DVB Real Estate Investments Inc.

3016-3032 KIRWIN AVENUE

Transportation Impact Study

April 2021

21111

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April 21, 2021

Reference Number: 21111.01

DVB Real Estate Investments Inc
Sent to:
Steven Pham
Weston Consulting

RE: Transportation Impact Study for the Stacked Townhouse Condominium Development at 3016-3032 Kirwin Avenue, Mississauga, Ontario

LEA Consulting Ltd. is pleased to present the findings of our Transportation Impact Study for the proposed 8-storey rental apartment development at 3016-3032 Kirwin Avenue in the City of Mississauga, Ontario.

Should you have any questions regarding this Transportation Impact Study, please feel free to contact Kelsey Waugh at 416-572-1793.

Yours truly,

LEA CONSULTING LTD.

Kelsey Waugh, P.Eng., RSP1
Transportation Engineer

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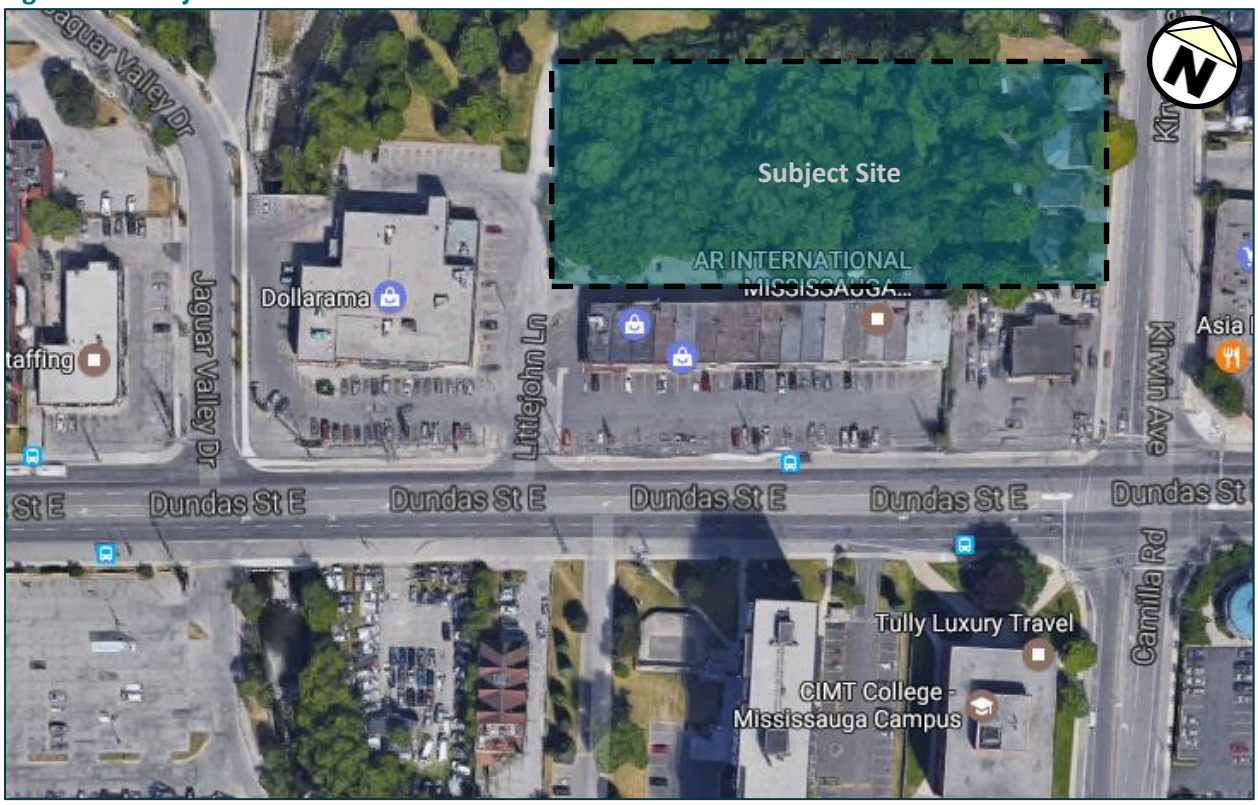
1 INTRODUCTION

LEA Consulting Ltd. (LEA) was retained by DVB Real Estate Investments Inc. to prepare a Transportation Impact Study (TIS) for the proposed residential development at 3016, 3020, 3026, 3032 Kirwin Avenue & 3031 Little John Lane in the City of Mississauga (herein referred to as the "subject site" or "3016 Kirwin Ave"). The subject site is located at the northwest corner of Dundas Street East and Kirwin Avenue/Camilla Road. For the purposes of this report, Dundas Street East will be referred to as an east-west road. Subsequently all other intersecting roads will be referred to as north-south roads. **Figure 1-1** illustrates the location of the subject site, which is currently green space bordered by an existing commercial building to the south.

Figure 1-1: Subject Site Location



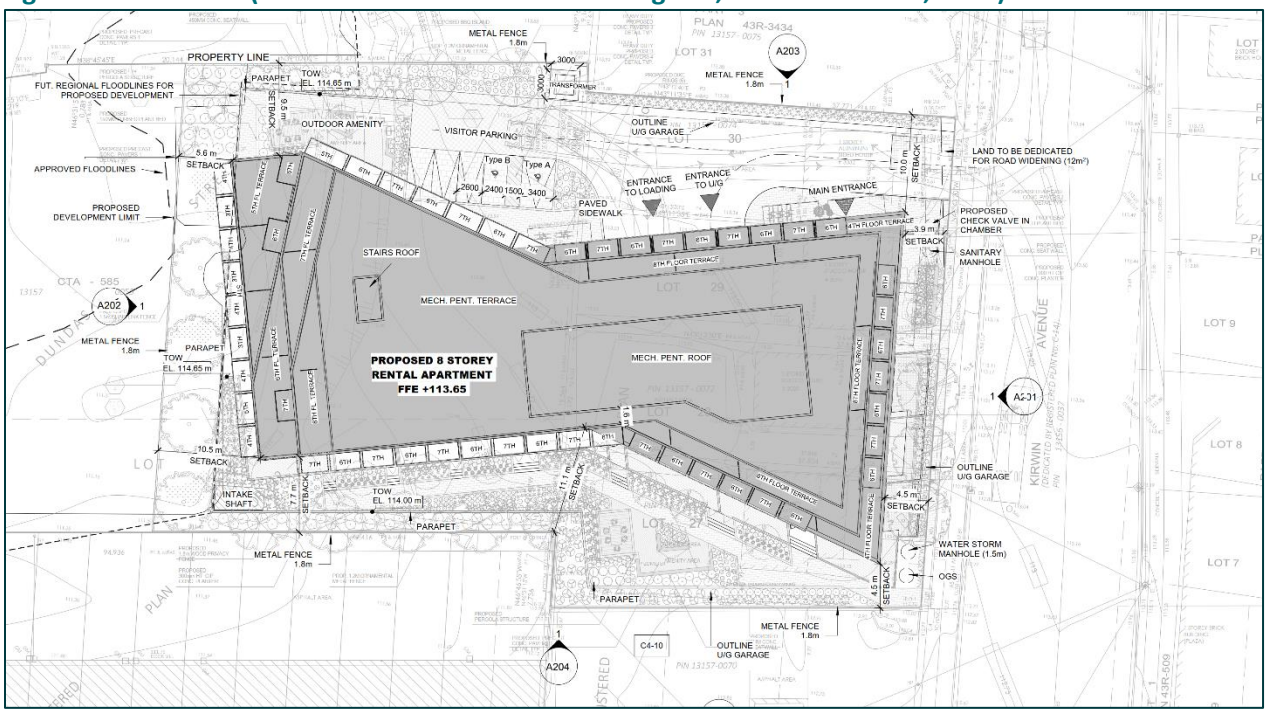
1.1 DEVELOPMENT PROPOSAL

Based on the latest site statistics, the proposed development will consist of an eight (8)-storey rental apartment building abutting Kirwin Avenue containing 148 residential units, with a mix of one-, two-, and three- bedroom units. A vehicle parking supply of 178 spaces is proposed, with 157 residential spaces within two levels of underground parking and 21 visitor spaces (located at-grade and on the P1 parking level). In addition, a total of 115 bicycle parking spaces are proposed (14 short-term spaces at-grade and 101 long-term spaces on the P1 parking level). Vehicle access will be provided via Kirwin Avenue on the northeast corner of the subject site and pedestrian access via Kirwin Avenue along the east side. The unit breakdown and preliminary site statistics are outlined in **Table 1-1** with the proposed site plan illustrated in **Figure 1-2**.

Table 1-1: Preliminary Site Statistics

Land Use	Unit Count	Unit Mix
Residential		
1-Bedroom	113	76%
2-Bedroom	32	22%
3-Bedroom	3	2%
Residential Total	**148**	**100%**
Proposed Number of Parking and Loading Spaces On-Site		
Residential Parking	157	
Visitor Parking	21	
Bicycle Parking	115	
Loading Space	1	

Figure 1-2: Site Plan (Source: KFA Architects + Planning Inc., dated March 10, 2021)



2 EXISTING TRANSPORTATION CONDITIONS

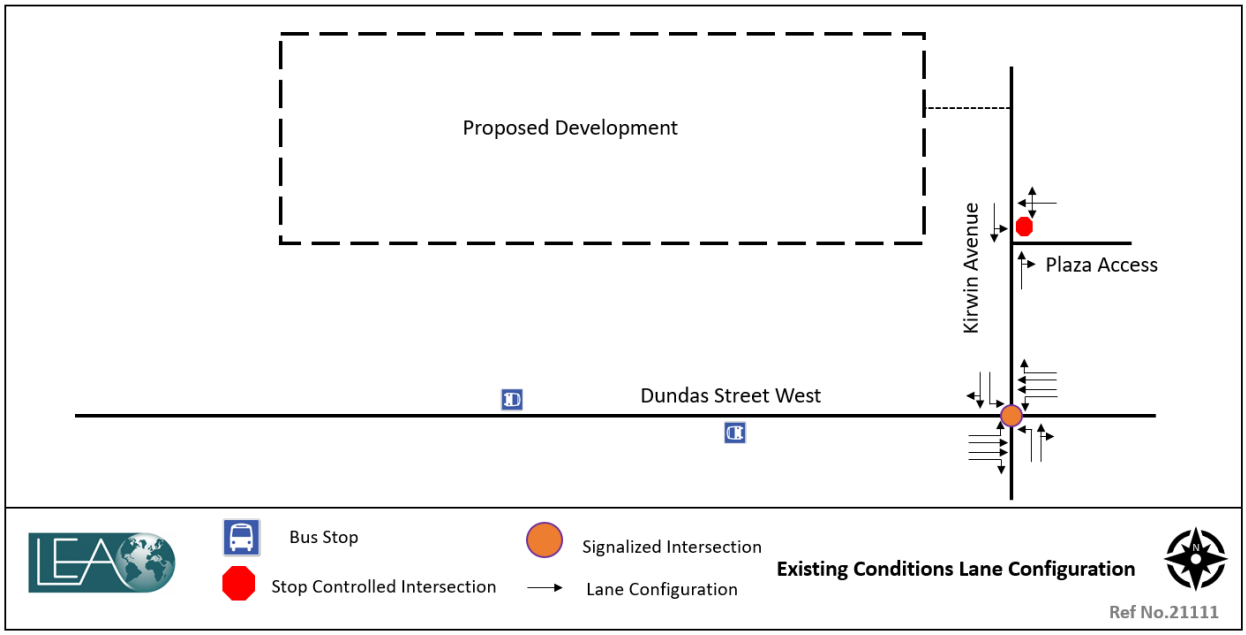
This section identifies and assesses the existing transportation conditions in the study area with regards to the road, transit, pedestrian, and cycling networks. The study area was determined based on the magnitude of the development and its anticipated transportation impact. The study area includes the following intersections:

- Dundas Street East and Kirwin Avenue /Camila Road (Signalized);
- Kirwin Avenue and Plaza Access on the east side of Kirwin Avenue (Unsignalized);
- Kirwin Avenue and Proposed Site Access (Unsignalized); and

2.1 EXISTING ROAD NETWORK

The existing lane configurations and intersection control for the study area are shown in **Figure 2-1**, followed by a summary of the surrounding road network.

Figure 2-1: Existing Road Network



Dundas Street is an east-west major arterial road with a four-lane cross section (two lanes per direction) that runs from Highway 427 and Ninth Line, respectively and is under the jurisdiction of the City of Mississauga within the study area. At the intersection of Kirwin Avenue, it provides one exclusive left-turn lane and one exclusive right-turn lane in both the eastbound and westbound direction. Dundas Street East has an assumed speed limit of 50 km/h within the study area as no speed limit is posted.

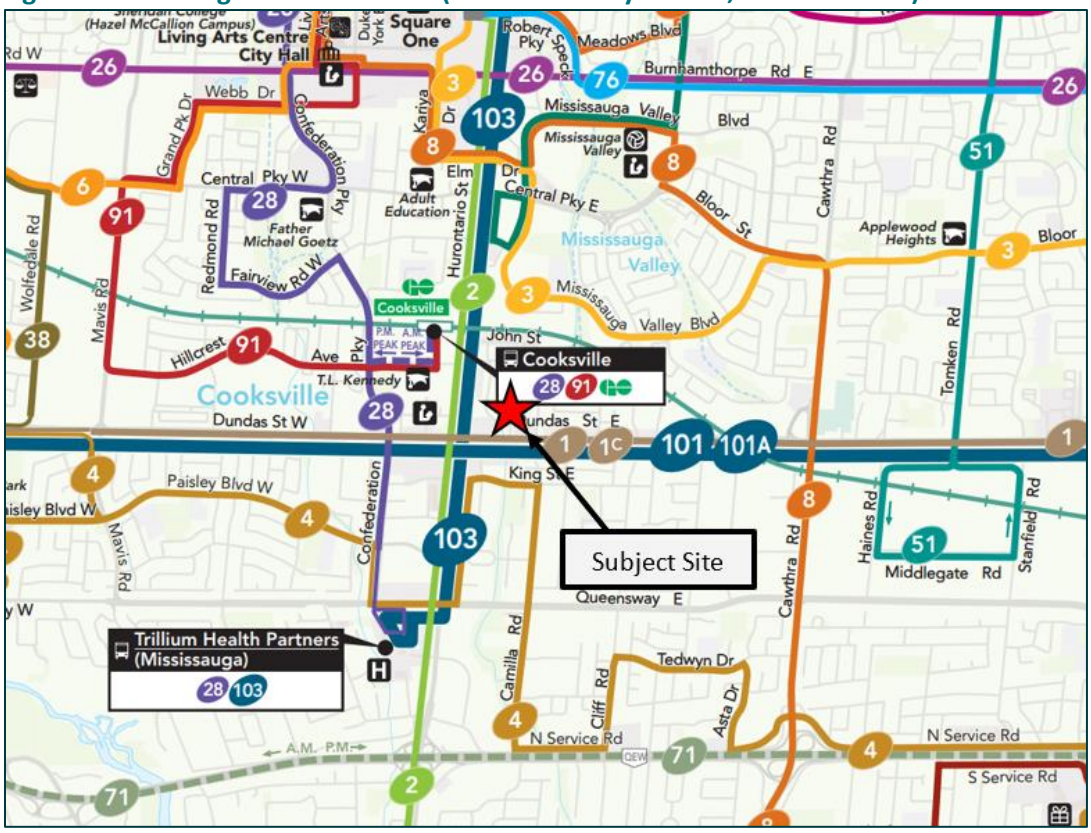
Kirwin Avenue/Camilla Road is generally a north-south collector road with a two-lane cross section (one lane per direction) as well as bike lanes running west from Hurontario Street and turning north-south to the intersection of Dundas Street East, at which point it becomes Camilla Road. Kirwin Avenue operates with a posted speed limit of 50 km/hr and is under the jurisdiction of the City of Mississauga. Camilla Road

runs south of Dundas Street East and terminates at North Service Road. It operates with a posted speed limit of 50km/hr and is under the jurisdiction of the City of Mississauga.

2.2 EXISTING TRANSIT SERVICE

The subject site is well serviced by Mississauga's public transit system MiWay. The subject site is located within short walking distance to bus transit services, providing for good accessibility to the transit network. The Cooksville GO Station is located about 950m (about 15-minute walk) north of the proposed development. GO Transit and MiWay routes within the study area are described below and illustrated in **Figure 2-2**.

Figure 2-2: Existing Transit Network (Source: MiWay Transit, Pre-Pandemic)



MiWay Bus Route 101, 101A, 101B, 101D, 101E – Dundas Express operates generally in an east-west direction along Dundas Street East/West from Islington Subway Station. The routes run a north-south loop on Mississauga Road and Erin Mills Parkway stopping first at the University of Toronto Mississauga campus and second at the South Common Mall bus terminal. The variants to the 101 (i.e., 101A, B, D, E) follow the same east-west and loop pattern. This route operates seven days a week, with approximately 10–15-minute headways during peak periods.

Access Location: Route 101 is accessible at the intersection of Hurontario Street and Dundas Street East

MiWay Bus Route 1 and 1C – Dundas operates in an east-west direction along Dundas Street East/West from Islington Subway Station. Route 1 Dundas runs east-west to the Laird Road/Ridgeway Drive loop. The 1C Dundas route keeps east-west along Dundas Street East/West, until Mississauga Road where it

runs north/south and loops through the University of Toronto before continuing to South Common Mall Bus Terminal. This route operates seven days a week, with approximately 10–15-minute headways during peak periods.

Access Location: Route 1 is accessible at the intersection of Camilla Road and Dundas Street East

MiWay Bus Route 2 – Hurontario operates generally in a north-south direction along Hurontario Street. The route runs from Port Credit GO Station in the south to the City Centre Transit Terminal in the north. The bus route provides service to the Lakeshore West GO line via Port Credit Station. This route operates seven days a week, with approximately 10-minute headways during peak periods.

Access Location: Route 2 is accessible at the intersection of Hurontario Street and Dundas Street East

MiWay Bus Route 103 – Hurontario Express operates generally in a north-south direction along Hurontario Street. The route runs from Queensway at Trillium Hospital in the south to Brampton's Gateway Terminal in the north. This route operates seven days a week, with approximately 20-minute headways during peak periods.

Access Location: Route 103 is accessible at the intersection of Hurontario Street and Dundas Street East

GO Rail – Milton Line is the east-west GO service line providing service to and from Union Station and has an average headway of 15-minutes on weekdays. As mentioned, the Cooksville GO Station is located about 950m (about 15-minute walk) north of the proposed development. A new station structure is being constructed for Cooksville GO Station which include multi-level parking structures, improved pedestrian access and connections to the future Hurontario LRT. Additionally, the station also features a bus loop providing regional and local buses operated by GO Transit and MiWay Transit.

2.3 CYCLING NETWORK

Cycling facilities are available within the study area with bike lanes along both sides of Kirwin Avenue providing north-south connections to and from the site. Signed routes are available along Hillcrest Avenue with a multi-use trail in the Stonebrook Park, located north of the subject site. Overall, cycling facilities surrounding the subject site are fair and provides connectivity to various parks and trails. The existing cycling network around the subject site is shown in **Figure 2-3**.

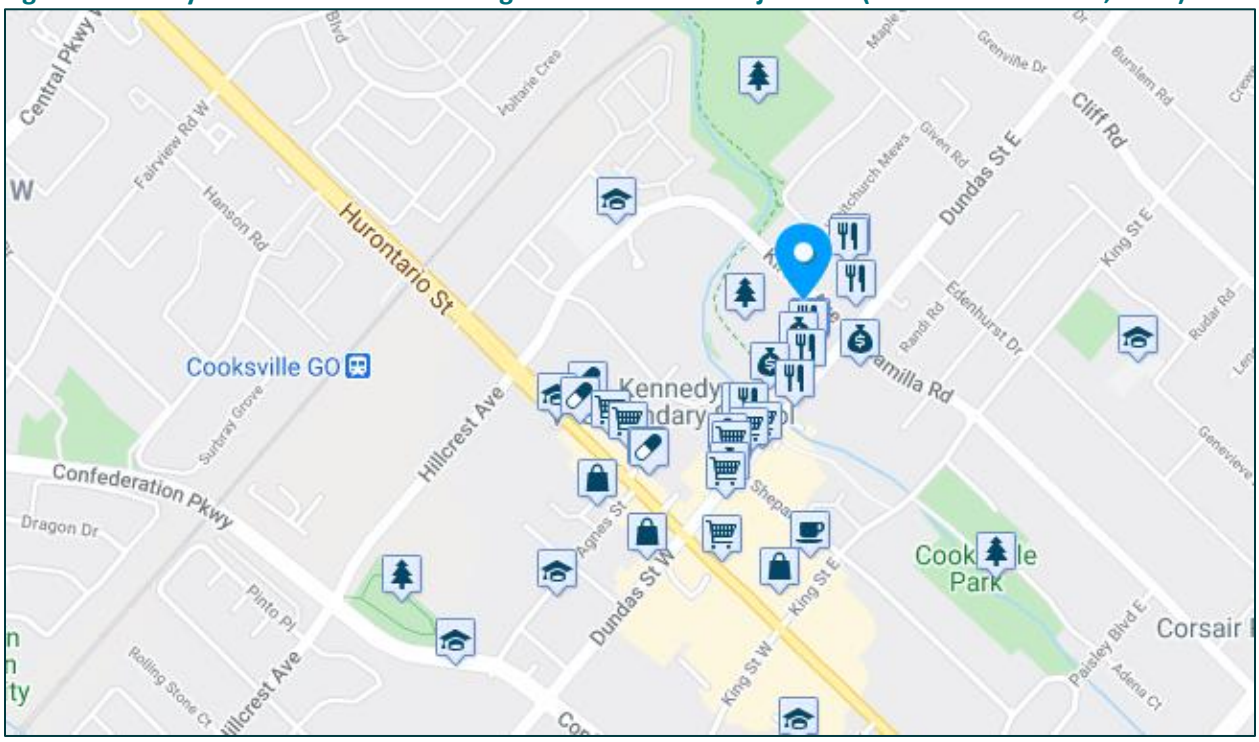
Figure 2-3: Existing Cycling Network (Source: City of Mississauga, 2018)

2.4 PEDESTRIAN NETWORK

In the area immediately surrounding the subject site, sidewalks are available along both sides of Kirwin Avenue and Dundas Street East. Crosswalks are available at all signalized intersections. To verify the land uses that support the area's walkability, the address of the subject site was examined in the Walk Score web application. The subject site location receives a Walk Score of 79/100 – Very Walkable, which indicates that most errands can be accomplished on foot.

A 10-minute walk from the site could permit an induvial to reach Cooksville Park in the south, Mississauga Valley Boulevard in the north, Hurontario Street to the west and Cliff Road to the east. Within this area are many amenities and services such as schools, public parks, restaurants, grocery stores, banks, pharmacies, and culture & entertainment use. **Figure 2-4** below displays a range of amenities and daily needs that are within a walkable distance from the subject site.

Figure 2-4: Daily Amenities within walking Distance of the Subject Site (Source: Walk Score, 2021)



2.5 TRAFFIC DATA COLLECTION

Given that no surveys can be conducted at this time due to the ongoing COVID-19 pandemic, LEA utilized turning movement counts (TMCs) collected in 2017 and adjusted them with historical growth rates (as outlined in **Section 3.1**) to reflect 2021 traffic conditions. The adjusted traffic volumes were then balanced between intersections along Dundas Street East and along Kirwin Avenue.

