM measures.
- AQ 1.2 Low-Emitting Vehicle (LEV) and Sustainable Mobility Spaces: If providing more than the minimum parking required under the Zoning By-law, the excess spaces must be dedicated priority parking spaces for LEVs, carpooling/ridesharing or for publicly accessible spaces dedicated to shared vehicle systems such as car sharing, ridesharing, or micro mobility systems.
- AQ 1.3 Electric Vehicle Infrastructure: Design the building to provide 20% of the parking spaces with electric vehicle supply equipment (EVSE). The remaining parking spaces must be designed to permit future EVSE installation.
- AQ Section 2 and 3 speaks to the provision of bike parking and accessible pedestrian infrastructure.

4.8.6 Relevant Plans for GMSP Study Area

The following projects and plans will create conditions in the Golden Mile study area that will support the effective implementation of TDM programs.

The Toronto Official Plan (particularly Official Plan Amendment 274 as highlighted in **Section 2.2.1**) shows strong support for TDM measures and envisions the City showing leadership by implementing the following:

- Requiring a TDM strategy as part of a TIS for major commercial, employment and institutional development applications;

- Actively pursuing measures that will increase the walking, cycling and transit mode share, the average vehicle occupancy rate and shift travel demand from peak to off-peak periods;
- Supporting the workplace TDM efforts of Smart Commute Toronto and the region-wide Metrolinx Smart Commute program, as well as TDM programs supported by School Boards;
- Support TDM programs supported by School Boards;
- Supporting local implementation through creation and operation of TMAs across the city;
- Promoting flexible work arrangements;
- Working with Metrolinx to pursue a region-wide study of road pricing to reduce congestion and better manage traffic; and
- Recognizing the transportation implications of diverse travel patterns, such as those of caregivers, shift workers and other vulnerable groups.

The Eglinton Crosstown LRT currently under construction and expected to be completed in 2021, will significantly reduce cross-town travel times from current bus service and will significantly increase transit capacity in that corridor. Within the study area, stations will be located at Victoria Park Avenue, Pharmacy Avenue, Hakimi-Lebovic Avenue, Golden Mile (at Warden Avenue) and Birchmount Road. The introduction of light rail mass transit to the area creates an excellent opportunity for TDM interventions, primarily around building ridership and addressing first/last mile challenges.

TransformTO. In April 2017, the City of Toronto approved a long-range climate action plan called "*TransformTO: Climate Action for a Healthy, Equitable and Prosperous Toronto - Report #2 - The Pathway to a Low Carbon Future*". The report envisions a future in which 17% of people walk, 27% cycle, 23% take transit and only 32% drive to work. Specific city-wide transportation goals for the year 2050 include:

- 100% of transportation options will use low or zero carbon energy sources; and
- 75% of all trips under five (5)-kilometre will be made by active transportation.

The Golden Mile, Scarborough, City of Toronto Market Analysis & Economic Strategy, prepared for the City of Toronto in December 2016 includes the following recommendations that will support TDM programs in the study area:

- Parking policies: Policies that serve to reduce parking supply, making it harder to find parking at all or find affordable parking will ultimately make other transportation options more attractive and cost-effective by comparison. The following policies are proposed:
    - Reduced parking standards for all land uses (gradual reduction of parking ratio standards) in the short term;

    - Full reduction in parking ratios, and prohibit surface parking for new development for all land uses in the long term; and
    - A centralized parking facility operated by Toronto Parking Authority or a private-public venture.
- Business Improvement Area (BIA): A BIA with a unique identity and brand is helpful when implementing TDM programs because they provide access to contacts and can help build agreement and coalitions around common goals related to transportation, access and options.
- Density and Height: Increased density helps support existing and future transit and provides opportunities to reshape the area so that it better supports walking, cycling and transit.

While not specific to the study area, the following city-wide plan elements and initiatives will drive long-term changes to the way transportation infrastructure and programs are developed and delivered across the City of Toronto, including the study area.

5 Transportation Challenges and Opportunities

Based upon the review of existing conditions, five major opportunities were identified:

1. Improving Eglinton Square Triangle
2. Creation of a grid street network
3. A complete street network for all mobility users
4. Improving connectivity to ECLRT stops
5. Improving TDM measures.

5.1 Eglinton Square Triangle

The Eglinton Square Triangle is home to the Victoria Park – Eglinton Parkette and is bounded by Eglinton Avenue, Victoria Park Avenue, and Eglinton Square. The parkette comprises an open green space with trees located on the edges of the parkette. Although the area does offer green space to the Golden Mile area, it is surrounded on all sides by major arterials with a minimum of five (5) lanes and does not offer enough protection from these arterials for pedestrians or park visitors. Furthermore, as identified in **Section 4.7.2**, eight (8) fatal collisions involving pedestrians and cyclists have occurred in the vicinity of the Triangle, highlighting the urgent need to improve the pedestrian realm and cycling infrastructure.

This TMP presents an opportunity to transform the Parkette and the roadways surrounding it into a public space that:

- Helps meet the future greenspace needs of a denser Golden Mile and contributes to the green corridor envisioned in Eglinton Connects;
- Facilitates safe and pleasant pedestrian and cyclist movements; and
- Serves as a distinct gateway into Scarborough and the Golden Mile area.

Some potential improvements to the Eglinton Square Triangle include:

- **Park Features** such as additional trees, playgrounds, fountains, a seasonal ice rink, or a park pavilion.
- **Public Art Installations** including features from local artists.
- **Pedestrian Infrastructure** including wider sidewalks, increased visibility for pedestrian markings at adjacent intersections (zebra crossings), benches, advanced pedestrian crossing movements, and improving pedestrian connections across Eglinton Square (e.g. a midblock crossing).
- **Cycling Infrastructure** including bicycle racks and multi-use paths in the park.
- **Community Hub** features that would allow all-season pop-up markets.

Currently there is a clear desire line in the Triangle that connects the northern bus stop to the southern bus stop. This could be converted into a multi-use path to provide a pedestrian and cycling connection.

An example of a recently renovated park space in Toronto is Lisgar Park, located south of Queen Street West between Abell Street and Lisgar Street. Shown in **Figure 5-1**, the park features over 300 seating spaces, a playground, and numerous trees in a space approximately half the size of the Parkette. The park currently hosts an outdoor market every Saturday between late June to late October which features local vendors and farmers.

Figure 5-1: Lisgar Park Space (Left) and Seating (Right)

5.2 Grid Street Network

At present, The Golden Mile street network is characterized by very large blocks bounded by arterial and collector roads. This built form encourages driving by requiring pedestrians to walk longer distances to reach their destinations, often across surface parking lots. It also reduces choices for all modes, funneling traffic into a discontinuous hierarchy of a few roads, rather than a continuous network.

The expected redevelopment of the Golden Mile offers an opportunity to break up the existing “superblock” pattern, establishing a finer-grained street network with a walkable block structure, as directed by Eglinton Connects. Increasing the grid network density would increase the number of options available to all modes, add road capacity to the network, balance mobility choices for walking and cycling trips within the study area due to improved connections across the land uses, and increase the pedestrian catchment area of Crosstown LRT stations.

5.2.1 New Connections

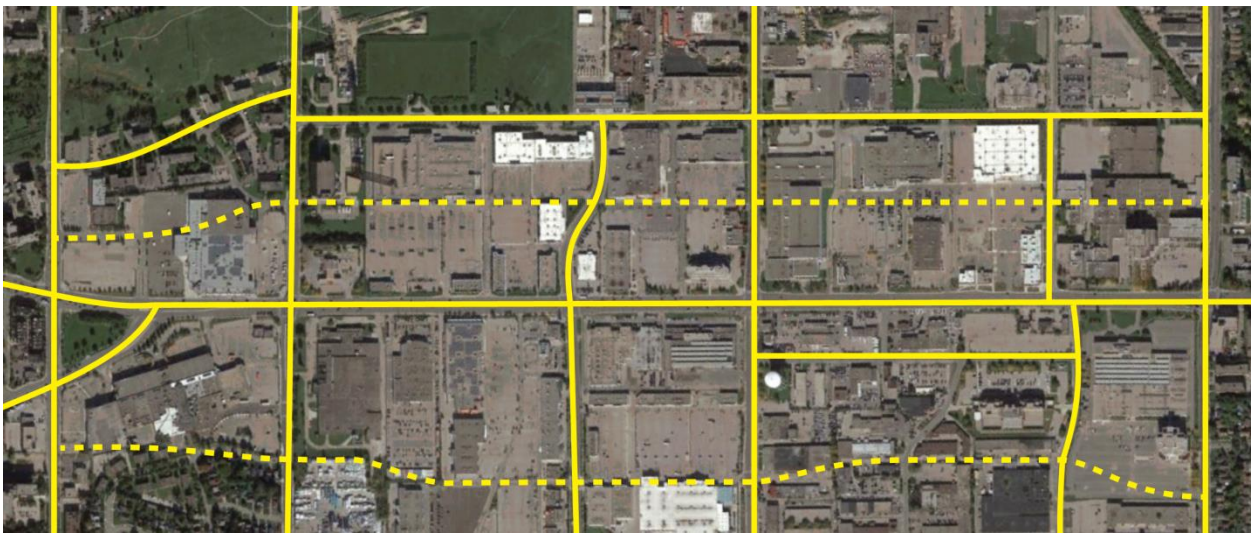
The existing street network in the GMSP study area lacks parallel connections, particularly for east-west travel. Eglinton Avenue is the only continuous east-west corridor in the study area and therefore experiences congestion during the peak hours. Ashtonbee Road and Civic Road are parallel corridors, however they do not

traverse the entire length of the study area: Ashtonbee Road runs between Pharmacy Avenue and Birchmount Road, and Civic Road between Warden Avenue and Sinnott Road.

To facilitate east-west travel throughout the GMSP study area, two new corridors are recommended to the north and south of Eglinton Avenue, respectively. The southern connection would be located south of Civic Road, running from Victoria Park Avenue in the west to Birchmount Road in the east. As proposed in Eglinton Connects, the new northern connection would run between Eglinton Avenue and Craigton Drive from Victoria Park Avenue until Pharmacy Avenue and then continue east to Birchmount Road between Eglinton Avenue and Ashtonbee Road.

Figure 5-2 illustrates the potential location for these new east-west collector roads. Both corridors would be composed of entirely new ROW. These new east-west corridors should be supported by several new minor north-south streets to be identified at later stages.

Figure 5-2: Potential East-West Collector Road



Background Image Source: Google Earth

5.3 A Complete Street Network for All Mobility Users

The existing street network is “incomplete” in the sense that it does not accommodate a variety of modes of transportation in a way that is safe and pleasant for people of all ages and abilities. Redevelopment of the area presents an opportunity to develop streets that balance mobility choices and create connections to other parts of the overall study area, in alignment with the City of Toronto Official Plan Complete Streets Policy.

The existing transportation network is designed to accommodate vehicles; therefore, in many places lacks adequate facilities for other modes of travel. Furthermore, streets in GMSP do not fulfil their vital role as public spaces to enhance the environment and community since the roads' ROW is mostly dedicated to vehicle

movement. The Toronto Complete Streets Guidelines provide guidance in the redesign of the existing street network to rebalance the needs of all current and future road users.

A Complete Street network in the GMSP study area will have to balance the needs of pedestrians, cyclists, transit users, drivers, and goods movement. It will have to take into account the area's ongoing role as a retail hub, the needs of students travelling to and from Centennial College, pedestrians and cyclists accessing Crosstown LRT stations from areas to the north and south, future residential densification, and truck traffic through and within the study area, particularly to light industrial sites to the south. Future stages of the TMP will take these mobility needs and priorities into account when making recommendations, while recognizing streets' roles in placemaking and prosperity. Key considerations are highlighted below.

5.3.1 Centennial College

Centennial College is located north of Ashtonbee Road between Hakimi Avenue and Warden Avenue. Centennial College Ashtonbee Campus is a major trip generator and destination in the GMSP study area. It is located approximately 330 metres north of the future Golden Mile ECLRT stop.

There is an opportunity to improve pedestrian and cycling connections from Centennial College to future ECLRT stations and elsewhere in the study area.

5.3.2 Gatineau Hydro Corridor Trail Connections

The Gatineau Hydro Corridor Trail runs east-west to the north of the GMSP study area. This existing trail will be part of the Meadoway - a Toronto Region Conservation Authority and City of Toronto initiative to create a 16km linear urban park and trail system connecting Downtown Toronto to Rouge National Urban Park. The existing trail runs easterly from Victoria Park Avenue to Orton Park Road (at Ellesmere Road), and from Conlins Road to Meadowvale Road. As part of the larger Meadoway project, the City of Toronto is currently undertaking an extension of the trail. Construction of the multi-use trail extension to Eglinton Avenue was completed in spring 2018. The timing of phase 2, across Eglinton Avenue and west to Bermondsey Road is being coordinated with the Eglinton Crosstown LRT and Metrolinx.

At present, there are no designated cycling links within the GMSP study area that connect to the Meadoway. The TMP presents the opportunity to provide a number of links to this important east-west link from all areas of the Golden Mile.

5.4 Improve Connectivity to ECLRT Stops

The ECLRT is scheduled to open in 2021 and includes five (5) stops in the GMSP study area: O'Connor, Pharmacy, Hakimi-Lebovic, Golden Mile (Warden), and Birchmount. There is an opportunity to improve access and connectivity to these stops in advance of the completion of the ECLRT.

According to the pedestrian walkshed analysis in **Section 4.6.3**, all roads in the GMSP study area are included as part of the 800 metres that people are willing to walk to a higher order transit stop. As a result, pedestrian infrastructure should be provided or improved on all roads in the GMSP study area, especially those with lower PLOS scores as seen in **Section 4.7.3**

5.5 Improving TDM Measures

5.5.1 Current TDM Challenges

The Golden Mile remains predominantly suburban in its development patterns and streetscape, and as such, faces TDM challenges consistent with suburban environments. The design of the area and transportation network is distinctly car-centric- inconvenient, unpleasant, and often unsafe for non-drivers. The predominant land use is large scale, big box retail with extensive surface parking.

As the TTS assessment showed in **Section 4.2.1**, incoming trips to the traffic zones in which the study area is located are more likely completed by driving alone than in other parts of the City. This could be due to employees living longer distances away from work, and potentially without reliable access to transit, or the higher percentage of trips for shopping, dining, errands and recreational purposes. Although served by regular bus service along the key corridors, surrounding development is low density and punctuated by wide roadways and parking lots, creating significant first/last mile challenges for those wishing to access transit. Traditionally, TDM programs have focused on employment and school trips and few initiatives have attempted to influence shopping trips.

The suburban streetscape of the Golden Mile also presents a barrier to cycling and walking as a viable mobility options. Wide, fast moving streets with minimal active transportation (AT) infrastructure are not supportive of cycling or walking.

Parking in the area is plentiful, and free or low cost in many areas. There is very little disincentive for the community to leave their cars at home and choose alternate modes, despite improving transit access.

5.5.2 TDM Opportunities

A number of opportunities for TDM can be identified for the Golden Mile. As the study area develops and intensifies, opportunities and recommended strategies will evolve, suggesting that a flexible and responsive approach to designing and implementing TDM strategies will be important. Within the study area, TDM programming should be viewed as a vital component of the area's development, necessary for the effective mobility management of the growing population and the utilization of new infrastructure.

First, existing and planned transit and active transportation infrastructure along with planned developments and intensification of the study area will create an excellent opportunity for TDM interventions, primarily around building ridership and addressing first/last mile challenges. The Golden Mile travel survey conducted in the summer of

2017 identified the top three (3) factors that would make transit more attractive. Those factors were more frequent service, shorter travel times and an expanded transit network. Furthermore, 37% of survey respondents said that they will consider changing their preferred mode to transit once the LRT opens. Residents and commuter in the area will need to be educated, supported and encouraged to utilize new facilities as they become available. There is an opportunity for TDM to play a significant role in building transit ridership and active transportation mode share through direct engagement and targeted marketing. The Smart Commute program can provide a partial conduit for this kind of programming, but the scale of required engagement would likely exceed the scope and capacity of the program. TDM interventions beyond the Smart Commute program and linked directly to the infrastructure development projects should be considered.

ECLRT and associated infrastructure improvements will create a strong backbone of transit and cycling infrastructure, but will need additional wider network connections to maximize success. Accessing stations from the surrounding area will present challenges, particularly in the existing large blocks and low-density environment.

The area is served by the Gatineau Trail paved bike route running along the hydro corridor to the north of the study area, with at grade access at Pharmacy Avenue, Warden Avenue and Birchmount Road. Promoting connections to this east-west route from Eglinton Avenue should be a key intervention, both for access to employment areas and future transit hubs. As with the ECLRT infrastructure improvements, residents and commuters will require education and encouragement to make use of existing and new connections, via existing and new TDM intervention channels.