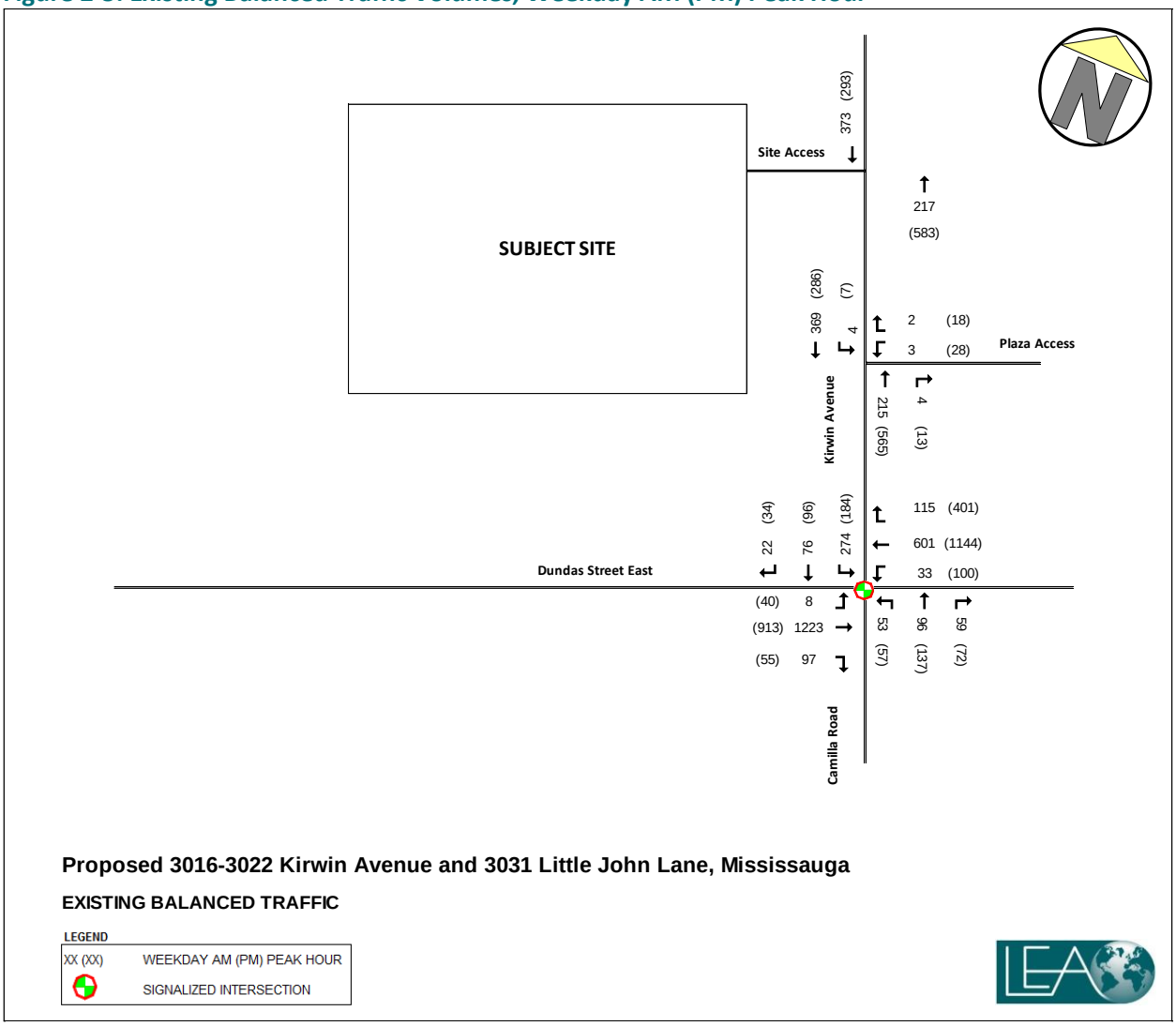
As shown in **Table 2-1**, the TMC surveys were conducted by LEA at the study area intersections on Tuesday, May 30th, 2017 and Thursday, June 8th, 2017 from 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM. TMC survey data is provided in **Appendix A**.

Table 2-1: Traffic Data Sources

Intersection	Date of Survey	Source
Dundas Street East and Kirwin Avenue/Camilla Road	Tuesday, May 30th, 2017	LEA Consulting Ltd.
Kirwin Avenue and Plaza Access	Thursday, June 8th, 2017	LEA Consulting Ltd.

The existing balanced traffic volumes for the weekday AM and PM peak hours are shown in **Figure 2-5**.

Figure 2-5: Existing Balanced Traffic Volumes, Weekday AM (PM) Peak Hour



2.6 EXISTING INTERSECTION CAPACITY ANALYSIS

Intersection capacity analysis was conducted for the existing traffic conditions using Synchro Version 9.0, which is based on the Highway Capacity Manual (2000) methodology and adhering to Region of Peel's *Regional Guidelines for using Synchro* (December, 2010). The intersection capacity was conducted for the weekday AM and PM peak hours. Peak hour factors (PHFs) for all movements were inputted as 1.00. The analysis incorporates signal timing plans obtained from the City of Mississauga in 2017 for the intersection of Dundas Street East and Kirwin Avenue/Camilla Road, which are provided in **Appendix B**.

The existing intersection capacity analysis for the weekday AM and PM peak hours is summarized in **Table 2-2** and **Table 2-3** for signalized and unsignalized intersections, respectively. Detailed capacity results can be found in **Appendix C**.

Table 2-2: Existing Signalized Intersection Capacity Analysis

Intersection	AM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dundas Street East and Kirwin Avenue / Camilla Road	0.69	34.8	C	EBL	0.02	25.1	C	1.4	4.7
				EBT	0.87	44.4	D	166.1	197.2
				EBR	0.09	25.9	C	4.9	16.1
				WBL	0.26	28.5	C	4.6	10.0
				WBT	0.37	24.5	C	55.8	69.0
				WBR	0.07	20.9	C	0.0	9.7
				NBL	0.13	32.5	C	10.7	23.8
				NBT	0.24	33.9	C	28.3	52.3
				SBL	0.51	29.1	C	50.7	84.0
				SBT	0.12	24.5	C	15.1	31.0
Intersection	PM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dundas Street East and Kirwin Avenue / Camilla Road	0.56	34.0	C	EBL	0.49	40.0	D	8.2	21.2
				EBT	0.80	44.1	D	111.3	134.7
				EBR	0.04	30.1	C	0.0	6.4
				WBL	0.50	29.1	C	14.5	25.0
				WBT	0.77	34.8	C	128.3	152.1
				WBR	0.26	25.0	C	0.0	16.9
				NBL	0.12	25.9	C	9.3	21.9
				NBT	0.29	28.0	C	33.7	62.2
				SBL	0.34	20.0	B	24.7	47.3
				SBT	0.14	19.0	B	16.1	33.8

The City of Mississauga *Traffic Impact Study* Guidelines define any through movements or shared through/turning movements at a v/c ratio of 0.85 or above and exclusive turning movements at a v/c ratio of 0.90 or above as critical movements, which are indicated in red. As shown in **Table 2-2**, under existing conditions, the signalized intersection of Dundas Street East and Kirwin Avenue/Camilla Road is currently operating well with an overall level of service (LOS) of 'C' during both weekday AM and PM peak hours. During the AM peak hour, the eastbound through movement is approaching capacity with a v/c ratio of 0.87. All other individual movements are operating with acceptable delays and ample residual capacity during both peak periods. No further constraints have been identified for the signalized intersection under existing conditions.

Table 2-3: Existing Unsignalized Intersection Capacity Analysis

Intersection	Movement	AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Kirwin Avenue and Plaza Access	WBLR	5	568	11.4	0.2	0.01	B
	SBL	4	1326	0.1	0.1	0.00	A
Intersection	**Movement**	**PM Peak Hour**					
		Flow Rate (vph)	**Capacity (vph)**	**Control Delay (s)**	**95th Queue (m)**	**V/C**	**LOS**
Kirwin Avenue and Plaza Access	WBLR	46	365	16.3	3.3	0.13	C
	SBL	7	974	0.3	0.2	0.01	A

The City of Mississauga *Traffic Impact Study Guidelines* indicate that the analysis must include identification of unsignalized intersections where the level of service, based on average delay per vehicle or on individual movements is LOS "E" or greater. As shown in **Table 2-3**, under existing conditions, the unsignalized intersections generally operate with acceptable levels of service. No constraints were identified, and residual capacity is present for all movements.

3 FUTURE BACKGROUND TRANSPORTATION CONDITIONS

This TIS considers a five-year horizon period up to the year 2026 for the future traffic conditions. The following sections detail assumptions made for the future background traffic conditions, including general traffic growth on corridors, additional site traffic as generated by other developments in the area, and proposed road improvements. This section will also detail current and expected service improvements to the existing MiWay transit network.

3.1 CORRIDOR GROWTH RATES

The five-year corridor growth rates to be applied to Dundas Street East were obtained based on consultation done in 2017 with City of Mississauga Transportation Planning Section staff. The recommended projected growth rates are shown in **Table 3-1**. These growth rates assume lane reductions on Hurontario Street from three through lanes in each direction to two through lanes in each direction by the year 2024 as part of the completion of the Hurontario Light Rail Transit (LRT).

Table 3-1: Corridor Growth Rates

Compound Annual Growth for Dundas Street East		
Peak Hour	**Eastbound**	**Westbound**
AM	0.0%	2.0%
PM	1.5%	0.0%

3.2 BACKGROUND DEVELOMENTS

Based on a review of the City of Mississauga's development application database, one (1) background development has been identified that is expected to impact the surrounding road network, including the study area and subject site. As outlined in **Table 3-2**, the background development is a 16-storey mixed-use development located at 86-90 Dundas Street East with 334 residential units and 324m^2 of ground-floor commercial space. The trip generation and distribution from this background development was obtained from the Traffic Impact Study provided as part of the development application database. Detailed background development information can be found in **Appendix D**.

Table 3-2: Background Development Near Study Area, City of Mississauga Development Applications

Address	Description	Status
86-90 Dundas Street East	334 residential units, 324 m^2 commercial	Application in Progress

3.3 FUTURE BACKGROUND TRANSIT SERVICE IMPROVEMENTS

The City of Mississauga MiWay Transit has budgeted several service improvements relevant to the subject site in the next five years according to the **Mississauga MiWay 2017-2020 Business Plan and 2017 Budget**.

The Hurontario Light Rail Transit Project (LRT) is a 20 km Regional LRT spanning from Port Credit GO to the South and the Brampton Gateway Terminal to the North. As it relates to the subject site, the LRT has a proposed stop at Hurontario Street and Dundas Street East, as indicated in **Figure 3-1**. Construction for the Hurontario LRT began in Spring 2020, with the expected completion to be in fall 2024. Through most of its segment, the Hurontario LRT tracks will occupy the two inner road lands of the six-lane arterial and operate segregated from other traffic expect at intersections. The completion year of the Hurontario LRT is expected to be before the five-year time horizon of this TIS. However, to provide a conservative trip generation estimate, the modal split was still assumed to be 100% auto trips.

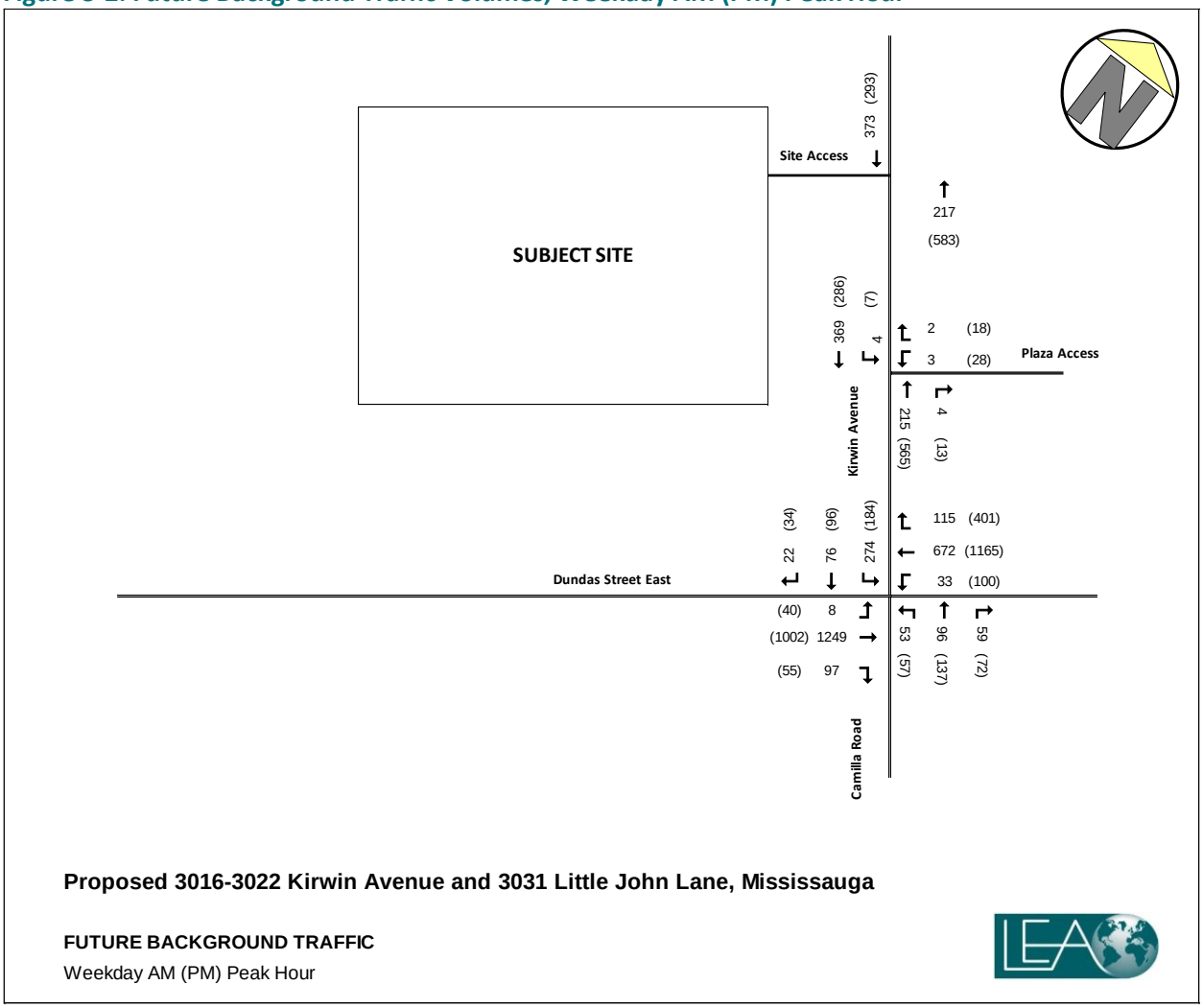
Figure 3-1: Hurontario LRT Route Map

As identified in **Section 2.2** of this TIS, the site is serviced by the 101 Dundas Express bus routes and the 1 and 1C Dundas routes. The City of Mississauga has proposed improvements to the 101 and its variants as part of its *2020 High Frequency Network Strategy*. By 2020 the City envisions frequency improvements of approximately five minutes during peak hours. The City has proposed the same improvement for the existing Hurontario bus routes. In conclusion, the expected transit service improvements identified in this section could reasonably reduce the number of auto trips in and out of the subject site. However, the potential modal split from these projects was not included in the future background and site trip generation to provide a more conservative forecast of traffic volumes.

3.4 FUTURE BACKGROUND TRAFFIC VOLUMES

Future background traffic volumes were derived by combining the existing balanced traffic volumes with the volumes associated with future background corridor growth and future background developments. The future background traffic volumes for the weekday AM and PM peak hours are shown in **Figure 3-2**.

Figure 3-2: Future Background Traffic Volumes, Weekday AM (PM) Peak Hour



3.5 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS

Intersection capacity analysis for future background traffic conditions was conducted with the same parameters as the existing traffic analysis. The future background intersection capacity analysis for the weekday AM and PM peak hours is summarized in **Table 3-3** and **Table 3-4** for signalized and unsignalized intersections, respectively. Detailed capacity results are found in **Appendix E**.

Table 3-3: Future Background Signalized Intersection Capacity Analysis

Intersection	AM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dundas Street East and Kirwin Avenue / Camilla Road	0.70	35.0	C	EBL	0.03	24.9	C	1.4	4.8
				EBT	0.87	44.6	D	171.6	203.5
				EBR	0.09	25.6	C	4.9	16.1
				WBL	0.27	28.8	C	4.6	10.0
				WBT	0.41	24.9	C	64.0	78.3
				WBR	0.07	20.7	C	0.0	9.7
				NBL	0.13	33.3	C	10.9	23.8
				NBT	0.24	34.7	C	28.8	52.3
				SBL	0.52	30.1	C	51.8	84.0
				SBT	0.12	25.2	C	15.5	31.0
Intersection	**PM Peak Hour**								
	Overall			**Movements of Interest**					
	V/C	**Delay (s)**	**LOS**	**Movement**	**V/C**	**Delay (s)**	**LOS**	**Queue (m)**	
								50th	**95th**
Dundas Street East and Kirwin Avenue / Camilla Road	0.58	34.4	C	EBL	0.46	38.0	D	8.2	21.2
				EBT	0.83	45.0	D	126.3	151.5
				EBR	0.04	29.3	C	0.0	6.4
				WBL	0.54	30.9	C	14.5	24.8
				WBT	0.75	33.9	C	131.8	155.7
				WBR	0.26	24.4	C	0.0	16.9
				NBL	0.12	27.7	C	9.9	22.6
				NBT	0.30	29.9	C	35.7	64.1
				SBL	0.35	21.7	C	26.5	49.4
				SBT	0.15	20.6	C	17.2	35.0

As shown in **Table 3-3**, under future background conditions, the signalized intersection continues to operate acceptable during the weekday AM and PM peak hours, with overall LOS of 'C'. All individual movements are operating similarly to existing conditions with residual capacity and acceptable delays, except for the eastbound through movement during the AM peak period.

Table 3-4: Future Background Unsignalized Intersection Capacity Analysis

Intersection	Movement	AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Kirwin Avenue and Plaza Access	WBLR	5	568	11.4	0.2	0.01	B
	SBL	4	1327	0.1	0.1	0.00	A
Intersection	**Movement**	**PM Peak Hour**					
		Flow Rate (vph)	**Capacity (vph)**	**Control Delay (s)**	**95th Queue (m)**	**V/C**	**LOS**
Kirwin Avenue and Plaza Access	WBLR	46	365	16.3	3.3	0.13	C
	SBL	7	974	0.3	0.2	0.01	A

As shown in **Table 3-4**, under future background conditions, the unsignalized intersections are generally expected to operate with acceptable levels of service, similar to the existing conditions. There were no other constraints identified, and residual capacity is present for all movements.

4 SITE GENERATED TRAFFIC

4.1 SITE TRIP GENERATION

The current site plan provided by DVB Real Estate Investments Inc. contains a total of 148 residential units in an eight (8) storey mid-rise rental apartment building. Trip generation rates for the residential component were estimated using residential trip generation rates obtained from the ITE Trip Generation Manual 10th Edition using the land-use code 221 (Multifamily Housing – Mid-Rise).

The proposed development is expected to generate 53 trips in the AM peak hour (14 inbound, 39 outbound) and 65 trips in the PM peak hour (40 inbound, 25 outbound). The residential trip generation calculations for the proposed development, and the development located within the site area can be found in **Table 4-1**.

Table 4-1: Site Trip Generation

Land Use		Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
148 Units - Residential (ITE Code 221)	Directional Distribution	26%	74%		61%	39%	
	Average Vehicle Trip Rates	0.09	0.27	0.36	0.27	0.17	0.44
	Trips Generated for Total Units	14	39	53	40	25	65

4.2 SITE TRIP DISTRIBUTION AND ASSIGNMENT

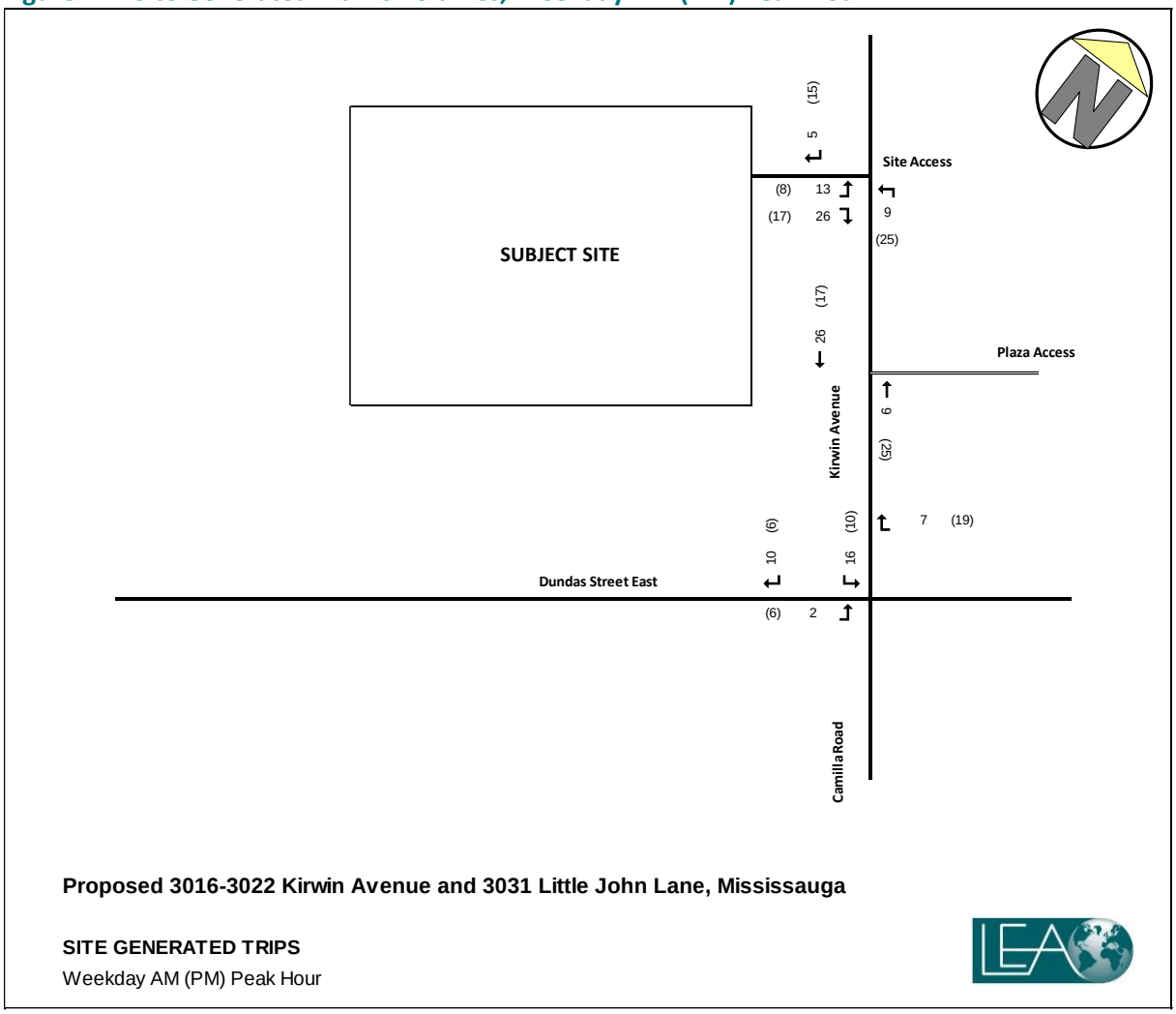
Trip distribution of site traffic for the residential development was estimated using the 2016 Transportation Tomorrow Survey (TTS) data. It is expected that most auto trips originating from the subject site will be traveling to the destination of work during the weekday AM peak hour. For the weekday PM peak hour, most residential auto trips will be traveling from the place of work to the subject site. Therefore, the trip distribution for the residential trips was calculated based on TTS data for home-based work trips.

Results of the TTS data extraction indicate that the general distribution of residential site traffic will be similar for the weekday AM and PM peak hours. **Table 4-2** below summarizes the general directional distribution of the site traffic with traffic shown in **Figure 4-1**.

Table 4-2: Site Trip Generation

To/From	Inbound Distribution	Outbound Distribution
North	68%	57%
South	4%	5%
East	14%	12%
West	14%	26%
Total	**100%**	**100%**

Figure 4-1: Site Generated Traffic Volumes, Weekday AM (PM) Peak Hour



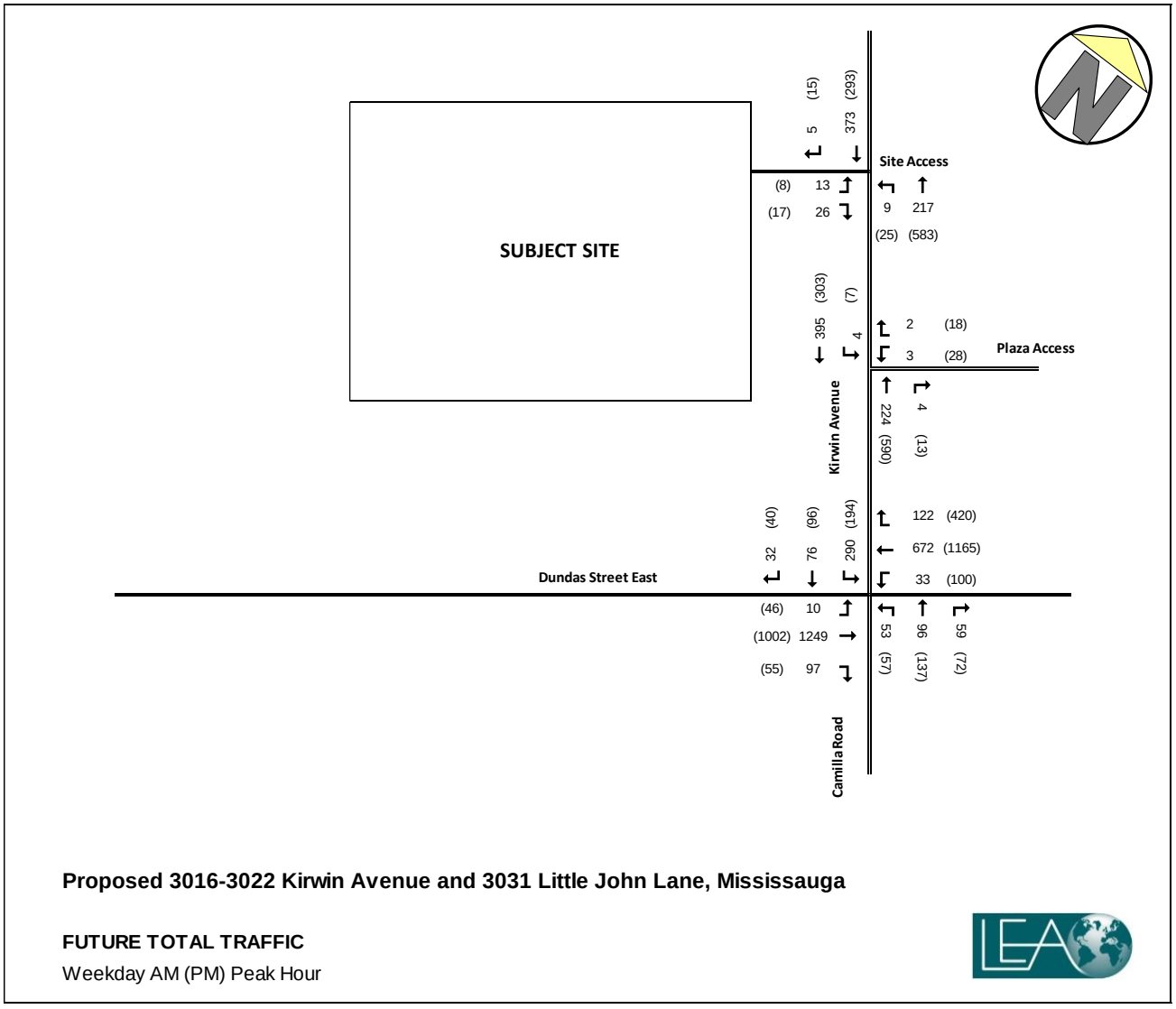
5 FUTURE TOTAL TRANSPORTATION CONDITIONS

5.1 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic volumes were derived by combining the future background traffic volumes with the site generated traffic volumes.

The future background traffic volumes for the weekday AM and PM peak hours are shown in **Figure 5-1**.

Figure 5-1: Future Total Traffic Volumes, Weekday AM (PM) Peak Hour



5.2 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS

Intersection capacity analysis for future total traffic conditions was conducted with the same parameters as the future background analysis. The future total intersection capacity analysis for the weekday AM and PM peak hours is summarized in **Table 5-1** and **Table 5-2** for signalized and unsignalized intersections, respectively. Detailed results are provided in **Appendix F**.

Table 5-1: Future Total Signalized Intersection Capacity Analysis

Intersection	AM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dundas Street East and Kirwin Avenue / Camilla Road	0.71	35.0	C	EBL	0.03	24.9	C	1.7	5.7
				EBT	0.87	44.6	D	171.6	203.5
				EBR	0.09	25.6	C	4.9	16.1
				WBL	0.27	28.8	C	4.6	10.0
				WBT	0.41	24.9	C	64.0	78.3
				WBR	0.08	20.7	C	0.0	10.0
				NBL	0.13	33.3	C	10.9	23.8
				NBT	0.24	34.7	C	28.8	52.3
				SBL	0.55	31.0	C	55.4	89.2
				SBT	0.14	25.4	C	16.6	33.2
Intersection	PM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dundas Street East and Kirwin Avenue / Camilla Road	0.59	34.3	C	EBL	0.53	40.9	D	9.7	24.3
				EBT	0.83	44.9	D	126.3	151.5
				EBR	0.04	29.3	C	0.0	6.4
				WBL	0.54	30.8	C	14.5	24.8
				WBT	0.75	33.8	C	131.8	155.7
				WBR	0.27	24.5	C	0.0	16.9
				NBL	0.12	27.8	C	9.9	22.7
				NBT	0.30	30.0	C	35.7	64.1
				SBL	0.37	21.9	C	28.1	51.8
				SBT	0.15	20.8	C	17.9	36.1

As shown in **Table 5-1**, under future total conditions, the signalized intersection is expected to operate with overall LOS 'C' during both peak hours. All individual movements are expected to operate within the roadway capacity and with acceptable delays.

Table 5-2: Future Total Unsignalized Intersection Capacity Analysis

Intersection	Movement	AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Kirwin Avenue and Plaza Access	WBLR	5	547	11.6	0.2	0.01	B
	SBL	4	1316	0.1	0.1	0.00	A
Kirwin Avenue and Site Access	EBLR	42	548	12.1	1.9	0.08	B
	NBTL	10	1149	0.4	0.2	0.01	A
Intersection	**Movement**	**PM Peak Hour**					
		Flow Rate (vph)	**Capacity (vph)**	**Control Delay (s)**	**95th Queue (m)**	**V/C**	**LOS**
Kirwin Avenue and Plaza Access	WBLR	46	345	17.0	3.5	0.13	C
	SBL	7	951	0.3	0.2	0.01	A
Kirwin Avenue and Site Access	EBLR	27	447	13.6	1.5	0.06	B
	NBTL	27	1225	0.6	0.5	0.02	A

As shown in **Table 5-2**, under future total conditions, the unsignalized intersections are generally expected to operate with acceptable levels of service, similar to the future background conditions. The results demonstrate minimal delays and queuing for the site access. No constraints were identified, and residual capacity is present for all movements.

Overall, the proposed development is expected to have minimal traffic impact to the intersections in the study area. All intersections and the proposed site access operate within the roadway capacity and within acceptable delays. Based on the above analysis, it can be concluded that site-generated traffic can readily be accommodated by the surrounding road network without the need for any improvements.

6 PARKING REVIEW

This section will review the vehicular parking standards based on the City's Zoning By-law for the subject site and provide justification to support the proposed parking provisions.

6.1 VEHICULAR ZONING BY-LAW REQUIREMENTS

The subject site is governed by the requirements within the City of Mississauga Zoning By-law 0025-2007. The parking requirements and the proposed supply is summarized in **Table 6-1** below.

Table 6-1: Vehicle Parking Requirements and Proposed Supply

Type	No. of Units or GFA	City of Mississauga Zoning By-law 0225-2007, Table 3.1.2.1, Rental Apartment		Proposed Development		
		Min Parking Rate	Min Parking Spaces	Parking Rate	Parking Spaces	Surplus (+) or Deficiency (-)
Residential						
1 bedroom	113	1.18 spaces/unit	133	1.06	157	-25
2 bedrooms	32	1.36 spaces/unit	44			
3+ bedroom	3	1.50 spaces/unit	5			
		Resident Sub-Total	**182**			
Visitors	148	0.20 spaces/unit	30	0.14	21	-9
		Total Parking	**212**	**-**	**178**	**-34**

According to the Zoning By-law, the subject site is required to provide a total of 212 parking spaces consisting of 182 resident parking spaces and 30 visitor parking spaces. The development is proposing a total of 178 parking spaces in two (2) levels of underground parking, which is 34 spaces deficient from the By-law requirement.

The proposed accessible parking spaces were also reviewed against the City of Mississauga's Zoning By-law 0025-2007. **Table 6-2** summarizes the accessible parking requirements and the proposed supply for the proposed development.

Table 6-2: Accessible Spaces for Vehicle Parking Requirements and Proposed Supply

Type	Required Total	City of Mississauga Zoning By-law 0225-2007, Table 3.1.3.1		Proposed Development	
		Min Accessible Spaces		Accessible Spaces	Surplus (+) or Deficiency (-)
Residential Visitor	30	Between 13-100: 4% of the total	2 (1 Type A, 1 Type B)	3 Type A, 4 Type B	-
Total			**2**	**7**	**+5**

According to the Zoning By-law, the subject site is required to provide a total of 2 accessible parking spaces consisting of 1 Type A and 1 Type B parking space. The development is proposing a total of 7 accessible parking spaces consisting of 3 Type A and 4 Type B, which exceeds the By-law requirement.

6.2 REDUCED VEHICULAR PARKING JUSTIFICATION

The following section presents the parking justification to support the development's proposed parking provisions. The future transit improvements, proxy parking demand surveys, and an inventory of pursued parking rates of surrounding developments were reviewed to determine the appropriateness of the reduced parking provisions for the subject site.

6.2.1 Future Transit Improvements

As discussed in **Section 3.3**, the subject site is within close proximity to the proposed Hurontario LRT line. The 18km rapid transit route will operate on a dedicated right-of-way and provide connections between Mississauga and Brampton. The line will have a total of 19 stops, with connections to GO Stations and key MiWay and Brampton Transit routes. The Hurontario LRT will connect people and businesses along and surrounding Hurontario Street, where it is predicted that within the next two (2) decades, 25% of the City's employments and residents will be located along this corridor. This project will not only provide high-frequency transit service along Hurontario Street but will also encourage pedestrian and cyclist infrastructure to be pursued concurrently.

In addition, as part of Metrolinx's GO Expansion Program, the Milton Line will offer up to 30% more trips and 15-minute rush hour service, in addition to upgraded stations. This will further improve transit accessibility for the subject site and provide convenient weekday travel to the Toronto downtown core. The Cooksville GO Station will also provide connections to the future Hurontario LRT Line.

Given the location of the subject site near existing higher order transit stations (Cooksville GO Station) and future higher order transit stops (Hurontario LRT), a reduced demand for parking is reasonable for the subject site. It is anticipated that the travel behaviour of the neighbourhood will further become less auto dependent with the introduction of the Hurontario LRT line.

6.2.2 Residential Proxy Site Survey

A proxy parking utilization survey was conducted to understand the parking demand for comparable sites within Mississauga, and to determine if the proposed reduced parking rate is appropriate for the proposed development. 2929 Aquitaine Avenue has 175 residential units and provides 388 parking spaces (348 underground for residents and 40 surface spaces for visitors). 2929 Aquitaine Avenue is a residential apartment building located within a 20-minute walk of the Meadowvale GO Station on the Milton GO line. The parking supply for the building is 2.0 spaces per unit, which is greater than the Zoning By-law 0225-2007 minimum requirements. A comparison of the proxy site and subject site is shown in **Table 6-3**.

Table 6-3: Comparison of Proxy Site and Subject Site

Proxy Site Location	Site Statistics	Transit and Neighbourhood Context	Walk/Transit/Bike Score
2929 Aquitaine Avenue	175 residential units	**Transit Access:** MiWay bus routes along Aquitaine Avenue and Winston Churchill Boulevard; 20-minute walk to Meadowvale GO Station. **Walkability:** Located within a residential neighbourhood, adjacent to the commercial plaza located at the Aquitaine Avenue and Winterson Churchill Boulevard intersection.	TransitScore™: 68 (Good Transit) WalkScore™: 71 (Very Walkable) BikeScore™: 55 (Bikeable)
Subject Site			
3016 Kirwin	152 residential units	**Transit Access:** MiWay bus Dundas Street East and Hurontario Street; 15-minute walk to Cooksville GO Station. **Walkability:** Located within a residential neighbourhood, adjacent to the commercial uses along Dundas Street East and Kirwin Avenue.	TransitScore™: 64 (Good Transit) WalkScore™: 79 (Very Walkable) BikeScore™: 63 (Bikeable)

Given the similarity in transportation context and access to the MiWay transit network, this site is considered appropriate for estimating the subject site's parking demand.

The proxy surveys were conducted on Friday, August 25th, and Saturday, August 26th, 2017 from 5:00PM to 9:00PM and Saturday, August 26th from 11:00AM to 9:00PM at 30-minute intervals. A summary of peak resident and visitor demand rates for the study period is provided in **Table 6-4** below.

Table 6-4: Residential Proxy Parking Utilization Results

	Number of Residential Units	Peak Residential Demand	Peak Residential Demand Rate	Peak Visitor Demand	Peak Visitor Demand Rate
Friday, August 25	175	117	0.67	32	0.18
Saturday, August 26		167	0.95	11	0.06

Based on the proxy parking surveys, the peak resident and visitor demand occurred on Saturday, August 26th, with a resident demand of 167 spaces (0.95 spaces per unit) and visitor demand of 11 spaces (0.07 spaces per unit). The data from the proxy survey reveals that the typical parking demand rate is significantly lower than the building provisions, and lower than the requirements set out in the City's Zoning By-law 0225-2007.

Given the similarity in transportation context between these sites and the subject site, it is expected that a similar residential demand will exist at the proposed development. The proposed supply of 157 resident spaces or 1.06 spaces per unit and 21 visitor spaces or 0.14 spaces per unit is comparably higher than observed at the proxy site. The parking demand rate observed that this site provides reasonable support for the proposed development's reduced parking supply and indicates that the proposed development can meet the expected parking demand.

6.2.3 Development Precedents

To further support the evaluation of the proposed parking supply, a review was conducted of comparable developments pursuing reduced parking rates as part of an active development application where a reduction from the by-law requirements has been sought. The developments reviewed were selected based on their similarity to the subject development and location. Information regarding the development applications were obtained from the City's Development Application database. **Table 6-5** summarizes the reduced parking rates for developments that have been approved or that are under review.

Table 6-5: Pursued Residential Parking Rates

Location	Site Stats	Transit Context	Proposed Parking Rate (spaces/unit)	Unit Mix	Application Status
89-95 Dundas Street West	16 storey mixed use development; 419 residential units. 385m^2 of retail GFA	Bus service along Dundas Street West and Confederation Parkway; 12-minute walk to Cooksville GO Station	0.92 (Res) 0.15 (Vis)	1BD – 82% 2BD – 18%	Rezoning Under Review
86-90 Dundas Street East	16 storey mixed use development; 334 residential units 324m^2 of retail GFA	Bus service along Dundas Street East; 15-minute walk to Cooksville GO Station	0.92 (Res) 0.15 (Vis)	1BD – 80% 2BD – 20%	Rezoning Under Review
2444 Hurontario Street	31 storey mixed use development; 215 residential units; 3 live-work units	Bus service along Hurontario Street; 10-minute bus ride to Cooksville GO Station	0.84 (Res) 0.15 (Vis)	1BD – 57% 2BD – 43%	Rezoning Under Review
1 Fairview Road East	36 storey mixed used development; 460 residential units; 270m^2 of retail GFA	Bus service along Hurontario Street; 10-minute walk to Cooksville GO Station	0.68 (Res) 0.10 (Vis)	1BD – 68% 2BD – 32%	Rezoning Under Review

A review of the nearby recently pursued residential developments reveal significantly reduced parking rates in comparison to the City of Mississauga Zoning By-Law 0225-2007 requirements. The reduced parking rates are well justified by the area's walkability and variety of shops and services offered along Dundas Street East, as well as proximity to surface and higher order transit. This trend of providing reduced resident and visitor parking supplies is reflective of the market demand from groups that seek to live car-free lifestyles within this neighbourhood. The proposed development will attract individuals who

are expected to adopt a car-free lifestyle, where their daily needs can be accommodated without driving. Therefore, the proposed parking supply is consistent with the characteristics of this neighbourhood and is considered appropriate as it is expected that a large portion of future residents will travel by non-auto modes, especially with the future implementation of the Hurontario LRT.

6.3 BICYCLE PARKING

While the City of Mississauga Zoning By-Law does not require bicycle parking, the City of Mississauga Cycling Master Plan generally recommends bicycle parking rates to apply to site development applications. The bicycle parking requirements are summarized in **Table 6-6.**

Table 6-6: Bicycle Parking Summary

Proposed Land Use	No. of Units or GFA	Min Parking Rate	Required Bike Parking Spaces	Proposed Development	
				Parking Spaces	Surplus (+) or Deficiency (-) from By-Law
Residential	148 units	Long-Term: 0.70 spaces/unit	103	Long-term: 101	-2
		Short-Term: 0.08 spaces/unit	12	Short-Term: 14	+2
		Total	**116**	**115**	**0**

The proposed development's provision of 115 bicycle parking spaces satisfies the recommended bicycle parking requirements.

7 LOADING

The loading requirements for the subject site were reviewed based on the City of Mississauga Zoning By-Law 0225-2007. The loading space requirements for the proposed development are summarized in **Table 7-1**.

Table 7-1: Loading Requirements and Proposed Supply

Proposed Land Use	No. of Units or GFA	City of Mississauga Zoning By-law 0225-2007, Part 3.1.4.5	Proposed Development
		Min Loading Space	Loading Supply
Residential	148 units	Min of 30 units: 1 loading space	1 loading space for garbage collection

The Zoning By-Law dictates that for residential buildings with more than 30 dwelling units, one (1) loading space is required per residential building. The subject site will provide one (1) loading space, thereby satisfying the Zoning By-Law Requirements.

The swept path diagrams demonstrating loading functionality are found in **Appendix G**.

8 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a set of strategies which strive towards a more efficient transportation network by influencing travel behaviour. Effective TDM measures can reduce vehicle usage and encourage residents to engage in more sustainable methods of travel. There are various opportunities

to incorporate TDM measures that support alternative modes of transportation. The recommendations should enhance non-single occupant auto vehicle trips for the future residents of the subject development. These TDM strategies are critical in achieving a balanced multi-modal transportation system in the City of Mississauga. A variety of multimodal infrastructure strategies and TDM measures for the residential development have been detailed below.

8.1 PEDESTRIAN BASED STRATEGIES

Building entrances are to be oriented close to the street with direct connections to the pedestrian pathways.

The proposed entrances to the building fronts onto the laneway, which is directly connected to Kirwin Avenue, which provides convenient access for pedestrians, transit users and cyclists. This entrance provides residents connectivity to the neighbourhood's pedestrian network, as well as the wealth of nearby amenities. Therefore, this provides convenient linkages for pedestrians and cyclists to access the building.

The pedestrian network should be provided with an enhanced landscape that would encourage walking.

The pedestrian connection along the laneway and Kirwin Avenue should provide a pleasant and safe pedestrian experience through enhanced landscaping. This can be achieved by means of benches, cover, planting, lighting, and other landscaping elements. The pedestrian network in the vicinity of the subject site will provide a variety of amenities for a safe and enjoyable pedestrian environment, which will encourage the use of active transportation modes.

Walking distance to nearby amenities

The subject development is conveniently located from a pedestrian perspective. The area provides excellent access to schools, public parks, restaurants, retail stores, pharmacies, and banks. All of these uses can be accessed within a 10-minute walking distance.

8.2 CYCLING-BASED STRATEGIES

Provision of bicycle parking supply.

The proposed development is providing bicycle parking facilities to support and encourage active transportation. A supply of 115 bicycle parking spaces (14 short-term, 101 long-term) satisfies the recommended requirement. The short-term spaces should be located in highly visible and convenient areas close to the building entrances for visitors. Long-term bicycle parking should be provided in secured and weather-protected locations, including storage rooms, bicycle lockers and underground parking areas.

Promote and increase cycling awareness and multi-modal transport.

Information packages should be provided to residents to encourage active transportation and different travel demand management programs. This should include educating residents on the health and environmental benefits of cycling, as well as providing pedestrian, cycling and transit maps of the available infrastructure in the surrounding area.

8.3 TRANSIT-BASED STRATEGIES

Connection to transit network

As noted, the proposed development will provide excellent connections to MiWay surface transit as well as the future Hurontario LRT. Bus stops are available at the intersection of Dundas Street East and Camilla Road/Kirwin Avenue, where residents will have access to various MiWay transit routes. Additionally, a future LRT station stop has been proposed at the intersection of Dundas and Hurontario Street. Therefore, the proposed development is ideally placed from a transit access perspective.

Communication strategy & transit incentive program

In order for residents to take advantage of the transit services surrounding the subject site, it is recommended that the owners provide information packages and communications to increase transit awareness and multi-modal transport by encouraging active transportations and different travel demand management programs. The information packages should contain public transit information such as route maps and schedule timetables.

8.4 PARKING-DEMAND MANAGEMENT STRAGIES

Provide reduced parking provision on the subject site

The proposed development will provide a reduced parking supply on the subject site. Given the subject site's convenient location within a well-connected transit system and walkable neighbourhood surrounded by many amenities and services, most daily activities are not expected to require driving from the proposed redevelopment. By providing reduced parking on site, the proposed redevelopment will deter residents from driving and promote the use of public transit and active transportation.

Unbundled parking

It is recommended that the proposed development provide unbundled parking, meaning that parking spaces will be sold separately from the unit. It is anticipated that parking spaces will be offered at a price point determined based on market conditions. This will facilitate residents to shift to other travel alternatives and reduce auto-dependency.

9 CONCLUSIONS AND RECOMMENDATIONS

- The proposed development will consist of an eight (8)-storey rental apartment building with a total of 148 residential units and two levels of underground parking consisting of 178 total parking spaces. The site will be accessible via a vehicular access along Kirwin Avenue.
- The subject site is located in an area that is well-serviced by the MiWay transit network. The subject site is within walkable distance of bus stops at Dundas Street East and Kirwin Avenue/Camilla Road, as well as future access to the Hurontario LRT which will be accessible at the intersection of Dundas and Hurontario Street.
- Under existing conditions, all intersections in the study area are operating with residual capacity and acceptable LOS during both weekday AM and PM peak hours.
- Under future background conditions, the signalized intersections continue to operate within the roadway capacity and minimal delays during the weekday AM and PM peak hours.
- The proposed development is anticipated to generate 53 two-way trips (14 inbound, 39 outbound) during the weekday AM peak hour, and 65 two-way trips (40 inbound, 25 outbound) during the weekday PM peak hour.
- Under future total conditions, all studied intersections operate similarly to future background conditions. No capacity constraints are anticipated for the proposed site access. Therefore, the introduction of the proposed development will have minimal impact to the traffic operations of the surrounding road network.
- The proposed parking provisions consist of 178 total spaces, which is deficient from the City of Mississauga Zoning By-Law 0225-2007 parking space requirements by 34 spaces. However, daily activities are expected to be achievable conveniently from the subject site by transit or active transportation modes. A review of nearby recently pursued residential developments with reduced parking rates indicate that there is a housing demand from individuals who seek to lead a car-free lifestyle within the neighbourhood. By providing a reduced parking supply, the proposed development is expected to attract a population that is not car-dependent and will rely on alternative modes of travel for their daily needs.
- A comprehensive TDM plan is recommended to reduce single occupant vehicle trips and encourage alternative modes of travel including secured bicycle parking and direct and convenient access to transit stops.

APPENDIX A

Existing Traffic Data

LEA CONSULTING LTD

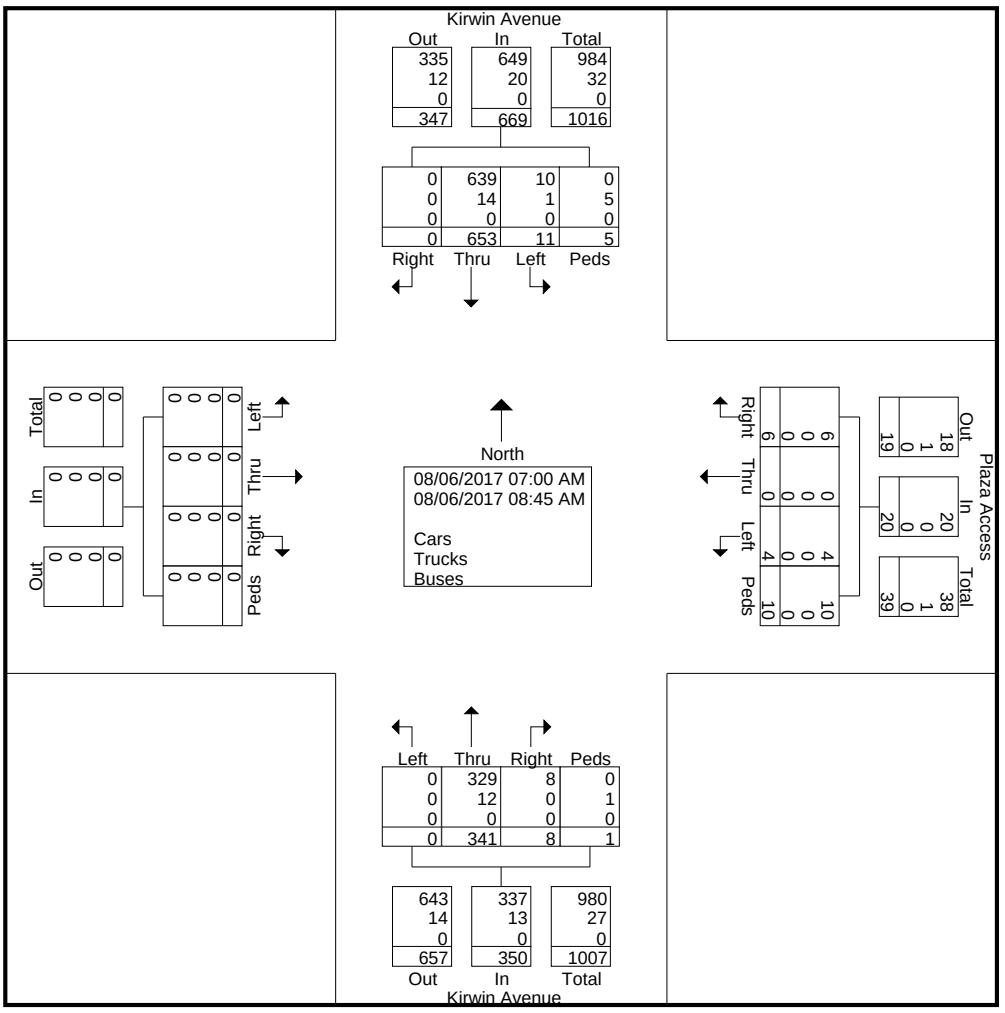
625 Cochrane Drive 9th Floor
Markham, Ontario, L3R 9R9

Project No.: 17360
Location: Kirwin Ave / Plaza Access
Weather: Sunny
Surveyor(s): KL