Second, the significant volume of transit-oriented development and redevelopment that is expected to occur around the Eglinton LRT line provides opportunities for the City of Toronto to further encourage and possibly require developers and subsequent tenants to submit and implement TDM plans. Plans should include both on-site infrastructure supporting non-automobile travel as well as programs and subsidies that will provide incentives to employees and residents of the area to travel by transit, walking, cycling or to share rides. In addition, membership in the Smart Commute Program could be a requirement for new commercial developments and future tenants, and opportunities to implement residential TDM for new developments should be explored.

Third, a successful TDM plan for the Golden Mile needs to include strategies proven to be successful in achieving travel behaviour change among the distinct audiences frequenting the study area: employees, residents and customers. The current land use in the Golden Mile area offers a solid employment base, particularly in the industrial units north and south of Eglinton Avenue, and the office complex at the Birchmount Road and Eglinton Avenue intersection. Centennial College, just to the north of the study area, is also a significant trip generator. This volume of commuters presents an excellent audience and a good starting point for TDM interventions in the study area. Because of the high prevalence of big box retail stores currently present

in the study area, a TDM strategy specifically targeting retail employees should be implemented.

TDM measures that will be considered in the early stages include transit pass subsidies and Try Transit campaigns, trip/commute planning opportunities, ridematching and rideshare incentives, and parking cash out programs. Innovative solutions can be developed on an employer by employer basis by analyzing the travel needs and options of their employees.

Retail and restaurant customers are the most difficult target group to reach with TDM measures. The most effective measure is to introduce paid parking or reduce the amount of parking available, however, both are very difficult to implement in the short term and therefore should be viewed as potential long-term opportunities to be considered as the area intensifies. Best practices from other retail centres in the GTHA and beyond can help inform specific retail employee strategies for the Golden Mile.

The active Smart Commute program in the area provides an existing channel for implementing workplace based on TDM programs and opportunities, from new infrastructure to behaviour change campaigns, and could be an ideal partner for implementation of the employer-based strategies identified in this TMP. However, the level of engagement required to meet the proposed growth in the area would require additional resources for the Smart Commute program or other TDM intervention programs in order to be implemented effectively.

The planned addition of approximately 24,000residential units across the GMSP area presents an opportunity to target TDM measures at residents. Possible TDM measures include new resident information kits, targeted individual marketing campaigns, walking and cycling maps, and on-street pedestrian wayfinding installations, displaying walking times to nearby transit stops, parks, and other destinations. Resources and delivery channels necessary to implement residential TDM should be identified, as this cannot currently be delivered through the Smart Commute program.

6 Problem and Opportunity Statement

The Golden Mile was planned and built for cars and is characterized by large blocks and low-rise buildings set-back and separated from streets by surface parking. Streets are wide with a lack of connectivity and no formal cycling facilities within the Secondary Plan Area. The six (6) traffic lanes on Eglinton Avenue creates a divide between the northern and southern areas of the GMSP study area and act as a physical barrier for pedestrians and cyclists. As such the majority of people choose to drive short distances despite delays.

With the introduction of the ECLRT and redevelopment along Eglinton Avenue, there is an opportunity to renew the Golden Mile where:

- A finer grained street network will enhance connectivity within the study area;
- A variety of mobility options are available and possible;
- An active community and lifestyle are encouraged;
- Streets are comfortable and accessible for users of all ages and abilities;
- Convenient and safe connections to the future ECLRT stops are provided; and
- The economic vitality of existing and future businesses is protected.

6.1 Vision and Guiding Principles

As part of the larger Secondary Plan study, the vision for the Golden Mile is to create:

- A connected, accessible and diverse mixed-use community;
- A balance of residential, commercial and employment uses anchored by community services;
- An improved network of streets, parks, and open spaces; and
- A distinct place that is both a community and a destination.

Together with the vision, four (4) guiding principles were developed for the Golden Mile Secondary Plan:

1. Towards a Complete Community: The Golden Mile will be a livable, vibrant neighbourhood with a balance of development and open spaces, diverse mix of housing types, different scales of retail, and a range of employment uses while retaining its historical identity as a commercial retail centre in the region.
2. Towards a Connected Community: The Golden Mile will offer improved connections for all modes of travel, providing enhanced travelling experience as well as safety for all users of the road. It will be an accessible, green and pedestrian-friendly area for residents, businesses, and visitors.

3. Towards a Responsive Community: The Golden Mile will be flexible, responsive, and resilient to the changing needs of the community. It will have the basis to provide wide range of facilities, services, and programs that suits the diverse neighbourhood while anticipating and accommodating change over time.
4. Towards a Prosperous Community: The Golden Mile will provide an opportunity for prosperity for all. It will have enhanced competitiveness of the existing employment, while providing opportunity for new types of businesses to grow and flourish.

The Guiding Principles are illustrated in **Figure 6-1**.

Figure 6-1: Golden Mile Guiding Principles

7 Alternative Street and Block Networks

This chapter documents the preliminary transportation analysis done to identify an initial street and block network plan for the GMSP area. This initial plan identifies key connections to be included in a street and block network to analyze development alternatives for the GMSP (**Section 8).**

Three (3) street and block network plans are considered in this evaluation: Alternative A: Gateway; Alternative B: Central Hub; and Alternative C: Cluster. The alternatives are illustrated in **Figure 7-1** to **Figure 7-3**. The analysis to determine an initial street and block network plan considers select evaluation criteria identified in the TAC and LAC meetings that took place on February 7, 2018.

Figure 7-1: Alternative A – Gateway

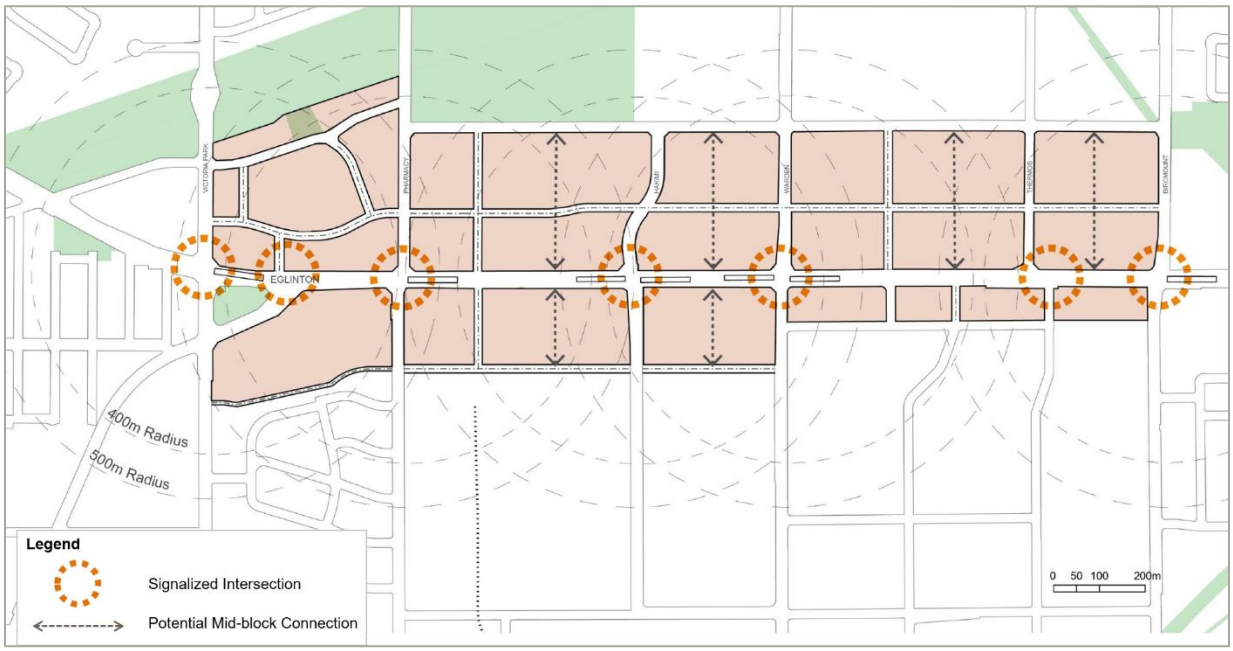


Figure 7-2: Alternative B – Central Hub

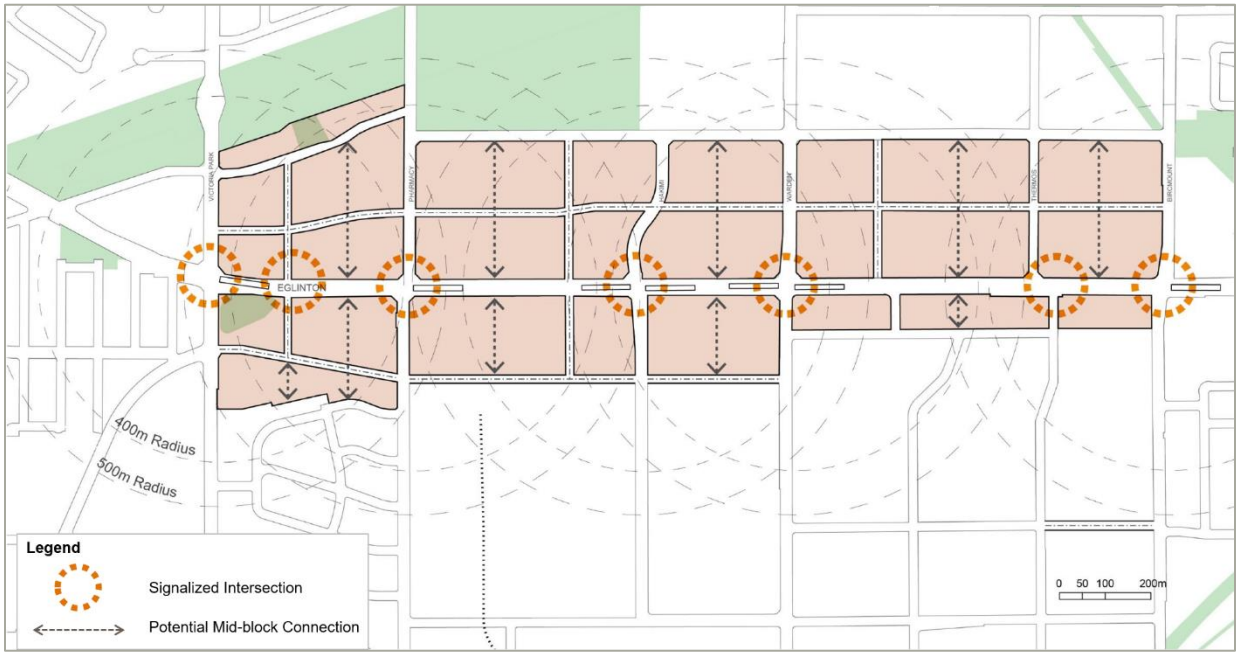
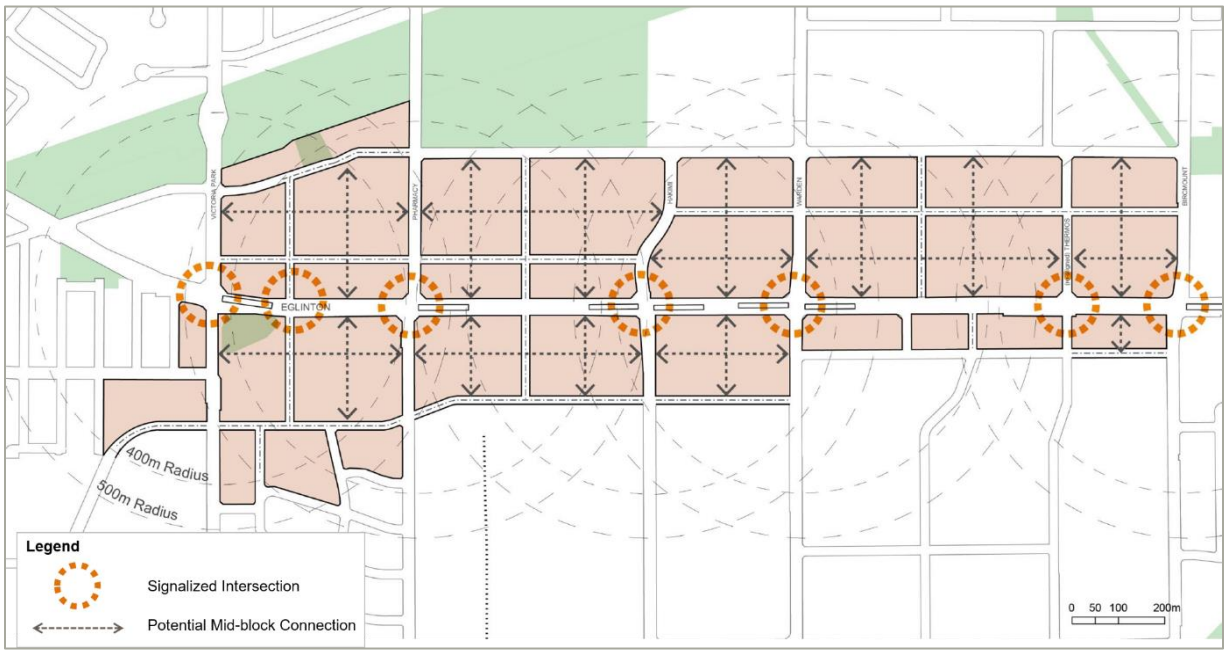


Figure 7-3: Alternative C – Cluster



7.1 Transportation Evaluation Methodology

Table 7-1 describes the indicator and the measure(s) associated with the objectives detailed in **Section 6.1** that will be used to evaluate the street and block network alternatives. The evaluation methodology for each indicator is further detailed in **Section 7.3**.

Table 7-1: Transportation Evaluation Indicators and Measures for the Alternative Street and Block Networks

Principle	Objective No.	Indicator	Measure
Connected	2.1	Multimodal mobility choice is measured by Connectivity Index (CI) analysis which measures how well connected the street network is in providing multiple route options for both vehicles and active modes.	CI Value (range between 1.0 – 2.0)
Connected	2.2	Assessed based on the walkshed analysis to/from ECLRT stops and the percentage of streets that are walkable within the 400m radius (5 minute walk).	Ratio (linear/radial walkshed)
Responsive	3.2	Service capacity of the vehicular transportation network will indicate whether the network has enough capacity to accommodate future demand. This will be calculated based on congested vehicle-kilometres travelled (VKT) and congested vehicle-hours travelled (VHT) for the GMSP study area.	VKT (km) and VHT (hrs)
Prosperous	4.2	Service capacity of the vehicular transportation network will indicate whether the network has enough capacity to accommodate future demand. This will be calculated based on congested vehicle-kilometres travelled (VKT) and congested vehicle-hours travelled (VHT) for the Golden Mile TMP study area.	VKT (km) and VHT (hrs)

7.2 Street and Block Analysis Methodology and Assumptions

The Golden Mile TMP Sub-Area Model was used to evaluate Criteria 3.2 and 4.2 of the transportation analysis. The Sub-Area Model includes a detailed road network and fine-level zone system within the Secondary Plan study area and is focused on the auto mode. The purpose of this model is to provide detailed traffic and turning movement forecasts for roads that would otherwise not be included in the city-wide macro model, including minor collector and local streets. Once the preferred street and block plan is identified, the volumes produced from this model can be used to conduct intersection and corridor capacity analyses in micro modelling platforms including VISSIM.

The model was calibrated based on observed traffic volumes at major intersections in the GMSP study area. As the GMSP study area is a mixed-used area with a variety of land use types, the model was calibrated for the PM peak hour to capture dynamic trip patterns for commuting trips and recreational trips.

Although the Sub-Area Model is based on the 2011 city-wide macro model, the network was updated to reflect 2017 conditions. As only the 2011 OD matrix was provided with the Sub-Area Model, it is assumed that no major land use changes have occurred in the area between 2011 and 2017 and that traffic volumes have remained consistent.

7.2.1 Zone Disaggregation

The 2011 Golden Mile TMP Sub-Area Model network is shown in **Figure 7-4**. The GMSP study area covers a smaller area of the larger Emme zones. To conduct a detailed trip generation analysis for the GMSP study area, zones 525 – 530 were disaggregated into smaller zones, as illustrated in **Figure 7-5** and in **Table 7-2.**

Figure 7-4: Original Zone Network

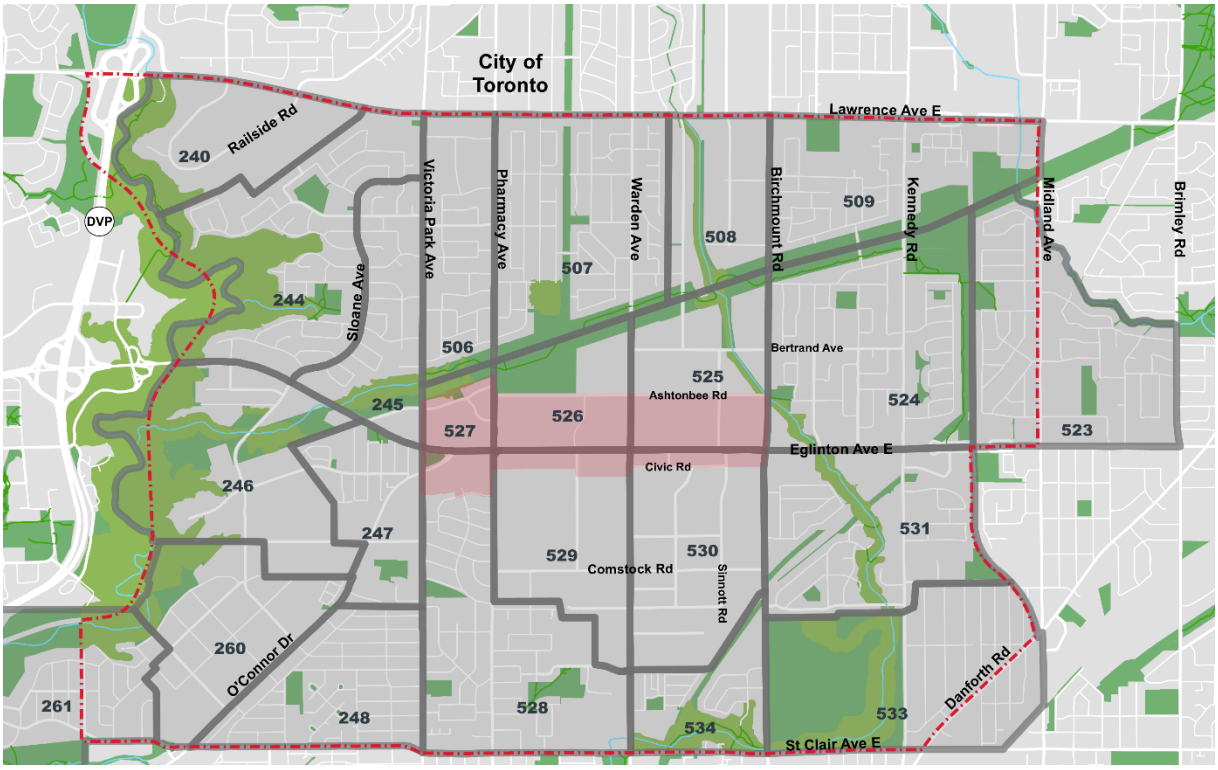


Figure 7-5: Disaggregated Zone Network

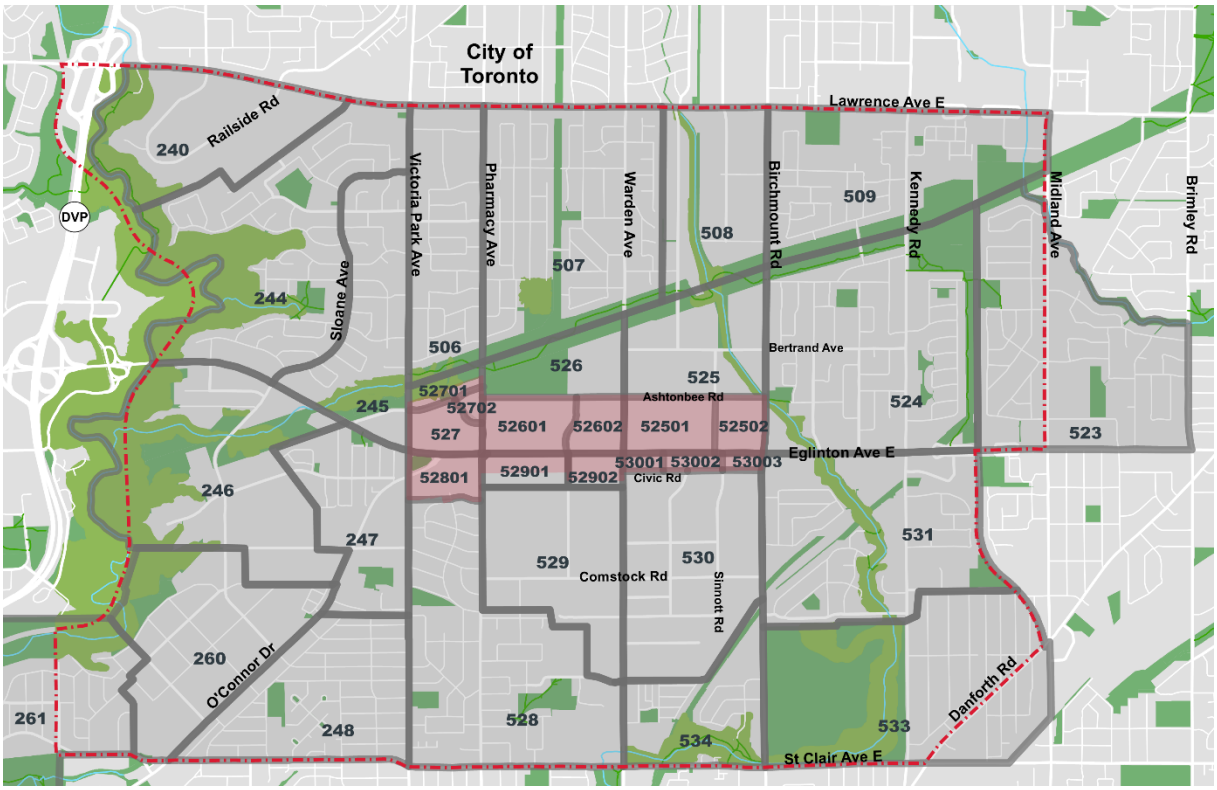


Table 7-2: Zone Disaggregation

Original Zones (Parent)	Disaggregated Zones (Child)
525	52501
	52502
526	52601
	52602
527	52701
	52702
528	52801
529	52901
	52902
530	53001
	53002
	53003

7.2.2 Multimodal Trip Generation

As seen in **Figure 7-4**, the original zones of the Sub-Area Model cover a much larger area than the GMSP study area. This includes the industrial areas north of the GMSP study area to the hydro corridor, industrial areas south of and beyond Comstock Road, and residential neighbourhoods to St. Clair Avenue. As a result, the trip productions and attractions of the original zones reflected all trips from the larger zones.

To more accurately predict trips to and from the study area and to reflect the specific land use options as part of the Secondary Plan work, the original zones in the GMSP study area were disaggregated as shown in **Figure 7-5**. As a result, the OD matrix for the Emme network had to be disaggregated to include the new zones. To disaggregate the matrix, the trip productions and attractions for the new zones had to be estimated. The sum of the disaggregated child zones had to be less than or equal to the original parent zone, depending on the area coverage and land use.

To determine the split of trip productions and attractions for each parent and child zone, the total number of trips for each child zone was calculated based on existing land use, using a multimodal trip generation method.

Parcel data received from the City of Toronto was used to calculate trip productions and attractions for the existing land use. This data included land use type and gross floor area (GFA). Trips for each building were calculated using the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition). As the Trip Generation Manual uses trip generation rates based on surveys throughout Canada and the United States since the 1960s, the rates represent suburban locations with little or no nearby pedestrian amenities, transit service, or travel demand management programs[6]. Based on a review, it is estimated that the ITE Trip Generation Manual surveys areas with an auto modal split of 90%. Based on the travel survey conducted (see **Appendix B**), it is known that the Golden Mile study area experiences only a 57% auto driver mode split. As a result, the trip generation rates from the ITE manual would over-estimate the number of trip productions and attractions for each building.

Trip Generation Validation

To test the above assumptions, trip productions and attractions from the ITE Trip Generation Manual were, at first, not reduced. The results showed that the trip generation manual rates significantly over-estimated auto productions and attractions. To reflect more accurate conditions and the observed modal split, the number of trips for each land use type were reduced firstly by the ratio of the 90% auto mode share in ITE relative to the observed 57% auto mode share. Trips were also reduced to account for pass-by trips as the GMSP study area comprises of a variety of uses and people making trips to the area generally make more than one stop. These further reductions are validated by comparisons to observed traffic counts, such that the overall trip generation for the GMSP is consistent with traffic count data. **Appendix E** provides the detailed multi-modal trip generation summary including a breakdown of GFA, ITE land use code, trip generation estimate, and reductions for each parcel.

Trip Generation Methodology

Once the total number of auto trips for each disaggregated zone was calculated using the ITE trip generation manual, trips were then converted to total auto person

[6] Trip Generation Manual, 9th Edition, Volume 1: User's Guide and Handbook

trips based on a rate of 1.2 for auto occupancy, according to cordon count data. As mentioned above, assuming that the ITE rates have an auto mode share of 90%, the total auto person trips were divided by the ITE auto mode split to determine the total number of trips that would occur for each zone. To determine how many auto trips this would generate for the GMSP study area, the mode split from the Golden Mile Travel Survey (2017) was applied to the total number of trips for each zone (57% auto split).

The 2011 OD matrix was disaggregated to represent the split between parent and child zone, and as it reflects existing land uses, the 2011 OD matrix represents 2017 trips.

7.2.3 Road Network Coding

The original sub-area model of the city-wide macro model did not include local collector roads in the GMSP study area. To conduct a detailed Trip Generation Model, the road network was edited to include all collector roads including Ashtonbee Road, Hakimi Avenue, Lebovic Avenue, Thermos Road, Civic Road, and Sinnott Road. The Transportation Modelling Group's (TMG) GTHA 2016 Emme Network Coding Standard was used when coding in the additional roads. The road class, subclass, speed, and capacity are shown in **Table 7-3**.

Table 7-3: Road Network Coding

Area	Class	Subclass	Speed Range	Lane Capacity
Urban	Arterials	Major urban arterials	50 – 80	800
Urban	Collector	Downtown / city centre roads	40 – 60	600
Urban	Collector	**Collector roads**	**40 – 60**	**500**
Suburban	Arterials	Principal urban arterials	60 – 90	1000
N/A	Local	Centroid Connectors	40	9999

Source: TMG GTHA 2016 Emme Network Coding Standards (August 2017)

7.2.4 Calibration

Data Source

The model was calibrated based on observed traffic volumes at major intersections in the GMSP study area. As mentioned in **Section 4.7**, turning movement count data was provided to HDR by the City of Toronto and additional counts were conducted in June 2017 to supplement missing data. Some of the turning movement count data was extracted from Traffic Impact Studies within the study area where the City did not have recent data (within the last 2 years). The count locations and dates are shown in **Table 7-4.**

Since peak hours may have varied for intersections and the year that counts were collected varies from 2015 to 2017, there may be inconsistencies between the counts. However, due to limited data, including a lack of traffic counts at driveways between adjacent intersections, the counts were not balanced.

Table 7-4: Turning Movement Count Locations and Dates

Intersection	Count Date
Eglinton Avenue and Victoria Park Avenue	March 2015
Eglinton Avenue and Pharmacy Avenue	March 2016
Eglinton Avenue and Warden Avenue	May 2015
Eglinton Avenue and Birchmount Road	June 2017

Calibration Targets

Using the Origin-Destination Matrix developed and the multimodal trip generation described based on 2017 data (2017 OD matrix), the modelled link volumes from the Sub-Area Model were compared to the observed turning movement counts based on the GEH statistic, which is an empirical formula named after its inventor, Geoffrey E. Havers who developed it in the 1970's.

The GEH statistic is able to address both absolute and relative difference between the modelled and observed volume. It avoids some pitfalls that occur when using simply the relative difference, primarily by allowing for greater variance between modelled and observed data at lower values, but requiring lesser variance at higher values.

The GEH statistic is calculated as:

Figure 7-6: GEH Statistic Formula

$$GEH = \sqrt{\frac{2(M-C)^2}{M+C}}$$

Where M is the hourly modelled volume and C is the observed volume (count).

A GEH value less than 5 is considered a good match between the modelled and observed volume; A value between 5 and 10 is acceptable; and a value higher than 10 usually requires further attention for model calibration. Typically 80% to 85% GEH values that are less than 5 is considered as very close match between the modelled and observed volume.

As the Sub-Area Model reflects a small area, the calibration targets established for the calibration process was that all links should have a GEH statistic less than or equal to 10.

A run with the 2017 OD matrix resulted in 75% of all modelled links having a GEH statistic less than or equal to 10.

Calibration Process

To calibrate the Sub-Area Model, the 2017 OD matrix is adjusted in Emme using the traffic demand adjustment tool, which adjusts or modifies the OD matrix to better fit observed volumes. Intersection turning movement counts are used in the demand

adjustment. The adjusted demand is then imported back to Emme to perform a standard traffic assignment. The modelled link volumes are compared with the counts. If the results satisfy the calibration target, then the calibration process is completed. The modelling process for a future OD matrix will then account for the specific adjustments made during this calibration exercise.

7.2.5 Population and Employment Forecasts

For the purposes of this preliminary analysis of the street and block pattern Alternatives, City-wide 2041 growth allocations by traffic zone are utilized based on the figures presented in **Table 4-1**.

7.3 Street and Block Evaluation

The initial street and block plans were evaluated against four (4) criteria as described in **Section 6.1** and are further detailed in the sections below. The scoring methodology is first outlined and the subsequent sections provide details on the evaluation for each of the four (4) criteria.

7.3.1 Evaluation Methodology

Each of the four (4) criteria is based on a quantitative performance measure. Each of these quantitative measurements provides a score for each alternative as follows:

- Most favourable Alternative score = 2
- Least favourable Alternative score = 0
- The middle ranking Alternative is assigned a score that is proportional to the lowest and highest scores

7.3.2 Criteria 2.1 – Provide Multi-modal Mobility Choice

The objective of Criteria 2.1 is to provide multi-modal mobility choice to existing and future residents. This choice is provided by a well-connected transportation network as it provides multiple options for different modes of transportation, such as walking, cycling, transit or car. The quantitative performance measure for this criteria is the Connectivity Index (CI), as detailed in **Section 4.3.1,** which is based on the ratio of links to nodes in the study area. A ratio of 1.4 to 1.7 indicates a desirable index zone for connectivity, and a ratio of 1.5 to 1.8 indicates a desirable index zone for active modes connectivity.

For the three (3) street and block pattern alternatives, it was assumed that all existing and future roads in the GMSP study area would have sidewalks, and the potential connections (dashed lines on the streets and blocks maps) are considered as walkways / formal pathways. **Table 7-5** and **Table 7-6** illustrates the scoring of both the street networks and active transportation networks. Overall, the three (3) street network connectivity score in the desirable range; however in active mode,

one of the alternatives scores behind the desirable range, as illustrated in **Figure 7-7** and **Figure 7-8**.

For vehicular connectivity, Alternative B scores the highest as it provides the most connections of all of the alternatives while Alternative C scores very closely to Alternative B. Alternative A scores the lowest as it provides the least new connections.

For active modes, Alternative C scores the highest with the introduction of multiple active pathways through development blocks. Alternative B scores lower while active connectivity for Alternative A falls outside of the desirable range.