File Name : Kirwin&PlazaAccess-AM
Site Code : 17360127
Start Date : 08/06/2017
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Kirwin Avenue Southbound					Plaza Access Westbound					Kirwin Avenue Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	56	0	0	59	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	80
07:15 AM	2	63	0	0	65	0	0	3	2	5	0	25	2	0	27	0	0	0	0	0	97
07:30 AM	0	81	0	1	82	1	0	0	2	3	0	35	1	0	36	0	0	0	0	0	121
07:45 AM	2	84	0	0	86	0	0	1	2	3	0	45	1	0	46	0	0	0	0	0	135
Total	7	284	0	1	292	1	0	4	6	11	0	126	4	0	130	0	0	0	0	0	433
08:00 AM	1	86	0	1	88	0	0	1	1	2	0	47	0	0	47	0	0	0	0	0	137
08:15 AM	0	101	0	2	103	1	0	0	0	1	0	53	3	0	56	0	0	0	0	0	160
08:30 AM	0	83	0	0	83	1	0	1	1	3	0	65	0	1	66	0	0	0	0	0	152
08:45 AM	3	99	0	1	103	1	0	0	2	3	0	50	1	0	51	0	0	0	0	0	157
Total	4	369	0	4	377	3	0	2	4	9	0	215	4	1	220	0	0	0	0	0	606
Grand Total	11	653	0	5	669	4	0	6	10	20	0	341	8	1	350	0	0	0	0	0	1039
Apprch %	1.6	97.6	0	0.7		20	0	30	50		0	97.4	2.3	0.3		0	0	0	0		
Total %	1.1	62.8	0	0.5	64.4	0.4	0	0.6	1	1.9	0	32.8	0.8	0.1	33.7	0	0	0	0	0	
Cars	10	639	0	0	649	4	0	6	10	20	0	329	8	0	337	0	0	0	0	0	1006
% Cars	90.9	97.9	0	0	97	100	0	100	100	100	0	96.5	100	0	96.3	0	0	0	0	0	96.8
Trucks	1	14	0	5	20	0	0	0	0	0	0	12	0	1	13	0	0	0	0	0	33
% Trucks	9.1	2.1	0	100	3	0	0	0	0	0	0	3.5	0	100	3.7	0	0	0	0	0	3.2
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



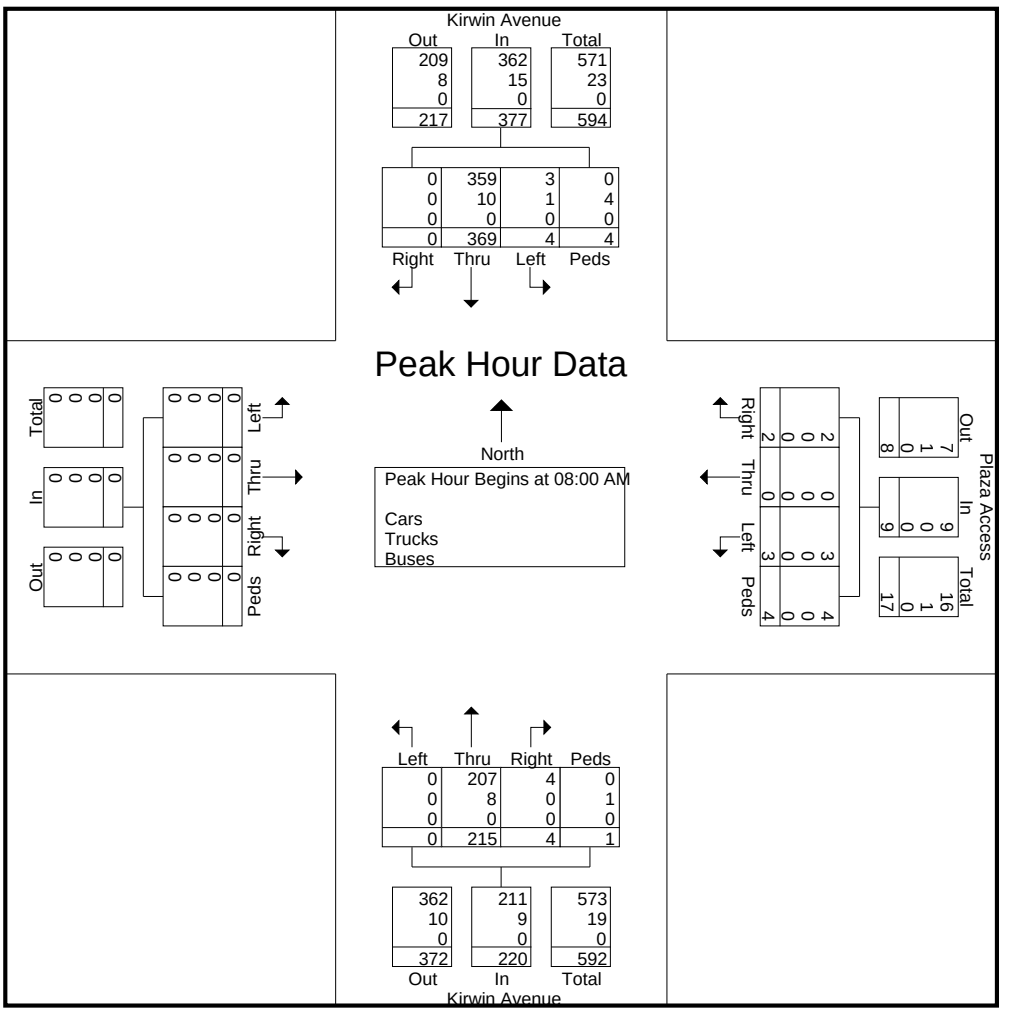
LEA CONSULTING LTD

625 Cochrane Drive 9th Floor
Markham, Ontario, L3R 9R9

Project No.: 17360
Location: Kirwin Ave / Plaza Access
Weather: Sunny
Surveyor(s): KL

File Name : Kirwin&PlazaAccess-AM
Site Code : 17360127
Start Date : 08/06/2017
Page No : 2

	Kirwin Avenue Southbound					Plaza Access Westbound					Kirwin Avenue Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	86	0	1	88	0	0	**1**	1	2	0	47	0	0	47	0	0	0	0	0	137
08:15 AM	0	**101**	0	**2**	**103**	**1**	0	0	0	1	0	53	**3**	0	56	0	0	0	0	0	**160**
08:30 AM	0	83	0	0	83	1	0	1	1	**3**	0	**65**	0	**1**	**66**	0	0	0	0	0	152
08:45 AM	**3**	99	0	1	103	1	0	0	**2**	3	0	50	1	0	51	0	0	0	0	0	157
Total Volume	4	369	0	4	377	3	0	2	4	9	0	215	4	1	220	0	0	0	0	0	606
% App. Total	1.1	97.9	0	1.1		33.3	0	22.2	44.4		0	97.7	1.8	0.5		0	0	0	0		
PHF	.333	.913	.000	.500	.915	.750	.000	.500	.500	.750	.000	.827	.333	.250	.833	.000	.000	.000	.000	.000	.947
Cars	3	359	0	0	362	3	0	2	4	9	0	207	4	0	211	0	0	0	0	0	582
% Cars	75.0	97.3	0	0	96.0	100	0	100	100	100	0	96.3	100	0	95.9	0	0	0	0	0	96.0
Trucks	1	10	0	4	15	0	0	0	0	0	0	8	0	1	9	0	0	0	0	0	24
% Trucks	25.0	2.7	0	100	4.0	0	0	0	0	0	0	3.7	0	100	4.1	0	0	0	0	0	4.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LEA CONSULTING LTD

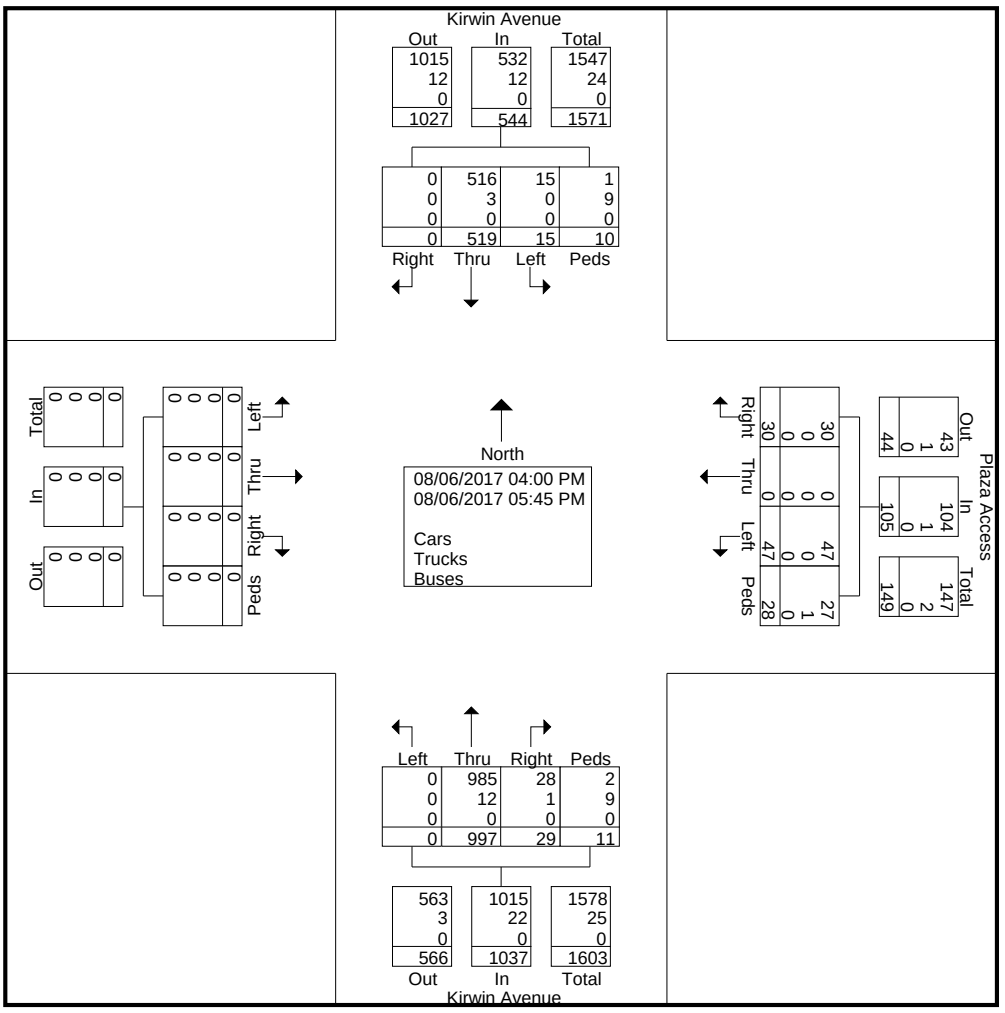
625 Cochrane Drive 9th Floor
Markham, Ontario, L3R 9R9

Project No.: 17360
Location: Kirwin Ave / Plaza Access
Weather: Sunny
Surveyor(s): Michael Loo

File Name : Kirwin&PlazaAccess-PM
Site Code : 17360127
Start Date : 08/06/2017
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Kirwin Avenue Southbound					Plaza Access Westbound					Kirwin Avenue Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	61	0	1	62	7	0	4	1	12	0	133	5	0	138	0	0	0	0	0	212
04:15 PM	1	65	0	5	71	2	0	5	7	14	0	100	2	2	104	0	0	0	0	0	189
04:30 PM	3	51	0	1	55	4	0	3	7	14	0	111	2	3	116	0	0	0	0	0	185
04:45 PM	2	81	0	0	83	5	0	3	4	12	0	135	0	3	138	0	0	0	0	0	233
Total	6	258	0	7	271	18	0	15	19	52	0	479	9	8	496	0	0	0	0	0	819
05:00 PM	3	63	0	3	69	6	0	4	1	11	0	142	7	2	151	0	0	0	0	0	231
05:15 PM	1	65	0	0	66	10	0	6	4	20	0	139	3	0	142	0	0	0	0	0	228
05:30 PM	1	60	0	0	61	7	0	5	2	14	0	123	3	0	126	0	0	0	0	0	201
05:45 PM	4	73	0	0	77	6	0	0	2	8	0	114	7	1	122	0	0	0	0	0	207
Total	9	261	0	3	273	29	0	15	9	53	0	518	20	3	541	0	0	0	0	0	867
Grand Total	15	519	0	10	544	47	0	30	28	105	0	997	29	11	1037	0	0	0	0	0	1686
Apprch %	2.8	95.4	0	1.8		44.8	0	28.6	26.7		0	96.1	2.8	1.1		0	0	0	0		
Total %	0.9	30.8	0	0.6	32.3	2.8	0	1.8	1.7	6.2	0	59.1	1.7	0.7	61.5	0	0	0	0	0	
Cars	15	516	0	1	532	47	0	30	27	104	0	985	28	2	1015	0	0	0	0	0	1651
% Cars	100	99.4	0	10	97.8	100	0	100	96.4	99	0	98.8	96.6	18.2	97.9	0	0	0	0	0	97.9
Trucks	0	3	0	9	12	0	0	0	1	1	0	12	1	9	22	0	0	0	0	0	35
% Trucks	0	0.6	0	90	2.2	0	0	0	3.6	1	0	1.2	3.4	81.8	2.1	0	0	0	0	0	2.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



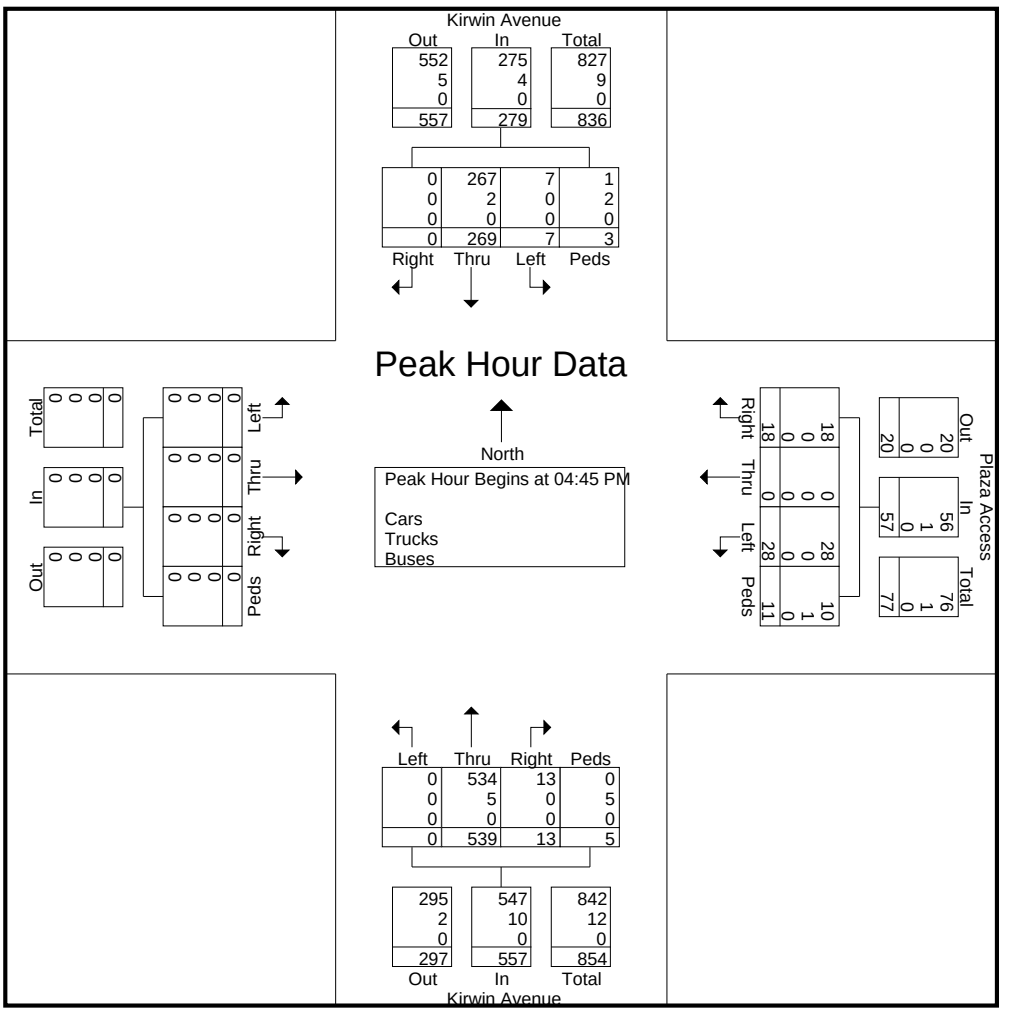
LEA CONSULTING LTD

625 Cochrane Drive 9th Floor
Markham, Ontario, L3R 9R9

Project No.: 17360
Location: Kirwin Ave / Plaza Access
Weather: Sunny
Surveyor(s): Michael Loo

File Name : Kirwin&PlazaAccess-PM
Site Code : 17360127
Start Date : 08/06/2017
Page No : 2

	Kirwin Avenue Southbound					Plaza Access Westbound					Kirwin Avenue Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	**81**	0	0	**83**	5	0	3	**4**	12	0	135	0	**3**	138	0	0	0	0	0	**233**
05:00 PM	**3**	63	0	**3**	69	6	0	4	1	11	0	**142**	**7**	2	**151**	0	0	0	0	0	231
05:15 PM	1	65	0	0	66	**10**	0	**6**	4	**20**	0	139	3	0	142	0	0	0	0	0	228
05:30 PM	1	60	0	0	61	7	0	5	2	14	0	123	3	0	126	0	0	0	0	0	201
Total Volume	7	269	0	3	279	28	0	18	11	57	0	539	13	5	557	0	0	0	0	0	893
% App. Total	2.5	96.4	0	1.1		49.1	0	31.6	19.3		0	96.8	2.3	0.9		0	0	0	0		
PHF	.583	.830	.000	.250	.840	.700	.000	.750	.688	.713	.000	.949	.464	.417	.922	.000	.000	.000	.000	.000	.958
Cars	7	267	0	1	275	28	0	18	10	56	0	534	13	0	547	0	0	0	0	0	878
% Cars	100	99.3	0	33.3	98.6	100	0	100	90.9	98.2	0	99.1	100	0	98.2	0	0	0	0	0	98.3
Trucks	0	2	0	2	4	0	0	0	1	1	0	5	0	5	10	0	0	0	0	0	15
% Trucks	0	0.7	0	66.7	1.4	0	0	0	9.1	1.8	0	0.9	0	100	1.8	0	0	0	0	0	1.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LEA CONSULTING LTD

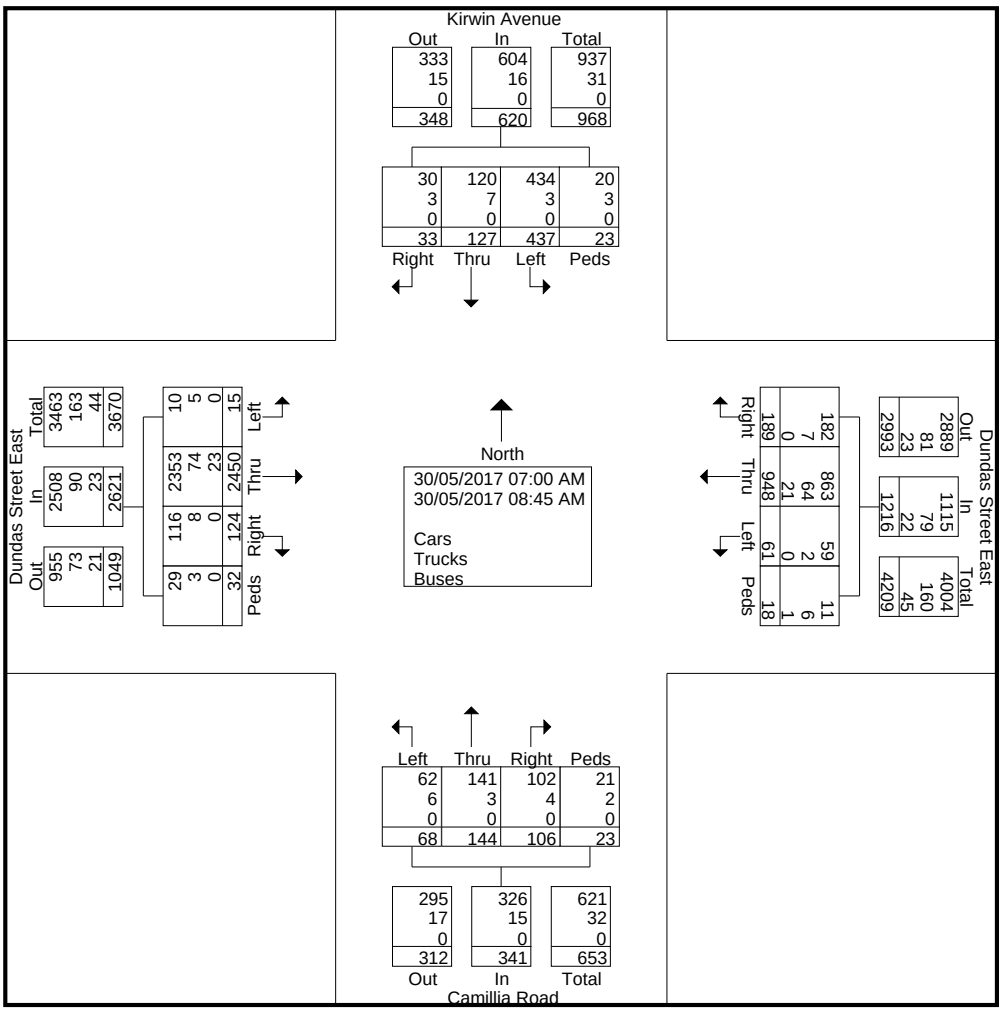
625 Cochrane Drive 9th Floor
Markham, Ontario, L3R 9R9

Project No.: 17360
Location: Kirwin Ave / Dundas St E
Weather: Cloudy / Rain
Surveyor(s): Belinda Wong & May Yue

File Name : Kirwin&Dundas-MERGED-AM
Site Code : 17360025
Start Date : 30/05/2017
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Kirwin Avenue Southbound					Dundas Street East Westbound					Camillia Road Northbound					Dundas Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	47	10	2	2	61	4	91	19	2	116	4	7	9	0	20	3	234	3	2	242	439
07:15 AM	37	11	3	3	54	6	99	14	3	122	3	8	12	0	23	2	301	12	3	318	517
07:30 AM	54	9	1	2	66	5	94	17	5	121	3	13	11	2	29	0	342	7	5	354	570
07:45 AM	61	21	5	3	90	13	98	26	3	140	5	20	15	4	44	2	350	5	4	361	635
Total	199	51	11	10	271	28	382	76	13	499	15	48	47	6	116	7	1227	27	14	1275	2161
08:00 AM	49	23	5	1	78	3	137	32	1	173	13	23	9	5	50	1	339	24	4	368	669
08:15 AM	49	23	5	3	80	10	123	19	1	153	14	30	17	5	66	2	289	26	6	323	622
08:30 AM	78	8	6	2	94	7	147	28	1	183	13	23	17	5	58	4	319	20	0	343	678
08:45 AM	62	22	6	7	97	13	159	34	2	208	13	20	16	2	51	1	276	27	8	312	668
Total	238	76	22	13	349	33	566	113	5	717	53	96	59	17	225	8	1223	97	18	1346	2637
Grand Total	437	127	33	23	620	61	948	189	18	1216	68	144	106	23	341	15	2450	124	32	2621	4798
Apprch %	70.5	20.5	5.3	3.7		5	78	15.5	1.5		19.9	42.2	31.1	6.7		0.6	93.5	4.7	1.2		
Total %	9.1	2.6	0.7	0.5	12.9	1.3	19.8	3.9	0.4	25.3	1.4	3	2.2	0.5	7.1	0.3	51.1	2.6	0.7	54.6	
Cars	434	120	30	20	604	59	863	182	11	1115	62	141	102	21	326	10	2353	116	29	2508	4553
% Cars	99.3	94.5	90.9	87	97.4	96.7	91	96.3	61.1	91.7	91.2	97.9	96.2	91.3	95.6	66.7	96	93.5	90.6	95.7	94.9
Trucks	3	7	3	3	16	2	64	7	6	79	6	3	4	2	15	5	74	8	3	90	200
% Trucks	0.7	5.5	9.1	13	2.6	3.3	6.8	3.7	33.3	6.5	8.8	2.1	3.8	8.7	4.4	33.3	3	6.5	9.4	3.4	4.2
Buses	0	0	0	0	0	0	21	0	1	22	0	0	0	0	0	0	23	0	0	23	45
% Buses	0	0	0	0	0	0	2.2	0	5.6	1.8	0	0	0	0	0	0	0.9	0	0	0.9	0.9