Table 7-5: Connectivity Index Scoring for the Streets Network

Alternatives	Links	Nodes	Connectivity Index	Score
A	67	43	1.56	0
B	**59**	**35**	**1.69**	**2**
C	65	39	1.67	1.7

Table 7-6: Active Mode Connectivity Index Scoring for the Active Network

Alternatives	Links	Nodes	Connectivity Index	Score
A	77	58	1.33	0
B	91	56	1.63	1.0
C	**149**	**78**	**1.91**	**2**

Figure 7-7: Connectivity Index Range

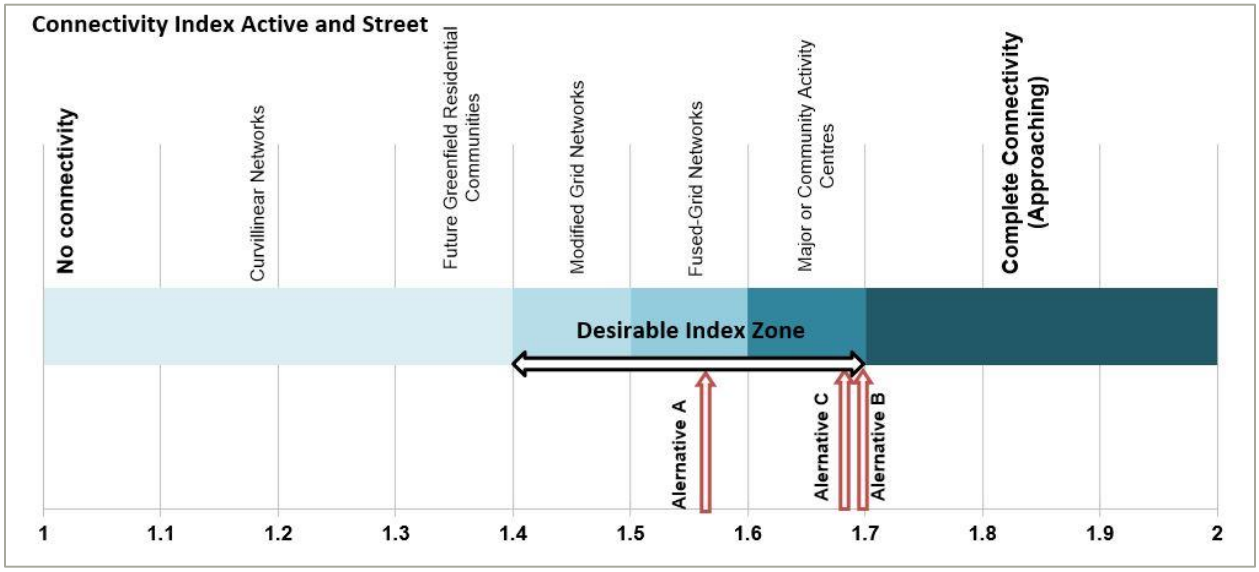
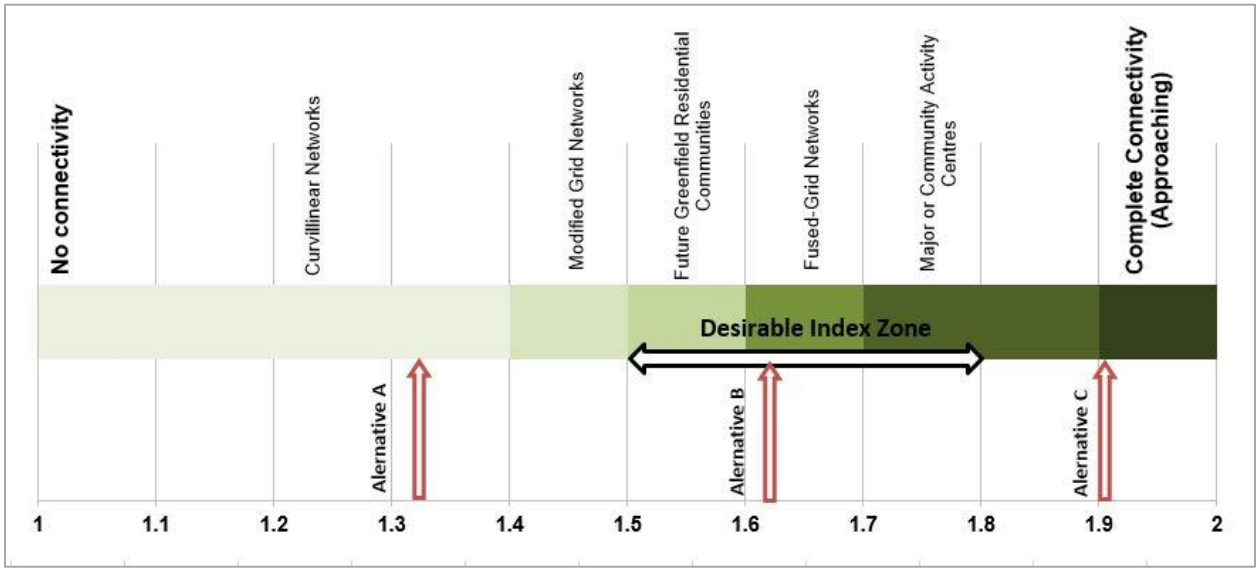


Figure 7-8: Active Mode Connectivity Index Range



For evaluation purposes, the vehicular and active connectivity indices are averaged, as shown in **Table 7-7**.

Table 7-7: Multimodal Connectivity Analysis Result

Alternatives	Average Score of Active and Vehicular Connectivity Index
A	0.0
B	1.5
C	**1.8**

7.3.3 Criteria 2.2 – Provide Station Area Connectivity

The objective of Criteria 2.2 is to provide well-designed, convenient, safe, and accessible connections between the new ECLRT stations and key destinations within the Golden Mile. This will be assessed based on the walkshed analysis to/from the ECLRT stops and the percentage of streets that are walkable within the 400m radius (5 minute walk).

Transit walkshed refers to the pedestrian catchment area of a transit facility. It is determined by the distance people are generally willing to walk to a transit stop. The simplest way of measuring the walkshed of a transit facility is to include the entire area within a 400-metre radius. However, this approach may include areas that are, in reality, not accessible to pedestrians (i.e. over a ravine) or require longer walking distances due to barriers or irregular street patterns. An alternative method is to map the “true” linear walking distance from a transit facility using the existing street network accessible to pedestrians. Comparing the two methods can illustrate issues with connectivity and point to where new pedestrian links may be necessary.

For this analysis, it is assumed that all new roads in the three (3) alternatives contain walking infrastructure on at least one side of the road. Also, the potential connections on the map (dashed lines) will act as pedestrian connections/ formal pathways.

To evaluate the three (3) alternatives based on the 400m walkshed analysis, the total walkable linear street length was divided by the total street length within the radial walkshed to determine the percentage of streets that are walkable within the radial distance in the GMSP study area. Streets included in the linear or radial walkshed analysis that are outside of the GMSP study area were not included in the analysis.

Figure 7-9 to **Figure 7-11** illustrate the walkshed analysis for each alternative and **Table 7-8** illustrates the result of the walkshed evaluation. All three (3) alternatives score well with a result in a walkshed ratio of over 80%. As seen in the previous criteria, Alternatives C scores the highest due to additional north-south and east-west connections and more active connections than other alternatives in the GMSP study area. Similarly, Alternative A scores the lowest with the less street and active connections, and Alternative B scores higher than Alternative A as it has relatively better streets and active connections than Alternative A.

Table 7-8: Walkshed Analysis

Alternatives	Ratio (Linear/Radial Walkshed)	Score
A	84%	0
B	85%	0.7
C	**87%**	**2**

Figure 7-9: Alternative A Walkshed Analysis

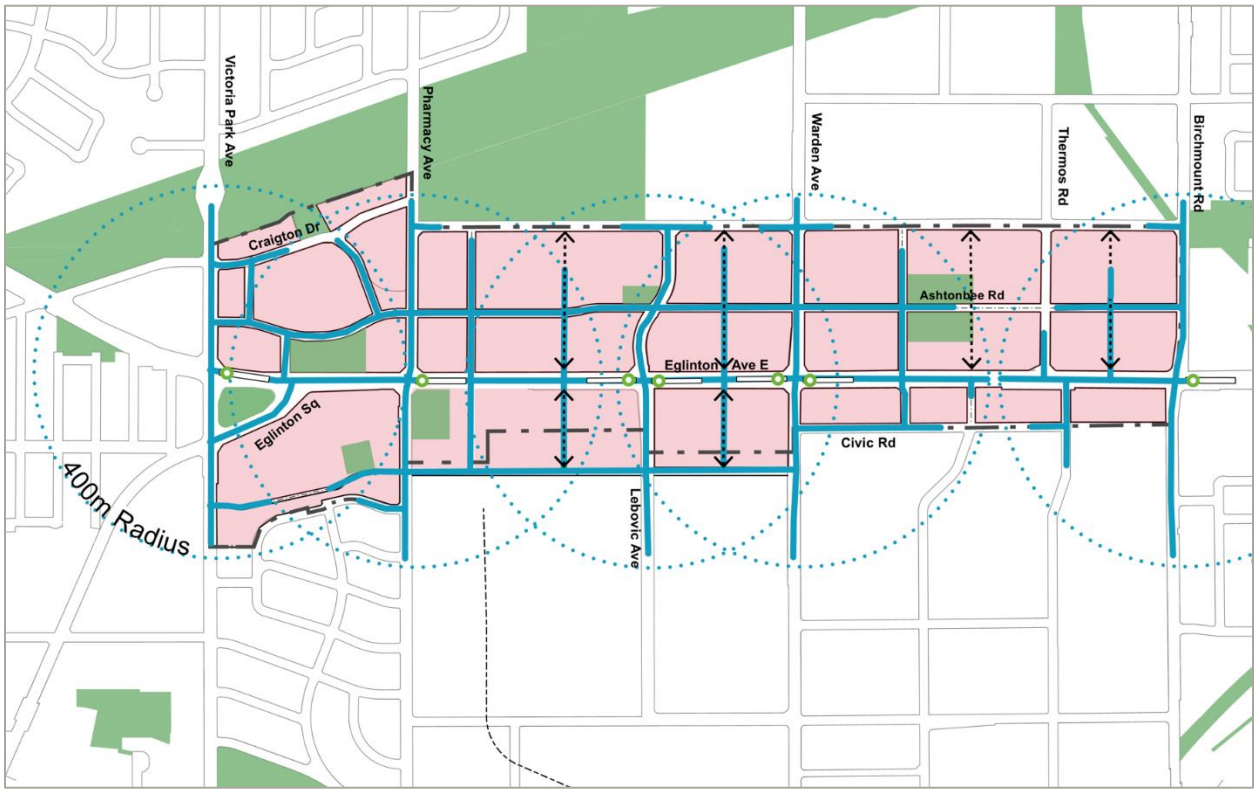


Figure 7-10: Alternative B Walkshed Analysis

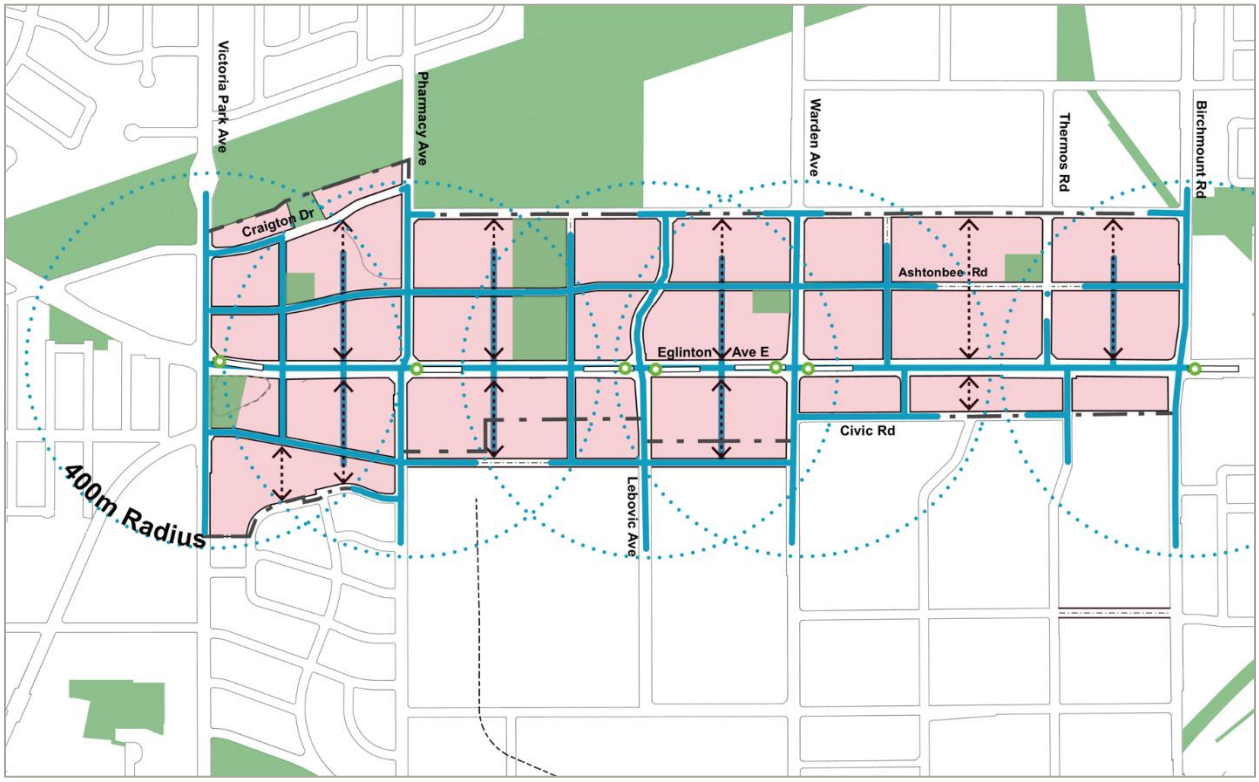
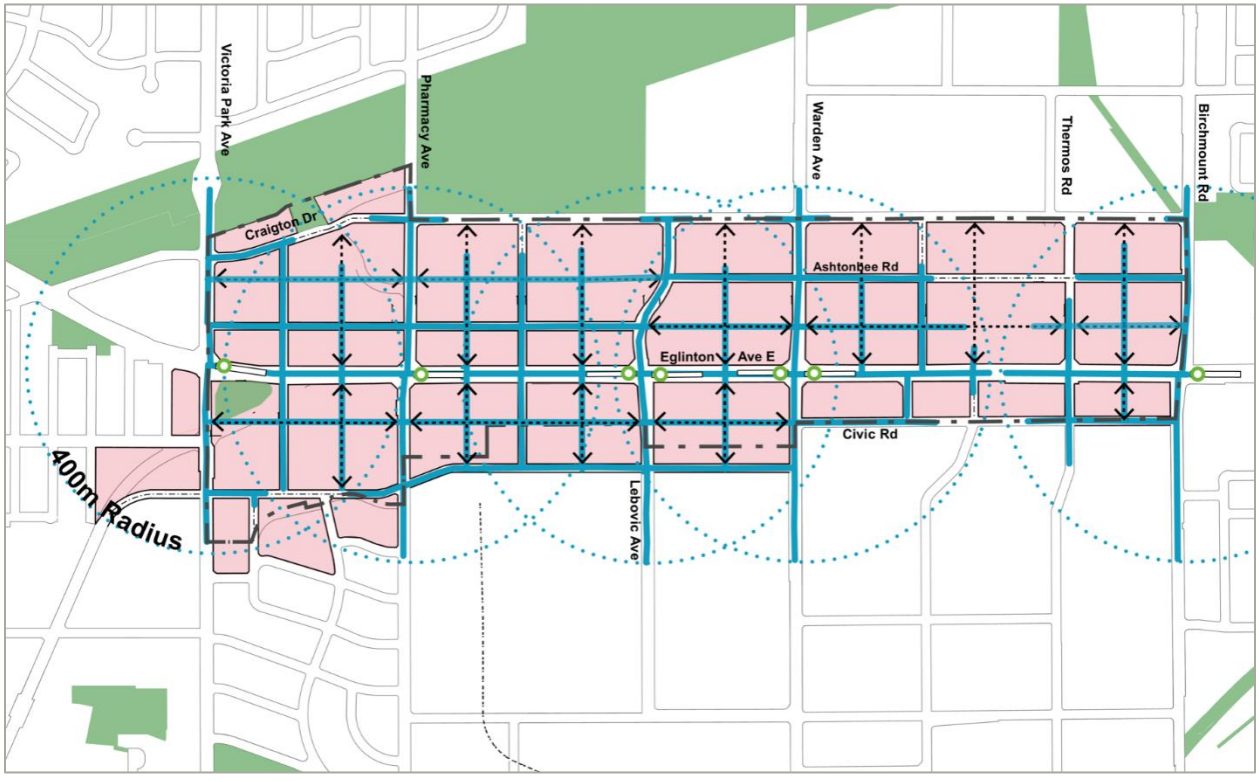


Figure 7-11: Alternative C Walkshed Analysis



7.3.4 Criteria 3.2 – Align Infrastructure with Development

As noted in **Section 6.1**, the objective of Criteria 3.2 is to plan, phase, and build infrastructure and facilities in alignment with future demands. At this level of evaluation, service capacity of the vehicular transportation network will indicate if the network has enough capacity to accommodate future demand. This is based on delay calculated as the percentage of congested vehicle-kilometres travelled (VKT) and the percentage of congested vehicle-hours travelled (VHT) for the GMSP study area[7]. This determines how many total vehicle kilometres are travelled in congestion and how many total hours are spent in vehicles in congestion. VKT is calculated by multiplying the number of vehicles using a road segment and the length of the segment. VHT is calculated by multiplying the number of vehicles using a road segment and the segment travel time.