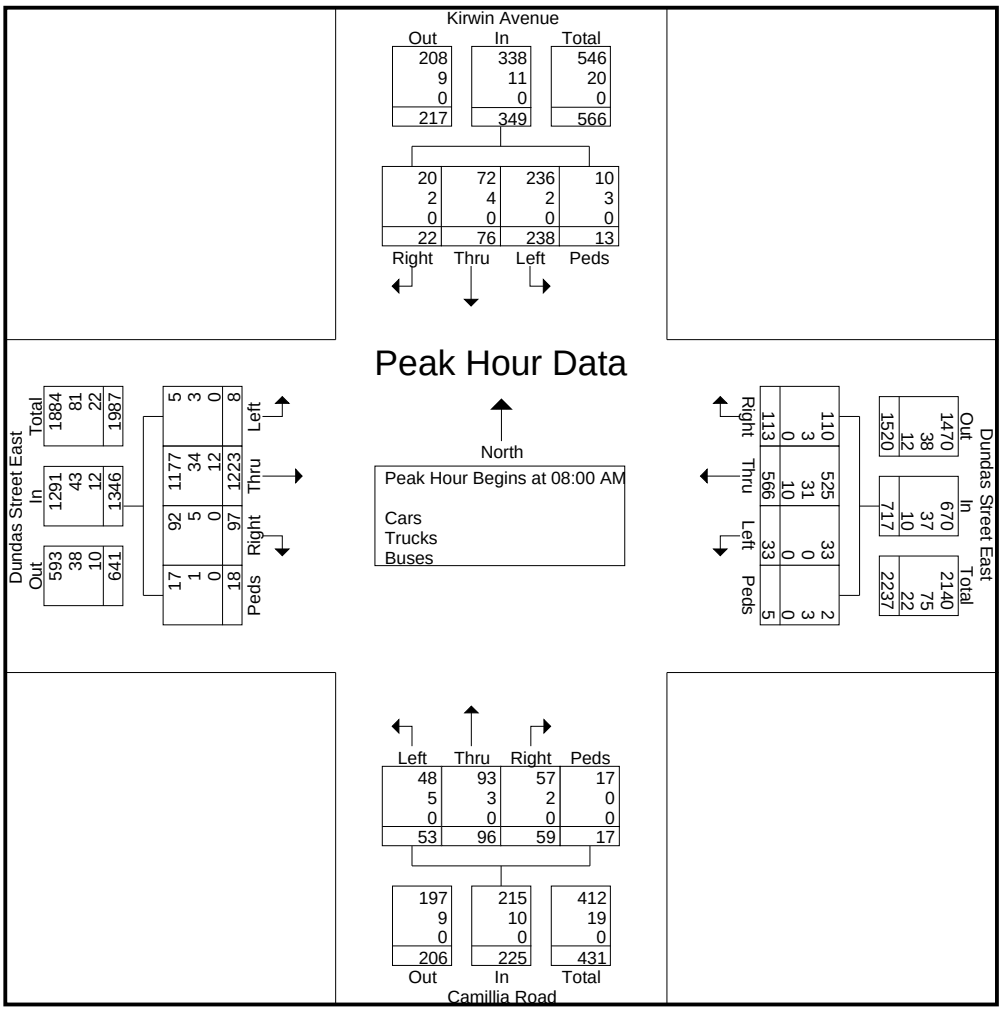
LEA CONSULTING LTD

625 Cochrane Drive 9th Floor
Markham, Ontario, L3R 9R9

Project No.: 17360
Location: Kirwin Ave / Dundas St E
Weather: Cloudy / Rain
Surveyor(s): Belinda Wong & May Yue

File Name : Kirwin&Dundas-MERGED-AM
Site Code : 17360025
Start Date : 30/05/2017
Page No : 2

	Kirwin Avenue Southbound					Dundas Street East Westbound					Camillia Road Northbound					Dundas Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	49	**23**	5	1	78	3	137	32	1	173	13	23	9	**5**	50	1	**339**	24	4	**368**	669
08:15 AM	49	23	5	3	80	10	123	19	1	153	**14**	**30**	**17**	5	**66**	2	289	26	6	323	622
08:30 AM	**78**	8	**6**	2	94	7	147	28	1	183	13	23	17	5	58	**4**	319	20	0	343	**678**
08:45 AM	62	22	6	**7**	**97**	**13**	**159**	**34**	**2**	**208**	13	20	16	2	51	1	276	**27**	**8**	312	668
Total Volume	238	76	22	13	349	33	566	113	5	717	53	96	59	17	225	8	1223	97	18	1346	2637
% App. Total	68.2	21.8	6.3	3.7		4.6	78.9	15.8	0.7		23.6	42.7	26.2	7.6		0.6	90.9	7.2	1.3		
PHF	.763	.826	.917	.464	.899	.635	.890	.831	.625	.862	.946	.800	.868	.850	.852	.500	.902	.898	.563	.914	.972
Cars	236	72	20	10	338	33	525	110	2	670	48	93	57	17	215	5	1177				
% Cars	99.2	94.7	90.9	76.9	96.8	100	92.8	97.3	40.0	93.4	90.6	96.9	96.6	100	95.6	62.5	96.2	94.8	94.4	95.9	95.3
Trucks	2	4	2	3	11	0	31	3	3	37	5	3	2	0	10	3	34	5	1	43	101
% Trucks	0.8	5.3	9.1	23.1	3.2	0	5.5	2.7	60.0	5.2	9.4	3.1	3.4	0	4.4	37.5	2.8	5.2	5.6	3.2	3.8
Buses	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	12	0	0	12	22
% Buses	0	0	0	0	0	0	1.8	0	0	1.4	0	0	0	0	0	0	1.0	0	0	0.9	0.8



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625 Cochrane Drive 9th Floor
Markham, Ontario, L3R 9R9

Project No.: 17360
Location: Kirwin Ave / Dundas St E
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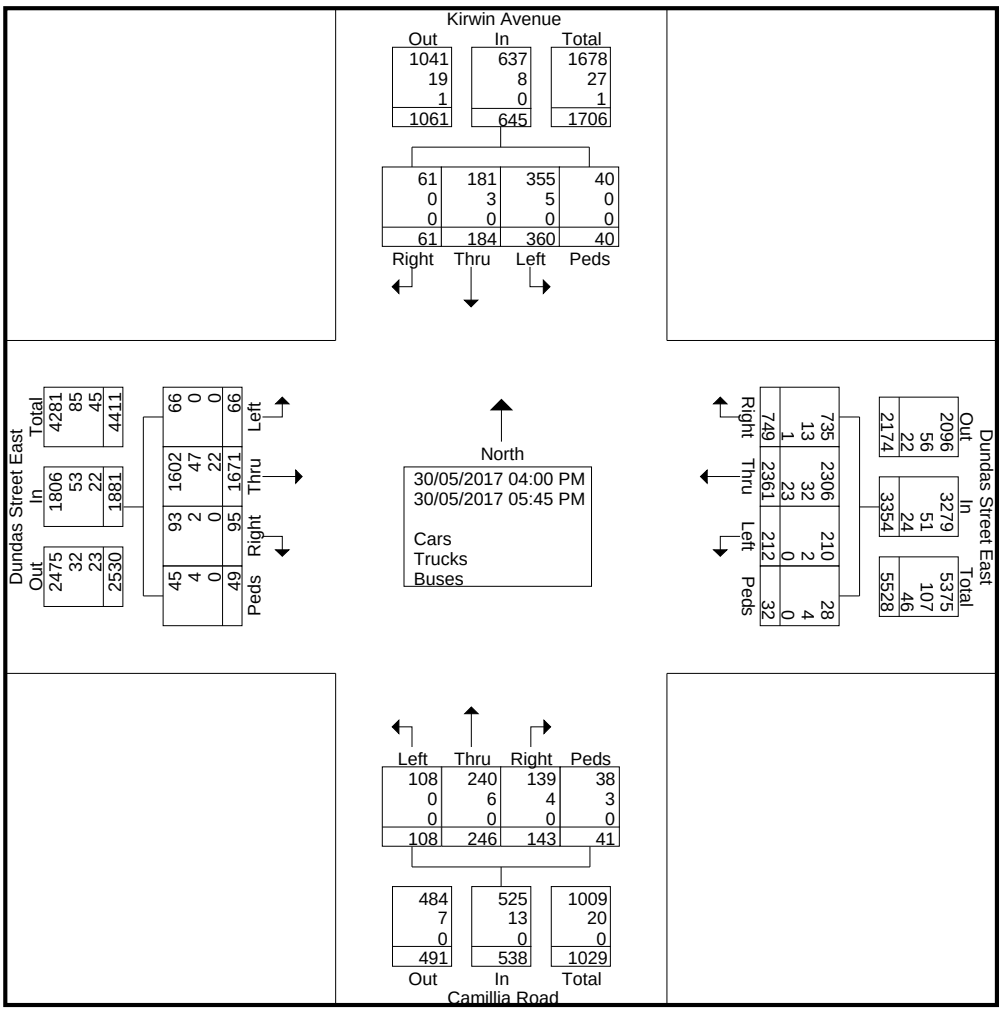
Surveyor(s): Belinda Wong & May Yue

File Name : Kirwin&Dundas-MERGED-PM
Site Code : 17360025
Start Date : 30/05/2017
Page No : 1

Groups Printed- Cars - Trucks - Buses

	Kirwin Avenue Southbound					Dundas Street East Westbound					Camillia Road Northbound					Dundas Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	45	26	4	6	81	28	299	70	3	400	15	22	25	7	69	4	212	9	7	232	782
04:15 PM	36	17	10	5	68	26	304	91	6	427	9	29	13	4	55	5	194	12	3	214	764
04:30 PM	41	21	7	8	77	28	307	97	1	433	15	23	18	5	61	11	184	11	5	211	782
04:45 PM	54	24	6	5	89	30	315	90	7	442	12	35	15	8	70	6	208	8	7	229	830
Total	176	88	27	24	315	112	1225	348	17	1702	51	109	71	24	255	26	798	40	22	886	3158
05:00 PM	49	16	4	8	77	28	243	106	7	384	18	39	18	2	77	8	197	12	11	228	766
05:15 PM	43	24	10	0	77	21	294	90	0	405	11	25	15	1	52	11	228	11	3	253	787
05:30 PM	45	25	5	2	77	19	318	97	2	436	16	49	18	5	88	11	233	15	7	266	867
05:45 PM	47	31	15	6	99	32	281	108	6	427	12	24	21	9	66	10	215	17	6	248	840
Total	184	96	34	16	330	100	1136	401	15	1652	57	137	72	17	283	40	873	55	27	995	3260
Grand Total	360	184	61	40	645	212	2361	749	32	3354	108	246	143	41	538	66	1671	95	49	1881	6418
Apprch %	55.8	28.5	9.5	6.2		6.3	70.4	22.3	1		20.1	45.7	26.6	7.6		3.5	88.8	5.1	2.6		
Total %	5.6	2.9	1	0.6	10	3.3	36.8	11.7	0.5	52.3	1.7	3.8	2.2	0.6	8.4	1	26	1.5	0.8	29.3	
Cars	355	181	61	40	637	210	2306	735	28	3279	108	240	139	38	525	66	1602	93	45	1806	6247
% Cars	98.6	98.4	100	100	98.8	99.1	97.7	98.1	87.5	97.8	100	97.6	97.2	92.7	97.6	100	95.9	97.9	91.8	96	97.3
Trucks	5	3	0	0	8	2	32	13	4	51	0	6	4	3	13	0	47	2	4	53	125
% Trucks	1.4	1.6	0	0	1.2	0.9	1.4	1.7	12.5	1.5	0	2.4	2.8	7.3	2.4	0	2.8	2.1	8.2	2.8	1.9
Buses	0	0	0	0	0	0	23	1	0	24	0	0	0	0	0	0	22	0	0	22	46
% Buses	0	0	0	0	0	0	1	0.1	0	0.7	0	0	0	0	0	0	1.3	0	0	1.2	0.7



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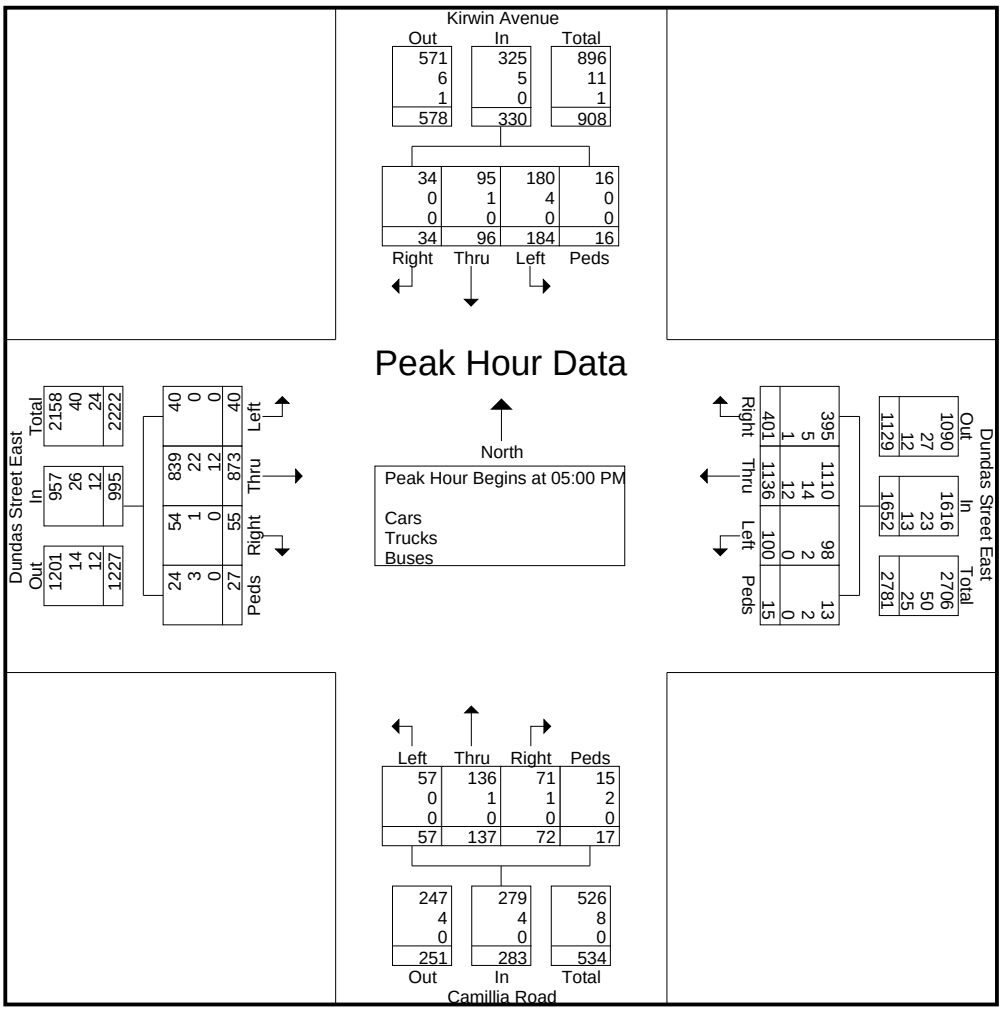
	Kirwin Avenue Southbound					Dundas Street East Westbound					Camillia Road Northbound					Dundas Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**49**	16	4	**8**	77	28	243	106	**7**	384	**18**	39	18	2	77	8	197	12	**11**	228	766
05:15 PM	43	24	10	0	77	21	294	90	0	405	11	25	15	1	52	**11**	228	11	3	253	787
05:30 PM	45	25	5	2	77	19	**318**	97	2	**436**	16	**49**	18	5	**88**	11	**233**	15	7	**266**	**867**
05:45 PM	47	**31**	**15**	6	**99**	**32**	281	**108**	6	427	12	24	**21**	**9**	66	10	215	**17**	6	248	840
Total Volume	184	96	34	16	330	100	1136	401	15	1652	57	137	72	17	283	40	873	55	27	995	3260
% App. Total	55.8	29.1	10.3	4.8		6.1	68.8	24.3	0.9		20.1	48.4	25.4	6		4	87.7	5.5	2.7		
PHF	.939	.774	.567	.500	.833	.781	.893	.928	.536	.947	.792	.699	.857	.472	.804	.909	.937	.809	.614	.935	.940
Cars	180	95	34	16	325	98	1110														
% Cars	97.8	99.0	100	100	98.5	98.0	97.7	98.5	86.7	97.8	100	99.3	98.6	88.2	98.6	100	96.1	98.2	88.9	96.2	97.5
Trucks	4	1	0	0	5	2	14	5	2	23	0	1	1	2	4	0	22	1	3	26	58
% Trucks	2.2	1.0	0	0	1.5	2.0	1.2	1.2	13.3	1.4	0	0.7	1.4	11.8	1.4	0	2.5	1.8	11.1	2.6	1.8
Buses	0	0	0	0	0	0	12	1	0	13	0	0	0	0	0	0	12	0	0	12	25
% Buses	0	0	0	0	0	0	1.1	0.2	0	0.8	0	0	0	0	0	0	1.4	0	0	1.2	0.8



APPENDIX B

Signal Timing Plans

```
?? SHOW TIMING REPORT,ACT1-3,I282
  SCHEDULED DATA
  INT  TIME          SELECTION PLANS  IN USE         ALTERNATES
             MODE   CYC   OFF  SPLT  SPEC  DUP   MODE CYC  OFF  SPLT SPEC
DUP
                    LEN   NO.  NO.   FUNC  ISEC       LEN  NO.   NO. FUNC
ISEC
   282 00:00   /     /     /     /     /     /    LO  101   2     2    2
   282 06:00  1/1    /     /     /    1/1    /    CC  160   1     1    1
1047

  LOCATION:  DUNDA@CAMILLA/KIRWIN            INTERSECTION NO.:   282
  DATE:      27-JUN-2017                     TIME:              06:00
  SCHEDULE:   1                              SPEC. FUNC.: 1 - Y  2 - N  3
- N

  MAIN ST.:  DUNDAS ST                       CONTROLLER TYPE:   D
  NO. OF PH: 5                               CONTROL MODE:      CC

  Ring 1

  2.   EB                          - Walk           =  71 seconds
       DUNDAS ST                   - FL. Don't Walk =  19 seconds
                                   - Amber          =   4 seconds
                                   - All Red        =   3 seconds

  3.   SBL                         - Minimum green  =   5 seconds
       KIRWIN AVE                  - Maximum green  =  15 seconds
                                   - Clearance      =   3 seconds

  4.   NB                          - Walk           =  11 seconds
       CAMILLA RD                  - FL. Don't Walk =  18 seconds
                                   - Sd. Don't Walk =   9 seconds
                                   - Maximum        =  38 seconds
                                   - Amber          =   4 seconds
                                   - All Red        =   3 seconds

                          Total Cycle Length (Ring 1) = 160 seconds

  Ring 2

  6.   WB                          - Walk           =  71 seconds
       DUNDAS ST                   - FL. Don't Walk =  19 seconds
                                   - Amber          =   4 seconds
                                   - All Red        =   3 seconds

  8.   SB                          - Walk           =  11 seconds
       KIRWIN AVE                  - FL. Don't Walk =  18 seconds
                                   - Sd. Don't Walk =  27 seconds
                                   - Maximum        =  56 seconds
                                   - Amber          =   4 seconds
                                   - All Red        =   3 seconds

                          Total Cycle Length (Ring 2) = 160 seconds
```

SCHEDULED DATA

INT	TIME	SELECTION PLANS IN USE					ALTERNATES					
		MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC	MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC
282	09:30	1/1	/	/	/	1/1	/	CC	160	2	2	2	1047

LOCATION: DUNDA@CAMILLA/KIRWIN
INTERSECTION NO.: 282
DATE: 27-JUN-2017
TIME: 09:30
SCHEDULE: 1
SPEC. FUNC.: 1 - N 2 - N 3 - N

MAIN ST.: DUNDAS ST
CONTROLLER TYPE: D
NO. OF PH: 6
CONTROL MODE: CC

Ring 1

1.	WBL	- Minimum green	= 5 seconds
	DUNDAS ST	- Maximum green	= 13 seconds
		- Clearance	= 3 seconds
2.	EB	- Walk	= 49 seconds
	DUNDAS ST	- FL. Don't Walk	= 19 seconds
		- Amber	= 4 seconds
		- All Red	= 3 seconds
3.	SBL	- Minimum green	= 5 seconds
	KIRWIN AVE	- Maximum green	= 13 seconds
		- Clearance	= 3 seconds
4.	NB	- Walk	= 11 seconds
	CAMILLA RD	- FL. Don't Walk	= 18 seconds
		- Sd. Don't Walk	= 17 seconds
		- Maximum	= 46 seconds
		- Amber	= 4 seconds
		- All Red	= 3 seconds

Total Cycle Length (Ring 1) = 160 seconds

Ring 2

6.	WB	- Walk	= 66 seconds
	DUNDAS ST	- FL. Don't Walk	= 19 seconds
		- Amber	= 4 seconds
		- All Red	= 3 seconds
8.	SB	- Walk	= 11 seconds
	KIRWIN AVE	- FL. Don't Walk	= 18 seconds
		- Sd. Don't Walk	= 32 seconds
		- Maximum	= 61 seconds
		- Amber	= 4 seconds

- All Red = 3 seconds

Total Cycle Length (Ring 2) = 160 seconds

SCHEDULED DATA

INT	TIME	SELECTION PLANS IN USE					ALTERNATES					
		MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC	MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC
282	15:00	1/1	/	/	/	1/1	/	CC	160	3	3	3	1047

LOCATION: DUNDA@CAMILLA/KIRWIN INTERSECTION NO.: 282
DATE: 27-JUN-2017 TIME: 15:00
SCHEDULE: 1 SPEC. FUNC.: 1 - N 2 - N 3 - N

MAIN ST.: DUNDAS ST CONTROLLER TYPE: D
NO. OF PH: 6 CONTROL MODE: CC

Ring 1

1. WBL
   DUNDAS ST
   - Minimum green = 5 seconds
   - Maximum green = 15 seconds
   - Clearance = 3 seconds

2. EB
   DUNDAS ST
   - Walk = 58 seconds
   - FL. Don't Walk = 19 seconds
   - Amber = 4 seconds
   - All Red = 3 seconds

3. SBL
   KIRWIN AVE
   - Minimum green = 5 seconds
   - Maximum green = 10 seconds
   - Clearance = 3 seconds

4. NB
   CAMILLA RD
   - Walk = 11 seconds
   - FL. Don't Walk = 18 seconds
   - Sd. Don't Walk = 9 seconds
   - Maximum = 38 seconds
   - Amber = 4 seconds
   - All Red = 3 seconds

Total Cycle Length (Ring 1) = 160 seconds

Ring 2

6. WB
   DUNDAS ST
   - Walk = 76 seconds
   - FL. Don't Walk = 19 seconds
   - Amber = 4 seconds
   - All Red = 3 seconds

8. SB
   KIRWIN AVE
   - Walk = 11 seconds
   - FL. Don't Walk = 18 seconds

- Sd. Don't Walk = 22 seconds
- Maximum = 51 seconds
- Amber = 4 seconds
- All Red = 3 seconds

Total Cycle Length (Ring 2) = 160 seconds

SCHEDULED DATA

INT	TIME	MODE	SELECTION PLANS IN USE CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC	ALTERNATES MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC
282	19:30	1/1	/	/	/	1/1	/	CC	160	2	2	2	1047

LOCATION: DUNDA@CAMILLA/KIRWIN
INTERSECTION NO.: 282
DATE: 27-JUN-2017
TIME: 19:30
SCHEDULE: 1
SPEC. FUNC.: 1 - N 2 - N 3 - N

MAIN ST.: DUNDAS ST
CONTROLLER TYPE: D
NO. OF PH: 6
CONTROL MODE: CC

Ring 1

1. WBL
DUNDAS ST
- Minimum green = 5 seconds
- Maximum green = 13 seconds
- Clearance = 3 seconds

2. EB
DUNDAS ST
- Walk = 49 seconds
- FL. Don't Walk = 19 seconds
- Amber = 4 seconds
- All Red = 3 seconds

3. SBL
KIRWIN AVE
- Minimum green = 5 seconds
- Maximum green = 13 seconds
- Clearance = 3 seconds

4. NB
CAMILLA RD
- Walk = 11 seconds
- FL. Don't Walk = 18 seconds
- Sd. Don't Walk = 17 seconds
- Maximum = 46 seconds
- Amber = 4 seconds
- All Red = 3 seconds

Total Cycle Length (Ring 1) = 160 seconds

Ring 2

6. WB
DUNDAS ST
- Walk = 66 seconds
- FL. Don't Walk = 19 seconds
- Amber = 4 seconds
- All Red = 3 seconds

8.	SB	- Walk	=	11 seconds
	KIRWIN AVE	- FL. Don't Walk	=	18 seconds
		- Sd. Don't Walk	=	32 seconds
		- Maximum	=	61 seconds
		- Amber	=	4 seconds
		- All Red	=	3 seconds

Total Cycle Length (Ring 2) = 160 seconds

SCHEDULED DATA

INT	TIME	MODE	SELECTION PLANS IN USE CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC	ALTERNATES MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC
282	00:00	/	/	/	/	/	/	LO	101	2	2	2	
282	07:00	1/1	/	/	/	1/1	/	CC	160	2	2	2	1047

LOCATION: DUNDA@CAMILLA/KIRWIN INTERSECTION NO.: 282
DATE: 27-JUN-2017 TIME: 07:00
SCHEDULE: 2 SPEC. FUNC.: 1 - N 2 - N 3 - N

MAIN ST.: DUNDAS ST CONTROLLER TYPE: D
NO. OF PH: 6 CONTROL MODE: CC

Ring 1

1.	WBL	- Minimum green	=	5 seconds
	DUNDAS ST	- Maximum green	=	13 seconds
		- Clearance	=	3 seconds
2.	EB	- Walk	=	49 seconds
	DUNDAS ST	- FL. Don't Walk	=	19 seconds
		- Amber	=	4 seconds
		- All Red	=	3 seconds
3.	SBL	- Minimum green	=	5 seconds
	KIRWIN AVE	- Maximum green	=	13 seconds
		- Clearance	=	3 seconds
4.	NB	- Walk	=	11 seconds
	CAMILLA RD	- FL. Don't Walk	=	18 seconds
		- Sd. Don't Walk	=	17 seconds
		- Maximum	=	46 seconds
		- Amber	=	4 seconds
		- All Red	=	3 seconds