Table 7-9 illustrates the percentage of VKT and VHT spent in congestion in the GMSP study area. Alternative C is the highest performing as the network minimizes kilometres travelled and hours spent in congestion, while Alternative B is the lowest performing.

Table 7-9: VKT and VHT Evaluation for the GMSP Study Area

Alternatives	Percentage of VKT in Congestion	Percentage of VHT in Congestion	Score
A	4.77%	6.18%	0.5
B	5.89%	10.2%	0
C	**2.51%**	**4.83%**	**2**

Network V/C Ratio Analysis

While not considered in the comparative analysis of the alternative street and block network plans, the forecasted volume to capacity (v/c) ratios are examined to gain further insight into the operations of initial analysis of the street and block networks under consideration, given that the population and employment growth assumptions will be further refined through the analysis of Development Alternatives. **Figure 7-12** to **Figure 7-14** illustrate the auto volumes and the v/c ratios on each link for each alternative.

Upon examining the plots, the following observations are made:

- It is apparent that the internal road networks proposed provide sufficient internal capacity in each Alternative (with the caveat that the further transit oriented intensification is not yet considered);
- The constraints exist primarily on the major arterial roadways leading to and from the Secondary Plan area;
- The intersection reconfiguration at Craigton Drive and Ashtonbee Road at Pharmacy Avenue can help offload internal traffic within the Secondary Plan area as well as on Eglinton Avenue; and

[7] Congested refers to a volume to capacity ratio greater than or equal to 1.00

- The reconfiguration of O'Connor Drive at Victoria Park Avenue and Eglinton Square Boulevard shifts congestion away from Eglinton Avenue onto Victoria Park Avenue:
    - With this reconfiguration, the new east-west street east of Victoria Park Avenue can be constructed with higher capacity (four lanes) to accommodate the demand and reduce the Victoria Park Avenue congestion.
    - By providing the new east-west street continuous with O'Connor Drive, more route options are provided by giving drivers an option to avoid bottlenecks. This should benefit surrounding neighbourhoods by reducing overall congestion and thus the need for drivers to divert onto quiet residential streets.

Figure 7-12: Alternative A Auto Volumes and V/C Ratio

Figure 7-13: Alternative B Auto Volumes and V/C Ratio

Figure 7-14: Alternative C Auto Volumes and V/C Ratio

7.3.5 Criteria 4.2 – Balance Transportation Needs with Existing Industrial Land Uses

The objective of Criteria 4.2 is to ensure compatible land use and balance transportation needs with the existing industrial uses within and adjacent to the Golden Mile. Similarly to Criteria 3.2, this is dependent on service capacity of the vehicular transportation network as it will indicate whether the network has enough capacity to accommodate future demand. However, the percentage of congested VKT and VHT for this Criteria will not be calculated based on the GMSP study area, rather it will include the TMP study area.

Table 7-10 illustrates the percentage of VKT and VHT spent in congestion in the Golden Mile TMP study area. Overall, there is little difference between the alternatives when comparing the TMP study area. Alternative B is the highest scoring when looking at overall delay in the TMP study area whereas it was the lowest scoring in the GMSP study area.

Table 7-10: VKT and VHT Evaluation for the GMSP TMP Study Area

Alternatives	Percentage of VKT in Congestion	Percentage of VHT in Congestion	Score
A	9.62%	14.8%	0
B	**9.39%**	**14.7%**	**2**
C	9.66%	14.9%	1.0

7.4 Preliminary Preferred Street and Block Network

The preliminary transportation analysis for the initial street and block network plan will help identify key connections to be included in a consistent street network.

With an equal weighting for each criteria, the maximum score an alternative can achieve is eight (8) while the minimum score is zero (0). Based on the evaluation presented above, Alternative C is the highest performing street and block network with a score of 6.8, as shown in **Table 7-11**. Alternative B ranks second with a score of 4.2 while Alternative A performs very poorly with a score of 0.5. It is recommended that Alternative A is screened out; and Alternative B and Alternative C are carried forward for further consideration from a land use planning and built-form perspective.

Table 7-11: Summary of Evaluation

Alternatives	Criteria 2.1	Criteria 2.2	Criteria 3.2	Criteria 4.2	Total Score	Summary
A	0.0	0.0	0.5	0.0	0.5	Screen Out
B	1.5	0.7	0.0	2.0	4.2	**Carry Forward**
C	1.8	2.0	2.0	1.0	6.8	**Carry Forward**

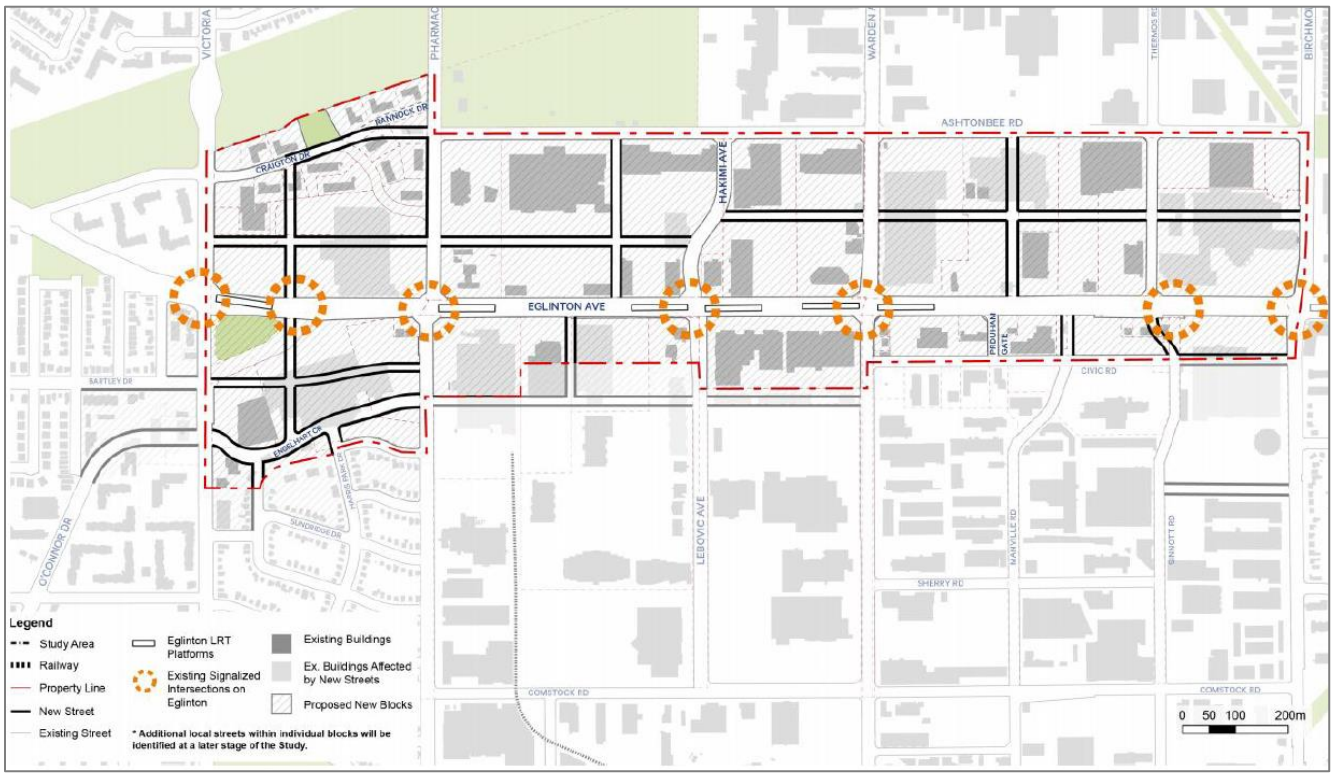
Three key findings of the street and block network analysis include:

- The proposed reconfiguration of Craigton Drive at Pharmacy Avenue to meet with Ashtonbee Road will provide a continuous east-west route for pedestrians and cyclists while also offloading internal traffic within the Secondary Plan area and on Eglinton Avenue;
- A new east-west street between Craigton Drive / Ashtonbee Road, and Eglinton Avenue will provide additional east-west mobility and reduce traffic pressure on Eglinton Avenue. This new street became known as "*Golden Mile Boulevard*" during June 2018 consultation and engagement activities.
- The reconfiguration of O'Connor Drive at Victoria Park Avenue and Eglinton Square Boulevard and its extension running parallel to Eglinton Avenue provides an additional east-west route south of Eglinton Avenue and also help alleviating traffic congestion at this intersection . It is recommended that this new east-west street east of Victoria Park Avenue be constructed with higher capacity (four lanes) to accommodate the demand and reduce the Victoria Park Avenue congestion.

Based upon the preliminary transportation analysis, elements of Alternative B and Alternative C were carried forward for further consideration and integration with other aspects of the Golden Mile Secondary Plan. With consideration of the key elements of Alternative B and Alternative C as well as urban design, built form and the parks and open space opportunities, a **preliminary preferred street and block network** (Preliminary Preferred Network) was identified.

Figure 7-15 illustrates the Preliminary Preferred Network for the Golden Mile TMP. This network was carried forward in June 2018 to the Technical Advisory Committee, Local Advisory Committee, and Community Consultation Meetings.

Figure 7-15: Preliminary Preferred Street and Block Network (June 2018)

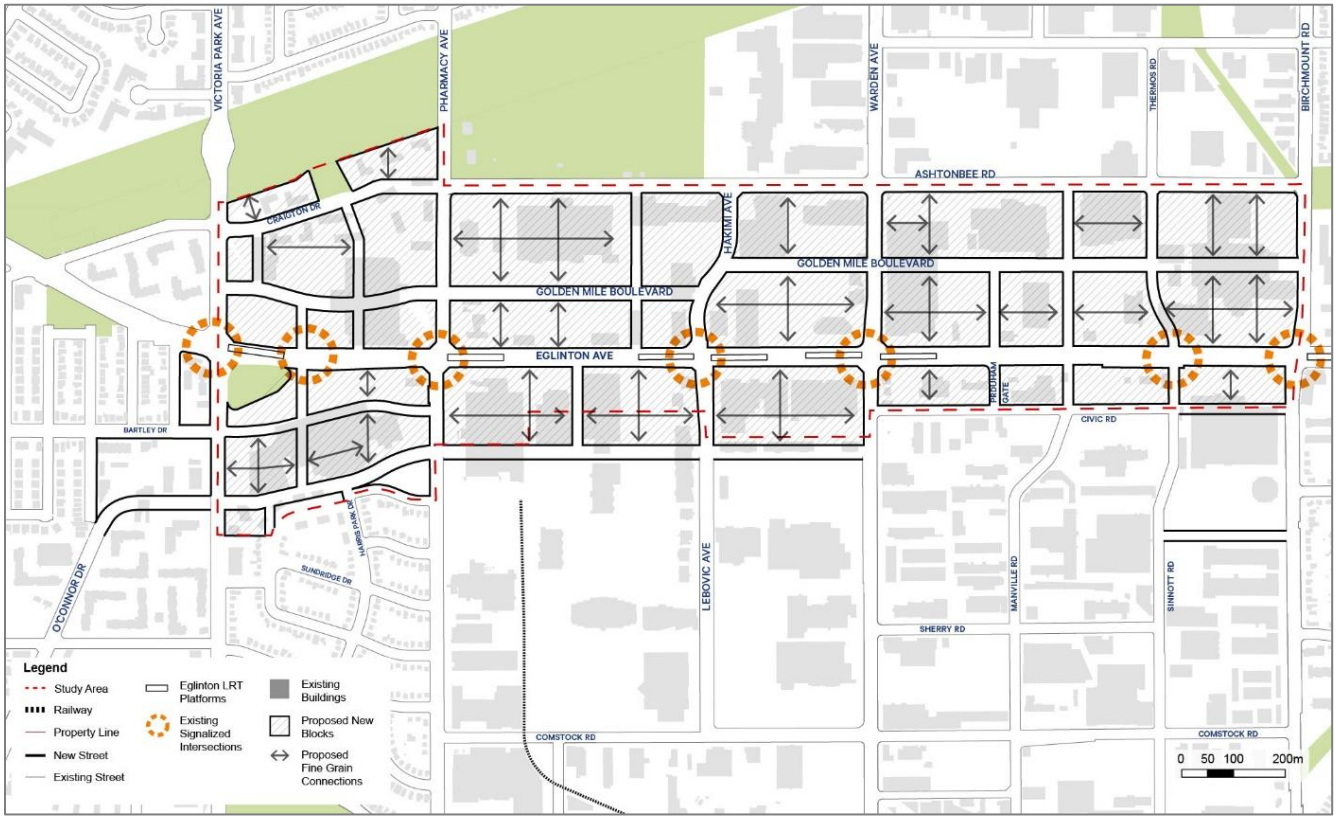


7.5 Preferred Street and Block Network Development

Following the June 2018 consultation and engagement activities, the Preliminary Preferred Network was further refined before ultimately arriving at a preferred street and block network (Preferred Network).

The October 2018 Preliminary Preferred Network largely maintained the June 2018 recommendations, with only minor variations to the local street grids in the blocks north and south of Eglinton Avenue, between Victoria Park Avenue and Pharmacy Avenue, as well as north of Eglinton Avenue between Warden Avenue and Thermos Road. These modifications were made based on Parks and Open space considerations, as well as active site plan application considerations. Thermos Road was also recommended to align with the existing Sinnott Road intersection to reduce impacts on the ECLRT construction and to provide a continuous north-south route for all modes. The October 2018 Preliminary Preferred Network is presented in **Figure 7-16**.

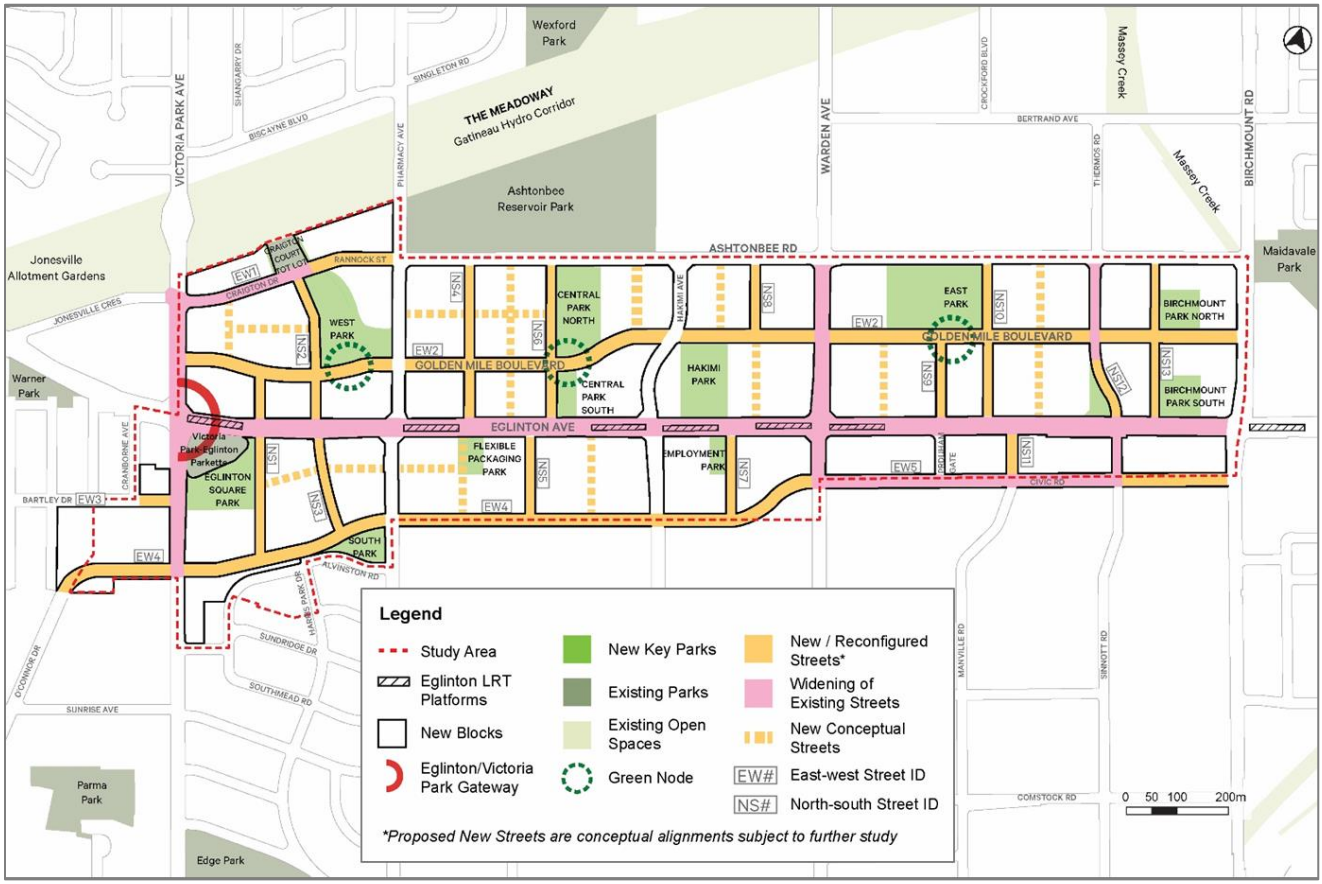
Figure 7-16: Preliminary Preferred Street and Block Network (October 2018)



Following the October 2018 TAC Meeting, it was recognized that the O'Connor Drive reconfiguration would impact some parcels of land on the west side of Victoria Park Avenue, and would thus result in a boundary change for the Secondary Plan. Please see Section 3 of the TMP for more information regarding the boundary change.