Total Cycle Length (Ring 1) = 160 seconds

Ring 2

6.	WB	- Walk	= 66 seconds
	DUNDAS ST	- FL. Don't Walk	= 19 seconds
		- Amber	= 4 seconds
		- All Red	= 3 seconds
8.	SB	- Walk	= 11 seconds
	KIRWIN AVE	- FL. Don't Walk	= 18 seconds
		- Sd. Don't Walk	= 32 seconds
		- Maximum	= 61 seconds
		- Amber	= 4 seconds
		- All Red	= 3 seconds

Total Cycle Length (Ring 2) = 160 seconds

SCHEDULED DATA

INT	TIME	SELECTION PLANS IN USE MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC	ALTERNATES MODE	CYC LEN	OFF NO.	SPLT NO.	SPEC FUNC	DUP ISEC
282	00:00	/	/	/	/	/	/	LO	101	2	2	2	
282	08:00	1/1	/	/	/	1/1	/	CC	160	2	2	2	1047

LOCATION: DUNDA@CAMILLA/KIRWIN
INTERSECTION NO.: 282
DATE: 27-JUN-2017
TIME: 08:00
SCHEDULE: 3
SPEC. FUNC.: 1 - N 2 - N 3 - N

MAIN ST.: DUNDAS ST
CONTROLLER TYPE: D
NO. OF PH: 6
CONTROL MODE: CC

Ring 1

1.	WBL	- Minimum green	= 5 seconds
	DUNDAS ST	- Maximum green	= 13 seconds
		- Clearance	= 3 seconds
2.	EB	- Walk	= 49 seconds
	DUNDAS ST	- FL. Don't Walk	= 19 seconds
		- Amber	= 4 seconds
		- All Red	= 3 seconds
3.	SBL	- Minimum green	= 5 seconds
	KIRWIN AVE	- Maximum green	= 13 seconds
		- Clearance	= 3 seconds
4.	NB	- Walk	= 11 seconds
	CAMILLA RD	- FL. Don't Walk	= 18 seconds
		- Sd. Don't Walk	= 17 seconds
		- Maximum	= 46 seconds
		- Amber	= 4 seconds
		- All Red	= 3 seconds

```
                          Total Cycle Length (Ring 1) = 160 seconds

  Ring 2

  6.   WB                              - Walk           =  66 seconds
       DUNDAS ST                       - FL. Don't Walk =  19 seconds
                                       - Amber          =   4 seconds
                                       - All Red        =   3 seconds

  8.   SB                              - Walk           =  11 seconds
       KIRWIN AVE                      - FL. Don't Walk =  18 seconds
                                       - Sd. Don't Walk =  32 seconds
                                       - Maximum        =  61 seconds
                                       - Amber          =   4 seconds
                                       - All Red        =   3 seconds

                          Total Cycle Length (Ring 2) = 160 seconds

  SCHEDULED DATA
  INT  TIME          SELECTION PLANS  IN USE         ALTERNATES
             MODE   CYC   OFF  SPLT  SPEC  DUP   MODE CYC  OFF  SPLT SPEC
DUP
                    LEN   NO.  NO.   FUNC  ISEC       LEN  NO.   NO. FUNC
ISEC
   282 23:00   /     /     /     /     /     /    LO  101   2     2    2
?? SHOW CDT282
CYCLE DEFINITION TABLE: 282
 PHASE  DIR  VEH  PED   PED   AMBER  ALL  COMM  SPECIAL  STREET
             MIN  MIN  CLEAR         RED  DELAY FEATURE  NAME
   1    WBL   5                3           1             DUNDAS ST
   2    EB        13    19      4     3     1    C       DUNDAS ST
   3    SBL   5                3           1             KIRWIN AVE
   4    NB        11    18      4     3     1            CAMILLA RD
   5    EBL                                 1            DUNDAS ST
   6    WB        13    19      4     3     1    C       DUNDAS ST
   7    NBL                                 1            CAMILLA RD
   8    SB        11    18      4     3     1            KIRWIN AVE
     VALID SPECIAL FUNCTIONS(Y/N)
      1   2   3  1&2 1&3 2&3 ALL
      Y   Y   Y   Y   Y   Y   Y
?? SHOW DINTREP,ACT1-3,I282
  DAILY INTERSECTION REPORT FOR ACT SCH  1 ( MON TUE WED THU FRI )
  INT  TIME          SELECTION PLANS  IN USE         ALTERNATES
             MODE   CYC   OFF  SPLT  SPEC  DUP   MODE CYC  OFF  SPLT SPEC
DUP
                    LEN   NO.  NO.   FUNC  ISEC       LEN  NO.   NO. FUNC
ISEC
   282 00:00   /     /     /     /     /     /    LO  101   2     2    2
   282 06:00  1/1    /     /     /    1/1    /    CC  160   1     1    1
1047
   282 09:30  1/1    /     /     /    1/1    /    CC  160   2     2    2
1047
   282 15:00  1/1    /     /     /    1/1    /    CC  160   3     3    3
1047
```

```
   282 19:30  1/1    /     /     /    1/1    /    CC  160   2     2    2
1047
  DAILY INTERSECTION REPORT FOR ACT SCH  2 ( SAT )
   282 00:00   /     /     /     /     /     /    LO  101   2     2    2
   282 07:00  1/1    /     /     /    1/1    /    CC  160   2     2    2
1047
  DAILY INTERSECTION REPORT FOR ACT SCH  3 ( SUN HOL )
   282 00:00   /     /     /     /     /     /    LO  101   2     2    2
   282 08:00  1/1    /     /     /    1/1    /    CC  160   2     2    2
1047
   282 23:00   /     /     /     /     /     /    LO  101   2     2    2
?? SHOW SPL1-3,I282
   SPLIT TABLE
    INTERSECTION  282           DUNDA@CAMILLA/KIRWIN
    TABLE     (SPLIT) PHASE NUMBER            (MAX SPLIT) PHASE NUMBER
    NO.    1   2   3   4   5   6   7   8    1   2   3   4   5   6   7   8
          WBL EB  SBL NB  EBL WB  NBL SB
     1     0  61  11  28      61      39    0   0   0   0       0       0
     2    10  47  10  33      57      43   14   0   0   0       0       0
     3    11  53   8  28      64      36   18   0   0   0       0       0
?? SHOW OFF1-3,I282
   OFFSET TABLE
    INTERSECTION  282           DUNDA@CAMILLA/KIRWIN
    OFFSET #   OFFSET %
        1         24
        2         97
        3         16
?? SHOW SPF1-3,I282
   SPECIAL FUNCTIONS
    INTERSECTION  282   DUNDA@CAMILLA/KIRWIN
    SPECIAL   IN(Y)/OUT(N)
    FUNCTION  #  1   2   3
                WBL NA  CAL   PHASE OMIT
      1          Y   N   N
      2          N   N   N
      3          N   N   N
??
```

APPENDIX C

Intersection Capacity Analysis – Existing Conditions

1: Camilla Rd/Kirwin Ave & Dundas St E

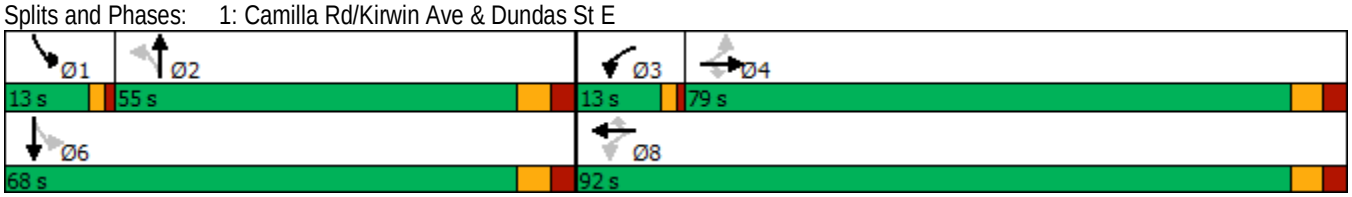
12/09/2020

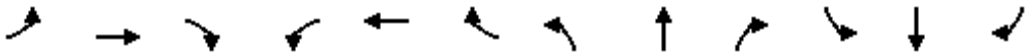
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	1223	97	33	601	115	53	96	274	76
Future Volume (vph)	8	1223	97	33	601	115	53	96	274	76
Lane Group Flow (vph)	8	1223	97	33	601	115	53	155	274	98
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		3	8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	3	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	75.0	75.0	75.0	13.0	92.0	92.0	53.0	53.0	13.0	68.0
Total Split (s)	79.0	79.0	79.0	13.0	92.0	92.0	55.0	55.0	13.0	68.0
Total Split (%)	49.4%	49.4%	49.4%	8.1%	57.5%	57.5%	34.4%	34.4%	8.1%	42.5%
Yellow Time (s)	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	2.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
Recall Mode	Min	Min	Min	None	None	None	Min	Min	None	Max
v/c Ratio	0.02	0.86	0.15	0.23	0.37	0.15	0.13	0.25	0.48	0.13
Control Delay	24.5	45.3	9.7	20.7	24.5	3.5	38.2	33.5	31.0	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	45.3	9.7	20.7	24.5	3.5	38.2	33.5	31.0	25.2
Queue Length 50th (m)	1.4	166.1	4.9	4.6	55.8	0.0	10.7	28.3	50.7	15.1
Queue Length 95th (m)	4.7	197.2	16.1	10.0	69.0	9.7	23.8	52.3	84.0	31.0
Internal Link Dist (m)		146.0			239.6			263.0		56.0
Turn Bay Length (m)	40.0		45.0	40.0		110.0	70.0		95.0	
Base Capacity (vph)	410	1766	797	185	2085	977	408	610	572	760
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.69	0.12	0.18	0.29	0.12	0.13	0.25	0.48	0.13

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 142
Natural Cycle: 160
Control Type: Semi Act-Uncoord

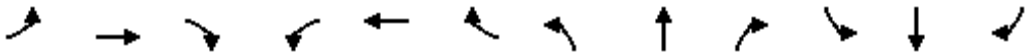
Splits and Phases: 1: Camilla Rd/Kirwin Ave & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1223	97	33	601	115	53	96	59	274	76	22
Future Volume (vph)	8	1223	97	33	601	115	53	96	59	274	76	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1818	3444	1493	1825	3444	1541	1638	1748		1805	1738	
Flt Permitted	0.42	1.00	1.00	0.07	1.00	1.00	0.69	1.00		0.60	1.00	
Satd. Flow (perm)	803	3444	1493	133	3444	1541	1196	1748		1134	1738	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	1223	97	33	601	115	53	96	59	274	76	22
RTOR Reduction (vph)	0	0	40	0	0	61	0	13	0	0	6	0
Lane Group Flow (vph)	8	1223	57	33	601	54	53	142	0	274	92	0
Confl. Peds. (#/hr)	10		17	17		10	17		2	2		17
Confl. Bikes (#/hr)			3						1			3
Heavy Vehicles (%)	0%	6%	5%	0%	6%	3%	9%	3%	3%	1%	5%	9%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	58.4	58.4	58.4	66.8	66.8	66.8	48.6	48.6		61.7	61.7	
Effective Green, g (s)	58.4	58.4	58.4	66.8	66.8	66.8	48.6	48.6		61.7	61.7	
Actuated g/C Ratio	0.41	0.41	0.41	0.47	0.47	0.47	0.34	0.34		0.43	0.43	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	329	1411	611	126	1614	722	407	596		538	752	
v/s Ratio Prot		c0.36		0.01	c0.17			0.08		c0.04	0.05	
v/s Ratio Perm	0.01		0.04	0.11		0.03	0.04			c0.18		
v/c Ratio	0.02	0.87	0.09	0.26	0.37	0.07	0.13	0.24		0.51	0.12	
Uniform Delay, d1	25.1	38.5	25.8	27.4	24.4	20.8	32.4	33.7		28.4	24.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	5.9	0.1	1.1	0.1	0.0	0.1	0.2		0.8	0.3	
Delay (s)	25.1	44.4	25.9	28.5	24.5	20.9	32.5	33.9		29.1	24.5	
Level of Service	C	D	C	C	C	C	C	C		C	C	
Approach Delay (s)		42.9			24.1			33.5			27.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	142.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1297	8	11	660	5	10	0	26	5	0	4
Future Volume (Veh/h)	6	1297	8	11	660	5	10	0	26	5	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	6	1297	8	11	660	5	10	0	26	5	0	4
Pedestrians		10			2			50			10	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			5			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					170							
pX, platoon unblocked	0.89						0.89	0.89		0.89	0.89	0.89
vC, conflicting volume	675			1355			1729	2060	704	1383	2062	352
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395			1355			1576	1947	704	1188	1948	33
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			83	100	93	96	100	100
cM capacity (veh/h)	1038			479			58	52	360	112	53	909

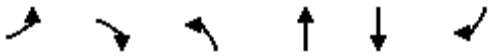
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	865	440	11	440	225	36	9
Volume Left	6	0	0	11	0	0	10	5
Volume Right	0	0	8	0	0	5	26	4
cSH	1038	1700	1700	479	1700	1700	147	183
Volume to Capacity	0.01	0.51	0.26	0.02	0.26	0.13	0.25	0.05
Queue Length 95th (m)	0.1	0.0	0.0	0.5	0.0	0.0	6.9	1.2
Control Delay (s)	8.5	0.0	0.0	12.7	0.0	0.0	37.3	25.7
Lane LOS	A			B			E	D
Approach Delay (s)	0.0			0.2			37.3	25.7
Approach LOS							E	D

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	49.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	2	215	4	4	369
Future Volume (Veh/h)	3	2	215	4	4	369
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	2	215	4	4	369
Pedestrians	4					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	598	221			223	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	574	187			189	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	468	835			1326	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	219	373
Volume Left	3	0	4
Volume Right	2	4	0
cSH	568	1700	1326
Volume to Capacity	0.01	0.13	0.00
Queue Length 95th (m)	0.2	0.0	0.1
Control Delay (s)	11.4	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	11.4	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	217	373	0
Future Volume (Veh/h)	0	0	0	217	373	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	236	405	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				114		
pX, platoon unblocked	0.99					
vC, conflicting volume	641	405	405			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	635	405	405			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	440	646	1154			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	236	405
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1154	1700
Volume to Capacity	0.00	0.00	0.24
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

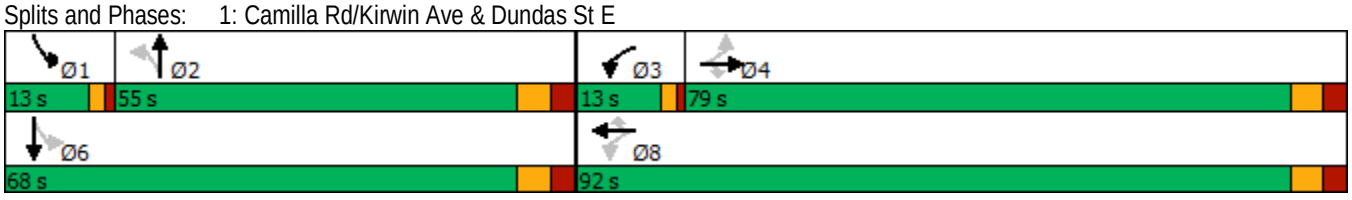
1: Camilla Rd/Kirwin Ave & Dundas St E

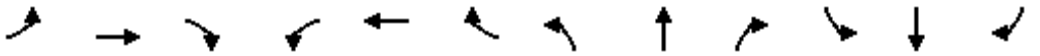
12/09/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	40	913	55	100	1144	401	57	137	184	96
Future Volume (vph)	40	913	55	100	1144	401	57	137	184	96
Lane Group Flow (vph)	40	913	55	100	1144	401	57	209	184	130
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		3	8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	3	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	75.0	75.0	75.0	13.0	92.0	92.0	53.0	53.0	13.0	68.0
Total Split (s)	79.0	79.0	79.0	13.0	92.0	92.0	55.0	55.0	13.0	68.0
Total Split (%)	49.4%	49.4%	49.4%	8.1%	57.5%	57.5%	34.4%	34.4%	8.1%	42.5%
Yellow Time (s)	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	2.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
Recall Mode	Min	Min	Min	None	None	None	Min	Min	None	Max
v/c Ratio	0.49	0.80	0.10	0.49	0.77	0.46	0.12	0.31	0.32	0.15
Control Delay	57.4	45.9	4.8	28.5	36.0	3.8	30.1	29.0	20.7	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	45.9	4.8	28.5	36.0	3.8	30.1	29.0	20.7	19.3
Queue Length 50th (m)	8.2	111.3	0.0	14.5	128.3	0.0	9.3	33.7	24.7	16.1
Queue Length 95th (m)	21.2	134.7	6.4	25.0	152.1	16.9	21.9	62.2	47.3	33.8
Internal Link Dist (m)		146.0			239.6			263.0		56.0
Turn Bay Length (m)	40.0		45.0	40.0		110.0	70.0		95.0	
Base Capacity (vph)	145	2021	888	217	2409	1172	479	684	579	874
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.45	0.06	0.46	0.47	0.34	0.12	0.31	0.32	0.15

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 128.2
Natural Cycle: 160
Control Type: Semi Act-Uncoord

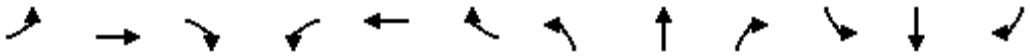
Splits and Phases: 1: Camilla Rd/Kirwin Ave & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	913	55	100	1144	401	57	137	72	184	96	34
Future Volume (vph)	40	913	55	100	1144	401	57	137	72	184	96	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1821	3579	1528	1789	3614	1562	1793	1783		1777	1816	
Flt Permitted	0.13	1.00	1.00	0.11	1.00	1.00	0.67	1.00		0.55	1.00	
Satd. Flow (perm)	256	3579	1528	215	3614	1562	1271	1783		1026	1816	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	913	55	100	1144	401	57	137	72	184	96	34
RTOR Reduction (vph)	0	0	37	0	0	236	0	11	0	0	7	0
Lane Group Flow (vph)	40	913	18	100	1144	165	57	198	0	184	123	0
Confl. Peds. (#/hr)	16		24	24		16	16		15	15		16
Confl. Bikes (#/hr)			3			2			3			2
Heavy Vehicles (%)	0%	2%	2%	2%	1%	1%	0%	1%	1%	2%	1%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	40.8	40.8	40.8	52.8	52.8	52.8	48.6	48.6		61.3	61.3	
Effective Green, g (s)	40.8	40.8	40.8	52.8	52.8	52.8	48.6	48.6		61.3	61.3	
Actuated g/C Ratio	0.32	0.32	0.32	0.41	0.41	0.41	0.38	0.38		0.48	0.48	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	81	1139	486	199	1489	643	482	676		547	869	
v/s Ratio Prot		0.26		0.04	c0.32			0.11		c0.03	0.07	
v/s Ratio Perm	0.16		0.01	0.17		0.11	0.04			c0.14		
v/c Ratio	0.49	0.80	0.04	0.50	0.77	0.26	0.12	0.29		0.34	0.14	
Uniform Delay, d1	35.3	39.9	30.1	27.1	32.4	24.8	25.8	27.8		19.6	18.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	4.1	0.0	2.0	2.4	0.2	0.1	0.2		0.4	0.3	
Delay (s)	40.0	44.1	30.1	29.1	34.8	25.0	25.9	28.0		20.0	19.0	
Level of Service	D	D	C	C	C	C	C	C		B	B	
Approach Delay (s)		43.2			32.1			27.6			19.6	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	128.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	985	10	12	1207	16	3	0	6	17	1	53
Future Volume (Veh/h)	36	985	10	12	1207	16	3	0	6	17	1	53
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	36	985	10	12	1207	16	3	0	6	17	1	53
Pedestrians		10			2			32			16	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			3			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					170							
pX, platoon unblocked	0.72						0.72	0.72		0.72	0.72	0.72
vC, conflicting volume	1239			1027			1785	2357	532	1828	2354	638
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	562			1027			1318	2110	532	1377	2106	0
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			98			95	100	99	75	97	93
cM capacity (veh/h)	710			663			66	32	476	68	33	768

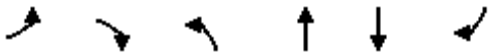
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	36	657	338	12	805	418	9	71
Volume Left	36	0	0	12	0	0	3	17
Volume Right	0	0	10	0	0	16	6	53
cSH	710	1700	1700	663	1700	1700	156	203
Volume to Capacity	0.05	0.39	0.20	0.02	0.47	0.25	0.06	0.35
Queue Length 95th (m)	1.2	0.0	0.0	0.4	0.0	0.0	1.4	11.2
Control Delay (s)	10.3	0.0	0.0	10.5	0.0	0.0	29.5	31.9
Lane LOS	B			B			D	D
Approach Delay (s)	0.4			0.1			29.5	31.9
Approach LOS							D	D

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	48.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	18	565	13	7	286
Future Volume (Veh/h)	28	18	565	13	7	286
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	28	18	565	13	7	286
Pedestrians	11		5			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	1		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	888	586			589	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	851	532			535	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	96			99	
cM capacity (veh/h)	307	514			974	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	578	293
Volume Left	28	0	7
Volume Right	18	13	0
cSH	365	1700	974
Volume to Capacity	0.13	0.34	0.01
Queue Length 95th (m)	3.3	0.0	0.2
Control Delay (s)	16.3	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	16.3	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	583	293	0
Future Volume (Veh/h)	0	0	0	583	293	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	634	318	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				114		
pX, platoon unblocked	0.96					
vC, conflicting volume	952	318	318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930	318	318			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	285	723	1242			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	634	318
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1242	1700
Volume to Capacity	0.00	0.00	0.19
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX D

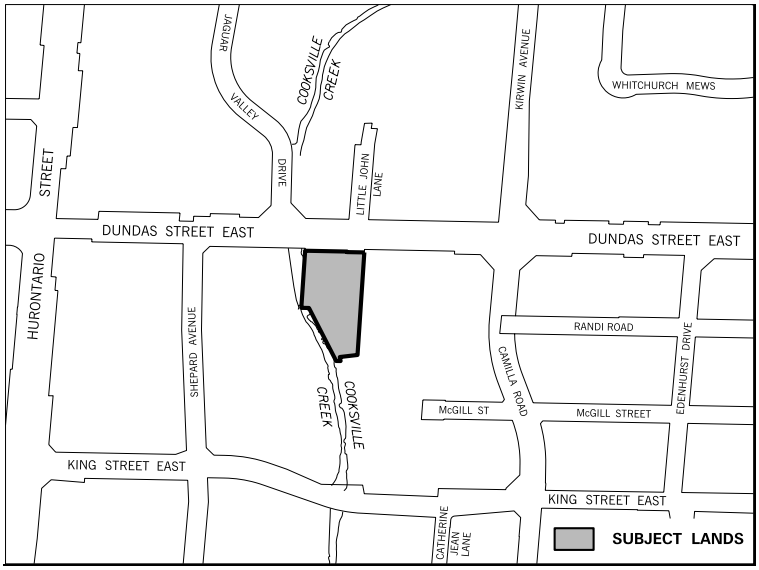
Background Development Information

Please be informed of a proposed development in your neighbourhood

MISSISSAUGA

86-90 Dundas Street East
South side of Dundas Street East, east of Hurontario Street
File: OZ 16/008 W7

Location of the Proposal



Applicant's Rendering

Applicant's Proposal:

- To revise the official plan and zoning to permit a 29-storey apartment building with 300 residential units and commercial uses on the ground floor.

If you would like to provide input on the proposed development or you wish to be notified of any upcoming meetings:

Contact the Planning and Building Department:

- Mail: 300 City Centre Drive, 6th floor, Mississauga ON L5B 3C1
- Fax: 905-896-5553
- Email: application.info@mississauga.ca

For detailed information contact:
City Planner Michael Hynes at 905-615-3200 ext. 5525
Michael.Hynes@mississauga.ca

Planning documents and background material are available for inspection at the Planning and Building Department, Planning Services Centre, 3rd floor, Mississauga Civic Centre between 8:30 a.m. and 4:30 p.m.

Lesley Pavan, Director
Development and Design Division
Planning and Building Department

If you are a landlord, please post a copy of this notice where your tenants can see it. We want to make sure they have a chance to take part.

See other side of notice for additional information and for legal requirements

The following studies/information were submitted in support of the applications:

- Survey
- Site Plan and Statistics
- Floor Plans
- Building Elevations
- Site Servicing Plan
- Site Grading Plan
- Utility Plan
- Streetscape and Landscape Drawings
- Tree Preservation and Removals Plan
- Arborist Report
- Green Standards
- Planning Justification Report
- Urban Design Brief
- Slope Stability Assessment
- Sun/Shadow Study
- Detailed Noise Control Study
- Pedestrian Wind Study
- Traffic Impact Study
- Functional Servicing Report
- Geotechnical Investigation
- Scoped Environmental Impact Study
- Phase I Environmental Site Assessment
- Stage 1-2 Archaeological Assessment
- Restrictions on Title
- Draft Official Plan Amendment
- Draft Zoning By-law

***Planning Act* Requirements:**

The City will be processing the applications in accordance with the Provincial *Planning Act* which requires that all complete applications be processed.

The applications are now being circulated to City Departments and Agencies for technical review.

Once the technical review has been completed, a report summarizing the development and the comments received will be prepared by Planning staff and presented at a Public Meeting.

Notice of the Public Meeting will be given in accordance with the *Planning Act* requirements.

A recommendation on the applications will not be presented until after the Public Meeting and all technical comments have been received.