During this time, detailed analysis was conducted to support the development of the TMP Solution Alternatives following Phases 1 and 2 of the Municipal Class Environmental Assessment process. This analysis resulted in further refinements to the Preliminary Preferred Network which were recommended and presented to the Project Team, TAC and LAC members. These refinements included a continuous Golden Mile Boulevard (previously jogged at Hakimi Avenue), a signalized intersection at Eglinton Avenue and Jonesville Crescent, and a reconfiguration of the O'Connor Drive Extension with Civic Road at Warden Avenue. Following the meetings with TAC and LAC, the Preferred Network was then presented to the general public at CCM#4 in June 2019 (**Figure 7-17**).

Figure 7-17: Preferred Street and Block Network (June 2019, Revised October 2019)



It is noted that the supporting analysis for the Preferred Network is provided **Chapter 10**.

It is also noted that the Preliminary Preferred Network from June 2018 formed the basis testing the alternative land use options described in the following Chapter.

8 Alternative Land Use Options

This chapter documents the preliminary transportation analysis of the development alternatives for the GMSP. This initial analysis identified the preferred density and spatial allocation for land use in the study area. This was done through the development a multi-modal trip generation model capable of providing a comparative analysis of the land use alternatives.

Three (3) land use alternatives are being considered in this evaluation, which were presented at CCM#3 on June 26, 2018:

- Alternative 1 – A Mid-Rise Eglinton;
- Alternative 2 – Three Gateways and Park Districts; and
- Alternative 3 – Five Transit Nodes and a Central Hub.

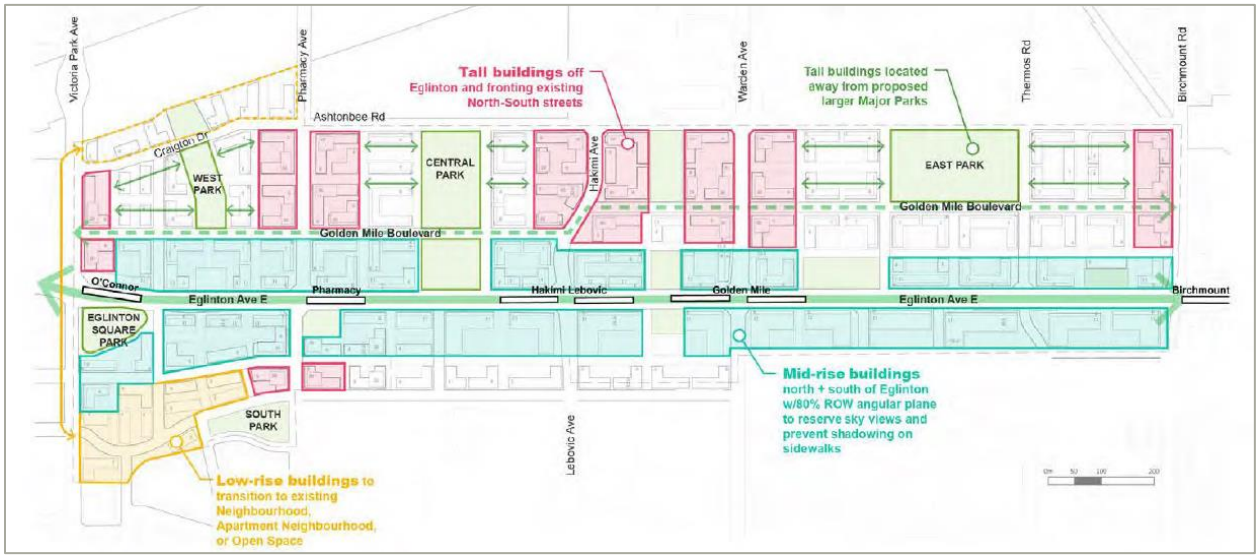
8.1 Land Use Alternatives

8.1.1 Alternative 1: A Mid-Rise Eglinton

The first development alternative for the GMSP reflects the vision of the Eglinton Connects study, with a focus on mid-rises along Eglinton Avenue and with taller buildings fronting north-south streets north of Eglinton Avenue. Tall buildings would also be located away from major parks. **Figure 8-1** displays some land use and the built form for Alternative 1.

Alternative 1 has a total of 17,480 residential dwelling units, over 5.9 million square feet of office space, and over 2.2 million square feet of retail space.

Figure 8-1: Alternative 1 Land Use and Built Form



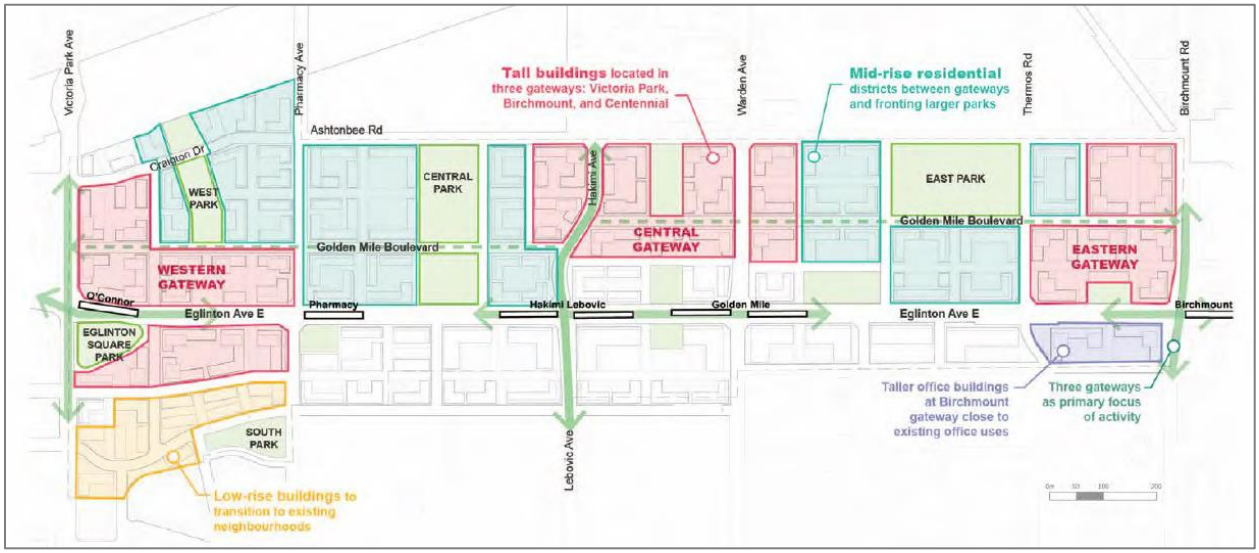
Source: SvN

8.1.2 Alternative 2: Three Gateways and Park Districts

Alternative 2 concentrates development around three (3) nodes in the study area, as illustrated in pink in **Figure 8-2**. These three (3) nodes would act as the primary focus of activity within the Golden Mile. Mid-rise development would be located around the parks in the study area.

Alternative 2 includes a total of 14,774 residential dwelling units, over 5.7 million square feet of office space, and over 2 million square feet of retail space.

Figure 8-2: Alternative 2 Land Use and Built Form



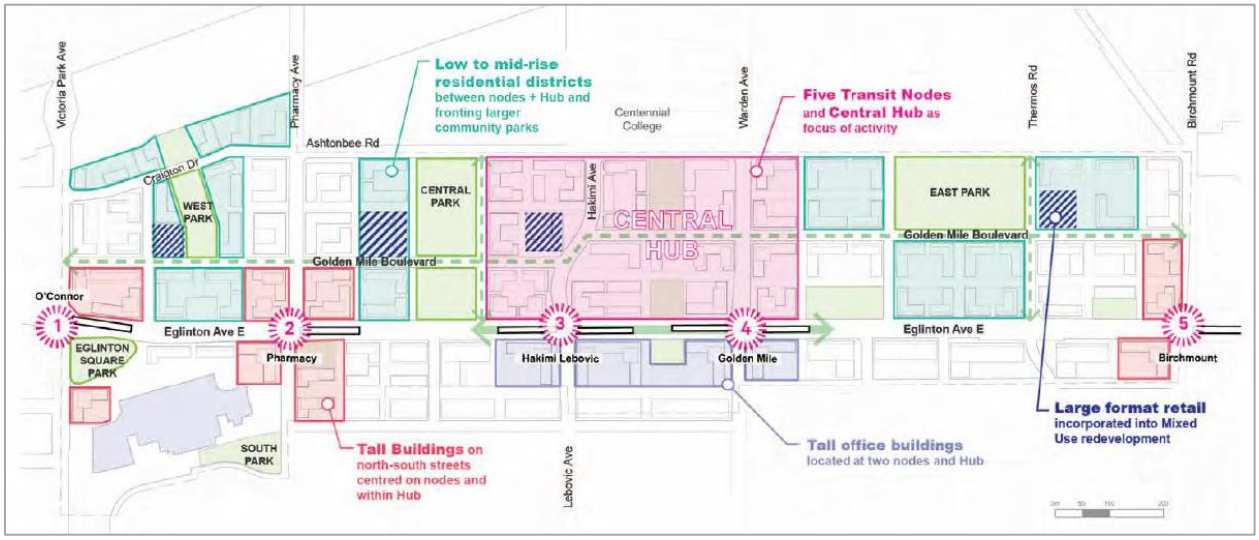
Source: SvN

8.1.3 Alternative 3: Five Transit Nodes and a Central Hub

Alternative 3 centers around the ECLRT corridor. There are five (5) stops in the GMSP study area and development in this alternative centers around these nodes, as illustrated in **Figure 8-3**. Tall buildings are centered on the five (5) transit nodes and a central hub which would connect Centennial College to Eglinton Avenue.

Alternative 3 comprises of 14,873 residential dwelling units, over 5.2 million square feet of office space, and over 2.8 million square feet of retail space.

Figure 8-3: Alternative 3 Land Use and Built Form



Source: SvN

The main difference between Alternatives 1 and 2 to Alternative 3 is the street and block network. Although there is a preferred street and block network, the feedback received from June 2018 CCM#3 and September 2018 LAC meeting stressed the importance of the Eglinton Square Mall to local residents as a gathering spot. As a result, the street and block network was altered for Alternative 3 to keep the existing configuration for the Eglinton Square Mall in Block 5.

Based on the August 2018 TAC#3 meeting, emergency services noted concerns about response time and their ability to travel across Eglinton Avenue after the opening of the ECLRT. They requested that Alternative 3 be tested with the preferred street and block network in Block 5, including the O'Connor Drive reconfiguration as it is a parallel route to Eglinton Avenue. Due to these concerns from emergency services, two (2) sub-alternatives were tested using the land use figures for Alternative 3 but with two (2) different street and block networks:

- Alternative 3A – keeps the existing configuration in Block 5 (includes Eglinton Square Mall); and
- Alternative 3B – uses the street and block network which includes the O'Connor Drive reconfiguration through Block 5.

8.1.4 Comparison of Alternatives

The three (3) alternatives comprise of varying land uses and intensification targets. **Table 8-1** outlines the land use mix and the population and employment for each alternative. Alternative 1 has the highest population and employment figures, Alternative 2 has the lowest, and Alternative 3 has a combination between the two alternatives. **Figure 8-4** and **Figure 8-5** illustrate the population and employment forecasts by block (traffic zone).

Table 8-1: Comparison of Alternative Land Uses

Land Use	Alternative 1	Alternative 2	Alternative 3
Residential Dwelling Units	17,500	14,800	14,900
Office Space (sq. ft.)	5,927,600	5,721,700	5,256,600
Retail Space (sq. ft.)	2,240,400	2,008,800	2,838,100
Population	30,900	26,200	26,300
Employment	31,900	30,500	29,500

Figure 8-4: Alternatives Population Forecast (2041) by Traffic Zone

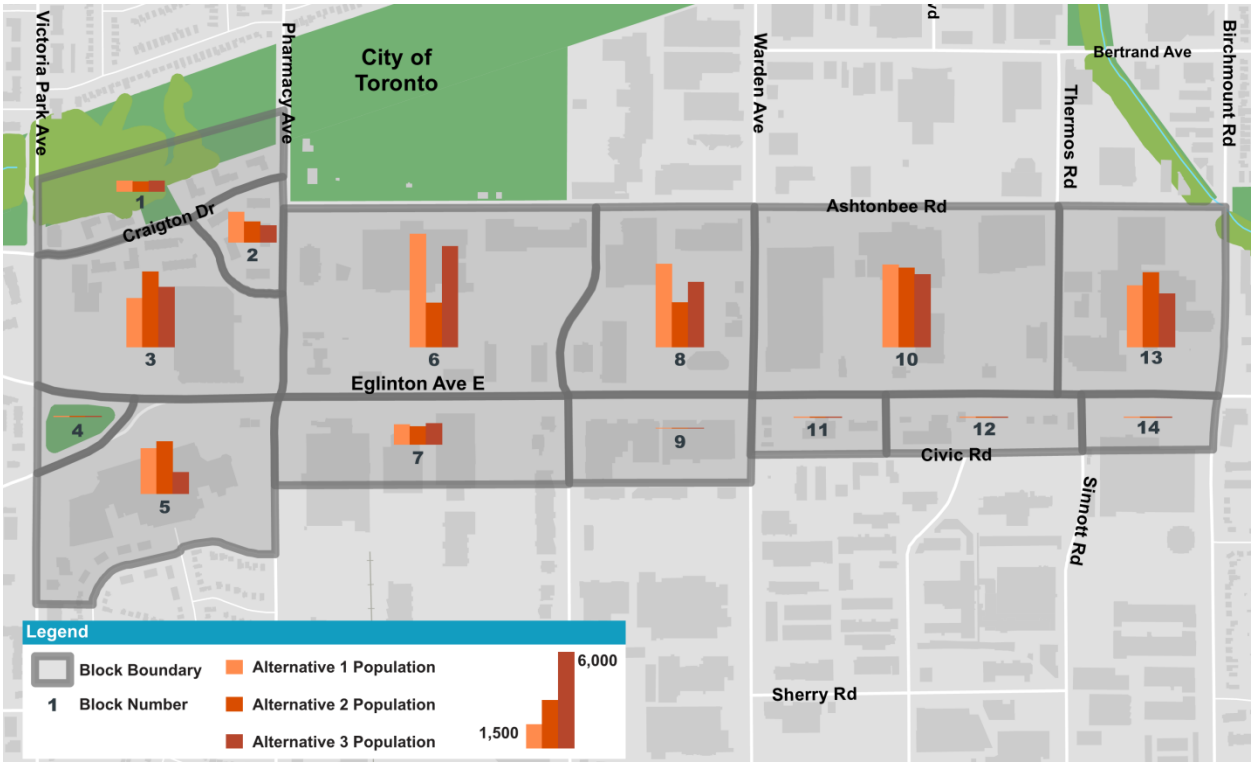


Figure 8-5: Alternatives Employment Forecast (2041) by Traffic Zone

8.2 Transportation Evaluation of Land Use Alternatives

Three transportation-specific performance indicators in alignment with the four guiding principles identified in **Section 6.1** are evaluated to provide input to a broader evaluation of land use alternatives (summarized within this report in **Section 8.3**). **Table 8-2** describes the indicator and the measure(s) that was used to evaluate each criteria of the guiding principles.

Table 8-2: Transportation Evaluation Indicators and Measures for the Land Use Options

Principle	No.	Indicator	Measure
Connected	2.2	Assessed based on the walkshed analysis to/from ECLRT stops and the percentage of streets that are walkable within the 250m radius (2.5 minute walk).	Ratio (linear/radial walkshed)
Responsive	3.2	Service capacity of the vehicular transportation network will indicate whether the network has enough capacity to accommodate future demand. This will be calculated based on congested vehicle-kilometres travelled (VKT) and congested vehicle-hours travelled (VHT) for the GMSP study area. Service capacity of the transit network will indicate whether the existing service can accommodate future demand. This will be based on the volume-to-capacity (v/c) ratio.	Total VKT (km) and total VHT (hours) for the GMSP Study Area for vehicular service capacity and v/c ratio for transit service capacity
Prosperous	4.2	Service capacity of the vehicular transportation network will indicate whether the network has enough capacity to accommodate future demand. This will be calculated based on congested vehicle-kilometres travelled (VKT) and congested vehicle-hours travelled (VHT) for the GMSP TMP study area. This will be based on the volume-to-capacity (v/c) ratio.	Total VKT (km) and total VHT (hours) for TMP Study Area for vehicular service capacity and v/c ratio for transit service capacity

Each of the criteria is based on a quantitative performance measure. Each of these quantitative measurements provides a score for each alternative as follows:

- Most favourable Alternative score = 3; and
- Least favourable Alternative score = 0.

It is noted that a four-point scale is used from zero to three given that four scenarios are being assessed.

8.2.1 Land Use Alternatives Analysis Methodology and Assumptions

The transportation forecasting approach follows the traditional four (4)-stage process of trip generation, mode share, distribution and assignment. While the City's GTA-wide Emme model (GTAv4) provides critical inputs with respect to regional future changes to distribution, this focused planning study developed a more detailed look at travel demand estimation and analysis, as follows:

- Trip generation was conducted utilizing the ITE Trip Generation Manual (9th Edition) at the parcel level based on the latest available parcel information;
- Mode share estimation was applied to trip generation which is based upon existing surveys, academic research, and proxy site analysis;

- For vehicular traffic analysis:
    - Trip distribution and assignment relied upon an Emme based subarea model of the GMSP;
    - Trip distribution relied upon the City's Emme model traversal matrices-2011 for a calibration scenario and 2041 for forecasting scenarios;
    - The traversal matrices provided "seed matrices" upon which modified trip generation was applied through a "fratar" or trip balancing process; and
    - Emme conducted dynamic traffic assignment with the "balanced" trip matrix, accounting for congestion related shifts in demand.

The 2011 traffic model, following the approach described above, was calibrated to observed traffic counts within acceptable error using demand adjustment. This process identified trip matrix modification factors (or a calibration mask) to match observed turning movements, and was applied to all future scenarios.

Multimodal Trip Generation

The multi-modal trip generation for the three (3) alternatives is detailed in the following sections. As noted in **Section 7.2**, the analysis will be conducted for the critical time period for the GMSP study area, which occurs in the PM peak hour.

Land Use by Traffic Zone

As detailed in **Section 7.2.2,** to conduct a detailed trip generation analysis for the GMSP study area, the traffic zones from the 2011 Golden Mile TMP Sub-Area Model were disaggregated into smaller zones to represent the blocks within the GMSP study area. The 2011 Sub-Area Model trip generation was validated and calibrated against traffic counts conducted along Eglinton Avenue.

To determine the 2041 multi-modal trip generation, the land use for each traffic zone was extracted from the 3D Revit Model. Each alternative was created in this model so that the GFA could be extracted. Land use was extracted as three (3) types: residential, office, and retail. To determine detailed vehicular trip generation, it was assumed that:

- Residential GFA comprises of:
    - 80% condo and/or townhouse;
    - 10% rental and affordable housing; and
    - 10% senior housing.
- Office GFA comprises of:
    - 85% general office; and
    - 15% medical office.
- Retail GFA comprises of:
    - 50% specialty retail centres;

- 25% restaurants;
- 5% cinema and other entertainment;
- 10% fitness and recreation; and
- 10% hotel.

Table 8-3 and **Table 8-4** illustrate the detailed land use for each alternative and for each block.

Table 8-3: Land Use Alternative Assumptions by Block/Traffic Zone - Residential

Block	Traffic Zone	Alt. 1 Residential GFA (sq. ft.)	Alt. 1 Residential Units	Alt. 2 Residential GFA (sq. ft.)	Alt. 2 Residential Units	Alt. 3 Residential GFA (sq. ft.)	Alt. 3 Residential Units
1	52701	361,732	378	333,537	348	361,697	378
2	52702	1,018,093	1,063	701,909	733	570,610	596
3	527	1,650,512	1,723	2,539,298	2,651	2,018,170	2,107
4	52801	0	0	0	0	0	0
5	52801	1,539,695	1,607	1,775,044	1,853	732,842	765
6	52601	3,823,208	3,991	1,490,365	1,556	3,395,710	3,545
7	52901	680,169	710	615,405	642	718,542	750
8	52602	2,808,696	2,932	1,509,120	1,575	2,194,329	2,291
9	52902	0	0	0	0	0	0
10	52501	2,781,499	2,903	2,674,573	2,792	2,447,033	2,554
11	53001	0	0	0	0	0	0
12	53002	0	0	0	0	0	0
13	52502	2,081,151	2,172	2,514,015	2,624	1,809,476	1,889
14	53003	0	0	0	0	0	0
Total		**16,744,755**	**17,479**	**14,153,266**	**14,774**	**14,248,409**	**14,875**

Table 8-4: Land Use Alternative Assumptions by Block/Traffic Zone – Office / Retail

Block	Traffic Zone	Alt. 1 Office GFA (sq. ft.)	Alt. 1 Retail GFA (sq. ft.)	Alt. 2 Office GFA (sq. ft.)	Alt. 2 Retail GFA (sq. ft.)	Alt. 3 Office GFA (sq. ft.)	Alt. 3 Retail GFA (sq. ft.)
1	52701	0	11,184	0	10,316	0	11,186
2	52702	37,706	75,412	25,997	51,993	14,342	63,893
3	527	64,241	212,491	97,714	294,418	79,367	283,481
4	52801	0	0	0	0	0	0
5	52801	59,746	192,942	69,289	234,338	29,314	636,504
6	52601	144,338	362,588	55,199	110,397	122,310	433,666
7	52901	1,407,478	233,211	1,379,900	232,865	1,293,642	194,006
8	52602	106,012	265,658	55,893	111,787	75,181	361,166
9	52902	1,328,458	147,606	1,305,712	145,079	1,341,856	149,095
10	52501	105,014	263,909	100,555	241,509	93,657	269,011

Block	Traffic Zone	Alt. 1 Office GFA (sq. ft.)	Alt. 1 Retail GFA (sq. ft.)	Alt. 2 Office GFA (sq. ft.)	Alt. 2 Retail GFA (sq. ft.)	Alt. 3 Office GFA (sq. ft.)	Alt. 3 Retail GFA (sq. ft.)
11	53001	821,307	91,256	821,888	91,321	693,529	77,059
12	53002	969,788	107,754	970,010	107,779	809,101	89,900
13	52502	78,208	186,881	96,843	294,437	60,873	197,646
14	53003	805,332	89,481	742,683	82,520	643,444	71,494
Total		**5,927,628**	**2,240,373**	**5,721,683**	**2,008,759**	**5,256,616**	**2,838,107**

Existing Mode Share and Auto Occupancy

Existing mode share estimations were based upon a combination of the 2016 TTS, the Golden Mile Travel Survey, and by proxy site analysis when the first two (2) methods were not applicable.

Table 8-5 illustrates the mode share for the land uses.

Table 8-5: Existing Mode Share and Auto Occupancy Input Assumptions for Land Uses

Parameters	Residential: Condo / Townhouse[3]	Residential: Affordable Housing[4]	Residential: Senior Living[5]	Office	Retail
Auto Driver	50%	29%	35%[6]	67%	59%
Auto Passenger	11.5%	8%	35%[6]	5%	16%
Vehicular[1]	61.5%	37%	35%	72%	75%
Transit	34.5%	42%	51%	25%	17%
Walking	3.5%	16%	11%	1%	6%
Cycling	0.5%	5%	3%	2%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Auto Occupancy[2]	**1.23**	**1.28**	**1.00**	**1.07**	**1.27**

[1]The sum of auto driver and auto passenger.

[2]Calculated as the ratio of the total auto drive and auto passenger over auto driver.

[3]Baseline existing mode share for condo/townhouse is based on the average of the 2016 TTS Data for the proxy sites of the Scarborough Civic Centre and the apartments west of the GMSP study area.

[4]Baseline existing mode share for affordable housing is based on the average of the 2016 TTS Data for the proxy sites of Parkway Forest and Regent Park.

[5]Baseline existing mode share data for senior living from City of New Haven.

[6]The 35% mode share for senior living is the combined mode share between the auto driver and auto passenger modes.

While the above mode shares were assumed as inputs to the transportation model, the resulting mode share for the GMSP study area as a whole after applying existing land use is as follows:

Future Mode Share and Auto Occupancy

Future mode share was estimated based on shifts due to the introduction of the ECLRT on Eglinton Avenue alongside redevelopment. It was estimated that the ECLRT and the redevelopment of Eglinton Avenue would result, at most, approximately a 10% reduction for the vehicular mode[8]. The corresponding increases are split evenly between increased transit use (based on TTS data 46% of study area trips are greater than 5km in length and thus less likely to walk or cycle) and increased walking and cycling. Mode share for affordable housing and senior living was not modified from existing as these uses currently rely heavily on other modes other than auto. **Table 8-6** details the future estimated mode share for the GMSP study area.

Table 8-6: Future Mode Share and Auto Occupancy Input Assumptions for Land Uses

Parameters	Residential: Condo / Townhouse[3]	Residential: Affordable Housing[4]	Residential: Senior Living[5]	Office	Retail
Auto Driver	40%	29%	35%[6]	57%	51%
Auto Passenger	13%	8%	35%[6]	8%	16%
Vehicular[1]	53%	37%	35%	65%	67%
Transit	38%	42%	51%	30%	22%
Walking	6%	16%	11%	3%	8%
Cycling	3%	5%	3%	2%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Auto Occupancy[2]	**1.33**	**1.28**	**1.00**	**1.14**	**1.31**

[1]The sum of auto driver and auto passenger.

[2]Calculated as the ratio of total auto drive and auto passenger over auto driver.

[3]Baseline existing mode share for condo/townhouse is based on the average of the 2016 TTS Data for the proxy sites of the Scarborough Civic Centre and the apartments west of the GMSP Study Area.

[4]Baseline existing mode share for affordable housing is based on the average of the 2016 TTS Data for the proxy sites of Parkway Forest and Regent Park.

[5] Baseline existing mode share data for senior living from City of New Haven.

[8] Based on 1996 and 2016 TTS auto mode share in the Sheppard Avenue Corridor, where the implementation of the Sheppard Subway in 2002 resulted in a decrease in auto driver mode share for work trips from 59.4% to 49.7% in the PM peak period, which is a 9.7% decrease. While it is recognized that the comparison is being made between subway and LRT, the Sheppard Avenue subway proximity to Highway 401 represents a comparable dis-benefit to transit modal choice as on-street LRT versus subway. It is further noted that the significant proportion of retail trips in GMSP contributes to a lower existing mode share.

[6]The 35% mode share for senior living is the combined mode share between the auto driver and auto passenger modes.

As noted above, the breakdown of mode shares by land use type provided an input to the transportation model for future conditions. The resulting mode shares after applying estimated future land use are summarized as follows:

Vehicular Trip Generation

The ITE Trip Generation Manual (9th Edition) was used to determine vehicular trip generation based upon the land use types mentioned above. **Table 8-7** describes each land use type considered for the vehicular trip generation and the associated ITE category.

Table 8-7: Land Use and Associated ITE Breakdown

Land Use	Breakdown	ITE Name	ITE Code
Residential	Condo / Townhouse	Residential Condominium / Townhouse	230
Residential	Rental / Affordable housing	Apartment	220
Residential	Senior Home	Assisted Living	254
Office	General	General Office	710
Office	Medical	Medical / Dental Office	720
Retail	Specialty Retail Centre	Specialty Retail Centre	826
Retail	Restaurant	Quality Restaurant	931
Retail	Cinema / Entertainment	Multiplex Movie Theater	445
Retail	Fitness / Recreation	Health / Fitness Club	492
Retail	Hotel	Hotel	310

Based on each land use type, where applicable, the PM peak hour equation was applied to each land use to determine the total vehicular trips, as detailed in **Table 8-8**.

Table 8-8: ITE Total Vehicular Trips (PM Peak Hour)[1]

Land Use Trips	Alternative 1	Alternative 2	Alternative 3
Residential – Total	6,650	5,700	5,730
Residential – In	4,200	3,600	3,620
Residential – Out	2,450	2,100	2,110
Office – Total	9,120	8,840	8,210
Office – In	1,830	1,770	1,650
Office – Out	7,290	7,060	6,560
Retail – Total	9,640	8,710	11,880
Retail – In	5,520	4,980	6,820

Land Use Trips	Alternative 1	Alternative 2	Alternative 3
Retail – Out	4,120	3,730	5,060
Total of Trips	**25,410**	**23,240**	**25,810**
Total In Trips	**11,550**	**10,350**	**12,080**
Total Out Trips	**13,860**	**12,890**	**13,730**

[1]Please reference Table 8-3 for residential units and GFA

To conduct the multi-modal trip generation, total trips were first estimated. This calculation builds upon vehicular ITE trip generation in the table above. Recognizing that the ITE method only estimated vehicular traffic, assumptions with respect to auto occupancy and mode share were applied in order to estimate total person trips generated.

The auto occupancy of each land use type calculated in the beginning of this section was applied to the vehicular trip estimation to determine person trips (total number of auto driver and auto passengers). To determine total person trips (total number of people making a trip, regardless of mode), these trips were then divided by the estimated auto mode share for the ITE Trip Generation Manual. As the Trip Generation Manual uses trip generation rates based on surveys throughout Canada and the United States since the 1960s, the rates represent suburban locations with little or no nearby pedestrian amenities, transit service, or travel demand management programs. Based on a review, it is estimated that the ITE Trip Generation Manual surveys areas with an auto modal split of 90%. This auto mode share was applied to calculate total person trips.

To determine the total future auto trips for each alternative, the future mode share for each land use calculated in the **Mode Share and Auto Occupancy** section was applied to the total person trips. This calculation resulted in the number of future auto trips for each type of land use.

Additional adjustments were made to vehicular retail trips to account for internal capture and pass-by trips. These auto trips were adjusted by 35% and 40% respectively, similar to what was done for the 2011 Golden Mile TMP Sub-Area Model, to account for trips staying in the Golden Mile and to reduce the over-estimation of auto trips (see **Section 7.2.2**).

Table 8-9 details the total vehicular trips for each land use after the multi-modal trip generation.

Table 8-9: Golden Mile Total Vehicular Trips (PM Peak Hour)[1]

Land Use Trips	Alternative 1	Alternative 2	Alternative 3
Residential – Total	4,720	4,040	4,060
Residential – In	3,000	2,570	2,580
Residential – Out	1,720	1,470	1,480
Office – Total	7,510	7,240	6,730
Office – In	1,510	1,450	1,350
Office – Out	6,000	5,790	5,390
Retail – Total	3,680	3,330	4,520
Retail – In	2,110	1,910	2,600

Land Use Trips	Alternative 1	Alternative 2	Alternative 3
Retail – Out	1,570	1,420	1,920
Total of Trips	**15,910**	**14,610**	**15,310**
Total In Trips	**6,620**	**5,930**	**6,530**
Total Out Trips	**9,290**	**8,680**	**8,780**

[1] The table summarizes the total adjustment from the ITE Total Vehicular Trips (Table 8-6) with adjustments made to trips to account for person trips (based on existing auto occupancy for each land use), ITE auto mode share (90%), the future auto driver mode share (for each land use), and the retail adjustments for internal capture (35%) and pass-by trips (40%).

Vehicular Distribution and Assignment

Trip distribution and assignment was conducted in the Golden Mile TMP Sub-Area model in Emme. The City's Emme model 2041 OD matrices were updated to include the vehicular trip productions and attractions described in the previous section. While the design alternatives identified growth in the internal zones, any growth in travel external to the study area were not accounted for. The traversal matrices then underwent a "fratar" or matrix trip balancing process to determine vehicular distribution for the sub-area.

Following the trip balancing, the calibration adjustments from the 2011 Golden Mile TMP Sub-Area model described in **Section 7.2.2** were applied to the 2041 traversal matrix. Assignment was then conducted by Emme to determine 2041 model traffic volumes.

Transit Trip Generation and Distribution

The City of Toronto provided a base future transit assignment which includes the future transit network (e.g. ECLRT) and the planned land use forecasts (e.g. without the additional intensification of the land use alternatives). This run provides the "background" transit volumes for the future alternatives.