Personal Information:

The personal information related to the consideration of any planning matter (including consideration of applications; comments and correspondence provided, whether written or verbal in relation to an application; comments and correspondence provided at, before or after a public or statutory meeting or a Committee or Council meeting) is collected under the authority of the *Municipal Act, 2001,* and the *Planning Act.* The City collects this information to enable it to make an informed decision on the relevant issue(s). Individuals who submit correspondence (as noted above) should be aware that any personal information in their communication will become part of the public record, unless the individual expressly requests the City to remove the personal information. Questions about the collection of this information may be directed to application.info@mississauga.ca or in writing to the Planning and Building Department at 300 City Centre Drive, Mississauga ON L5B 3C1.

Date of Notice: October 14, 2016

APPENDIX E

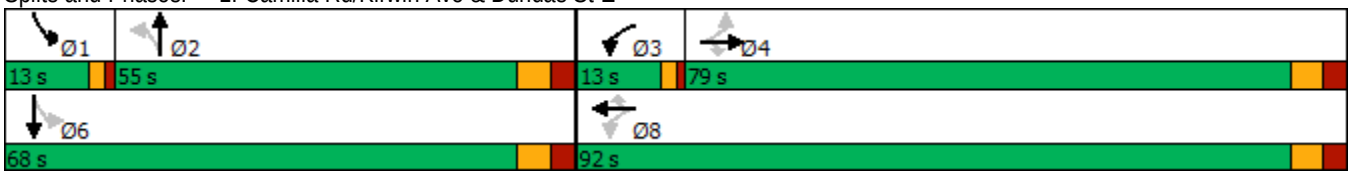
Intersection Capacity Analysis

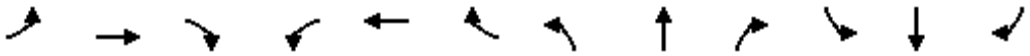
– Future Background Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	8	1249	97	33	672	115	53	96	274	76
Future Volume (vph)	8	1249	97	33	672	115	53	96	274	76
Lane Group Flow (vph)	8	1249	97	33	672	115	53	155	274	98
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		3	8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	3	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	75.0	75.0	75.0	13.0	92.0	92.0	53.0	53.0	13.0	68.0
Total Split (s)	79.0	79.0	79.0	13.0	92.0	92.0	55.0	55.0	13.0	68.0
Total Split (%)	49.4%	49.4%	49.4%	8.1%	57.5%	57.5%	34.4%	34.4%	8.1%	42.5%
Yellow Time (s)	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	2.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
Recall Mode	Min	Min	Min	None	None	None	Min	Min	None	Max
v/c Ratio	0.03	0.87	0.15	0.23	0.41	0.15	0.13	0.26	0.49	0.13
Control Delay	24.4	45.5	9.6	20.7	25.0	3.5	38.9	34.1	31.8	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	45.5	9.6	20.7	25.0	3.5	38.9	34.1	31.8	25.8
Queue Length 50th (m)	1.4	171.6	4.9	4.6	64.0	0.0	10.9	28.8	51.8	15.5
Queue Length 95th (m)	4.8	203.5	16.1	10.0	78.3	9.7	23.8	52.3	84.0	31.0
Internal Link Dist (m)		146.0			239.6			263.0		56.0
Turn Bay Length (m)	40.0		45.0	40.0		110.0	70.0		95.0	
Base Capacity (vph)	365	1746	788	182	2061	967	403	604	564	752
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.72	0.12	0.18	0.33	0.12	0.13	0.26	0.49	0.13

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 143.6
Natural Cycle: 160
Control Type: Semi Act-Uncoord

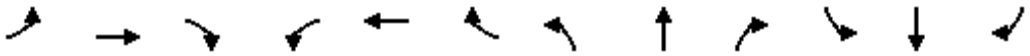
Splits and Phases: 1: Camilla Rd/Kirwin Ave & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1249	97	33	672	115	53	96	59	274	76	22
Future Volume (vph)	8	1249	97	33	672	115	53	96	59	274	76	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1819	3444	1493	1825	3444	1541	1637	1748		1805	1738	
Flt Permitted	0.38	1.00	1.00	0.07	1.00	1.00	0.69	1.00		0.59	1.00	
Satd. Flow (perm)	719	3444	1493	127	3444	1541	1195	1748		1130	1738	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	1249	97	33	672	115	53	96	59	274	76	22
RTOR Reduction (vph)	0	0	40	0	0	60	0	13	0	0	6	0
Lane Group Flow (vph)	8	1249	57	33	672	55	53	142	0	274	92	0
Confl. Peds. (#/hr)	10		17	17		10	17		2	2		17
Confl. Bikes (#/hr)			3						1			3
Heavy Vehicles (%)	0%	6%	5%	0%	6%	3%	9%	3%	3%	1%	5%	9%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	60.0	60.0	60.0	68.4	68.4	68.4	48.6	48.6		61.7	61.7	
Effective Green, g (s)	60.0	60.0	60.0	68.4	68.4	68.4	48.6	48.6		61.7	61.7	
Actuated g/C Ratio	0.42	0.42	0.42	0.47	0.47	0.47	0.34	0.34		0.43	0.43	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	299	1434	621	123	1634	731	403	589		531	744	
v/s Ratio Prot		c0.36		0.01	c0.20			0.08		c0.04	0.05	
v/s Ratio Perm	0.01		0.04	0.12		0.04	0.04			c0.18		
v/c Ratio	0.03	0.87	0.09	0.27	0.41	0.07	0.13	0.24		0.52	0.12	
Uniform Delay, d1	24.8	38.5	25.5	27.7	24.7	20.6	33.1	34.4		29.3	24.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	6.1	0.1	1.2	0.2	0.0	0.1	0.2		0.8	0.3	
Delay (s)	24.9	44.6	25.6	28.8	24.9	20.7	33.3	34.7		30.1	25.2	
Level of Service	C	D	C	C	C	C	C	C		C	C	
Approach Delay (s)		43.1			24.4			34.3			28.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	144.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1297	19	19	729	5	42	0	52	5	0	4
Future Volume (Veh/h)	6	1297	19	19	729	5	42	0	52	5	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	6	1297	19	19	729	5	42	0	52	5	0	4
Pedestrians		10			2			50			10	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			5			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					170							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	744			1366			1785	2150	710	1494	2158	387
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	428			1366			1615	2032	710	1283	2040	21
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			20	100	85	94	100	100
cM capacity (veh/h)	992			474			52	45	357	85	45	910

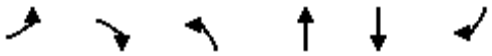
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	865	451	19	486	248	94	9
Volume Left	6	0	0	19	0	0	42	5
Volume Right	0	0	19	0	0	5	52	4
cSH	992	1700	1700	474	1700	1700	99	142
Volume to Capacity	0.01	0.51	0.27	0.04	0.29	0.15	0.95	0.06
Queue Length 95th (m)	0.1	0.0	0.0	0.9	0.0	0.0	42.7	1.5
Control Delay (s)	8.7	0.0	0.0	12.9	0.0	0.0	154.2	32.0
Lane LOS	A			B			F	D
Approach Delay (s)	0.0			0.3			154.2	32.0
Approach LOS							F	D

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	50.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	2	215	4	4	369
Future Volume (Veh/h)	3	2	215	4	4	369
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	2	215	4	4	369
Pedestrians	4					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	598	221			223	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	573	186			188	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	468	835			1327	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	219	373
Volume Left	3	0	4
Volume Right	2	4	0
cSH	568	1700	1327
Volume to Capacity	0.01	0.13	0.00
Queue Length 95th (m)	0.2	0.0	0.1
Control Delay (s)	11.4	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	11.4	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	217	373	0
Future Volume (Veh/h)	0	0	0	217	373	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	236	405	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				114		
pX, platoon unblocked	0.99					
vC, conflicting volume	641	405	405			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	634	405	405			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	440	646	1154			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	236	405
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1154	1700
Volume to Capacity	0.00	0.00	0.24
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

1: Camilla Rd/Kirwin Ave & Dundas St E

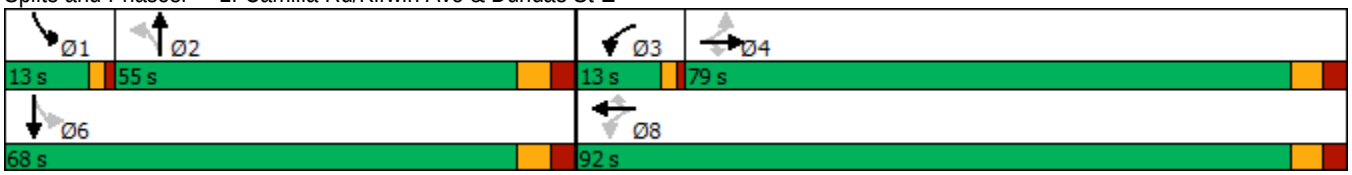
12/09/2020

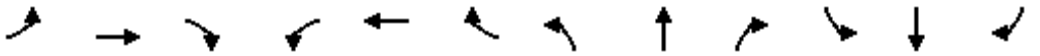
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	40	1002	55	100	1165	401	57	137	184	96
Future Volume (vph)	40	1002	55	100	1165	401	57	137	184	96
Lane Group Flow (vph)	40	1002	55	100	1165	401	57	209	184	130
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		3	8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	3	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	75.0	75.0	75.0	13.0	92.0	92.0	53.0	53.0	13.0	68.0
Total Split (s)	79.0	79.0	79.0	13.0	92.0	92.0	55.0	55.0	13.0	68.0
Total Split (%)	49.4%	49.4%	49.4%	8.1%	57.5%	57.5%	34.4%	34.4%	8.1%	42.5%
Yellow Time (s)	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	2.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
Recall Mode	Min	Min	Min	None	None	None	Min	Min	None	Max
v/c Ratio	0.47	0.83	0.10	0.53	0.75	0.45	0.12	0.31	0.33	0.15
Control Delay	53.4	46.7	4.5	30.0	34.9	3.6	31.8	30.8	22.5	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	46.7	4.5	30.0	34.9	3.6	31.8	30.8	22.5	20.8
Queue Length 50th (m)	8.2	126.3	0.0	14.5	131.8	0.0	9.9	35.7	26.5	17.2
Queue Length 95th (m)	21.2	151.5	6.4	24.8	155.7	16.9	22.6	64.1	49.4	35.0
Internal Link Dist (m)		146.0			239.6			263.0		56.0
Turn Bay Length (m)	40.0		45.0	40.0		110.0	70.0		95.0	
Base Capacity (vph)	140	1963	865	202	2340	1150	465	665	557	850
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.51	0.06	0.50	0.50	0.35	0.12	0.31	0.33	0.15

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 131.9
Natural Cycle: 160
Control Type: Semi Act-Uncoord

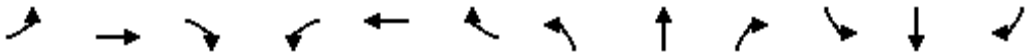
Splits and Phases: 1: Camilla Rd/Kirwin Ave & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1002	55	100	1165	401	57	137	72	184	96	34
Future Volume (vph)	40	1002	55	100	1165	401	57	137	72	184	96	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1821	3579	1527	1789	3614	1562	1792	1783		1777	1816	
Flt Permitted	0.13	1.00	1.00	0.09	1.00	1.00	0.67	1.00		0.54	1.00	
Satd. Flow (perm)	258	3579	1527	174	3614	1562	1271	1783		1015	1816	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	1002	55	100	1165	401	57	137	72	184	96	34
RTOR Reduction (vph)	0	0	36	0	0	229	0	11	0	0	7	0
Lane Group Flow (vph)	40	1002	19	100	1165	172	57	198	0	184	123	0
Confl. Peds. (#/hr)	16		24	24		16	16		15	15		16
Confl. Bikes (#/hr)			3			2			3			2
Heavy Vehicles (%)	0%	2%	2%	2%	1%	1%	0%	1%	1%	2%	1%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	44.5	44.5	44.5	56.5	56.5	56.5	48.5	48.5		61.3	61.3	
Effective Green, g (s)	44.5	44.5	44.5	56.5	56.5	56.5	48.5	48.5		61.3	61.3	
Actuated g/C Ratio	0.34	0.34	0.34	0.43	0.43	0.43	0.37	0.37		0.47	0.47	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	87	1208	515	184	1549	669	467	656		528	844	
v/s Ratio Prot		c0.28		0.04	c0.32			0.11		c0.03	0.07	
v/s Ratio Perm	0.16		0.01	0.20		0.11	0.04			c0.14		
v/c Ratio	0.46	0.83	0.04	0.54	0.75	0.26	0.12	0.30		0.35	0.15	
Uniform Delay, d1	34.2	40.2	29.3	27.6	31.7	24.2	27.6	29.6		21.3	20.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	4.9	0.0	3.3	2.1	0.2	0.1	0.3		0.4	0.4	
Delay (s)	38.0	45.0	29.3	30.9	33.9	24.4	27.7	29.9		21.7	20.6	
Level of Service	D	D	C	C	C	C	C	C		C	C	
Approach Delay (s)		44.0			31.4			29.4			21.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	131.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1062	59	33	1207	16	39	0	24	17	1	53
Future Volume (Veh/h)	36	1062	59	33	1207	16	39	0	24	17	1	53
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	36	1062	59	33	1207	16	39	0	24	17	1	53
Pedestrians		10			2			32			16	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			3			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					170							
pX, platoon unblocked	0.72						0.72	0.72		0.72	0.72	0.72
vC, conflicting volume	1239			1153			1928	2500	594	1926	2522	638
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	568			1153			1520	2310	594	1517	2340	0
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			94			14	100	94	66	96	93
cM capacity (veh/h)	708			594			45	23	433	50	23	770

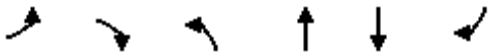
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	36	708	413	33	805	418	63	71
Volume Left	36	0	0	33	0	0	39	17
Volume Right	0	0	59	0	0	16	24	53
cSH	708	1700	1700	594	1700	1700	69	156
Volume to Capacity	0.05	0.42	0.24	0.06	0.47	0.25	0.92	0.45
Queue Length 95th (m)	1.2	0.0	0.0	1.3	0.0	0.0	34.4	15.8
Control Delay (s)	10.4	0.0	0.0	11.4	0.0	0.0	187.2	45.8
Lane LOS	B			B			F	E
Approach Delay (s)	0.3			0.3			187.2	45.8
Approach LOS							F	E

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	49.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	18	565	13	7	286
Future Volume (Veh/h)	28	18	565	13	7	286
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	28	18	565	13	7	286
Pedestrians	11		5			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	1		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	888	586			589	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	850	529			533	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	96			99	
cM capacity (veh/h)	307	514			974	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	578	293
Volume Left	28	0	7
Volume Right	18	13	0
cSH	365	1700	974
Volume to Capacity	0.13	0.34	0.01
Queue Length 95th (m)	3.3	0.0	0.2
Control Delay (s)	16.3	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	16.3	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	583	293	0
Future Volume (Veh/h)	0	0	0	583	293	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	634	318	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				114		
pX, platoon unblocked	0.96					
vC, conflicting volume	952	318	318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	929	318	318			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	285	723	1242			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	634	318
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1242	1700
Volume to Capacity	0.00	0.00	0.19
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

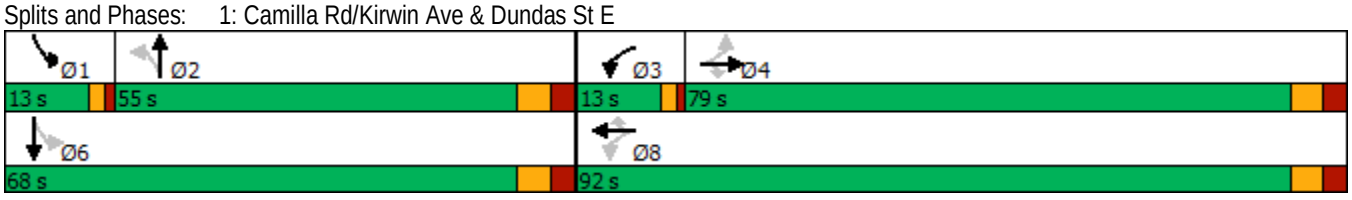
APPENDIX F

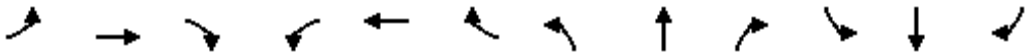
Intersection Capacity Analysis – Future Total Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	10	1249	97	33	672	122	53	96	290	76
Future Volume (vph)	10	1249	97	33	672	122	53	96	290	76
Lane Group Flow (vph)	10	1249	97	33	672	122	53	155	290	108
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		3	8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	3	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	75.0	75.0	75.0	13.0	92.0	92.0	53.0	53.0	13.0	68.0
Total Split (s)	79.0	79.0	79.0	13.0	92.0	92.0	55.0	55.0	13.0	68.0
Total Split (%)	49.4%	49.4%	49.4%	8.1%	57.5%	57.5%	34.4%	34.4%	8.1%	42.5%
Yellow Time (s)	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	2.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
Recall Mode	Min	Min	Min	None	None	None	Min	Min	None	Max
v/c Ratio	0.03	0.87	0.15	0.23	0.41	0.15	0.13	0.26	0.51	0.15
Control Delay	24.6	45.5	9.6	20.7	25.0	3.4	38.9	34.1	32.7	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	45.5	9.6	20.7	25.0	3.4	38.9	34.1	32.7	25.2
Queue Length 50th (m)	1.7	171.6	4.9	4.6	64.0	0.0	10.9	28.8	55.4	16.6
Queue Length 95th (m)	5.7	203.5	16.1	10.0	78.3	10.0	23.8	52.3	89.2	33.2
Internal Link Dist (m)		146.0			239.6			263.0		56.0
Turn Bay Length (m)	40.0		45.0	40.0		110.0	70.0		95.0	
Base Capacity (vph)	365	1746	788	182	2061	970	399	604	564	742
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.72	0.12	0.18	0.33	0.13	0.13	0.26	0.51	0.15

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 143.6
Natural Cycle: 160
Control Type: Semi Act-Uncoord

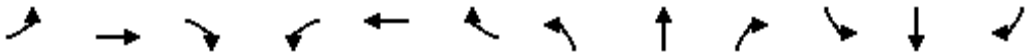
Splits and Phases: 1: Camilla Rd/Kirwin Ave & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1249	97	33	672	122	53	96	59	290	76	32
Future Volume (vph)	10	1249	97	33	672	122	53	96	59	290	76	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1819	3444	1493	1825	3444	1541	1638	1748		1805	1709	
Flt Permitted	0.38	1.00	1.00	0.07	1.00	1.00	0.69	1.00		0.59	1.00	
Satd. Flow (perm)	719	3444	1493	127	3444	1541	1185	1748		1130	1709	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	1249	97	33	672	122	53	96	59	290	76	32
RTOR Reduction (vph)	0	0	40	0	0	64	0	13	0	0	9	0
Lane Group Flow (vph)	10	1249	57	33	672	58	53	142	0	290	99	0
Confl. Peds. (#/hr)	10		17	17		10	17		2	2		17
Confl. Bikes (#/hr)			3						1			3
Heavy Vehicles (%)	0%	6%	5%	0%	6%	3%	9%	3%	3%	1%	5%	9%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	60.0	60.0	60.0	68.4	68.4	68.4	48.6	48.6		61.7	61.7	
Effective Green, g (s)	60.0	60.0	60.0	68.4	68.4	68.4	48.6	48.6		61.7	61.7	
Actuated g/C Ratio	0.42	0.42	0.42	0.47	0.47	0.47	0.34	0.34		0.43	0.43	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	299	1434	621	123	1634	731	399	589		531	731	
v/s Ratio Prot		c0.36		0.01	c0.20			0.08		c0.04	0.06	
v/s Ratio Perm	0.01		0.04	0.12		0.04	0.04			c0.20		
v/c Ratio	0.03	0.87	0.09	0.27	0.41	0.08	0.13	0.24		0.55	0.14	
Uniform Delay, d1	24.9	38.5	25.5	27.7	24.7	20.7	33.1	34.4		29.9	25.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	6.1	0.1	1.2	0.2	0.0	0.2	0.2		1.2	0.4	
Delay (s)	24.9	44.6	25.6	28.8	24.9	20.7	33.3	34.7		31.0	25.4	
Level of Service	C	D	C	C	C	C	C	C		C	C	
Approach Delay (s)		43.1			24.4			34.3			29.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	144.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1299	19	19	739	5	42	0	52	5	0	4
Future Volume (Veh/h)	6	1299	19	19	739	5	42	0	52	5	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	6	1299	19	19	739	5	42	0	52	5	0	4
Pedestrians		10			2			50			10	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			5			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					170							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	754			1368			1792	2162	711	1505	2170	392
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	440			1368			1623	2045	711	1296	2053	27
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			19	100	85	94	100	100
cM capacity (veh/h)	982			473			52	44	356	83	44	902

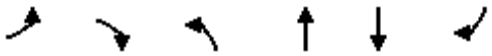
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	866	452	19	493	251	94	9
Volume Left	6	0	0	19	0	0	42	5
Volume Right	0	0	19	0	0	5	52	4
cSH	982	1700	1700	473	1700	1700	98	139
Volume to Capacity	0.01	0.51	0.27	0.04	0.29	0.15	0.96	0.06
Queue Length 95th (m)	0.1	0.0	0.0	1.0	0.0	0.0	43.2	1.6
Control Delay (s)	8.7	0.0	0.0	12.9	0.0	0.0	158.5	32.6
Lane LOS	A			B			F	D
Approach Delay (s)	0.0			0.3			158.5	32.6
Approach LOS							F	D

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	50.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	2	224	4	4	395
Future Volume (Veh/h)	3	2	224	4	4	395
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	2	224	4	4	395
Pedestrians	4					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	633	230			232	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	609	195			197	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	446	825			1316	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	228	399
Volume Left	3	0	4
Volume Right	2	4	0
cSH	547	1700	1316
Volume to Capacity	0.01	0.13	0.00
Queue Length 95th (m)	0.2	0.0	0.1
Control Delay (s)	11.6	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	11.6	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	26	9	217	373	5
Future Volume (Veh/h)	13	26	9	217	373	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	28	10	236	405	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				114		
pX, platoon unblocked	0.99					
vC, conflicting volume	664	408	410			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	657	408	410			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	96	99			
cM capacity (veh/h)	423	644	1149			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	246	410
Volume Left	14	10	0
Volume Right	28	0	5
cSH	548	1149	1700
Volume to Capacity	0.08	0.01	0.24
Queue Length 95th (m)	1.9	0.2	0.0
Control Delay (s)	12.1	0.4	0.0
Lane LOS	B	A	
Approach Delay (s)	12.1	0.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

1: Camilla Rd/Kirwin Ave & Dundas St E

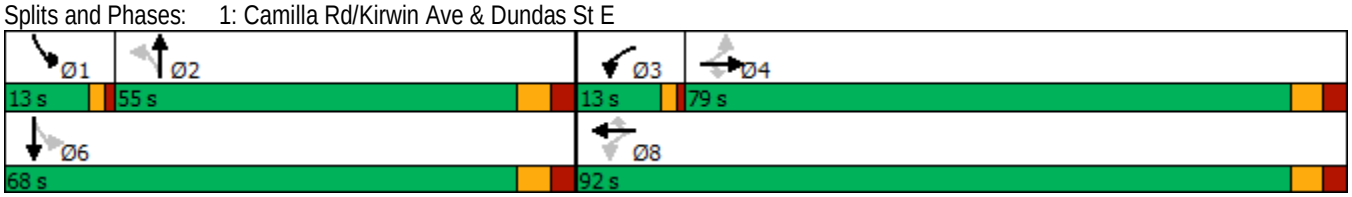
02-10-2021

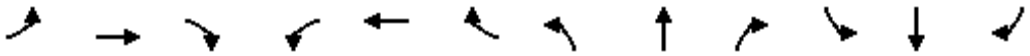
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	46	1002	55	100	1165	420	57	137	194	96
Future Volume (vph)	46	1002	55	100	1165	420	57	137	194	96
Lane Group Flow (vph)	46	1002	55	100	1165	420	57	209	194	136
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		3	8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	3	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	75.0	75.0	75.0	13.0	92.0	92.0	53.0	53.0	13.0	68.0
Total Split (s)	79.0	79.0	79.0	13.0	92.0	92.0	55.0	55.0	13.0	68.0
Total Split (%)	49.4%	49.4%	49.4%	8.1%	57.5%	57.5%	34.4%	34.4%	8.1%	42.5%
Yellow Time (s)	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	2.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0	1.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
Recall Mode	Min	Min	Min	None	None	None	Min	Min	None	Max
v/c Ratio	0.53	0.83	0.10	0.53	0.75	0.46	0.12	0.32	0.35	0.16
Control Delay	58.7	46.6	4.5	29.8	34.8	3.6	32.0	30.9	22.9	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	46.6	4.5	29.8	34.8	3.6	32.0	30.9	22.9	20.7
Queue Length 50th (m)	9.7	126.3	0.0	14.5	131.8	0.0	9.9	35.7	28.1	17.9
Queue Length 95th (m)	24.3	151.5	6.4	24.8	155.7	16.9	22.7	64.1	51.8	36.1
Internal Link Dist (m)		146.0			239.6			263.0		56.0
Turn Bay Length (m)	40.0		45.0	40.0		110.0	70.0		95.0	
Base Capacity (vph)	142	1960	864	203	2337	1155	462	663	556	844
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.51	0.06	0.49	0.50	0.36	0.12	0.32	0.35	0.16