Based on the total person trips generated and mode share assumptions discussed above, the number of transit trips was calculated for the base future and each land use alternative to determine the total number of transit trips for each alternative. The number of new transit trips and the total transit trips for each alternative is summarized in **Table 8-10**.

Table 8-10: Transit Trips (PM Peak Hour)

Alt	Transit Trips	Total	In	Out
Base Future	Background Transit Trips	4,940	2,460	2,470
1	New Transit Trips	5,380	2,390	3,000
1	Total Transit Trips	10,320	4,850	5,470
2	New Transit Trips	4,420	1,850	2,590
2	Total Transit Trips	9,360	4,310	5,060
3	New Transit Trips	5,220	2,400	2,830
3	Total Transit Trips	10,160	4,860	5,300

New transit trips generated for Alternatives 1, 2, and 3 were distributed to each transit line based on the transit volumes in the base case. The distribution are

summarized in **Table 8-11**. New transit trips (**Table 8-10**) were distributed based on the factors above and added on top of the future base case volumes.

Table 8-11: Transit Trip Distribution Factors

Block	Victoria Park	Pharmacy	Warden	Birchmount	Eglinton
1-5	19.8%	6.6%			73.6%
6-9		6.8%	17.6%		75.7%
10-14			16.3%	13.7%	70.0%

8.2.2 Criteria 2.2 – Connected

The objective of Criteria 2.2 is to provide a well-***connected***, convenient, safe, and accessible network between the new ECLRT stations and key destinations within the Golden Mile. This will be assessed based on the walkshed analysis to/from the ECLRT stops and the percentage of streets that are walkable within a 250m radius (2.5 minute walk).

Transit walkshed refers to the pedestrian catchment area of a transit facility. It is determined by the distance people are generally willing to walk to a transit stop. The simplest way of measuring the walkshed of a transit facility is to include the entire area within a 250m radius. However, this approach may include areas that are, in reality, not accessible to pedestrians (i.e. over a ravine) or require longer walking distances due to barriers or irregular street patterns. An alternative method is to map the “true” linear walking distance from a transit facility using the existing street network accessible to pedestrians. Comparing the two methods can illustrate issues with connectivity and point to where new pedestrian links may be necessary.

For this analysis, it is assumed that all new roads in the three (3) alternatives contain walking infrastructure on at least one side of the road. Also the potential connections on the map (dashed lines) will act as pedestrian connections/ formal pathways.

To evaluate the three (3) alternatives based on the 250m walkshed analysis, the percentage of population and employment located within 250m radial distance from the ECLRT stations was calculated. Streets included in the linear or radial walkshed analysis that are outside of the GMSP study area were not included in the analysis.

Table 8-12 summarizes the percentage of population and employment within 250m radial distance from the future ECLRT stations.

Table 8-12: Walkshed Analysis

Alt	Total Pop.	Total Emp.	Linear Walkshed Pop.	Linear Walkshed Emp.	Linear Walkshed Pop %	Linear Walkshed Emp. %	Score
1	30,700	30,900	18,200	22,600	59%	73%	0
2	26,150	30,500	17,200	23,200	66%	76%	3
3A	26,300	29,500	17,000	22,700	64%	77%	1.5
3B	26,300	29,500	17,000	22,700	64%	77%	1.5

8.2.3 Criteria 3.2 – Responsive

The objective of Criteria 3.2 is to plan, phase, and build infrastructure and facilities in in alignment with and ***responsive*** to future demands including community needs, market readiness and municipal resources. This is measured through service capacity of the vehicular and transit network within the Secondary Plan area.

Vehicular Service

Service capacity of the vehicular transportation network will indicate whether the network has enough capacity to accommodate future demand. This will be based on delay which is calculated as the percentage of congested vehicle-kilometres travelled (VKT) and the percentage of congested vehicle-hours travelled (VHT) for the GMSP study area. This determine how many total vehicle kilometres are travelled in congestion and how many total hours are spent in vehicles in congestion. VKT is calculated by multiplying the number of vehicles using a road segment and the length of the segment. VHT is calculated by multiplying the number of vehicles using a road segment and the segment travel time.

Table 8-13 details the results of the congested VKT and VHT analysis for the GMSP study area. Alternative 2 is the highest performing as its land use distribution minimizes kilometres travelled, while Alternative 3A is the lowest performing due to a discontinuous road network.

Table 8-13: VKT and VHT Evaluation for the GMSP Study Area

Alternative	Percentage of VKT in Congestion	Percentage of VHT in Congestion	Score
1	13%	17%	2
2	11%	15%	3
3A	15%	20%	0
3B	11%	15%	3

Transit Service

Similar to vehicular service, the V/C ratios for transit service indicate whether the network has enough capacity to accommodate future transit demand. The transit V/C ratios were calculated using the peak direction peak point ridership over the total capacity for transit routes in the study area.

Table 8-14 shows the projected transit V/C ratios and the scoring for each alternative. Alternative 2 is the highest performing relative to other alternatives as it has the lowest overall V/C ratios, but it is also important to note that all three (3) alternatives have v/c ratios which exceed 1.

Table 8-14: Projected Transit V/C Ratio and Scoring (PM Peak Hour Peak Direction NB and EB)

Route / Street	No. of Buses (headway)	Transit Capacity	Alt 1 Transit Volume	Alt 2 Transit Volume	Alt 3A/B Transit Volume	Alt 1 V/C	Alt 2 V/C	Alt 3A/B V/C
Victoria Park (NB)	10 (6 min)	510	536	566	375	**1.05**	**1.11**	**1.13**
Pharmacy (NB)	5 (12 min)	255	261	226	269	**1.02**	0.89	**1.06**
Warden (NB)	10 (6 min)	510	1,039	910	985	**2.04**	**1.78**	**1.93**
Birchmount (NB)	8 (7.5 min)	408	390	353	328	0.93	0.96	0.87
Eglinton LRT (EB)	12 (5 min)	6,000	4,386	3,943	4,318	0.73	0.66	0.72
					Score	0	3	1.5

8.2.4 Criteria 4.2 – Prosperous

The objective of Criteria 4.2 is to measure how the transportation network contributes to the ***prosperity*** of the area in ensuring efficient movement of people and goods in the broader transportation study area. Similarly to Criteria 3.2, this is dependent on service capacity of the vehicular transportation network as it will indicate whether the network has enough capacity to accommodate future demands.

Table 8-15 summarizes the percentage of VKT and VHT spent in congestion in the Golden Mile TMP study area. As seen in Criteria 3.2, Alternative 3B is the highest performing while Alternative 1 is the lowest performing.

Table 8-15: VKT and VHT Evaluation for the Golden Mile TMP Study Area

Alternatives	Percentage of VKT in Congestion	Percentage of VHT in Congestion	Score
1	20%	29%	0
2	20%	28%	1.5
3A	19%	27%	1.5
3B	17%	25%	3

8.2.5 Recommended Input to Evaluation of Land Use Alternatives

The preliminary transportation analysis of the development alternatives provides input into a multiple criteria evaluation of the land use alternatives for the Golden Mile Secondary Plan.

With an equal weighting for each criteria evaluated in the previous section, the maximum score an alternative can achieve is 12 and the minimum score is zero (0). A summary of the transportation evaluation is shown in **Table 8-16**.

Table 8-16: Transportation Evaluation of Land Use Alternatives Results

Alternatives	Criteria 2.2 Walkshed Analysis	Criteria 3.2 Vehicular Service in GMSP Study Area	Criteria 3.2 Transit Service	Criteria 4.2 Vehicular Service in TMP Study Area	Total Score	Summary
1	0	2	0	0	1	Screen Out
2	3	3	3	1.5	10.5	**Carry Forward**
3A	1.5	0	1.5	1.5	4.5	Screen Out
3B	1.5	3	1.5	3	9	**Carry Forward**

Alternative 2 is the highest performing alternative, achieving a score of 10.5. Alternative 3B ranks second with a score of 9, and Alternative 3A has a score of 4.5. Alternative 1 performs very poorly with a score of 1. **A combination of Alternative 2 and Alternative 3B is recommended to be carried forward for consideration in formation of the Preferred Development Alternative.**

8.3 Evaluation of Land Use Alternatives

The evaluation of land use alternatives is based upon performance measures which align with the four Guiding Principles identified at the outset of the Secondary Plan study (**Section 6.1**).

Measurable objectives were in turn developed for each principle. Using input from the preceding transportation analysis, a full evaluation of the land use alternatives was conducted by the GMSP team which incorporates land use planning, built-form, urban design, community facilities, water servicing, and open space objectives.

The evaluation of the land use alternatives followed a similar scoring system as the transportation evaluation. Each performance indicator is scored based upon relative performance where the most favourable alternative score is 3 and the least favourable score is 1. Scores of zero are assigned to each alternatives where there is no difference between them.

The evaluation tables for each of the four criteria: Complete, Connected, Responsive and Prosperous; are provided in **Table 8-17** to **Table 8-20** (It is also noted that this evaluation also appears in the *Golden Mile Secondary Plan Study Alternatives Report).*

Combining the results across all four Guiding Principles and without any weighting criteria, Alternative 3 received the highest total score as follows:

- Alternative 1: 33
- Alternative 2: 38
- Alternative 3: 41

While Alternative 3 scored the highest, particularly in Guiding Principles #1 and #4, Alternative 2 actually scored better in Principles #2 and #3 especially from a transportation perspective as noted in the previous **Section 8.2.5**.

Thus, with both Alternative 2 and 3 having advantages and disadvantages from multiple perspectives, it was determined that a combination of Alternatives 2 and 3 be brought forward as the Emerging Preferred Alternative to be refined into a Preferred Alternative, and this process is described in the following section.

Table 8-17: Evaluation under Principle #1 Complete Community

#	Objective	Indicator	Development Alternatives		
			Alt 1	Alt 2	Alt 3
1.1	Pair growth with public investment in transit, the public realm and in services	Meet or exceeds Major Transit Station Area density target 160 people + job/ha	3	1	2
1.2	Create distinct and identifiable districts within Golden Mile	Number of districts with distinct identity	1	2	3
1.3	Within districts, balance new development with new streets, community facilities and open space	Ratio of developable lands to non-developable lands	2	2	3
		Ratio of population to open space	1	3	2
1.4	Encourage a mix of housing forms and ensure future housing is accessible	Range of housing forms (e.g. low, mid and high rise)	3	3	2
1.5	Encourage a mix of residential and employment uses	Ratio of people to jobs	1	2	3
1.6	Ensure that existing employment uses are supported and promote new employment uses as the area transitions over time	No net loss of employment GFA (Existing = 495,875 m2)	0	0	0
		Net gain of employment GFA (Existing = 495,875 m2)	3	1	2
		SUBTOTAL	**14**	**14**	**17**

Table 8-18: Evaluation under Principle #2: Connected Community

#	Objective	Indicator	Development Alternatives		
			Alt 1	Alt 2	Alt 3
2.1	Provide multi-modal mobility choice to existing and future residents	Network congestion within GMSP study area (congested VKT)	2	3	1
		Sufficient vehicular capacity - Minimizes critical screenline volume/capacity (v/c) ratios	1	3	2
		Protecting surrounding neighbourhoods from through traffic	1	2	2
2.2	Ensure safe, green, convenient, comfortable and well-designed pedestrian connections	Amount of contiguous sidewalk (direct, convenient connections)	0	0	0
		Percentage of People and jobs within 200m of transit stops	1	3	2
2.3	Ensure strengthened connectivity to adjacent parks, ravines and open spaces	Connectivity to the Hydro Corridor, Victoria Eglinton Parkette, Craigton Court and Wexford Park	0	0	0
		SUBTOTAL	**5**	**11**	**7**

Table 8-19: Evaluation under Principle #3: Responsive Community

#	Objective	Indicator	Development Alternatives		
			Alt 1	Alt 2	Alt 3
3.1	Plan, phase and build infrastructure and facilities in alignment with community need, market readiness and municipal resources	Impact of proposed streets on existing buildings and existing streets	0	0	0
3.2	Ensure transition in built form down to Neighbourhoods, Parks and Open Spaces and streets to minimize shadowing and overlook impacts	Built form does not penetrate 45 degree angular plane as measured from existing neighbourhoods and existing and proposed significant parks and streets	3	2	1
3.3	Ensure pedestrian comfort is achieved in terms of skyview, adjacent building height and setback and wind impact	Built Form meets and exceeds mid rise and tall building guidelines in terms of separation distance, pedestrian perception stepback, desired setbacks and wind analysis	0	0	0
		SUBTOTAL	**3**	**2**	**1**

Table 8-20: Evaluation under Principle #4 Prosperous Community

#	Objective	Indicator	Development Alternatives		
			Alt 1	Alt 2	Alt 3
4.1	Leverage investment in public realm, infrastructure and transit in building the competitiveness, brand and reputation of Golden Mile as a place of opportunity, commerce and innovation in Scarborough	Ratio of m2 to jobs	3	1	2
4.2	Ensure compatible land use and balance transportation needs with the existing industrial uses within and adjacent to the Golden Mile	Responsiveness of built form to business needs: measured by size - small, medium, large (GFA requirements to commercial/industrial floor plates)	1	2	3
		Service capacity of transportation system (vehicles, transit) - Based on EMME congested VKT, VHT (vehicular analysis only) - at TMP study area level.	1	2	2
		Service capacity of water infrastructure	2	3	3
4.3	Continue the story of the Golden Mile as a key destination within the GTA	Net gain of retail GFA (Existing = 215,559 m2)	2	1	3
		Variety in scale of retail spaces	2	2	3
		SUBTOTAL	**11**	**11**	**16**

8.4 Formation of the Preferred Land Use Alternative

Following the evaluation, refinements to the Preferred Land Use Alternative were made based on the preliminary analyses conducted as well as through consultation with key stakeholders.

8.4.1 Technical Advisory and Local Advisory Committee Input

Based on meetings with the Technical Advisory Committee (TAC) and Local Advisory Committee (LAC), the following recommendations were made.

The TAC provided the following feedback:

- Agree to carry forward a combination of Alternative 2 and 3
- Adjust Alternative 2 Street Network to better reflect proposed redevelopments of Golden Mile Plaza and Eglinton Square Mall
- Redistribute density from Warden Avenue to the western end of the GMSP study area; retain the transit node density concept
- Realign Thermos Road to align with Sinnott Road
- Re-examine the total amount of office gross floor area, and explore travel demand management to minimize transportation network impacts

The LAC provided the following feedback:

- Redistribute density to future LRT stations to incentivize all landowners to redevelop their lands
- Redistribute density to large sites with extensive proposed roads to offset infrastructure costs associated with redevelopment
- Look to improve north-south pedestrian connectivity, safety, and comfort, particularly on existing north-south arterials or provide alternative connections
- Assess quantity and distribution of mid-rise built form in some of the alternatives

8.4.2 Recommended Transportation Refinements

Building upon the feedback from TAC and LAC, further refinements to the Street and Block Network were considered in the formation of the Preferred Development Alternative as noted in **Section 7.5**. This includes the elimination of the jogged intersection of Golden Mile Boulevard at Hakimi Avenue, the elimination of the jogged intersection of O'Connor Drive Extension and Civic Road at Warden Avenue, and a new traffic signal at Jonesville Crescent and Eglinton Avenue.

The preliminary transportation analysis of the Land Use Alternatives also determined that the level of employment (office and retail) in particular resulted in additional trips in the peak direction of travel. As such it was recommended that a decrease to the

office and retail space be made in the preferred alternative, which would allow for additional residential units.

8.4.3 Preferred Land Use Alternative

Building upon the analysis and evaluation of the land use alternative and subsequent refinements, consultation with the TAC and LAC members, and the public through CCMs, the Preferred Land Use Alternative was developed by the GMSP team. The characteristics of the Preferred Land Use Alternative are summarized in **Table 8-21**, and the Demonstration Concept Plan of the Preferred Land Use Alternative is provided in **Figure 8-6**.

Table 8-21: Preferred Alternative Land Use

Land Use	Alternative 1	Alternative 2	Alternative 3 [1]	Preferred
Residential Dwelling Units	17,500	14,800	14,900	24,200
Office Space (sq. ft.)	5,927,600	5,721,700	5,256,600	3,846,500
Retail Space (sq. ft.)	2,240,400	2,008,800	2,838,100	939,800
Population	30,900	26,200	26,300	42,900
Employment	31,900	30,500	29,500	19,800

[1]3a and 3b yield the same land use figures with a variation in the street network.

The Preferred Land Use Concept forms the basis of identifying infrastructure improvements and requirements for the TMP study which follows Phases 1 and 2 of the Municipal Class Environmental Assessment process. The TMP analysis of alternatives is presented in the following Chapter.

Figure 8-6: Preferred Land Use Concept

Source: SvN