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 132.1
Natural Cycle: 160
Control Type: Semi Act-Uncoord

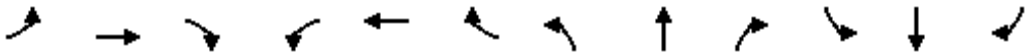
Splits and Phases: 1: Camilla Rd/Kirwin Ave & Dundas St E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	1002	55	100	1165	420	57	137	72	194	96	40
Future Volume (vph)	46	1002	55	100	1165	420	57	137	72	194	96	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1821	3579	1527	1789	3614	1562	1792	1783		1777	1805	
Flt Permitted	0.13	1.00	1.00	0.09	1.00	1.00	0.67	1.00		0.54	1.00	
Satd. Flow (perm)	259	3579	1527	175	3614	1562	1264	1783		1014	1805	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	46	1002	55	100	1165	420	57	137	72	194	96	40
RTOR Reduction (vph)	0	0	36	0	0	240	0	11	0	0	8	0
Lane Group Flow (vph)	46	1002	19	100	1165	180	57	198	0	194	128	0
Confl. Peds. (#/hr)	16		24	24		16	16		15	15		16
Confl. Bikes (#/hr)			3			2			3			2
Heavy Vehicles (%)	0%	2%	2%	2%	1%	1%	0%	1%	1%	2%	1%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	44.7	44.7	44.7	56.7	56.7	56.7	48.5	48.5		61.3	61.3	
Effective Green, g (s)	44.7	44.7	44.7	56.7	56.7	56.7	48.5	48.5		61.3	61.3	
Actuated g/C Ratio	0.34	0.34	0.34	0.43	0.43	0.43	0.37	0.37		0.46	0.46	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	87	1211	517	185	1552	670	464	655		527	838	
v/s Ratio Prot		c0.28		0.04	c0.32			0.11		c0.03	0.07	
v/s Ratio Perm	0.18		0.01	0.19		0.12	0.05			c0.14		
v/c Ratio	0.53	0.83	0.04	0.54	0.75	0.27	0.12	0.30		0.37	0.15	
Uniform Delay, d1	35.2	40.1	29.2	27.6	31.7	24.3	27.7	29.7		21.5	20.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.7	4.8	0.0	3.2	2.1	0.2	0.1	0.3		0.4	0.4	
Delay (s)	40.9	44.9	29.3	30.8	33.8	24.5	27.8	30.0		21.9	20.8	
Level of Service	D	D	C	C	C	C	C	C		C	C	
Approach Delay (s)		43.9			31.3			29.5			21.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	132.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1068	59	33	1213	16	39	0	24	17	1	53
Future Volume (Veh/h)	36	1068	59	33	1213	16	39	0	24	17	1	53
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	36	1068	59	33	1213	16	39	0	24	17	1	53
Pedestrians		10			2			32			16	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		1			0			3			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					170							
pX, platoon unblocked	0.72						0.72	0.72		0.72	0.72	0.72
vC, conflicting volume	1245			1159			1938	2512	598	1935	2534	640
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	578			1159			1534	2327	598	1530	2357	0
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			94			12	100	94	65	96	93
cM capacity (veh/h)	703			591			44	23	431	49	22	770

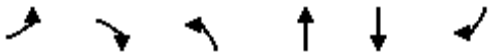
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	36	712	415	33	809	420	63	71
Volume Left	36	0	0	33	0	0	39	17
Volume Right	0	0	59	0	0	16	24	53
cSH	703	1700	1700	591	1700	1700	67	153
Volume to Capacity	0.05	0.42	0.24	0.06	0.48	0.25	0.94	0.46
Queue Length 95th (m)	1.2	0.0	0.0	1.3	0.0	0.0	35.0	16.3
Control Delay (s)	10.4	0.0	0.0	11.5	0.0	0.0	195.9	47.2
Lane LOS	B			B			F	E
Approach Delay (s)	0.3			0.3			195.9	47.2
Approach LOS							F	E

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	49.3%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	18	590	13	7	303
Future Volume (Veh/h)	28	18	590	13	7	303
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	28	18	590	13	7	303
Pedestrians	11		5			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	1		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	930	610			614	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	892	552			556	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	96			99	
cM capacity (veh/h)	289	497			951	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	603	310
Volume Left	28	0	7
Volume Right	18	13	0
cSH	345	1700	951
Volume to Capacity	0.13	0.35	0.01
Queue Length 95th (m)	3.5	0.0	0.2
Control Delay (s)	17.0	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	17.0	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	17	25	583	293	15
Future Volume (Veh/h)	8	17	25	583	293	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	18	27	634	318	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				114		
pX, platoon unblocked	0.96					
vC, conflicting volume	1014	326	334			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	993	326	334			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	97	98			
cM capacity (veh/h)	255	715	1225			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	661	334
Volume Left	9	27	0
Volume Right	18	0	16
cSH	447	1225	1700
Volume to Capacity	0.06	0.02	0.20
Queue Length 95th (m)	1.5	0.5	0.0
Control Delay (s)	13.6	0.6	0.0
Lane LOS	B	A	
Approach Delay (s)	13.6	0.6	0.0
Approach LOS	B		

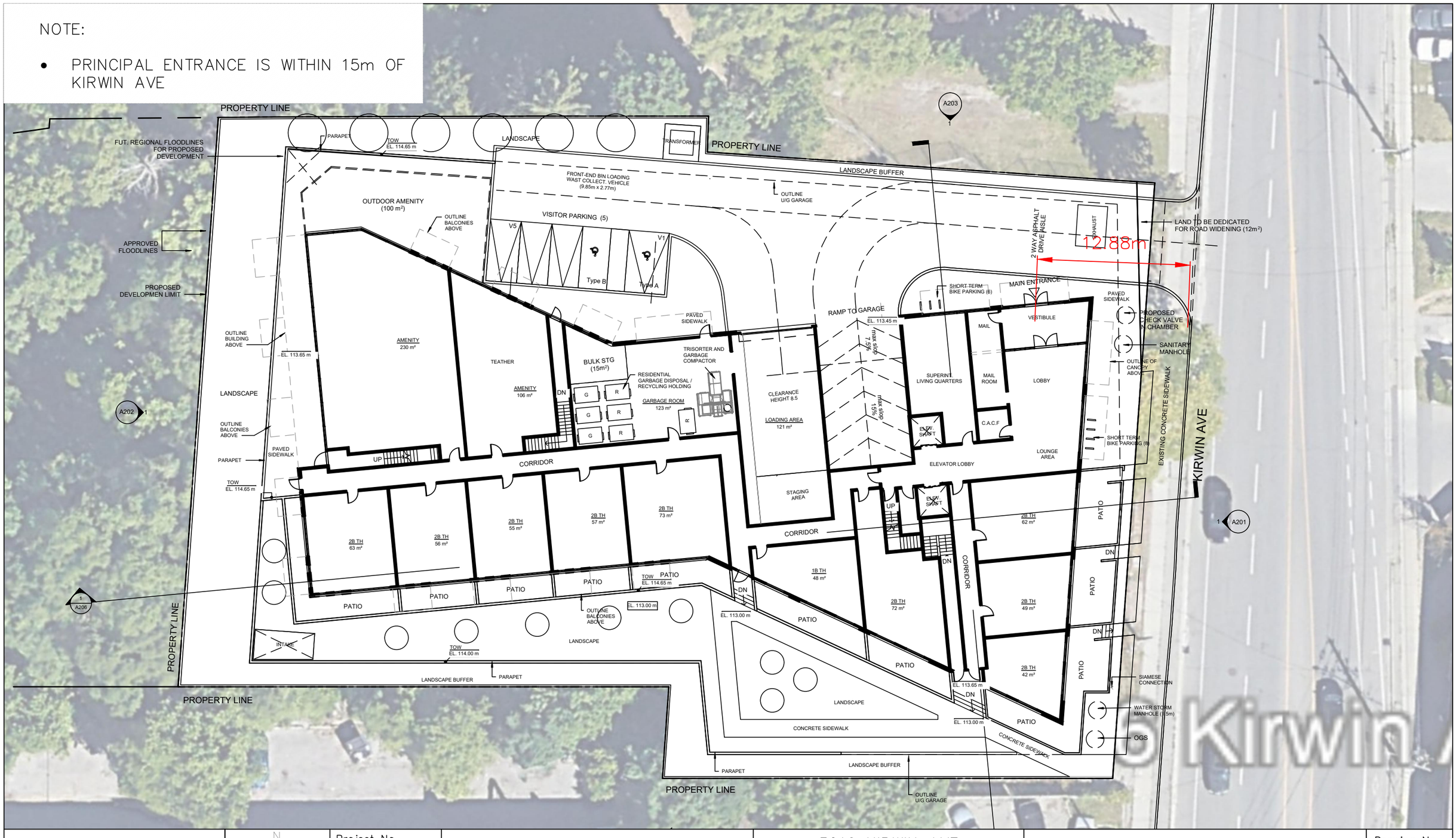
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

APPENDIX G

Loading Swept Path Diagrams

NOTE:

- PRINCIPAL ENTRANCE IS WITHIN 15m OF KIRWIN AVE



DRAWN BY: D.T. PLOT DATE: February 17, 2021

LEA Consulting Ltd.
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N

Project No. 21111

Date FEB. 17, 2020

DRAFT
FOR DISCUSSION

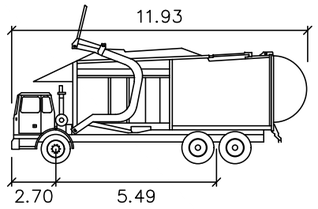
3016 KIRWIN AVE
MISSISSAUGA ONTARIO

3 0 3 6 9m
1:300

GROUND FLOOR
FIRE ROUTE

Drawing No. 001

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp



Garbage Peel meters

Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 25.0

PROPERTY LINE
PARAPET
TOW EL. 114.65 m
LANDSCAPE
TRANSFORMER
PROPERTY LINE
LANDSCAPE BUFFER
FRONT-END BIN LOADING WAST COLLECT. VEHICLE (9.85m x 2.77m)
OUTLINE U/G GARAGE
OUTDOOR AMENITY (100 m²)
OUTLINE BALCONIES ABOVE
VISITOR PARKING (5)
V5
V1
Type B
Type A
2-WAY ASPHALT DRIVE AISLE
EXHAUST
LAND TO BE DEDICATED FOR ROAD WIDENING (12m²)
R13.0
APPROVED FLOODLINES
PROPOSED DEVELOPMEN LIMIT
OUTLINE BUILDING ABOVE
EL. 113.65 m
AMENITY 230 m²
TEATHER
PAVED SIDEWALK
TRISORTER AND GARBAGE COMPACTOR
BULK STG (15m²)
RESIDENTIAL GARBAGE DISPOSAL / RECYCLING HOLDING
AMENITY 106 m²
GARBAGE ROOM 22m²
DN
HEAD-ON APPROACH
18.00m
RAMP TO GARAGE
EL. 113.45 m
max slope 7.5%
CLEARANCE HEIGHT 8.5
LOADING AREA 121 m²
SHORT TERM BIKE PARKING (6)
MAIN ENTRANCE
VESTIBULE
MAIL
SUPERINT. LIVING QUARTERS
MAIL ROOM
LOBBY
PAVED SIDEWALK
PROPOSED CHECK VALVE CHAMBER
SANITARY MANHOLE
OUTLINE OF CANOPY ABOVE
A202 1
LANDSCAPE
OUTLINE BALCONIES ABOVE
PARAPET
PAVED SIDEWALK
TOW EL. 114.65 m
UP
CORRIDOR
STAGING AREA
4.00
6.00
ELEV. SHAFT
C.A.C.F
ELEVATOR LOBBY
LOUNGE AREA
SHORT TERM BIKE PARKING (6)
EXISTING CONCRETE SIDEWALK
KIRWIN AVE
A203 1
1 A201
2B TH 63 m²
2B TH 56 m²
2B TH 55 m²
2B TH 57 m²
2B TH 73 m²
2B TH 62 m²
PATIO
1 A206
MIN. 10m² BULKY SET OUT AREA REQUIRED.
INTAKE
TOW EL. 114.00 m
EL. 113.00 m
1B TH 48 m²
2B TH 72 m²
2B TH 49 m²
2B TH 42 m²
EL. 113.65 m
CONCRETE SIDEWALK
SIAMESE CONNECTION
WATER STORM MANHOLE (1.5m)
OGS
PROPERTY LINE
LANDSCAPE BUFFER
PARAPET
OUTLINE U/G GARAGE

DRAWN BY: D.T. PLOT DATE: February 17, 2021

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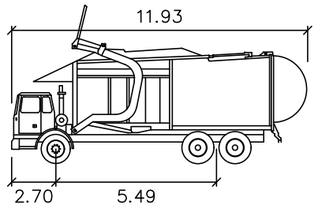
3016 KIRWIN AVE
MISSISSAUGA ONTARIO

3 0 3 6 9m
1:300

GROUND FLOOR
PEEL REGION GARBAGE TRUCK
ENTRY PATH

Drawing No. 002

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp



Garbage Peel meters

Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 25.0

PROPERTY LINE
PARAPET
TOW EL. 114.65 m
LANDSCAPE
TRANSFORMER
PROPERTY LINE
LANDSCAPE BUFFER
FRONT-END BIN LOADING WAST COLLECT. VEHICLE (9.85m x 2.77m)
OUTLINE U/G GARAGE
OUTDOOR AMENITY (100 m²)
OUTLINE BALCONIES ABOVE
VISITOR PARKING (5)
V5
V1
Type B
Type A
14.47<15.0
REVERSE DISTANCE
2 WAY ASPHALT DRIVE AISLE
EXHAUST
LAND TO BE DEDICATED FOR ROAD WIDENING (12m²)
APPROVED FLOODLINES
PROPOSED DEVELOPMEN LIMIT
A203
1
SHORT-TERM BIKE PARKING (6)
MAIN ENTRANCE
PAVED SIDEWALK
RAMP TO GARAGE
EL. 113.45 m
max slope 7.5%
PROPOSED CHECK VALVE CHAMBER
SANITARY MANHOLE
OUTLINE OF CANOPY ABOVE
OUTLINE BUILDING ABOVE
EL. 113.65 m
AMENITY 230 m²
TEATHER
AMENITY 106 m²
BULK STG (15m²)
TRISORTER AND GARBAGE COMPACTOR
RESIDENTIAL GARBAGE DISPOSAL / RECYCLING HOLDING
GARBAGE ROOM 123 m²
CLEARANCE HEIGHT 8.5
LOADING AREA 121 m²
SUPERINT. LIVING QUARTERS
MAIL ROOM
MAIL
VESTIBULE
LOBBY
C.A.C.F
ELEV. SHAFT
LOUNGE AREA
ELEVATOR LOBBY
SHORT TERM BIKE PARKING (6)
EXISTING CONCRETE SIDEWALK
KIRWIN AVE
R13.0
A202
1
OUTLINE BALCONIES ABOVE
PAVED SIDEWALK
PARAPET
TOW EL. 114.65 m
CORRIDOR
UP
DN
4.00
6.00
STAGING AREA
1B TH 48 m²
2B TH 72 m²
2B TH 62 m²
2B TH 49 m²
2B TH 42 m²
2B TH 63 m²
2B TH 56 m²
2B TH 55 m²
2B TH 57 m²
2B TH 73 m²
PATIO
1
A206
MIN. 10m² BULKY SET OUT AREA REQUIRED.
INTAKE
TOW EL. 114.00 m
EL. 113.00 m
LANDSCAPE
CONCRETE SIDEWALK
EL. 113.65 m
SIAMESE CONNECTION
WATER STORM MANHOLE (1.5m)
OGS
1
A201
PROPERTY LINE
LANDSCAPE BUFFER
PARAPET
PROPERTY LINE
OUTLINE U/G GARAGE

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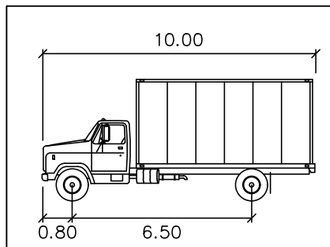
3016 KIRWIN AVE
MISSISSAUGA ONTARIO

3 0 3 6 9m
1:300

GROUND FLOOR
PEEL REGION GARBAGE TRUCK
EXIT PATH

Drawing No. 003

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

PROPERTY LINE
PARAPET
TOW EL. 114.65 m
LANDSCAPE
TRANSFORMER
PROPERTY LINE
LANDSCAPE BUFFER
FRONT-END BIN LOADING WAST COLLECTION VEHICLE (9.85m x 2.6m)
OUTLINE U/G GARAGE
OUTDOOR AMENITY (100 m²)
OUTLINE BALCONIES ABOVE
VISITOR PARKING (5)
V5
V1
Type B
Type A
2 WAY ASPHALT DRIVE AISLE
EXHAUST
LAND TO BE DEDICATED FOR ROAD WIDENING (12m²)
PROPOSED DEVELOPMEN LIMIT
OUTLINE BUILDING ABOVE
EL. 113.65 m
AMENITY 230 m²
TEATHER
AMENITY 106 m²
BULK STG (15m²)
TRISORTER AND GARBAGE COMPACTOR
RESIDENTIAL GARBAGE DISPOSAL / RECYCLING HOLDING
GARBAGE ROOM 123 m²
PAVED SIDEWALK
RAMP TO GARAGE
EL. 113.45 m
max slope 4.5%
CLEARANCE HEIGHT 3.5
LOADING AREA 21 m²
max slope 15%
SHORT TERM BIKE PARKING (6)
MAIN ENTRANCE
VESTIBULE
MAIL
MAIL ROOM
LOBBY
SUPERINT. LIVING QUARTERS
C.A.C.F
ELEV. SHAFT
PAVED SIDEWALK
PROPOSED CHECK VALVE CHAMBER
SANITARY MANHOLE
OUTLINE OF CANOPY ABOVE
EXISTING CONCRETE SIDEWALK
KIRWIN AVE
A202 1
A203 1
1 A201
1 A206
LANDSCAPE
OUTLINE BALCONIES ABOVE
PARAPET
PAVED SIDEWALK
TOW EL. 114.65 m
UP
CORRIDOR
2B TH 63 m²
2B TH 56 m²
2B TH 55 m²
2B TH 57 m²
2B TH 73 m²
PATIO
TOW EL. 114.65 m
EL. 113.00 m
OUTLINE BALCONIES ABOVE
INTAKE
TOW EL. 114.00 m
LANDSCAPE
LANDSCAPE BUFFER
PARAPET
PROPERTY LINE
STAGING AREA
ELEVATOR LOBBY
LOUNGE AREA
SHORT TERM BIKE PARKING (6)
1B TH 48 m²
2B TH 72 m²
2B TH 62 m²
2B TH 49 m²
2B TH 42 m²
EL. 113.65 m
EL. 113.00 m
SIAMESE CONNECTION
WATER STORM MANHOLE (1.5m)
OGS
CONCRETE SIDEWALK
LANDSCAPE BUFFER
PARAPET
PROPERTY LINE
OUTLINE U/G GARAGE

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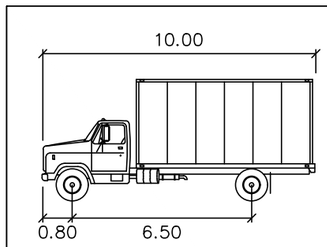
3016 KIRWIN AVE
MISSISSAUGA ONTARIO

3 0 3 6 9m
1:300

GROUND FLOOR
MSU – MOVING/DELIVERY TRUCK ENTRY PATH

Drawing No. 004

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

PROPERTY LINE
PARAPET
TOW EL. 114.65 m
LANDSCAPE
TRANSFORMER
PROPERTY LINE
LANDSCAPE BUFFER
FRONT-END BIN LOADING WAST COLLECT. VEHICLE (9.85m x 2.77m)
OUTLINE U/G GARAGE
OUTDOOR AMENITY (100 m²)
OUTLINE BALCONIES ABOVE
VISITOR PARKING (5)
V5
V1
Type B
Type A
2 WAY ASPHALT DRIVE AISLE
EXHAUST
LAND TO BE DEDICATED FOR ROAD WIDENING (12m²)
PROPOSED DEVELOPMEN LIMIT
OUTLINE BUILDING ABOVE
EL. 113.65 m
AMENITY 230 m²
TEATHER
AMENITY 106 m²
BULK STG (15m²)
RESIDENTIAL GARBAGE DISPOSAL / RECYCLING HOLDING
TRISORTER AND GARBAGE COMPACTOR
GARBAGE ROOM 123 m²
PAVED SIDEWALK
RAMP TO GARAGE
EL. 113.45 m
max slop 2.5%
CLEARANCE HEIGHT 8.5
LOADING AREA 21 m²
SHORT-TERM BIKE PARKING (6)
MAIN ENTRANCE
VESTIBULE
MAIL
SUPERINT. LIVING QUARTERS
MAIL ROOM
LOBBY
PROPOSED CHECK VALVE CHAMBER
SANITARY MANHOLE
OUTLINE OF CANOPY ABOVE
max slop 15%
ELEV. SHAFT
C.A.C.F
SHORT TERM BIKE PARKING (6)
EXISTING CONCRETE SIDEWALK
KIRWIN AVE
LANDSCAPE
OUTLINE BALCONIES ABOVE
PARAPET
TOW EL. 114.65 m
PAVED SIDEWALK
UP
CORRIDOR
ELEVATOR LOBBY
LOUNGE AREA
STAGING AREA
2B TH 63 m²
2B TH 56 m²
2B TH 55 m²
2B TH 57 m²
2B TH 73 m²
2B TH 62 m²
1B TH 48 m²
2B TH 72 m²
2B TH 49 m²
2B TH 42 m²
PATIO
TOW EL. 114.65 m
EL. 113.00 m
OUTLINE BALCONIES ABOVE
INTAKE
TOW EL. 114.00 m
LANDSCAPE
LANDSCAPE BUFFER
PARAPET
PROPERTY LINE
CONCRETE SIDEWALK
SIAMESE CONNECTION
WATER STORM MANHOLE (1.5m)
OGS
OUTLINE U/G GARAGE
A202
A203
A206
A207

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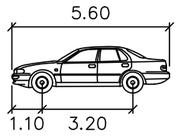
MISSISSAUGA ONTARIO

3 0 3 6 9m
1:300

GROUND FLOOR
MSU – MOVING/DELIVERY TRUCK EXIT PATH

Drawing No. 005

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

PROPERTY LINE
APPROVED FLOODLINES
PROPOSED DEVELOPMEN LIMIT
PARAPET
TOW EL. 114.65 m
LANDSCAPE
TRANSFORMER
FRONT-END BIN LOADING WAST COLLECT. VEHICLE (9.85m x 2.77m)
OUTLINE U/G GARAGE
LANDSCAPE BUFFER
OUTDOOR AMENITY (100 m²)
OUTLINE BALCONIES ABOVE
VISITOR PARKING (5)
V5
V1
Type B
Type A
2 WAY ASPHALT DRIVE AISLE
EXHAUST
LAND TO BE DEDICATED FOR ROAD WIDENING (12m²)
A203
1
SHORT-TERM BIKE PARKING (6)
MAIN ENTRANCE
PAVED SIDEWALK
RAMP TO GARAGE
EL. 113.45m
TRUE SLOPE
PROPOSED CHECK VALVE CHAMBER
SANITARY MANHOLE
OUTLINE OF CANOPY ABOVE
MAIL
VESTIBULE
SUPERINT. LIVING QUARTERS
MAIL ROOM
LOBBY
C.A.C.F
ELEV. SHAFT
LOUNGE AREA
ELEVATOR LOBBY
SHORT TERM BIKE PARKING (6)
EXISTING CONCRETE SIDEWALK
KIRWIN AVE
OUTLINE BUILDING ABOVE
EL. 113.65 m
AMENITY 230 m²
TEATHER
AMENITY 106 m²
BULK STG (15m²)
RESIDENTIAL GARBAGE DISPOSAL / RECYCLING HOLDING
TRISORTER AND GARBAGE COMPACTOR
GARBAGE ROOM 123 m²
CLEARANCE HEIGHT 8.5
LOADING AREA 121 m²
STAGING AREA
A202
1
OUTLINE BALCONIES ABOVE
PAVED SIDEWALK
PARAPET
TOW EL. 114.65 m
UP
DN
CORRIDOR
2B TH 63 m²
2B TH 56 m²
2B TH 55 m²
2B TH 57 m²
2B TH 73 m²
1B TH 48 m²
2B TH 72 m²
2B TH 62 m²
2B TH 49 m²
2B TH 42 m²
PATIO
TOW EL. 114.65 m
EL. 113.00 m
OUTLINE BALCONIES ABOVE
INTAKE
TOW EL. 114.00 m
LANDSCAPE
PARAPET
LANDSCAPE BUFFER
PROPERTY LINE
CONCRETE SIDEWALK
SIAMESE CONNECTION
WATER STORM MANHOLE (1.5m)
OGS
OUTLINE U/G GARAGE
1 A206
1 A201

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3016 KIRWIN AVE
MISSISSAUGA ONTARIO

3 0 3 6 9m
1:300

GROUND FLOOR PASSENGER VEHICLE ENTRY & EXIT PATHS

Drawing No. 006

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp