TRANSPORTATION IMPACT STUDY

Proposed Residential Development

1056-1060 Brant Street
City of Burlington

December 2025

24223

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1 INTRODUCTION

LEA Consulting Ltd. (LEA) has been retained by 2735842 Ontario Inc., 2060188 Ontario Inc., 2735841 Ontario Inc., and 2059977 Ontario Inc to undertake a Transportation Impact Study (TIS) for the proposed residential development located at 1056-1060 Brant Street in the City of Burlington (herein referred to as the "subject site"). The following TIS has been prepared in support of the Official Plan Amendment (OPA) / Zoning By-law Amendment (ZBA) application for the proposed development. The subject site is currently vacant. The site location is illustrated in **Figure 1-1**.

Figure 1-1: Site Location



Source: Google Maps, Accessed March 2025

The purpose of this assessment is to review the existing transportation infrastructure in the surrounding area, including the road network, transit network and active transportation network, and assess the traffic impact of the proposed development on the surrounding network. In addition, the proposed parking and loading provisions have been reviewed, and Transportation Demand Management (TDM) measures have been recommended to encourage the use of other modes of transportation. The TIS for the proposed development has been conducted in accordance with the requirements set out by the Halton Region's *Transportation Impact Study Guidelines (January 2015)* and MTO's *General Guidelines for the Preparation of Traffic Impact Studies (March 2023).*

1.1 PROPOSED DEVELOPMENT

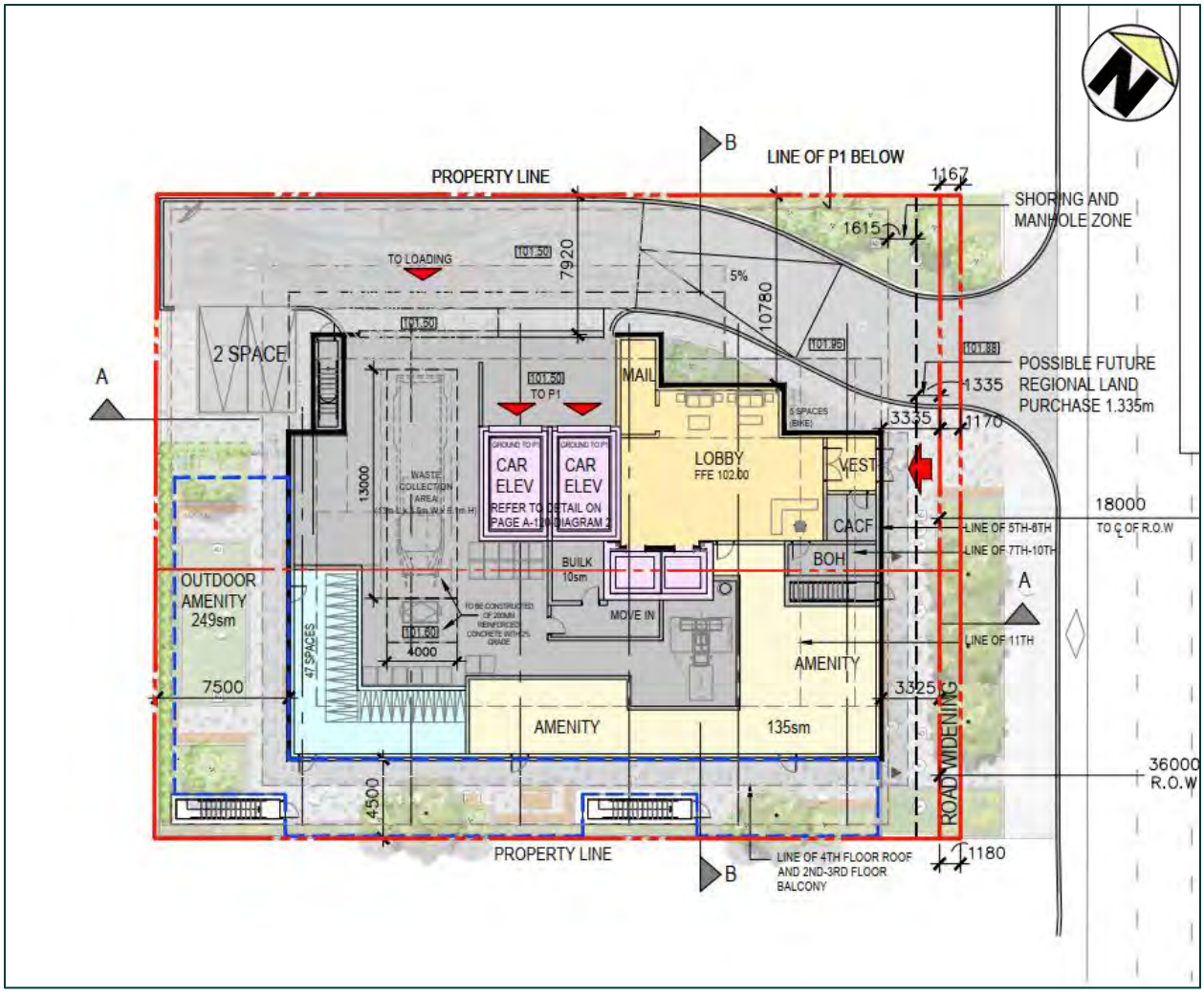
The proposed development is an 11-storey residential building containing 93 purpose-built rental units. The proposed site statistics are summarized in **Table 1-1.**

Table 1-1: Site Statistics

Land Use	Unit Count / GFA
Residential	**93 Units**
1-Bedroom/ Studio	64 Units
2-Bedroom	20 Units
3-Bedroom	9 Units

Vehicular access to the development is proposed via a full movement driveway off Brant Street. The proposed ground floor plan is illustrated in **Figure 1-2.**

Figure 1-2: Proposed Ground Floor Plan



Source: WZMH Architects, December 2025

2 EXISTING TRAFFIC CONDITIONS

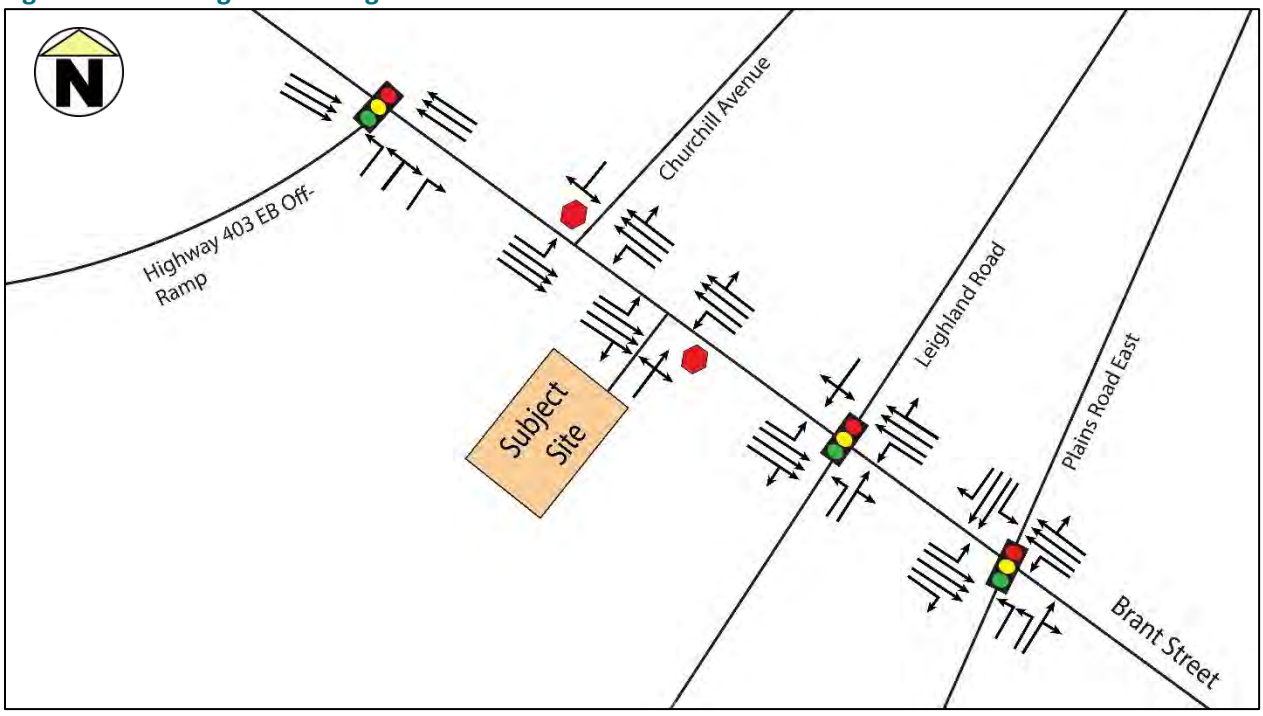
This section identifies the existing traffic conditions present in the study area, including the road, transit, cyclist, and pedestrian networks. The study area was determined by assessing the size of the proposed development and its anticipated traffic impact. The study terms of reference and correspondence with the City of Burlington staff is included in **Appendix A.** The study area includes the following existing intersections:

- Brant Street and Highway 403 EB Off-Ramp (Signalized);
- Brant Street and Churchill Avenue/Site Access (Unsignalized);
- Brant Street and Leighland Road (Signalized); and
- Brant Street and Plain Road East (Signalized).

2.1 EXISTING ROAD NETWORK

This section describes the road network within the above-mentioned study area. The existing intersection controls and lane configuration are illustrated in **Figure 2-1**.

Figure 2-1: Existing Lane Configuration



Brant Street is a north-south regional urban road that operates with a seven (7) lane cross section, consisting of three lanes in each direction and a centre left turn lane. Brant Street runs between Dundas Street in the north to Lakeshore Road in the south. The roadway operates with a posted speed limit of 60 km/h in the study area. Brant Street is under the jurisdiction of Halton Region within the study area.

Highway 403 is an east-west highway that merges with Queen Elizabeth Way (QEW) within the study area. Highway 403 stretches from Woodstock in the west to Mississauga in the east. The roadway operates with a posted speed limit of 100 km/h in the study area. Highway 403 is under the jurisdiction of the Ministry of Transportation.

Churchill Avenue is an east-west local road that operates with a two (2) lane cross-section, consisting of one lane in each direction. Churchill Avenue operates between Brant Street in the west and Truman Street in the east. The roadway operates with an assumed speed limit of 40 km/h in the study area.

Leighland Road is a north-south neighbourhood connector road that operates with a two (2) lane cross-section, consisting of one lane in each direction. Leighland Avenue operates between east of the QEW to the west and Truman Street in the east. The roadway operates with a posted speed limit of 40 km/h in the study area.

Plains Road East is an east-west minor arterial that operates with a four (4) lane cross-section, consisting of two (2) lanes in each direction. Plains Road East operates from Fairview Street in the west to Brenda Crescent in the east, where it continues as Queensway Drive. The roadway operates with a posted speed limit of 60 km/h around the study area.

2.2 EXISTING TRANSIT NETWORK

The subject site is located in an area well-serviced by the existing Burlington transit network. There are a number of surface transit options available in the study area which connect the subject site to a variety of destinations, including the Burlington GO station. The subject site is within convenient walking distance of several bus stops along Brant Street, providing easy access to public transportation.

Transit routes currently servicing the area are illustrated in **Figure 2-2** and are described below. The site has a TransitScore™ of 54/100, which classifies the area as having "Good Transit" and indicates that there are several nearby public transportation options.

Figure 2-2: Existing Transit Network



Source: Burlington Transit, Accessed April 2025

Route 2 – Brant is a bus route that generally operates in a north-south direction, connecting the Downtown Terminal (John Street) to the Highway 407 Carpool Lot. Along the route, it serves key locations such as Burlington GO Station, which connects various local transit routes and GO Transit services.

Access Location: *Route 2 is accessible in the study area at the existing bus stop adjacent to the site (southbound direction), and at the intersection of Brant Street and Leighland Road (northbound direction).*

Route 12 – Upper Middle is a bus route that generally operates in an east-west direction on weekdays, connecting key location in the city. Route 12 runs from Burlington GO Station to Burlington North SmartCentre, passing through key intersections such as Guelph Line and Walkers Line.

Access Location: *Route 2 is accessible in the study area at the existing bus stop adjacent to the site (southbound direction), and at the intersection of Brant Street and Leighland Road (northbound direction).*

Route 52 – Burlington Northwest is a late-night bus route that primarily serves the northwest end of Burlington, covering key areas such as Walkers Line at Upper Middle Road, and Burlington GO Station. The route operates Monday through Saturday, with no service on Sundays.

Access Location: *Route 52 is accessible in the study area at the intersection of Brant Street and Leighland Road.*

Route 87 – North Service (Aldershot) is a bus route that that generally operates in an east-west direction, connecting Aldershot GO Station to Burlington GO Station. Service is available Monday through Friday; there is no service on weekends.

Access Location: *Route 2 is accessible in the study area at the existing bus stop adjacent to the site (southbound direction), and at the intersection of Brant Street and Leighland Road (northbound direction).*

GO Route 17 – Waterloo/Hamilton is a GO bus route that that generally operates in an east-west direction, connecting the University of Waterloo Terminal to Hamilton GO Centre. Service is available Monday through Friday; there is no service on weekends.

Access Location: *Route 17 is accessible in the study area at the intersection of Brant Street and Leighland Road.*

GO Route 18 – Lakeshore West is a GO bus route that that generally operates in an east-west direction, connecting Union Station to Hamilton GO Centre. Service is available Monday through Friday; there is no service on weekends.

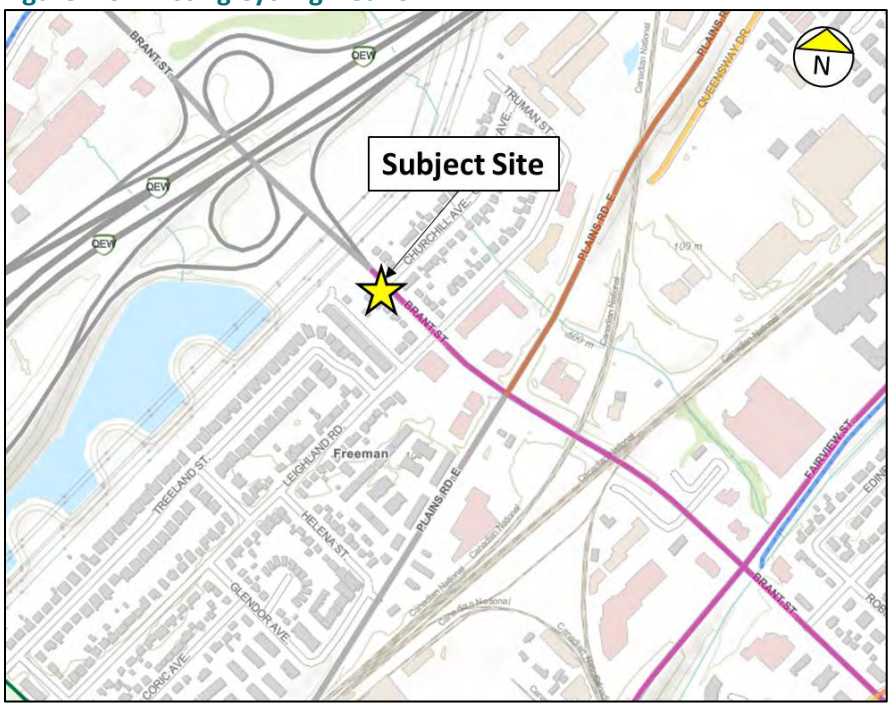
Access Location: *Route 18 is accessible in the study area at the intersection of Brant Street and Leighland Road.*

2.3 EXISTING CYCLING NETWORK

The existing cycling network surrounding the site is illustrated in **Figure 2-3**. The subject site is located in a neighborhood with access to nearby cycling infrastructure, including bike lanes along Brant Street and Fairview Street. Additionally, the site benefits from a mixed-use path (bike lane and sharrows) along Plain Road E, as well as sharrows on Queensway Drive, indicating shared use by cyclists and vehicles.

The site receives a BikeScore™ of 67/100, or "Bikeable", when entered into the WalkScore™ application. This indicates that cycling is feasible for some trips.

Figure 2-3: Existing Cycling Network



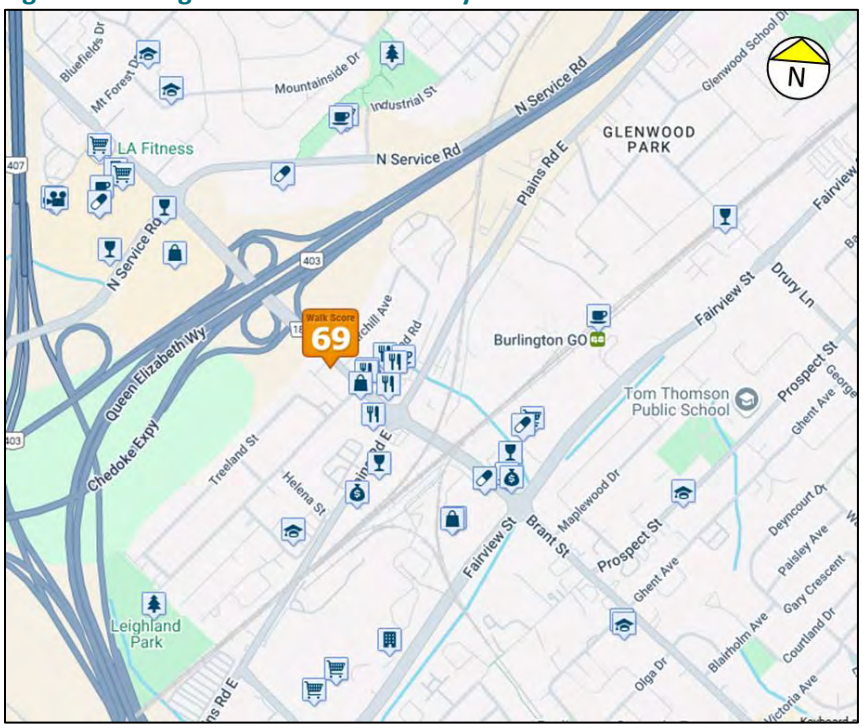
Source: City of Burlington, Accessed April 2025

2.4 EXISTING PEDESTRIAN NETWORK

The existing pedestrian network consists of sidewalks along both sides of all major roadways within the study area, except for Churchill Avenue which has a sidewalk on the south side only. Pedestrian crosswalks are available at the signalized intersection of Brant Street & Leighland Road and Brant Street & Plains Road East. The existing pedestrian network provides good connections between the residential and commercial uses in the area.

The site has a WalkScore™ of 69/100, or "Somewhat Walkable", which indicates that some daily errands can be readily accomplished without requiring a private vehicle. As shown in **Figure 2-4**, a 15-minute walk from the site provides access to amenities and services such as restaurants, retail, grocery stores, schools, and parks, ensuring that many daily needs can be accommodated as a pedestrian or a short bus ride.

Figure 2-4: Neighbourhood Walkability



Source: Walkscore.com, accessed April 2025

2.5 TRAFFIC DATA COLLECTION

Turning movement counts (TMCs) were used as the source of traffic data for the intersection capacity analysis. Traffic counts were collected by LEA to capture the weekday AM and PM peak periods. The signal timing plan (STP) for the signalized intersections was obtained from the Region of Halton.

A summary of the TMC data collected is outlined in **Table 2-1**, with detailed traffic counts and signal timing plans available in **Appendix B**.

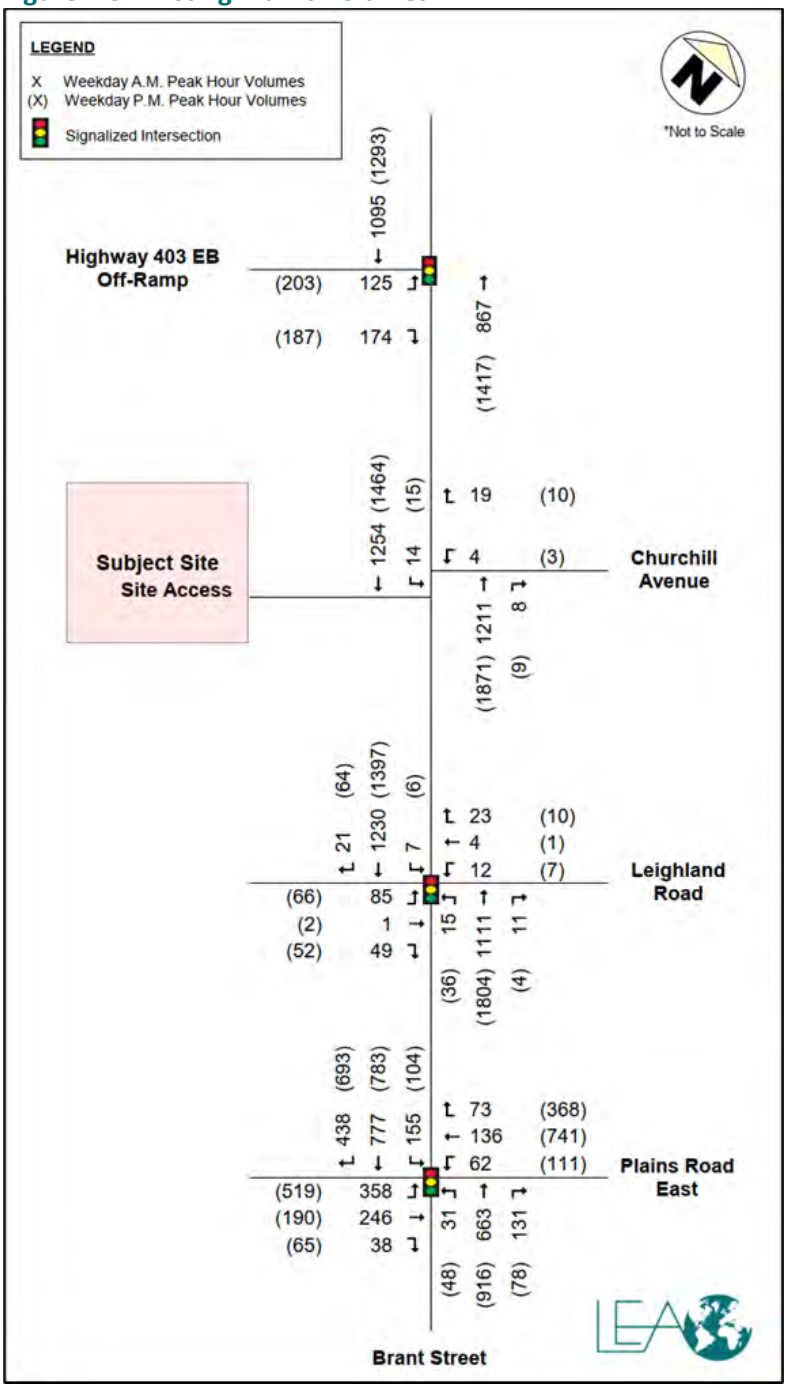
Table 2-1: Traffic Data Summary

Intersection	TMC Date	Source
Brant Street & Highway 403 EB Off-Ramp	Thursday, February 27, 2025	LEA Consulting Ltd.
Brant Street & Churchill Avenue/Site Access		
Brant Street & Leighland Road		
Brant Street & Plains Road	Tuesday, October 29, 2025	

2.6 EXISTING TRAFFIC VOLUMES

The existing traffic volumes during the weekday AM and PM peak hours are illustrated in **Figure 2-5.** Volumes were balanced where adjacent intersections had discrepancies.

Figure 2-5: Existing Traffic Volumes



3 FUTURE BACKGROUND CONDITIONS

For the analysis of future background traffic conditions, this study considers a five (5)-year horizon from the existing year 2025 to the future year 2030 for full buildout of the site, along with 2035 and 2040 horizons. Future background conditions include traffic added to the network from general corridor growth. The future background conditions were used as the baseline for evaluating the impact of the proposed development.

3.1 FUTURE ROAD NETWORK IMPROVEMENTS

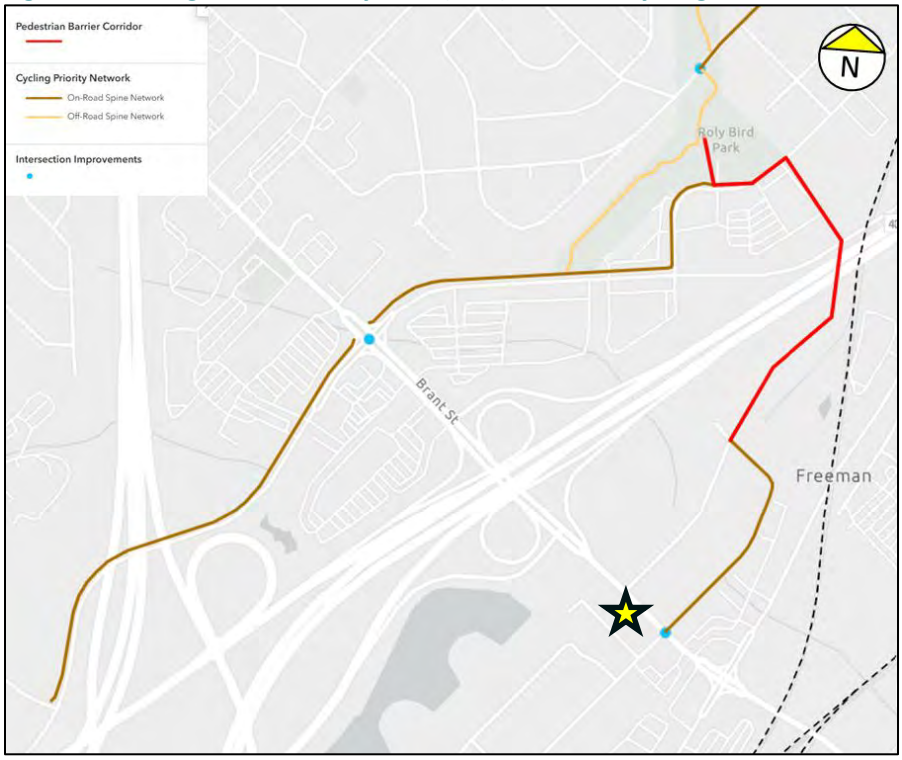
No external roadway improvements are noted within the immediate study area. However, it is noted that MTO will be implementing active transportation improvements at the Highway 403 interchange with Brant Street as part of a future bridge widening.

3.2 FUTURE ACTIVE TRANSPORTATION IMPROVEMENTS

3.2.1 Integrated Mobility Plan (IMP)

The City of Burlington has developed its first Integrated Mobility Plan (IMP), a 30-year strategy aimed at enhancing the citywide transportation network. The IMP focuses on creating a sustainable and accessible transportation system, emphasizing improvements for pedestrians and cyclists. Within the study area, the plan identifies a cycling connection from Leighland Road that connects across the QEW at a future crossing to the east. In addition, Brant Street (north of Fairview Street) is identified as a Candidate Frequent Transit Corridor where transit improvements will be prioritized. **Figure 3-1** Illustrates the future cycling network.

Figure 3-1: Integrated Mobility Plan (IMP) – Future Cycling Network



Source: City of Burlington

3.3 CORRIDOR GROWTH

A 2.00% annual growth rate was applied to the through movements along Brant Street and Plains Road East. A 2.5% growth rate was assumed for traffic associated with the Highway 403 EB Off-Ramp. Growth rates were applied to the through movements along the respective corridors using the rates outlined in **Table 3-1**.

Table 3-1: Corridor Growth Rates

Corridor	AM	PM
Brant Street	2.00%	2.00%
Plains Road East	2.00%	2.00%
Highway 403 EB Off-Ramp	2.50%	2.50%

3.4 BACKGROUND DEVELOPMENTS

No proposed/approved background developments were identified in the surrounding area.

3.5 FUTURE BACKGROUND TRAFFIC VOLUMES

Future background traffic volumes during the weekday AM and PM peak hours under the 2030, 2035, and 2040 horizon years are illustrated in **Figure 3-2** to **Figure 3-4**.

Figure 3-2: Future Background (2030) Traffic Volumes

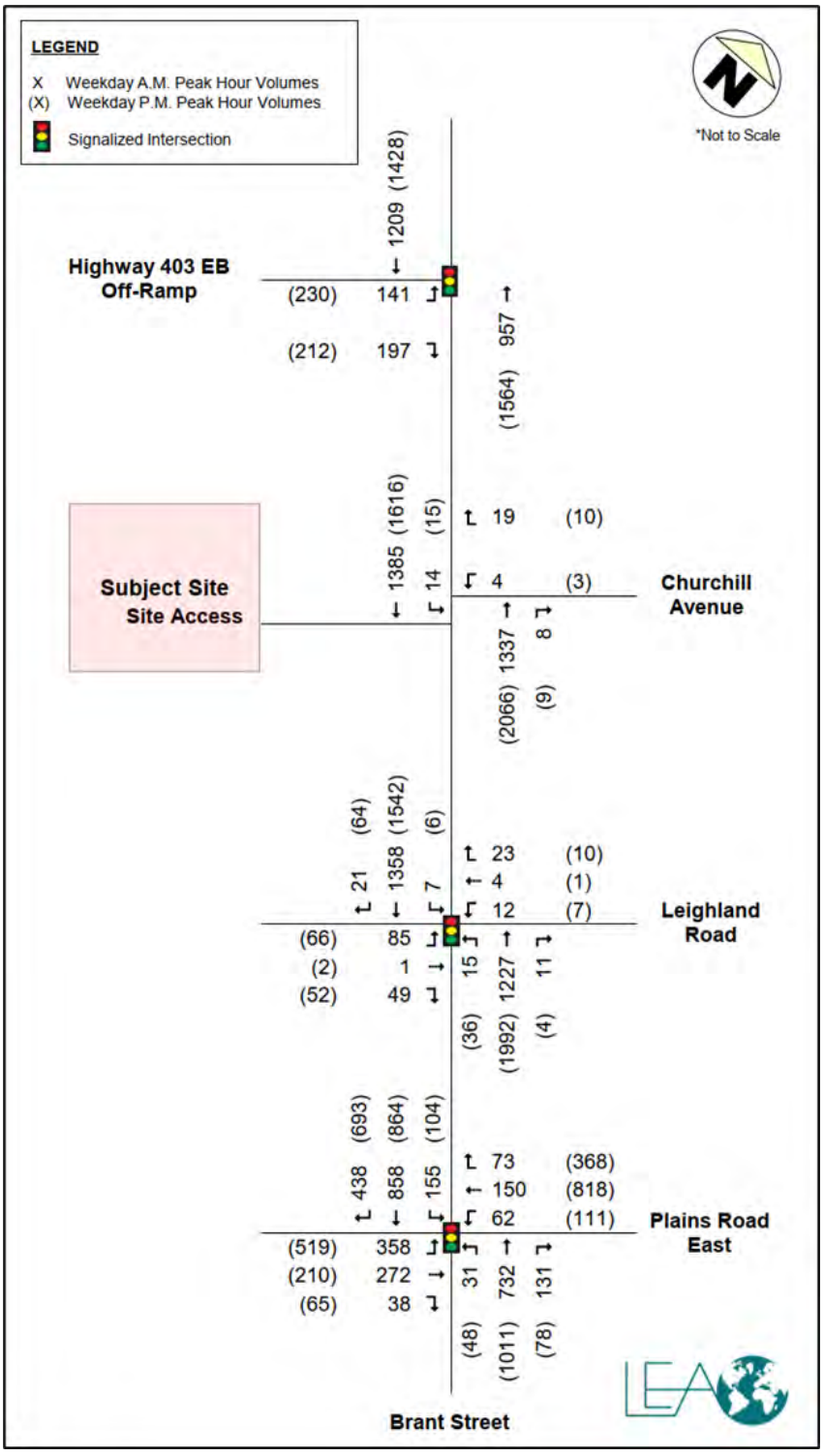


Figure 3-3: Future Background (2035) Traffic Volumes

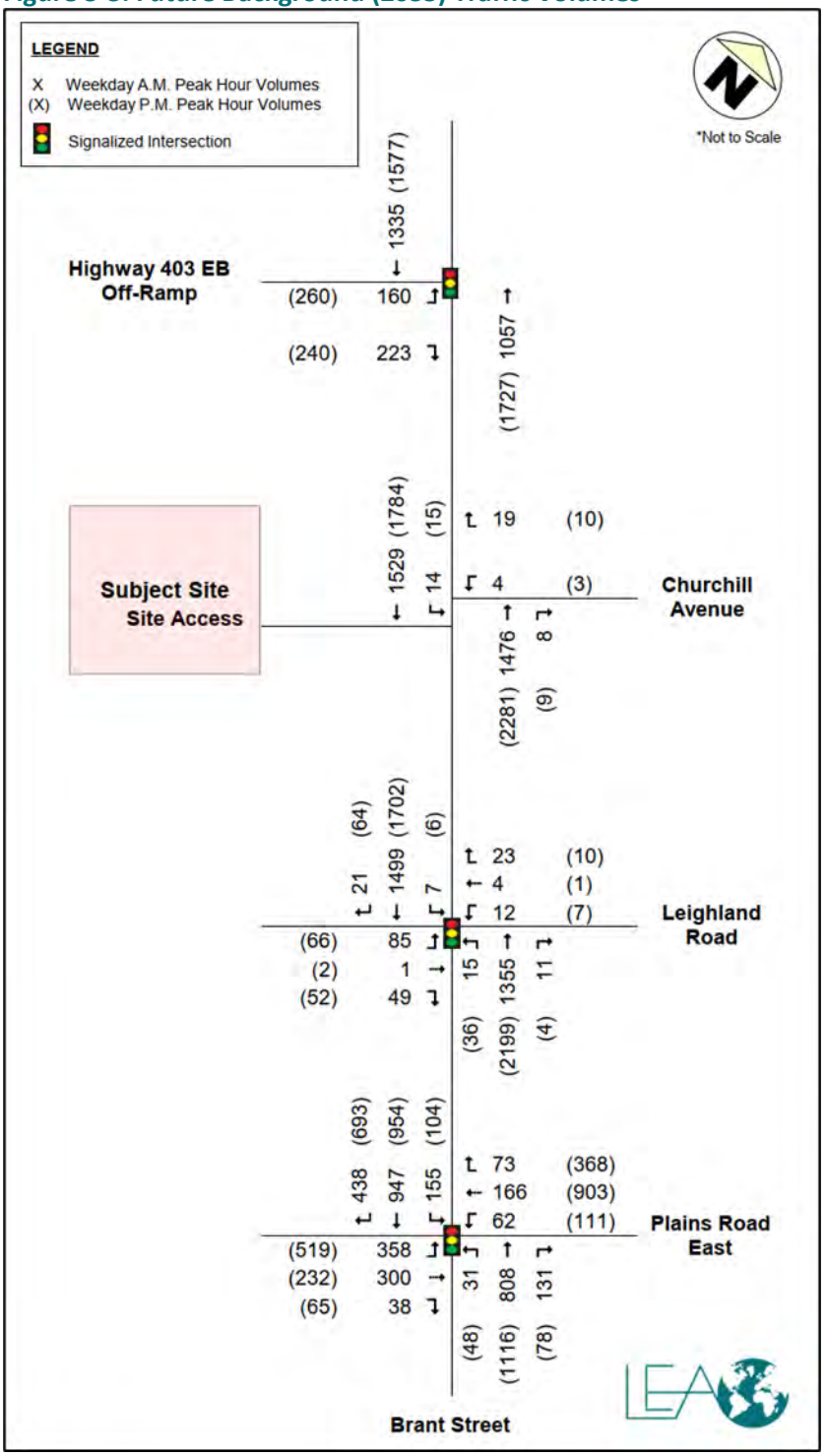
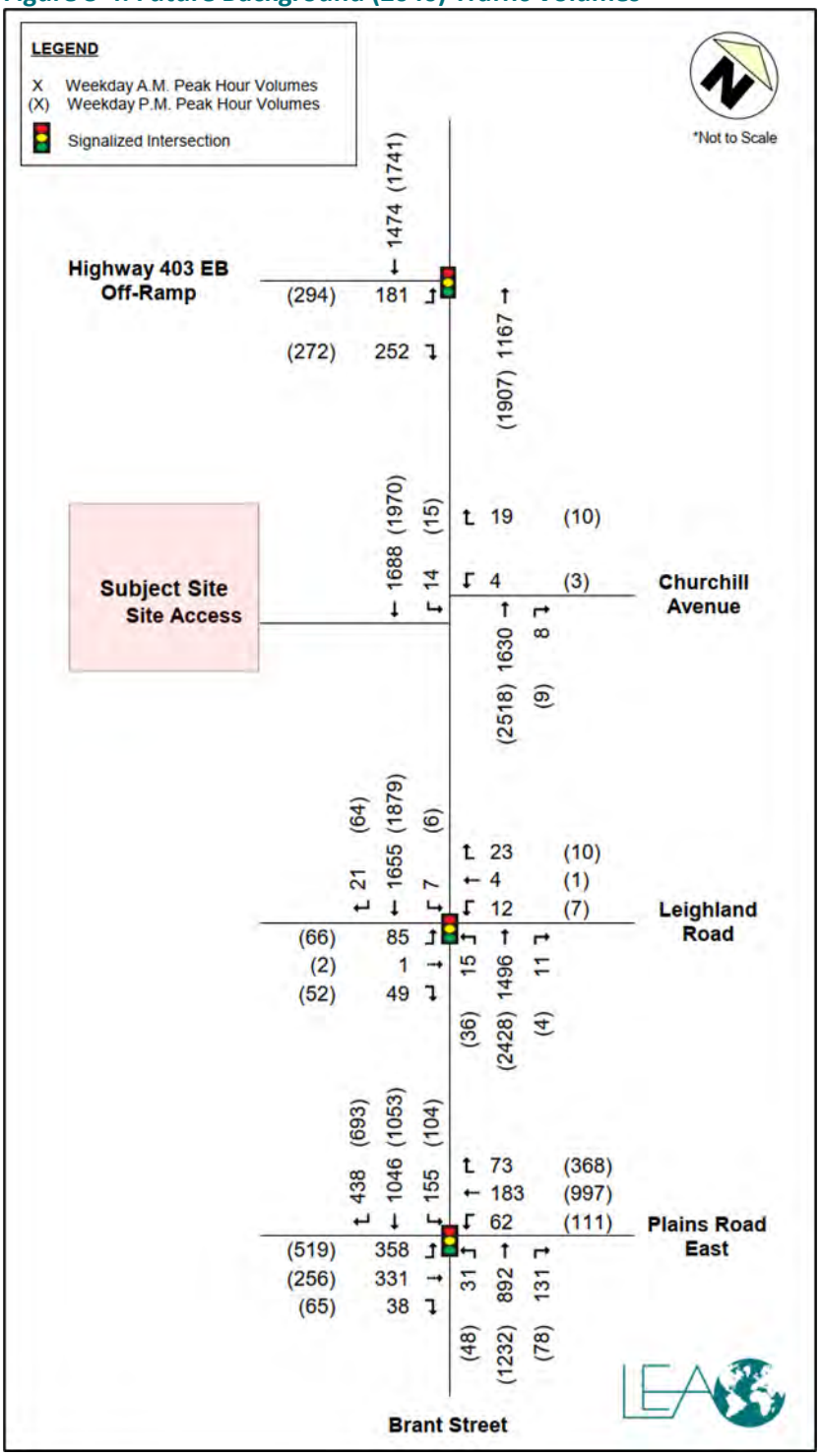


Figure 3-4: Future Background (2040) Traffic Volumes



4 SITE GENERATED TRAFFIC

The proposed development will consist of an 11-storey residential building containing a total of 93 rental units. Access to the development is proposed via an unsignalized full-movement site access off Brant Street. The sections below discuss the calculation, distribution, and assignment of site-generated vehicle trips.

4.1 MODE SPLIT

Data from the 2022 Transportation Tomorrow Survey (TTS) was extracted to identify the modal split of neighbourhood home-based trips originating from the study area (TAZ: 4057-4059). The local area modal split is summarized in **Table 4-1.** Detailed TTS data is provided in **Appendix C**.

Table 4-1: Existing Study Area Mode Split

Mode	Split
Auto Driver	73%
Auto Passenger/Taxi/Rideshare	10%
Transit	7%
Pedestrian	9%
Cyclist	1%
Total	100%

As per the 2022 TTS, 73% of residential trips are currently made by single-occupant vehicles while 17% of trips are by non-auto modes such as auto passenger, transit, walking, and cycling. The existing modal split in **Table 4-1** was used to forecast site multi-modal trip generation.

4.2 TRIP GENERATION

Trip generation was estimated using trip rates from the ITE Trip Generation Manual 11th Edition. The trip rates from ITE LUC 222 (Multifamily Housing – High Rise) in General Urban/Suburban, not close to rail transit was used to estimate the number of residential trips. A summary of the site vehicle trip generation is provided in **Table 4-2**.

Table 4-2: Site Vehicle Trip Generation

Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
ITE LUC 222 – Multifamily Housing (High-Rise) 93 units	ITE Auto Trip Rate (/unit)	0.07	0.20	0.27	0.21	0.11	0.32
	ITE Auto Trips	**6**	**19**	**25**	**20**	**10**	**30**

The proposed development is anticipated to generate 25 two-way vehicle trips during the weekday AM peak hour (6 inbound, 19 outbound) and 30 two-way vehicle trips during the weekday PM peak hour (20 inbound, 10 outbound). This represents a conservative estimate given that the site will provide a limited supply of vehicle parking (68 spaces, or 0.73 spaces per unit).

Multi-modal site trip generation was estimated using the local mode split identified in the 2022 TTS, as shown in **Table 4-3.**

Table 4-3: Multi-Modal Site Trip Generation

Land Use	Description	Modal Split	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Residential	**External Person Trips**	**100%**	**8**	**26**	**34**	**27**	**14**	**41**
	Auto Driver	73%	6	19	25	20	10	30
	Auto Passenger	10%	1	3	4	3	1	4
	Transit	7%	0	2	2	2	1	3
	Pedestrian	9%	1	2	3	2	2	4
	Cyclist	1%	0	0	0	0	0	0
	Taxi/Rideshare	0%	0	0	0	0	0	0

4.3 TRIP DISTRIBUTION AND ASSIGNMENT

The directional trip distribution of site traffic was derived using the 2022 TTS data filtered for trips originating in/destined to apartments or townhouses during the AM and PM peak periods within TAZ 4057-4059. Site traffic was assigned to the road network based on logical routing, turn restrictions, and the location and configuration of the site access.

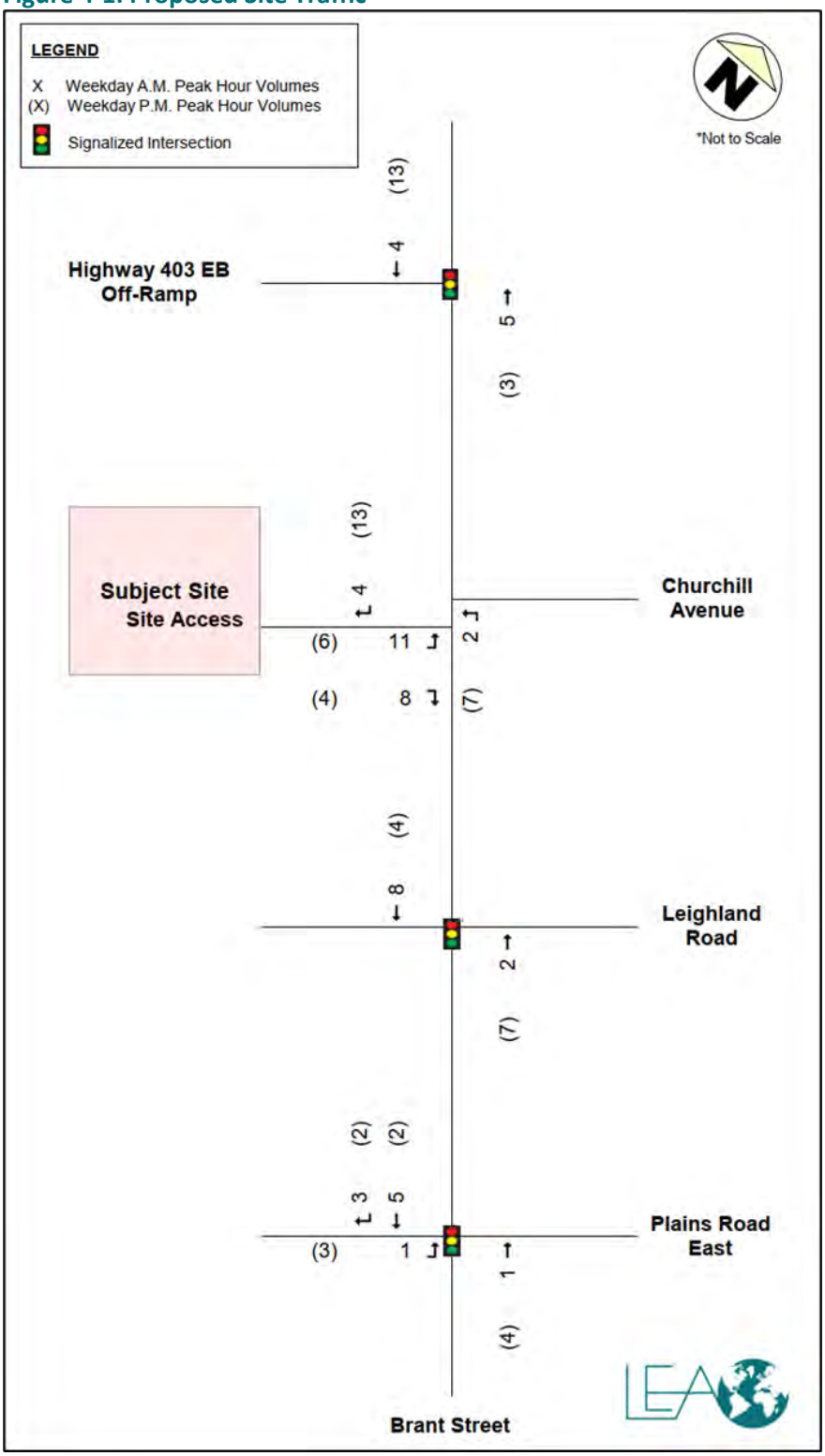
The assumed trip distribution for the proposed development is outlined in **Table 4-4.** Detailed TTS calculations are provided in **Appendix D**.

Table 4-4: Site Trip Distribution

Origin/ Destination	Assigned Route	Weekday AM/PM	
		In	Out
North	Brant Street and EW Corridors	6%	2%
	QEW via Brant Street	-	7%
South	Brant Street and EW Corridors	17%	14%
	Highway 403 via Brant Street	-	6%
East	Brant Street and EW Corridors	34%	38%
	QEW via Brant Street	-	21%
West	Brant Street and EW Corridors	43%	5%
	QEW via Brant Street	-	1%
	Highway 403 via Brant Street	-	6%
	Total	**100%**	**100%**

The proposed site traffic is illustrated in **Figure 4-1**.

Figure 4-1: Proposed Site Traffic



5 FUTURE TOTAL TRAFFIC CONDITIONS

Future total traffic conditions include the addition of site trips to the 2030, 2035, and 2040 future background volumes.

5.1 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic volumes under the weekday AM and PM peak hours during the 2030, 2035, and 2040 horizon year are illustrated in **Figure 5-1**, **Figure 5-2**, and **Figure 5-3**, respectively.

Figure 5-1: Future Total (2030) Traffic Volumes

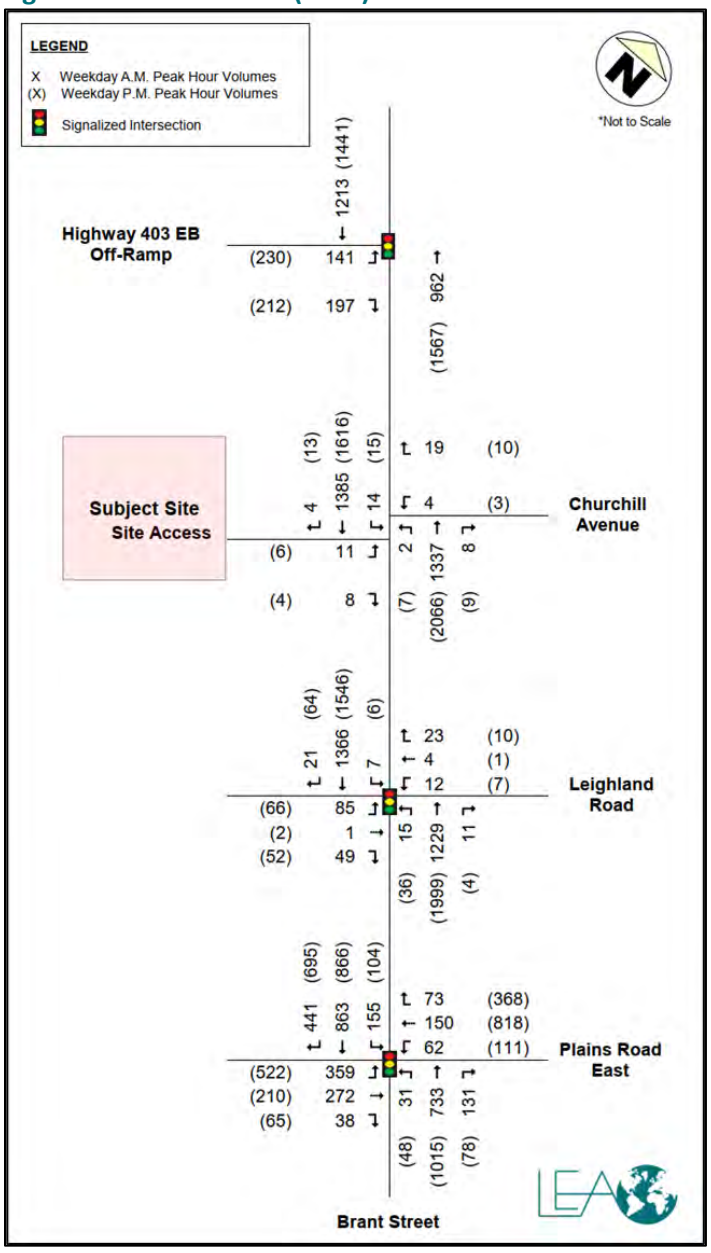


Figure 5-2: Future Total (2035) Traffic Volumes

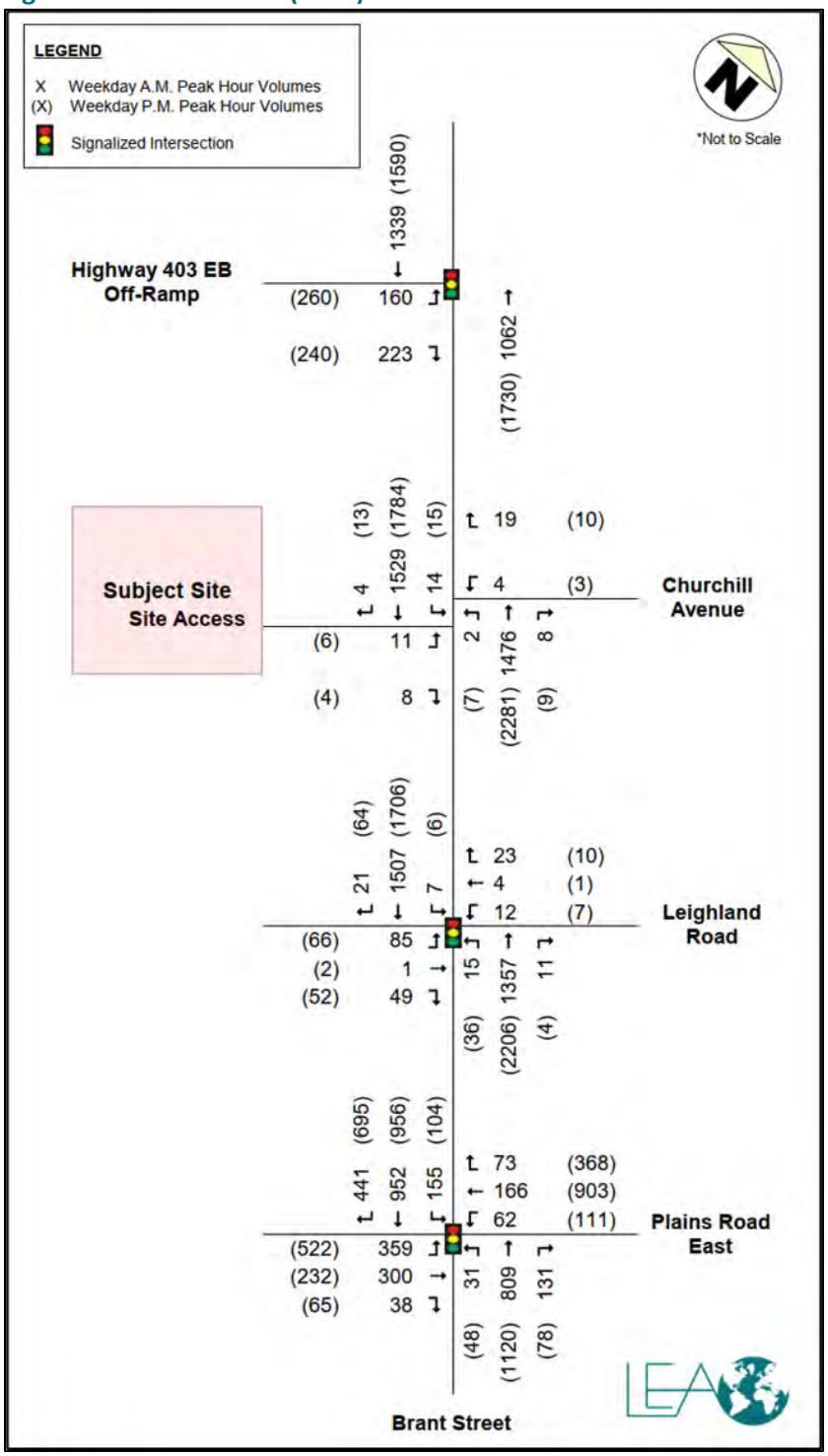
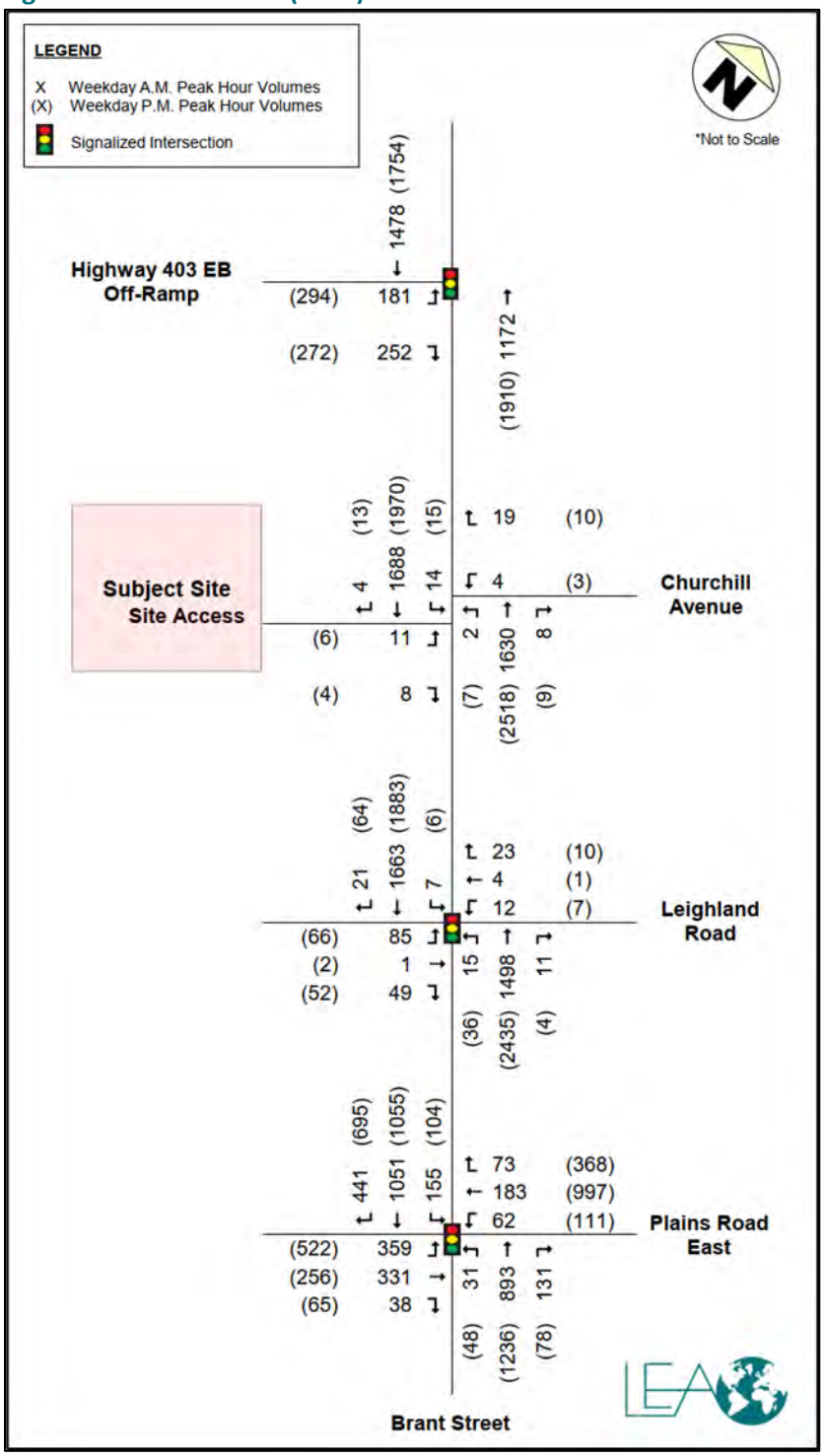


Figure 5-3: Future Total (2040) Traffic Volumes



6 INTERSECTION CAPACITY ANALYSIS

The following sections provide an analysis of the intersection operations under the existing, future background, and future total scenarios. The intersection capacity analysis for the study area was undertaken using Synchro version 11.0, which is based on the MTO General Guidelines for the Preparation of Traffic Impact Studies (2023) for signalized intersections and Halton Region's Transportation Impact Study Guidelines (2015). As per the guidelines, key movements of interest are those with a Level Volume-to-Capacity (V/C) ratio greater than 0.85 for through or shared through/turning movements, V/C ratio greater than 0.95 or greater for exclusive movements. At the highway off-ramp, a V/C greater than 0.75 is deemed critical.

Detailed results of the intersection capacity analysis under existing, future background, and future total conditions are provided in **Appendix E, Appendix F,** and **Appendix G,** respectively**.**

6.1 EXISTING SYNCHRO MODEL INPUTS

Existing traffic operations were assessed to provide a baseline for future traffic operations. The existing analysis incorporates the most recent signal timing plans for the study intersections. The applied Peak Hour Factor (PHF) value was calculated based on surveyed counts.

6.2 FUTURE SYNCHRO MODEL INPUTS

Input parameters from the existing conditions were maintained with the corresponding future background and future total volumes.

6.3 SIGNALIZED INTERSECTIONS

The results for the studied signalized intersections under each traffic scenario during the weekday AM and PM peak hours are summarized in the sections below.

6.3.1 Brant Street & Highway 403 EB Off-Ramp

The intersection capacity analysis results for Brant Street & Highway 403 EB Off-Ramp during the AM and PM peak hours for the 2030, 2035, and 2040 horizon years are summarized in **Table 6-1, Table 6-2,** and **Table 6-3**.

Table 6-1: Intersection Capacity Analysis – Brant Street & Highway 403 EB Off-Ramp – Existing and Horizon Year 2030

AM	Existing (2025)				Future Background (2030)				Future Total (2030)			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
EBL	125	0.49	D (48)	15/27	141	0.55	D (48)	20/32	141	0.55	D (48)	21/32
EBR	174	0.26	D (47)	6/24	197	0.44	D (48)	14/33	197	0.44	D (48)	14/33
NBT	867	0.23	A (3)	15/23	957	0.26	A (4)	19/30	962	0.26	A (4)	19/30
SBT	1095	0.29	A (4)	21/31	1209	0.33	A (4)	26/40	1213	0.33	A (4)	26/40
PM	Existing (2025)				Future Background (2030)				Future Total (2030)			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
EBL	203	0.64	D (53)	30/42	230	0.66	D (53)	34/47	230	0.66	D (53)	35/47
EBR	187	0.51	D (52)	20/42	212	0.61	D (54)	29/51	212	0.61	D (54)	29/51
NBT	1417	0.38	A (5)	37/53	1564	0.43	A (6)	46/68	1567	0.43	A (6)	46/68
SBT	1293	0.35	A (5)	33/47	1428	0.39	A (6)	40/60	1441	0.39	A (6)	41/61

Table 6-2: Intersection Capacity Analysis – Brant Street & Highway 403 EB Off-Ramp – Horizon Year 2035

AM	Future Background (2035)				Future Total (2035)			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
EBL	160	0.59	D (48)	26/37	160	0.60	D (48)	26/37
EBR	223	0.54	D (48)	21/41	223	0.55	D (49)	21/41
NBT	1057	0.29	A (5)	24/37	1062	0.29	A (5)	24/38
SBT	1335	0.37	A (5)	32/50	1339	0.38	A (5)	33/50
PM	Future Background (2035)				Future Total (2035)			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
EBL	260	0.68	D (52)	41/53	260	0.68	D (52)	41/53
EBR	240	0.67	E (55)	37/60	240	0.67	E (55)	37/60
NBT	1727	0.48	A (7)	57/86	1730	0.48	A (7)	58/87
SBT	1577	0.44	A (7)	50/76	1590	0.45	A (7)	51/77

Table 6-3: Intersection Capacity Analysis – Brant Street & Highway 403 EB Off-Ramp – Horizon Year 2040

AM	Future Background (2040)				Future Total (2040)			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
EBL	181	0.62	D (47)	31/42	181	0.62	D (47)	31/42
EBR	174	0.26	D (47)	6/24	252	0.62	D (50)	28/48
NBT	867	0.23	A (3)	15/23	1167	0.33	A (5)	29/46
SBT	1095	0.29	A (4)	21/31	1474	0.42	A (6)	40/64
PM	Future Background (2040)				Future Total (2040)			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
EBL	294	0.70	D (50)	47/59	294	0.70	D (50)	47/59
EBR	272	0.71	E (56)	45/68	272	0.71	E (56)	45/68
NBT	1907	0.55	A (9)	74/112	1910	0.55	A (9)	74/112
SBT	1741	0.50	A (8)	64/97	1754	0.51	A (8)	64/98

Existing Conditions: Under existing conditions, the intersection of Brant Steet & Highway 403 EB Off-Ramp operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

6.3.2 Brant Street & Leighland Road

The intersection capacity analysis results for Brant Street & Leighland Road during the AM and PM peak hours for the 2030, 2035, and 2040 horizon years are summarized in **Table 6-4**, **Table 6-5**, and **Table 6-6**.

Table 6-4: Intersection Capacity Analysis – Brant Street & Leighland Road – Existing and Horizon Year 2030

Mvmt	Existing (2025)				Future Background (2030)				Future Total (2030)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK												
EBL	85	0.47	C (23)	6/22	85	0.47	C (24)	6/24	85	0.47	C (24)	6/24
EBTR	50	0.04	C (20)	0/8	50	0.04	C (21)	0/9	50	0.04	C (21)	0/9
WBLT	16	0.10	C (21)	1/7	16	0.10	C (21)	1/7	16	0.10	C (21)	1/7
WBR	23	0.02	C (20)	0/1	23	0.02	C (21)	0/1	23	0.02	C (21)	0/1
NBL	15	0.08	A (5)	1/3	15	0.09	A (5)	1/3	15	0.10	A (5)	1/3
NBTR	1122	0.38	A (5)	19/34	1238	0.41	A (5)	22/40	1240	0.42	A (5)	22/40
SBL	7	0.04	A (6)	0/3	7	0.05	A (6)	0/3	7	0.05	A (6)	0/3
SBTR	1251	0.49	A (8)	22/60	1379	0.53	A (8)	25/69	1387	0.54	A (8)	26/69
PM PEAK												
EBL	66	0.42	C (26)	6/20	66	0.45	C (29)	8/22	66	0.45	C (29)	8/22
EBTR	54	0.05	C (24)	0/9	54	0.05	C (26)	0/10	54	0.05	C (26)	0/10
WBLT	8	0.06	C (24)	1/5	8	0.06	C (26)	1/5	8	0.06	C (26)	1/5
WBR	10	0.01	C (23)	0/0	10	0.01	C (26)	0/0	10	0.01	C (26)	0/0
NBL	36	0.20	A (5)	1/4	36	0.19	A (5)	1/4	36	0.19	A (5)	1/4
NBTR	1808	0.56	A (5)	37/60	1996	0.60	A (5)	45/73	2003	0.60	A (5)	45/73
SBL	6	0.07	A (6)	0/3	6	0.07	A (7)	0/3	6	0.07	A (7)	0/3
SBTR	1461	0.54	A (8)	27/71	1606	0.58	A (9)	55/82	1610	0.59	A (9)	55/82

Table 6-5: Intersection Capacity Analysis – Brant Street & Leighland Road – Horizon Year 2035

Mvmt	Future Background (2035)				Future Total (2035)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK								
EBL	85	0.47	C (25)	6/26	85	0.47	C (25)	6/26
EBTR	50	0.04	C (22)	0/9	50	0.04	C (22)	0/9
WBLT	16	0.10	C (22)	1/8	16	0.10	C (22)	1/8
WBR	23	0.02	C (22)	0/1	23	0.02	C (22)	0/1
NBL	15	0.11	A (5)	1/3	15	0.11	A (5)	1/3

Mvmt	Future Background (2035)				Future Total (2035)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
NBTR	1366	0.45	A (5)	26/46	1368	0.45	A (5)	26/46
SBL	7	0.05	A (6)	0/3	7	0.05	A (6)	0/3
SBTR	1520	0.58	A (9)	30/80	1528	0.58	A (9)	30/80
PM PEAK								
EBL	66	0.46	C (31)	8/23	66	0.46	C (31)	8/23
EBTR	54	0.05	C (28)	0/10	54	0.05	C (28)	0/10
WBLT	8	0.07	C (28)	1/5	8	0.07	C (28)	1/5
WBR	10	0.01	C (28)	0/0	10	0.01	C (28)	0/0
NBL	36	0.20	A (6)	1/4	36	0.20	A (6)	1/4
NBTR	2203	0.65	A (6)	55/88	2210	0.65	A (6)	55/88
SBL	6	0.08	A (6)	0/3	6	0.08	A (6)	0/3
SBTR	1766	0.62	A (9)	64/94	1770	0.62	A (9)	64/94

Table 6-6: Intersection Capacity Analysis – Brant Street & Leighland Road – Horizon Year 2040

Mvmt	Future Background (2040)				Future Total (2040)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
PM PEAK								
EBL	85	0.49	C (27)	7/28	85	0.49	C (27)	7/28
EBTR	50	0.04	C (23)	0/10	50	0.04	C (23)	0/10
WBLT	16	0.10	C (24)	1/8	16	0.11	C (24)	1/8
WBR	23	0.02	C (23)	0/0	23	0.02	C (23)	0/0
NBL	15	0.11	A (5)	1/3	15	0.12	A (5)	1/3
NBTR	1507	0.49	A (5)	31/52	1509	0.49	A (5)	31/52
SBL	7	0.06	A (6)	0/3	7	0.06	A (6)	0/3
SBTR	1676	0.61	A (9)	36/90	1684	0.62	A (9)	36/91
PM PEAK								
EBL	66	0.49	C (35)	9/26	66	0.49	D (35)	9/26
EBTR	54	0.05	C (31)	0/12	54	0.05	C (31)	0/12
WBLT	8	0.07	C (31)	1/6	8	0.07	C (31)	1/6
WBR	10	0.01	C (31)	0/0	10	0.01	C (31)	0/0
NBL	36	0.22	A (6)	1/4	36	0.22	A (6)	1/4
NBTR	2432	0.69	A (6)	69/104	2439	0.69	A (6)	70/104
SBL	6	0.09	A (6)	0/3	6	0.09	A (6)	0/3
SBTR	1943	0.64	A (9)	77/106	1947	0.64	A (9)	77/106

Existing Conditions: Under existing conditions, the intersection of Brant Steet and Leighland Road operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

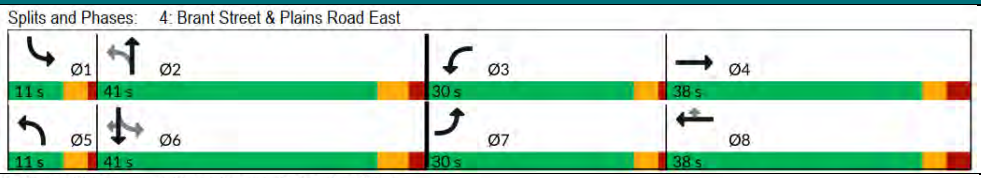
Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

6.3.3 Brant Street & Plains Road East

6.3.3.1 Optimized Signal Timing

Due to critical movements identified at the intersection of Brant Street & Plains Road East during the PM peak hour in the 2040 future background scenario, the following signal timing plan optimization is recommended to provide adequate service to all movements under future conditions. The signal timings are presented in **Table 6-7**.

Table 6-7 Brant Street & Plains Road East Optimized Signal Timing

Brant Street & Plains Road East	
Existing - PM Peak Period	
2040 Future Optimized - PM Peak Period	

The intersection capacity analysis results for Brant Street & Plains Road East during the AM and PM peak hours for the 2030, 2035, and 2040 horizon years are summarized in **Table 6-8**, **Table 6-9**, and **Table 6-10**.

Table 6-8: Intersection Capacity Analysis – Brant Street & Plains Road East – Existing and Horizon Year 2030

Mvmt	Existing (2025)				Future Background (2030)				Future Total (2030)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK												
EBL	358	0.71	D (40)	31/54	358	0.72	D (41)	32/56	359	0.72	D (41)	32/56
EBTR	284	0.66	C (34)	46/80	310	0.69	D (35)	52/88	310	0.69	D (35)	52/88
WBL	62	0.46	D (42)	11/26	62	0.47	D (42)	11/26	62	0.47	D (42)	11/26
WBT	136	0.26	C (33)	12/21	150	0.26	C (33)	13/23	150	0.26	C (33)	13/23
WBR	73	0.06	C (32)	0/6	73	0.06	C (32)	0/5	73	0.06	C (32)	0/5
NBL	31	0.12	B (18)	3/9	31	0.12	B (18)	3/10	31	0.13	B (18)	3/10
NBTR	794	0.51	C (25)	40/67	863	0.56	C (27)	47/76	864	0.56	C (27)	47/77
SBL	155	0.47	B (15)	14/33	155	0.51	B (16)	15/35	155	0.51	B (16)	15/35
SBT	777	0.40	B (20)	38/62	858	0.45	C (21)	44/72	863	0.45	C (21)	45/72
SBR	438	0.37	C (21)	5/36	438	0.41	C (22)	10/48	441	0.41	C (22)	10/49
PM PEAK												
EBL	519	0.83	D (54)	65/85	519	0.84	D (55)	65/85	522	0.84	E (55)	65/85
EBTR	255	0.43	C (30)	45/75	275	0.45	C (30)	50/81	275	0.45	C (30)	50/81
WBL	111	0.60	D (54)	27/45	111	0.60	D (55)	27/45	111	0.60	D (55)	27/45
WBT	**741**	**0.86**	**D (49)**	**92/118**	**818**	**0.91**	**D (55)**	**105/143**	**818**	**0.91**	**D (55)**	**105/143**
WBR	368	0.75	D (48)	57/105	368	0.73	D (46)	58/106	368	0.73	D (46)	58/106
NBL	48	0.22	C (25)	7/16	48	0.25	C (26)	7/16	48	0.25	C (26)	7/16
NBTR	994	0.66	D (37)	81/99	1089	0.74	D (40)	91/111	1093	0.74	D (40)	92/111
SBL	104	0.59	C (30)	17/31	104	0.67	D (36)	17/36	104	0.67	D (37)	17/37
SBT	783	0.49	C (32)	61/76	864	0.55	C (34)	68/85	866	0.55	C (34)	69/85
SBR	693	0.77	D (46)	51/141	693	0.78	D (49)	54/144	695	0.79	D (49)	55/144

Table 6-9: Intersection Capacity Analysis – Brant Street & Plain Road East – Horizon Year 2035

Mvmt	Future Background (2035)				Future Total (2035)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK								
EBL	358	0.73	D (42)	32/56	359	0.73	D (42)	33/56
EBTR	338	0.73	D (37)	58/96	338	0.73	D (37)	58/96
WBL	62	0.47	D (43)	11/27	62	0.47	D (43)	11/27
WBT	166	0.27	C (33)	15/24	166	0.27	C (33)	15/24
WBR	73	0.06	C (31)	0/5	73	0.06	C (31)	0/5
NBL	31	0.14	B (19)	3/10	31	0.14	B (19)	3/10
NBTR	939	0.62	C (28)	54/86	940	0.62	C (28)	54/86
SBL	155	0.55	B (17)	16/35	155	0.55	B (17)	16/35
SBT	947	0.50	C (22)	52/82	952	0.50	C (22)	52/82
SBR	438	0.45	C (23)	15/58	441	0.45	C (23)	16/59
PM PEAK								
EBL	519	0.84	E (55)	65/85	522	0.84	E (56)	65/85
EBTR	297	0.48	C (30)	55/89	297	0.48	C (30)	55/89
WBL	111	0.61	E (55)	27/45	111	0.61	E (56)	27/45
WBT	**903**	**0.98**	**E (67)**	**120/168**	**903**	**0.98**	**E (68)**	**120/168**
WBR	368	0.71	D (45)	58/107	368	0.72	D (45)	58/107
NBL	48	0.29	C (27)	7/16	48	0.29	C (27)	7/16
NBTR	1194	0.82	D (43)	103/124	1198	0.82	D (44)	103/125
SBL	104	0.70	D (41)	17/39	104	0.70	D (41)	17/39
SBT	954	0.62	D (36)	77/95	956	0.62	D (36)	78/95
SBR	693	0.81	D (51)	58/148	695	0.81	D (52)	59/149

Table 6-10: Intersection Capacity Analysis – Brant Street & Plains Road East – Horizon Year 2040

Mvmt	Future Background (2040)				Future Total (2040)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK								
EBL	358	0.74	D (43)	33/56	359	0.74	D (43)	34/56
EBTR	369	0.77	D (39)	65/107	369	0.77	D (39)	65/107
WBL	62	0.48	D (44)	12/27	62	0.48	D (44)	12/27
WBT	183	0.29	C (33)	16/27	183	0.29	C (33)	16/27
WBR	73	0.06	C (31)	0/5	73	0.06	C (31)	0/5
NBL	31	0.16	B (20)	3/10	31	0.16	B (20)	3/10
NBTR	1023	0.68	C (30)	63/96	1024	0.68	C (30)	63/96
SBL	155	0.59	B (20)	16/36	155	0.59	B (20)	16/36
SBT	1046	0.56	C (24)	61/92	1051	0.56	C (24)	62/92
SBR	438	0.48	C (25)	21/67	441	0.49	C (25)	22/68
PM PEAK								
EBL	**519**	**0.95**	**E (74)**	**68/103**	**522**	**0.95**	**E (75)**	**69/103**
EBTR	321	0.50	C (30)	61/94	321	0.50	C (30)	61/94
WBL	111	0.64	E (59)	27/46	111	0.64	E (59)	27/46
WBT	**997**	**0.98**	**E (64)**	**133/179**	**997**	**0.98**	**E (64)**	**133/179**
WBR	368	0.65	D (40)	54/93	368	0.65	D (40)	54/93
NBL	48	0.42	D (44)	10/24	48	0.42	D (45)	10/24
NBTR	**1310**	**0.91**	**D (50)**	**117/145**	**1314**	**0.91**	**D (51)**	**118/146**
SBL	104	0.71	D (42)	17/37	104	0.71	D (42)	17/37

Mvmt	Future Background (2040)				Future Total (2040)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
SBT	1053	0.55	C (29)	76/90	1055	0.55	C (30)	76/91
SBR	693	0.88	D (51)	96/184	695	0.88	D (52)	97/185

Existing Conditions: Under existing conditions, the intersection of Brant Street and Plains Road East operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. Most existing 95th percentile queues can be accommodated by their available storage lanes. During the PM peak hour, the 95th percentile queues for the EBL, WBR and SBR movements exceed the available storage. The WBT movement has a v/c above 0.85. No other critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to operate similar to existing conditions with acceptable increases in V/C ratios and delay. Under 2035 conditions, the WBT movement is projected to operate closer to capacity during the PM peak hour. The EBL and WBL movements are expected to experience LOS E under 2035 and 2040 conditions during the PM peak hour. Under 2040 conditions, the EBL, WBT, NBTR, and SBR movement are expected to operate close to capacity. Further optimization could not be performed due to the existing signal timing minimums.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No new critical movements were identified. No intersection modifications are recommended.

6.4 UNSIGNALIZED INTERSECTIONS

The results for the unsignalized intersection under each traffic scenario during the weekday AM and PM peak hours are summarized in the sections below.

6.4.1 Brant Street & Site Access/Churchill Avenue

The intersection capacity analysis results at Brant Street and Site Access/Churchill Avenue during the AM and PM peak hours are summarized in **Table 6-11, Table 6-12,** and **Table 6-13.**

Note: the proposed site access will have an offset alignment with Churchill Avenue but has been evaluated as a single intersection as part of the analysis.

Table 6-11: Intersection Capacity Analysis – Brant Street & Site Access/Churchill Avenue – Existing and Horizon Year 2030

Mvmt	Existing (2025)				Future Background (2030)				Future Total (2030)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK												
NBL	0	0.00	A (0)	-/0	0	0.00	A (0)	-/0	2	0.01	C (20)	-/0
NBT	1211	0.00	(0)	-/0	1337	0.00	(0)	-/0	1337	0.00	(0)	-/0
NBR	8	0.00	(0)	-/0	8	0.00	(0)	-/0	8	0.00	(0)	-/0
EBLTR	0	0.00	A (0)	-/0	0	0.00	A (0)	-/0	**19**	**0.24**	**F (61)**	**-/1**
WBLTR	23	0.11	C (23)	-/0	23	0.13	D (27)	-/0	23	0.13	D (28)	-/0
SBL	14	0.06	C (21)	-/0	14	0.07	C (24)	-/0	14	0.07	C (24)	-/0
SBT	1254	0.00	(0)	-/0	1385	0.00	(0)	-/0	1385	0.00	(0)	-/0

Mvmt	Existing (2025)				Future Background (2030)				Future Total (2030)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
SBR	0	0.00	(0)	-/0	0	0.00	(0)	-/0	4	0.00	(0)	-/0
PM PEAK												
NBL	0	0.00	A (0)	-/0	0	0.00	A (0)	-/0	7	0.04	D (26)	-/0
NBT	1871	0.00	(0)	-/0	2066	0.00	(0)	-/0	2066	0.00	(0)	-/0
NBR	9	0.00	(0)	-/0	9	0.00	(0)	-/0	9	0.00	(0)	-/0
EBLTR	0	0.00	A (0)	-/0	0	0.00	A (0)	-/0	**10**	**0.32**	**F (159)**	**-/1**
WBLTR	**13**	**0.19**	**F (64)**	**-/1**	**13**	**0.26**	**F (95)**	**-/1**	**13**	**0.29**	**F (108)**	**-/1**
SBL	**15**	**0.12**	**E (36)**	**-/0**	**15**	**0.15**	**E (46)**	**-/1**	**15**	**0.15**	**E (46)**	**-/1**
SBT	1464	0.00	(0)	-/0	1616	0.00	(0)	-/0	1616	0.00	(0)	-/0
SBR	0	0.00	(0)	-/0	0	0.00	(0)	-/0	13	0.00	(0)	-/0

Table 6-12: Intersection Capacity Analysis – Brant Street & Site Access/Churchill Avenue – Horizon Year 2035

Mvmt	Future Background (2035)				Future Total (2035)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK								
NBL	0	0.00	A (0)	-/0	2	0.01	C (23)	-/0
NBT	1476	0.00	(0)	-/0	1476	0.00	(0)	-/0
NBR	8	0.00	(0)	-/0	8	0.00	(0)	-/0
EBLTR	0	0.00	A (0)	-/0	**19**	**0.31**	**F (86)**	**-/1**
WBLTR	23	0.16	D (34)	-/1	23	0.16	D (34)	-/1
SBL	14	0.08	D (27)	-/0	14	0.08	D (27)	-/0
SBT	1529	0.00	(0)	-/0	1529	0.00	(0)	-/0
SBR	0	0.00	(0)	-/0	4	0.00	(0)	-/0
PM PEAK								
NBL	0	0.00	A (0)	-/0	7	0.05	D (31)	-/0
NBT	2281	0.00	(0)	-/0	2281	0.00	(0)	-/0
NBR	9	0.00	(0)	-/0	9	0.00	(0)	-/0
EBLTR	0	0.00	A (0)	-/0	**10**	**0.48**	**F (-)**	**-/1**
WBLTR	**13**	**0.43**	**F (184)**	**-/1**	**13**	**0.43**	**F (184)**	**-/1**
SBL	**15**	**0.20**	**F (62)**	**-/1**	**15**	**0.20**	**F (62)**	**-/1**
SBT	1784	0.00	(0)	-/0	1784	0.00	(0)	-/0
SBR	0	0.00	(0)	-/0	13	0.00	(0)	-/0

Table 6-13: Intersection Capacity Analysis – Brant Street & Site Access/Churchill Avenue – Horizon Year 2040

Mvmt	Future Background (2040)				Future Total (2040)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
AM PEAK								
NBL	0	0.00	A (0)	-/0	2	0.01	D (27)	-/0
NBT	1630	0.00	(0)	-/0	1630	0.00	(0)	-/0
NBR	8	0.00	(0)	-/0	8	0.00	(0)	-/0
EBLTR	0	0.00	A (0)	-/0	**19**	**0.44**	**F (137)**	**-/2**
WBLTR	**23**	**0.21**	**E (44)**	**-/1**	**23**	**0.21**	**E (45)**	**-/1**
SBL	14	0.10	D (33)	-/0	14	0.10	D (33)	-/0

Mvmt	Future Background (2040)				Future Total (2040)			
	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)
SBT	1688	0.00	(0)	-/0	1688	0.00	(0)	-/0
SBR	0	0.00	(0)	-/0	4	0.00	(0)	-/0
PM PEAK								
NBL	0	0.00	A (0)	-/0	**7**	**0.06**	**E (38)**	**-/0**
NBT	2518	0.00	(0)	-/0	2518	0.00	(0)	-/0
NBR	9	0.00	(0)	-/0	9	0.00	(0)	-/0
EBLTR	0	0.00	A (0)	-/0	10	0.81	**F (-)**	-/2
WBLTR	**13**	**0.62**	**F (-)**	**-/2**	**13**	**0.72**	**F (-)**	**-/2**
SBL	**15**	**0.27**	**F (87)**	**-/1**	**15**	**0.27**	**F (87)**	**-/1**
SBT	1970	0.00	(0)	-/0	1970	0.00	(0)	-/0
SBR	0	0.00	(0)	-/0	13	0.00	(0)	-/0

Existing Conditions: Under existing conditions, the intersection of Brant Steet and Site Access/Churchill Avenue generally operates well during both weekday peak hours. Most movements are operating with residual capacity and acceptable delays. During the PM peak hour, the WBLTR movement experiences LOS F and the SBL movement experiences LOS E due to the limited number of gaps in north-south through traffic along Brant Street. All existing 95th percentile queues can be accommodated by their available storage lanes.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with small increases in V/C ratios and delay. Under 2040 conditions, the WBLTR is expected to experience LOS E during the AM peak hour. Under 2035 and 2040 conditions, the SBL movement is expected to worsen to LOS F during PM peak hour.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. Under 2030, 2035 and 2040 conditions, the EBLTR is expected to experience LOS E and LOS F during the AM and PM peak hours, respectively. Under 2040 conditions, the NBL movement is expected to experience LOS E with minimal delay. However, there are no queuing constraints.

Given that site traffic volumes are expected to be low and there remains capacity for this movement, no intersection modifications are recommended. In addition, it should be noted that there is an existing reversible two-way left turn lane that will allow left turning vehicles to make a two-stage crossing if required; this condition is not analyzed in Synchro and it is therefore reasonable to conclude that future vehicle delays will be lower than predicted.

7 PARKING REVIEW

The following section reviews the parking standards for the proposed redevelopment based on the current zoning by-law requirements applicable to the subject site.

7.1 BICYCLE PARKING REVIEW

There are no bicycle parking requirements for residential developments under the City of Burlington Zoning By-law 2020. However, to support the vehicle parking strategy, bicycle parking will be provided at the rates specified in the Burlington City-wide Parking Standards Review:

- 0.50 long-term bike parking spaces per residential unit
- 0.05 short-term bike parking spaces per residential unit.

This corresponds to a proposed bicycle parking supply of 47 long-term and 5 short-term bike parking spaces. In addition, a bicycle repair facility will be co-located with the long-term bike parking to increase the convenience of cycling as a travel alternative.

7.2 VEHICULAR PARKING REVIEW

The proposed parking supply was evaluated against the requirements contained in Zoning By-law 2020. Based on the City's Official Plan (2020) Schedule B-1, the subject site falls within the 'Secondary Growth Area'. **Table 7-1** details the applicable parking requirements and proposed supply for the subject site.

Table 7-1: Zoning By-law 2020 Vehicular Parking Requirements

Land Use	Units	ZBL 2020 – Secondary Growth Area		Proposed Development	
		Minimum Parking Rate	Required Spaces	Proposed Supply	Proposed Rate
Residential	93 units	1.25 sp./unit (1)	116	54 (incl. 1 carshare)	0.58 sp./unit
Visitor				14	0.15 sp./unit
		Total	116	68	0.73 sp./unit

Note: (1) – Inclusive of visitor parking

Based on Zoning By-law 2020, the proposed development is required to provide a minimum of 116 spaces inclusive of both residential and visitor parking. The proposed development will provide 53 residential spaces, one (1) carshare space, and 14 visitor spaces for a total of 68 parking spaces (0.73 sp./unit). This represents a 59% reduction from the current zoning by-law requirements; **Section 8** provides supporting justification for the proposed shortfall.

7.2.1 Accessible Parking Review

The site requirements for accessible parking were evaluated as per Zoning By-law 2020. The number of accessible parking spaces required is summarized in **Table 7-2**.

Table 7-2: Zoning By-law 2020 Accessible Parking Requirements

Total Parking Required	Minimum Parking Rate	Required Accessible Parking	Proposed Supply
116	3% of required parking	3	3 (1 Type A & 2 Type B)

The proposed development is required to provide a minimum of three (3) accessible parking spaces. The proposed development will provide three (3) accessible spaces, satisfying the zoning by-law requirements.

8 PARKING JUSTIFICATION

As indicated above, a total of 68 vehicle parking spaces is proposed, representing a shortfall of 48 parking spaces relative to the by-law requirements. Although not required under Zoning By-law 2020, 14 visitor spaces will be provided (0.15 spaces per unit). The remaining parking spaces will consist of 53 residential and one (1) carshare space. Given the residential parking supply deficiency, the following subsections will provide justification for the proposed residential parking rate.

8.1 EXISTING & FUTURE TRANSPORTATION CONTEXT

8.1.1 Opportunities for Transit Users

The subject site has convenient access to the transit network provided by Burlington Transit. The site is serviced by local bus routes along Brant Street including Route 2 – Brant, Route 12 – Upper Middle, and Route 87 – Harvester/North Service (Aldershot). Notably, Route 2 provides frequent transit service (15 minutes during weekday daytime) connecting the site to Burlington GO station and Burlington's Downtown. The southbound bus stop for these routes is located adjacent to the site while the northbound bus stop is located approx. 130m from the site at the intersection of Brant Street & Leighland Road. As per the City of Burlington Integrated Mobility Plan (September 2023), Brant Street north of Fairview Street, is identified as a candidate for frequent transit and a Major Transit Station Area (MTSA) Primary Connector to provide direct transit connections between MTSAs and have a strong pedestrian environment.

Furthermore, the subject site is located within a 9-minute bus ride or 15-minute walk of the Burlington GO station providing connections to the Lakeshore West GO rail line and several GO bus routes including GO Route 12 – Niagara Falls/Toronto. The proximity of the subject site to the Burlington GO station provides good access to destinations throughout the City of Burlington and Halton Region. Corridor improvements are planned along the Lakeshore West GO line between Union Station and Burlington Station for electrification and 15-minute or better service. New hourly service to and from Hamilton seven days a week is also planned as part of Metrolinx's GO expansion project. These future transit initiatives will further improve transit access to/from the proposed development.

8.1.2 Opportunities for Active Transportation Users

The area in which the subject site is situated is walkable, with continuous sidewalks on both sides of Brant Street, Plains Road E, and Fairview Street. Pedestrian crosswalks are also available at all signalized intersections surrounding the subject site. These sidewalks provide supporting pedestrian infrastructure to reach nearby transit stops.

Within the study area, painted bike lanes are provided along Brant Street, Plains Roads E, and Fairview Street providing continuous cycling infrastructure from the subject site to Burlington GO station which has dedicated bike parking facilities. These cycling facilities also provide connections to nearby multi-use trails for recreational travel. In addition, cycling facilities are proposed on Leighland Road as per the City's Integrated Mobility Plan.

8.2 POLICY REVIEW

There are a number of key Provincial and City policy documents and initiatives providing overarching direction as it relates to the provision of vehicular parking, particularly within transit accessible areas. The subject site has convenient access to local and regional transit services and is situated on a candidate

frequent transit corridor. The following section describes the relevant policies as it relates to reducing vehicular parking and increasing other modes of transportation.

8.2.1 Provincial Planning Statement (2024)

The Provincial Planning Statement (PPS) 2024 is a streamlined province-wide land use planning policy framework which came into effect on October 20, 2024 and replaces both the Provincial Policy Statement, 2020 and A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019.

Under Section 3 of the Planning Act, all decisions affecting land use planning matters "shall be consistent with" the PPS. One of the key matters pertaining to PPS policies includes the promotion of transportation decisions that increase active transportation and transit usage, which are highlighted throughout the PPS. Specifically:

- **Section 2.3.1.2** states that land use patterns within settlement area should be based on densities and a mix of land uses which:
    - Efficiently use land and resources;
    - Optimize existing and planning infrastructure and public service facilities;
    - Support active transportation;
    - Are transit-supportive, as appropriate
- **Section 3.2.2** states that efficient use should be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible.
- **Section 2.4.1.2** states that planning authorities support the achievement of complete communities and that strategic growth areas should be planned:
    - To accommodate and support the transit network and provide connection points for inter- and intra-regional transit.

By proposing a reduced residential parking supply, the proposed development will promote the efficient use of the existing transit and active transportation network that surrounds the site, situating future rental households in an area where they can travel without requiring the use of a personal vehicle. The provision of a limited supply of parking will ensure that future households are largely compatible with a lifestyle that does not require the daily use of a private vehicle, helping to foster a transit-supportive neighbourhood that will enable future investments such as frequent transit on Brant Street.

8.2.2 Bill 185: Changes to the Ontario Planning Act (1990)

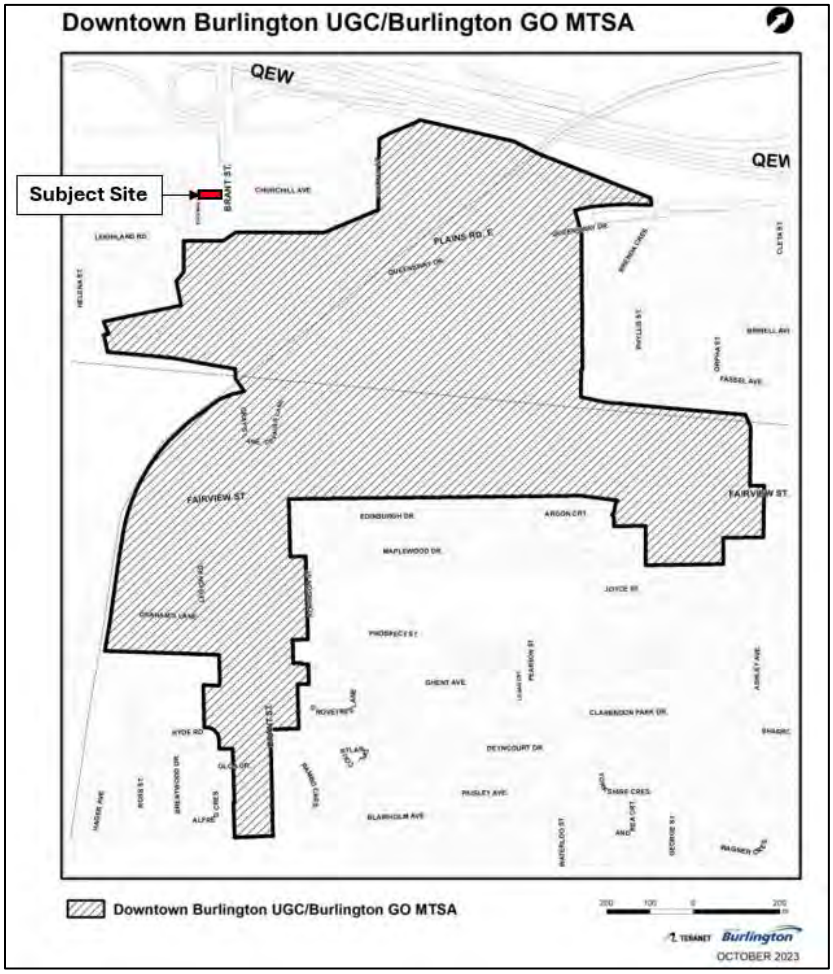
The Planning Act (PA) is a provincial legislation that outlines the rules and regulations for land use planning within the Province of Ontario. The purpose of the PA is to ensure that the planning process is equitable and accessible and can be done in a timely manner. The PA aims to promote sustainable economic development, provide a planning system based on provincial policy, integrate provincial interests in order to be consistent and conform with the Provincial Policy Statement, promote inter-disciplinary co-operation and coordination, and recognize the decision-making authority and accountability of the municipality.

On June 6, 2024, Bill 185 received royal assent to amend the Ontario Planning Act to add Section 16 and to further amend Section 34 of the PEA to remove a municipality's ability to require minimum vehicular parking (except for bicycle parking) in Major Transit Station Areas.

As per the City of Burlington's Official Plan, MTSAs are the area including and around any existing or planned higher order transit station and are generally defined as the area within an approximate 500m to 800m radius of a transit station. As illustrated in **Figure 8-1**, the subject site is located just outside of the Downtown Burlington UGC/Burlington GO Major Transit Station Area. While the provisions in Bill 185 do not directly apply to the subject site, it is important to note that the site lies approximately 90m north of the MTSA boundary.

Given that the subject site is located just outside the MTSA boundary, it can reasonably be argued that it has equivalent transit access as properties located directly to the south. The parking policy direction from Bill 185 is therefore relevant to the subject site as it directs municipalities to eliminate the overprovision of vehicle parking in areas near higher order transit.

Figure 8-1: Downtown Burlington UGC/Burlington GO MTSA



Source: City of Burlington By-law 45-2024 (Council Adopted) (June 2024)

8.2.3 City of Burlington Official Plan (2020)

The City of Burlington Official Plan is a policy document that guides decision-making on land use, development, and resource management. Chapter 6.2 outlines the policy direction related to multimodal transportation and integrating mobility with land use to improve the quality of life in the City. The Official Plan notes that in order for Burlington to grow successfully, it must be a walking-friendly city, a bike-friendly city, and a city designed and built with supporting public transit. These modes should be attractive choices in place of the automobile. Notably, objective 6.2.1(1) l) is to recognize parking management as a

critical tool to influence travel mode choice which in turn will affect housing costs and shape the public realm. The City's Official Plan also recognizes the importance of a Transportation Demand Management (TDM) Plan and will consider reducing parking requirements for developments where a comprehensive TDM Plan is submitted and implemented.

The proposed development's reduced parking supply supports the objectives in the Official Plan and will help prioritize transit and active modes in a planned growth area. The reduced parking supply is also supported by a comprehensive TDM Plan aimed at reducing vehicle ownership and single-occupancy vehicle (SOV) travel, as discussed in **Section 10** of this report.

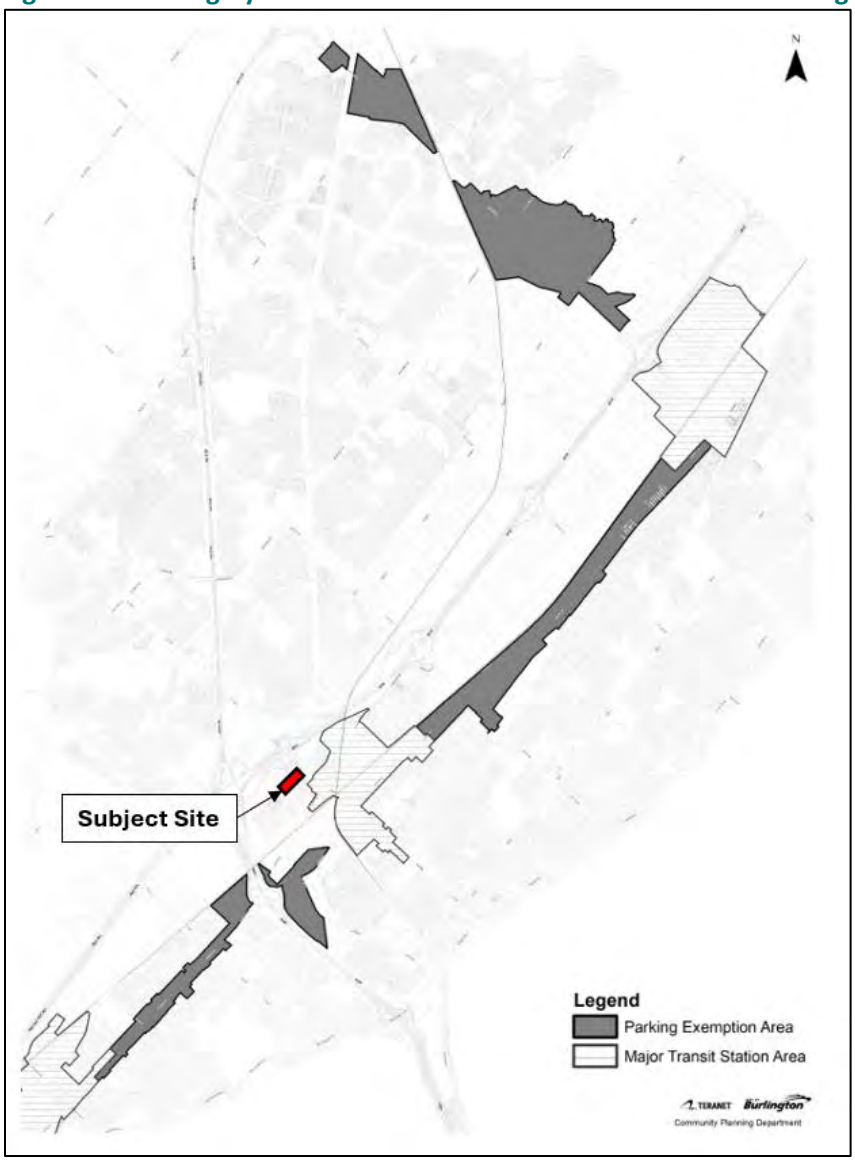
8.2.4 City Housing Accelerator Fund & Zoning By-law Amendment 2020.478

On January 15, 2024, the Government of Canada and the City of Burlington announced a $21 million agreement to encourage the construction of affordable housing. Through the Housing Accelerator Fund (HAF) investment, the City plans to build 2,500+ new residential units by the end of 2026. One of the HAF Action Plan initiatives is to support new residential units by looking at opportunities to remove policy and regulatory barriers. As part of this initiative, City staff launched a pilot project for no parking minimums through an amendment to Zoning By-law 2020 (Zoning By-law Amendment 2020-478). The amendment removes the minimum vehicular parking requirements for residential uses along the following sections of Fairview Street, Plains Road, and Appleby Line as these corridors are serviced by frequent Burlington Transit bus routes:

- Fairview Street / Plains Road corridor from the Aldershot GO Major Transit Station Area (MTSA) to the Burlington GO MTSA and from the Burlington GO MTSA to the Appleby GO MTSA; and
- Appleby Line corridor from the Appleby GO MTSA to Highway 407.

The proposed amendment allows the development industry to determine the appropriate amount of on-site parking to be provided based on market demand. **Figure 8-2** illustrates the residential parking exemption areas in relation to the subject site.

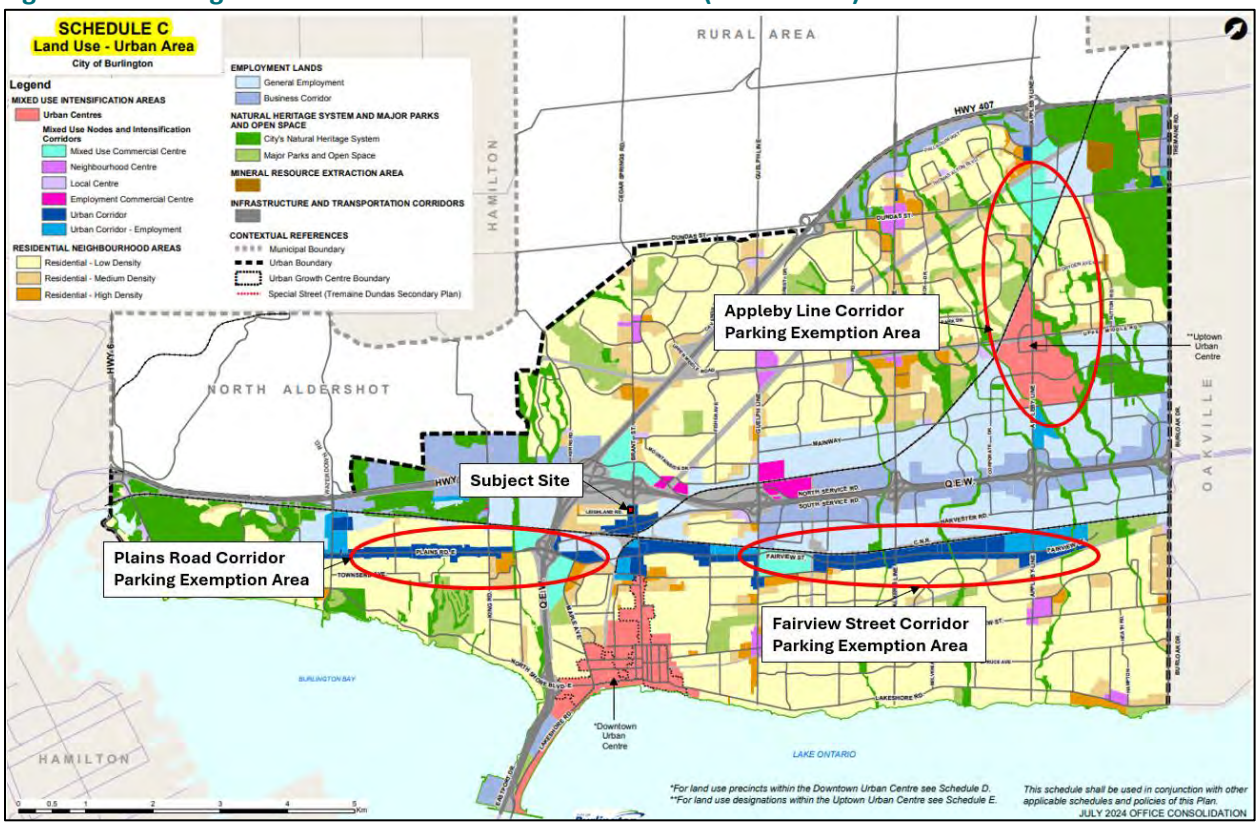
Figure 8-2: Zoning By-law Amendment 2020.478 – Residential Parking Exemption Area



Source: City of Burlington Community Planning Department (June 2024)

While the subject site is not located within a parking exempt area, the exemption areas correspond to Mixed-Use Nodes and Intensification Corridors as identified in the Official Plan (2020) Schedule C. As illustrated in **Figure 8-3**, the majority of the parking exempt areas are designated as either Urban Corridors or Urban Centres. Similar to the parking exempt areas, the subject site is also designated as an Urban Corridor. Recognizing the site's proximity to a MTSA and its designated land use as an Urban Corridor, the site has a similar land use and travel context as the Plains Road and Fairview Street parking exempt areas.

Figure 8-3: Burlington Official Plan Schedule C – Land Use (Urban Area) Plan



Source: City of Burlington Official Plan – Schedule C (July 2024)

As noted above, the pilot project was initiated for areas served by high frequency transit, and it is understood that this could expand in the future to other areas that are well supported by transit.

To demonstrate that that the subject site is situated in a similar transit context to the parking exemption area, transit access was reviewed and summarized in **Table 8-1.**

Table 8-1: Transit Access and Frequency

Parking Exemption Area	Higher Order Transit Access (1)	Transit Service	Transit Frequency
Plains Road Corridor	• ~9-minute transit ride to Aldershot GO Station • ~12-minute transit ride to Burlington GO Station	Route 1 – Frequent Service	15 minutes weekday daytime
		Route 4 – Regular Service	30-59 minutes midday service
Fairview Street Corridor	• ~12-minute transit ride to Burlington GO Station • ~15-minute transit ride to Appleby GO Station	Route 1 – Frequent Service	15 minutes weekday daytime
Appleby Line Corridor	• ~20-minute transit ride to Appleby GO Station	Route 11 – Regular Service	15 minutes peak, 30 minutes off peak
		Route 12 – Regular Service	30-59 minutes midday service
		Route 81 – Regular Service	
Subject Site	• **~8-minute transit ride to Burlington GO Station**	**Route 2 – Frequent Service**	**15 minutes weekday daytime**
		Route 12 – Regular Service	**30-59 minutes midday service**
		Route 87 – Peak Service	**30-59 minutes peak service**

Note: (1) – Higher Order Transit Access is based on the midpoint of each Parking Exemption Area

As detailed in **Table 8-1**, the subject site has equivalent or better access to surface transit and is a shorter distance from a GO station when compared to the parking exemption areas. The site has direct access to Burlington Transit Route 2, which offers 15 minute weekday service which is comparable to the Route 1 service provided along the Plains Road and Fairview Street corridors. The site has access to higher frequency transit when compared to the Appleby Line Corridor, and is a shorter distance from the nearest GO station. It is therefore reasonable to conclude that the viability of living without a personal vehicle will be similar to the parking exemption areas, and this evidence further demonstrates that the site is a suitable candidate for a reduced supply of residential vehicle parking.

8.2.5 Jurisdictional Scan

It is recognized that the planning and transportation context both within the Greater Toronto and Hamilton Area (GTHA) and across the province are evolving and experiencing significant changes in land use and development patterns. In particular, the elimination of vehicle parking standards has become increasingly common to support transit-oriented development and facilitate urban infill development, especially in areas well served by existing or planned higher order transit. Notably, the municipalities of Toronto, Brampton, Hamilton, Kitchener, and Oakville have updated their zoning by-laws in recent years to eliminate parking requirements in whole or in part of the municipality. These prominent examples within the GTHA are discussed below.

- **City of Toronto** approved an update to the city wide zoning by-law in 2022 through By-law 89-2022, which removed minimum parking requirements for new developments (except for visitor parking) and introduced maximum parking requirements.
- **City of Brampton** passed an update to their city-wide zoning by-law in 2021 through By-law 45-2021 to eliminate minimum parking requirements for specific uses such as residential in the Downtown, Central Area, and Hurontario-Main Corridor while maintaining visitor parking requirements for multi-unit dwellings.

- **City of Hamilton** approved By-law 24-052 in 2024 to introduce modernized parking standards and eliminate minimum parking requirements for developments within areas that are transit-supportive and are planned to accommodate higher density mixed use developments.
- **City of Kitchener** eliminated minimum parking requirements in By-law 2019-051 for residential and non-residential uses in areas designated for higher density growth and/or near the ION LRT corridor.
- **Town of Oakville** updated By-law 2009-189 with modernized parking requirements for lands between Dundas Street and Highway 407. A maximum parking requirement was placed on new apartment developments to reduce auto dependency and encourage alternative modes of travel.

Table 8-2**Table 8-2** compares the City of Burlington, City of Toronto, City of Brampton, City of Hamilton, City of Kitchener, and Town of Oakville vehicle parking requirements for residential uses.

Table 8-2: Comparison of Zoning By-law Requirements

Land Use	City of Burlington (ZBL 2020)	City of Toronto (ZBL 89-2022)	City of Brampton (ZBL 45-2021)	City of Hamilton (ZBL 24-052)	City of Kitchener (ZBL 2019)	Town of Oakville (ZBL 2009-189)
Residential	1.25 sp./unit	0 sp./unit	0 sp./unit	0 sp./unit	0 sp./unit [3]	0 sp./unit
Visitor		2 + 0.05 sp./unit [1]	0.20 sp./unit	2 + 0.05 sp./unit [2]	0 sp./unit [3]	0.20 sp./unit

Note: (1) – Based on City of Toronto 'Parking Zone B' and in 'All Other Areas'
(2) – Based on City of Hamilton Parking Rate Area (PRA) A
(3) – Based on City Kitchener Urban Growth Centre Zones (UGC) Zones

As detailed above, the proposed residential parking supply satisfies the parking requirements when compared against the Toronto, Brampton, Hamilton, Kitchener, and Oakville parking standards for developments located in transit-accessible areas. These findings confirm that the proposed development aligns with an emerging direction across GTHA municipalities to support a reduced vehicle parking supply in neighbourhoods served by existing or planned high frequency transit, furthering a key municipal objective of increasing travel via sustainable mobility alternatives.

8.2.6 Summary

Provincial and local policy provides clear guidance towards the promotion of sustainable travel modes, including transit and active transportation. A reduced vehicle parking supply aligns with these key objectives and is consistent with provincial direction for MTSAs and the City's parking exemption pilot, as the site is well served by the existing surface transit and active travel network. Although technically outside of the boundaries of an MTSA or parking exemption area, the site shares many similarities with respect to planning and transportation context that indicate it is a suitable candidate for a reduced vehicle parking supply. A reduced supply is also consistent with recent policy direction from municipalities across the GTA who have modernized parking requirements to better support transit-oriented development.

8.3 LITERATURE REVIEW

The following section provides an overview of the academic and professional literature pertaining to parking supply and travel behaviour.

8.3.1 Parking As a Sunk Cost

From the perspective of residents, a purchased parking space, either separately or as part of the leasing cost, represents a fixed cost. Consequently, the value would be attributed to whether the space is being used or not. The perception that their parking space should be used can influence an individual to either purchase a car they would not have, keep a car that they would no longer need, or lease their space to someone else who otherwise would not have access to one.

From the perspective of developers, parking facilities typically represent sunk costs. As a result, there are minimal perceived benefits to reducing parking demand after the parking facilities have already been constructed, as the cost has already been realized.[1]

Therefore, limiting the amount of parking that will ultimately be constructed is critical and will allow site-generated travel behaviour to be influenced from the onset of development. By limiting the supply of vehicle parking available to future residents, the use of transit and active travel modes will be prioritized and engrained in the daily travel pattern of future residents who choose to rent within the proposed development.

8.3.2 Parking's Influence on Travel Mode Choice

While it is generally understood that dense urban environments support walking and cycling, it is also understood that travel behaviour and mode choice can be influenced by a number of other factors. Using a randomized sample of human behaviour, four California-based researchers published a paper that sought to identify the link between elements of the built environment, such as the presence of on-site parking and proximity to transit, to travel behaviour.

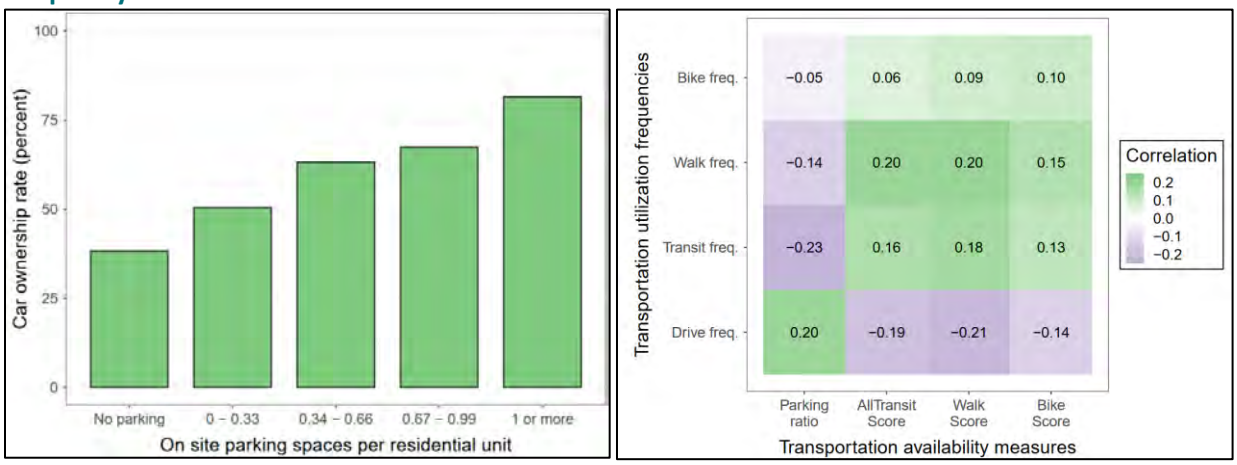
The paper, "What Do Residential Lotteries Show Us about Transportation Choices?", authored by Adam Millard-Ball, Jeremy West, Nazanin Rezaei, and Garima Desai, explored how various aspects of the built environment influence travel behaviour by leveraging the affordable housing lotteries conducted in the City of San Francisco[2]. These lotteries involve randomly selecting households to live in price-regulated homes located in new apartments and condo buildings. Given the high cost of housing in San Francisco, two-person households with incomes up to $118,200 could generally qualify for this lottery. The study therefore captures households who could theoretically afford a car, in addition to those for which the cost of car ownership would be a significant barrier.

The units included in the lottery program range in location, size, and in the amount of on-site parking provided, with older buildings constructed towards the beginning of the lottery system typically having a 1:1 parking space per unit ratio (as was required until 2010), to newer developments having reduced or even zero parking spaces available. The researchers surveyed the residents of 2,654 total households across 197 projects constructed from 2002 onwards.

While no correlation between parking availability and employment was found, the presence of parking was found to both induce car ownership (**Figure 8-4**) and lead to more driving compared to other modes. The results of the study support the notion that providing on-site vehicle parking can induce parking demand, and confirms that higher on-site parking ratios lead to an increase in driving. Additionally, the study notes that access to transit and active transportation infrastructure are critical to enabling increased use of non-driving modes. These findings confirm that on-site parking management is a key strategy to support the development of a walkable, transit-oriented community.

[1] *Transportation Cost and Benefit Analysis II - Parking Costs: https://www.vtpi.org/tca/tca0504.pdf*
[2] *What Do Residential Lotteries Show Us About Transportation Choices (2022): https://doi.org/10.1177/0042098021995139*

Figure 8-4: On-Site Parking vs. Car Ownership and Correlation Between Transportation Factors and Frequency of Mode



Source: What do Residential Lotteries Show Us About Transportation Choices? (UCLA) (2022)

8.3.3 Self-Selection of Mode for Residents

Research has been conducted that investigates the link between parking provision, parking standards, auto ownership, and usage. As indicated in a research paper titled "*Residential Choice, the Built Environment, and Non-Work Travel: Evidence Using New Data and Methods*[3]," the study found that individuals and/or households locate themselves in built environments that are consistent with their lifestyle preferences, attitudes and values. Overall, it was concluded that the self-selection hypothesis contains three non-mutually exclusive hypothesis:

- People decide where to live based on how they expect to travel;
- The sorting process is not significantly constrained, so preferences and built environment characteristics are highly correlated; and,
- Self-selectors are more responsive to the built environment.

Self-selection is related to the choices that individuals or households make. Households will choose neighbourhoods based on their expected travel patterns. This shows that future residents of the proposed development will choose to live in the area if they are compatible with a lifestyle that does not require frequent use of a personal vehicle. The proposed development will offer a housing choice for households who do not require a vehicle parking space, providing an affordable rental alternative that is well situated to meet their daily needs. Future residents will be made aware of the limited parking available through marketing materials and prior to signing a rental agreement, thereby ensuring that appropriate self-selection will occur prior to residents moving into the building.

These principles will be supported by the site's comprehensive TDM plan (discussed in **Section 10**), which will further enable travel by alternative modes for residents without a personal vehicle parking space.

8.3.4 Summary

The academic research on parking demand provides a clear indication that the provision of vehicle parking will induce demand for higher vehicle ownership and a corresponding increase in vehicle-based travel. Limited the supply of residential vehicle parking will result in a self-selection of households who are

[3] *Residential Choice, the Built Environment, and Non-Work Travel: Evidence Using New Data and Methods: DOI:10.1068/a4114*

compatible with a lifestyle that does not require frequent use of a private vehicle, and will help increase transit ridership and use of surrounding active transportation facilities. The proposed development will be marketed as a rental building catering to Burlington residents who largely use transit and walk/cycle for daily activities, providing an attractive alternative for carless households who do not want to absorb the sunk cost of a unit that includes vehicle parking.

8.4 TDM MEASURES

The site parking strategy will be supported by a comprehensive TDM plan to promote the use of transit, active travel, and other non-driving travel modes. Key measures that support the limited provision of vehicle parking are described below:

- On-site carshare space to enable occasional vehicle trips for carless households, increasing the convenience of living without a personal vehicle
- The provision of pre-loaded PRESTO cards to all incoming rental households at building occupancy to encourage the use of Burlington Transit and GO Transit services in the surrounding area;
- A real-time transit display in the building lobby to advise residents/visitors of transit arrivals at nearby bus stops, increasing the convenience of using transit;
- On-site bike parking and a bike repair station; and
- One designated short-term visitor space on the ground floor to accommodate pick-up/drop-off trips via taxi or ridehailing services for trips that are not practical using transit or active modes.

8.5 VISITOR PARKING

Although not required under Zoning By-law 2020, 14 visitor spaces will be provided (0.15 spaces per unit). To verify the appropriateness of the proposed visitor parking supply, proxy parking surveys at comparable residential developments were reviewed to determine the typical visitor demand rate for residential uses located in a similar suburban context but with access to frequent transit. Surveys were conducted between 2022 and 2024 and are therefore representative of current parking demand.

A comparison of the proxy sites included in this review is provided in **Table 8-3**.

Table 8-3: Comparison of Proxy Sites and Subject Site

Proxy Site Location	Land Use (Units)	Transit Context	Neighbourhood Context	Transit Score	Walk Score	Bike Score
1333 Bloor Street (Mississauga)	Residential Condo (442 units)	Local Bus Stop: 100m Dixie GO: 2.2km	Located in a predominately residential neighbourhood and within walking distance to commercial/retail uses along Dixie Road	49	72	61
1750 Bloor Street (Mississauga)	Residential Rental (153 units)	Local Bus Stop: <100m Dixie GO: 2.9km	Located in a predominately residential neighbourhood and within walking distance to commercial/retail uses along Fieldgate Drive	52	68	53
3480 Havenwood Drive (Mississauga)	Residential Rental (132 units)	Local Bus Stop: 260m Dixie GO: 2.5km	Located in a predominately residential neighbourhood and within walking distance to commercial/retail uses along Dixie Road	49	68	60
7805 Bayview Avenue (Markham)	Residential Condo (341 units)	Local Bus Stop: 300m Dixie GO: 4.1km	Located in a predominately residential neighbourhood and within walking distance to commercial/retail and a community centre at Green Lane	40	81	56
1056-1060 Brant Street (Burlington)	**Residential Rental (93 units)**	**Local Bus Stop: adjacent to site Dixie GO: 1.3km**	**Located in a residential neighbourhood and within walking distance to commercial/retail and office uses along Brant Street**	**55**	**69**	**67**

Given the similarity in neighbourhood and transportation context, these sites are considered appropriate for estimating the subject site's parking demand. The observed parking demand rates are summarized in **Table 8-4** with detailed survey data provided in **Appendix H**. The peak observed visitor demand is reported for each site.

Table 8-4: Proxy Site – Parking Demand Survey Results

Proxy Site Location	Unit Count	Total Vis. Supply	Peak Vis Demand	
			Spaces	Rate
1333 Bloor Street (Mississauga)	442	99	25	0.06 sp./unit
1750 Bloor Street (Mississauga)	153	18	13	0.09 sp./unit
3480 Havenwood Drive (Mississauga)	132	10	5	0.04 sp./unit
7805 Bayview Avenue (Markham)	341	65	24	0.07 sp./unit
			Weighted Average	0.06 sp./unit

The proxy site's survey results show a visitor parking demand rate that ranges between 0.04 to 0.07 sp./unit. The weighted average corresponds to 0.06 sp./unit. It is expected that a similar visitor demand will exist at the proposed development. The proposed visitor supply of 14 spaces or 0.15 sp./unit is more than the observed parking demand. As a result, it can be concluded that the proposed supply is appropriate for the subject site.

8.6 OVERALL SUMMARY

The proposed development will provide 53 residential spaces, one (1) carshare space, and 14 visitor spaces for a total of 68 parking spaces (0.73 sp./unit). This represents a 59% reduction from the current zoning by-law requirements. As demonstrated in this section, the proposed parking supply is appropriate and aligns with the site's access to frequent transit and active facilities that will allow residents and visitors to meet their travel needs without relying on private vehicles.

The reduced parking supply aligns with the transportation and parking objectives of both the Province and the City of Burlington, particularly given the site's proximity to a MTSA and access to higher-order transit routes. While the site is not located in a parking exempt area as defined by Zoning By-Law Amendment 2020.478, the site has comparable or better transit access when compared to the approved exempt areas. The proposed development will be marketed to Burlington renters who typically use transit or walk/cycle and do not own a personal vehicle, providing an affordable alternative for these households who do not want to incur the sunk cost of a unit with vehicle parking. This parking strategy will be supported by a robust Transportation Demand Management Plan that will enhance the convenience of travelling by transit, cycling, and other modes. Based on this evidence, it is our professional evidence that the proposed vehicle parking supply is appropriate and should be supported.

9 LOADING & FUNCTIONAL DESIGN REVIEW

According to Zoning By-law 2020 Section 2.25.3, at least one (1) off-street loading space shall be provided in conjunction with every principal building, including mixed-use buildings. The proposed development will provide one (1) loading space, satisfying the zoning by-law requirements.

A review of the functionality and accessibility of the proposed loading space was completed to determine that the proposed loading space can be accessed and egressed by the appropriate vehicles. In addition, the functionality and alignment of the site access on Brant Street has been reviewed. Swept path diagrams demonstrating vehicular and loading functionality are provided in **Appendix I**.

10 TRANSPORTATION DEMAND MANAGEMENT PLAN

Transportation Demand Management (TDM) is a set of strategies that strive towards a more efficient transportation network by influencing travel behaviour. Effective TDM measures can reduce vehicle usage and encourage people to engage in more sustainable methods of travel. There are several opportunities to incorporate TDM measures that support alternative modes of transportation. The recommendations should enhance non-single occupant vehicle trips for the future residents of the proposed development. In an effort to reduce single occupancy auto vehicle trips generated, a variety of multimodal infrastructure strategies and TDM measures have been detailed below.

10.1 PEDESTRIAN-BASED STRATEGIES

On-Site Pedestrian Infrastructure and Connection to Public Sidewalk Network

The proposed development will implement a pedestrian-friendly design through adequate lighting and landscaping near the building entrance. The lobby and main entrance to the building are positioned facing Brant Street for easy access to the public sidewalk network. This approach will provide a convenient connection to the adjacent transit stop and surrounding neighbourhood amenities.

10.2 CYCLING-BASED STRATEGIES

Provision of Bicycle Parking

The proposed development will provide bicycle parking spaces to support and encourage active transportation. Bicycle parking will be provided at the rates specified in the *Burlington City-wide Parking Standards Review*, which recommended a rate of 0.50 long-term and 0.05 short-term bike parking spaces per residential unit. This corresponds to a proposed bicycle parking supply of 47 long-term and 5 short-term bike parking spaces.

Provision of Bicycle Repair Facility

A significant barrier for some people considering cycling as their day-to-day mode of travel is repair and maintenance. Providing a bicycle repair stand, tools, and basic information on site will alleviate the stress of technical issues and promote cycling as a long-term travel method for tenants. The bicycle repair station will be provided near the residential long-term bike parking to further support individuals choosing to cycle.

Cycling Information Packages

Information packages will be made available to residents of the proposed development, to help encourage active transportation and increase awareness of different travel alternatives. The package will information regarding the environmental and health benefits of cycling, rules of the road, and maps which display active transportation infrastructure available in the surrounding area.

10.3 TRANSIT-BASED STRATEGIES

Pre-Loaded PRESTO Cards

The applicant will provide a PRESTO card to each rental unit of the proposed development at building occupancy, pre-loaded with a monthly pass (value of $156). This will help reduce the financial barriers restricting usage of the available transit infrastructure. Residents will be able to learn how to make use of transit in their daily lives and will have a reduced reliance on automobiles as a mode of transportation.

Transit Information Packages and Real-time Digital Display

For residents to take complete advantage of the local transit services, transit information packages will be distributed to residents to increase transit awareness. The information packages will contain public transit information such as route maps and timetables. In addition, a digital display will be located in the building lobby with up-to-date information regarding transit schedules, adjacent transit stops, and service disruptions. The addition of a digital display showing transit information will help residents gain a better understanding of what transit routes are available and when departure times are so that they can easily plan their trip.

10.4 PARKING-BASED STRATEGIES

On-site Carshare Space

The proposed development will include one (1) on-site carshare space located at-grade to facilitate convenient access. The IBI report titled *Examination of Potential Options and Impacts of Car Share Programs on Parking Standards*[4] determined that carshare is a significant TDM measures that can support the reduced supply of residential parking by facilitating occasional trips where transit or active modes are not practical.

Short-term Visitor Space

The proposed development will provide one on-site visitor space that is specifically designated for short-term use (<15 minutes) to readily facilitate PUDO and delivery trips serving future residents. This approach will ensure that these trips can be easily accommodated without impacting the surrounding neighbourhood, increasing the convenience of using taxi/ridehailing or food delivery services for carless households.

[4] https://www.urbandb.com/document/ibi-group-parking-standards-review-examination-of-potential-options-and-impacts-of-car-share-programs-on-par...-2009-03-01.pdf

10.5 TDM SUMMARY

The recommended TDM measures are summarized in **Table 10-1**.

Table 10-1: Proposed TDM Measures

Recommended TDM Measure	Quantity	Unit Cost	Total Cost
Pedestrian-based Strategies			
On-Site Pedestrian Infrastructure and Connection to Public Sidewalk Network	N/A	Included in Site Plan	Included in Site Plan
Cycling-based Strategies			
Provision of Bicycle Parking	51 spaces	$500	$26,000
Provision of Bicycle Repair Station	1	$2,500	$2,500
Cycling Information Packages	93 units	~$2.00 per unit	$186
Transit-based Strategies			
Pre-loaded PRESTO Cards	93 units	$156	$14,508
Transit Information Packages and Real-time Digital Display	93 units 1 display	~$2.00 per unit $5,000	$5,186
Parking-based Strategies			
On-Site Carshare Space	1 space	Included in Site Plan	Included in Site Plan
Short-term Visitor Space	1 space	Included in Site Plan	Included in Site Plan
Total	-	-	$45,880

11 CONCLUSIONS AND RECOMMENDATIONS

- **Proposed Development:** LEA has been retained by 2735842 Ontario Inc., 2060188 Ontario Inc., 2735841 Ontario Inc., and 2059977 Ontario Inc to undertake a TIS for the proposed residential development located at 1056-1060 Brant Street in the City of Burlington. The proposed development is an 11-storey residential building containing 93 purpose-built rental units.
- **Existing Transit Network**: The subject site is located in an area well-serviced by the existing Burlington transit network. There are a number of surface transit options available in the study area which connect the subject site to a variety of destinations, including the Burlington GO station. The subject site is within convenient walking distance of several bus stops along Brant Street, providing easy access to public transportation.
- **Surrounding Active Network:** The subject site is located in a neighborhood with access to nearby cycling infrastructure, including bike lanes along Brant Street and Fairview Street. Additionally, the site benefits from a mixed-use path (bike lane and sharrows) along Plain Road E, as well as sharrows on Queensway Drive, indicating shared use by cyclists and vehicles. The existing pedestrian network provides good connections between the residential and commercial uses in the area.

  The City of Burlington has developed its first Integrated Mobility Plan (IMP), a 30-year strategy aimed at enhancing the citywide transportation network. The IMP focuses on creating a sustainable and accessible transportation system, emphasizing improvements for pedestrians and cyclists. Within the study area, the plan identifies a cycling connection from Leighland Road that connects across the QEW at a future crossing to the east. In addition, Brant Street (north of Fairview Street) is identified as a Candidate Frequent Transit Corridor where transit improvements will be prioritized.
- **Site Trip Generation:** The proposed development is anticipated to generate 25 two-way vehicle trips during the weekday AM peak hour (6 inbound, 19 outbound) and 30 two-way vehicle trips during the weekday PM peak hour (20 inbound, 10 outbound). This represents a highly conservative estimate given that the site will provide a limited supply of vehicle parking (53 spaces, or 0.57 spaces per unit).
- **Intersection Capacity Analysis:** The traffic analysis was undertaken based on a future horizon of 2030, 2035, and 2040. The analysis results confirm that the proposed development will have an acceptable impact on the surrounding road network, with all intersections operating similar to background conditions.
- **Bicycle Parking:** There are no bicycle parking requirements for residential developments under the City of Burlington Zoning By-law 2020. However, to support the vehicle parking strategy, bicycle parking will be provided at the rates specified in the Burlington City-wide Parking Standards Review. This corresponds to a proposed bicycle parking supply of 47 long-term and 5 short-term bike parking spaces.
- **Vehicle Parking:** Based on Zoning By-law 2020, the proposed development is required to provide a minimum of 116 spaces inclusive of both residential and visitor parking. The proposed development will provide 53 residential spaces, one (1) carshare space, and 14 visitor spaces for a total of 68 parking spaces (0.73 sp./unit). This represents a 59% reduction from the current zoning by-law requirements.

- **Vehicular Parking Justification:** The reduced parking supply aligns with the transportation and parking objectives of both the Province and the City of Burlington, particularly given the site's proximity to a MTSA and access to higher-order transit routes. While the site is not located in a parking exempt area as defined by Zoning By-Law Amendment 2020.478, the site has comparable or better transit access when compared to the approved exempt areas. The proposed development will be marketed to Burlington renters who typically use transit or walk/cycle and do not own a personal vehicle, providing an affordable alternative for these households who do not want to incur the sunk cost of a unit with vehicle parking. This parking strategy will be supported by a robust Transportation Demand Management Plan that will enhance the convenience of travelling by transit, cycling, and other modes. Based on this evidence, it is our professional evidence that the proposed vehicle parking supply is appropriate and should be supported.
- **Loading Review:** According to Zoning By-law 2020 Section 2.25.3, at least one (1) off-street loading space shall be provided in conjunction with every principal building, including mixed-use buildings. The proposed development will provide one (1) loading space, satisfying the zoning by-law requirements.
- **Transportation Demand Management:** Several Transportation Demand Management (TDM) measures have been proposed to reduce automobile usage and encourage people to engage in more sustainable transportation mode.



APPENDIX A

TERMS OF REFERENCE

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March 7, 2025

Reference Number: 24223

Matt Krusto
Halton Region
Via Email: matt.krusto@halton.ca

Stephanie Robinson
City of Burlington
Via Email: Stephanie.robinson@burlington.ca

Colin Mulrenin
Ministry of Transportation
Via Email: colin.mulrenin@ontario.ca

Terms of Reference – Transportation Impact Study
Proposed Residential Development
1060 Brant Street, Burlington

We wish to confirm the following work plan for a Transportation Impact Study (TIS) in support of the Official Plan Amendment (OPA) / Zoning By-law Amendment (ZBA) application for the proposed residential development located at 1060 Brant Street in the City of Burlington (hereinafter referred to as the "subject site"). **Figure 1** below illustrates the site location.

Figure 1: Site Location

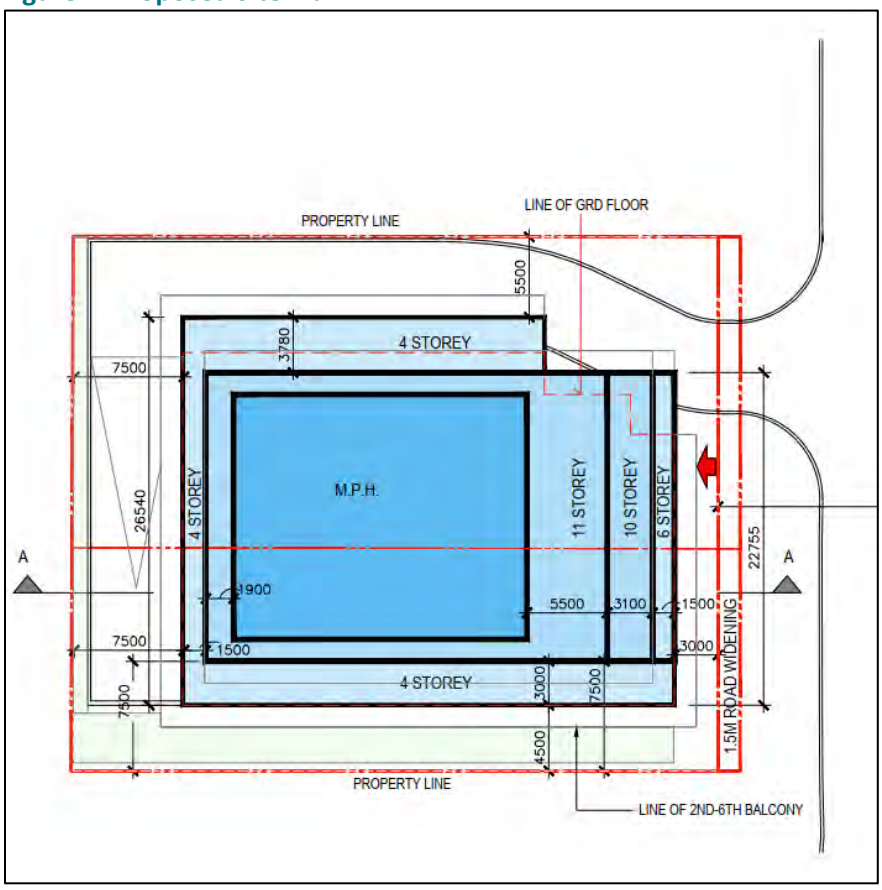


The TIS will be conducted following Halton Region's *Transportation Impact Study Guidelines (January 2015)* and MTO's *General Guidelines for the Preparation of Traffic Impact Studies (March 2023)*. The following outlines the proposed Terms of Reference for the TIS for your review and approval.

Proposed Development

The subject site is currently occupied by a vacant building. The proposed development is an 11-storey residential building containing 93 purpose-built rental units. Access to the site is proposed via a full-movement driveway off of Brant Street. The proposed site plan is shown in **Figure 2**.

Figure 2: Proposed Site Plan



Study Area & Traffic Data

LEA will review the existing conditions of the proposed study area, including the existing road, active transportation, and transit networks. As illustrated in **Figure 1**, the proposed study area includes the following intersections:

- Brant Street & Highway 403 EB Off-Ramp (Signalized);
- Brant Street & Churchill Avenue (Unsignalized); and
- Brant Street & Leighland Road (Signalized)

LEA has surveyed the intersections during the weekday AM/PM peak periods. Peak hour factors, heavy vehicle percentages, and pedestrian/cyclist volumes will be adopted based on the existing turning movement count (TMC) data. Signal timing plans will be obtained from the Region/MTO.

Traffic Assessment and Study Horizons

The TIS will assess vehicle traffic operations during the weekday AM and PM peak hours for the study area intersections. The proposed development is expected to be constructed by the year 2030. The following horizons will be utilized to assess future conditions.

- Opening Year: 2030
- 5 Years Post Build-Out: 2035
- 10 Years Post Build-Out: 2040

Synchro 12.0 will be used to perform intersection capacity analysis, utilizing the methodology of the Highway Capacity Manual and input parameter values consistent with the *Halton Region Transportation Impact Study Guidelines (January 2015)* and the MTO's *General Guidelines for the Preparation of Traffic Impact Studies (March 2023)*.

Per the *Halton Region Transportation Impact Study Guidelines (January 2015)*, the definition of critical intersections/movements for the vehicle traffic analysis for signalized intersections will be as follows:

- Volume/capacity (V/C) ratios for overall intersection operations, through movements, or shared through/turning movements increased to 0.85 or above;
- V/C ratios for exclusive movements increased to 0.95 or above; or
- Queues for an individual movement are projected to exceed available turning lane.

Per the *Halton Region Transportation Impact Study Guidelines (January 2015)*, the definition of critical intersections/movements for the vehicle traffic analysis for unsignalized intersections will be as follows:

- Level of service (LOS), based on average delay per vehicle, on individual movements exceeds LOS "D"; or
- The estimated 95th percentile queue length for an individual movement exceeds the available queue storage.

Per the MTO's *General Guidelines for the Preparation of Traffic Impact Studies (March 2023)*, the definition of critical ramp approaches are those with a V/C ratio greater than 0.75.

Future Background Traffic

Road Network Improvements: LEA will investigate and account for any anticipated road improvements in the study area and account for any traffic diversions associated with these improvements within the analysis. Please advise of any planned road improvements within the study area.

General Corridor Growth Rate: Historical intersection TMC data will be reviewed to calculate an appropriate annual growth rate along major corridors within the study area. Otherwise please advise of recommended growth rates to apply to study roadways.

Background Development Traffic: The City of Burlington's Current Development Projects portal was reviewed to identify relevant background developments for the study. However, no applicable projects were found, so no background developments will be included in the analysis.

Trip Generation, Distribution and Assignment

Trip generation for the proposed development will be forecasted based on the ITE Trip Generation Manual 11th Edition for the different land uses. The local mode split will be estimated using the 2022 Transportation Tomorrow Survey (TTS) and used to determine multi-modal trips. The general trip distribution will be based on a review of 2022 TTS data. Trip assignment will be completed accordingly to reflect the configuration of the site accesses, turning restrictions, and logical routings.

Remedial Measures

Any movements at the studied intersections that exceed a V/C ratio of 1.00 under future total conditions will be identified. If remedial actions such as signal optimization are unsuccessful this will also be identified. If remedial measures are to be employed, a scenario will be provided demonstrating the change in intersection operations.

Parking & Loading

A parking assessment will be undertaken to ensure that the proposed supply meets the zoning by-law requirements. If a shortfall from the requirements is proposed, justification will be provided to demonstrate the adequacy of the proposed supply.

Transportation Demand Management

A comprehensive TDM Plan will be completed and provide recommendations to shift and reduce vehicle demand associated with truck and employee-related traffic associated with the proposed development.

Functional Design Review

A functional design will be conducted to confirm that the site plan is functionally sound and will accommodate all vehicles in an acceptable manner. LEA will investigate if vehicles can effectively access, circulate, and perform loading activities on-site. LEA will also review and assess the layout and design of the surface parking lot. This will involve plotting swept paths of the subject vehicles using AutoTurn, identifying points of conflict, and providing mitigation measures.

Should you have any questions or concerns regarding these terms of reference, please do not hesitate to contact me.

Yours truly,

LEA CONSULTING LTD.



Robert Keel, MSc. Pl, MCIP, RPP
Manager, Transportation Planning

APPENDIX B

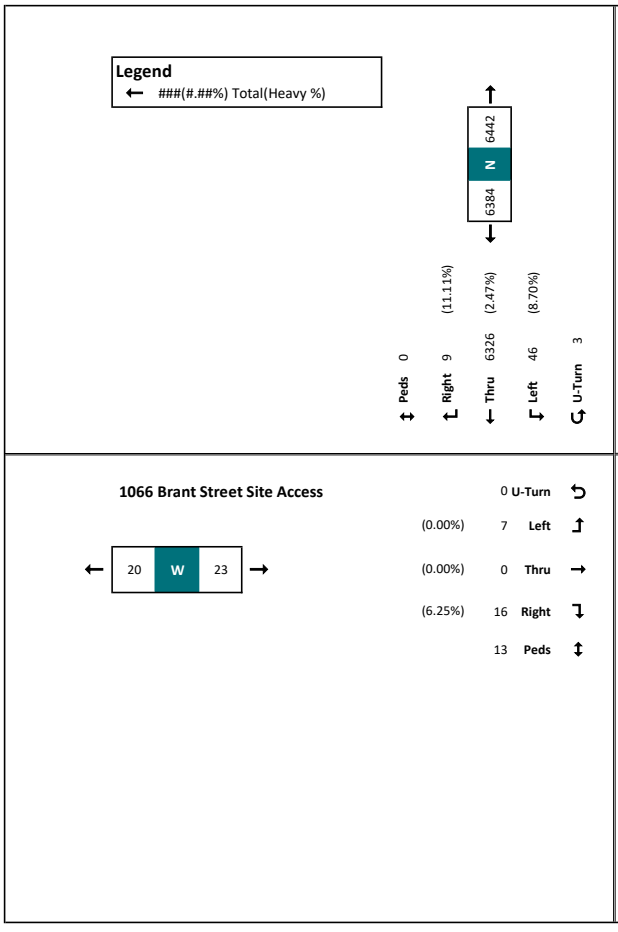
TRAFFIC DATA AND SIGNAL TIMING PLANS

LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Churchill Avenue
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25079

Turning Movement Count - Brant Street & Churchill Avenue

	Brant Street Southbound						Churchill Avenue Westbound						Brant Street Northbound						1066 Brant Street Site Access Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	2	167	0	0	169	0	1	0	4	0	5	0	1	189	0	0	190	0	0	0	0	0	0	364
7:15	0	2	214	0	0	216	0	0	0	2	2	2	0	1	226	0	0	227	0	0	0	1	0	1	446
7:30	0	0	206	0	0	206	0	0	0	5	0	5	0	0	219	0	0	219	0	0	0	0	0	0	430
7:45	0	1	288	0	0	289	0	0	0	3	1	3	0	0	242	1	0	243	0	1	0	0	0	1	536
Hourly Total	0	5	875	0	0	880	0	1	0	14	3	15	0	2	876	1	0	879	0	1	0	1	0	2	1776
8:00	0	2	290	0	0	292	0	1	0	0	0	1	0	0	266	1	0	267	0	0	0	0	0	0	560
8:15	0	2	311	0	0	313	0	2	0	2	0	4	0	1	295	3	0	299	0	0	0	0	0	0	616
8:30	0	5	319	0	0	324	0	1	0	4	1	5	0	0	310	2	0	312	0	0	0	0	1	0	641
8:45	0	5	334	1	0	340	0	0	0	13	0	13	0	0	279	2	0	281	0	0	0	2	0	2	636
Hourly Total	0	14	1254	1	0	1269	0	4	0	19	1	23	0	1	1150	8	0	1159	0	0	0	2	1	2	2453
9:00	1	2	268	1	0	272	0	3	0	1	0	4	0	1	267	1	0	269	0	0	0	0	0	0	545
9:15	0	2	319	0	0	321	0	1	0	3	2	4	0	0	10	0	0	10	0	1	0	1	0	2	337
Hourly Total	1	4	587	1	0	593	0	4	0	4	2	8	0	1	277	1	0	279	0	1	0	1	0	2	882
													* Break *												
16:00	0	1	344	1	0	346	0	0	0	3	2	3	0	0	434	3	0	437	0	1	0	1	2	2	788
16:15	0	2	383	1	0	386	0	1	0	5	0	6	0	0	490	1	0	491	0	0	0	2	0	2	885
16:30	0	4	335	1	0	340	0	1	0	0	0	1	0	1	462	2	0	465	0	0	0	3	0	3	809
16:45	0	4	375	1	0	380	0	0	0	4	0	4	0	2	467	3	0	472	0	0	0	1	2	1	857
Hourly Total	0	11	1437	4	0	1452	0	2	0	12	2	14	0	3	1853	9	0	1865	0	1	0	7	4	8	3339
17:00	2	3	371	0	0	376	0	1	0	1	1	2	0	1	434	3	0	438	0	0	0	1	1	1	817
17:15	0	4	366	1	0	371	0	3	0	1	1	4	0	0	416	3	0	419	0	1	0	0	0	1	795
17:30	0	1	370	1	0	372	0	1	0	0	1	1	0	3	338	1	0	342	0	1	0	0	3	1	716
17:45	0	2	368	0	0	370	0	0	0	4	0	4	0	0	383	0	0	383	0	1	0	3	2	4	761
Hourly Total	2	10	1475	2	0	1489	0	5	0	6	3	11	0	4	1571	7	0	1582	0	3	0	4	6	7	3089
18:00	0	1	331	1	0	333	0	1	0	1	0	2	0	0	321	6	0	327	0	1	0	0	1	1	663
18:15	0	1	367	0	0	368	0	1	0	4	3	5	0	0	324	2	0	326	0	0	0	1	1	1	700
Hourly Total	0	2	698	1	0	701	0	2	0	5	3	7	0	0	645	8	0	653	0	1	0	1	2	2	1363
Grand Total	3	46	6326	9	0	6384	0	18	0	60	14	78	0	11	6372	34	0	6417	0	7	0	16	13	23	12902
Approach %	0.0%	0.7%	99.1%	0.1%	-	-	0.0%	23.1%	0.0%	76.9%	-	-	0.0%	0.2%	99.3%	0.5%	-	-	0.0%	30.4%	0.0%	69.6%	-	-	-
Total %	0.0%	0.4%	49.0%	0.1%	-	49.5%	0.0%	0.1%	0.0%	0.5%	-	0.6%	0.0%	0.1%	49.4%	0.3%	-	49.7%	0.0%	0.1%	0.0%	0.1%	-	0.2%	-
Lights	3	42	6170	8	-	6223	0	18	0	54	-	72	0	11	6176	30	-	6217	0	7	0	15	-	22	12534
% Lights	100.0%	91.3%	97.5%	88.9%	-	97.5%	-	100.0%	-	90.0%	-	92.3%	-	100.0%	96.9%	88.2%	-	96.9%	-	100.0%	-	93.8%	-	95.7%	97.1%
Buses	-	2	65	0	-	67	-	0	0	4	-	4	-	0	70	4	-	74	-	0	0	0	-	0	145
% Buses	-	4.3%	1.0%	0.0%	-	1.0%	-	0.0%	-	6.7%	-	5.1%	-	0.0%	1.1%	11.8%	-	1.2%	-	0.0%	-	0.0%	-	0.0%	1.1%
Trucks	-	2	91	1	-	94	-	0	0	2	-	2	-	0	126	0	-	126	-	0	0	1	-	1	223
% Trucks	-	4.3%	1.4%	-	-	1.5%	-	0.0%	-	3.3%	-	2.6%	-	0.0%	2.0%	0.0%	-	2.0%	-	0.0%	-	6.3%	-	4.3%	1.7%
Bicycles	-	-	-	-	4	4	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	4
Pedestrians	-	-	-	-	0	-	-	-	-	-	14	-	-	-	-	-	0	-	-	-	-	-	13	-	27

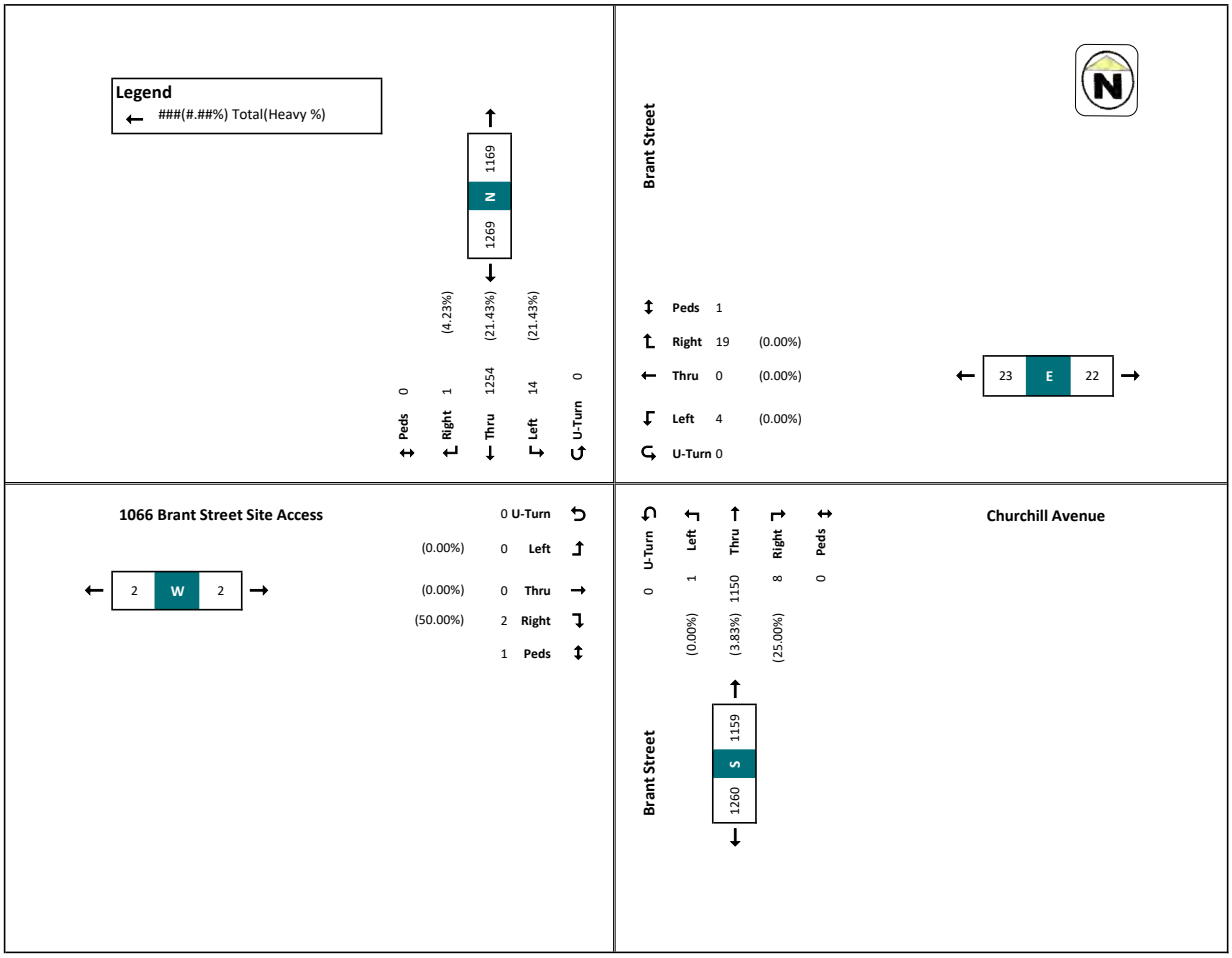


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Churchill Avenue
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25079

AM Peak Hour - Brant Street & Churchill Avenue

	Brant Street Southbound						Churchill Avenue Westbound						Brant Street Northbound						1066 Brant Street Site Access Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
8:00	0	2	290	0	0	292	0	1	0	0	0	1	0	0	266	1	0	267	0	0	0	0	0	0	560
8:15	0	2	311	0	0	313	0	2	0	2	0	4	0	1	295	3	0	299	0	0	0	0	0	0	616
8:30	0	5	319	0	0	324	0	1	0	4	1	5	0	0	310	2	0	312	0	0	0	0	1	0	641
8:45	0	5	334	1	0	340	0	0	0	13	0	13	0	0	279	2	0	281	0	0	0	2	0	2	636
Hourly Total	0	14	1254	1	0	1269	0	4	0	19	1	23	0	1	1150	8	0	1159	0	0	0	2	1	2	2453
Approach %	0.0%	1.1%	98.8%	0.1%	-	-	0.0%	17.4%	0.0%	82.6%	-	-	0.0%	0.1%	99.2%	0.7%	-	-	0.0%	0.0%	0.0%	100.0%	-	-	-
Total %	0.0%	0.6%	51.1%	0.0%	-	51.7%	0.0%	0.2%	0.0%	0.8%	-	0.9%	0.0%	0.0%	46.9%	0.3%	-	47.2%	0.0%	0.0%	0.0%	0.1%	-	0.1%	-
PHF	0	0.7	0.94	0.25	-	0.93	0	0.5	0	0.37	-	0.44	0	0.25	0.93	0.67	-	0.93	0	0	0	0.25	-	0.25	0.96
Lights	0	11	1201	0	-	1212	0	4	0	19	-	23	0	1	1106	6	-	1113	0	0	0	1	-	1	2349
% Lights	-	78.6%	95.8%	0.0%	-	95.5%	-	100.0%	-	100.0%	-	100.0%	-	100.0%	96.2%	75.0%	-	96.0%	-	-	-	50.0%	-	50.0%	95.8%
Buses	-	2	18	0	-	20	-	0	0	0	-	0	-	0	13	2	-	15	-	0	0	0	-	0	35
% Buses	-	14.3%	1.4%	0.0%	-	1.6%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1.1%	25.0%	-	1.3%	-	-	-	0.0%	-	0.0%	1.4%
Trucks	-	1	35	1	-	37	-	0	0	0	-	0	-	0	31	0	-	31	-	0	0	1	-	1	69
% Trucks	-	7.1%	2.8%	100.0%	-	2.9%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	2.7%	0.0%	-	2.7%	-	-	-	50.0%	-	50.0%	2.8%
Bicycles	-	-	-	-	1	1	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	1
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	2

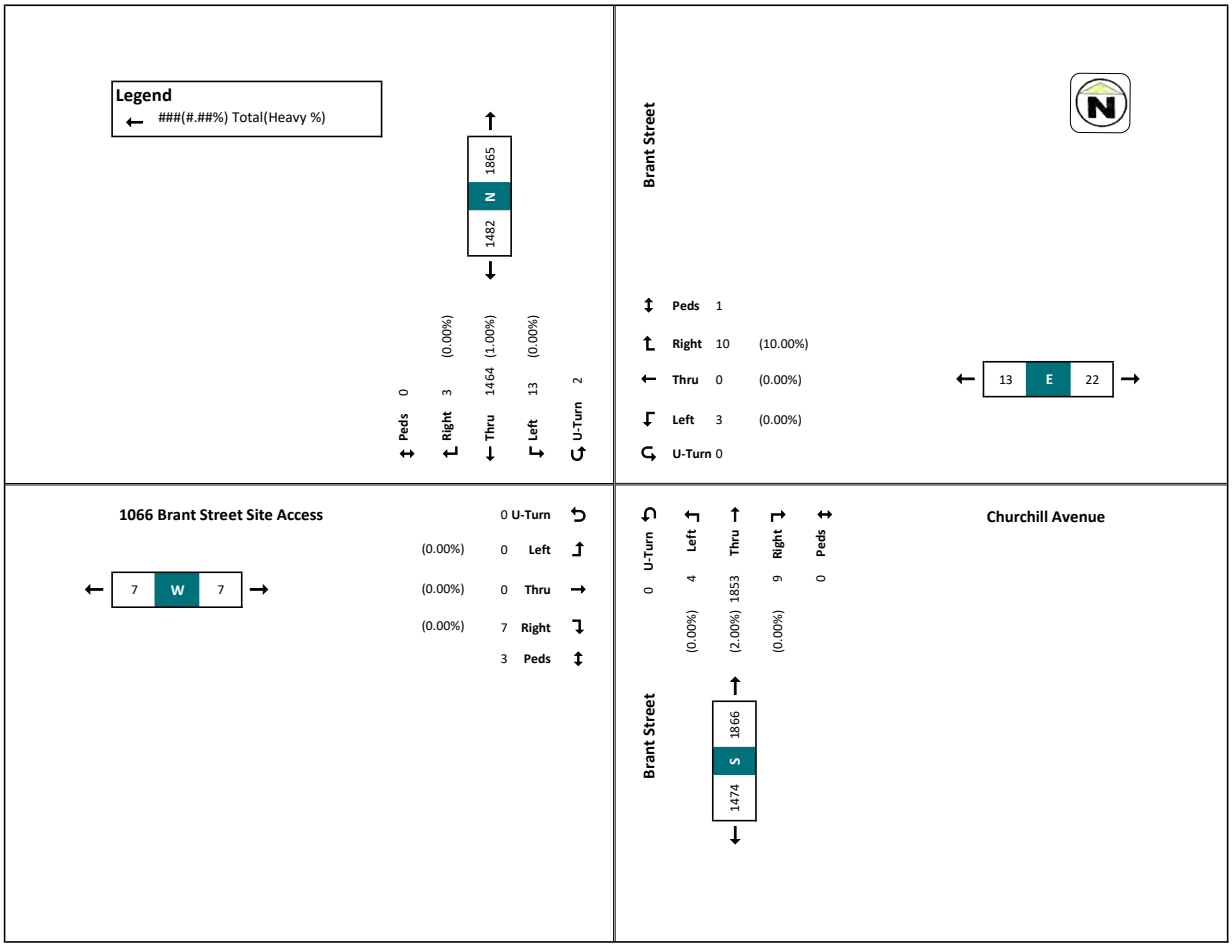


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Churchill Avenue
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25079

PM Peak Hour - Brant Street & Churchill Avenue

	Brant Street Southbound						Churchill Avenue Westbound						Brant Street Northbound						1066 Brant Street Site Access Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
16:15	0	2	383	1	0	386	0	1	0	5	0	6	0	0	490	1	0	491	0	0	0	2	0	2	885
16:30	0	4	335	1	0	340	0	1	0	0	0	1	0	1	462	2	0	465	0	0	0	3	0	3	809
16:45	0	4	375	1	0	380	0	0	0	4	0	4	0	2	467	3	0	472	0	0	0	1	2	1	857
17:00	2	3	371	0	0	376	0	1	0	1	1	2	0	1	434	3	0	438	0	0	0	1	1	1	817
Hourly Total	2	13	1464	3	0	1482	0	3	0	10	1	13	0	4	1853	9	0	1866	0	0	0	7	3	7	3368
Approach %	0.1%	0.9%	98.8%	0.2%	-	-	0.0%	23.1%	0.0%	76.9%	-	-	0.0%	0.2%	99.3%	0.5%	-	-	0.0%	0.0%	0.0%	100.0%	-	-	-
Total %	0.1%	0.4%	43.5%	0.1%	-	44.0%	0.0%	0.1%	0.0%	0.3%	-	0.4%	0.0%	0.2%	75.5%	0.4%	-	55.4%	0.0%	0.0%	0.0%	0.3%	-	0.2%	-
PHF	0.25	0.81	0.96	0.75	-	0.96	0	0.75	0	0.5	-	0.54	0	0.5	0.95	0.75	-	0.95	0	0	0	0.58	-	0.58	0.95
Lights	2	13	1446	3	-	1464	0	3	0	9	-	12	0	4	1816	9	-	1829	0	0	0	7	-	7	3312
% Lights	100.0%	100.0%	98.8%	100.0%	-	98.8%	-	100.0%	-	90.0%	-	92.3%	-	100.0%	98.0%	100.0%	-	98.0%	-	-	-	100.0%	-	100.0%	98.3%
Buses	-	0	18	0	-	18	-	0	0	1	-	1	-	0	14	0	-	14	-	0	0	0	-	0	33
% Buses	#VALUE!	0.0%	1.2%	0.0%	-	1.2%	-	0.0%	-	10.0%	-	7.7%	-	0.0%	0.8%	0.0%	-	0.8%	-	-	-	0.0%	-	0.0%	1.0%
Trucks	-	0	7	0	-	7	-	0	0	0	-	0	-	0	23	0	-	23	-	0	0	0	-	0	30
% Trucks	#VALUE!	0.0%	0.5%	0.0%	-	0.5%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1.2%	0.0%	-	1.2%	-	-	-	0.0%	-	0.0%	0.9%
Bicycles	-	-	-	-	1	1	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	1
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

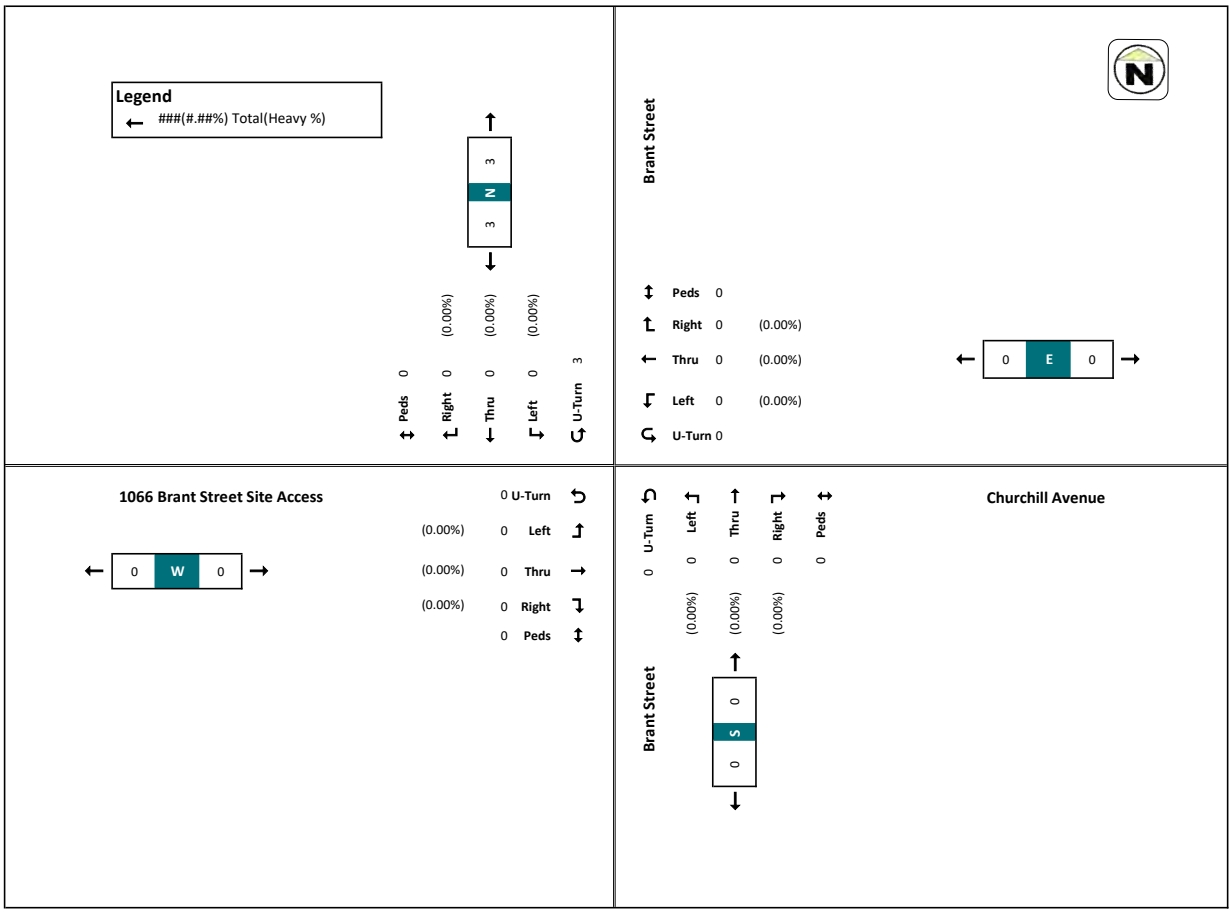


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Churchill Avenue
Survey Date : January 0, 1900
Project No. : 24223
Count ID : 25079

Turning Movement Count - Brant Street & Churchill Avenue

	Brant Street Southbound						Churchill Avenue Westbound						Brant Street Northbound						1066 Brant Street Site Access Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lights	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Lights	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Buses	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Trucks	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

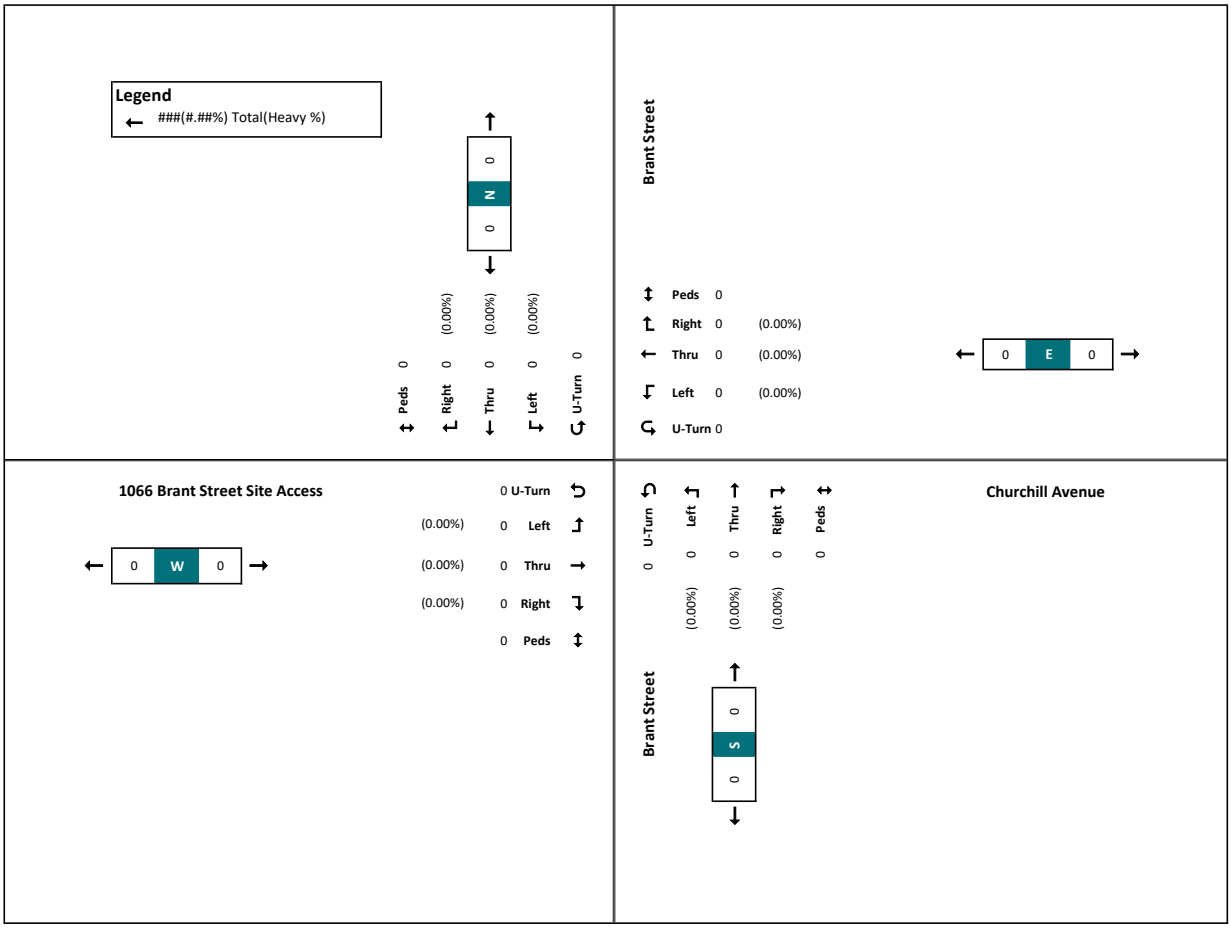


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Churchill Avenue
Survey Date : January 0, 1900
Project No. : 24223
Count ID : 25079

SAT Peak Hour - Brant Street & Churchill Avenue

	Brant Street Southbound						Churchill Avenue Westbound						Brant Street Northbound						1066 Brant Street Site Access Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total %	-	-	-	-	-	-	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-
PHF	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Lights	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Lights	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Buses	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Trucks	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

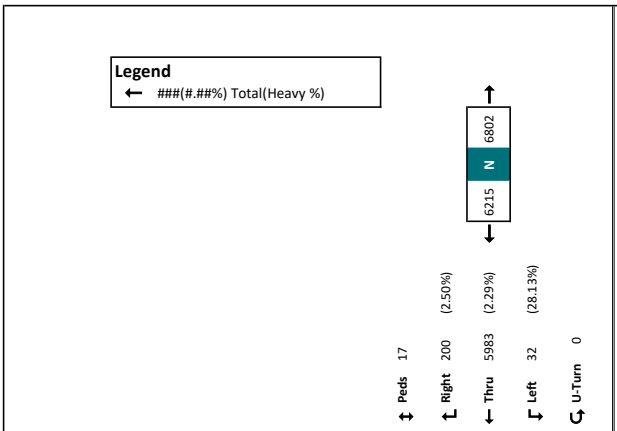


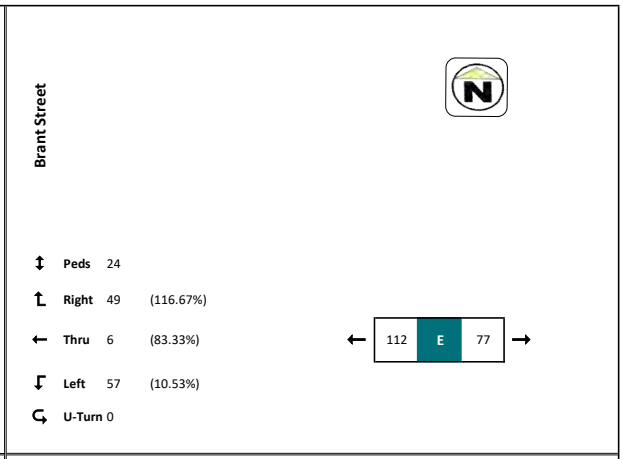
LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

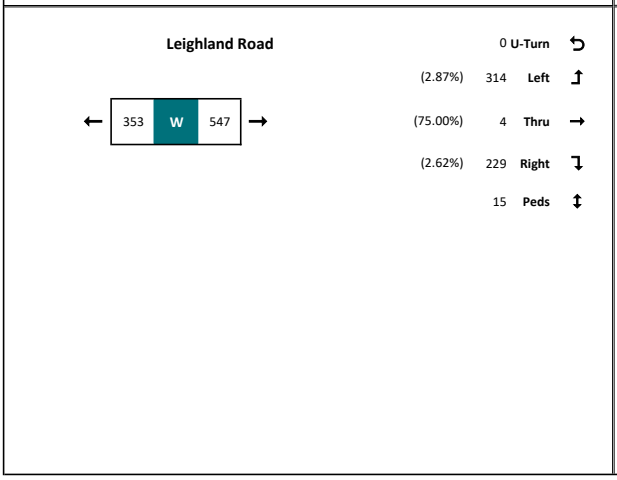
Intersection : Brant Street & Leighland Road
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25080

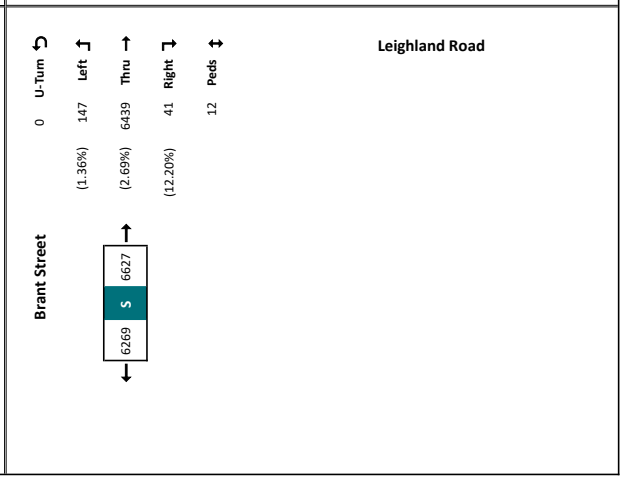
Turning Movement Count - Brant Street & Leighland Road

	Brant Street Southbound						Leighland Road Westbound						Brant Street Northbound						Leighland Road Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	1	168	1	0	170	0	1	0	1	1	2	0	2	178	3	0	183	0	11	0	5	0	16	371
7:15	0	3	201	6	0	210	0	1	0	1	1	2	0	2	204	2	2	208	0	17	0	7	1	24	444
7:30	0	1	214	5	0	220	0	2	0	1	0	3	0	4	220	2	1	226	0	18	0	13	3	31	480
7:45	0	2	288	2	2	292	0	2	1	4	2	7	0	1	246	1	0	248	0	20	1	11	0	32	579
Hourly Total	0	7	871	14	2	892	0	6	1	7	4	14	0	9	848	8	3	865	0	66	1	36	4	103	1874
8:00	0	2	279	5	0	286	0	0	0	4	2	4	0	2	251	1	0	254	0	21	0	14	0	35	579
8:15	0	0	295	5	0	300	0	2	3	3	0	8	0	6	287	0	0	293	0	22	0	12	0	34	635
8:30	0	3	318	1	0	322	0	2	1	3	1	6	0	2	302	9	0	313	0	19	0	13	0	32	673
8:45	0	2	327	10	0	339	0	8	0	13	1	21	0	5	271	1	0	277	0	23	1	10	0	34	671
Hourly Total	0	7	1219	21	0	1247	0	12	4	23	4	39	0	15	1111	11	0	1137	0	85	1	49	0	135	2558
9:00	0	2	255	6	0	263	0	7	0	2	2	9	0	10	251	2	0	263	0	14	0	9	0	23	558
9:15	0	1	300	7	0	308	0	8	0	1	1	9	0	5	259	4	0	268	0	7	0	7	0	14	599
Hourly Total	0	3	557	13	0	573	0	15	0	3	3	18	0	15	511	6	0	532	0	21	0	16	0	37	1160
* Break *																									
16:00	0	0	329	18	0	347	0	5	1	2	2	8	0	10	442	1	1	453	0	14	1	16	1	31	839
16:15	0	2	366	15	0	383	0	0	0	3	0	3	0	7	478	2	0	487	0	18	0	6	0	24	897
16:30	0	1	308	9	1	318	0	2	0	2	2	4	0	7	424	1	1	432	0	20	1	14	0	35	789
16:45	0	3	348	20	0	371	0	0	0	3	0	3	0	12	460	0	3	472	0	14	0	16	5	30	876
Hourly Total	0	6	1351	62	1	1419	0	7	1	10	4	18	0	36	1804	4	5	1844	0	66	2	52	6	120	3401
17:00	0	1	343	13	0	357	0	1	0	2	2	3	0	13	431	2	1	446	0	13	0	14	1	27	833
17:15	0	1	316	16	1	333	0	3	0	0	1	3	0	22	441	2	1	465	0	11	0	15	0	26	827
17:30	0	0	334	19	3	353	0	2	0	2	4	4	0	7	329	1	1	337	0	12	0	13	0	25	719
17:45	0	4	338	13	1	355	0	6	0	0	1	6	0	7	391	1	1	399	0	11	0	11	2	22	782
Hourly Total	0	6	1331	61	5	1398	0	12	0	4	8	16	0	49	1592	6	4	1647	0	47	0	53	3	100	3161
18:00	0	3	307	15	1	325	0	3	0	2	0	5	0	9	276	3	0	288	0	14	0	10	1	24	642
18:15	0	0	345	14	8	359	0	2	0	0	1	2	0	14	296	3	0	313	0	15	0	13	1	28	702
Hourly Total	0	3	652	29	9	684	0	5	0	2	1	7	0	23	572	6	0	601	0	29	0	23	2	52	1344
Grand Total	0	32	5983	200	17	6215	0	57	6	49	24	112	0	147	6439	41	12	6627	0	314	4	229	15	547	13501
Approach %	0.0%	0.5%	96.3%	3.2%	-	-	0.0%	50.9%	5.4%	43.8%	-	-	0.0%	2.2%	97.2%	0.6%	-	-	0.0%	57.4%	0.7%	41.9%	-	-	-
Total %	0.0%	0.2%	44.3%	1.5%	-	46.0%	0.0%	0.4%	0.0%	0.4%	-	0.8%	0.0%	1.1%	47.7%	0.3%	-	49.1%	0.0%	2.3%	0.0%	1.7%	-	4.1%	-
Lights	0	23	5846	195	-	6064	0	51	1	42	-	94	0	145	6266	36	-	6447	0	305	1	223	-	529	13134
% Lights	-	71.9%	97.7%	97.5%	-	97.6%	-	89.5%	16.7%	85.7%	-	83.9%	-	98.6%	97.3%	87.8%	-	97.3%	-	97.1%	25.0%	97.4%	-	96.7%	97.3%
Buses	-	1	62	4	-	67	-	2	5	0	-	7	-	1	79	1	-	81	-	9	3	5	-	17	172
% Buses	-	3.1%	1.0%	2.0%	-	1.1%	-	3.5%	83.3%	0.0%	-	6.3%	-	0.7%	1.2%	2.4%	-	1.2%	-	2.9%	75.0%	2.2%	-	3.1%	1.3%
Trucks	-	8	75	1	-	84	-	4	0	7	-	11	-	1	94	4	-	99	-	0	0	1	-	1	195
% Trucks	-	25.0%	1.3%	-	-	1.4%	-	7.0%	0.0%	14.3%	-	9.8%	-	0.7%	1.5%	9.8%	-	1.5%	-	0.0%	0.0%	0.4%	-	0.2%	1.4%
Bicycles	-	-	-	-	1	1	-	-	-	-	2	2	-	-	-	-	0	0	-	-	-	-	1	1	4
Pedestrians	-	-	-	-	17	-	-	-	-	-	24	-	-	-	-	-	12	-	-	-	-	-	15	-	68







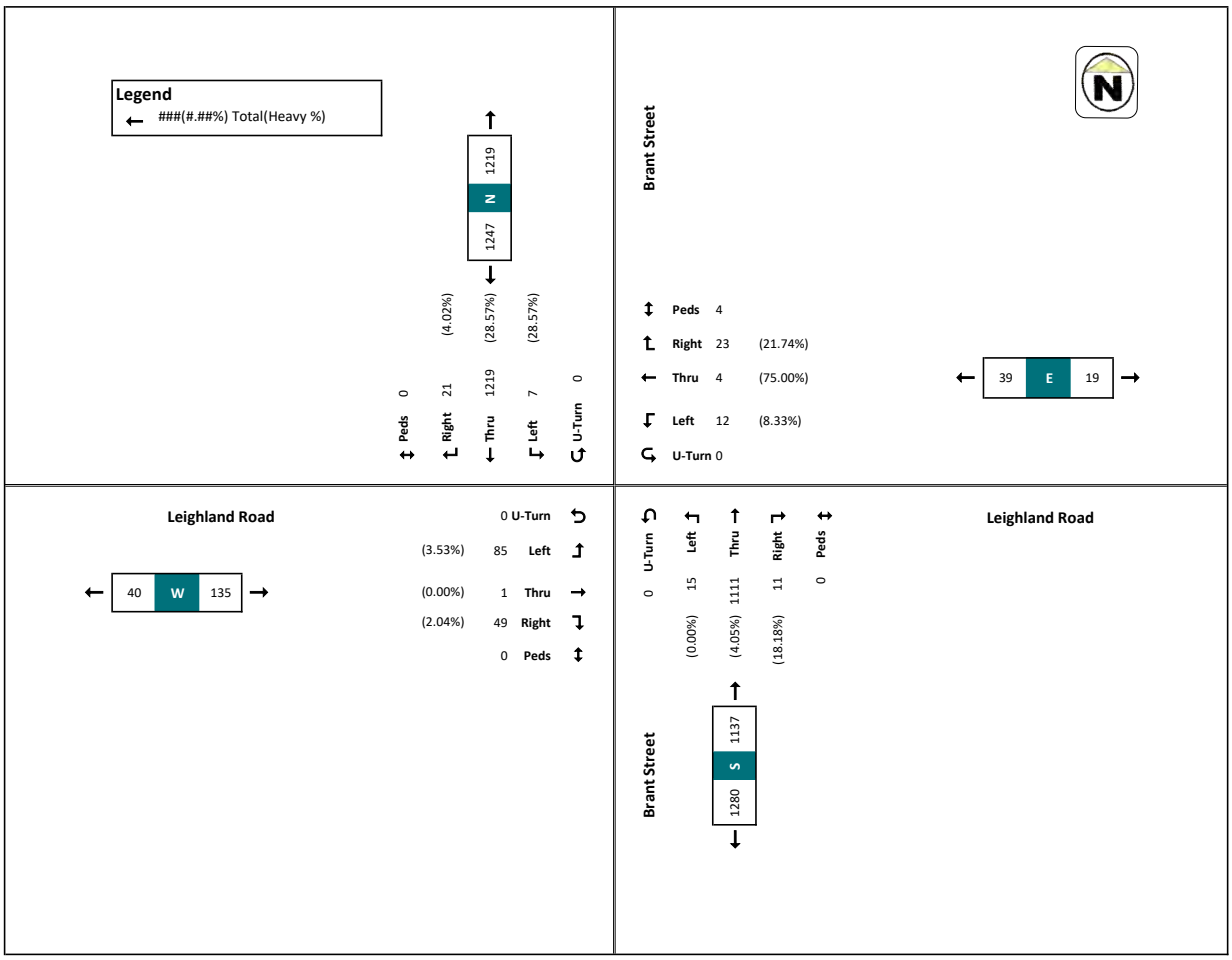


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Leighland Road
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25080

AM Peak Hour - Brant Street & Leighland Road

	Brant Street Southbound						Leighland Road Westbound						Brant Street Northbound						Leighland Road Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
8:00	0	2	279	5	0	286	0	0	0	4	2	4	0	2	251	1	0	254	0	21	0	14	0	35	579
8:15	0	0	295	5	0	300	0	2	3	3	0	8	0	6	287	0	0	293	0	22	0	12	0	34	635
8:30	0	3	318	1	0	322	0	2	1	3	1	6	0	2	302	9	0	313	0	19	0	13	0	32	673
8:45	0	2	327	10	0	339	0	8	0	13	1	21	0	5	271	1	0	277	0	23	1	10	0	34	671
Hourly Total	0	7	1219	21	0	1247	0	12	4	23	4	39	0	15	1111	11	0	1137	0	85	1	49	0	135	2558
Approach %	0.0%	0.6%	97.8%	1.7%	-	-	0.0%	30.8%	10.3%	59.0%	-	-	0.0%	1.3%	97.7%	1.0%	-	-	0.0%	63.0%	0.7%	36.3%	-	-	-
Total %	0.0%	0.3%	47.7%	0.8%	-	48.7%	0.0%	0.5%	0.2%	0.9%	-	1.5%	0.0%	0.6%	43.4%	0.4%	-	44.4%	0.0%	3.3%	0.0%	1.9%	-	5.3%	-
PHF	0	0.58	0.93	0.53	-	0.92	0	0.38	0.33	0.44	-	0.46	0	0.63	0.92	0.31	-	0.91	0	0.92	0.25	0.88	-	0.96	0.95
Lights	0	5	1170	18	-	1193	0	11	1	18	-	30	0	15	1066	9	-	1090	0	82	1	48	-	131	2444
% Lights	-	71.4%	96.0%	85.7%	-	95.7%	-	91.7%	25.0%	78.3%	-	76.9%	-	100.0%	95.9%	81.8%	-	95.9%	-	96.5%	100.0%	98.0%	-	97.0%	95.5%
Buses	-	0	17	2	-	19	-	1	3	0	-	4	-	0	13	0	-	13	-	3	0	1	-	4	40
% Buses	-	0.0%	1.4%	9.5%	-	1.5%	-	8.3%	75.0%	0.0%	-	10.3%	-	0.0%	1.2%	0.0%	-	1.1%	-	3.5%	0.0%	2.0%	-	3.0%	1.6%
Trucks	-	2	32	1	-	35	-	0	0	5	-	5	-	0	32	2	-	34	-	0	0	0	-	0	74
% Trucks	-	28.6%	2.6%	4.8%	-	2.8%	-	0.0%	0.0%	21.7%	-	12.8%	-	0.0%	2.9%	18.2%	-	3.0%	-	0.0%	0.0%	0.0%	-	0.0%	2.9%
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	1	1	1
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	4

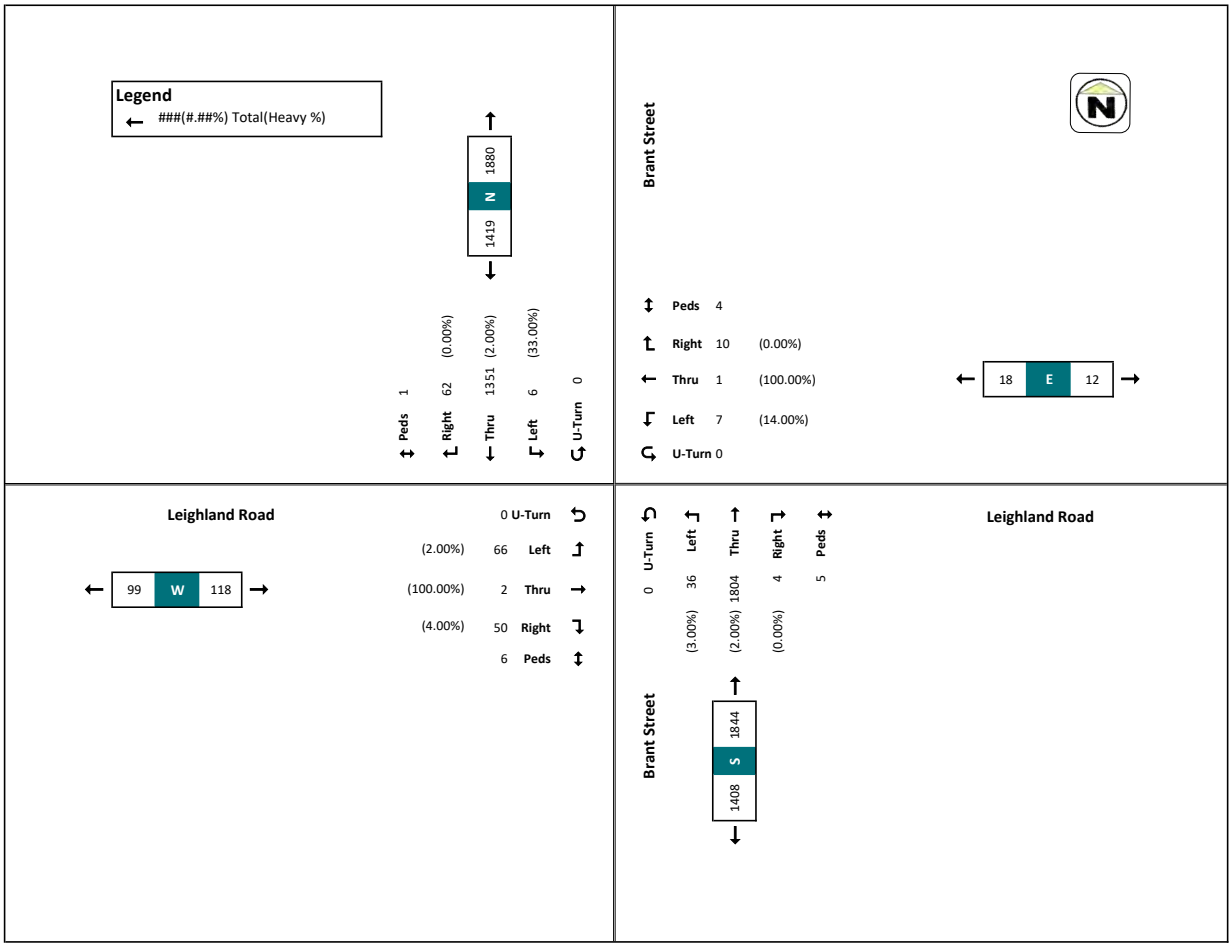


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Leighland Road
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25080

PM Peak Hour - Brant Street & Leighland Road

	Brant Street Southbound						Leighland Road Westbound						Brant Street Northbound						Leighland Road Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
16:00	0	0	329	18	0	347	0	5	1	2	2	8	0	10	442	1	1	453	0	14	1	16	1	31	839
16:15	0	2	366	15	0	383	0	0	0	3	0	3	0	7	478	2	0	487	0	18	0	6	0	24	897
16:30	0	1	308	9	1	318	0	2	0	2	2	4	0	7	424	1	1	432	0	20	1	14	0	35	789
16:45	0	3	348	20	0	371	0	0	0	3	0	3	0	12	460	0	3	472	0	14	0	16	5	30	876
Hourly Total	0	6	1351	62	1	1419	0	7	1	10	4	18	0	36	1804	4	5	1844	0	66	2	52	6	120	3401
Approach %	0.0%	0.4%	95.2%	4.4%	-	-	0.0%	38.9%	5.6%	55.6%	-	-	0.0%	2.0%	97.8%	0.2%	-	-	0.0%	55.0%	1.7%	43.3%	-	-	-
Total %	0.0%	0.2%	39.7%	1.8%	-	41.7%	0.0%	0.3%	0.0%	0.3%	-	0.5%	0.0%	1.4%	70.5%	0.2%	-	54.2%	0.0%	2.6%	0.1%	2.0%	-	3.5%	-
PHF	0	0.5	0.92	0.78	-	0.93	0	0.35	0.25	0.83	-	0.56	0	0.75	0.94	0.5	-	0.95	0	0.83	0.5	0.81	-	0.86	0.95
Lights	0	4	1329	62	-	1395	0	6	0	10	-	16	0	35	1766	4	-	1805	0	65	0	50	-	115	3331
% Lights	-	66.7%	98.4%	100.0%	-	98.3%	-	85.7%	0.0%	100.0%	-	88.9%	-	97.2%	97.9%	100.0%	-	97.9%	-	98.5%	0.0%	96.2%	-	95.8%	97.9%
Buses	-	1	17	0	-	18	-	1	1	0	-	2	-	0	21	0	-	21	-	1	2	1	-	4	45
% Buses	-	16.7%	1.3%	0.0%	-	1.3%	-	14.3%	100.0%	0.0%	-	11.1%	-	0.0%	1.2%	0.0%	-	1.1%	-	1.5%	100.0%	1.9%	-	3.3%	1.3%
Trucks	-	1	6	0	-	7	-	0	0	0	-	0	-	1	17	0	-	18	-	0	0	1	-	1	26
% Trucks	-	16.7%	0.4%	0.0%	-	0.5%	-	0.0%	0.0%	0.0%	-	0.0%	-	2.8%	0.9%	0.0%	-	1.0%	-	0.0%	0.0%	1.9%	-	0.8%	0.8%
Bicycles	-	-	-	-	1	1	-	-	-	-	1	1	-	-	-	-	0	0	-	-	-	-	0	0	2
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	1

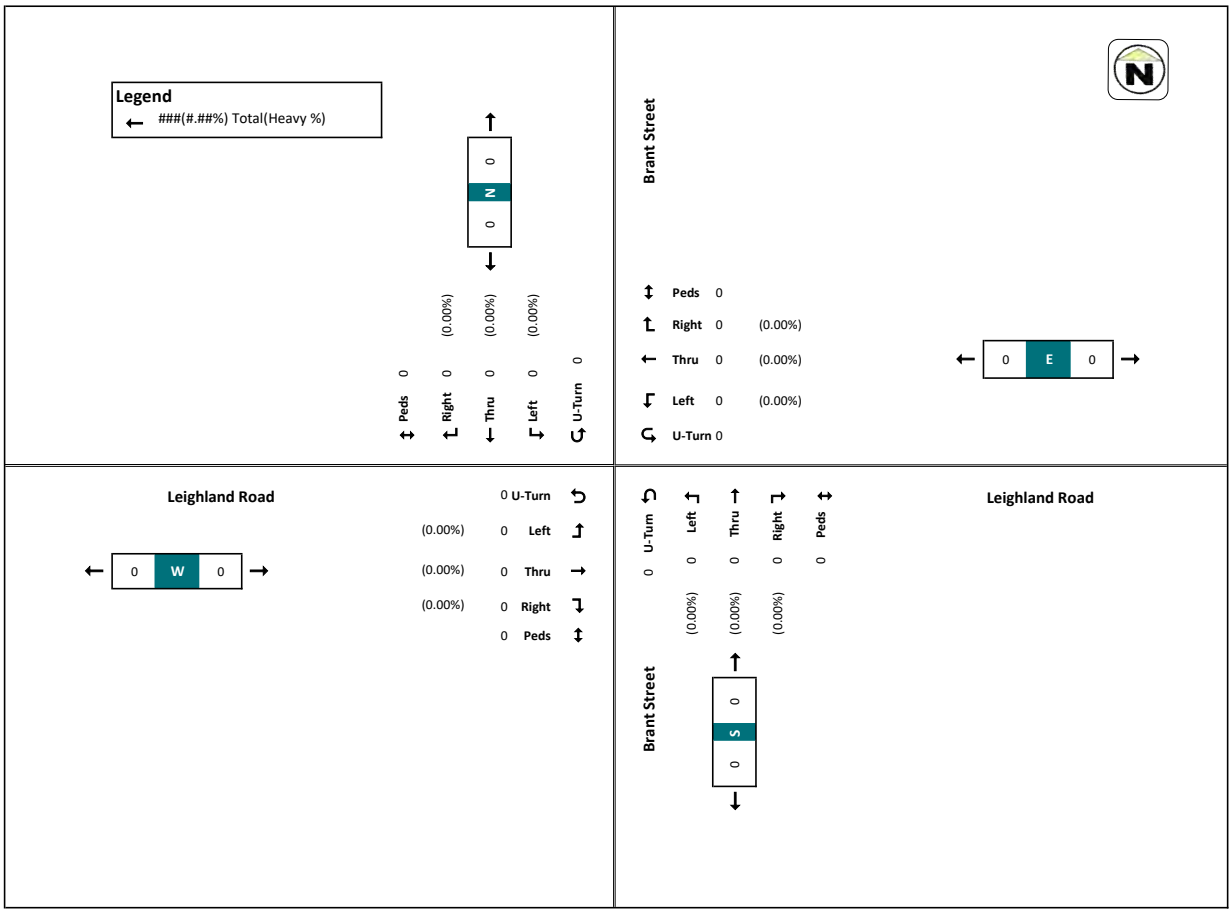


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Leighland Road
Survey Date : January 0, 1900
Project No. : 24223
Count ID : 25080

Turning Movement Count - Brant Street & Leighland Road

	Brant Street Southbound						Leighland Road Westbound						Brant Street Northbound						Leighland Road Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lights	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Lights	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Buses	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Trucks	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

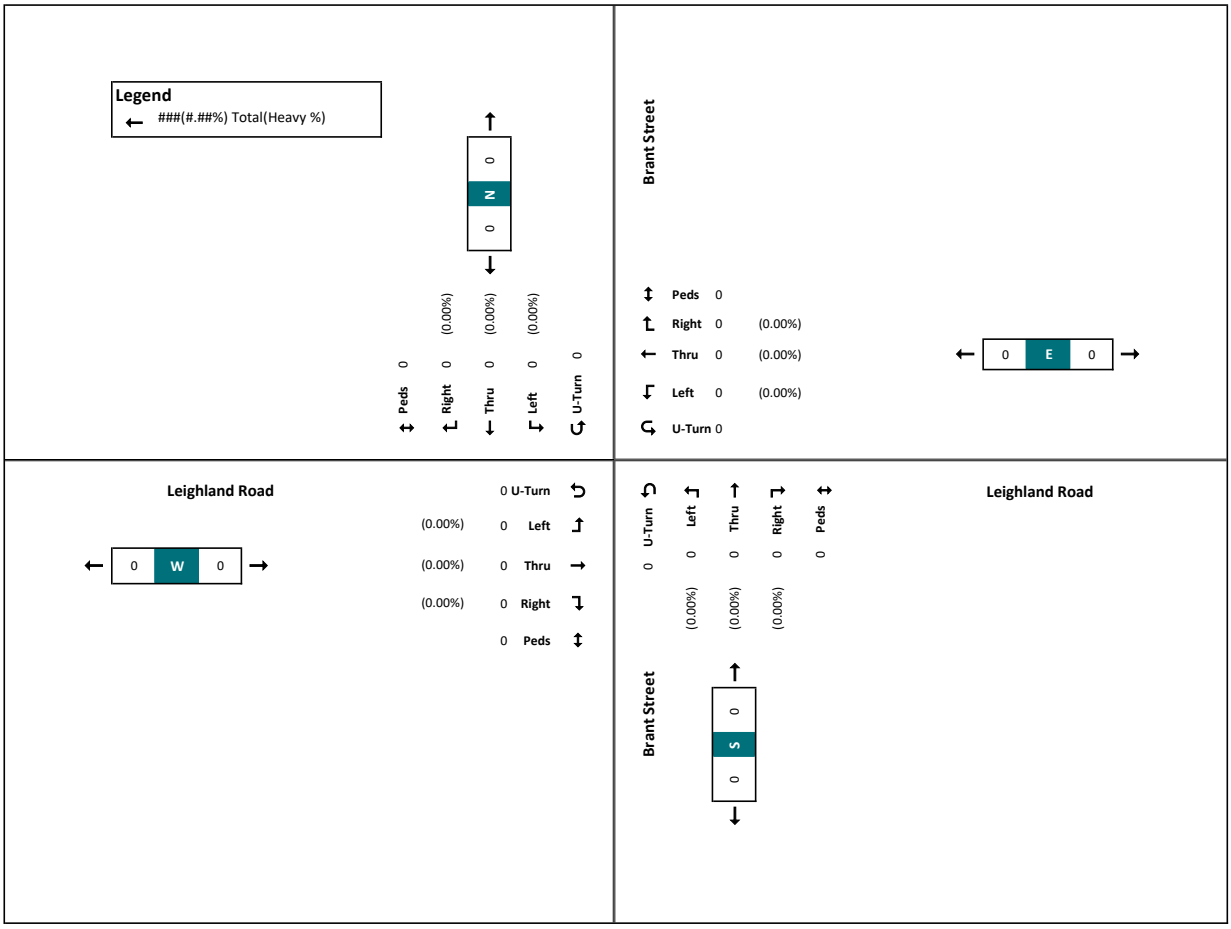


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Leighland Road
Survey Date : January 0, 1900
Project No. : 24223
Count ID : 25080

SAT Peak Hour - Brant Street & Leighland Road

	Brant Street Southbound						Leighland Road Westbound						Brant Street Northbound						Leighland Road Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total %	-	-	-	-	-	-	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-
PHF	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Lights	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Lights	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Buses	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Trucks	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

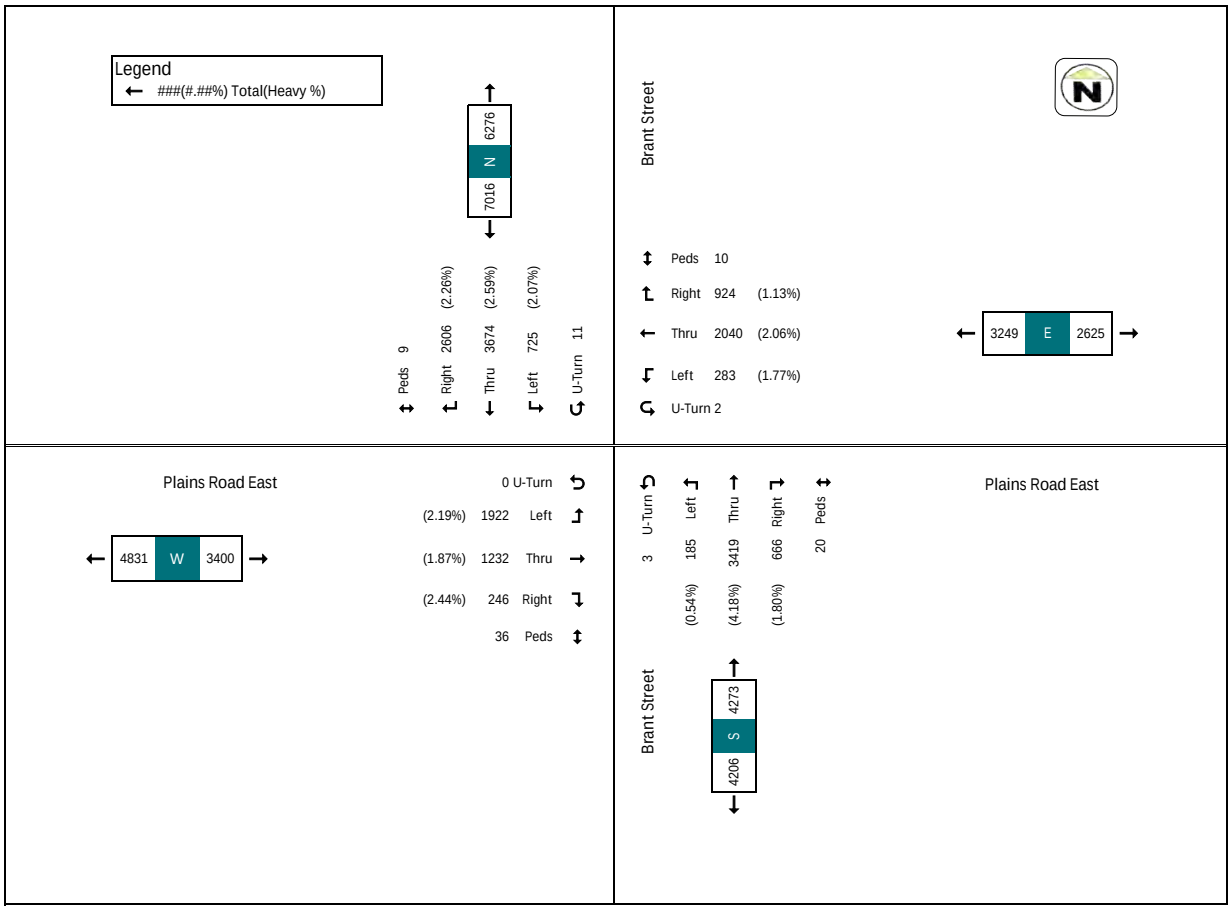


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Plains Road East
Survey Date : October 2, 2025
Project No. : 24223
Count ID : 25310

Turning Movement Count - Brant Street & Plains Road East

	Brant Street Southbound						Plains Road East Westbound						Brant Street Northbound						Plains Road East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	41	76	51	0	168	0	3	17	8	0	28	0	1	114	45	0	160	0	52	98	4	2	154	510
7:15	0	68	75	58	4	201	0	5	21	10	0	36	0	5	141	89	3	235	0	63	108	4	2	175	647
7:30	0	69	107	68	0	244	0	2	27	13	1	47	1	6	164	75	1	248	0	59	124	6	4	189	728
7:45	1	65	194	82	0	342	0	10	26	16	0	52	0	5	189	70	0	264	0	61	93	8	3	162	820
Hourly Total	1	243	452	259	4	955	0	25	91	47	1	163	1	19	608	279	4	907	0	235	423	22	11	680	2705
8:00	1	52	197	89	1	339	0	8	30	10	0	48	0	5	130	38	0	173	0	65	79	12	0	156	716
8:15	0	40	183	91	0	314	0	13	34	17	0	64	0	5	124	33	1	162	0	83	63	5	0	151	691
8:30	1	51	183	114	0	349	0	12	37	12	0	61	0	6	111	23	0	140	0	101	67	4	2	172	722
8:45	1	48	211	95	0	355	0	15	46	18	0	79	0	12	129	38	0	179	0	84	80	7	0	171	784
Hourly Total	3	191	774	389	1	1357	0	48	147	57	0	252	0	28	494	132	1	654	0	333	289	28	2	650	2913
9:00	0	31	209	116	1	357	0	16	32	9	1	58	0	7	193	96	0	296	0	84	49	13	2	146	792
9:15	0	23	175	113	1	311	0	19	21	35	4	75	0	6	180	34	0	220	0	89	50	14	0	153	759
Hourly Total	0	54	383	229	2	668	0	35	53	43	5	131	0	13	362	70	0	445	0	173	99	27	2	299	1541
* Break *																									
16:00	1	16	194	142	0	353	0	27	170	86	3	283	0	11	208	23	1	242	0	155	70	17	1	242	1120
16:15	1	26	186	192	1	405	0	33	192	69	1	294	1	12	245	16	3	274	0	115	27	13	3	155	1128
16:30	0	30	169	197	1	396	0	26	213	104	0	343	0	6	198	18	1	222	0	148	51	16	3	216	1177
16:45	1	29	234	162	0	426	0	25	166	109	0	300	0	18	224	21	0	263	0	100	42	19	4	161	1150
Hourly Total	3	101	783	693	2	1580	0	111	741	368	4	1220	1	47	875	78	5	1001	0	519	190	65	11	774	4575
17:00	1	30	200	169	0	400	0	0	180	60	0	240	0	15	201	13	1	229	0	150	49	23	2	222	1091
17:15	1	18	244	185	0	448	0	0	159	81	0	240	1	13	230	18	3	262	0	117	47	12	1	176	1126
17:30	0	19	238	182	0	439	0	0	186	80	0	266	0	9	139	17	1	165	0	106	32	19	3	157	1027
17:45	2	21	226	188	0	417	0	0	170	73	0	243	0	17	188	20	0	225	0	83	31	16	0	130	1015
Hourly Total	4	88	908	704	0	1704	0	0	695	294	0	989	1	54	758	68	5	881	0	456	159	70	6	685	4259
18:00	0	19	171	167	0	357	2	33	156	62	0	253	0	8	157	20	3	186	0	106	47	18	3	171	967
18:15	0	29	203	165	0	397	0	31	157	53	0	241	0	15	165	19	2	199	0	100	25	16	1	141	978
Hourly Total	0	48	374	332	0	754	2	64	313	115	0	494	0	24	322	39	5	385	0	206	72	34	4	312	1945
Grand Total	11	725	3674	2606	9	7016	2	283	2040	924	10	3249	3	185	3419	666	20	4273	0	1922	1232	246	36	3400	17938
Approach %	0.2%	10.3%	52.4%	37.1%	-	-	0.1%	8.7%	62.8%	28.4%	-	-	0.1%	4.3%	80.0%	15.6%	-	-	0.0%	56.5%	36.2%	7.2%	-	-	-
Total %	0.1%	4.0%	20.5%	14.5%	-	39.1%	0.0%	1.6%	11.4%	5.2%	-	18.1%	0.0%	1.0%	19.1%	3.7%	-	23.8%	0.0%	10.7%	6.9%	1.4%	-	19.0%	
Lights	11	710	3579	2547	-	6847	2	278	1998	901	-	3179	3	184	3276	654	-	4117	0	1880	1209	240	-	3329	17472
% Lights	100.0%	97.9%	97.4%	97.7%	-	97.6%	100.0%	98.2%	97.9%	97.5%	-	97.8%	100.0%	99.5%	95.8%	98.2%	-	96.3%	-	97.8%	98.1%	97.6%	-	97.9%	97.4%
Buses	-	5	44	16	-	65	-	1	12	10	-	23	-	1	56	5	-	62	-	10	12	3	-	25	175
% Buses	-	0.7%	1.2%	0.6%	-	0.9%	-	0.4%	0.6%	1.1%	-	0.7%	-	0.5%	1.6%	0.8%	-	1.5%	-	0.5%	1.0%	1.2%	-	0.7%	1.0%
Trucks	-	10	51	43	-	104	-	4	30	13	-	47	-	0	87	7	-	94	-	32	11	3	-	46	291
% Trucks	-	1.4%	1.4%	-	-	1.5%	-	1.4%	1.5%	1.4%	-	1.4%	-	0.0%	2.5%	1.1%	-	2.2%	-	1.7%	0.9%	1.2%	-	1.4%	1.6%
Bicycles	-	-	-	-	19	19	-	-	-	-	4	4	-	-	-	-	1	1	-	-	-	-	4	4	28
Pedestrians	-	-	-	-	9	-	-	-	-	-	10	-	-	-	-	-	20	-	-	-	-	-	36	-	75

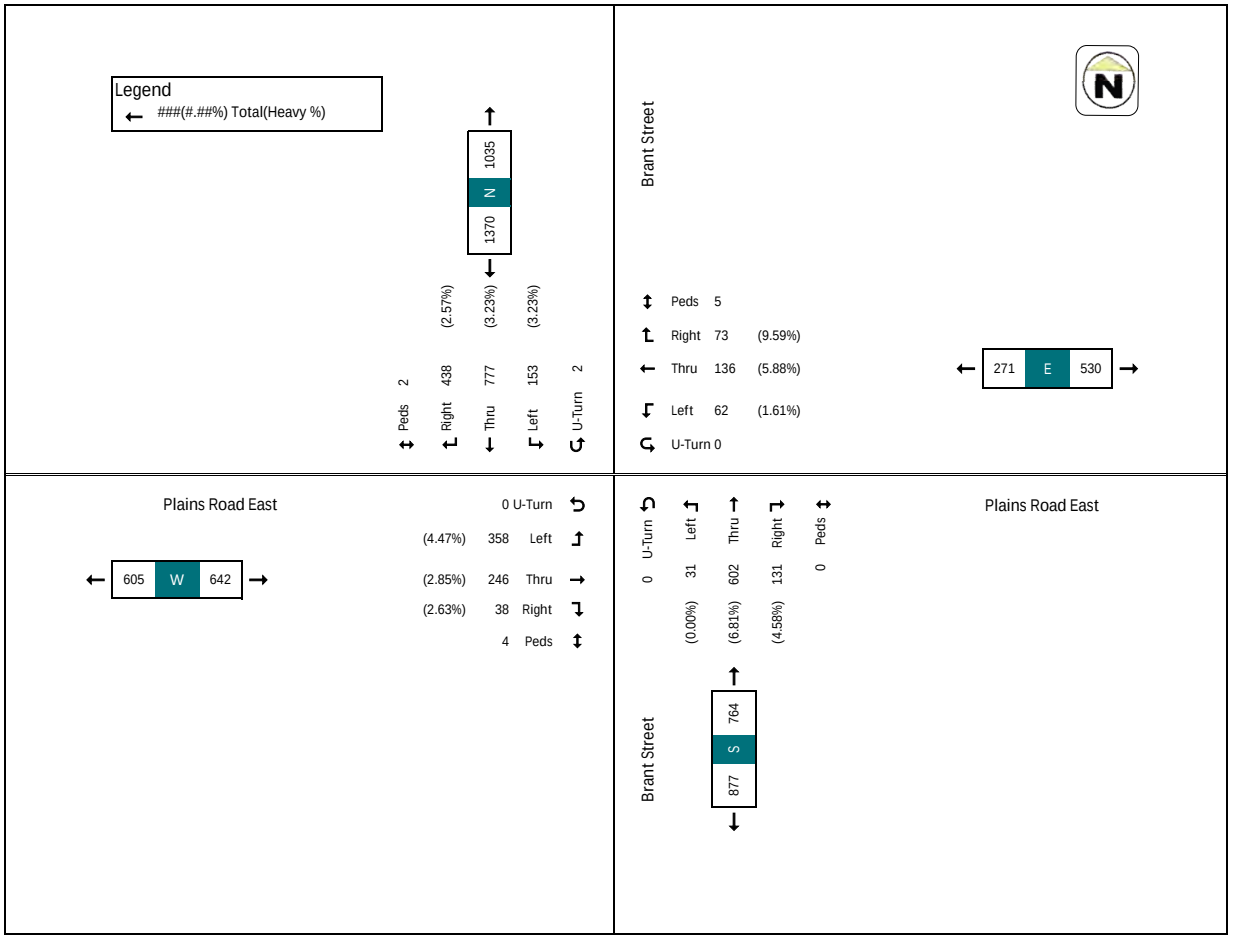


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Plains Road East
Survey Date : October 2, 2025
Project No. : 24223
Count ID : 25310

AM Peak Hour - Brant Street & Plains Road East

	Brant Street Southbound						Plains Road East Westbound						Brant Street Northbound						Plains Road East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
8:30	1	51	183	114	0	349	0	12	37	12	0	61	0	6	111	23	0	140	0	101	67	4	2	172	722
8:45	1	48	211	95	0	355	0	15	46	18	0	79	0	12	129	38	0	179	0	84	80	7	0	171	784
9:00	0	31	208	116	1	356	0	16	32	8	1	56	0	7	182	36	0	225	0	84	49	13	2	146	782
9:15	0	23	175	113	1	311	0	19	21	35	4	75	0	6	180	34	0	220	0	89	50	14	0	153	759
Hourly Total	2	153	777	438	2	1370	0	62	136	73	5	271	0	31	602	131	0	764	0	358	246	38	4	642	3047
Approach %	0.1%	11.2%	56.7%	32.0%	-	-	0.0%	22.9%	50.2%	26.9%	-	-	0.0%	4.1%	78.8%	17.1%	-	-	0.0%	55.8%	38.3%	5.9%	-	-	-
Total %	0.1%	5.0%	25.5%	14.4%	-	45.0%	0.0%	2.0%	4.5%	2.4%	-	8.9%	0.0%	1.0%	19.8%	4.3%	-	25.1%	0.0%	11.7%	8.1%	1.2%	-	21.1%	-
PHF	0.5	0.73	0.90	0.94	-	0.96	0	0.82	0.74	0.52	-	0.86	0	0.65	0.83	0.86	-	0.85	0	0.89	0.77	0.68	-	0.93	0.97
Lights	2	148	757	420	-	1327	0	61	128	66	-	255	0	31	561	125	-	717	0	342	239	37	-	618	2917
% Lights	100.0%	96.7%	97.4%	95.9%	-	96.9%	-	98.4%	94.1%	90.4%	-	94.1%	-	100.0%	93.2%	95.4%	-	93.8%	-	95.5%	97.2%	97.4%	-	96.3%	95.7%
Buses	-	1	7	-	-	15	-	1	3	0	-	4	-	0	11	3	-	14	-	5	4	0	-	9	42
% Buses	#VALUE!	0.7%	0.9%	1.8%	-	1.1%	-	1.6%	2.2%	0.0%	-	1.5%	-	0.0%	1.8%	2.3%	-	1.8%	-	1.4%	1.6%	0.0%	-	1.4%	1.4%
Trucks	-	4	13	11	-	28	-	0	5	7	-	12	-	0	30	3	-	33	-	11	3	1	-	15	88
% Trucks	#VALUE!	2.6%	1.7%	2.5%	-	2.0%	-	0.0%	3.7%	9.6%	-	4.4%	-	0.0%	5.0%	2.3%	-	4.3%	-	3.1%	1.2%	2.6%	-	2.3%	2.9%
Bicycles	-	-	-	-	2	2	-	-	-	-	5	5	-	-	-	-	0	0	-	-	-	-	4	4	11
Pedestrians	-	-	-	-	2	2	-	-	-	-	5	5	-	-	-	-	0	0	-	-	-	-	4	4	11

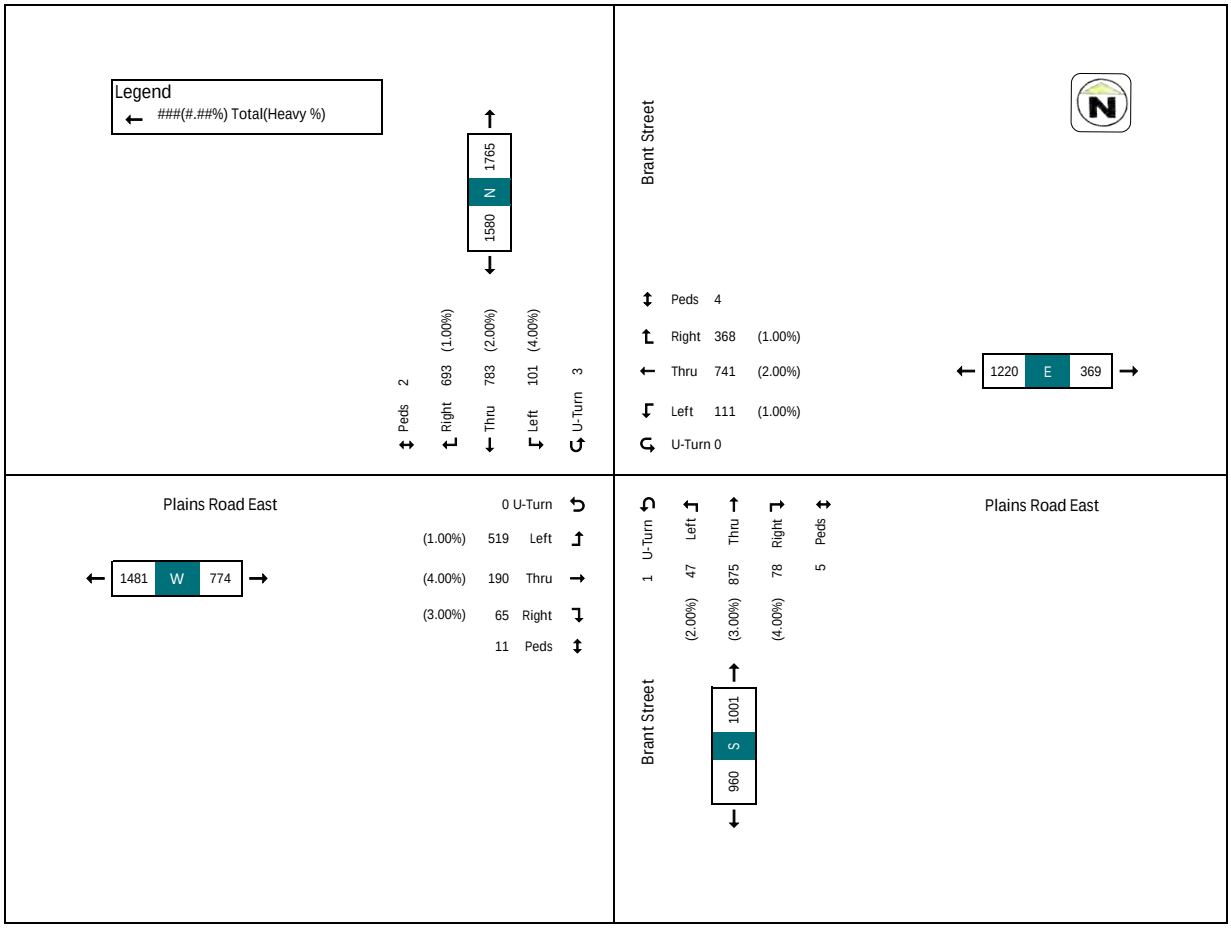


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Plains Road East
Survey Date : October 2, 2025
Project No. : 24223
Count ID : 25310

PM Peak Hour - Brant Street & Plains Road East

	Brant Street Southbound						Plains Road East Westbound						Brant Street Northbound						Plains Road East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
16:00	1	16	194	142	0	353	0	27	170	86	3	283	0	11	208	23	1	242	0	155	70	17	1	242	1120
16:15	1	26	186	192	1	405	0	33	192	69	1	294	1	12	245	16	3	274	0	115	27	13	3	155	1128
16:30	0	30	169	197	1	396	0	26	213	104	0	343	0	6	198	18	1	222	0	149	51	16	3	216	1177
16:45	1	29	234	162	0	426	0	25	166	109	0	300	0	18	224	21	0	263	0	100	42	19	4	161	1150
Hourly Total	3	101	783	693	2	1580	0	111	741	368	4	1220	1	47	875	78	5	1001	0	519	190	65	11	774	4575
Approach %	0.2%	6.4%	49.6%	43.9%	-	-	0.0%	9.1%	60.7%	30.2%	-	-	0.1%	4.7%	87.4%	7.8%	-	-	0.0%	67.1%	24.5%	8.4%	-	-	-
Total %	0.1%	2.2%	17.1%	15.1%	-	34.5%	0.0%	2.6%	24.3%	8.0%	-	26.7%	0.0%	1.5%	28.7%	2.6%	-	21.9%	0.0%	17.0%	6.2%	2.1%	-	16.9%	-
PHF	0.75	0.84	0.84	0.88	-	0.93	0	0.84	0.87	0.84	-	0.89	0	0.65	0.89	0.85	-	0.91	0	0.84	0.68	0.86	-	0.8	0.97
Lights	3	97	764	684	-	1548	0	110	729	364	-	1203	1	46	853	75	-	975	0	513	183	63	-	759	4485
% Lights	100.0%	96.0%	97.6%	98.7%	-	98.0%	-	99.1%	98.4%	98.9%	-	98.6%	-	97.9%	97.5%	96.2%	-	97.4%	-	98.8%	96.3%	96.9%	-	98.1%	98.0%
Buses	-	3	7	2	-	12	-	0	2	1	-	3	-	1	11	2	-	14	-	1	3	1	-	5	34
% Buses	#VALUE!	3.0%	0.9%	0.3%	-	0.8%	-	0.0%	0.3%	0.3%	-	0.2%	-	2.1%	1.3%	2.6%	-	1.4%	-	0.2%	1.6%	1.5%	-	0.6%	0.7%
Trucks	-	1	8	7	-	16	-	1	10	3	-	14	-	0	11	1	-	12	-	5	4	1	-	10	52
% Trucks	#VALUE!	1.0%	1.0%	1.0%	-	1.0%	-	0.9%	1.3%	0.8%	-	1.1%	-	0.0%	1.3%	1.3%	-	1.2%	-	1.0%	2.1%	1.5%	-	1.3%	1.1%
Bicycles	-	-	-	-	4	4	-	-	-	-	3	3	-	-	-	-	0	0	-	-	-	-	0	0	7
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	3

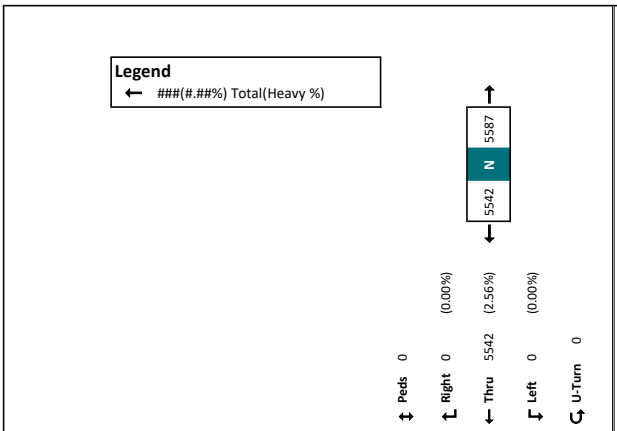


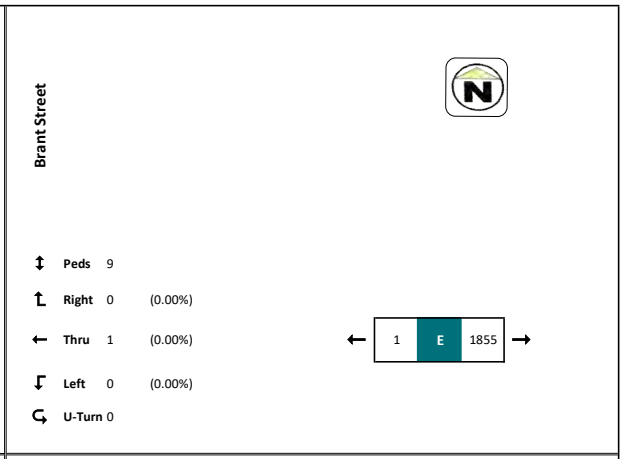
LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

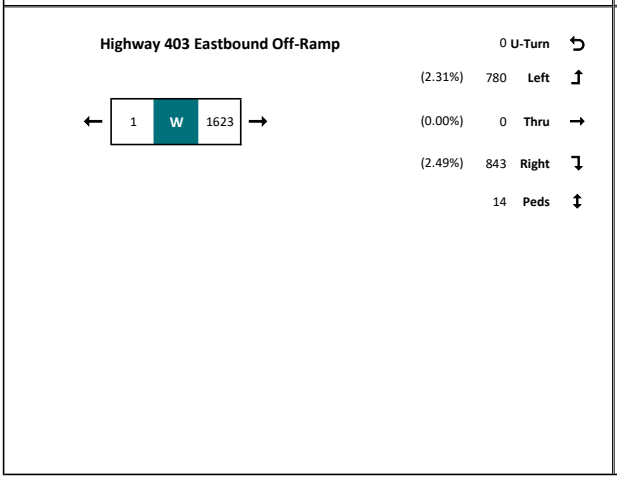
Intersection : Brant Street & Highway 403 Eastbound Off-Ramp
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25078

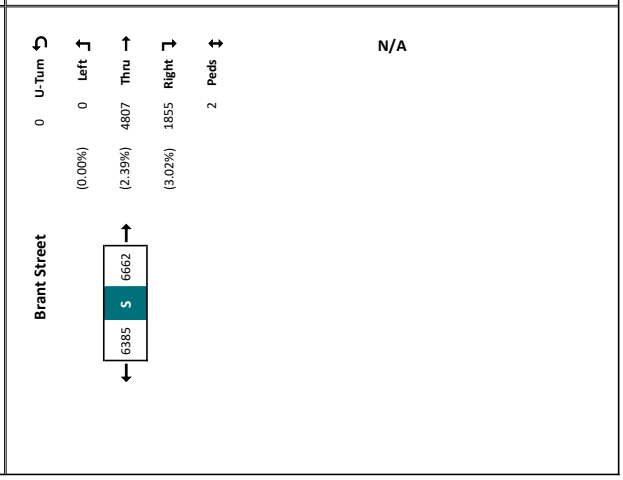
Turning Movement Count - Brant Street & Highway 403 Eastbound Off-Ramp

	Brant Street Southbound						N/A Westbound						Brant Street Northbound						Highway 403 Eastbound Off-Ramp Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	0	141	0	0	141	0	0	0	0	0	0	0	0	119	74	0	193	0	27	0	28	0	55	389
7:15	0	0	176	0	0	176	0	0	0	0	0	0	0	0	154	74	0	228	0	29	0	40	0	69	473
7:30	0	0	168	0	0	168	0	0	0	0	0	0	0	0	159	65	0	224	0	32	0	38	0	70	462
7:45	0	0	257	0	0	257	0	0	0	0	0	0	0	0	181	65	0	246	0	44	0	32	0	76	579
Hourly Total	0	0	742	0	0	742	0	0	0	0	0	0	0	0	613	278	0	891	0	132	0	138	0	270	1903
8:00	0	0	259	0	0	259	0	0	0	0	0	0	0	0	194	72	0	266	0	37	0	33	0	70	595
8:15	0	0	272	0	0	272	0	0	0	0	0	0	0	0	211	86	0	297	0	35	0	41	0	76	645
8:30	0	0	276	0	0	276	0	0	0	0	1	0	0	0	219	95	0	314	0	23	0	48	0	71	661
8:45	0	0	288	0	0	288	0	0	0	0	0	0	0	0	200	92	0	292	0	30	0	52	0	82	662
Hourly Total	0	0	1095	0	0	1095	0	0	0	0	1	0	0	0	824	345	0	1169	0	125	0	174	0	299	2563
9:00	0	0	233	0	0	233	0	0	0	0	0	0	0	0	199	69	0	268	0	34	0	38	0	72	573
9:15	0	0	282	0	0	282	0	0	0	0	0	0	0	0	191	77	0	268	0	24	0	39	0	63	613
Hourly Total	0	0	517	0	0	517	0	0	0	0	0	0	0	0	390	146	0	536	0	58	0	77	0	135	1188
* Break *																									
16:00	0	0	312	0	0	312	0	0	0	0	3	0	0	0	322	119	2	441	0	39	0	34	4	73	826
16:15	0	0	335	0	0	335	0	0	0	0	0	0	0	0	372	124	0	496	0	42	0	51	0	93	924
16:30	0	0	288	0	0	288	0	0	0	0	0	0	0	0	341	116	0	457	0	50	0	52	1	102	847
16:45	0	0	346	0	0	346	0	0	0	0	0	0	0	0	364	106	0	470	0	52	0	34	2	86	902
Hourly Total	0	0	1281	0	0	1281	0	0	0	0	3	0	0	0	1399	465	2	1864	0	183	0	171	7	354	3499
17:00	0	0	324	0	0	324	0	0	0	0	1	0	0	0	320	112	0	432	0	59	0	50	1	109	865
17:15	0	0	315	0	0	315	0	0	1	0	0	1	0	0	306	113	0	419	0	56	0	56	0	112	847
17:30	0	0	325	0	0	325	0	0	0	0	0	0	0	0	251	81	0	332	0	43	0	47	1	90	747
17:45	0	0	307	0	0	307	0	0	0	0	0	0	0	0	279	101	0	380	0	48	0	63	4	111	798
Hourly Total	0	0	1271	0	0	1271	0	0	1	0	1	1	0	0	1156	407	0	1563	0	206	0	216	6	422	3257
18:00	0	0	302	0	0	302	0	0	0	0	2	0	0	0	223	93	0	316	0	34	0	31	1	65	683
18:15	0	0	332	0	0	332	0	0	0	0	2	0	0	0	202	121	0	323	0	42	0	36	0	78	733
Hourly Total	0	0	634	0	0	634	0	0	0	0	4	0	0	0	425	214	0	639	0	76	0	67	1	143	1416
Grand Total	0	0	5542	0	0	5542	0	0	1	0	9	1	0	0	4807	1855	2	6662	0	780	0	843	14	1623	13828
Approach %	0.0%	0.0%	100.0%	0.0%	-	-	0.0%	0.0%	100.0%	0.0%	-	-	0.0%	0.0%	72.2%	27.8%	-	-	0.0%	48.1%	0.0%	51.9%	-	-	-
Total %	0.0%	0.0%	40.1%	0.0%	-	40.1%	0.0%	0.0%	0.0%	0.0%	-	0.0%	0.0%	0.0%	34.8%	13.4%	-	48.2%	0.0%	5.6%	0.0%	6.1%	-	11.7%	-
Lights	0	0	5400	0	-	5400	0	0	1	0	-	1	0	0	4692	1799	-	6491	0	762	0	822	-	1584	13476
% Lights	-	-	97.4%	-	-	97.4%	-	-	100.0%	-	-	100.0%	-	-	97.6%	97.0%	-	97.4%	-	97.7%	-	97.5%	-	97.6%	97.5%
Buses	-	0	66	0	-	66	-	0	0	0	-	0	-	0	68	6	-	74	-	4	0	1	-	5	145
% Buses	-	-	1.2%	-	-	1.2%	-	-	0.0%	-	-	0.0%	-	-	1.4%	0.3%	-	1.1%	-	0.5%	-	0.1%	-	0.3%	1.0%
Trucks	-	0	76	0	-	76	-	0	0	0	-	0	-	0	47	50	-	97	-	14	0	20	-	34	207
% Trucks	-	-	1.4%	-	-	1.4%	-	-	0.0%	-	-	0.0%	-	-	1.0%	2.7%	-	1.5%	-	1.8%	-	2.4%	-	2.1%	1.5%
Bicycles	-	-	-	-	0	0	-	-	-	-	1	1	-	-	-	-	0	0	-	-	-	-	1	1	2
Pedestrians	-	-	-	-	0	-	-	-	-	-	9	-	-	-	-	-	2	-	-	-	-	-	14	-	25







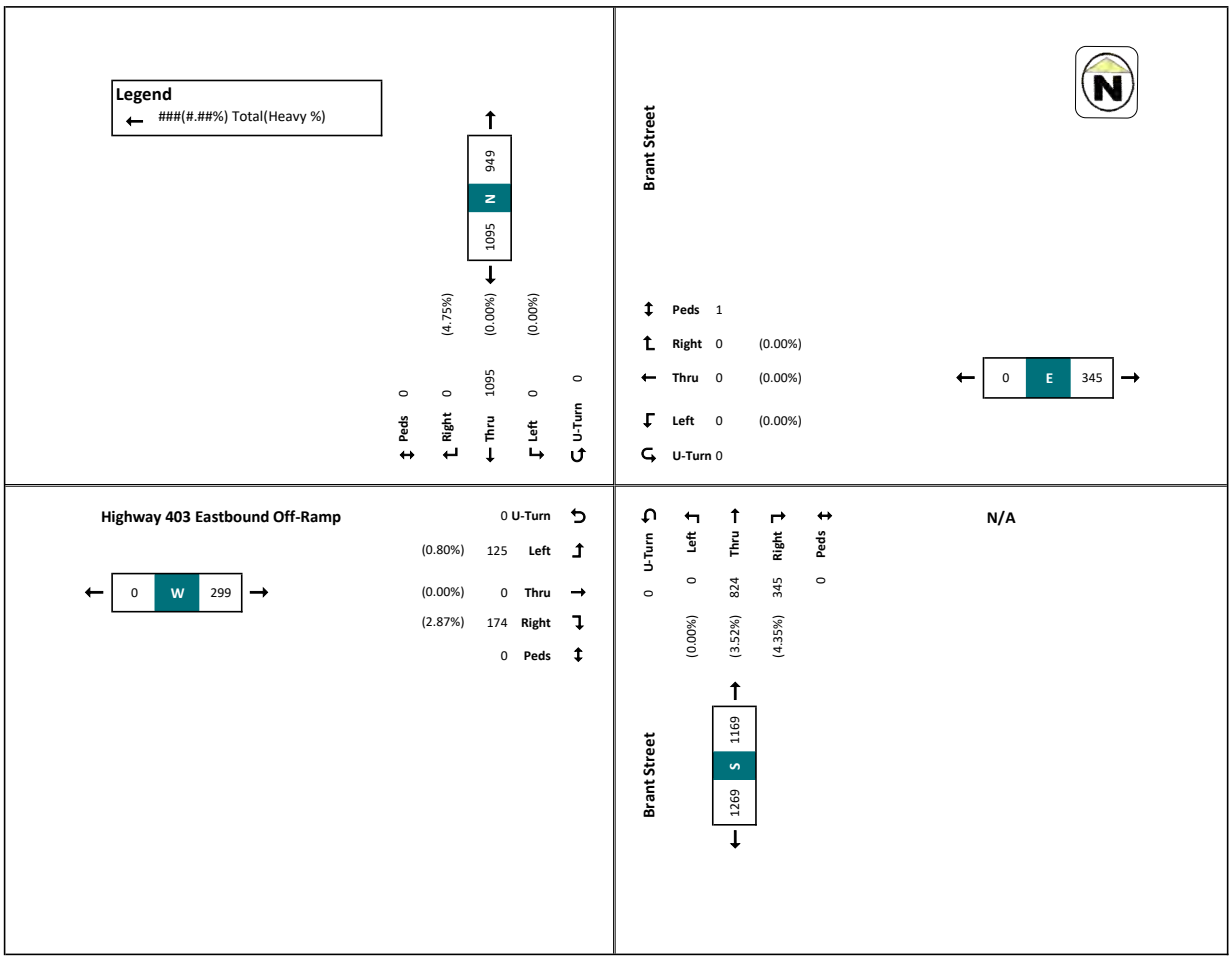


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Highway 403 Eastbound Off-Ramp
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25078

AM Peak Hour - Brant Street & Highway 403 Eastbound Off-Ramp

	Brant Street Southbound						N/A Westbound						Brant Street Northbound						Highway 403 Eastbound Off-Ramp Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
8:00	0	0	259	0	0	259	0	0	0	0	0	0	0	0	194	72	0	266	0	37	0	33	0	70	595
8:15	0	0	272	0	0	272	0	0	0	0	0	0	0	0	211	86	0	297	0	35	0	41	0	76	645
8:30	0	0	276	0	0	276	0	0	0	0	1	0	0	0	219	95	0	314	0	23	0	48	0	71	661
8:45	0	0	288	0	0	288	0	0	0	0	0	0	0	0	200	92	0	292	0	30	0	52	0	82	662
Hourly Total	0	0	1095	0	0	1095	0	0	0	0	1	0	0	0	824	345	0	1169	0	125	0	174	0	299	2563
Approach %	0.0%	0.0%	100.0%	0.0%	-	-	-	-	-	-	-	-	0.0%	0.0%	70.5%	29.5%	-	-	0.0%	41.8%	0.0%	58.2%	-	-	-
Total %	0.0%	0.0%	42.7%	0.0%	-	42.7%	0.0%	0.0%	0.0%	0.0%	-	0.0%	0.0%	0.0%	32.1%	13.5%	-	45.6%	0.0%	4.9%	0.0%	6.8%	-	11.7%	-
PHF	0	0	0.95	0	-	0.95	0	0	0	0	-	0	0	0	0.94	0.91	-	0.93	0	0.84	0	0.84	-	0.91	0.97
Lights	0	0	1043	0	-	1043	0	0	0	0	-	0	0	0	795	330	-	1125	0	124	0	169	-	293	2461
% Lights	-	-	95.3%	-	-	95.3%	-	-	-	-	-	-	-	-	96.5%	95.7%	-	96.2%	-	99.2%	-	97.1%	-	98.0%	96.0%
Buses	-	0	20	0	-	20	-	0	0	0	-	0	-	0	13	0	-	13	-	0	0	0	-	0	33
% Buses	-	-	1.8%	-	-	1.8%	-	-	-	-	-	-	-	-	1.6%	0.0%	-	1.1%	-	0.0%	-	0.0%	-	0.0%	1.3%
Trucks	-	0	32	0	-	32	-	0	0	0	-	0	-	0	16	15	-	31	-	1	0	5	-	6	69
% Trucks	-	-	2.9%	-	-	2.9%	-	-	-	-	-	-	-	-	1.9%	4.3%	-	2.7%	-	0.8%	-	2.9%	-	2.0%	2.7%
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	1	1	1
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	1

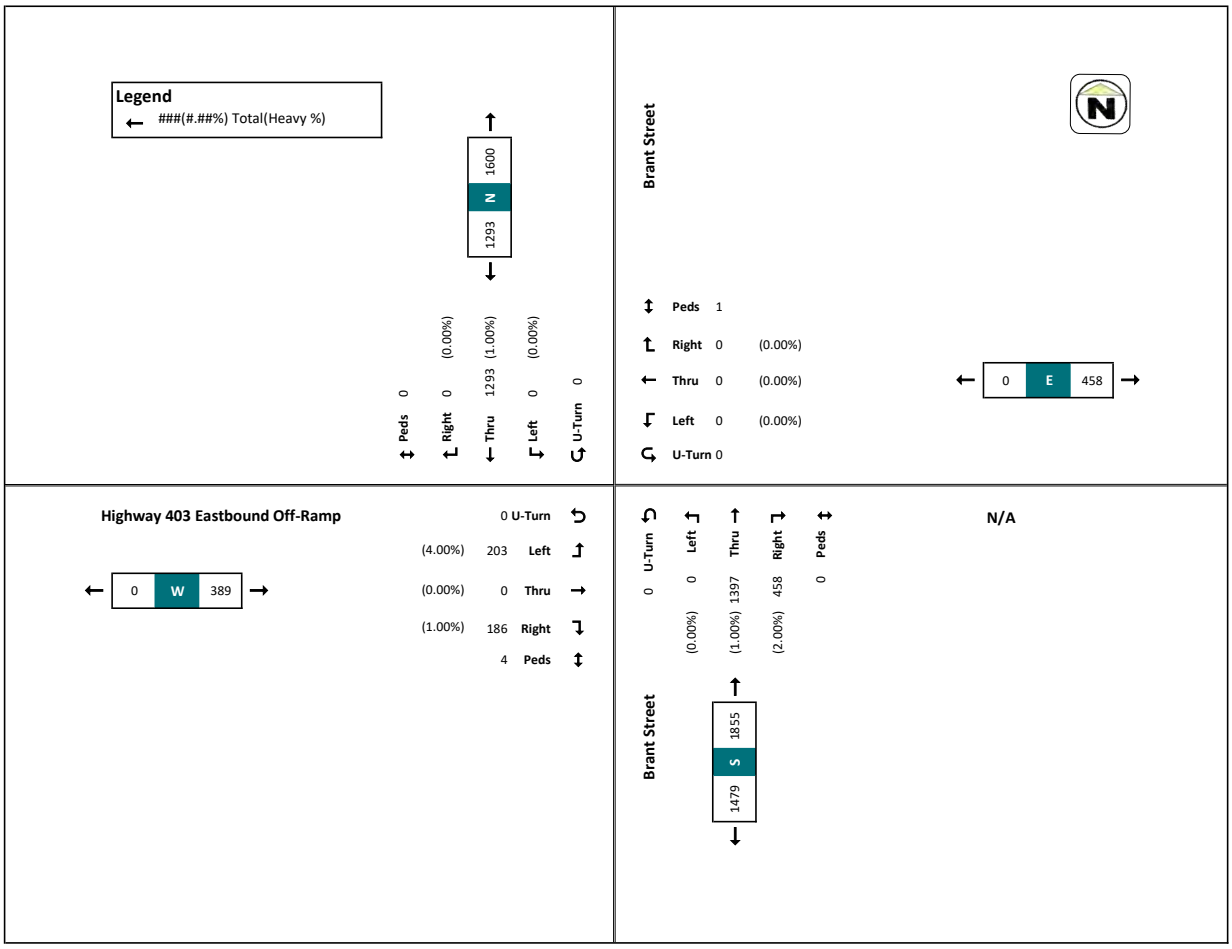


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Highway 403 Eastbound Off-Ramp
Survey Date : February 27, 2025
Project No. : 24223
Count ID : 25078

PM Peak Hour - Brant Street & Highway 403 Eastbound Off-Ramp

	Brant Street Southbound						N/A Westbound						Brant Street Northbound						Highway 403 Eastbound Off-Ramp Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
16:15	0	0	335	0	0	335	0	0	0	0	0	0	0	0	372	124	0	496	0	42	0	51	0	93	924
16:30	0	0	288	0	0	288	0	0	0	0	0	0	0	0	341	116	0	457	0	50	0	52	1	102	847
16:45	0	0	346	0	0	346	0	0	0	0	0	0	0	0	364	106	0	470	0	52	0	34	2	86	902
17:00	0	0	324	0	0	324	0	0	0	0	1	0	0	0	320	112	0	432	0	59	0	50	1	109	865
Hourly Total	0	0	1293	0	0	1293	0	0	0	0	1	0	0	0	1397	458	0	1855	0	203	0	187	4	390	3538
Approach %	0.0%	0.0%	100.0%	0.0%	-	-	-	-	-	-	-	-	0.0%	0.0%	75.3%	24.7%	-	-	0.0%	52.1%	0.0%	47.9%	-	-	-
Total %	0.0%	0.0%	36.5%	0.0%	-	36.5%	0.0%	0.0%	0.0%	0.0%	-	0.0%	0.0%	0.0%	54.5%	17.9%	-	52.4%	0.0%	7.9%	0.0%	7.3%	-	11.0%	-
PHF	0	0	0.93	0	-	0.93	0	0	0	0	-	0	0	0	0.94	0.92	-	0.93	0	0.86	0	0.9	-	0.89	0.96
Lights	0	0	1276	0	-	1276	0	0	0	0	-	0	0	0	1377	448	-	1825	0	194	0	186	-	380	3481
% Lights	-	-	98.7%	-	-	98.7%	-	-	-	-	-	-	-	-	98.6%	97.8%	-	98.4%	-	95.6%	-	99.5%	-	97.4%	98.4%
Buses	-	0	20	0	-	20	-	0	0	0	-	0	-	0	14	1	-	15	-	2	0	0	-	2	37
% Buses	-	-	1.5%	-	-	1.5%	-	-	-	-	-	-	-	-	1.0%	0.2%	-	0.8%	-	1.0%	-	0.0%	-	0.5%	1.0%
Trucks	-	0	6	0	-	6	-	0	0	0	-	0	-	0	6	9	-	15	-	7	0	1	-	8	29
% Trucks	-	-	0.5%	-	-	0.5%	-	-	-	-	-	-	-	-	0.4%	2.0%	-	0.8%	-	3.4%	-	0.5%	-	2.1%	0.8%
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

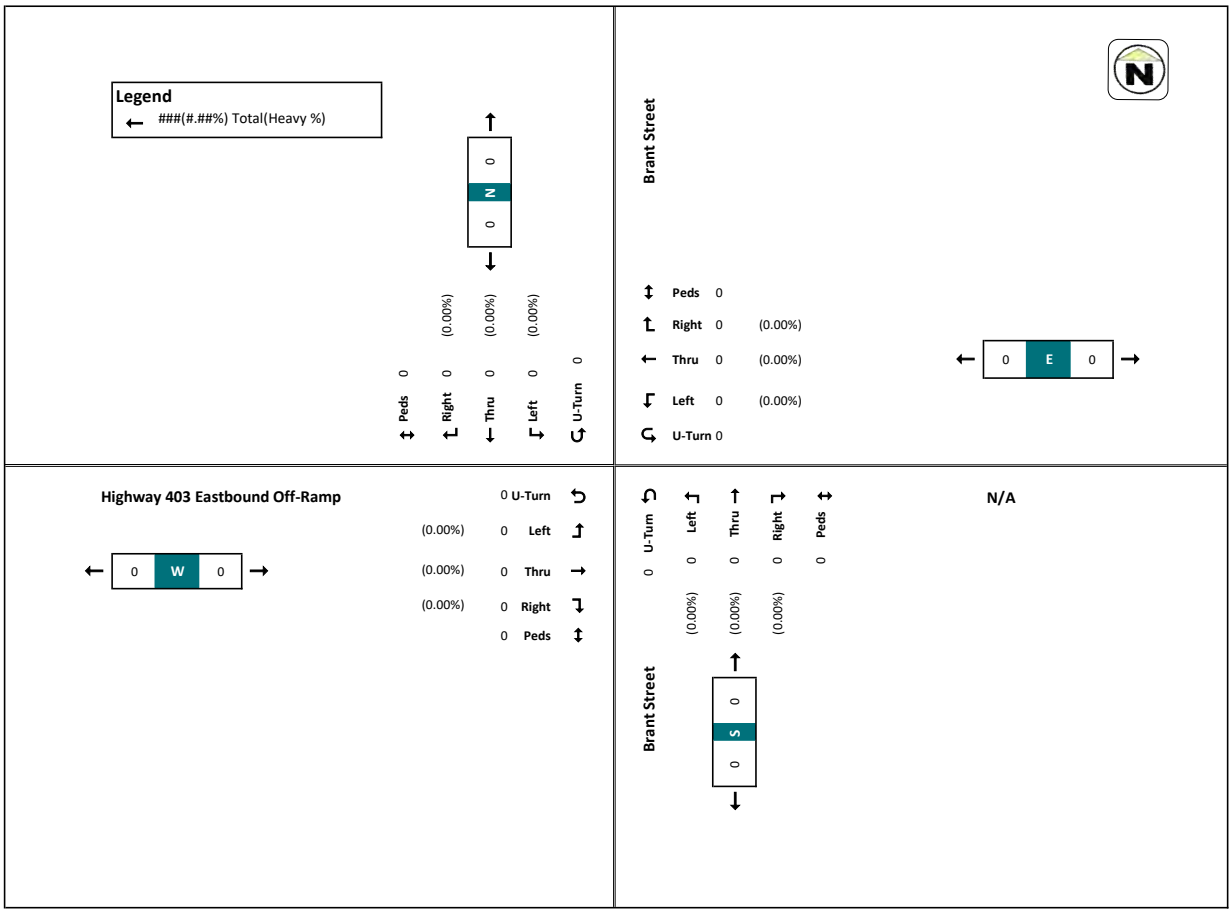


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Highway 403 Eastbound Off-Ramp
Survey Date : January 0, 1900
Project No. : 24223
Count ID : 25078

Turning Movement Count - Brant Street & Highway 403 Eastbound Off-Ramp

	Brant Street Southbound						N/A Westbound						Brant Street Northbound						Highway 403 Eastbound Off-Ramp Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lights	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Lights	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Buses	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Trucks	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0

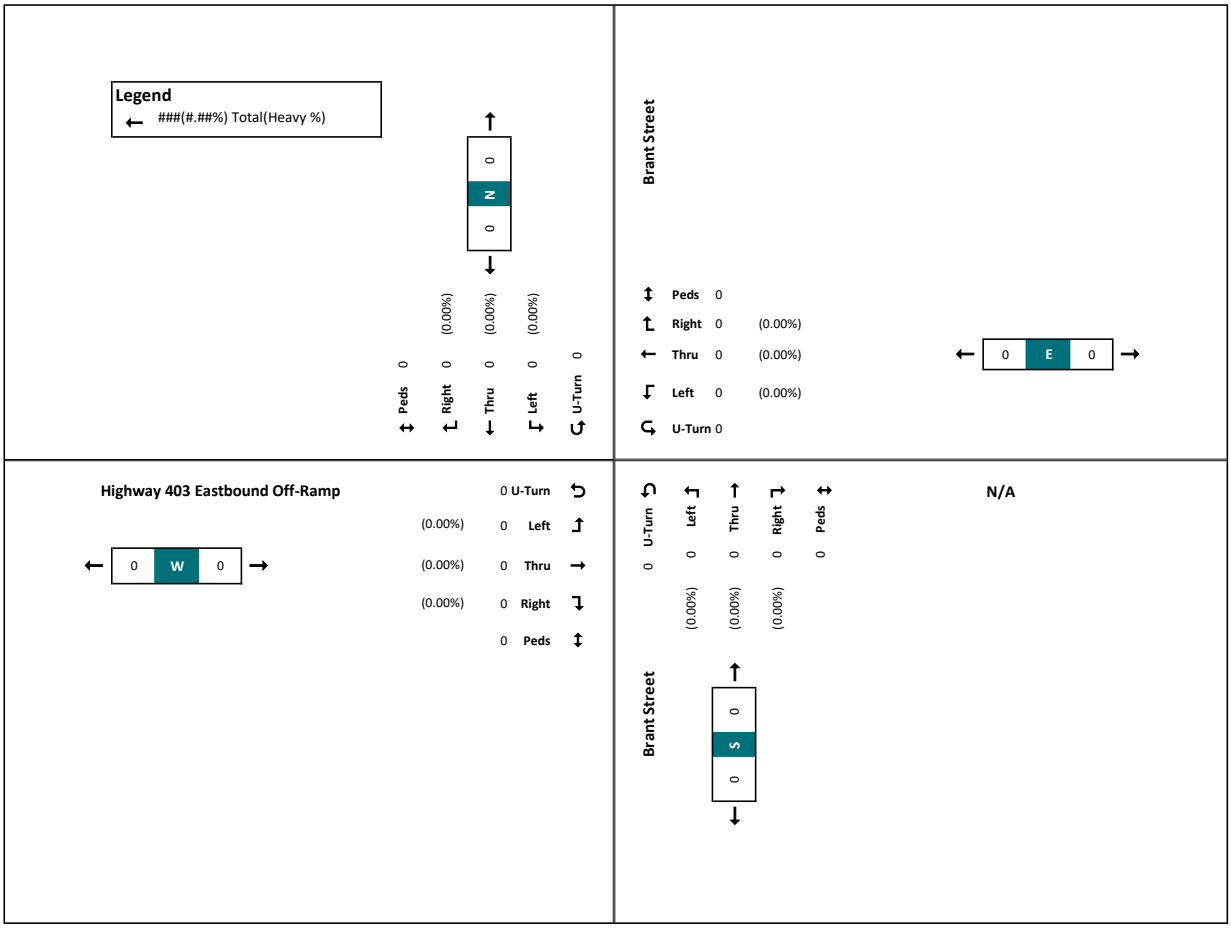


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Brant Street & Highway 403 Eastbound Off-Ramp
Survey Date : January 0, 1900
Project No. : 24223
Count ID : 25078

SAT Peak Hour - Brant Street & Highway 403 Eastbound Off-Ramp

	Brant Street Southbound						N/A Westbound						Brant Street Northbound						Highway 403 Eastbound Off-Ramp Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total %	-	-	-	-	-	-	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-
PHF	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Lights	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Lights	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Buses	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Trucks	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	-	0	0	0	-	0	0
% Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#DIV/0!
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	0



Intersection Name:	TS ID:	Group NO:	IP address:
Brant St @ South Ramp	163		172.24.71.2
Controller Make:	**Model:**	**Firmware Rev. No:**	
Econolite	ACS/3		

Type of Operation 8 Phase Semi-Actuated

Revision

NO	Date Y	Date M	Date D	Description	Prepared by
2	2021	10	4	Mofified to match Centracs	PH

*- Start From Main Menu

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	NB - Brant St.	PH6	SB - Brant St.
Ph3		Ph7	
Ph4	EB- South Ramp	Ph8	

CONTROLLER TIMING DATA - VEHICLE TIMINGS (4 available) *** - 2 - 1**

Timing Plan: 1

Phase:	1	2	3	4	5	6	7	8
Minimum Green :		8		8		8		
Conditional Service Min. Green :								
Walk :		7		7		7		
Ped. Clearance :		15		23		15		
Pedestrians Carry Over :								
Vehicle Extension :		3		3		3		
MAX 1 :		45		25		45		
MAX 2 :		45		25		45		
Yellow Change :		4		4		4		
Red Clearance :		2		3		2		

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS *** - 2 - 8**

Phase:	1	2	3	4	5	6	7	8
Lock Detector :								
Vehicle Recall :								
Pedestrian Recall :		X				X		
MAX Recall :		X				X		
Soft Recall :								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN *** - 3 - 2, - 3 - 3**

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec) 1	2	3	4	5	6	7	8
1	110	6	1	1		67		43		67		
2	110	105	1	2		67		43		67		
3	120	49	1	3		77		43		77		
4	100	0	1	4		75		25		75		
10	0	0	1	10		0		0		0		

Intersection Name:	TS ID:	Group NO:	IP address:
Brant St @ South Ramp	163		172.24.71.2
Controller Make:	**Model:**	**Firmware Rev. No:**	
Econolite	ACS/3		

CP # 1, 2,3,4& 10	Phase:	1	2	3	4	5	6	7	8
Coord Phase	:		X				X		
Vehicle Recall	:								
Pedestrian Recall *(3-3, 5-2)	:		X				X		
Recall to MAX Time	:								
Phase Omit	:								
Special Function Outputs	:								

Coordinator Pattern #	Prefer.	Phase							
		1	2	3	4	5	6	7	8
	1								
	2								

X - select "." deselect

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, - 5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:15	3	1
1	1	2	19:00	2	1
1	1	10	21:30	254	1
2	2	4	07:00	4	1
2	2	1	08:30	1	1
2	2	4	17:30	4	1
2	2	10	23:00	254	1
3	3	4	07:30	4	1
3	3	1	12:00	1	1
3	3	4	17:30	4	1
3	3	10	22:00	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOM	WOM/ Year	Day Plan
New Year's Day	1	Fixed	01	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	04	6	1	3
Victoria Day	4	Float	05	2	3	3
Canada Day	5	Fixed	07	1	0	3
Civic Day	6	Float	08	2	1	3
Labour Day	7	Float	09	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Brant St @ Leighland Rd - TS 162 - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		NB		EB	NBLT	SB		WB								
Min Green	0	8	0	8	7	8	0	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	15	0	25	0	15	0	25	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	0.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	0	35	0	25	10	35	0	25	35	35	35	35	35	35	35	35
Max2	0	35	0	25	10	35	0	25	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.7	3.0	3.3	3.0	3.7	3.0	3.3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.0	1.9	0.0	3.1	1.0	1.9	0.0	3.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Brant St @ Leighland Rd - TS 162 - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	110	Std (COS)	9	Offsets In	Seconds
Offset Value	22s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		NB		EB	NBLT	SB		WB								
Splits (Split Pat 1)	0	68	0	42	12	56	0	42	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	110s	110s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Brant St @ Leighland Rd - TS 162 - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		NB		EB	NBLT	SB		WB								
Split (seconds)	0	68	0	42	12	56	0	42	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	110s	110s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		NB		EB	NBLT	SB		WB								
Split (seconds)	0	68	0	42	12	56	0	42	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	110s	110s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		NB		EB	NBLT	SB		WB								
Split (seconds)	0	78	0	42	12	66	0	42	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		NB		EB	NBLT	SB		WB								
Split (seconds)	0	60	0	40	12	48	0	40	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100s	100s	0s	0s

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Brant St @ Leighland Rd - TS 162 - Econolite Type - ASC/3

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1

Pattern	1	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2

Pattern	2	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3

Pattern	3	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Brant St @ Leighland Rd - TS 162 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	1	06:00
2	2	09:00
3	3	15:15
4	2	19:00
5	10	21:30

Day Plan #2

Event	Action Plan	Start Time
1	4	07:00
2	1	08:30
3	4	17:30
4	10	23:00

Day Plan #3

Event	Action Plan	Start Time
1	4	07:30
2	1	12:00
3	4	17:30
4	10	22:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

APPENDIX C

TTS MODAL SPLIT DATA

Mode Split for Residential Trips

Tue Feb 25 2025 15:57:46 GMT-0500 (Eastern Standard Time) - Run Time: 2723ms

Cross Tabulation Query Form - Trip - 2022

Row: Type of dwelling unit - dwell_type
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of household - gta06_hhld In 4057-4059
and
Trip purpose - trip_purp In 1-2

Trip 2022
Table:

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	GO rail and local t	Auto passenger	School bus	Walk
House	119	128	3207	42	44	566	141	605
Apartment	211	0	4214	32	26	59	22	259
Townhouse	92	0	1150	15	0	531	186	179
SUM	**422**	**128**	**8571**	**89**	**70**	**1156**	**349**	**1043**
							GRAND SUM	**11828**

Mode	%
Auto Driver	73%
Auto Passenger	10%
Transit	7%
Pedestrian	9%
Cycling	1%
Total	**100%**

APPENDIX D

TTS TRIP DISTRIBUTION

Mon Mar 03 2025 15:51:53 GMT-0500 (Eastern Standard Time) - Run Time: 3542ms

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
2006 GTA zone of destination - gta06_dest In 4057-4059
and
Start time of trip - start_time In 1500-1900
and
2022 Trip purpose of destination - purp_dest2022 In 80
and
Primary travel mode of trip - mode_prime In D,M,P,T,U

Pull for Burlington only:
Mon Mar 03 2025 16:08:18 GMT-0500 (Eastern Standard Time) - Run Time: 3382ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
2006 GTA zone of destination - gta06_dest In 4057-4059
and
Start time of trip - start_time In 1500-1900
and
2022 Trip purpose of destination - purp_dest2022 In 80
and
Primary travel mode of trip - mode_prime In D,M,P,T,U
and
Planning district of origin - pd_orig In 40

Trip 2022
Table:

Origin	Destination			Trips from Origin	Trip Distribution		Trip Assignment					
	4057	4058	4059		Distribution	Direction From	From East	From West	From North	From South	-	Assignment
PD 1 of Toronto	0	76	0	76	1%	E	1%				QEW WB	SB Brant
PD 3 of Toronto	38	0	0	38	0%	E	0%				401, 427, QEW WB	SB Brant
						E	0%				401, 403, 407	Plains Rd EB, NB Brant
PD 7 of Toronto	28	0	0	28	0%	E	0%				QEW WB	SB Brant
PD 10 of Toronto	11	0	37	48	1%	E	0%				401, 427, QEW WB	SB Brant
						E	0%				407	Plains Rd EB, NB Brant
PD 16 of Toronto	0	58	0	58	1%	E	0%				407	Plains Rd EB, NB Brant
						E	0%				401, 427, QEW WB	SB Brant
Markham	0	0	36	36	0%	E	0%				407	Plains Rd EB, NB Brant
						E	0%				404, 401, 427, QEW WB	SB Brant
Brampton	49	0	0	49	1%	E	1%				410, 403, QEW WB	SB Brant
Mississauga	166	0	116	282	3%	E	3%				403 WB	SB Brant
Halton Hills	0	0	32	32	0%	N			0%		Highway 25, QEW WB	SB Brant
Milton	50	14	69	133	1%	N			1%		Highway 25, QEW WB	SB Brant
Oakville	287	0	95	382	4%	E	4%				QEW WB	SB Brant
Flamborough	1958	352	1321	3631	40%	W		40%			Highway 6, 403 EB	SB Brant
Ancaster	111	0	0	111	1%	W		1%			403 EB	SB Brant
Glanbrook	45	0	0	45	0%	S				0%	Highway 20, QEW NB	Plains Rd EB, NB Brant
Stoney Creek	113	0	0	113	1%	S				1%	QEW NB	Plains Rd EB, NB Brant
Hamilton	155	0	126	281	3%	S				2%	403 EB	SB Brant
						S				2%	QEW NB	Plains Rd EB, NB Brant
Lincoln	38	0	0	38	0%	E	1%				QEW NB	Plains Rd EB, NB Brant
St. Catherines	70	0	0	70	1%	E	0%				QEW NB	Plains Rd EB, NB Brant
Kitchener	0	0	27	27	0%	W		0%			Hwy 8, 401, Hwy 6, 403 EB	SB Brant
Guelph	0	0	20	20	0%	W		0%			Hwy 6, 403 EB	SB Brant
Brantford	0	0	52	52	1%	W		1%			403 EB	SB Brant
4051	26	0	0	26	0%	S				0%	403 EB	SB Brant
4052	0	0	25	25	0%	S				0%	403 EB	SB Brant
4053	53	0	9	62	1%	W		1%				EB Fairview, NB Brant
4054	28	0	39	67	1%	S				1%		EB Fairview, NB Brant
4056	0	0	44	44	0%	S				0%	QEW NB	EB Fairview, NB Brant
4057	434	127	87	648	7%	S				7%		EB Fairview, NB Brant
4058	37	0	0	37	0%	S				0%		EB Leighland, NB Brant
4059	265	116	27	408	4%	E	4%					NB Brant
4060	135	0	103	238	3%	S				3%		NB Brant
4062	89	0	21	110	1%	E	1%					NB Brant
4063	269	4	323	596	6%	E	6%					WB Fairview, NB Brant
4064	0	0	155	155	2%	E	2%					WB Fairview, NB Brant
4068	39	0	108	147	2%	E	2%					Plains Rd WB, NB Brant
4069	74	0	0	74	1%	E	1%				QEW WB	SB Brant
4076	32	0	0	32	0%	E	0%				QEW WB	SB Brant
4077	133	0	74	207	2%	E	2%				QEW WB	SB Brant
4078	12	0	16	28	0%	E	0%				QEW WB	SB Brant
4079	14	0	0	14	0%	N			0%		QEW WB	SB Brant
4080	49	0	0	49	1%	N			1%		QEW WB	SB Brant
4081	25	30	93	148	2%	E	2%				QEW WB	SB Brant
4082	78	0	51	129	1%	E	1%				QEW WB	SB Brant
4084	0	76	17	93	1%	N			1%		QEW WB	SB Brant
4087	16	0	50	66	1%	N			1%			SB Brant
4088	23	0	0	23	0%	W		0%				SB Brant
4089	56	0	40	96	1%	N			1%			SB Brant
4091	18	0	0	18	0%	W		0%			QEW WB	SB Brant
4096	17	0	9	26	0%	N			0%		Hwy 1, QEW WB	SB Brant
4189	38	0	24	62	1%	N			1%		QEW WB	SB Brant
4190	0	0	6	6	0%	E	0%				QEW WB	SB Brant
				9184	100%	TOTAL	34%	43%	6%	17%		100%

Tue Mar 04 2025 12:06:18 GMT-0500 (Eastern Standard Time) - Run Time: 3127ms

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
2006 GTA zone of origin - gta06_orig In 4057-4059
and
Start time of trip - start_time In 600-1000
and
2022 Trip Purpose of Origin - purp_orig2022 In 80
and
Primary travel mode of trip - mode_prime In D,M,P,T,U

Pull for Burlington only:
Tue Mar 04 2025 12:19:55 GMT-0500 (Eastern Standard Time) - Run Time: 3268ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
2006 GTA zone of origin - gta06_orig In 4057-4059
and
Start time of trip - start_time In 600-1000
and
2022 Trip Purpose of Origin - purp_orig2022 In 80
and
Primary travel mode of trip - mode_prime In D,M,P,T,U
and
Planning district of destination - pd_dest In 40

Trip 2022
Table:

Destination	Origin			Trips to Destination	Trip Distribution		Trip Assignment					
	4057	4058	4059		Distribution	Direction To	To East	To West	To North	To South	-	Assignment
PD 1 of Toronto	0	76	0	76	1%	E	1%					NB Brant, QEW EB
PD 3 of Toronto	38	0	0	38	1%	E	0%				401, 427	NB Brant, QEW EB
						E	0%				401, 403, 407	SB Brant, WB Plains
PD 7 of Toronto	28	0	0	28	0%	E	0%					NB Brant, QEW EB
PD 10 of Toronto	29	0	37	66	1%	E	1%				401, 427	NB Brant, QEW EB
						E	1%				407	SB Brant, WB Plains
PD 16 of Toronto	0	58	0	58	1%	E	0%				407	SB Brant, WB Plains
						E	0%				401, 427	NB Brant, QEW EB
Markham	0	0	36	36	1%	E	0%				407	SB Brant, WB Plains
						E	0%				404, 401, 427	NB Brant, QEW EB
Brampton	49	0	0	49	1%	E	1%				410, 403	NB Brant, QEW EB
Mississauga	146	0	76	222	4%	E	4%					NB Brant, QEW EB
Halton Hills	0	0	32	32	1%	N			1%		Highway 25	NB Brant, QEW EB
Milton	150	76	95	321	5%	N			5%		Highway 25	NB Brant, QEW EB
Oakville	441	58	173	672	11%	E	11%					NB Brant, QEW EB
Flamborough	103	0	0	103	2%	W		2%			Highway 6	NB Brant, 403 WB
Ancaster	108	0	12	120	2%	W		2%				NB Brant, 403 WB
Glanbrook	65	0	0	65	1%	S				1%	Highway 20, QEW SB	SB Brant, WB Plains
Stoney Creek	109	0	20	129	2%	S				2%	QEW SB	SB Brant, WB Plains
Hamilton	287	58	24	369	6%	S				3%		NB Brant, 403 WB
						S				3%	QEW SB	SB Brant, WB Plains
Lincoln	38	0	0	38	1%	E	1%				QEW SB	SB Brant, WB Plains
St. Catherines	77	41	0	118	2%	E	2%				QEW SB	SB Brant, WB Plains
Kitchener	0	0	27	27	0%	W		0%			Hwy 8, 401, Hwy 6	NB Brant, 403 WB
Cambridge	0	0	48	48	1%	W		1%			Hwy 8, Hwy 5	NB Brant, 403 WB
North Dumfries	10	0	0	10	0%	W		0%				NB Brant, 403 WB
Guelph	13	0	0	13	0%	W		0%			Hwy 6	NB Brant, 403 WB
Ramara	0	0	32	32	1%	N			0%		400, 401, 427	NB Brant, QEW EB
						N			0%		404, 407	SB Brant, WB Plains
Brantford	0	0	52	52	1%	W		1%				NB Brant, 403 WB
4051	107	0	11	118	2%	S				2%		NB Brant, 403 WB
4052	31	0	7	38	1%	S				1%		NB Brant, 403 WB
4053	77	0	143	220	4%	W		4%				SB Brant, WB Fairview
4054	28	0	0	28	0%	S				0%		SB Brant, WB Fairview
4056	10	0	38	48	1%	S				1%	QEW SB	SB Brant, WB Fairview
4057	141	51	0	192	3%	S				3%		SB Brant, WB Fairview
4058	14	0	0	14	0%	S				0%		SB Brant, WB Leighland
4059	185	130	130	445	8%	E	8%					SB Brant
4060	84	0	33	117	2%	S				2%		SB Brant
4061	28	0	33	61	1%	S				1%		SB Brant
4062	0	0	10	10	0%	E	0%					SB Brant
4063	207	18	57	282	5%	E	5%					SB Brant, EB Fairview
4064	30	0	310	340	6%	E	6%					SB Brant, EB Fairview
4068	64	0	108	172	3%	E	3%					SB Brant, EB Plains
4069	62	0	0	62	1%	E	1%					NB Brant
4077	133	0	90	223	4%	E	4%					NB Brant
4078	107	76	0	183	3%	E	3%					NB Brant
4080	37	0	0	37	1%	N			1%			NB Brant
4081	25	0	154	179	3%	E	3%					NB Brant
4082	36	0	28	64	1%	E	1%					NB Brant
4084	28	0	0	28	0%	N			0%			NB Brant
4086	38	0	0	38	1%	E	1%					NB Brant
4087	49	0	0	49	1%	N			1%			NB Brant
4088	55	0	22	77	1%	W		1%				NB Brant
4091	36	0	0	36	1%	W		1%				NB Brant, QEW EB
4093	0	0	6	6	0%	N			0%			NB Brant
4096	0	0	9	9	0%	N			0%		Hwy 1	NB Brant, 403 WB
4189	22	0	0	22	0%	N			0%			NB Brant, QEW EB
4190	109	0	0	109	2%	E	2%					NB Brant, QEW EB
				5929	**100%**	**TOTAL**	**59%**	**12%**	**9%**	**20%**		**100%**

APPENDIX E

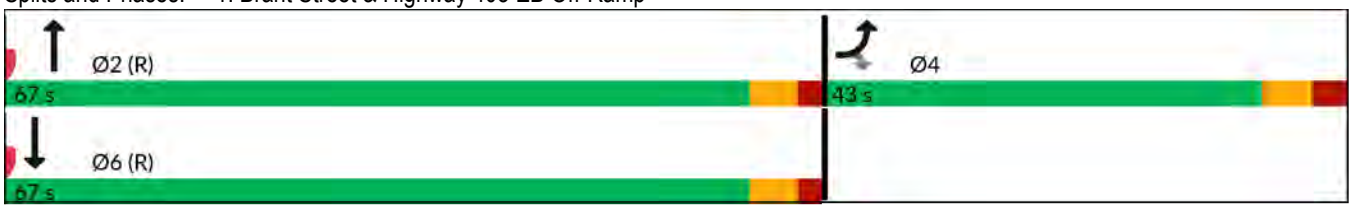
EXISTING INTERSECTION CAPACITY ANALYSIS



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	125	174	867	1095
Future Volume (vph)	125	174	867	1095
Lane Group Flow (vph)	210	98	894	1129
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	67.0	67.0
Total Split (%)	39.1%	39.1%	60.9%	60.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	10.7	10.7	86.3	86.3
Actuated g/C Ratio	0.10	0.10	0.78	0.78
v/c Ratio	0.58	0.51	0.23	0.29
Control Delay (s/veh)	37.1	26.1	3.4	3.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.1	26.1	3.4	3.7
LOS	D	C	A	A
Approach Delay (s/veh)	33.6		3.4	3.7
Approach LOS	C		A	A
Queue Length 50th (m)	15.4	6.0	15.4	20.8
Queue Length 95th (m)	26.7	23.9	23.3	30.7
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	1054	478	3869	3832
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.20	0.21	0.23	0.29

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 49 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay (s/veh): 7.5	Intersection LOS: A
Intersection Capacity Utilization 39.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	125	174	0	867	1095	0
Future Volume (vph)	125	174	0	867	1095	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	0.99	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.94	0.85		1.00	1.00	
Flt Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3073	1313		4932	4885	
Flt Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3073	1313		4932	4885	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	129	179	0	894	1129	0
RTOR Reduction (vph)	65	65	0	0	0	0
Lane Group Flow (vph)	145	33	0	894	1129	0
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	1%	3%	0%	4%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	10.7	10.7		86.3	86.3	
Effective Green, g (s)	10.7	10.7		86.3	86.3	
Actuated g/C Ratio	0.10	0.10		0.78	0.78	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	298	127		3869	3832	
v/s Ratio Prot	c0.05			0.18	c0.23	
v/s Ratio Perm		0.03				
v/c Ratio	0.49	0.26		0.23	0.29	
Uniform Delay, d1	47.0	46.0		3.1	3.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	1.1		0.1	0.2	
Delay (s)	48.3	47.1		3.3	3.5	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	47.9			3.3	3.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	0	19	0	1211	8	14	1254	0
Future Vol, veh/h	0	0	0	4	0	19	0	1211	8	14	1254	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	21	4	0
Mvmt Flow	0	0	0	4	0	20	0	1261	8	15	1306	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1841	2607	654	1818	2603	636	1307	0	0	1270	0	0
Stage 1	1337	1337	-	1266	1266	-	-	-	-	-	-	-
Stage 2	504	1270	-	552	1337	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.72	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.31	-	-
Pot Cap-1 Maneuver	81	25	355	84	25	364	282	-	-	245	-	-
Stage 1	118	224	-	132	242	-	-	-	-	-	-	-
Stage 2	478	241	-	447	224	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	73	23	355	80	23	364	282	-	-	245	-	-
Mov Cap-2 Maneuver	73	23	-	80	23	-	-	-	-	-	-	-
Stage 1	118	210	-	132	242	-	-	-	-	-	-	-
Stage 2	452	241	-	420	210	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	22.9	0	0.2
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	282	-	-	-	225	245	-	-
HCM Lane V/C Ratio	-	-	-	-	0.106	0.06	-	-
HCM Control Delay (s/veh)	0	-	-	0	22.9	20.6	-	-
HCM Lane LOS	A	-	-	A	C	C	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0.4	0.2	-	-

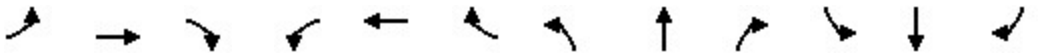


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	85	1	12	4	23	15	1111	7	1230
Future Volume (vph)	85	1	12	4	23	15	1111	7	1230
Lane Group Flow (vph)	89	53	0	17	24	16	1181	7	1317
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	68.0	56.0	56.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	10.9%	61.8%	50.9%	50.9%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.2	10.2		10.2	10.2	33.2	32.9	31.3	31.3
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.65	0.65	0.62	0.62
v/c Ratio	0.35	0.15		0.08	0.08	0.04	0.37	0.04	0.44
Control Delay (s/veh)	23.0	8.1		18.9	1.3	5.0	6.3	9.4	8.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.0	8.1		18.9	1.3	5.0	6.3	9.4	8.6
LOS	C	A		B	A	A	A	A	A
Approach Delay (s/veh)		17.4		8.6			6.3		8.6
Approach LOS		B		A			A		A
Queue Length 50th (m)	6.0	0.1		1.1	0.0	0.5	18.8	0.2	21.7
Queue Length 95th (m)	22.4	8.2		6.6	1.1	2.6	34.0	2.8	59.7
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	919	1136		813	911	406	4832	294	4642
Starvation Cap Reductn	0	0		0	0	0	177	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.05		0.02	0.03	0.04	0.25	0.02	0.28

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 50.7	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay (s/veh): 8.0	Intersection LOS: A
Intersection Capacity Utilization 50.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Brant Street & Leighland Road

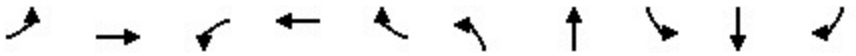




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1	49	12	4	23	15	1111	11	7	1230	21
Future Volume (vph)	85	1	49	12	4	23	15	1111	11	7	1230	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1551			1462	1236	1685	4917		1305	4912	
Flt Permitted	0.75	1.00			0.74	1.00	0.15	1.00		0.23	1.00	
Satd. Flow (perm)	1273	1551			1126	1236	270	4917		312	4912	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	52	13	4	24	16	1169	12	7	1295	22
RTOR Reduction (vph)	0	44	0	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	89	9	0	0	17	4	16	1180	0	7	1316	0
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	0%	2%	8%	75%	22%	0%	4%	18%	29%	4%	14%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.3	8.3			8.3	8.3	34.9	34.9		29.9	29.9	
Effective Green, g (s)	8.3	8.3			8.3	8.3	34.9	34.9		29.9	29.9	
Actuated g/C Ratio	0.15	0.15			0.15	0.15	0.63	0.63		0.54	0.54	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	191	233			169	185	196	3108		169	2660	
v/s Ratio Prot		0.01					0.00	c0.24			c0.27	
v/s Ratio Perm	c0.07				0.02	0.00	0.05			0.02		
v/c Ratio	0.47	0.04			0.10	0.02	0.08	0.38		0.04	0.49	
Uniform Delay, d1	21.4	20.0			20.2	20.0	4.3	4.9		5.9	7.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.1			0.3	0.0	0.2	0.1		0.1	0.1	
Delay (s)	23.2	20.1			20.5	20.0	4.5	5.0		6.0	8.1	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		22.1			20.2			5.0			8.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

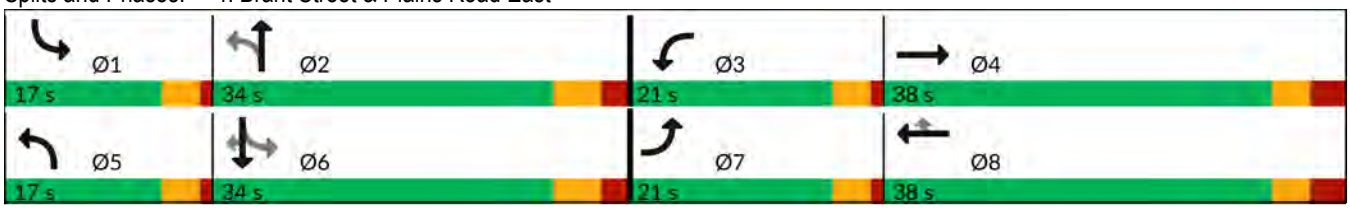
c Critical Lane Group

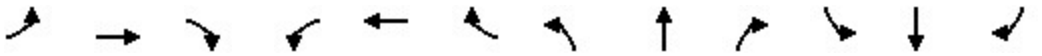


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	358	246	62	136	73	31	663	155	777	438
Future Volume (vph)	358	246	62	136	73	31	663	155	777	438
Lane Group Flow (vph)	369	293	64	140	75	32	819	160	801	452
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	21.0	38.0	21.0	38.0	38.0	17.0	34.0	17.0	34.0	34.0
Total Split (%)	19.1%	34.5%	19.1%	34.5%	34.5%	15.5%	30.9%	15.5%	30.9%	30.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	14.8	21.9	9.2	13.7	13.7	37.7	28.4	44.4	36.2	36.2
Actuated g/C Ratio	0.17	0.25	0.11	0.16	0.16	0.43	0.33	0.51	0.42	0.42
v/c Ratio	0.69	0.65	0.37	0.26	0.25	0.09	0.53	0.46	0.39	0.55
Control Delay (s/veh)	42.8	37.4	45.0	33.7	4.6	14.1	25.9	17.8	21.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.8	37.4	45.0	33.7	4.6	14.1	25.9	17.8	21.0	6.9
LOS	D	D	D	C	A	B	C	B	C	A
Approach Delay (s/veh)		40.4		28.5			25.5		16.1	
Approach LOS		D		C			C		B	
Queue Length 50th (m)	30.8	46.3	10.6	11.6	0.0	2.6	40.1	14.2	38.1	5.2
Queue Length 95th (m)	54.1	79.8	25.8	20.7	5.6	9.0	67.0	33.2	62.1	36.0
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	621	669	326	1252	571	458	1545	392	2067	826
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	0.59	0.44	0.20	0.11	0.13	0.07	0.53	0.41	0.39	0.55

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 87.2			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 24.7		Intersection LOS: C	
Intersection Capacity Utilization 68.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	246	38	62	136	73	31	663	131	155	777	438
Future Volume (vph)	358	246	38	62	136	73	31	663	131	155	777	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3143	1788		1652	3368	1352	1684	4676		1635	4980	1422
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.34	1.00		0.24	1.00	1.00
Satd. Flow (perm)	3143	1788		1652	3368	1352	598	4676		405	4980	1422
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	369	254	39	64	140	75	32	684	135	160	801	452
RTOR Reduction (vph)	0	5	0	0	0	63	0	24	0	0	0	242
Lane Group Flow (vph)	369	288	0	64	140	12	32	795	0	160	801	210
Confl. Peds. (#/hr)	2					2	4		5	5		4
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	4%	3%	3%	2%	6%	10%	0%	7%	5%	3%	3%	4%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	14.8	21.9		7.5	14.6	14.6	34.3	30.2		44.3	36.2	36.2
Effective Green, g (s)	14.8	21.9		7.5	14.6	14.6	34.3	30.2		44.3	36.2	36.2
Actuated g/C Ratio	0.16	0.24		0.08	0.16	0.16	0.38	0.34		0.49	0.40	0.40
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	518	436		138	548	220	278	1574		338	2009	573
v/s Ratio Prot	c0.12	c0.16		0.04	0.04		0.01	0.17		c0.05	0.16	
v/s Ratio Perm						0.01	0.04			c0.18		0.15
v/c Ratio	0.71	0.66		0.46	0.26	0.06	0.12	0.51		0.47	0.40	0.37
Uniform Delay, d1	35.4	30.5		39.2	32.8	31.7	17.4	23.8		13.5	19.0	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	4.6	3.6		2.5	0.2	0.1	0.2	1.2		1.0	0.6	1.8
Delay (s)	40.0	34.1		41.6	33.0	31.8	17.6	24.9		14.5	19.6	20.5
Level of Service	D	C		D	C	C	B	C		B	B	C
Approach Delay (s/veh)		37.4			34.7			24.7			19.3	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

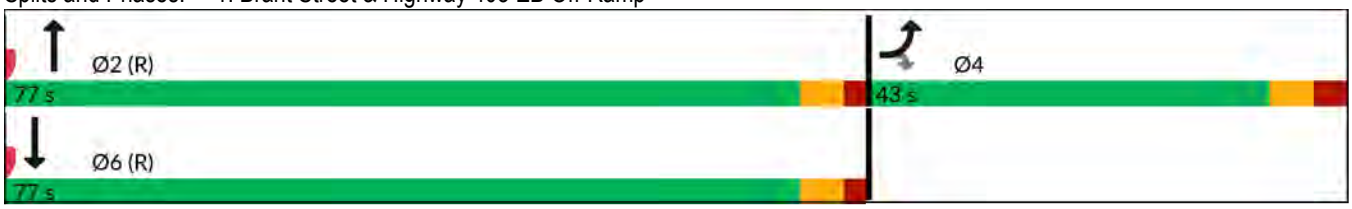
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	203	187	1417	1293
Future Volume (vph)	203	187	1417	1293
Lane Group Flow (vph)	277	129	1476	1347
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	77.0	77.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	14.9	14.9	92.1	92.1
Actuated g/C Ratio	0.12	0.12	0.77	0.77
v/c Ratio	0.67	0.61	0.38	0.35
Control Delay (s/veh)	50.9	41.9	5.2	5.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.9	41.9	5.2	5.0
LOS	D	D	A	A
Approach Delay (s/veh)	48.0		5.2	5.0
Approach LOS	D		A	A
Queue Length 50th (m)	29.6	20.3	36.9	32.6
Queue Length 95th (m)	42.4	41.9	53.3	47.2
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	953	442	3897	3897
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	0.29	0.38	0.35

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay (s/veh): 10.5	Intersection LOS: B
Intersection Capacity Utilization 46.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	187	0	1417	1293	0
Future Volume (vph)	203	187	0	1417	1293	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3094	1358		5079	5079	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3094	1358		5079	5079	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	211	195	0	1476	1347	0
RTOR Reduction (vph)	32	44	0	0	0	0
Lane Group Flow (vph)	245	85	0	1476	1347	0
Confl. Peds. (#/hr)			4			4
Heavy Vehicles (%)	4%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.9	14.9		92.1	92.1	
Effective Green, g (s)	14.9	14.9		92.1	92.1	
Actuated g/C Ratio	0.12	0.12		0.77	0.77	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	384	168		3898	3898	
v/s Ratio Prot	c0.08			c0.29	0.27	
v/s Ratio Perm		0.06				
v/c Ratio	0.64	0.51		0.38	0.35	
Uniform Delay, d1	50.0	49.1		4.6	4.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	2.4		0.3	0.2	
Delay (s)	53.4	51.5		4.9	4.7	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	52.8			4.9	4.7	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	10	0	1871	9	15	1464	0
Future Vol, veh/h	0	0	0	3	0	10	0	1871	9	15	1464	0
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	10	0	2	0	0	1	0
Mvmt Flow	0	0	0	3	0	11	0	1969	9	16	1541	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2364	3555	774	2623	3551	990	1544	0	0	1979	0	0
Stage 1	1576	1576	-	1975	1975	-	-	-	-	-	-	-
Stage 2	788	1979	-	648	1576	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.3	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	4	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	39	6	296	26	6	199	216	-	-	131	-	-
Stage 1	80	172	-	41	109	-	-	-	-	-	-	-
Stage 2	322	108	-	392	172	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	5	295	24	5	199	215	-	-	131	-	-
Mov Cap-2 Maneuver	33	5	-	24	5	-	-	-	-	-	-	-
Stage 1	80	151	-	41	109	-	-	-	-	-	-	-
Stage 2	305	108	-	344	151	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	64.4	0	0.4
HCM LOS	A	F		

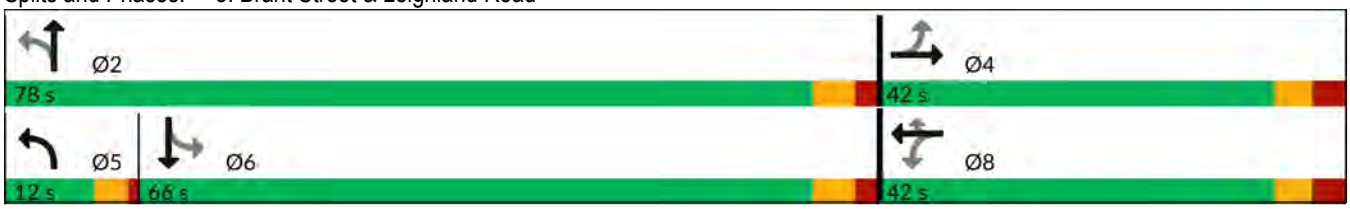
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	215	-	-	-	74	131	-	-
HCM Lane V/C Ratio	-	-	-	-	0.185	0.121	-	-
HCM Control Delay (s/veh)	0	-	-	0	64.4	36.2	-	-
HCM Lane LOS	A	-	-	A	F	E	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0.6	0.4	-	-

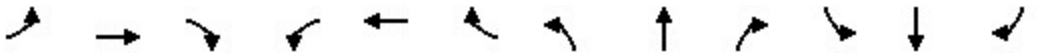


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	2	7	1	10	36	1804	6	1397
Future Volume (vph)	66	2	7	1	10	36	1804	6	1397
Lane Group Flow (vph)	69	57	0	8	11	38	1903	6	1538
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	78.0	66.0	66.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	10.0%	65.0%	55.0%	55.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	9.8	9.8		9.8	9.8	40.5	40.3	36.5	36.5
Actuated g/C Ratio	0.17	0.17		0.17	0.17	0.71	0.70	0.64	0.64
v/c Ratio	0.31	0.19		0.04	0.04	0.12	0.54	0.06	0.48
Control Delay (s/veh)	27.4	10.1		23.6	0.2	4.6	6.5	11.5	9.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.4	10.1		23.6	0.2	4.6	6.5	11.5	9.5
LOS	C	B		C	A	A	A	B	A
Approach Delay (s/veh)		19.6		10.1			6.5		9.5
Approach LOS		B		B			A		A
Queue Length 50th (m)	5.8	0.2		0.7	0.0	1.2	37.3	0.2	27.1
Queue Length 95th (m)	20.0	9.4		4.6	0.0	4.1	60.2	2.7	70.7
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	841	967		687	979	347	5021	145	4768
Starvation Cap Reductn	0	0		0	0	0	218	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06		0.01	0.01	0.11	0.40	0.04	0.32

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 57.2			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 8.2		Intersection LOS: A	
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

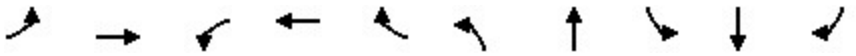




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	52	7	1	10	36	1804	4	6	1397	64
Future Volume (vph)	66	2	52	7	1	10	36	1804	4	6	1397	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1651	1475			1440	1486	1636	5027		1266	4994	
Flt Permitted	0.75	1.00			0.71	1.00	0.11	1.00		0.11	1.00	
Satd. Flow (perm)	1307	1475			1070	1486	197	5027		152	4994	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	2	55	7	1	11	38	1899	4	6	1471	67
RTOR Reduction (vph)	0	48	0	0	0	10	0	0	0	0	3	0
Lane Group Flow (vph)	69	9	0	0	8	1	38	1903	0	6	1535	0
Confl. Peds. (#/hr)	1		5	5		1	6		4	4		6
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	100%	4%	14%	100%	0%	3%	2%	0%	33%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	7.7	7.7			7.7	7.7	41.5	41.5		35.0	35.0	
Effective Green, g (s)	7.7	7.7			7.7	7.7	41.5	41.5		35.0	35.0	
Actuated g/C Ratio	0.13	0.13			0.13	0.13	0.68	0.68		0.57	0.57	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	185			134	186	192	3408		86	2856	
v/s Ratio Prot		0.01					0.01	c0.38			0.31	
v/s Ratio Perm	c0.05				0.01	0.00	0.13			0.04		
v/c Ratio	0.42	0.05			0.06	0.01	0.20	0.56		0.07	0.54	
Uniform Delay, d1	24.7	23.5			23.6	23.4	4.3	5.1		5.8	8.1	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.1			0.2	0.0	0.5	0.2		0.3	0.2	
Delay (s)	26.4	23.6			23.7	23.4	4.8	5.3		6.2	8.3	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		25.2			23.6			5.3			8.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



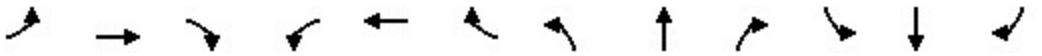
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	519	190	111	741	368	48	916	104	783	693
Future Volume (vph)	519	190	111	741	368	48	916	104	783	693
Lane Group Flow (vph)	535	263	114	764	379	49	1024	107	807	714
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	30.0	38.0	30.0	38.0	38.0	11.0	41.0	11.0	41.0	41.0
Total Split (%)	25.0%	31.7%	25.0%	31.7%	31.7%	9.2%	34.2%	9.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	22.9	39.1	13.2	29.4	29.4	44.2	35.1	45.1	37.6	37.6
Actuated g/C Ratio	0.20	0.34	0.12	0.26	0.26	0.39	0.31	0.39	0.33	0.33
v/c Ratio	0.83	0.44	0.60	0.85	0.80	0.20	0.68	0.58	0.49	0.86
Control Delay (s/veh)	56.0	30.8	61.6	50.9	39.1	23.9	37.8	36.7	33.7	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.0	30.8	61.6	50.9	39.1	23.9	37.8	36.7	33.7	22.8
LOS	E	C	E	D	D	C	D	D	C	C
Approach Delay (s/veh)		47.7		48.3			37.2		29.1	
Approach LOS		D		D			D		C	
Queue Length 50th (m)	64.6	45.0	27.0	92.1	56.8	7.2	80.7	16.5	60.7	51.3
Queue Length 95th (m)	85.0	74.5	45.1	118.3	#105.0	15.8	98.9	#31.4	76.0	#140.9
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	737	600	380	982	508	248	1514	184	1652	827
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	1
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	0.73	0.44	0.30	0.78	0.75	0.20	0.68	0.58	0.49	0.86

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 114.5		
Natural Cycle: 105		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay (s/veh): 39.1	Intersection LOS: D	
Intersection Capacity Utilization 84.1%	ICU Level of Service E	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		

Queue shown is maximum after two cycles.

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	519	190	65	111	741	368	48	916	78	104	783	693
Future Volume (vph)	519	190	65	111	741	368	48	916	78	104	783	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3236	1734		1668	3500	1467	1650	4911		1620	5029	1450
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.26	1.00		0.15	1.00	1.00
Satd. Flow (perm)	3236	1734		1668	3500	1467	456	4911		258	5029	1450
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	535	196	67	114	764	379	49	944	80	107	807	714
RTOR Reduction (vph)	0	9	0	0	0	100	0	8	0	0	0	353
Lane Group Flow (vph)	535	254	0	114	764	279	49	1016	0	107	807	361
Confl. Peds. (#/hr)	2		5	5		2	11		4	4		11
Confl. Bikes (#/hr)						3						4
Heavy Vehicles (%)	1%	4%	3%	1%	2%	1%	2%	3%	4%	4%	2%	1%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	22.9	39.1		13.2	29.4	29.4	41.6	36.1		44.6	37.6	37.6
Effective Green, g (s)	22.9	39.1		13.2	29.4	29.4	41.6	36.1		44.6	37.6	37.6
Actuated g/C Ratio	0.20	0.34		0.11	0.25	0.25	0.36	0.31		0.39	0.33	0.33
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	642	587		190	891	373	221	1536		182	1638	472
v/s Ratio Prot	c0.17	0.15		0.07	c0.22		0.01	0.21		c0.04	0.16	
v/s Ratio Perm						0.19	0.07			0.19		c0.25
v/c Ratio	0.83	0.43		0.60	0.86	0.75	0.22	0.66		0.59	0.49	0.77
Uniform Delay, d1	44.4	29.6		48.6	41.0	39.6	24.6	34.4		24.8	31.2	34.9
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	9.1	0.5		5.2	8.2	8.0	0.5	2.3		4.8	1.1	11.3
Delay (s)	53.5	30.1		53.8	49.2	47.6	25.1	36.6		29.6	32.3	46.2
Level of Service	D	C		D	D	D	C	D		C	C	D
Approach Delay (s/veh)		45.8			49.1			36.1			38.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX F

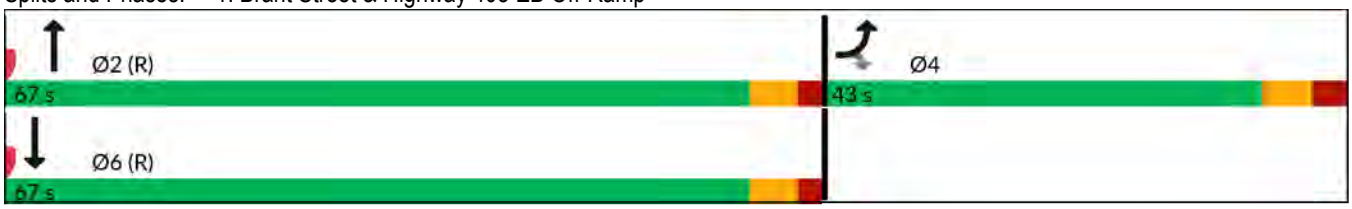
FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	141	197	957	1209
Future Volume (vph)	141	197	957	1209
Lane Group Flow (vph)	236	112	987	1246
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	67.0	67.0
Total Split (%)	39.1%	39.1%	60.9%	60.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	12.3	12.3	84.7	84.7
Actuated g/C Ratio	0.11	0.11	0.77	0.77
v/c Ratio	0.61	0.58	0.26	0.33
Control Delay (s/veh)	41.9	36.7	4.1	4.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.9	36.7	4.1	4.4
LOS	D	D	A	A
Approach Delay (s/veh)	40.2		4.1	4.4
Approach LOS	D		A	A
Queue Length 50th (m)	20.4	13.6	19.0	25.9
Queue Length 95th (m)	31.9	32.9	29.8	39.7
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	1042	466	3799	3763
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.24	0.26	0.33

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 49 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay (s/veh): 9.1	Intersection LOS: A
Intersection Capacity Utilization 42.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	141	197	0	957	1209	0
Future Volume (vph)	141	197	0	957	1209	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	0.99	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.94	0.85		1.00	1.00	
Flt Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3073	1313		4932	4885	
Flt Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3073	1313		4932	4885	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	145	203	0	987	1246	0
RTOR Reduction (vph)	48	48	0	0	0	0
Lane Group Flow (vph)	188	64	0	987	1246	0
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	1%	3%	0%	4%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.3	12.3		84.7	84.7	
Effective Green, g (s)	12.3	12.3		84.7	84.7	
Actuated g/C Ratio	0.11	0.11		0.77	0.77	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	343	146		3797	3761	
v/s Ratio Prot	c0.06			0.20	c0.26	
v/s Ratio Perm		0.05				
v/c Ratio	0.55	0.44		0.26	0.33	
Uniform Delay, d1	46.2	45.6		3.6	3.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	2.1		0.2	0.2	
Delay (s)	48.0	47.7		3.8	4.1	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	47.9			3.8	4.1	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	0	19	0	1337	8	14	1385	0
Future Vol, veh/h	0	0	0	4	0	19	0	1337	8	14	1385	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	21	4	0
Mvmt Flow	0	0	0	4	0	20	0	1393	8	15	1443	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2031	2876	723	2005	2872	702	1444	0	0	1402	0	0
Stage 1	1474	1474	-	1398	1398	-	-	-	-	-	-	-
Stage 2	557	1402	-	607	1474	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.72	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.31	-	-
Pot Cap-1 Maneuver	62	17	320	65	17	330	242	-	-	209	-	-
Stage 1	94	192	-	106	209	-	-	-	-	-	-	-
Stage 2	444	209	-	415	192	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	16	320	61	16	330	242	-	-	209	-	-
Mov Cap-2 Maneuver	55	16	-	61	16	-	-	-	-	-	-	-
Stage 1	94	178	-	106	209	-	-	-	-	-	-	-
Stage 2	417	209	-	385	178	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	27.1	0	0.2
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	242	-	-	-	187	209	-	-
HCM Lane V/C Ratio	-	-	-	-	0.128	0.07	-	-
HCM Control Delay (s/veh)	0	-	-	0	27.1	23.5	-	-
HCM Lane LOS	A	-	-	A	D	C	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0.4	0.2	-	-

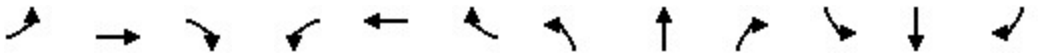


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	85	1	12	4	23	15	1227	7	1358
Future Volume (vph)	85	1	12	4	23	15	1227	7	1358
Lane Group Flow (vph)	89	53	0	17	24	16	1304	7	1451
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	68.0	56.0	56.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	10.9%	61.8%	50.9%	50.9%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.5	10.5		10.5	10.5	34.6	34.4	32.8	32.8
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.66	0.66	0.63	0.63
v/c Ratio	0.35	0.15		0.08	0.08	0.05	0.40	0.04	0.47
Control Delay (s/veh)	24.1	8.5		20.2	1.0	5.0	6.5	9.3	8.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.1	8.5		20.2	1.0	5.0	6.5	9.3	8.8
LOS	C	A		C	A	A	A	A	A
Approach Delay (s/veh)		18.3		9.0			6.5		8.8
Approach LOS		B		A			A		A
Queue Length 50th (m)	6.0	0.1		1.1	0.0	0.5	21.9	0.2	25.3
Queue Length 95th (m)	23.6	8.5		7.1	0.9	2.6	39.6	2.8	68.8
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	896	1109		793	890	380	4781	254	4561
Starvation Cap Reductn	0	0		0	0	0	219	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.05		0.02	0.03	0.04	0.29	0.03	0.32

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 52.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay (s/veh): 8.2		Intersection LOS: A	
Intersection Capacity Utilization 52.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

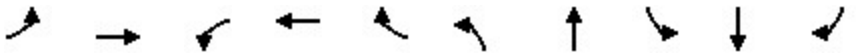




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1	49	12	4	23	15	1227	11	7	1358	21
Future Volume (vph)	85	1	49	12	4	23	15	1227	11	7	1358	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1551			1462	1236	1685	4918		1305	4914	
Flt Permitted	0.75	1.00			0.74	1.00	0.13	1.00		0.20	1.00	
Satd. Flow (perm)	1273	1551			1126	1236	225	4918		274	4914	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	52	13	4	24	16	1292	12	7	1429	22
RTOR Reduction (vph)	0	44	0	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	89	9	0	0	17	4	16	1303	0	7	1450	0
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	0%	2%	8%	75%	22%	0%	4%	18%	29%	4%	14%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.5	8.5			8.5	8.5	36.4	36.4		31.4	31.4	
Effective Green, g (s)	8.5	8.5			8.5	8.5	36.4	36.4		31.4	31.4	
Actuated g/C Ratio	0.15	0.15			0.15	0.15	0.64	0.64		0.55	0.55	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	231			168	184	169	3146		151	2711	
v/s Ratio Prot		0.01					0.00	c0.26			c0.30	
v/s Ratio Perm	c0.07				0.02	0.00	0.06			0.03		
v/c Ratio	0.47	0.04			0.10	0.02	0.09	0.41		0.05	0.53	
Uniform Delay, d1	22.1	20.7			20.9	20.6	4.5	5.0		5.9	8.1	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.1			0.3	0.0	0.2	0.1		0.1	0.2	
Delay (s)	24.0	20.8			21.2	20.7	4.7	5.1		6.0	8.3	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		22.8			20.9			5.1			8.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

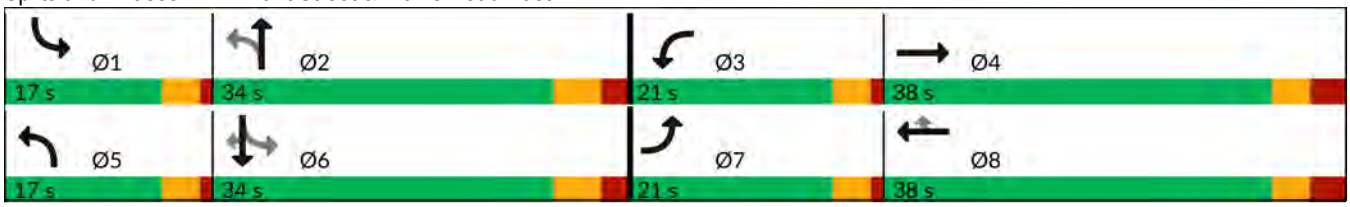
c Critical Lane Group

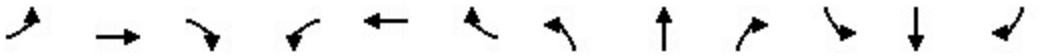


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	358	272	62	150	73	31	732	155	858	438
Future Volume (vph)	358	272	62	150	73	31	732	155	858	438
Lane Group Flow (vph)	369	319	64	155	75	32	890	160	885	452
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	21.0	38.0	21.0	38.0	38.0	17.0	34.0	17.0	34.0	34.0
Total Split (%)	19.1%	34.5%	19.1%	34.5%	34.5%	15.5%	30.9%	15.5%	30.9%	30.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	14.9	23.2	9.3	15.0	15.0	37.8	28.4	44.6	36.4	36.4
Actuated g/C Ratio	0.17	0.26	0.10	0.17	0.17	0.43	0.32	0.50	0.41	0.41
v/c Ratio	0.70	0.67	0.37	0.27	0.24	0.10	0.59	0.49	0.43	0.57
Control Delay (s/veh)	44.1	38.2	46.2	33.3	4.3	15.0	27.9	19.6	22.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.1	38.2	46.2	33.3	4.3	15.0	27.9	19.6	22.3	8.9
LOS	D	D	D	C	A	B	C	B	C	A
Approach Delay (s/veh)		41.4		28.7			27.5		18.0	
Approach LOS		D		C			C		B	
Queue Length 50th (m)	31.6	51.8	10.8	13.0	0.0	2.7	46.5	14.9	44.4	10.2
Queue Length 95th (m)	55.6	87.5	26.3	22.5	5.4	9.5	76.4	34.7	71.9	48.0
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	611	659	321	1232	563	434	1520	367	2040	798
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	0.60	0.48	0.20	0.13	0.13	0.07	0.59	0.44	0.43	0.57

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 88.8			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 26.2		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	272	38	62	150	73	31	732	131	155	858	438
Future Volume (vph)	358	272	38	62	150	73	31	732	131	155	858	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3143	1791		1652	3368	1352	1684	4685		1635	4980	1422
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.31	1.00		0.20	1.00	1.00
Satd. Flow (perm)	3143	1791		1652	3368	1352	548	4685		352	4980	1422
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	369	280	39	64	155	75	32	755	135	160	885	452
RTOR Reduction (vph)	0	4	0	0	0	62	0	21	0	0	0	221
Lane Group Flow (vph)	369	315	0	64	155	13	32	869	0	160	885	231
Confl. Peds. (#/hr)	2					2	4		5	5		4
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	4%	3%	3%	2%	6%	10%	0%	7%	5%	3%	3%	4%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	14.8	23.2		7.6	16.0	16.0	34.4	30.3		44.5	36.4	36.4
Effective Green, g (s)	14.8	23.2		7.6	16.0	16.0	34.4	30.3		44.5	36.4	36.4
Actuated g/C Ratio	0.16	0.25		0.08	0.18	0.18	0.38	0.33		0.49	0.40	0.40
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	509	455		137	590	236	257	1554		314	1985	566
v/s Ratio Prot	c0.12	c0.18		0.04	0.05		0.01	c0.19		c0.06	0.18	
v/s Ratio Perm						0.01	0.04			0.19		0.16
v/c Ratio	0.72	0.69		0.47	0.26	0.06	0.12	0.56		0.51	0.45	0.41
Uniform Delay, d1	36.3	30.8		39.9	32.6	31.4	18.1	25.0		14.3	20.1	19.7
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	5.1	4.5		2.5	0.2	0.1	0.2	1.5		1.3	0.7	2.2
Delay (s)	41.4	35.3		42.4	32.8	31.5	18.3	26.5		15.6	20.8	21.9
Level of Service	D	D		D	C	C	B	C		B	C	C
Approach Delay (s/veh)		38.6			34.5			26.2			20.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

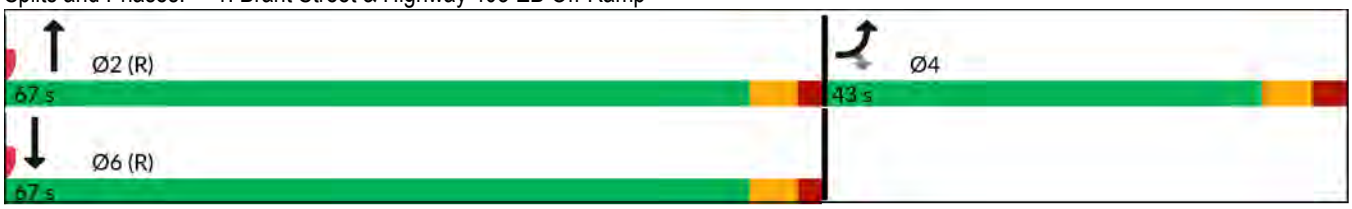
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	160	223	1057	1335
Future Volume (vph)	160	223	1057	1335
Lane Group Flow (vph)	269	126	1090	1376
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	67.0	67.0
Total Split (%)	39.1%	39.1%	60.9%	60.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	14.2	14.2	82.8	82.8
Actuated g/C Ratio	0.13	0.13	0.75	0.75
v/c Ratio	0.63	0.62	0.29	0.37
Control Delay (s/veh)	44.8	43.8	4.8	5.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.8	43.8	4.8	5.3
LOS	D	D	A	A
Approach Delay (s/veh)	44.5		4.8	5.3
Approach LOS	D		A	A
Queue Length 50th (m)	25.7	20.6	23.5	32.3
Queue Length 95th (m)	37.2	40.7	37.3	50.1
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	1032	456	3714	3679
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.28	0.29	0.37

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 49 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 10.5	Intersection LOS: B
Intersection Capacity Utilization 45.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	223	0	1057	1335	0
Future Volume (vph)	160	223	0	1057	1335	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	0.99	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.94	0.85		1.00	1.00	
Flt Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3073	1313		4932	4885	
Flt Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3073	1313		4932	4885	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	165	230	0	1090	1376	0
RTOR Reduction (vph)	34	34	0	0	0	0
Lane Group Flow (vph)	235	92	0	1090	1376	0
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	1%	3%	0%	4%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.2	14.2		82.8	82.8	
Effective Green, g (s)	14.2	14.2		82.8	82.8	
Actuated g/C Ratio	0.13	0.13		0.75	0.75	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	396	169		3712	3677	
v/s Ratio Prot	c0.08			0.22	c0.28	
v/s Ratio Perm		0.07				
v/c Ratio	0.59	0.54		0.29	0.37	
Uniform Delay, d1	45.2	44.9		4.3	4.7	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	3.6		0.2	0.3	
Delay (s)	47.6	48.4		4.5	5.0	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	47.8			4.5	5.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	0	19	0	1476	8	14	1529	0
Future Vol, veh/h	0	0	0	4	0	19	0	1476	8	14	1529	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	21	4	0
Mvmt Flow	0	0	0	4	0	20	0	1538	8	15	1593	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2239	3171	798	2210	3167	774	1594	0	0	1547	0	0
Stage 1	1624	1624	-	1543	1543	-	-	-	-	-	-	-
Stage 2	615	1547	-	667	1624	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.72	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.31	-	-
Pot Cap-1 Maneuver	46	11	286	48	11	296	204	-	-	175	-	-
Stage 1	74	163	-	84	178	-	-	-	-	-	-	-
Stage 2	410	177	-	381	163	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	10	286	45	10	296	204	-	-	175	-	-
Mov Cap-2 Maneuver	40	10	-	45	10	-	-	-	-	-	-	-
Stage 1	74	149	-	84	178	-	-	-	-	-	-	-
Stage 2	383	177	-	348	149	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	33.5	0	0.2
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	204	-	-	-	150	175	-	-
HCM Lane V/C Ratio	-	-	-	-	0.16	0.083	-	-
HCM Control Delay (s/veh)	0	-	-	0	33.5	27.4	-	-
HCM Lane LOS	A	-	-	A	D	D	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0.6	0.3	-	-

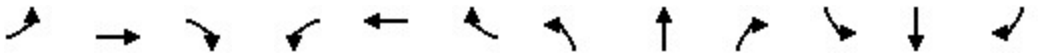


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	85	1	12	4	23	15	1355	7	1499
Future Volume (vph)	85	1	12	4	23	15	1355	7	1499
Lane Group Flow (vph)	89	53	0	17	24	16	1438	7	1600
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	68.0	56.0	56.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	10.9%	61.8%	50.9%	50.9%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.9	10.9		10.9	10.9	36.8	36.5	35.0	35.0
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.67	0.66	0.64	0.64
v/c Ratio	0.35	0.15		0.08	0.08	0.05	0.44	0.05	0.51
Control Delay (s/veh)	25.8	9.1		22.1	0.7	4.9	6.7	9.3	9.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.8	9.1		22.1	0.7	4.9	6.7	9.3	9.1
LOS	C	A		C	A	A	A	A	A
Approach Delay (s/veh)		19.5		9.6			6.6		9.1
Approach LOS		B		A			A		A
Queue Length 50th (m)	6.2	0.1		1.1	0.0	0.5	25.8	0.3	30.1
Queue Length 95th (m)	25.7	9.1		7.6	0.6	2.6	45.9	2.8	79.7
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	866	1073		766	862	355	4713	214	4429
Starvation Cap Reductn	0	0		0	0	0	267	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.05		0.02	0.03	0.05	0.32	0.03	0.36

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 54.9			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay (s/veh): 8.4		Intersection LOS: A	
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

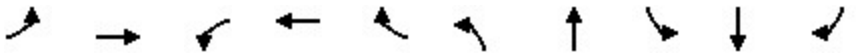




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1	49	12	4	23	15	1355	11	7	1499	21
Future Volume (vph)	85	1	49	12	4	23	15	1355	11	7	1499	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1551			1462	1236	1685	4919		1305	4915	
Flt Permitted	0.75	1.00			0.74	1.00	0.11	1.00		0.17	1.00	
Satd. Flow (perm)	1273	1551			1127	1236	189	4919		238	4915	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	52	13	4	24	16	1426	12	7	1578	22
RTOR Reduction (vph)	0	44	0	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	89	9	0	0	17	4	16	1437	0	7	1599	0
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	0%	2%	8%	75%	22%	0%	4%	18%	29%	4%	14%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.9	8.9			8.9	8.9	38.5	38.5		33.5	33.5	
Effective Green, g (s)	8.9	8.9			8.9	8.9	38.5	38.5		33.5	33.5	
Actuated g/C Ratio	0.15	0.15			0.15	0.15	0.65	0.65		0.56	0.56	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	232			168	185	147	3188		134	2771	
v/s Ratio Prot		0.01					0.00	c0.29			c0.33	
v/s Ratio Perm	c0.07				0.02	0.00	0.07			0.03		
v/c Ratio	0.47	0.04			0.10	0.02	0.11	0.45		0.05	0.58	
Uniform Delay, d1	23.1	21.6			21.8	21.5	4.8	5.2		5.8	8.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.1			0.3	0.0	0.3	0.1		0.2	0.3	
Delay (s)	24.9	21.7			22.1	21.6	5.1	5.3		6.0	8.7	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		23.7			21.8			5.3			8.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

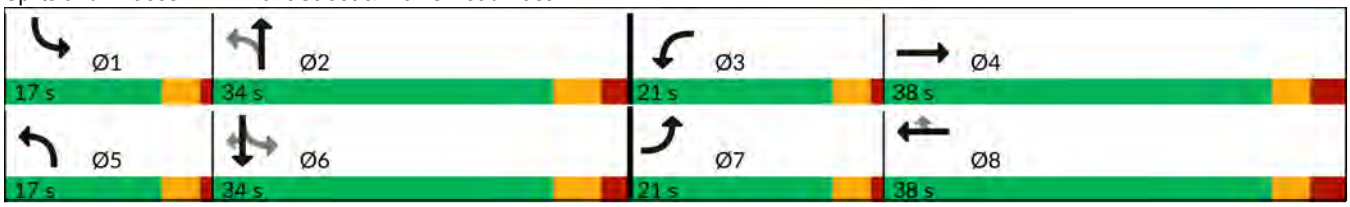
c Critical Lane Group

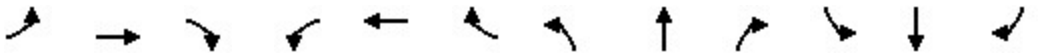


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	358	300	62	166	73	31	808	155	947	438
Future Volume (vph)	358	300	62	166	73	31	808	155	947	438
Lane Group Flow (vph)	369	348	64	171	75	32	968	160	976	452
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	21.0	38.0	21.0	38.0	38.0	17.0	34.0	17.0	34.0	34.0
Total Split (%)	19.1%	34.5%	19.1%	34.5%	34.5%	15.5%	30.9%	15.5%	30.9%	30.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	14.9	24.5	9.3	16.2	16.2	37.8	28.4	44.8	36.5	36.5
Actuated g/C Ratio	0.17	0.27	0.10	0.18	0.18	0.42	0.31	0.50	0.40	0.40
v/c Ratio	0.71	0.71	0.38	0.28	0.23	0.11	0.65	0.53	0.48	0.59
Control Delay (s/veh)	45.3	39.3	47.2	33.0	4.1	15.8	30.0	21.5	23.7	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.3	39.3	47.2	33.0	4.1	15.8	30.0	21.5	23.7	11.0
LOS	D	D	D	C	A	B	C	C	C	B
Approach Delay (s/veh)		42.4		29.0			29.6		19.8	
Approach LOS		D		C			C		B	
Queue Length 50th (m)	32.4	58.0	11.1	14.5	0.0	2.9	53.9	15.6	51.9	15.2
Queue Length 95th (m)	56.3	96.2	26.6	24.3	5.4	9.5	86.0	35.3	81.6	58.1
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	601	649	316	1213	556	402	1498	344	2016	772
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	0.61	0.54	0.20	0.14	0.13	0.08	0.65	0.47	0.48	0.59

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 90.2			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 27.8		Intersection LOS: C	
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	300	38	62	166	73	31	808	131	155	947	438
Future Volume (vph)	358	300	38	62	166	73	31	808	131	155	947	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3143	1793		1652	3368	1352	1684	4694		1635	4980	1422
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.27	1.00		0.17	1.00	1.00
Satd. Flow (perm)	3143	1793		1652	3368	1352	470	4694		299	4980	1422
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	369	309	39	64	171	75	32	833	135	160	976	452
RTOR Reduction (vph)	0	4	0	0	0	61	0	18	0	0	0	202
Lane Group Flow (vph)	369	344	0	64	171	14	32	950	0	160	976	250
Confl. Peds. (#/hr)	2					2	4		5	5		4
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	4%	3%	3%	2%	6%	10%	0%	7%	5%	3%	3%	4%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	14.9	24.5		7.6	17.2	17.2	34.4	30.3		44.6	36.5	36.5
Effective Green, g (s)	14.9	24.5		7.6	17.2	17.2	34.4	30.3		44.6	36.5	36.5
Actuated g/C Ratio	0.16	0.26		0.08	0.19	0.19	0.37	0.33		0.48	0.39	0.39
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	505	473		135	624	250	228	1534		292	1960	559
v/s Ratio Prot	c0.12	c0.19		0.04	0.05		0.01	c0.20		c0.06	0.20	
v/s Ratio Perm						0.01	0.05			0.20		0.18
v/c Ratio	0.73	0.73		0.47	0.27	0.06	0.14	0.62		0.55	0.50	0.45
Uniform Delay, d1	37.0	31.0		40.6	32.4	31.1	18.7	26.3		15.3	21.2	20.7
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	5.4	5.5		2.6	0.2	0.1	0.3	1.9		2.1	0.9	2.6
Delay (s)	42.4	36.5		43.3	32.6	31.2	19.0	28.2		17.4	22.1	23.3
Level of Service	D	D		D	C	C	B	C		B	C	C
Approach Delay (s/veh)		39.5			34.5			27.9			22.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

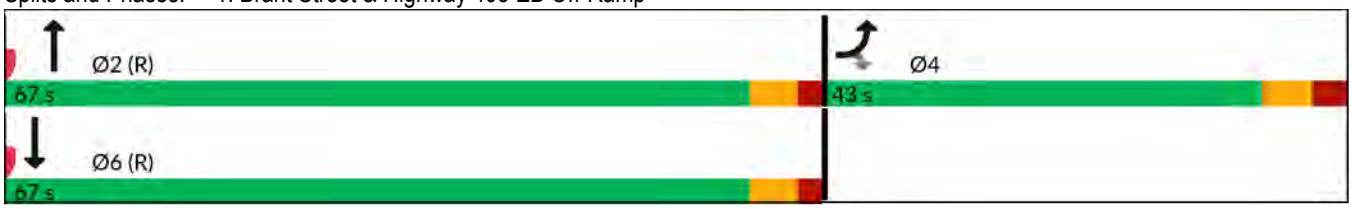
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	181	252	1167	1474
Future Volume (vph)	181	252	1167	1474
Lane Group Flow (vph)	304	143	1203	1520
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	67.0	67.0
Total Split (%)	39.1%	39.1%	60.9%	60.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	16.2	16.2	80.8	80.8
Actuated g/C Ratio	0.15	0.15	0.73	0.73
v/c Ratio	0.64	0.66	0.33	0.42
Control Delay (s/veh)	45.8	49.7	5.8	6.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.8	49.7	5.8	6.5
LOS	D	D	A	A
Approach Delay (s/veh)	47.1		5.8	6.5
Approach LOS	D		A	A
Queue Length 50th (m)	31.0	27.6	29.0	40.2
Queue Length 95th (m)	42.2	48.2	46.4	63.5
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	1024	448	3622	3588
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.32	0.33	0.42

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 49 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay (s/veh): 11.9	Intersection LOS: B
Intersection Capacity Utilization 49.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	252	0	1167	1474	0
Future Volume (vph)	181	252	0	1167	1474	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	0.99	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.94	0.85		1.00	1.00	
Flt Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3074	1314		4932	4885	
Flt Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3074	1314		4932	4885	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	187	260	0	1203	1520	0
RTOR Reduction (vph)	23	23	0	0	0	0
Lane Group Flow (vph)	281	120	0	1203	1520	0
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	1%	3%	0%	4%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.2	16.2		80.8	80.8	
Effective Green, g (s)	16.2	16.2		80.8	80.8	
Actuated g/C Ratio	0.15	0.15		0.73	0.73	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	452	193		3622	3588	
v/s Ratio Prot	c0.09			0.24	c0.31	
v/s Ratio Perm		0.09				
v/c Ratio	0.62	0.62		0.33	0.42	
Uniform Delay, d1	44.0	44.0		5.1	5.6	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	6.1		0.2	0.4	
Delay (s)	46.7	50.1		5.4	6.0	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	47.8			5.4	6.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	0	19	0	1630	8	14	1688	0
Future Vol, veh/h	0	0	0	4	0	19	0	1630	8	14	1688	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	21	4	0
Mvmt Flow	0	0	0	4	0	20	0	1698	8	15	1758	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2468	3496	880	2436	3492	854	1759	0	0	1707	0	0
Stage 1	1789	1789	-	1703	1703	-	-	-	-	-	-	-
Stage 2	679	1707	-	733	1789	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.72	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.31	-	-
Pot Cap-1 Maneuver	33	6	252	35	7	263	169	-	-	143	-	-
Stage 1	56	135	-	65	149	-	-	-	-	-	-	-
Stage 2	375	148	-	348	135	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	5	252	32	6	263	169	-	-	143	-	-
Mov Cap-2 Maneuver	28	5	-	32	6	-	-	-	-	-	-	-
Stage 1	56	121	-	65	149	-	-	-	-	-	-	-
Stage 2	347	148	-	311	121	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	43.5	0	0.3
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	169	-	-	-	117	143	-	-
HCM Lane V/C Ratio	-	-	-	-	0.205	0.102	-	-
HCM Control Delay (s/veh)	0	-	-	0	43.5	33	-	-
HCM Lane LOS	A	-	-	A	E	D	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0.7	0.3	-	-

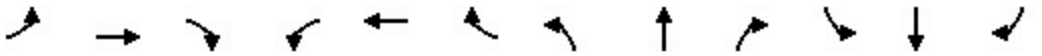


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	85	1	12	4	23	15	1496	7	1655
Future Volume (vph)	85	1	12	4	23	15	1496	7	1655
Lane Group Flow (vph)	89	53	0	17	24	16	1587	7	1764
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	68.0	56.0	56.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	10.9%	61.8%	50.9%	50.9%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	11.2	11.2		11.2	11.2	39.7	39.5	38.0	38.0
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.68	0.68	0.66	0.66
v/c Ratio	0.36	0.16		0.08	0.08	0.05	0.47	0.05	0.55
Control Delay (s/veh)	28.4	9.9		24.6	0.6	4.7	6.7	8.9	9.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.4	9.9		24.6	0.6	4.7	6.7	8.9	9.1
LOS	C	A		C	A	A	A	A	A
Approach Delay (s/veh)		21.5		10.5			6.7		9.1
Approach LOS		C		B			A		A
Queue Length 50th (m)	6.8	0.1		1.2	0.0	0.5	30.5	0.3	35.7
Queue Length 95th (m)	27.6	9.6		8.1	0.4	2.5	51.7	2.8	90.3
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	827	1027		732	826	340	4654	177	4294
Starvation Cap Reductn	0	0		0	0	0	308	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.05		0.02	0.03	0.05	0.37	0.04	0.41

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 58			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay (s/veh): 8.5		Intersection LOS: A	
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

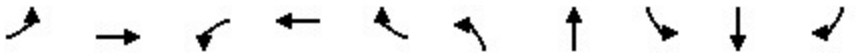




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1	49	12	4	23	15	1496	11	7	1655	21
Future Volume (vph)	85	1	49	12	4	23	15	1496	11	7	1655	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1551			1462	1236	1685	4921		1305	4917	
Flt Permitted	0.75	1.00			0.74	1.00	0.10	1.00		0.15	1.00	
Satd. Flow (perm)	1273	1551			1127	1236	175	4921		203	4917	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	52	13	4	24	16	1575	12	7	1742	22
RTOR Reduction (vph)	0	45	0	0	0	21	0	1	0	0	1	0
Lane Group Flow (vph)	89	8	0	0	17	3	16	1586	0	7	1763	0
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	0%	2%	8%	75%	22%	0%	4%	18%	29%	4%	14%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	9.0	9.0			9.0	9.0	41.5	41.5		36.5	36.5	
Effective Green, g (s)	9.0	9.0			9.0	9.0	41.5	41.5		36.5	36.5	
Actuated g/C Ratio	0.14	0.14			0.14	0.14	0.66	0.66		0.58	0.58	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	183	223			162	177	140	3267		118	2871	
v/s Ratio Prot		0.01					0.00	c0.32			c0.36	
v/s Ratio Perm	c0.07				0.02	0.00	0.07			0.03		
v/c Ratio	0.49	0.04			0.10	0.02	0.11	0.49		0.06	0.61	
Uniform Delay, d1	24.6	23.0			23.2	23.0	5.0	5.2		5.6	8.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.1			0.3	0.0	0.4	0.1		0.2	0.4	
Delay (s)	26.7	23.1			23.5	23.0	5.4	5.3		5.8	8.8	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		25.3			23.2			5.3			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

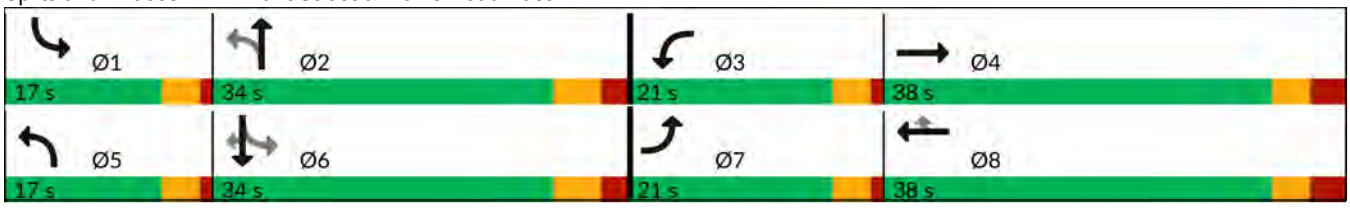
c Critical Lane Group

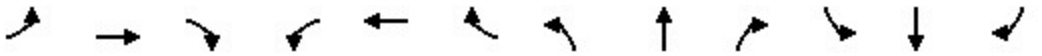


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	358	331	62	183	73	31	892	155	1046	438
Future Volume (vph)	358	331	62	183	73	31	892	155	1046	438
Lane Group Flow (vph)	369	380	64	189	75	32	1055	160	1078	452
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	21.0	38.0	21.0	38.0	38.0	17.0	34.0	17.0	34.0	34.0
Total Split (%)	19.1%	34.5%	19.1%	34.5%	34.5%	15.5%	30.9%	15.5%	30.9%	30.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	15.0	25.7	9.4	17.3	17.3	37.8	28.5	45.0	36.7	36.7
Actuated g/C Ratio	0.16	0.28	0.10	0.19	0.19	0.41	0.31	0.49	0.40	0.40
v/c Ratio	0.72	0.75	0.38	0.30	0.22	0.12	0.71	0.57	0.54	0.60
Control Delay (s/veh)	46.3	41.1	48.0	32.9	4.0	16.5	32.5	24.1	25.1	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.3	41.1	48.0	32.9	4.0	16.5	32.5	24.1	25.1	13.2
LOS	D	D	D	C	A	B	C	C	C	B
Approach Delay (s/veh)		43.7		29.2			32.0		21.8	
Approach LOS		D		C			C		C	
Queue Length 50th (m)	33.4	65.4	11.5	16.2	0.0	3.0	63.1	16.4	61.2	21.0
Queue Length 95th (m)	56.3	106.6	26.6	26.6	5.4	9.5	95.5	35.9	91.7	67.2
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	592	641	311	1195	549	371	1477	321	1994	748
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	0.62	0.59	0.21	0.16	0.14	0.09	0.71	0.50	0.54	0.60

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 91.6			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 29.6		Intersection LOS: C	
Intersection Capacity Utilization 73.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	331	38	62	183	73	31	892	131	155	1046	438
Future Volume (vph)	358	331	38	62	183	73	31	892	131	155	1046	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3143	1796		1652	3368	1351	1684	4702		1635	4980	1422
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.22	1.00		0.14	1.00	1.00
Satd. Flow (perm)	3143	1796		1652	3368	1351	392	4702		246	4980	1422
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	369	341	39	64	189	75	32	920	135	160	1078	452
RTOR Reduction (vph)	0	4	0	0	0	60	0	16	0	0	0	184
Lane Group Flow (vph)	369	376	0	64	189	15	32	1039	0	160	1078	268
Confl. Peds. (#/hr)	2					2	4		5	5		4
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	4%	3%	3%	2%	6%	10%	0%	7%	5%	3%	3%	4%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	15.0	25.7		7.6	18.3	18.3	34.5	30.4		44.8	36.7	36.7
Effective Green, g (s)	15.0	25.7		7.6	18.3	18.3	34.5	30.4		44.8	36.7	36.7
Actuated g/C Ratio	0.16	0.27		0.08	0.19	0.19	0.37	0.32		0.48	0.39	0.39
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	501	490		133	654	262	200	1519		270	1942	554
v/s Ratio Prot	c0.12	c0.21		0.04	0.06		0.01	c0.22		c0.07	0.22	
v/s Ratio Perm						0.01	0.05			0.22		0.19
v/c Ratio	0.74	0.77		0.48	0.29	0.06	0.16	0.68		0.59	0.56	0.48
Uniform Delay, d1	37.7	31.5		41.4	32.3	30.9	19.3	27.7		16.3	22.3	21.6
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	5.6	7.1		2.7	0.2	0.1	0.4	2.5		3.5	1.1	3.0
Delay (s)	43.3	38.6		44.1	32.6	31.0	19.7	30.2		19.7	23.5	24.6
Level of Service	D	D		D	C	C	B	C		B	C	C
Approach Delay (s/veh)		40.9			34.5			29.9			23.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

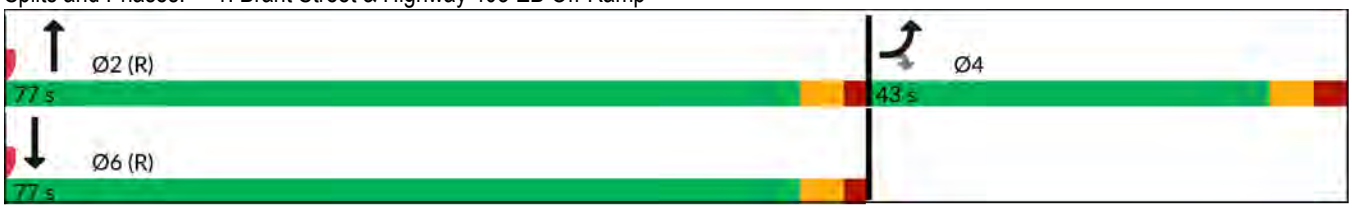
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	230	212	1564	1428
Future Volume (vph)	230	212	1564	1428
Lane Group Flow (vph)	315	146	1629	1488
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	77.0	77.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	16.7	16.7	90.3	90.3
Actuated g/C Ratio	0.14	0.14	0.75	0.75
v/c Ratio	0.68	0.66	0.43	0.39
Control Delay (s/veh)	50.6	50.7	6.2	5.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.6	50.7	6.2	5.9
LOS	D	D	A	A
Approach Delay (s/veh)	50.6		6.2	5.9
Approach LOS	D		A	A
Queue Length 50th (m)	34.4	28.7	45.5	40.0
Queue Length 95th (m)	47.0	51.2	68.1	60.0
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	952	432	3820	3820
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.34	0.43	0.39

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 11.8	Intersection LOS: B
Intersection Capacity Utilization 49.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	212	0	1564	1428	0
Future Volume (vph)	230	212	0	1564	1428	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3094	1358		5079	5079	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3094	1358		5079	5079	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	240	221	0	1629	1488	0
RTOR Reduction (vph)	31	31	0	0	0	0
Lane Group Flow (vph)	284	115	0	1629	1488	0
Confl. Peds. (#/hr)			4			4
Heavy Vehicles (%)	4%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.7	16.7		90.3	90.3	
Effective Green, g (s)	16.7	16.7		90.3	90.3	
Actuated g/C Ratio	0.14	0.14		0.75	0.75	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	430	188		3821	3821	
v/s Ratio Prot	c0.09			c0.32	0.29	
v/s Ratio Perm		0.08				
v/c Ratio	0.66	0.61		0.43	0.39	
Uniform Delay, d1	49.0	48.6		5.4	5.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	5.8		0.3	0.3	
Delay (s)	52.7	54.4		5.8	5.5	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	53.3			5.8	5.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	10	0	2066	9	15	1616	0
Future Vol, veh/h	0	0	0	3	0	10	0	2066	9	15	1616	0
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	10	0	2	0	0	1	0
Mvmt Flow	0	0	0	3	0	11	0	2175	9	16	1701	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2606	3921	854	2893	3917	1093	1704	0	0	2185	0	0
Stage 1	1736	1736	-	2181	2181	-	-	-	-	-	-	-
Stage 2	870	2185	-	712	1736	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.3	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	4	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	27	3	263	18	3	169	180	-	-	103	-	-
Stage 1	61	143	-	29	85	-	-	-	-	-	-	-
Stage 2	287	85	-	358	143	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	3	262	16	3	169	180	-	-	103	-	-
Mov Cap-2 Maneuver	22	3	-	16	3	-	-	-	-	-	-	-
Stage 1	61	121	-	29	85	-	-	-	-	-	-	-
Stage 2	269	85	-	302	121	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	95.1	0	0.4
HCM LOS	A	F		

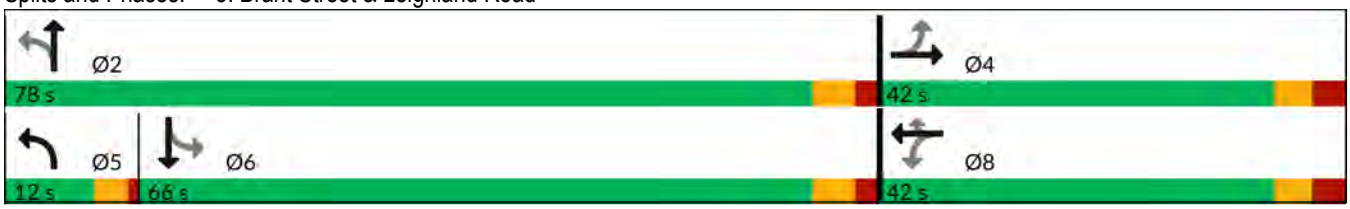
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	180	-	-	-	53	103	-	-
HCM Lane V/C Ratio	-	-	-	-	0.258	0.153	-	-
HCM Control Delay (s/veh)	0	-	-	0	95.1	46.2	-	-
HCM Lane LOS	A	-	-	A	F	E	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0.9	0.5	-	-

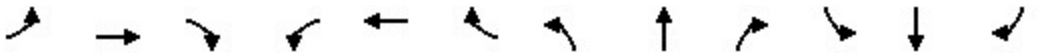


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	2	7	1	10	36	1992	6	1542
Future Volume (vph)	66	2	7	1	10	36	1992	6	1542
Lane Group Flow (vph)	69	57	0	8	11	38	2101	6	1690
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	78.0	66.0	66.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	10.0%	65.0%	55.0%	55.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.1	10.1		10.1	10.1	45.6	45.6	39.5	39.5
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.73	0.73	0.63	0.63
v/c Ratio	0.33	0.20		0.05	0.04	0.13	0.57	0.07	0.53
Control Delay (s/veh)	30.8	10.8		26.3	0.2	4.6	6.6	11.8	10.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.8	10.8		26.3	0.2	4.6	6.6	11.8	10.9
LOS	C	B		C	A	A	A	B	B
Approach Delay (s/veh)		21.8		11.2			6.6		10.9
Approach LOS		C		B			A		B
Queue Length 50th (m)	7.6	0.2		0.9	0.0	1.2	45.0	0.4	54.5
Queue Length 95th (m)	21.5	10.0		4.8	0.0	4.2	72.5	2.7	81.6
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	776	897		634	907	316	4941	130	4621
Starvation Cap Reductn	0	0		0	0	0	578	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.06		0.01	0.01	0.12	0.48	0.05	0.37

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 62.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 8.9		Intersection LOS: A	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

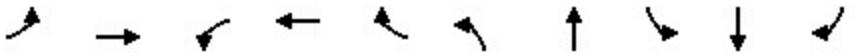




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	52	7	1	10	36	1992	4	6	1542	64
Future Volume (vph)	66	2	52	7	1	10	36	1992	4	6	1542	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1651	1475			1439	1486	1636	5027		1266	4997	
Flt Permitted	0.75	1.00			0.71	1.00	0.10	1.00		0.11	1.00	
Satd. Flow (perm)	1307	1475			1070	1486	164	5027		141	4997	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	2	55	7	1	11	38	2097	4	6	1623	67
RTOR Reduction (vph)	0	48	0	0	0	10	0	0	0	0	3	0
Lane Group Flow (vph)	69	9	0	0	8	1	38	2101	0	6	1687	0
Confl. Peds. (#/hr)	1		5	5		1	6		4	4		6
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	100%	4%	14%	100%	0%	3%	2%	0%	33%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	7.8	7.8			7.8	7.8	45.8	45.8		37.9	37.9	
Effective Green, g (s)	7.8	7.8			7.8	7.8	45.8	45.8		37.9	37.9	
Actuated g/C Ratio	0.12	0.12			0.12	0.12	0.70	0.70		0.58	0.58	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	155	175			127	176	202	3509		81	2886	
v/s Ratio Prot		0.01					0.01	c0.42			0.34	
v/s Ratio Perm	c0.05				0.01	0.00	0.12			0.04		
v/c Ratio	0.45	0.05			0.06	0.01	0.19	0.60		0.07	0.58	
Uniform Delay, d1	26.9	25.6			25.7	25.5	4.6	5.1		6.1	8.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.1			0.2	0.0	0.5	0.3		0.4	0.3	
Delay (s)	28.9	25.7			25.9	25.5	5.0	5.4		6.5	9.1	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		27.5			25.7			5.4			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



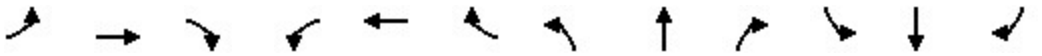
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	519	210	111	818	368	48	1011	104	864	693
Future Volume (vph)	519	210	111	818	368	48	1011	104	864	693
Lane Group Flow (vph)	535	283	114	843	379	49	1122	107	891	714
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	30.0	38.0	30.0	38.0	38.0	11.0	41.0	11.0	41.0	41.0
Total Split (%)	25.0%	31.7%	25.0%	31.7%	31.7%	9.2%	34.2%	9.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	23.1	40.7	13.3	30.9	30.9	44.1	35.1	45.0	37.5	37.5
Actuated g/C Ratio	0.20	0.35	0.11	0.27	0.27	0.38	0.30	0.39	0.32	0.32
v/c Ratio	0.83	0.46	0.60	0.91	0.78	0.22	0.75	0.66	0.55	0.87
Control Delay (s/veh)	56.9	31.3	62.3	55.9	38.1	24.6	40.6	44.1	35.3	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.9	31.3	62.3	55.9	38.1	24.6	40.6	44.1	35.3	24.2
LOS	E	C	E	E	D	C	D	D	D	C
Approach Delay (s/veh)		48.0		51.4			39.9		31.2	
Approach LOS		D		D			D		C	
Queue Length 50th (m)	64.6	49.6	27.0	104.6	57.5	7.2	91.0	16.5	68.4	53.9
Queue Length 95th (m)	85.0	81.2	45.1	#143.4	#106.2	15.8	110.6	#36.3	84.7	#143.5
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	726	617	374	967	500	222	1492	162	1624	817
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	1
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	0.74	0.46	0.30	0.87	0.76	0.22	0.75	0.66	0.55	0.88

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 116.1		
Natural Cycle: 105		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.91		
Intersection Signal Delay (s/veh): 41.3	Intersection LOS: D	
Intersection Capacity Utilization 86.1%	ICU Level of Service E	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		

Queue shown is maximum after two cycles.

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	519	210	65	111	818	368	48	1011	78	104	864	693
Future Volume (vph)	519	210	65	111	818	368	48	1011	78	104	864	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3236	1739		1668	3500	1468	1651	4917		1620	5029	1450
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.22	1.00		0.12	1.00	1.00
Satd. Flow (perm)	3236	1739		1668	3500	1468	384	4917		198	5029	1450
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	535	216	67	114	843	379	49	1042	80	107	891	714
RTOR Reduction (vph)	0	8	0	0	0	96	0	7	0	0	0	351
Lane Group Flow (vph)	535	275	0	114	843	283	49	1115	0	107	891	363
Confl. Peds. (#/hr)	2		5	5		2	11		4	4		11
Confl. Bikes (#/hr)						3						4
Heavy Vehicles (%)	1%	4%	3%	1%	2%	1%	2%	3%	4%	4%	2%	1%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	23.1	40.7		13.3	30.9	30.9	41.5	36.0		44.5	37.5	37.5
Effective Green, g (s)	23.1	40.7		13.3	30.9	30.9	41.5	36.0		44.5	37.5	37.5
Actuated g/C Ratio	0.20	0.35		0.11	0.26	0.26	0.35	0.31		0.38	0.32	0.32
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	638	604		189	924	387	195	1512		160	1611	464
v/s Ratio Prot	c0.17	0.16		0.07	c0.24		0.01	0.23		c0.04	0.18	
v/s Ratio Perm						0.19	0.08			0.21		c0.25
v/c Ratio	0.84	0.45		0.60	0.91	0.73	0.25	0.74		0.67	0.55	0.78
Uniform Delay, d1	45.2	29.6		49.3	41.7	39.2	25.6	36.3		26.2	32.8	36.1
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	9.4	0.5		5.3	13.0	6.9	0.7	3.3		10.1	1.4	12.4
Delay (s)	54.6	30.1		54.7	54.8	46.2	26.3	39.5		36.4	34.2	48.5
Level of Service	D	C		D	D	D	C	D		D	C	D
Approach Delay (s/veh)		46.1			52.3			39.0			40.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	117.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

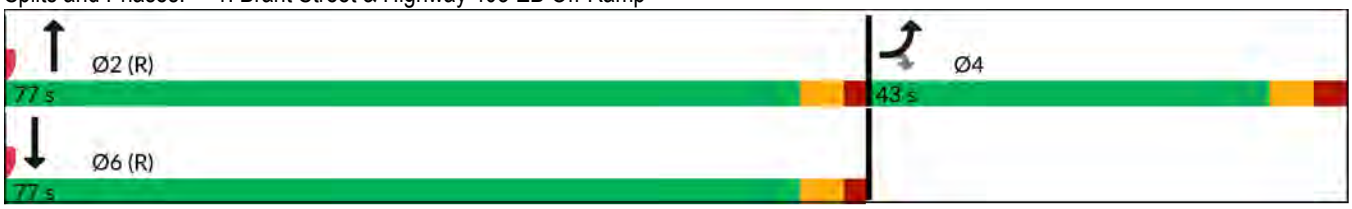
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	260	240	1727	1577
Future Volume (vph)	260	240	1727	1577
Lane Group Flow (vph)	356	165	1799	1643
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	77.0	77.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	19.0	19.0	88.0	88.0
Actuated g/C Ratio	0.16	0.16	0.73	0.73
v/c Ratio	0.70	0.70	0.48	0.44
Control Delay (s/veh)	51.3	55.6	7.6	7.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.3	55.6	7.6	7.2
LOS	D	E	A	A
Approach Delay (s/veh)	52.7		7.6	7.2
Approach LOS	D		A	A
Queue Length 50th (m)	40.8	36.8	57.3	50.0
Queue Length 95th (m)	53.0	59.6	86.3	75.5
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	945	424	3724	3724
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.48	0.44

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay (s/veh): 13.3	Intersection LOS: B
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	260	240	0	1727	1577	0
Future Volume (vph)	260	240	0	1727	1577	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3094	1358		5079	5079	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3094	1358		5079	5079	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	271	250	0	1799	1643	0
RTOR Reduction (vph)	21	21	0	0	0	0
Lane Group Flow (vph)	335	144	0	1799	1643	0
Confl. Peds. (#/hr)			4			4
Heavy Vehicles (%)	4%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	19.0	19.0		88.0	88.0	
Effective Green, g (s)	19.0	19.0		88.0	88.0	
Actuated g/C Ratio	0.16	0.16		0.73	0.73	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	489	215		3724	3724	
v/s Ratio Prot	c0.11			c0.35	0.32	
v/s Ratio Perm		0.11				
v/c Ratio	0.68	0.67		0.48	0.44	
Uniform Delay, d1	47.7	47.5		6.6	6.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.0	7.7		0.5	0.4	
Delay (s)	51.6	55.2		7.1	6.7	
Level of Service	D	E		A	A	
Approach Delay (s/veh)	52.8			7.1	6.7	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	10	0	2281	9	15	1784	0
Future Vol, veh/h	0	0	0	3	0	10	0	2281	9	15	1784	0
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	10	0	2	0	0	1	0
Mvmt Flow	0	0	0	3	0	11	0	2401	9	16	1878	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2873	4324	942	3190	4320	1206	1881	0	0	2411	0	0
Stage 1	1913	1913	-	2407	2407	-	-	-	-	-	-	-
Stage 2	960	2411	-	783	1913	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.3	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	4	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	18	2	230	11	2	142	147	-	-	79	-	-
Stage 1	46	117	-	20	65	-	-	-	-	-	-	-
Stage 2	252	65	-	324	117	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	14	2	229	9	2	142	147	-	-	79	-	-
Mov Cap-2 Maneuver	14	2	-	9	2	-	-	-	-	-	-	-
Stage 1	46	93	-	20	65	-	-	-	-	-	-	-
Stage 2	233	65	-	258	93	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	184.3	0	0.5
HCM LOS	A	F		

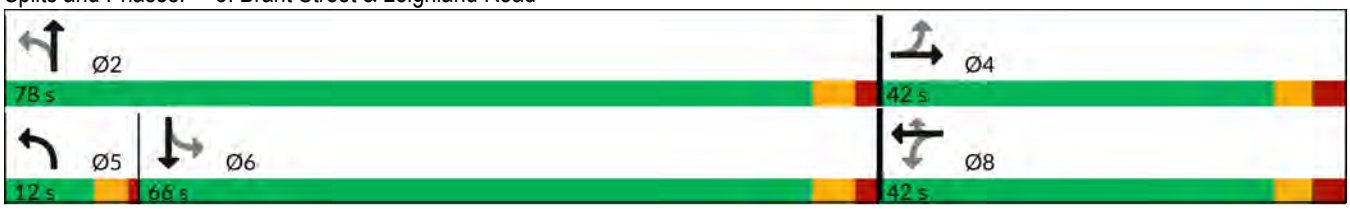
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	147	-	-	-	32	79	-	-
HCM Lane V/C Ratio	-	-	-	-	0.428	0.2	-	-
HCM Control Delay (s/veh)	0	-	-	0	184.3	61.6	-	-
HCM Lane LOS	A	-	-	A	F	F	-	-
HCM 95th %tile Q (veh)	0	-	-	-	1.4	0.7	-	-

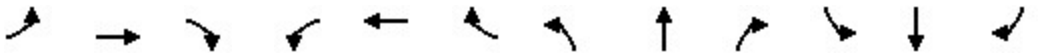


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	2	7	1	10	36	2199	6	1702
Future Volume (vph)	66	2	7	1	10	36	2199	6	1702
Lane Group Flow (vph)	69	57	0	8	11	38	2319	6	1859
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	78.0	66.0	66.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	10.0%	65.0%	55.0%	55.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.6	10.6		10.6	10.6	50.0	50.1	44.1	44.1
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.75	0.75	0.66	0.66
v/c Ratio	0.33	0.20		0.05	0.04	0.14	0.62	0.07	0.57
Control Delay (s/veh)	33.7	11.5		28.9	0.3	4.6	6.9	11.7	10.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (s/veh)	33.7	11.5		28.9	0.3	4.6	7.0	11.7	10.9
LOS	C	B		C	A	A	A	B	B
Approach Delay (s/veh)		23.6		12.3			7.0		10.9
Approach LOS		C		B			A		B
Queue Length 50th (m)	8.2	0.3		0.9	0.0	1.2	55.2	0.4	64.0
Queue Length 95th (m)	22.9	10.3		5.1	0.0	4.3	87.6	2.7	94.1
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	732	849		598	859	297	4849	110	4340
Starvation Cap Reductn	0	0		0	0	0	655	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.07		0.01	0.01	0.13	0.55	0.05	0.43

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 67.1	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 9.2	Intersection LOS: A
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Brant Street & Leighland Road

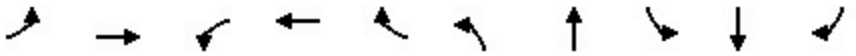




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	52	7	1	10	36	2199	4	6	1702	64
Future Volume (vph)	66	2	52	7	1	10	36	2199	4	6	1702	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1651	1475			1439	1485	1636	5027		1266	5000	
Flt Permitted	0.75	1.00			0.71	1.00	0.09	1.00		0.09	1.00	
Satd. Flow (perm)	1307	1475			1070	1485	149	5027		126	5000	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	2	55	7	1	11	38	2315	4	6	1792	67
RTOR Reduction (vph)	0	49	0	0	0	10	0	0	0	0	3	0
Lane Group Flow (vph)	69	8	0	0	8	1	38	2319	0	6	1856	0
Confl. Peds. (#/hr)	1		5	5		1	6		4	4		6
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	100%	4%	14%	100%	0%	3%	2%	0%	33%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.1	8.1			8.1	8.1	50.2	50.2		42.3	42.3	
Effective Green, g (s)	8.1	8.1			8.1	8.1	50.2	50.2		42.3	42.3	
Actuated g/C Ratio	0.12	0.12			0.12	0.12	0.71	0.71		0.60	0.60	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	150	169			123	171	188	3589		75	3008	
v/s Ratio Prot		0.01					0.01	c0.46			0.37	
v/s Ratio Perm	c0.05				0.01	0.00	0.13			0.05		
v/c Ratio	0.46	0.05			0.07	0.01	0.20	0.65		0.08	0.62	
Uniform Delay, d1	29.1	27.7			27.7	27.5	5.0	5.3		5.9	8.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.1			0.2	0.0	0.5	0.4		0.5	0.4	
Delay (s)	31.3	27.8			27.9	27.6	5.5	5.7		6.3	9.3	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		29.7			27.7			5.7			9.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



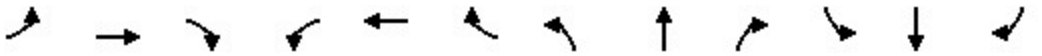
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	519	232	111	903	368	48	1116	104	954	693
Future Volume (vph)	519	232	111	903	368	48	1116	104	954	693
Lane Group Flow (vph)	535	306	114	931	379	49	1231	107	984	714
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	30.0	38.0	30.0	38.0	38.0	11.0	41.0	11.0	41.0	41.0
Total Split (%)	25.0%	31.7%	25.0%	31.7%	31.7%	9.2%	34.2%	9.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	23.2	41.9	13.3	32.0	32.0	44.0	35.0	44.9	37.3	37.3
Actuated g/C Ratio	0.20	0.36	0.11	0.27	0.27	0.38	0.30	0.38	0.32	0.32
v/c Ratio	0.84	0.49	0.60	0.97	0.77	0.25	0.83	0.69	0.62	0.89
Control Delay (s/veh)	57.6	32.1	62.7	66.4	37.3	25.3	44.5	47.6	36.9	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
Total Delay (s/veh)	57.6	32.1	62.7	66.4	37.3	25.3	44.5	47.6	37.2	26.3
LOS	E	C	E	E	D	C	D	D	D	C
Approach Delay (s/veh)		48.3		58.4			43.7		33.5	
Approach LOS		D		E			D		C	
Queue Length 50th (m)	64.6	55.0	27.0	119.6	57.8	7.2	102.8	16.5	77.3	58.2
Queue Length 95th (m)	85.0	88.8	45.1	#167.8	#106.6	15.8	123.9	#38.8	94.8	#148.0
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	718	630	370	955	495	197	1475	155	1600	804
Starvation Cap Reductn	0	0	0	0	0	0	0	0	163	1
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	0.75	0.49	0.31	0.97	0.77	0.25	0.83	0.69	0.68	0.89

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 117.3		
Natural Cycle: 105		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.97		
Intersection Signal Delay (s/veh): 44.9	Intersection LOS: D	
Intersection Capacity Utilization 88.3%	ICU Level of Service E	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		

Queue shown is maximum after two cycles.

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	519	232	65	111	903	368	48	1116	78	104	954	693
Future Volume (vph)	519	232	65	111	903	368	48	1116	78	104	954	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3236	1744		1668	3500	1468	1651	4923		1620	5029	1449
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.18	1.00		0.11	1.00	1.00
Satd. Flow (perm)	3236	1744		1668	3500	1468	313	4923		183	5029	1449
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	535	239	67	114	931	379	49	1151	80	107	984	714
RTOR Reduction (vph)	0	7	0	0	0	95	0	6	0	0	0	345
Lane Group Flow (vph)	535	299	0	114	931	284	49	1225	0	107	984	369
Confl. Peds. (#/hr)	2		5	5		2	11		4	4		11
Confl. Bikes (#/hr)						3						4
Heavy Vehicles (%)	1%	4%	3%	1%	2%	1%	2%	3%	4%	4%	2%	1%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	23.2	41.9		13.3	32.0	32.0	41.3	35.8		44.3	37.3	37.3
Effective Green, g (s)	23.2	41.9		13.3	32.0	32.0	41.3	35.8		44.3	37.3	37.3
Actuated g/C Ratio	0.20	0.36		0.11	0.27	0.27	0.35	0.30		0.38	0.32	0.32
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	636	619		188	949	398	171	1493		153	1589	458
v/s Ratio Prot	c0.17	0.17		0.07	c0.27		0.01	0.25		c0.04	0.20	
v/s Ratio Perm						0.19	0.09			0.22		c0.25
v/c Ratio	0.84	0.48		0.61	0.98	0.71	0.29	0.82		0.70	0.62	0.81
Uniform Delay, d1	45.6	29.6		49.9	42.7	38.9	26.5	38.1		27.5	34.3	37.0
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	9.8	0.6		5.4	24.5	6.0	0.9	5.2		13.1	1.8	14.1
Delay (s)	55.4	30.2		55.3	67.2	44.8	27.4	43.3		40.6	36.1	51.1
Level of Service	E	C		E	E	D	C	D		D	D	D
Approach Delay (s/veh)		46.3			60.3			42.7			42.3	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

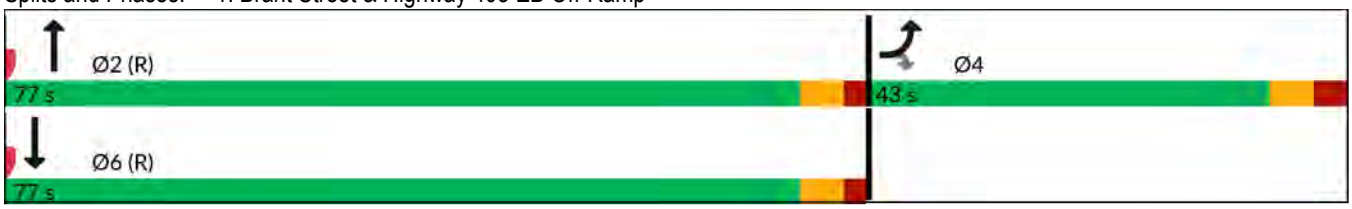
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	294	272	1907	1741
Future Volume (vph)	294	272	1907	1741
Lane Group Flow (vph)	402	187	1986	1814
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	77.0	77.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	21.6	21.6	85.4	85.4
Actuated g/C Ratio	0.18	0.18	0.71	0.71
v/c Ratio	0.71	0.73	0.55	0.50
Control Delay (s/veh)	50.8	58.1	9.5	8.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.8	58.1	9.5	8.9
LOS	D	E	A	A
Approach Delay (s/veh)	53.1		9.5	8.9
Approach LOS	D		A	A
Queue Length 50th (m)	47.2	44.9	73.6	63.7
Queue Length 95th (m)	58.9	67.6	111.8	97.3
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	938	418	3615	3615
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.45	0.55	0.50

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 15.1	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	294	272	0	1907	1741	0
Future Volume (vph)	294	272	0	1907	1741	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3094	1358		5079	5079	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3094	1358		5079	5079	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	306	283	0	1986	1814	0
RTOR Reduction (vph)	13	13	0	0	0	0
Lane Group Flow (vph)	389	174	0	1986	1814	0
Confl. Peds. (#/hr)			4			4
Heavy Vehicles (%)	4%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	21.6	21.6		85.4	85.4	
Effective Green, g (s)	21.6	21.6		85.4	85.4	
Actuated g/C Ratio	0.18	0.18		0.71	0.71	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	556	244		3614	3614	
v/s Ratio Prot	0.13			c0.39	0.36	
v/s Ratio Perm		c0.13				
v/c Ratio	0.70	0.71		0.55	0.50	
Uniform Delay, d1	46.2	46.3		8.2	7.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	9.4		0.6	0.5	
Delay (s)	50.0	55.7		8.8	8.3	
Level of Service	D	E		A	A	
Approach Delay (s/veh)	51.8			8.8	8.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	10	0	2518	9	15	1970	0
Future Vol, veh/h	0	0	0	3	0	10	0	2518	9	15	1970	0
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	10	0	2	0	0	1	0
Mvmt Flow	0	0	0	3	0	11	0	2651	9	16	2074	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3169	4770	1040	3519	4766	1331	2077	0	0	2661	0	0
Stage 1	2109	2109	-	2657	2657	-	-	-	-	-	-	-
Stage 2	1060	2661	-	862	2109	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.3	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	4	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	12	1	198	7	1	116	117	-	-	59	-	-
Stage 1	33	93	-	13	48	-	-	-	-	-	-	-
Stage 2	219	48	-	290	93	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	9	1	198	6	1	116	117	-	-	59	-	-
Mov Cap-2 Maneuver	9	1	-	6	1	-	-	-	-	-	-	-
Stage 1	33	68	-	13	48	-	-	-	-	-	-	-
Stage 2	199	48	-	211	68	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	$ 313.9	0	0.7
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	117	-	-	-	22	59	-	-
HCM Lane V/C Ratio	-	-	-	-	0.622	0.268	-	-
HCM Control Delay (s/veh)	0	-	-	0	$ 313.9	87	-	-
HCM Lane LOS	A	-	-	A	F	F	-	-
HCM 95th %tile Q (veh)	0	-	-	-	1.8	0.9	-	-

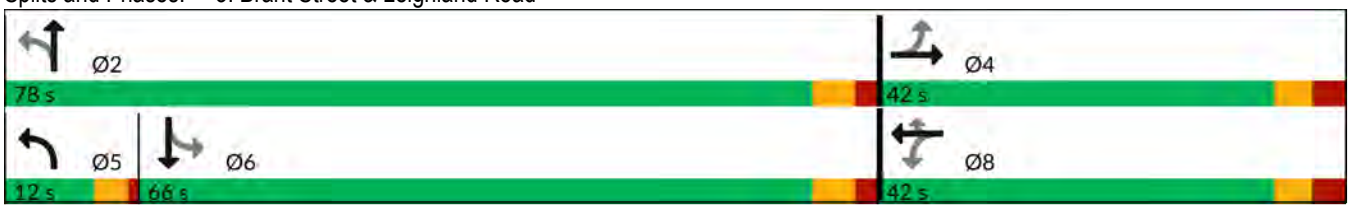
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

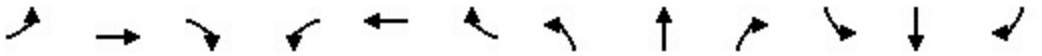


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	2	7	1	10	36	2428	6	1879
Future Volume (vph)	66	2	7	1	10	36	2428	6	1879
Lane Group Flow (vph)	69	57	0	8	11	38	2560	6	2045
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	78.0	66.0	66.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	10.0%	65.0%	55.0%	55.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	11.0	11.0		11.0	11.0	56.2	56.4	50.4	50.4
Actuated g/C Ratio	0.15	0.15		0.15	0.15	0.76	0.77	0.69	0.69
v/c Ratio	0.36	0.22		0.05	0.04	0.15	0.66	0.08	0.60
Control Delay (s/veh)	38.4	12.8		33.0	0.3	4.5	7.2	11.3	10.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (s/veh)	38.4	12.8		33.0	0.3	4.5	7.3	11.3	10.6
LOS	D	B		C	A	A	A	B	B
Approach Delay (s/veh)		26.8		14.1			7.3		10.6
Approach LOS		C		B			A		B
Queue Length 50th (m)	9.1	0.3		1.0	0.0	1.3	69.3	0.4	76.6
Queue Length 95th (m)	25.8	11.5		5.6	0.0	4.1	103.9	2.7	105.7
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	676	789		552	799	275	4660	87	4032
Starvation Cap Reductn	0	0		0	0	0	739	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.07		0.01	0.01	0.14	0.65	0.07	0.51

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 73.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 9.3		Intersection LOS: A	
Intersection Capacity Utilization 79.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

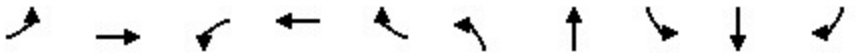




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	52	7	1	10	36	2428	4	6	1879	64
Future Volume (vph)	66	2	52	7	1	10	36	2428	4	6	1879	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1650	1474			1439	1485	1636	5028		1266	5002	
Flt Permitted	0.75	1.00			0.71	1.00	0.08	1.00		0.08	1.00	
Satd. Flow (perm)	1307	1474			1070	1485	131	5028		110	5002	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	2	55	7	1	11	38	2556	4	6	1978	67
RTOR Reduction (vph)	0	49	0	0	0	10	0	0	0	0	2	0
Lane Group Flow (vph)	69	8	0	0	8	1	38	2560	0	6	2043	0
Confl. Peds. (#/hr)	1		5	5		1	6		4	4		6
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	100%	4%	14%	100%	0%	3%	2%	0%	33%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.3	8.3			8.3	8.3	56.4	56.4		48.6	48.6	
Effective Green, g (s)	8.3	8.3			8.3	8.3	56.4	56.4		48.6	48.6	
Actuated g/C Ratio	0.11	0.11			0.11	0.11	0.74	0.74		0.63	0.63	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	141	159			115	160	170	3697		69	3169	
v/s Ratio Prot		0.01					0.01	c0.51			0.41	
v/s Ratio Perm	c0.05				0.01	0.00	0.15			0.05		
v/c Ratio	0.49	0.05			0.07	0.01	0.22	0.69		0.09	0.64	
Uniform Delay, d1	32.2	30.7			30.7	30.5	5.5	5.5		5.4	8.7	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	0.1			0.3	0.0	0.7	0.6		0.5	0.5	
Delay (s)	34.9	30.8			31.0	30.5	6.1	6.0		6.0	9.2	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		33.0			30.7			6.0			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

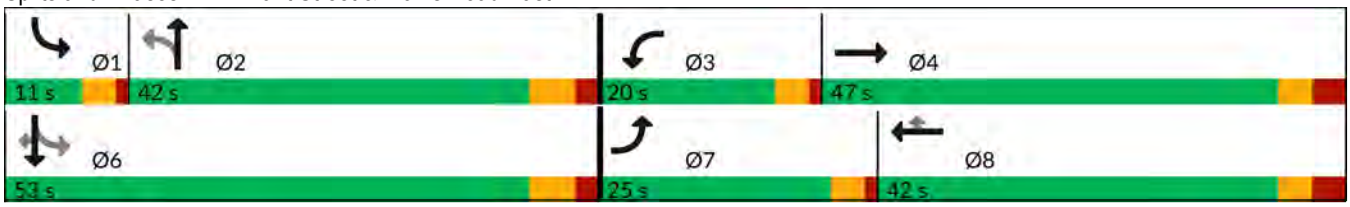


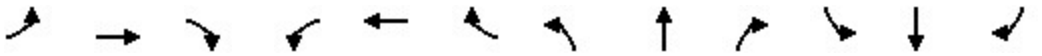
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	519	256	111	997	368	48	1232	104	1053	693
Future Volume (vph)	519	256	111	997	368	48	1232	104	1053	693
Lane Group Flow (vph)	535	331	114	1028	379	49	1350	107	1086	714
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8			2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	25.0	47.0	20.0	42.0	42.0	42.0	42.0	11.0	53.0	53.0
Total Split (%)	20.8%	39.2%	16.7%	35.0%	35.0%	35.0%	35.0%	9.2%	44.2%	44.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	21.0	44.1	12.9	36.0	36.0	36.0	36.0	49.0	47.0	47.0
Actuated g/C Ratio	0.18	0.37	0.11	0.30	0.30	0.30	0.30	0.41	0.39	0.39
v/c Ratio	0.95	0.51	0.64	0.98	0.71	0.42	0.91	0.69	0.55	0.91
Control Delay (s/veh)	75.7	32.5	66.9	65.1	31.7	46.9	50.4	47.5	29.6	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	11.4
Total Delay (s/veh)	75.7	32.5	66.9	65.1	31.7	46.9	50.4	47.5	30.5	45.7
LOS	E	C	E	E	C	D	D	D	C	D
Approach Delay (s/veh)		59.2		56.9			50.3		37.1	
Approach LOS		E		E			D		D	
Queue Length 50th (m)	68.2	61.4	27.4	132.7	54.3	9.7	117.4	16.6	75.6	95.8
Queue Length 95th (m)	#102.5	94.3	46.4	#179.1	92.6	23.6	#145.2	#37.3	90.3	#184.2
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	566	650	222	1050	535	117	1483	154	1969	784
Starvation Cap Reductn	0	0	0	0	0	0	0	0	545	67
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	0.95	0.51	0.51	0.98	0.71	0.42	0.91	0.69	0.76	1.00

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Natural Cycle: 95		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.98		
Intersection Signal Delay (s/veh): 49.0	Intersection LOS: D	
Intersection Capacity Utilization 93.3%	ICU Level of Service F	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		

Queue shown is maximum after two cycles.

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	519	256	65	111	997	368	48	1232	78	104	1053	693
Future Volume (vph)	519	256	65	111	997	368	48	1232	78	104	1053	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3236	1749		1668	3500	1468	1647	4928		1620	5029	1450
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.22	1.00		0.10	1.00	1.00
Satd. Flow (perm)	3236	1749		1668	3500	1468	390	4928		171	5029	1450
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	535	264	67	114	1028	379	49	1270	80	107	1086	714
RTOR Reduction (vph)	0	8	0	0	0	95	0	6	0	0	0	217
Lane Group Flow (vph)	535	323	0	114	1028	284	49	1344	0	107	1086	497
Confl. Peds. (#/hr)	2		5	5		2	11		4	4		11
Confl. Bikes (#/hr)						3						4
Heavy Vehicles (%)	1%	4%	3%	1%	2%	1%	2%	3%	4%	4%	2%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	21.0	44.1		12.9	36.0	36.0	36.0	36.0		47.0	47.0	47.0
Effective Green, g (s)	21.0	44.1		12.9	36.0	36.0	36.0	36.0		47.0	47.0	47.0
Actuated g/C Ratio	0.18	0.37		0.11	0.30	0.30	0.30	0.30		0.39	0.39	0.39
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0
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)	566	642		179	1050	440	117	1478		151	1969	567
v/s Ratio Prot	c0.17	0.18		0.07	c0.29			0.27		0.04	0.22	
v/s Ratio Perm						0.19	0.13			0.24		c0.34
v/c Ratio	0.95	0.50		0.64	0.98	0.65	0.42	0.91		0.71	0.55	0.88
Uniform Delay, d1	48.9	29.5		51.3	41.6	36.5	33.6	40.4		28.2	28.3	33.8
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	24.8	0.6		7.2	22.5	3.2	10.7	9.9		14.1	1.1	17.3
Delay (s)	73.7	30.1		58.5	64.1	39.7	44.3	50.3		42.3	29.4	51.1
Level of Service	E	C		E	E	D	D	D		D	C	D
Approach Delay (s/veh)		57.0			57.6			50.1			38.3	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX G

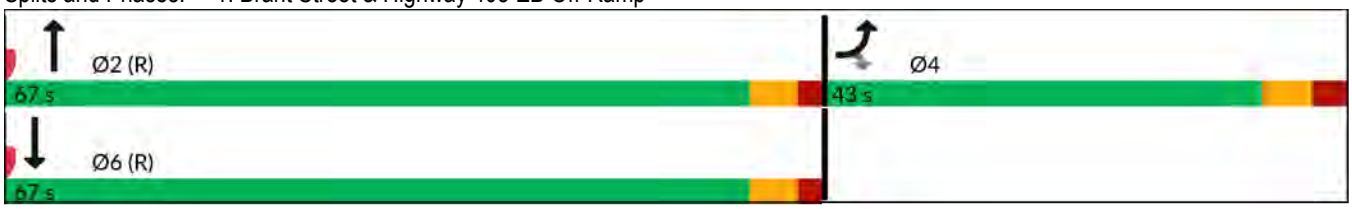
FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	141	197	962	1213
Future Volume (vph)	141	197	962	1213
Lane Group Flow (vph)	236	112	992	1251
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	67.0	67.0
Total Split (%)	39.1%	39.1%	60.9%	60.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	12.3	12.3	84.7	84.7
Actuated g/C Ratio	0.11	0.11	0.77	0.77
v/c Ratio	0.61	0.58	0.26	0.33
Control Delay (s/veh)	42.1	37.2	4.1	4.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.1	37.2	4.1	4.4
LOS	D	D	A	A
Approach Delay (s/veh)	40.5		4.1	4.4
Approach LOS	D		A	A
Queue Length 50th (m)	20.5	13.8	19.1	26.1
Queue Length 95th (m)	32.0	33.2	30.0	39.8
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	1041	466	3798	3762
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.24	0.26	0.33

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 49 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay (s/veh): 9.1	Intersection LOS: A
Intersection Capacity Utilization 42.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	141	197	0	962	1213	0
Future Volume (vph)	141	197	0	962	1213	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	0.99	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.94	0.85		1.00	1.00	
Flt Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3073	1313		4932	4885	
Flt Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3073	1313		4932	4885	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	145	203	0	992	1251	0
RTOR Reduction (vph)	47	47	0	0	0	0
Lane Group Flow (vph)	189	65	0	992	1251	0
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	1%	3%	0%	4%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.3	12.3		84.7	84.7	
Effective Green, g (s)	12.3	12.3		84.7	84.7	
Actuated g/C Ratio	0.11	0.11		0.77	0.77	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	343	146		3797	3761	
v/s Ratio Prot	c0.06			0.20	c0.26	
v/s Ratio Perm		0.05				
v/c Ratio	0.55	0.44		0.26	0.33	
Uniform Delay, d1	46.2	45.7		3.6	3.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	2.2		0.2	0.2	
Delay (s)	48.1	47.8		3.8	4.1	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	48.0			3.8	4.1	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	8	4	0	19	2	1337	8	14	1385	4
Future Vol, veh/h	11	0	8	4	0	19	2	1337	8	14	1385	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	21	4	0
Mvmt Flow	11	0	8	4	0	20	2	1393	8	15	1443	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2037	2882	725	2009	2880	702	1448	0	0	1402	0	0
Stage 1	1476	1476	-	1402	1402	-	-	-	-	-	-	-
Stage 2	561	1406	-	607	1478	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.72	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.31	-	-
Pot Cap-1 Maneuver	62	17	319	64	17	330	241	-	-	209	-	-
Stage 1	94	192	-	106	209	-	-	-	-	-	-	-
Stage 2	442	208	-	415	192	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	16	319	58	16	330	241	-	-	209	-	-
Mov Cap-2 Maneuver	55	16	-	58	16	-	-	-	-	-	-	-
Stage 1	93	178	-	105	207	-	-	-	-	-	-	-
Stage 2	412	206	-	375	178	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	60.6	27.8	0	0.2
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	241	-	-	84	182	209	-	-
HCM Lane V/C Ratio	0.009	-	-	0.236	0.132	0.07	-	-
HCM Control Delay (s/veh)	20.1	-	-	60.6	27.8	23.5	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q (veh)	0	-	-	0.8	0.4	0.2	-	-

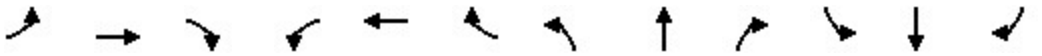


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	85	1	12	4	23	15	1229	7	1366
Future Volume (vph)	85	1	12	4	23	15	1229	7	1366
Lane Group Flow (vph)	89	53	0	17	24	16	1306	7	1460
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	68.0	56.0	56.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	10.9%	61.8%	50.9%	50.9%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.5	10.5		10.5	10.5	34.7	34.4	32.9	32.9
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.66	0.66	0.63	0.63
v/c Ratio	0.35	0.15		0.08	0.08	0.05	0.40	0.04	0.47
Control Delay (s/veh)	24.2	8.5		20.3	1.0	5.0	6.5	9.3	8.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.2	8.5		20.3	1.0	5.0	6.5	9.3	8.9
LOS	C	A		C	A	A	A	A	A
Approach Delay (s/veh)		18.3		9.0			6.5		8.9
Approach LOS		B		A			A		A
Queue Length 50th (m)	6.0	0.1		1.1	0.0	0.5	22.0	0.2	25.6
Queue Length 95th (m)	23.6	8.5		7.1	0.9	2.6	39.7	2.8	69.3
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	895	1107		792	888	378	4778	253	4553
Starvation Cap Reductn	0	0		0	0	0	221	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.05		0.02	0.03	0.04	0.29	0.03	0.32

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 52.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay (s/veh): 8.2		Intersection LOS: A	
Intersection Capacity Utilization 52.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

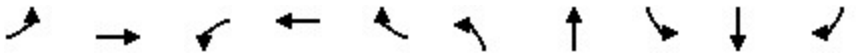




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1	49	12	4	23	15	1229	11	7	1366	21
Future Volume (vph)	85	1	49	12	4	23	15	1229	11	7	1366	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1551			1462	1236	1685	4918		1305	4914	
Flt Permitted	0.75	1.00			0.74	1.00	0.13	1.00		0.20	1.00	
Satd. Flow (perm)	1273	1551			1126	1236	222	4918		273	4914	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	52	13	4	24	16	1294	12	7	1438	22
RTOR Reduction (vph)	0	44	0	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	89	9	0	0	17	4	16	1305	0	7	1459	0
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	0%	2%	8%	75%	22%	0%	4%	18%	29%	4%	14%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.6	8.6			8.6	8.6	36.5	36.5		31.5	31.5	
Effective Green, g (s)	8.6	8.6			8.6	8.6	36.5	36.5		31.5	31.5	
Actuated g/C Ratio	0.15	0.15			0.15	0.15	0.64	0.64		0.55	0.55	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	191	233			169	186	167	3143		150	2710	
v/s Ratio Prot		0.01					0.00	c0.27			c0.30	
v/s Ratio Perm	c0.07				0.02	0.00	0.06			0.03		
v/c Ratio	0.47	0.04			0.10	0.02	0.10	0.42		0.05	0.54	
Uniform Delay, d1	22.2	20.7			20.9	20.7	4.5	5.1		5.9	8.2	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.1			0.3	0.0	0.3	0.1		0.1	0.2	
Delay (s)	23.9	20.8			21.2	20.7	4.8	5.1		6.0	8.4	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		22.8			20.9			5.1			8.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

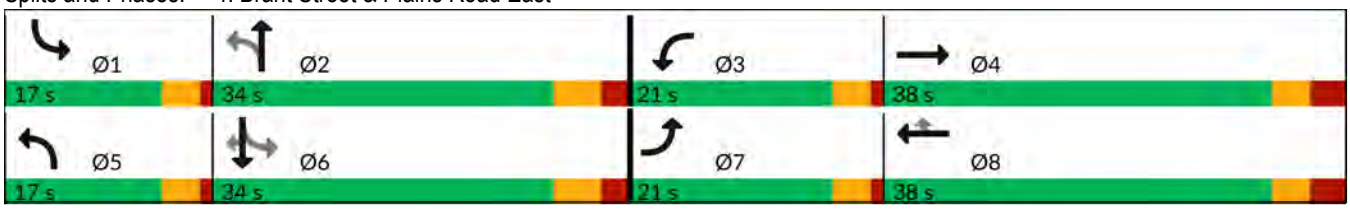
c Critical Lane Group

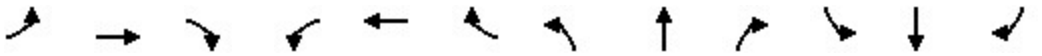


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	359	272	62	150	73	31	733	155	863	441
Future Volume (vph)	359	272	62	150	73	31	733	155	863	441
Lane Group Flow (vph)	370	319	64	155	75	32	891	160	890	455
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	21.0	38.0	21.0	38.0	38.0	17.0	34.0	17.0	34.0	34.0
Total Split (%)	19.1%	34.5%	19.1%	34.5%	34.5%	15.5%	30.9%	15.5%	30.9%	30.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	14.9	23.2	9.3	15.0	15.0	37.8	28.4	44.6	36.4	36.4
Actuated g/C Ratio	0.17	0.26	0.10	0.17	0.17	0.43	0.32	0.50	0.41	0.41
v/c Ratio	0.70	0.67	0.37	0.27	0.24	0.10	0.59	0.49	0.44	0.57
Control Delay (s/veh)	44.2	38.2	46.2	33.3	4.3	15.0	27.9	19.6	22.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.2	38.2	46.2	33.3	4.3	15.0	27.9	19.6	22.3	9.0
LOS	D	D	D	C	A	B	C	B	C	A
Approach Delay (s/veh)		41.4		28.7			27.5		18.0	
Approach LOS		D		C			C		B	
Queue Length 50th (m)	31.7	51.8	10.8	13.0	0.0	2.7	46.6	14.9	44.7	10.4
Queue Length 95th (m)	55.8	87.5	26.3	22.5	5.4	9.5	76.7	34.7	72.2	49.0
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	611	659	321	1232	563	433	1520	367	2040	798
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	0.61	0.48	0.20	0.13	0.13	0.07	0.59	0.44	0.44	0.57

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 88.8			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 26.2		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	272	38	62	150	73	31	733	131	155	863	441
Future Volume (vph)	359	272	38	62	150	73	31	733	131	155	863	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3143	1791		1652	3368	1352	1684	4686		1635	4980	1422
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.31	1.00		0.20	1.00	1.00
Satd. Flow (perm)	3143	1791		1652	3368	1352	544	4686		351	4980	1422
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	370	280	39	64	155	75	32	756	135	160	890	455
RTOR Reduction (vph)	0	4	0	0	0	62	0	21	0	0	0	221
Lane Group Flow (vph)	370	315	0	64	155	13	32	870	0	160	890	234
Confl. Peds. (#/hr)	2					2	4		5	5		4
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	4%	3%	3%	2%	6%	10%	0%	7%	5%	3%	3%	4%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	14.9	23.2		7.6	15.9	15.9	34.4	30.3		44.5	36.4	36.4
Effective Green, g (s)	14.9	23.2		7.6	15.9	15.9	34.4	30.3		44.5	36.4	36.4
Actuated g/C Ratio	0.16	0.25		0.08	0.17	0.17	0.38	0.33		0.49	0.40	0.40
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	512	455		137	586	235	256	1555		314	1985	566
v/s Ratio Prot	c0.12	c0.18		0.04	0.05		0.01	c0.19		c0.06	0.18	
v/s Ratio Perm						0.01	0.04			0.19		0.16
v/c Ratio	0.72	0.69		0.47	0.26	0.06	0.13	0.56		0.51	0.45	0.41
Uniform Delay, d1	36.2	30.8		39.9	32.6	31.4	18.1	25.0		14.3	20.1	19.8
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	5.0	4.5		2.5	0.2	0.1	0.2	1.5		1.3	0.7	2.2
Delay (s)	41.2	35.3		42.4	32.9	31.5	18.3	26.5		15.6	20.8	22.0
Level of Service	D	D		D	C	C	B	C		B	C	C
Approach Delay (s/veh)		38.5			34.6			26.2			20.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

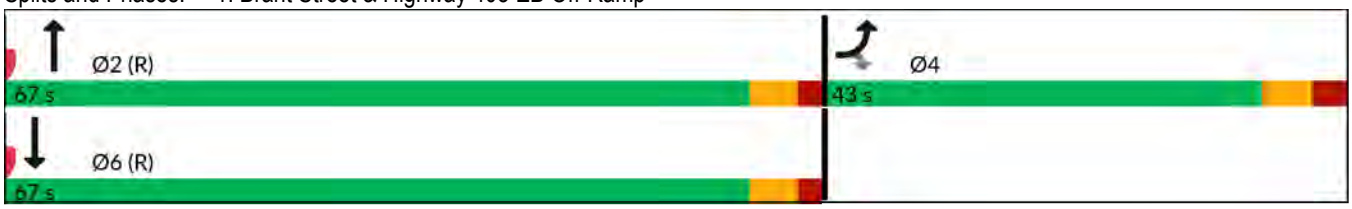
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	160	223	1062	1339
Future Volume (vph)	160	223	1062	1339
Lane Group Flow (vph)	269	126	1095	1380
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	67.0	67.0
Total Split (%)	39.1%	39.1%	60.9%	60.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	14.2	14.2	82.8	82.8
Actuated g/C Ratio	0.13	0.13	0.75	0.75
v/c Ratio	0.63	0.62	0.30	0.38
Control Delay (s/veh)	44.8	44.2	4.9	5.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.8	44.2	4.9	5.4
LOS	D	D	A	A
Approach Delay (s/veh)	44.6		4.9	5.4
Approach LOS	D		A	A
Queue Length 50th (m)	25.8	20.8	23.7	32.5
Queue Length 95th (m)	37.3	40.9	37.6	50.3
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	1031	455	3711	3676
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.28	0.30	0.38

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 49 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 10.6	Intersection LOS: B
Intersection Capacity Utilization 45.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	223	0	1062	1339	0
Future Volume (vph)	160	223	0	1062	1339	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	0.99	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.94	0.85		1.00	1.00	
Flt Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3073	1313		4932	4885	
Flt Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3073	1313		4932	4885	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	165	230	0	1095	1380	0
RTOR Reduction (vph)	33	33	0	0	0	0
Lane Group Flow (vph)	236	93	0	1095	1380	0
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	1%	3%	0%	4%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.2	14.2		82.8	82.8	
Effective Green, g (s)	14.2	14.2		82.8	82.8	
Actuated g/C Ratio	0.13	0.13		0.75	0.75	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	396	169		3712	3677	
v/s Ratio Prot	c0.08			0.22	c0.28	
v/s Ratio Perm		0.07				
v/c Ratio	0.60	0.55		0.29	0.38	
Uniform Delay, d1	45.2	44.9		4.3	4.7	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	3.6		0.2	0.3	
Delay (s)	47.6	48.5		4.5	5.0	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	47.9			4.5	5.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	8	4	0	19	2	1476	8	14	1529	4
Future Vol, veh/h	11	0	8	4	0	19	2	1476	8	14	1529	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	21	4	0
Mvmt Flow	11	0	8	4	0	20	2	1538	8	15	1593	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2245	3177	800	2214	3175	774	1598	0	0	1547	0	0
Stage 1	1626	1626	-	1547	1547	-	-	-	-	-	-	-
Stage 2	619	1551	-	667	1628	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.72	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.31	-	-
Pot Cap-1 Maneuver	46	11	285	48	11	296	203	-	-	175	-	-
Stage 1	73	162	-	83	177	-	-	-	-	-	-	-
Stage 2	408	177	-	381	162	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	10	285	43	10	296	203	-	-	175	-	-
Mov Cap-2 Maneuver	40	10	-	43	10	-	-	-	-	-	-	-
Stage 1	72	148	-	82	175	-	-	-	-	-	-	-
Stage 2	377	175	-	338	148	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	86.4	34.4	0	0.2
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	203	-	-	63	146	175	-	-
HCM Lane V/C Ratio	0.01	-	-	0.314	0.164	0.083	-	-
HCM Control Delay (s/veh)	22.9	-	-	86.4	34.4	27.4	-	-
HCM Lane LOS	C	-	-	F	D	D	-	-
HCM 95th %tile Q (veh)	0	-	-	1.1	0.6	0.3	-	-

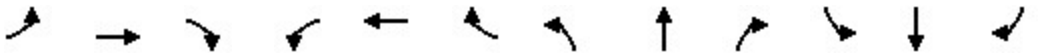


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	85	1	12	4	23	15	1357	7	1507
Future Volume (vph)	85	1	12	4	23	15	1357	7	1507
Lane Group Flow (vph)	89	53	0	17	24	16	1440	7	1608
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	68.0	56.0	56.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	10.9%	61.8%	50.9%	50.9%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.9	10.9		10.9	10.9	36.8	36.5	35.0	35.0
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.67	0.66	0.64	0.64
v/c Ratio	0.35	0.15		0.08	0.08	0.05	0.44	0.05	0.51
Control Delay (s/veh)	25.8	9.1		22.1	0.7	4.9	6.6	9.1	9.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.8	9.1		22.1	0.7	4.9	6.7	9.1	9.1
LOS	C	A		C	A	A	A	A	A
Approach Delay (s/veh)		19.6		9.6			6.6		9.1
Approach LOS		B		A			A		A
Queue Length 50th (m)	6.2	0.1		1.1	0.0	0.5	25.9	0.3	30.2
Queue Length 95th (m)	25.7	9.2		7.6	0.6	2.6	45.9	2.8	80.1
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	865	1072		766	861	354	4711	214	4426
Starvation Cap Reductn	0	0		0	0	0	269	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.05		0.02	0.03	0.05	0.32	0.03	0.36

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 54.9	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay (s/veh): 8.5	Intersection LOS: A
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Brant Street & Leighland Road

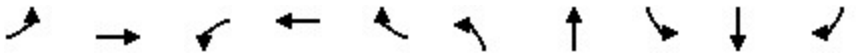




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1	49	12	4	23	15	1357	11	7	1507	21
Future Volume (vph)	85	1	49	12	4	23	15	1357	11	7	1507	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1551			1462	1236	1685	4919		1305	4915	
Flt Permitted	0.75	1.00			0.74	1.00	0.11	1.00		0.17	1.00	
Satd. Flow (perm)	1273	1551			1127	1236	189	4919		237	4915	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	52	13	4	24	16	1428	12	7	1586	22
RTOR Reduction (vph)	0	44	0	0	0	20	0	1	0	0	1	0
Lane Group Flow (vph)	89	9	0	0	17	4	16	1439	0	7	1607	0
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	0%	2%	8%	75%	22%	0%	4%	18%	29%	4%	14%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.9	8.9			8.9	8.9	38.6	38.6		33.6	33.6	
Effective Green, g (s)	8.9	8.9			8.9	8.9	38.6	38.6		33.6	33.6	
Actuated g/C Ratio	0.15	0.15			0.15	0.15	0.65	0.65		0.56	0.56	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	231			168	184	147	3191		133	2775	
v/s Ratio Prot		0.01					0.00	c0.29			c0.33	
v/s Ratio Perm	c0.07				0.02	0.00	0.07			0.03		
v/c Ratio	0.47	0.04			0.10	0.02	0.11	0.45		0.05	0.58	
Uniform Delay, d1	23.1	21.6			21.8	21.6	4.8	5.2		5.8	8.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.1			0.3	0.0	0.3	0.1		0.2	0.3	
Delay (s)	25.0	21.7			22.1	21.6	5.1	5.3		6.0	8.7	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		23.7			21.8			5.3			8.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

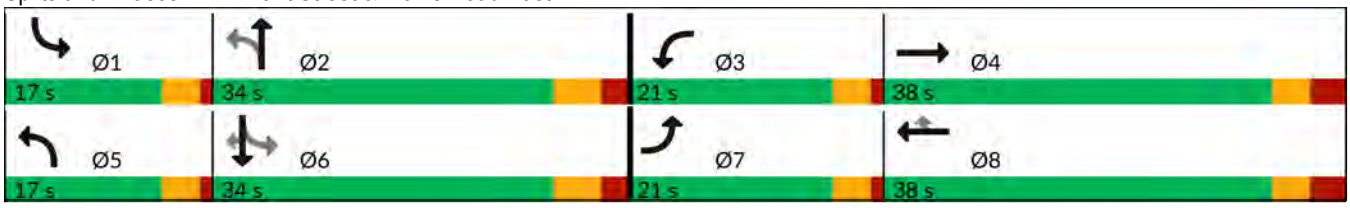
c Critical Lane Group

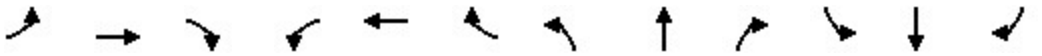


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	359	300	62	166	73	31	809	155	952	441
Future Volume (vph)	359	300	62	166	73	31	809	155	952	441
Lane Group Flow (vph)	370	348	64	171	75	32	969	160	981	455
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	21.0	38.0	21.0	38.0	38.0	17.0	34.0	17.0	34.0	34.0
Total Split (%)	19.1%	34.5%	19.1%	34.5%	34.5%	15.5%	30.9%	15.5%	30.9%	30.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	14.9	24.5	9.3	16.2	16.2	37.8	28.4	44.8	36.5	36.5
Actuated g/C Ratio	0.17	0.27	0.10	0.18	0.18	0.42	0.31	0.50	0.40	0.40
v/c Ratio	0.71	0.71	0.38	0.28	0.23	0.11	0.65	0.53	0.49	0.59
Control Delay (s/veh)	45.4	39.3	47.2	33.0	4.1	15.8	30.0	21.5	23.7	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.4	39.3	47.2	33.0	4.1	15.8	30.0	21.5	23.7	11.1
LOS	D	D	D	C	A	B	C	C	C	B
Approach Delay (s/veh)		42.4		29.0			29.6		19.9	
Approach LOS		D		C			C		B	
Queue Length 50th (m)	32.5	58.0	11.1	14.5	0.0	2.9	54.1	15.6	52.1	15.5
Queue Length 95th (m)	56.4	96.2	26.6	24.3	5.4	9.5	86.1	35.3	82.0	58.8
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	601	649	316	1213	556	401	1498	343	2016	773
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	0.62	0.54	0.20	0.14	0.13	0.08	0.65	0.47	0.49	0.59

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 90.2			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 27.8		Intersection LOS: C	
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	300	38	62	166	73	31	809	131	155	952	441
Future Volume (vph)	359	300	38	62	166	73	31	809	131	155	952	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3143	1793		1652	3368	1352	1684	4694		1635	4980	1422
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.26	1.00		0.17	1.00	1.00
Satd. Flow (perm)	3143	1793		1652	3368	1352	466	4694		298	4980	1422
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	370	309	39	64	171	75	32	834	135	160	981	455
RTOR Reduction (vph)	0	4	0	0	0	61	0	18	0	0	0	202
Lane Group Flow (vph)	370	344	0	64	171	14	32	951	0	160	981	253
Confl. Peds. (#/hr)	2					2	4		5	5		4
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	4%	3%	3%	2%	6%	10%	0%	7%	5%	3%	3%	4%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	14.9	24.5		7.6	17.2	17.2	34.4	30.3		44.6	36.5	36.5
Effective Green, g (s)	14.9	24.5		7.6	17.2	17.2	34.4	30.3		44.6	36.5	36.5
Actuated g/C Ratio	0.16	0.26		0.08	0.19	0.19	0.37	0.33		0.48	0.39	0.39
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	505	473		135	624	250	226	1534		291	1960	559
v/s Ratio Prot	c0.12	c0.19		0.04	0.05		0.01	c0.20		c0.06	0.20	
v/s Ratio Perm						0.01	0.05			0.20		0.18
v/c Ratio	0.73	0.73		0.47	0.27	0.06	0.14	0.62		0.55	0.50	0.45
Uniform Delay, d1	37.0	31.0		40.6	32.4	31.1	18.7	26.3		15.3	21.2	20.7
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	5.4	5.5		2.6	0.2	0.1	0.3	1.9		2.1	0.9	2.6
Delay (s)	42.4	36.5		43.3	32.6	31.2	19.0	28.2		17.4	22.1	23.3
Level of Service	D	D		D	C	C	B	C		B	C	C
Approach Delay (s/veh)		39.6			34.5			27.9			22.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

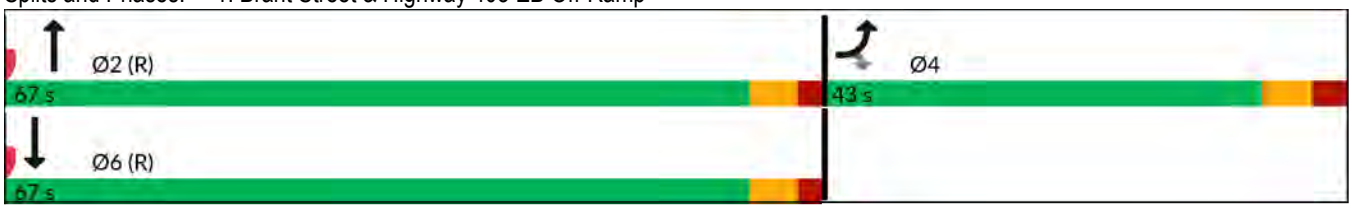
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	181	252	1172	1478
Future Volume (vph)	181	252	1172	1478
Lane Group Flow (vph)	304	143	1208	1524
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	67.0	67.0
Total Split (%)	39.1%	39.1%	60.9%	60.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	16.2	16.2	80.8	80.8
Actuated g/C Ratio	0.15	0.15	0.73	0.73
v/c Ratio	0.64	0.66	0.33	0.42
Control Delay (s/veh)	45.9	50.2	5.8	6.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.9	50.2	5.8	6.5
LOS	D	D	A	A
Approach Delay (s/veh)	47.3		5.8	6.5
Approach LOS	D		A	A
Queue Length 50th (m)	31.1	28.0	29.2	40.3
Queue Length 95th (m)	42.2	48.4	46.9	63.8
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	1023	447	3620	3586
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.32	0.33	0.42

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 49 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay (s/veh): 12.0	Intersection LOS: B
Intersection Capacity Utilization 49.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	252	0	1172	1478	0
Future Volume (vph)	181	252	0	1172	1478	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	0.99	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.94	0.85		1.00	1.00	
Flt Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3074	1314		4932	4885	
Flt Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3074	1314		4932	4885	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	187	260	0	1208	1524	0
RTOR Reduction (vph)	22	22	0	0	0	0
Lane Group Flow (vph)	282	121	0	1208	1524	0
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	1%	3%	0%	4%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.2	16.2		80.8	80.8	
Effective Green, g (s)	16.2	16.2		80.8	80.8	
Actuated g/C Ratio	0.15	0.15		0.73	0.73	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	452	193		3622	3588	
v/s Ratio Prot	0.09			0.24	c0.31	
v/s Ratio Perm		c0.09				
v/c Ratio	0.62	0.63		0.33	0.42	
Uniform Delay, d1	44.0	44.1		5.1	5.6	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	6.2		0.2	0.4	
Delay (s)	46.7	50.3		5.4	6.0	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	47.8			5.4	6.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	8	4	0	19	2	1630	8	14	1688	4
Future Vol, veh/h	11	0	8	4	0	19	2	1630	8	14	1688	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	4	25	21	4	0
Mvmt Flow	11	0	8	4	0	20	2	1698	8	15	1758	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2474	3502	882	2440	3500	854	1763	0	0	1707	0	0
Stage 1	1791	1791	-	1707	1707	-	-	-	-	-	-	-
Stage 2	683	1711	-	733	1793	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.1	5.3	-	-	5.72	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	3.9	3.1	-	-	3.31	-	-
Pot Cap-1 Maneuver	33	6	252	35	6	263	168	-	-	143	-	-
Stage 1	56	134	-	64	148	-	-	-	-	-	-	-
Stage 2	373	147	-	348	134	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	5	252	31	5	263	168	-	-	143	-	-
Mov Cap-2 Maneuver	28	5	-	31	5	-	-	-	-	-	-	-
Stage 1	55	120	-	63	146	-	-	-	-	-	-	-
Stage 2	341	145	-	301	120	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	137.1	44.8	0	0.3
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	168	-	-	45	114	143	-	-
HCM Lane V/C Ratio	0.012	-	-	0.44	0.21	0.102	-	-
HCM Control Delay (s/veh)	26.7	-	-	137.1	44.8	33	-	-
HCM Lane LOS	D	-	-	F	E	D	-	-
HCM 95th %tile Q (veh)	0	-	-	1.6	0.7	0.3	-	-

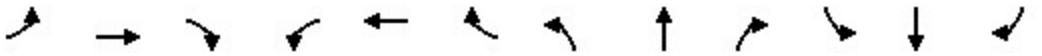


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	85	1	12	4	23	15	1498	7	1663
Future Volume (vph)	85	1	12	4	23	15	1498	7	1663
Lane Group Flow (vph)	89	53	0	17	24	16	1589	7	1773
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	68.0	56.0	56.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	10.9%	61.8%	50.9%	50.9%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	11.2	11.2		11.2	11.2	39.9	39.7	38.2	38.2
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.69	0.68	0.66	0.66
v/c Ratio	0.36	0.16		0.08	0.08	0.05	0.47	0.05	0.55
Control Delay (s/veh)	28.6	10.0		24.7	0.6	4.7	6.7	8.9	9.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.6	10.0		24.7	0.6	4.7	6.7	8.9	9.1
LOS	C	A		C	A	A	A	A	A
Approach Delay (s/veh)		21.6		10.6			6.6		9.1
Approach LOS		C		B			A		A
Queue Length 50th (m)	6.8	0.1		1.2	0.0	0.5	30.5	0.3	36.1
Queue Length 95th (m)	27.8	9.7		8.1	0.4	2.5	52.0	2.8	91.0
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	825	1025		730	825	339	4648	176	4287
Starvation Cap Reductn	0	0		0	0	0	310	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.05		0.02	0.03	0.05	0.37	0.04	0.41

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 58.2			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay (s/veh): 8.5		Intersection LOS: A	
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

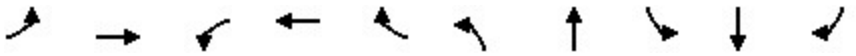




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1	49	12	4	23	15	1498	11	7	1663	21
Future Volume (vph)	85	1	49	12	4	23	15	1498	11	7	1663	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1551			1462	1236	1685	4921		1305	4917	
Flt Permitted	0.75	1.00			0.74	1.00	0.10	1.00		0.15	1.00	
Satd. Flow (perm)	1273	1551			1127	1236	174	4921		203	4917	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	1	52	13	4	24	16	1577	12	7	1751	22
RTOR Reduction (vph)	0	45	0	0	0	21	0	1	0	0	1	0
Lane Group Flow (vph)	89	8	0	0	17	3	16	1588	0	7	1772	0
Confl. Peds. (#/hr)									4	4		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	0%	2%	8%	75%	22%	0%	4%	18%	29%	4%	14%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	9.0	9.0			9.0	9.0	41.7	41.7		36.7	36.7	
Effective Green, g (s)	9.0	9.0			9.0	9.0	41.7	41.7		36.7	36.7	
Actuated g/C Ratio	0.14	0.14			0.14	0.14	0.67	0.67		0.59	0.59	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	182	222			161	177	139	3272		118	2878	
v/s Ratio Prot		0.01					0.00	c0.32			c0.36	
v/s Ratio Perm	c0.07				0.02	0.00	0.07			0.03		
v/c Ratio	0.49	0.04			0.11	0.02	0.12	0.49		0.06	0.62	
Uniform Delay, d1	24.7	23.1			23.3	23.1	5.0	5.2		5.6	8.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.1			0.3	0.0	0.4	0.1		0.2	0.4	
Delay (s)	26.8	23.2			23.6	23.1	5.4	5.3		5.8	8.8	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		25.5			23.3			5.3			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

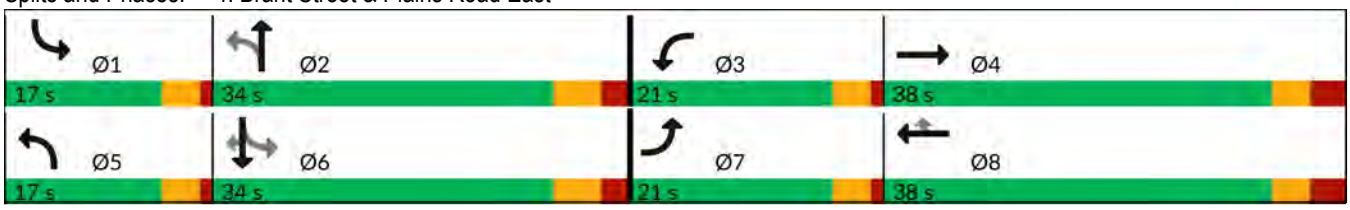
c Critical Lane Group

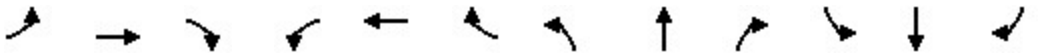


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	359	331	62	183	73	31	893	155	1051	441
Future Volume (vph)	359	331	62	183	73	31	893	155	1051	441
Lane Group Flow (vph)	370	380	64	189	75	32	1056	160	1084	455
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	21.0	38.0	21.0	38.0	38.0	17.0	34.0	17.0	34.0	34.0
Total Split (%)	19.1%	34.5%	19.1%	34.5%	34.5%	15.5%	30.9%	15.5%	30.9%	30.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	15.0	25.7	9.4	17.3	17.3	37.8	28.5	45.0	36.7	36.7
Actuated g/C Ratio	0.16	0.28	0.10	0.19	0.19	0.41	0.31	0.49	0.40	0.40
v/c Ratio	0.72	0.75	0.38	0.30	0.22	0.12	0.71	0.57	0.54	0.61
Control Delay (s/veh)	46.4	41.1	48.0	32.9	4.0	16.5	32.5	24.1	25.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.4	41.1	48.0	32.9	4.0	16.5	32.5	24.1	25.2	13.3
LOS	D	D	D	C	A	B	C	C	C	B
Approach Delay (s/veh)		43.7		29.2			32.0		21.9	
Approach LOS		D		C			C		C	
Queue Length 50th (m)	33.6	65.4	11.5	16.2	0.0	3.0	63.2	16.4	61.6	21.5
Queue Length 95th (m)	56.4	106.6	26.6	26.6	5.4	9.5	95.7	35.9	92.1	67.7
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	592	641	311	1195	549	370	1477	321	1994	749
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	0.63	0.59	0.21	0.16	0.14	0.09	0.71	0.50	0.54	0.61

Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 91.6			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 29.6		Intersection LOS: C	
Intersection Capacity Utilization 73.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	331	38	62	183	73	31	893	131	155	1051	441
Future Volume (vph)	359	331	38	62	183	73	31	893	131	155	1051	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3143	1796		1652	3368	1351	1684	4702		1635	4980	1422
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.22	1.00		0.14	1.00	1.00
Satd. Flow (perm)	3143	1796		1652	3368	1351	388	4702		246	4980	1422
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	370	341	39	64	189	75	32	921	135	160	1084	455
RTOR Reduction (vph)	0	4	0	0	0	60	0	16	0	0	0	184
Lane Group Flow (vph)	370	376	0	64	189	15	32	1040	0	160	1084	271
Confl. Peds. (#/hr)	2					2	4		5	5		4
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	4%	3%	3%	2%	6%	10%	0%	7%	5%	3%	3%	4%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	15.0	25.7		7.6	18.3	18.3	34.5	30.4		44.8	36.7	36.7
Effective Green, g (s)	15.0	25.7		7.6	18.3	18.3	34.5	30.4		44.8	36.7	36.7
Actuated g/C Ratio	0.16	0.27		0.08	0.19	0.19	0.37	0.32		0.48	0.39	0.39
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	501	490		133	654	262	198	1519		270	1942	554
v/s Ratio Prot	c0.12	c0.21		0.04	0.06		0.01	c0.22		c0.07	0.22	
v/s Ratio Perm						0.01	0.05			0.22		0.19
v/c Ratio	0.74	0.77		0.48	0.29	0.06	0.16	0.68		0.59	0.56	0.49
Uniform Delay, d1	37.7	31.5		41.4	32.3	30.9	19.3	27.7		16.3	22.4	21.6
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	5.6	7.1		2.7	0.2	0.1	0.4	2.5		3.5	1.2	3.1
Delay (s)	43.3	38.6		44.1	32.6	31.0	19.7	30.2		19.8	23.5	24.7
Level of Service	D	D		D	C	C	B	C		B	C	C
Approach Delay (s/veh)		40.9			34.5			29.9			23.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

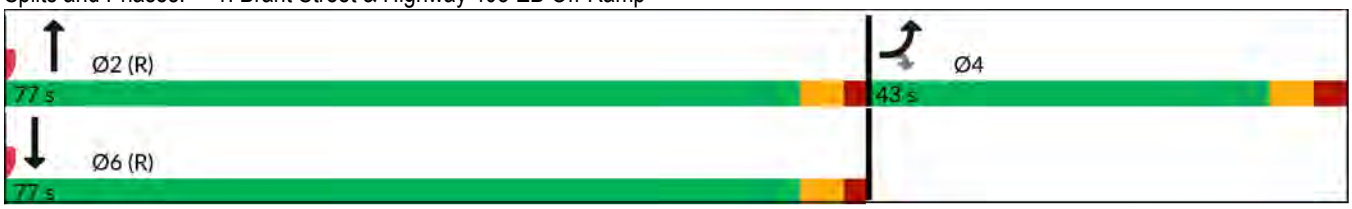
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	230	212	1567	1441
Future Volume (vph)	230	212	1567	1441
Lane Group Flow (vph)	315	146	1632	1501
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	77.0	77.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	16.8	16.8	90.2	90.2
Actuated g/C Ratio	0.14	0.14	0.75	0.75
v/c Ratio	0.68	0.66	0.43	0.39
Control Delay (s/veh)	50.6	51.0	6.2	6.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.6	51.0	6.2	6.0
LOS	D	D	A	A
Approach Delay (s/veh)	50.8		6.2	6.0
Approach LOS	D		A	A
Queue Length 50th (m)	34.5	29.0	45.8	40.6
Queue Length 95th (m)	47.1	51.4	68.3	60.9
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	952	431	3816	3816
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.34	0.43	0.39

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 11.8	Intersection LOS: B
Intersection Capacity Utilization 49.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	212	0	1567	1441	0
Future Volume (vph)	230	212	0	1567	1441	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3094	1358		5079	5079	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3094	1358		5079	5079	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	240	221	0	1632	1501	0
RTOR Reduction (vph)	30	30	0	0	0	0
Lane Group Flow (vph)	285	116	0	1632	1501	0
Confl. Peds. (#/hr)			4			4
Heavy Vehicles (%)	4%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.8	16.8		90.2	90.2	
Effective Green, g (s)	16.8	16.8		90.2	90.2	
Actuated g/C Ratio	0.14	0.14		0.75	0.75	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	433	190		3817	3817	
v/s Ratio Prot	c0.09			c0.32	0.30	
v/s Ratio Perm		0.09				
v/c Ratio	0.66	0.61		0.43	0.39	
Uniform Delay, d1	48.9	48.5		5.5	5.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	5.7		0.4	0.3	
Delay (s)	52.5	54.2		5.8	5.6	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	53.0			5.8	5.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	4	3	0	10	7	2066	9	15	1616	13
Future Vol, veh/h	6	0	4	3	0	10	7	2066	9	15	1616	13
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	10	0	2	0	0	1	0
Mvmt Flow	6	0	4	3	0	11	7	2175	9	16	1701	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2627	3942	861	2907	3945	1093	1718	0	0	2185	0	0
Stage 1	1743	1743	-	2195	2195	-	-	-	-	-	-	-
Stage 2	884	2199	-	712	1750	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.3	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	4	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	26	3	260	17	3	169	177	-	-	103	-	-
Stage 1	60	142	-	28	84	-	-	-	-	-	-	-
Stage 2	281	84	-	358	141	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	2	259	14	2	169	177	-	-	103	-	-
Mov Cap-2 Maneuver	21	2	-	14	2	-	-	-	-	-	-	-
Stage 1	57	120	-	27	81	-	-	-	-	-	-	-
Stage 2	253	81	-	297	119	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	158.7	107.5	0.1	0.4
HCM LOS	F	F		

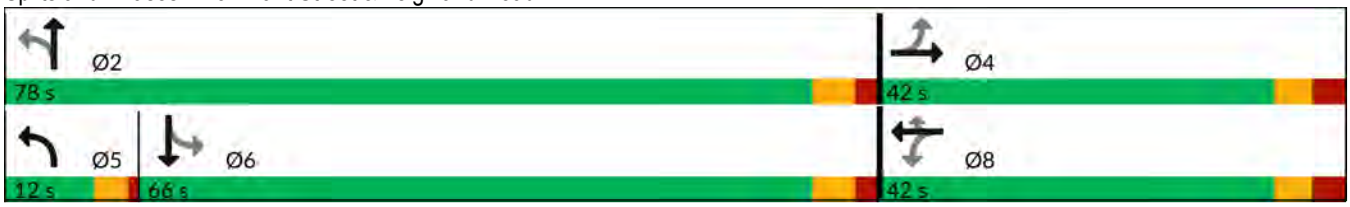
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	177	-	-	33	48	103	-	-
HCM Lane V/C Ratio	0.042	-	-	0.319	0.285	0.153	-	-
HCM Control Delay (s/veh)	26.2	-	-	158.7	107.5	46.2	-	-
HCM Lane LOS	D	-	-	F	F	E	-	-
HCM 95th %tile Q (veh)	0.1	-	-	1	1	0.5	-	-

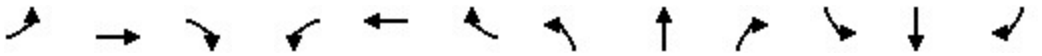


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	2	7	1	10	36	1999	6	1546
Future Volume (vph)	66	2	7	1	10	36	1999	6	1546
Lane Group Flow (vph)	69	57	0	8	11	38	2108	6	1694
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	78.0	66.0	66.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	10.0%	65.0%	55.0%	55.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.2	10.2		10.2	10.2	45.7	45.7	39.6	39.6
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.73	0.73	0.63	0.63
v/c Ratio	0.33	0.20		0.05	0.04	0.13	0.57	0.07	0.54
Control Delay (s/veh)	30.9	10.8		26.3	0.2	4.6	6.6	11.8	10.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.9	10.8		26.3	0.2	4.6	6.6	11.8	10.9
LOS	C	B		C	A	A	A	B	B
Approach Delay (s/veh)		21.8		11.2			6.6		10.9
Approach LOS		C		B			A		B
Queue Length 50th (m)	7.6	0.2		0.9	0.0	1.2	45.3	0.4	54.7
Queue Length 95th (m)	21.5	10.0		4.8	0.0	4.2	72.9	2.7	81.9
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	776	896		634	907	316	4940	130	4620
Starvation Cap Reductn	0	0		0	0	0	577	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.06		0.01	0.01	0.12	0.48	0.05	0.37

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 62.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 8.9		Intersection LOS: A	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

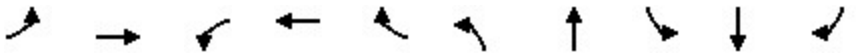




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	52	7	1	10	36	1999	4	6	1546	64
Future Volume (vph)	66	2	52	7	1	10	36	1999	4	6	1546	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1651	1475			1439	1486	1636	5027		1266	4997	
Flt Permitted	0.75	1.00			0.71	1.00	0.10	1.00		0.11	1.00	
Satd. Flow (perm)	1307	1475			1070	1486	164	5027		141	4997	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	2	55	7	1	11	38	2104	4	6	1627	67
RTOR Reduction (vph)	0	48	0	0	0	10	0	0	0	0	3	0
Lane Group Flow (vph)	69	9	0	0	8	1	38	2108	0	6	1691	0
Confl. Peds. (#/hr)	1		5	5		1	6		4	4		6
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	100%	4%	14%	100%	0%	3%	2%	0%	33%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	7.8	7.8			7.8	7.8	45.8	45.8		37.9	37.9	
Effective Green, g (s)	7.8	7.8			7.8	7.8	45.8	45.8		37.9	37.9	
Actuated g/C Ratio	0.12	0.12			0.12	0.12	0.70	0.70		0.58	0.58	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	155	175			127	176	202	3509		81	2886	
v/s Ratio Prot		0.01					0.01	c0.42			0.34	
v/s Ratio Perm	c0.05				0.01	0.00	0.12			0.04		
v/c Ratio	0.45	0.05			0.06	0.01	0.19	0.60		0.07	0.59	
Uniform Delay, d1	26.9	25.6			25.7	25.5	4.6	5.1		6.1	8.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.1			0.2	0.0	0.5	0.3		0.4	0.3	
Delay (s)	28.9	25.7			25.9	25.5	5.0	5.4		6.5	9.1	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		27.5			25.7			5.4			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



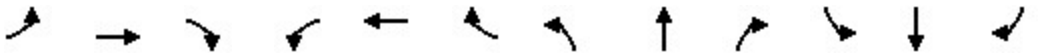
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	522	210	111	818	368	48	1015	104	866	695
Future Volume (vph)	522	210	111	818	368	48	1015	104	866	695
Lane Group Flow (vph)	538	283	114	843	379	49	1126	107	893	716
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	30.0	38.0	30.0	38.0	38.0	11.0	41.0	11.0	41.0	41.0
Total Split (%)	25.0%	31.7%	25.0%	31.7%	31.7%	9.2%	34.2%	9.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	23.1	40.7	13.3	30.8	30.8	44.1	35.1	45.0	37.5	37.5
Actuated g/C Ratio	0.20	0.35	0.11	0.27	0.27	0.38	0.30	0.39	0.32	0.32
v/c Ratio	0.83	0.46	0.60	0.91	0.78	0.22	0.76	0.66	0.55	0.88
Control Delay (s/veh)	57.1	31.3	62.3	56.0	38.2	24.6	40.7	44.5	35.3	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.1	31.3	62.3	56.0	38.2	24.6	40.7	44.5	35.3	24.5
LOS	E	C	E	E	D	C	D	D	D	C
Approach Delay (s/veh)		48.2		51.5			40.1		31.4	
Approach LOS		D		D			D		C	
Queue Length 50th (m)	65.0	49.6	27.0	104.8	57.6	7.3	91.5	16.5	68.6	54.8
Queue Length 95th (m)	85.4	81.2	45.1	#143.4	#106.2	15.8	110.9	#36.7	85.0	#144.0
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	726	618	374	966	500	221	1491	161	1623	817
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	0.74	0.46	0.30	0.87	0.76	0.22	0.76	0.66	0.55	0.88

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 116.1		
Natural Cycle: 105		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.91		
Intersection Signal Delay (s/veh): 41.5	Intersection LOS: D	
Intersection Capacity Utilization 86.2%	ICU Level of Service E	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		

Queue shown is maximum after two cycles.

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	522	210	65	111	818	368	48	1015	78	104	866	695
Future Volume (vph)	522	210	65	111	818	368	48	1015	78	104	866	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3236	1739		1668	3500	1468	1651	4918		1620	5029	1450
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.22	1.00		0.11	1.00	1.00
Satd. Flow (perm)	3236	1739		1668	3500	1468	382	4918		196	5029	1450
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	538	216	67	114	843	379	49	1046	80	107	893	716
RTOR Reduction (vph)	0	8	0	0	0	96	0	7	0	0	0	351
Lane Group Flow (vph)	538	275	0	114	843	283	49	1119	0	107	893	365
Confl. Peds. (#/hr)	2		5	5		2	11		4	4		11
Confl. Bikes (#/hr)						3						4
Heavy Vehicles (%)	1%	4%	3%	1%	2%	1%	2%	3%	4%	4%	2%	1%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	23.1	40.7		13.3	30.9	30.9	41.5	36.0		44.5	37.5	37.5
Effective Green, g (s)	23.1	40.7		13.3	30.9	30.9	41.5	36.0		44.5	37.5	37.5
Actuated g/C Ratio	0.20	0.35		0.11	0.26	0.26	0.35	0.31		0.38	0.32	0.32
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	638	604		189	924	387	195	1513		159	1611	464
v/s Ratio Prot	c0.17	0.16		0.07	c0.24		0.01	0.23		c0.04	0.18	
v/s Ratio Perm						0.19	0.08			0.21		c0.25
v/c Ratio	0.84	0.45		0.60	0.91	0.73	0.25	0.74		0.67	0.55	0.79
Uniform Delay, d1	45.2	29.6		49.3	41.7	39.2	25.6	36.3		26.3	32.8	36.1
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	9.9	0.5		5.3	13.0	6.9	0.7	3.3		10.7	1.4	12.7
Delay (s)	55.1	30.1		54.7	54.8	46.2	26.3	39.6		37.0	34.2	48.8
Level of Service	E	C		D	D	D	C	D		D	C	D
Approach Delay (s/veh)		46.5			52.3			39.0			40.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	117.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

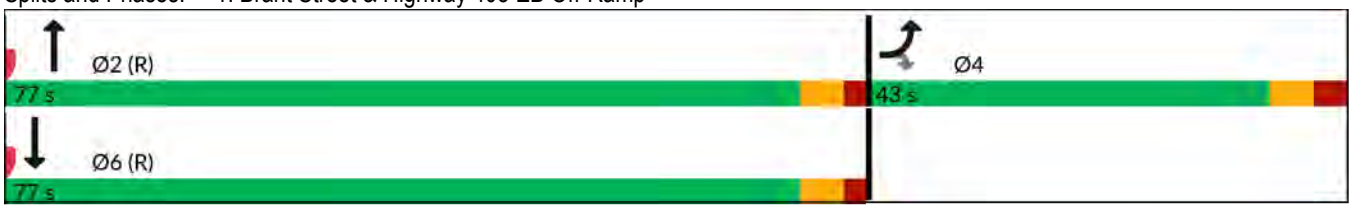
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	260	240	1730	1590
Future Volume (vph)	260	240	1730	1590
Lane Group Flow (vph)	356	165	1802	1656
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	77.0	77.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	19.1	19.1	87.9	87.9
Actuated g/C Ratio	0.16	0.16	0.73	0.73
v/c Ratio	0.70	0.70	0.48	0.45
Control Delay (s/veh)	51.3	55.8	7.6	7.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.3	55.8	7.6	7.3
LOS	D	E	A	A
Approach Delay (s/veh)	52.7		7.6	7.3
Approach LOS	D		A	A
Queue Length 50th (m)	40.9	37.1	57.7	50.7
Queue Length 95th (m)	53.0	59.8	86.8	76.8
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	944	424	3720	3720
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.48	0.45

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay (s/veh): 13.4	Intersection LOS: B
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	260	240	0	1730	1590	0
Future Volume (vph)	260	240	0	1730	1590	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3094	1358		5079	5079	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3094	1358		5079	5079	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	271	250	0	1802	1656	0
RTOR Reduction (vph)	20	20	0	0	0	0
Lane Group Flow (vph)	336	145	0	1802	1656	0
Confl. Peds. (#/hr)			4			4
Heavy Vehicles (%)	4%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	19.1	19.1		87.9	87.9	
Effective Green, g (s)	19.1	19.1		87.9	87.9	
Actuated g/C Ratio	0.16	0.16		0.73	0.73	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	492	216		3720	3720	
v/s Ratio Prot	c0.11			c0.35	0.33	
v/s Ratio Perm		0.11				
v/c Ratio	0.68	0.67		0.48	0.45	
Uniform Delay, d1	47.6	47.5		6.7	6.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	7.9		0.5	0.4	
Delay (s)	51.5	55.4		7.1	6.8	
Level of Service	D	E		A	A	
Approach Delay (s/veh)	52.7			7.1	6.8	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	4	3	0	10	7	2281	9	15	1784	13
Future Vol, veh/h	6	0	4	3	0	10	7	2281	9	15	1784	13
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	10	0	2	0	0	1	0
Mvmt Flow	6	0	4	3	0	11	7	2401	9	16	1878	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2894	4345	949	3204	4348	1206	1895	0	0	2411	0	0
Stage 1	1920	1920	-	2421	2421	-	-	-	-	-	-	-
Stage 2	974	2425	-	783	1927	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.3	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	4	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	18	2	227	11	2	142	145	-	-	79	-	-
Stage 1	45	116	-	19	64	-	-	-	-	-	-	-
Stage 2	247	64	-	324	115	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	14	2	226	9	2	142	145	-	-	79	-	-
Mov Cap-2 Maneuver	14	2	-	9	2	-	-	-	-	-	-	-
Stage 1	43	92	-	18	61	-	-	-	-	-	-	-
Stage 2	218	61	-	254	91	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	272.7	184.3	0.1	0.5
HCM LOS	F	F		

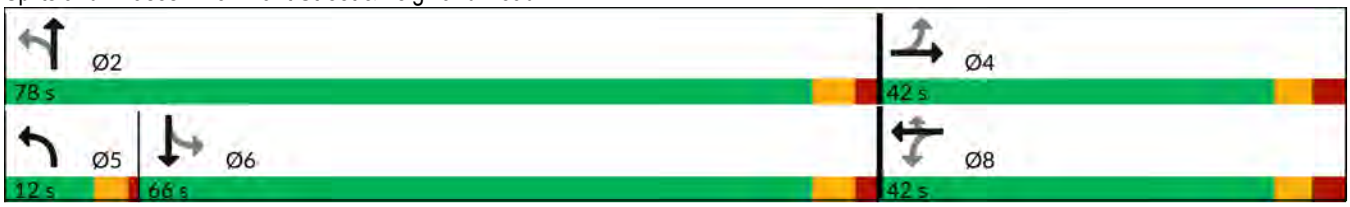
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	145	-	-	22	32	79	-	-
HCM Lane V/C Ratio	0.051	-	-	0.478	0.428	0.2	-	-
HCM Control Delay (s/veh)	31.2	-	-	272.7	184.3	61.6	-	-
HCM Lane LOS	D	-	-	F	F	F	-	-
HCM 95th %tile Q (veh)	0.2	-	-	1.4	1.4	0.7	-	-

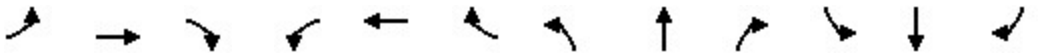


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	2	7	1	10	36	2206	6	1706
Future Volume (vph)	66	2	7	1	10	36	2206	6	1706
Lane Group Flow (vph)	69	57	0	8	11	38	2326	6	1863
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	78.0	66.0	66.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	10.0%	65.0%	55.0%	55.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	10.6	10.6		10.6	10.6	50.0	50.1	44.1	44.1
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.75	0.75	0.66	0.66
v/c Ratio	0.33	0.20		0.05	0.04	0.14	0.62	0.07	0.57
Control Delay (s/veh)	33.7	11.5		28.9	0.3	4.6	7.0	11.7	10.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (s/veh)	33.7	11.5		28.9	0.3	4.6	7.0	11.7	10.9
LOS	C	B		C	A	A	A	B	B
Approach Delay (s/veh)		23.6		12.3			7.0		10.9
Approach LOS		C		B			A		B
Queue Length 50th (m)	8.2	0.3		0.9	0.0	1.2	55.3	0.4	64.3
Queue Length 95th (m)	22.9	10.3		5.1	0.0	4.3	88.0	2.7	94.1
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	732	848		597	859	297	4848	110	4338
Starvation Cap Reductn	0	0		0	0	0	653	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.07		0.01	0.01	0.13	0.55	0.05	0.43

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 67.1			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 9.2		Intersection LOS: A	
Intersection Capacity Utilization 75.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

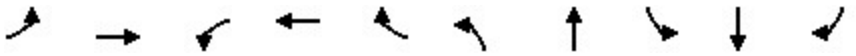




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	52	7	1	10	36	2206	4	6	1706	64
Future Volume (vph)	66	2	52	7	1	10	36	2206	4	6	1706	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1651	1475			1439	1485	1636	5027		1266	5000	
Flt Permitted	0.75	1.00			0.71	1.00	0.09	1.00		0.09	1.00	
Satd. Flow (perm)	1307	1475			1070	1485	149	5027		126	5000	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	2	55	7	1	11	38	2322	4	6	1796	67
RTOR Reduction (vph)	0	49	0	0	0	10	0	0	0	0	3	0
Lane Group Flow (vph)	69	8	0	0	8	1	38	2326	0	6	1860	0
Confl. Peds. (#/hr)	1		5	5		1	6		4	4		6
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	100%	4%	14%	100%	0%	3%	2%	0%	33%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.1	8.1			8.1	8.1	50.2	50.2		42.3	42.3	
Effective Green, g (s)	8.1	8.1			8.1	8.1	50.2	50.2		42.3	42.3	
Actuated g/C Ratio	0.12	0.12			0.12	0.12	0.71	0.71		0.60	0.60	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	150	169			123	171	188	3589		75	3008	
v/s Ratio Prot		0.01					0.01	c0.46			0.37	
v/s Ratio Perm	c0.05				0.01	0.00	0.13			0.05		
v/c Ratio	0.46	0.05			0.07	0.01	0.20	0.65		0.08	0.62	
Uniform Delay, d1	29.1	27.7			27.7	27.5	5.0	5.3		5.9	8.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.1			0.2	0.0	0.5	0.4		0.5	0.4	
Delay (s)	31.3	27.8			27.9	27.6	5.5	5.8		6.3	9.3	
Level of Service	C	C			C	C	A	A		A	A	
Approach Delay (s/veh)		29.7			27.7			5.8			9.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



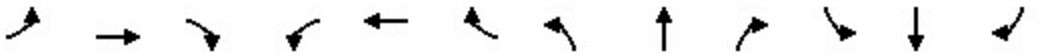
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	522	232	111	903	368	48	1120	104	956	695
Future Volume (vph)	522	232	111	903	368	48	1120	104	956	695
Lane Group Flow (vph)	538	306	114	931	379	49	1235	107	986	716
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8		5	2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	7.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	11.0	33.0	11.0	33.0	33.0
Total Split (s)	30.0	38.0	30.0	38.0	38.0	11.0	41.0	11.0	41.0	41.0
Total Split (%)	25.0%	31.7%	25.0%	31.7%	31.7%	9.2%	34.2%	9.2%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	1.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	23.3	42.0	13.3	32.0	32.0	44.0	35.0	44.9	37.3	37.3
Actuated g/C Ratio	0.20	0.36	0.11	0.27	0.27	0.38	0.30	0.38	0.32	0.32
v/c Ratio	0.84	0.49	0.60	0.97	0.77	0.25	0.84	0.69	0.62	0.89
Control Delay (s/veh)	57.8	32.1	62.7	66.6	37.5	25.4	44.6	47.7	37.0	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
Total Delay (s/veh)	57.8	32.1	62.7	66.6	37.5	25.4	44.6	47.7	37.3	26.7
LOS	E	C	E	E	D	C	D	D	D	C
Approach Delay (s/veh)		48.5		58.5			43.9		33.7	
Approach LOS		D		E			D		C	
Queue Length 50th (m)	65.0	55.0	27.0	119.8	58.1	7.3	103.4	16.5	77.6	59.2
Queue Length 95th (m)	85.4	88.8	45.1	#167.8	#107.0	15.8	124.5	#38.8	95.0	#148.5
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	717	630	369	955	493	196	1475	155	1599	804
Starvation Cap Reductn	0	0	0	0	0	0	0	0	163	1
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	0.75	0.49	0.31	0.97	0.77	0.25	0.84	0.69	0.69	0.89

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 117.3		
Natural Cycle: 105		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.97		
Intersection Signal Delay (s/veh): 45.1	Intersection LOS: D	
Intersection Capacity Utilization 88.4%	ICU Level of Service E	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		

Queue shown is maximum after two cycles.

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	522	232	65	111	903	368	48	1120	78	104	956	695
Future Volume (vph)	522	232	65	111	903	368	48	1120	78	104	956	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3236	1744		1668	3500	1468	1651	4923		1620	5029	1449
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.18	1.00		0.11	1.00	1.00
Satd. Flow (perm)	3236	1744		1668	3500	1468	311	4923		183	5029	1449
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	538	239	67	114	931	379	49	1155	80	107	986	716
RTOR Reduction (vph)	0	7	0	0	0	94	0	6	0	0	0	345
Lane Group Flow (vph)	538	299	0	114	931	285	49	1229	0	107	986	371
Confl. Peds. (#/hr)	2		5	5		2	11		4	4		11
Confl. Bikes (#/hr)						3						4
Heavy Vehicles (%)	1%	4%	3%	1%	2%	1%	2%	3%	4%	4%	2%	1%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	23.3	42.0		13.3	32.0	32.0	41.3	35.8		44.3	37.3	37.3
Effective Green, g (s)	23.3	42.0		13.3	32.0	32.0	41.3	35.8		44.3	37.3	37.3
Actuated g/C Ratio	0.20	0.36		0.11	0.27	0.27	0.35	0.30		0.38	0.32	0.32
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
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)	638	620		187	948	397	171	1492		153	1588	457
v/s Ratio Prot	c0.17	0.17		0.07	c0.27		0.01	0.25		c0.04	0.20	
v/s Ratio Perm						0.19	0.09			0.22		c0.26
v/c Ratio	0.84	0.48		0.61	0.98	0.72	0.29	0.82		0.70	0.62	0.81
Uniform Delay, d1	45.6	29.6		49.9	42.8	39.0	26.5	38.2		27.6	34.4	37.2
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	9.9	0.6		5.5	24.7	6.1	0.9	5.3		13.1	1.8	14.5
Delay (s)	55.5	30.2		55.5	67.5	45.1	27.4	43.5		40.7	36.2	51.7
Level of Service	E	C		E	E	D	C	D		D	D	D
Approach Delay (s/veh)		46.4			60.6			42.9			42.6	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	48.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

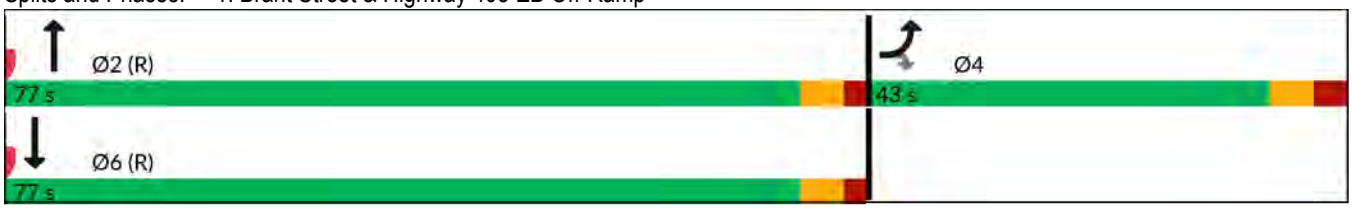
c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	294	272	1910	1754
Future Volume (vph)	294	272	1910	1754
Lane Group Flow (vph)	402	187	1990	1827
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	37.0	37.0	28.0	28.0
Total Split (s)	43.0	43.0	77.0	77.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	21.6	21.6	85.4	85.4
Actuated g/C Ratio	0.18	0.18	0.71	0.71
v/c Ratio	0.71	0.73	0.55	0.51
Control Delay (s/veh)	50.8	58.1	9.5	9.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.8	58.1	9.5	9.0
LOS	D	E	A	A
Approach Delay (s/veh)	53.1		9.5	9.0
Approach LOS	D		A	A
Queue Length 50th (m)	47.2	44.9	73.7	64.4
Queue Length 95th (m)	58.9	67.6	112.2	98.2
Internal Link Dist (m)	186.4		137.5	161.9
Turn Bay Length (m)		110.0		
Base Capacity (vph)	938	418	3615	3615
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.45	0.55	0.51

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 15.1	Intersection LOS: B
Intersection Capacity Utilization 59.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Brant Street & Highway 403 EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	294	272	0	1910	1754	0
Future Volume (vph)	294	272	0	1910	1754	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	7.0	7.0		6.0	6.0	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3094	1358		5079	5079	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3094	1358		5079	5079	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	306	283	0	1990	1827	0
RTOR Reduction (vph)	13	13	0	0	0	0
Lane Group Flow (vph)	389	174	0	1990	1827	0
Confl. Peds. (#/hr)			4			4
Heavy Vehicles (%)	4%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	21.6	21.6		85.4	85.4	
Effective Green, g (s)	21.6	21.6		85.4	85.4	
Actuated g/C Ratio	0.18	0.18		0.71	0.71	
Clearance Time (s)	7.0	7.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	556	244		3614	3614	
v/s Ratio Prot	0.13			c0.39	0.36	
v/s Ratio Perm		c0.13				
v/c Ratio	0.70	0.71		0.55	0.51	
Uniform Delay, d1	46.2	46.3		8.2	7.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	9.4		0.6	0.5	
Delay (s)	50.0	55.7		8.8	8.3	
Level of Service	D	E		A	A	
Approach Delay (s/veh)	51.8			8.8	8.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	4	3	0	10	7	2518	9	15	1970	13
Future Vol, veh/h	6	0	4	3	0	10	7	2518	9	15	1970	13
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	10	-	-	10	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	10	0	2	0	0	1	0
Mvmt Flow	6	0	4	3	0	11	7	2651	9	16	2074	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3190	4791	1047	3533	4794	1331	2091	0	0	2661	0	0
Stage 1	2116	2116	-	2671	2671	-	-	-	-	-	-	-
Stage 2	1074	2675	-	862	2123	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	7.1	6.4	6.5	7.3	5.3	-	-	5.3	-	-
Critical Hdwy Stg 1	7.3	5.5	-	7.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.8	4	3.9	3.8	4	4	3.1	-	-	3.1	-	-
Pot Cap-1 Maneuver	11	1	196	7	1	116	115	-	-	59	-	-
Stage 1	32	92	-	13	48	-	-	-	-	-	-	-
Stage 2	215	47	-	290	92	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	8	1	196	5	1	116	115	-	-	59	-	-
Mov Cap-2 Maneuver	8	1	-	5	1	-	-	-	-	-	-	-
Stage 1	30	67	-	12	45	-	-	-	-	-	-	-
Stage 2	184	44	-	207	67	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	$ 559.6	$ 387.2	0.1	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	115	-	-	13	19	59	-	-
HCM Lane V/C Ratio	0.064	-	-	0.81	0.72	0.268	-	-
HCM Control Delay (s/veh)	38.4	-	-	$ 559.6	$ 387.2	87	-	-
HCM Lane LOS	E	-	-	F	F	F	-	-
HCM 95th %tile Q (veh)	0.2	-	-	1.8	2	0.9	-	-

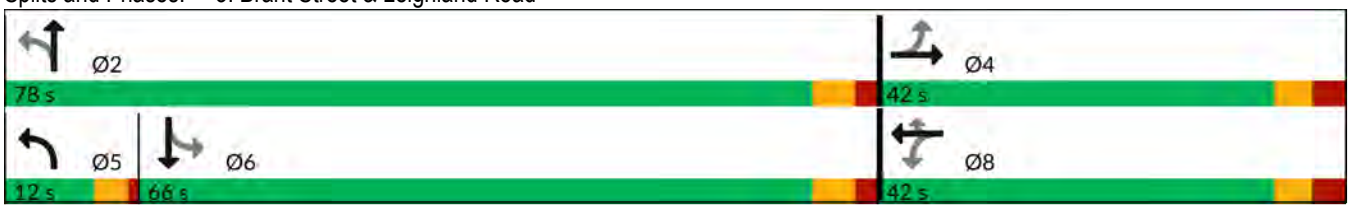
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

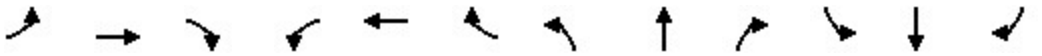


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	2	7	1	10	36	2435	6	1883
Future Volume (vph)	66	2	7	1	10	36	2435	6	1883
Lane Group Flow (vph)	69	57	0	8	11	38	2567	6	2049
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases		4		8		5	2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0
Minimum Split (s)	38.4	38.4	38.4	38.4	38.4	11.5	27.6	27.6	27.6
Total Split (s)	42.0	42.0	42.0	42.0	42.0	12.0	78.0	66.0	66.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	10.0%	65.0%	55.0%	55.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.0	3.7	3.7	3.7
All-Red Time (s)	3.1	3.1	3.1	3.1	3.1	1.0	1.9	1.9	1.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	6.4	4.0	5.6	5.6	5.6
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	Ped	Ped	Ped
Act Effct Green (s)	11.0	11.0		11.0	11.0	56.5	56.6	50.7	50.7
Actuated g/C Ratio	0.15	0.15		0.15	0.15	0.77	0.77	0.69	0.69
v/c Ratio	0.36	0.22		0.05	0.04	0.15	0.67	0.08	0.60
Control Delay (s/veh)	38.7	12.8		33.4	0.3	4.5	7.2	11.2	10.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (s/veh)	38.7	12.8		33.4	0.3	4.5	7.3	11.2	10.6
LOS	D	B		C	A	A	A	B	B
Approach Delay (s/veh)		27.0		14.2			7.3		10.6
Approach LOS		C		B			A		B
Queue Length 50th (m)	9.1	0.3		1.0	0.0	1.3	69.7	0.4	76.9
Queue Length 95th (m)	26.2	11.5		5.7	0.0	4.0	104.3	2.5	105.8
Internal Link Dist (m)		164.7		134.9			118.5		87.9
Turn Bay Length (m)	50.0				15.0	40.0		30.0	
Base Capacity (vph)	674	786		551	797	275	4644	87	4020
Starvation Cap Reductn	0	0		0	0	0	744	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.07		0.01	0.01	0.14	0.66	0.07	0.51

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 73.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 9.2		Intersection LOS: A	
Intersection Capacity Utilization 79.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Brant Street & Leighland Road

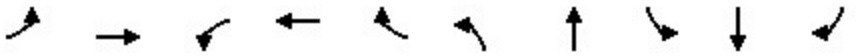




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	52	7	1	10	36	2435	4	6	1883	64
Future Volume (vph)	66	2	52	7	1	10	36	2435	4	6	1883	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1650	1474			1439	1485	1636	5028		1266	5002	
Flt Permitted	0.75	1.00			0.71	1.00	0.08	1.00		0.08	1.00	
Satd. Flow (perm)	1307	1474			1070	1485	130	5028		109	5002	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	2	55	7	1	11	38	2563	4	6	1982	67
RTOR Reduction (vph)	0	49	0	0	0	10	0	0	0	0	2	0
Lane Group Flow (vph)	69	8	0	0	8	1	38	2567	0	6	2047	0
Confl. Peds. (#/hr)	1		5	5		1	6		4	4		6
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	100%	4%	14%	100%	0%	3%	2%	0%	33%	2%	0%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.3	8.3			8.3	8.3	56.7	56.7		48.9	48.9	
Effective Green, g (s)	8.3	8.3			8.3	8.3	56.7	56.7		48.9	48.9	
Actuated g/C Ratio	0.11	0.11			0.11	0.11	0.74	0.74		0.64	0.64	
Clearance Time (s)	6.4	6.4			6.4	6.4	4.0	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	140	158			115	160	170	3702		69	3176	
v/s Ratio Prot		0.01					0.01	c0.51			0.41	
v/s Ratio Perm	c0.05				0.01	0.00	0.15			0.06		
v/c Ratio	0.49	0.05			0.07	0.01	0.22	0.69		0.09	0.64	
Uniform Delay, d1	32.4	30.8			30.9	30.7	5.5	5.5		5.4	8.7	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	0.1			0.3	0.0	0.7	0.6		0.5	0.5	
Delay (s)	35.1	30.9			31.1	30.7	6.2	6.0		6.0	9.1	
Level of Service	D	C			C	C	A	A		A	A	
Approach Delay (s/veh)		33.2			30.9			6.0			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

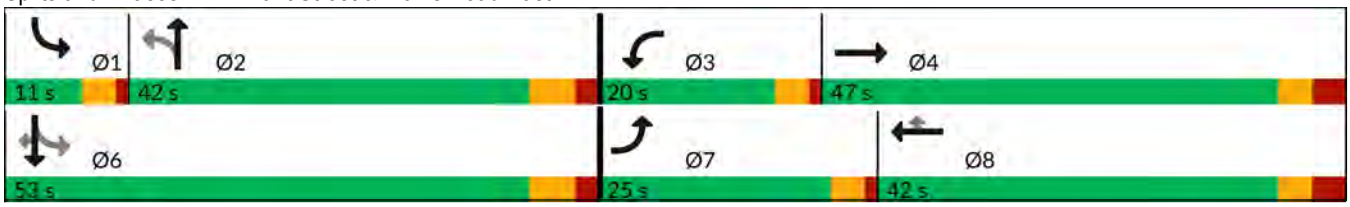


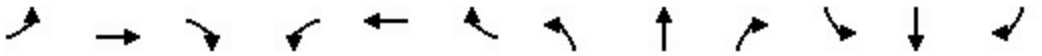
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	522	256	111	997	368	48	1236	104	1055	695
Future Volume (vph)	522	256	111	997	368	48	1236	104	1055	695
Lane Group Flow (vph)	538	331	114	1028	379	49	1354	107	1088	716
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	pm+pt	NA	Perm
Protected Phases	7	4	3	8			2	1	6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	7.0	8.0	7.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.0	11.0	38.0	38.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	25.0	47.0	20.0	42.0	42.0	42.0	42.0	11.0	53.0	53.0
Total Split (%)	20.8%	39.2%	16.7%	35.0%	35.0%	35.0%	35.0%	9.2%	44.2%	44.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	3.0	1.0	3.0	3.0	2.0	2.0	1.0	2.0	2.0
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)	4.0	6.0	4.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	21.0	44.1	12.9	36.0	36.0	36.0	36.0	49.0	47.0	47.0
Actuated g/C Ratio	0.18	0.37	0.11	0.30	0.30	0.30	0.30	0.41	0.39	0.39
v/c Ratio	0.95	0.51	0.64	0.98	0.71	0.42	0.91	0.69	0.55	0.91
Control Delay (s/veh)	76.7	32.5	66.9	65.1	31.7	47.2	50.7	47.5	29.6	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	11.8
Total Delay (s/veh)	76.7	32.5	66.9	65.1	31.7	47.2	50.7	47.5	30.5	46.6
LOS	E	C	E	E	C	D	D	D	C	D
Approach Delay (s/veh)		59.8		56.9			50.5		37.5	
Approach LOS		E		E			D		D	
Queue Length 50th (m)	68.7	61.4	27.4	132.7	54.3	9.7	117.8	16.6	75.7	96.7
Queue Length 95th (m)	#103.4	94.3	46.4	#179.1	92.6	23.7	#146.0	#37.3	90.5	#184.7
Internal Link Dist (m)		251.3		173.9			410.9		118.5	
Turn Bay Length (m)	65.0		60.0		75.0	60.0		55.0		40.0
Base Capacity (vph)	566	650	222	1050	535	116	1483	154	1969	784
Starvation Cap Reductn	0	0	0	0	0	0	0	0	544	67
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	0.95	0.51	0.51	0.98	0.71	0.42	0.91	0.69	0.76	1.00

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 95	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 49.3	Intersection LOS: D
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	

Queue shown is maximum after two cycles.

Splits and Phases: 4: Brant Street & Plains Road East





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	522	256	65	111	997	368	48	1236	78	104	1055	695
Future Volume (vph)	522	256	65	111	997	368	48	1236	78	104	1055	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	1.00		1.00	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3236	1749		1668	3500	1468	1647	4928		1620	5029	1450
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.22	1.00		0.10	1.00	1.00
Satd. Flow (perm)	3236	1749		1668	3500	1468	389	4928		171	5029	1450
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	538	264	67	114	1028	379	49	1274	80	107	1088	716
RTOR Reduction (vph)	0	8	0	0	0	95	0	6	0	0	0	217
Lane Group Flow (vph)	538	323	0	114	1028	284	49	1348	0	107	1088	499
Confl. Peds. (#/hr)	2		5	5		2	11		4	4		11
Confl. Bikes (#/hr)						3						4
Heavy Vehicles (%)	1%	4%	3%	1%	2%	1%	2%	3%	4%	4%	2%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	21.0	44.1		12.9	36.0	36.0	36.0	36.0		47.0	47.0	47.0
Effective Green, g (s)	21.0	44.1		12.9	36.0	36.0	36.0	36.0		47.0	47.0	47.0
Actuated g/C Ratio	0.18	0.37		0.11	0.30	0.30	0.30	0.30		0.39	0.39	0.39
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	6.0	6.0		4.0	6.0	6.0
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)	566	642		179	1050	440	116	1478		151	1969	567
v/s Ratio Prot	c0.17	0.18		0.07	c0.29			0.27		0.04	0.22	
v/s Ratio Perm						0.19	0.13			0.24		c0.34
v/c Ratio	0.95	0.50		0.64	0.98	0.65	0.42	0.91		0.71	0.55	0.88
Uniform Delay, d1	49.0	29.5		51.3	41.6	36.5	33.7	40.5		28.2	28.3	33.9
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	26.0	0.6		7.2	22.5	3.2	10.9	10.1		14.1	1.1	17.7
Delay (s)	74.9	30.1		58.5	64.1	39.7	44.6	50.6		42.3	29.5	51.6
Level of Service	E	C		E	E	D	D	D		D	C	D
Approach Delay (s/veh)		57.9			57.6			50.4			38.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX H

PROXY PARKING UTILIZATION SURVEY DATA

Date: Saturday, August 20, 2022

Supply	8	2	77	79	166	10		
TIME	**Surface**			**U/G**	**Total**	**Visitors Total**	**Visitor Utilization**	**Visitor Demand (per unit)**
	Visitors	**Staff / Trades**	**Tenants**	**Tenants**				
12:00	1	0	24	42	67	1	10%	0.01
12:30	3	0	25	43	71	3	30%	0.02
13:00	2	0	27	44	73	2	20%	0.02
13:30	3	0	29	43	75	3	30%	0.02
14:00	3	0	28	43	74	3	30%	0.02
14:30	2	0	27	41	70	2	20%	0.02
15:00	2	0	26	43	71	2	20%	0.02
15:30	2	0	27	44	73	2	20%	0.02
16:00	2	0	28	44	74	2	20%	0.02
16:30	3	0	30	46	79	3	30%	0.02
17:00	3	0	31	45	79	3	30%	0.02
17:30	3	0	29	45	77	3	30%	0.02
18:00	4	0	27	43	74	4	40%	0.03
18:30	2	0	30	45	77	2	20%	0.02
19:00	3	0	30	44	77	3	30%	0.02
19:30	3	0	29	45	77	3	30%	0.02
20:00	4	0	30	43	77	4	40%	0.03
20:30	5	0	31	45	81	5	50%	0.04
21:00	3	0	32	45	80	3	30%	0.02
21:30	3	0	32	46	81	3	30%	0.02
22:00	3	0	34	47	84	3	30%	0.02
22:30	3	0	34	50	87	3	30%	0.02
23:00	4	0	35	51	90	4	40%	0.03
23:30	3	0	36	52	91	3	30%	0.02
0:00	3	0	37	52	92	3	30%	0.02
0:30	3	0	37	54	94	3	30%	0.02
1:00	3	0	39	55	97	3	30%	0.02
1:30	3	0	40	56	99	3	30%	0.02
2:00	3	0	41	57	**101**	3	30%	0.02
2:30	3	0	41	56	100	3	30%	0.02
3:00	3	0	41	56	100	3	30%	0.02
				Max	**101**	**5**	**50%**	**0.04**

Overall Max	**103**	**5**	**50%**	**0.04**

1333 Bloor St, Mississauga - Parking Utilization Summary

Project No.: 19373

Unit Count 442

Assumed Vacancy Rate: 0.50%

Date: Sunday Jan. 14, 2024

TIME	Surface				Total
	Delivery	Visitor-W	Visitor-E	Staff	Visitor
Supply	8	40	59	7	99
18:00	1	19	5	1	24
18:30	1	18	6	1	24
19:00	2	19	5	1	24
19:30	1	15	6	1	21
20:00	1	13	6	1	19
20:30	1	10	5	1	15
21:00	0	10	5	1	15
21:30	1	10	5	1	15
22:00	0	11	4	1	15
22:30	0	9	4	1	13
23:00	0	9	4	1	13
23:30	0	8	4	1	12
0:00	0	6	4	1	10
0:30	0	6	4	1	10
1:00	0	6	4	1	10
				Max	**24**
				Rate	**0.054**
				Adjusted	**0.055**

Date: Monday Jan. 15, 2024

TIME	Surface				U/G	Total
	Delivery	Visitor-W	Visitor-E	Staff	Tenant	Visitor
Supply	8	40	59	7	435	99
18:00	3	10	5	2	314	15
18:30	2	8	4	2	332	12
19:00	1	7	4	1	334	11
19:30	2	8	4	1	340	12
20:00	1	7	4	1	345	11
20:30	0	8	4	1	352	12
21:00	0	8	4	1	361	12
21:30	0	6	5	1	365	11
22:00	0	5	4	1	374	9
22:30	0	5	4	2	376	9
23:00	0	5	5	2	376	10
23:30	0	5	5	2	378	10
0:00	0	5	5	2	382	10
0:30	0	5	5	2	383	10
1:00	0	5	5	2	384	10
				Max		**15**
				Rate		**0.034**
				Adjusted		**0.034**

Date: Monday Jan. 22, 2024

TIME	Surface				Total
	Delivery	Visitor-W	Visitor-E	Staff	Visitor
Supply	8	40	59	7	99
18:00	0	11	5	1	16
18:30	3	9	4	1	13
19:00	3	9	5	1	14
19:30	1	8	4	1	12
20:00	0	6	4	1	10
20:30	0	5	4	1	9
21:00	1	5	4	1	9
21:30	0	6	4	1	10
22:00	0	7	4	1	11
22:30	0	6	4	2	10
23:00	0	6	4	2	10
23:30	0	6	4	2	10
0:00	0	6	4	2	10
0:30	0	6	3	2	9
1:00	0	6	3	2	9
				Max	**16**
				Rate	**0.036**
				Adjusted	**0.036**

Date: Tuesday Jan. 23, 2024

TIME	Surface				U/G	Total
	Delivery	Visitor-W	Visitor-E	Staff	Tenant	Visitor
Supply	8	40	59	7	435	99
18:00	2	6	3	1	336	9
18:30	1	4	2	1	337	6
19:00	1	4	2	1	350	6
19:30	1	7	2	1	353	9
20:00	1	8	2	1	362	10
20:30	0	7	2	1	368	9
21:00	0	7	2	1	373	9
21:30	0	6	2	1	374	8
22:00	0	6	2	1	375	8
22:30	0	5	2	2	378	7
23:00	0	5	2	2	383	7
23:30	0	5	2	2	384	7
0:00	0	5	2	2	386	7
0:30	0	5	2	2	389	7
1:00	0	5	2	2	390	7
				Max		**10**
				Rate		**0.023**
				Adjusted		**0.023**

Date: Tuesday Jan. 16, 2024

TIME	Surface				Total
	Delivery	Visitor-W	Visitor-E	Staff	Visitor
Supply	8	40	59	7	99
18:00	3	10	5	2	15
18:30	2	11	5	2	16
19:00	2	11	5	3	16
19:30	1	12	5	3	17
20:00	2	11	6	3	17
20:30	1	6	5	3	11
21:00	0	7	5	3	12
21:30	0	6	5	3	11
22:00	0	4	4	2	8
22:30	0	4	4	2	8
23:00	0	3	4	3	7
23:30	0	3	4	3	7
0:00	0	3	4	3	7
0:30	0	4	4	3	8
1:00	0	4	4	3	8
				Max	**17**
				Rate	**0.038**
				Adjusted	**0.039**

Date: Sunday Jan. 21, 2024

TIME	Surface					U/G	Total
	Delivery	Visitor-W	Visitor-E	Staff	Tenant	Tenant	Tenant
Supply	8	40	59	7	132	435	567
18:00	1	19	5	1	45	342	387
18:30	1	20	5	1	45	348	393
19:00	0	18	6	1	55	352	407
19:30	1	15	5	1	64	354	418
20:00	0	12	5	2	61	361	422
20:30	0	11	5	1	60	364	424
21:00	0	11	4	1	65	371	436
21:30	0	11	3	1	63	376	439
22:00	0	11	3	1	58	380	438
22:30	0	10	3	2	64	381	445
23:00	0	10	3	2	66	384	450
23:30	0	9	3	2	67	387	454
0:00	0	8	3	3	67	388	455
0:30	0	8	3	2	68	390	458
1:00	0	8	3	2	69	391	460
				Max			**460**
				Rate			**1.041**
				Adjusted			**1.046**

1750 Bloor St, Mississauga - Parking Utilization Summary

Project No.: 19373

Unit Count 153

Assumed Vacancy Rate:

Date: Sunday Jan. 14, 2024

TIME	Surface
	Visitor
Supply	18
18:00	9
18:30	10
19:00	11
19:30	11
20:00	10
20:30	12
21:00	12
21:30	11
22:00	10
22:30	9
23:00	10
23:30	9
0:00	9
0:30	8
1:00	10
Max	**12**
Rate	**0.078431373**
Adjusted	**0.080**

Date: Monday Jan. 15, 2024

TIME	Surface
	Visitor
Supply	18
18:00	9
18:30	10
19:00	10
19:30	11
20:00	13
20:30	11
21:00	11
21:30	10
22:00	11
22:30	11
23:00	10
23:30	10
0:00	10
0:30	10
1:00	10
Max	**13**
Rate	**0.08496732**
Adjusted	**0.087**

Date: Tuesday Jan. 16, 2024

TIME	Surface
	Visitor
Supply	18
18:00	7
18:30	7
19:00	9
19:30	10
20:00	12
20:30	12
21:00	13
21:30	12
22:00	11
22:30	9
23:00	10
23:30	9
0:00	10
0:30	10
1:00	10
Max	**13**
Rate	**0.08496732**
Adjusted	**0.087**

Date: Sunday Jan. 21, 2024

TIME	Surface
	Visitor
Supply	18
18:00	11
18:30	12
19:00	11
19:30	12
20:00	12
20:30	12
21:00	11
21:30	9
22:00	8
22:30	8
23:00	6
23:30	8
0:00	7
0:30	7
1:00	8
Max	**12**
Rate	**0.078431373**
Adjusted	**0.080**

Date: Monday Jan. 22, 2024

TIME	Surface
	Visitor
Supply	18
18:00	7
18:30	6
19:00	6
19:30	7
20:00	11
20:30	11
21:00	10
21:30	9
22:00	11
22:30	11
23:00	9
23:30	8
0:00	8
0:30	8
1:00	8
Max	**11**
Rate	**0.071895425**
Adjusted	**0.073**

Date: Tuesday Jan. 23, 2024

TIME	Surface
	Visitor
Supply	18
18:00	3
18:30	3
19:00	6
19:30	6
20:00	6
20:30	9
21:00	9
21:30	10
22:00	9
22:30	11
23:00	10
23:30	9
0:00	11
0:30	10
1:00	10
Max	**11**
Rate	**0.071895425**
Adjusted	**0.073**

PARKING UTILIZATION SURVEY

Project No.: 21091

Site: 7805 Bayview Avenue

Date: Thursday December 15, 2022 Surveyor:

	Surface		Underground		Total	
TIME	Visitors	Reserved	Visitors	Service Car	Visitors	Reserved
Supply	13	2	52	4	65	6
18:00	6	2	7	1	13	3
18:30	5	2	6	1	11	3
19:00	4	2	7	1	11	3
19:30	4	2	8	1	12	3
20:00	3	2	9	1	12	3
20:30	2	1	8	0	10	1
21:00	2	1	8	0	10	1
21:30	2	1	7	0	9	1
22:00	2	0	7	0	9	0
22:30	1	0	6	0	7	0
23:00	0	0	7	0	7	0
23:30	0	0	6	0	6	0
0:00	0	0	4	0	4	0
0:30	0	0	3	0	3	0
1:00	0	0	3	0	3	0
1:30	0	0	3	0	3	0
2:00	0	0	3	0	3	0
2:30	0	0	3	0	3	0
3:00	0	0	3	0	3	0
					13	3

Date: Friday December 16, 2022 Surveyor:

	Surface		Underground		Total	
TIME	Visitors	Reserved	Visitors	Service Ca	Visitors	Reserved
Supply	13	2	52	4	65	6
18:00	5	1	10	1	15	2
18:30	7	0	11	1	18	1
19:00	8	1	15	1	23	2
19:30	9	1	14	1	23	2
20:00	9	1	15	1	24	2
20:30	7	1	16	1	23	2
21:00	5	1	16	1	21	2
21:30	4	1	15	1	19	2
22:00	3	1	11	1	14	2
22:30	2	0	9	1	11	1
23:00	0	0	7	0	7	0
23:30	0	0	7	0	7	0
0:00	0	0	7	0	7	0
0:30	0	0	7	0	7	0
1:00	0	0	7	0	7	0
1:30	0	0	7	0	7	0
2:00	0	0	7	0	7	0
2:30	0	0	7	0	7	0
3:00	0	0	7	0	7	0
					24	2

			occ rate	overall rate	supply rate
Occupied units	341				
Vacant	3	Visitor Rate	0.070	0.070	0.189
	344				

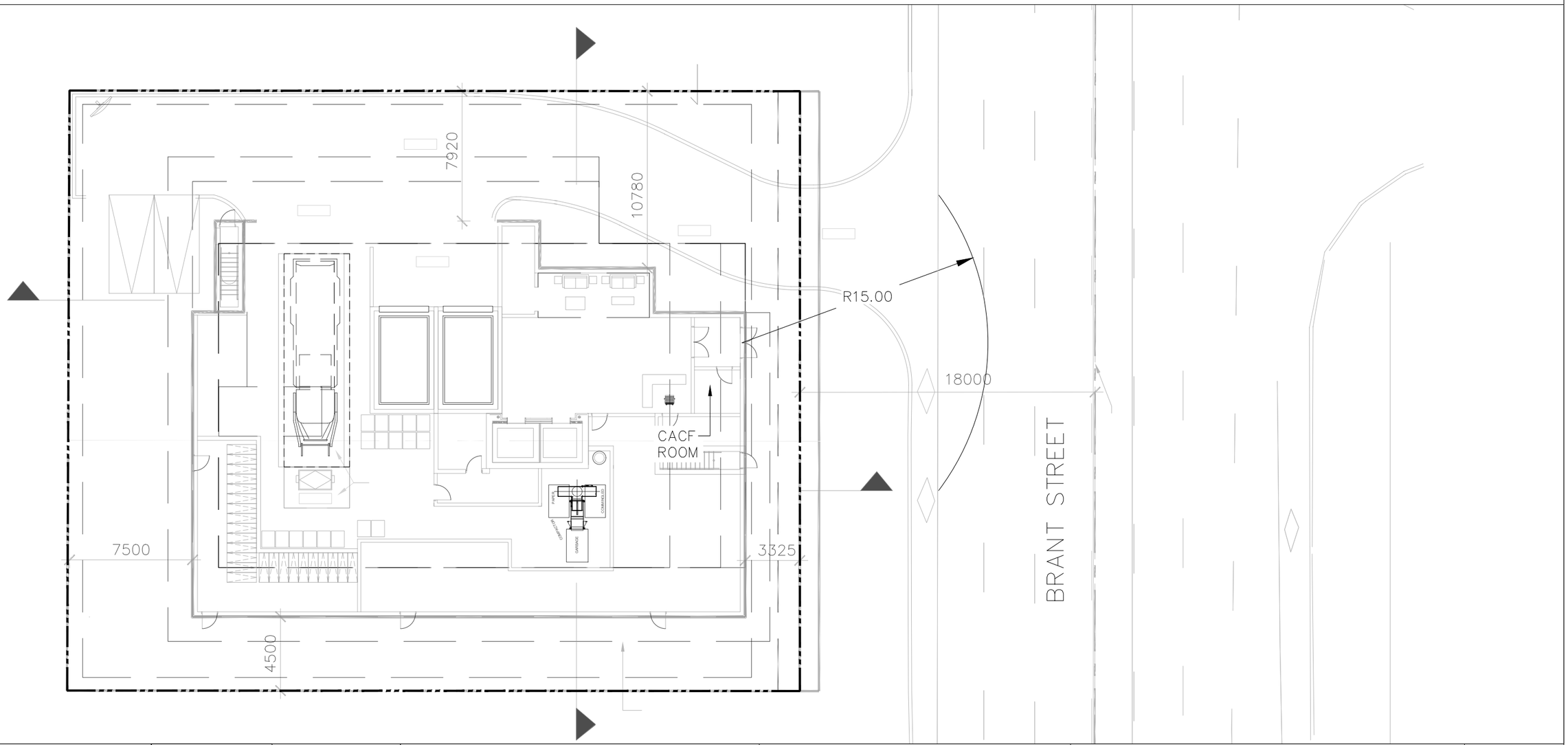
Date: Saturday December 17, 2022 Surveyor:

	Surface		Underground		Total	
TIME	Visitors	Reserved	Visitors	Service Ca	Visitors	Reserved
Supply	13	2	52	4	65	6
18:00	5	2	14	2	19	4
18:30	4	2	16	2	20	4
19:00	4	2	15	2	19	4
19:30	4	2	16	2	20	4
20:00	4	2	14	1	18	3
20:30	4	1	13	1	17	2
21:00	3	1	11	1	14	2
21:30	2	0	10	0	12	0
22:00	1	0	10	0	11	0
22:30	1	0	10	0	11	0
23:00	0	0	8	0	8	0
23:30	0	0	7	0	7	0
0:00	0	0	6	0	6	0
0:30	0	0	6	0	6	0
1:00	0	0	6	0	6	0
1:30	0	0	5	0	5	0
2:00	0	0	5	0	5	0
2:30	0	0	6	0	6	0
3:00	0	0	6	0	6	0
					20	4

APPENDIX I

FUNCTIONAL DESIGN REVIEW

ONTARIO BUILDING CODE – FIRE ACCESS ROUTE:
PER ONTARIO BUILDING CODE SECTION 3.2.5.5:
1. ACCESS ROUTES REQUIRE THAT THE PRINCIPAL ENTRANCES ARE LOCATED NOT LESS THAN 3m AND NOT MORE THAN 15m FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING. HENCE FIRE TRUCKS MAY PARK ALONG BRANT STREET.
2. FIRE HYDRANTS TO BE LOCATED AS SPECIFIED.
PER ONTARIO BUILDING CODE SECTION 3.2.5.6
3. A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL:
a. HAVE A CLEAR WIDTH NOT LESS THAN 6m, UNLESS IT CAN BE SHOWN THAT LESSER WIDTHS ARE SATISFACTORY;
b. HAVE A CENTRELINE RADIUS NOT LESS THAN 12m;
c. HAVE AN OVERHEAD CLEARANCE NOT LESS THAN 5m;
d. HAVE A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15m;
e. BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIREFIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE, ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS;
f. HAVE TURNAROUND FACILITIES FOR ANY DEAD–END PORTION OF THE ACCESS ROUTE MORE THAN 90m LONG AND;
g. BE CONNECTED WITH A PUBLIC THROUGHFARE.



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1060 BRANT ST
BURLINGTON ONTARIO

2.5 0 2.5 5 7.5m
1:250

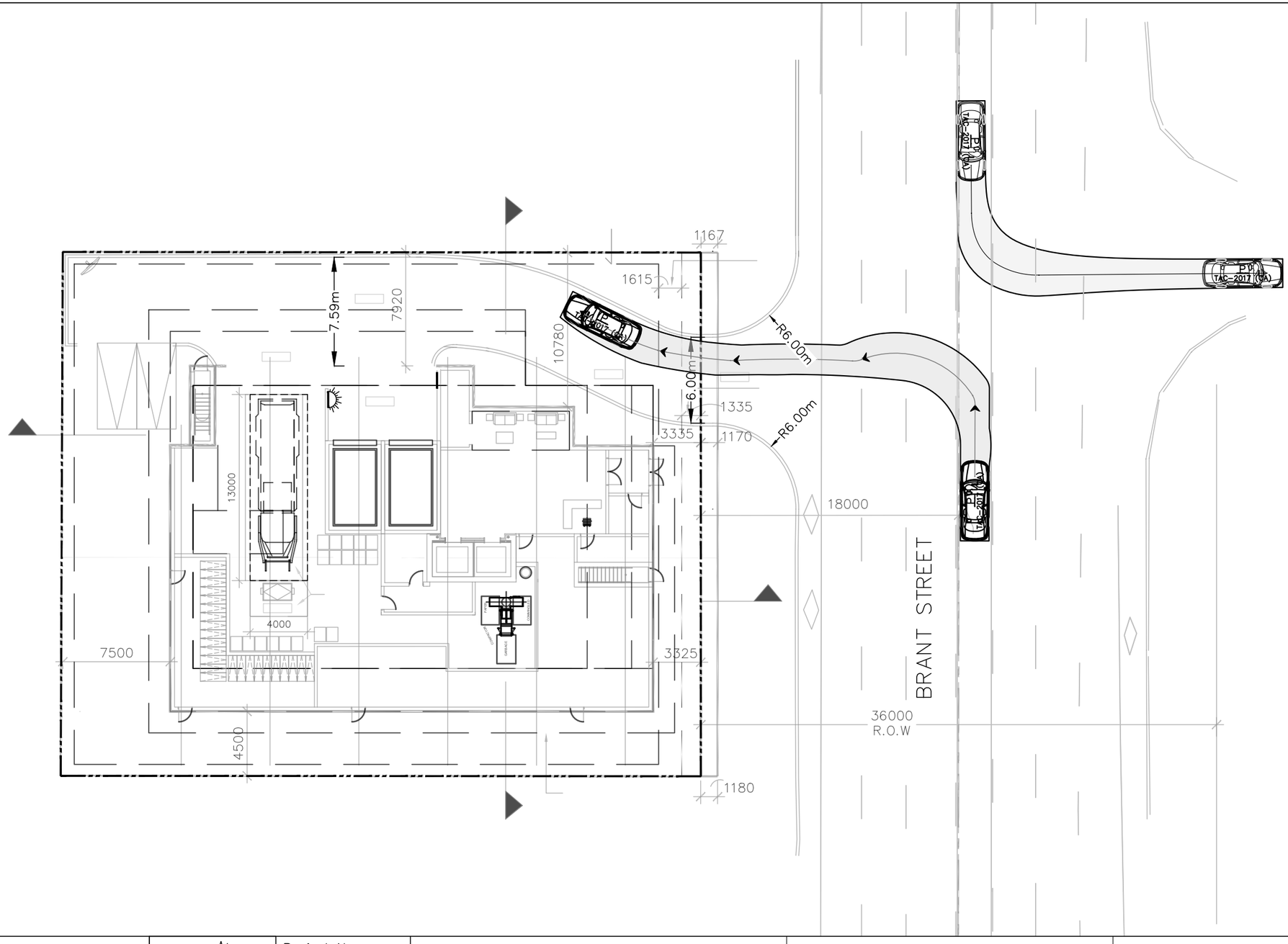
FIRE ROUTE REVIEW

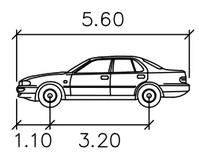
Drawing No. 001

DRAWING NAME: F:\24223\Drafting\24223WF006.dwg

AS PER CITY OF BURLINGTON STANDARD DRAWING S-110

1. MINIMUM CURB RADIUS AT THE ACCESS IS 6m,





P

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

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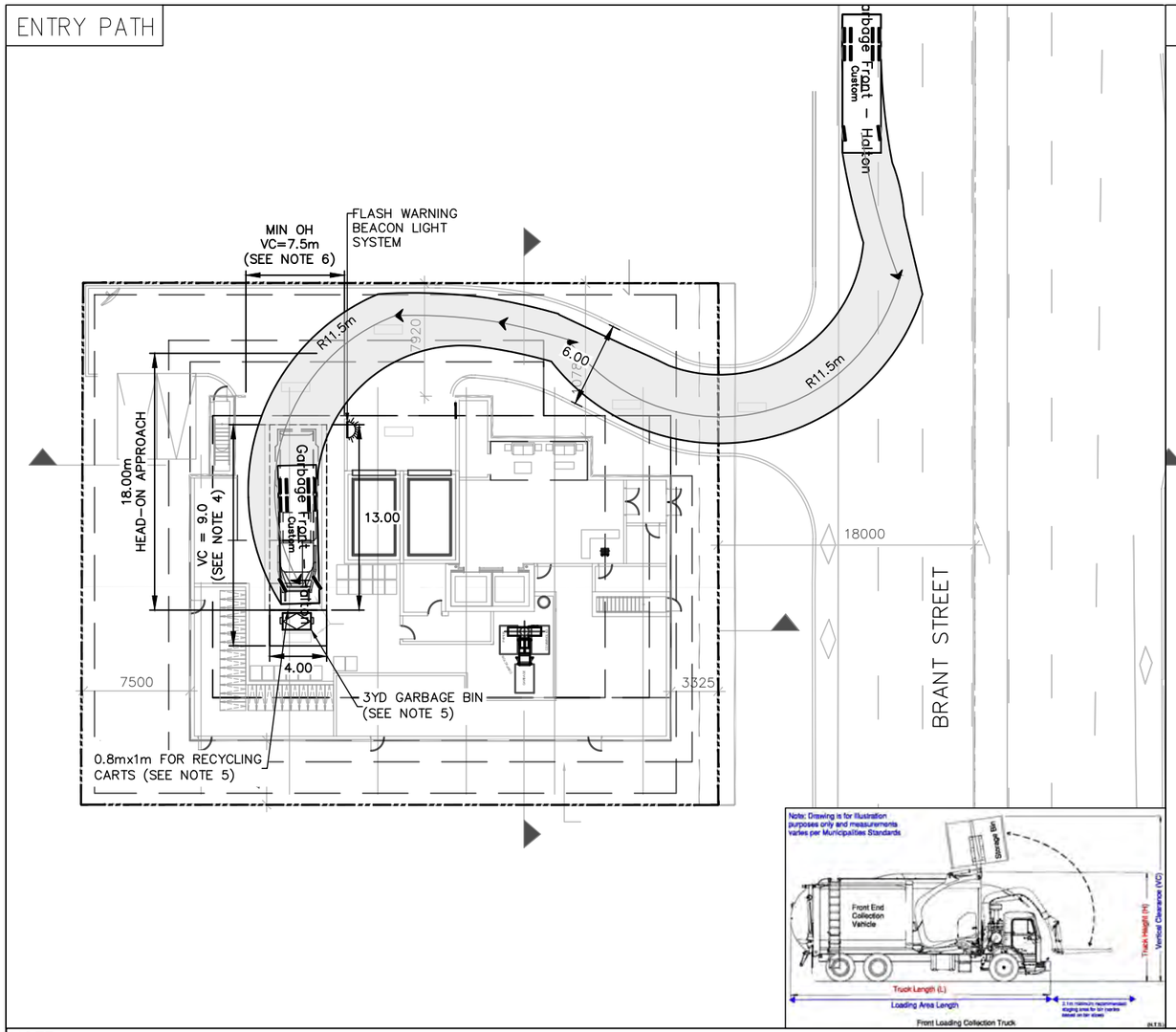
3 0 3 6 9m
1: 300

ACCESS REVIEW AND TWO-WAY LEFT TURN

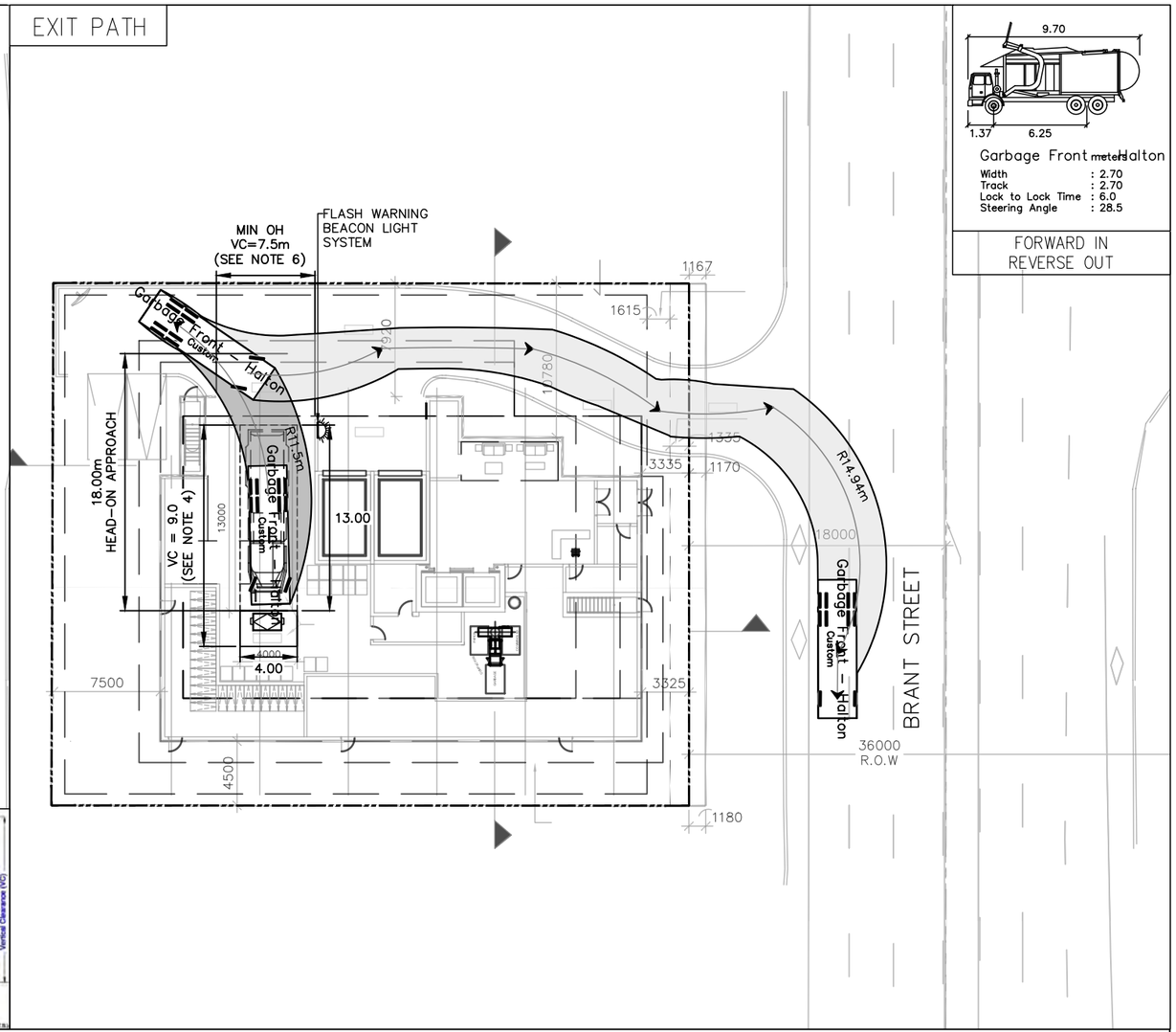
Drawing No. 002

DRAWING NAME: F:\24223\Drafting\24223WF006.dwg

ENTRY PATH



EXIT PATH



Garbage Front meter Halton

Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 28.5

FORWARD IN
REVERSE OUT

NOTE:

1. A TRAINED ON–SITE STAFF TO BE AVAILABLE TO MANEUVER THE WASTE COLLECTION BINS FROM THE STAGING AREA TO IN FRONT OF THE TRUCK FOR THE COLLECTION DRIVER, AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT WHEN THE ON–SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE CITY COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE.
   THE SYSTEM TO REMAIN ACTIVATED DURING THE CITY GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE.
3. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

PER HALTON REGION WASTE COLLECTION GUIDELINE

4. LOADING AREA SHALL HAVE A 9.0m VERTICAL LOADING CLEARANCE.
5. FOR 93 UNITS, 1 3yd^3 BIN IS REQUIRED FOR COMPACTED GARBAGE (TO BE COLLECTED TWICE A WEEK), 14 CARTS FOR RECYCLABLE MATERIAL AND 4 CARTS FOR ORGANIC WASTE
6. ACCESS DRIVEWAYS MUST BE A MIN. 6m WIDE AT THE POINT OF INGRESS/EGRESS TO THE SITE AND A MIN. 7.5m VERTICAL CLEARANCE THROUGHOUT THE PRIVATE DRIVEWAY.
7. FRONT END TRUCK MUST HAVE MIN 11.5m TURNING RADIUS AND RECYCLE TRUCK MUST HAVE A TURNING RADIUS OF 13m
8. A MIN. 18m HEAD–ON STRAIGHT APPROACH TO THE COLLECTION POINT IS REQUIRED
9. A 10m^2 BULK WASTE STORAGE AREA FOR LARGE ITEMS IS REQUIRED.

WATCH FOR TURNING TRUCKS WHEN FLASHING (600x300) BLACK LEGEND & BORDER, WHITE REFL. BACKGROUND.

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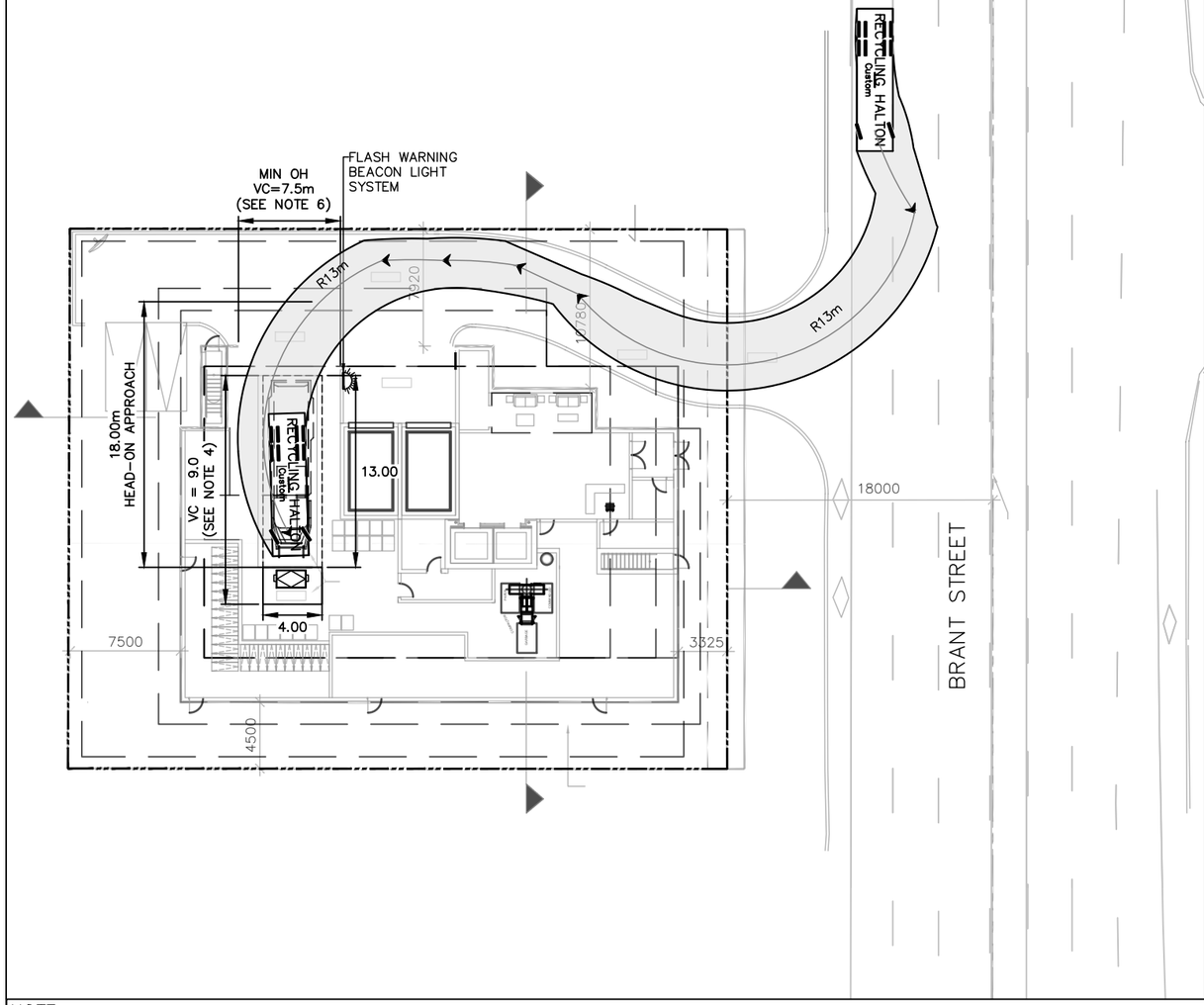
4 0 4 8 12m
1: 400

REGION GARBAGE ANALYSIS
ENTRY & EXIT PATHS
GROUND FLOOR

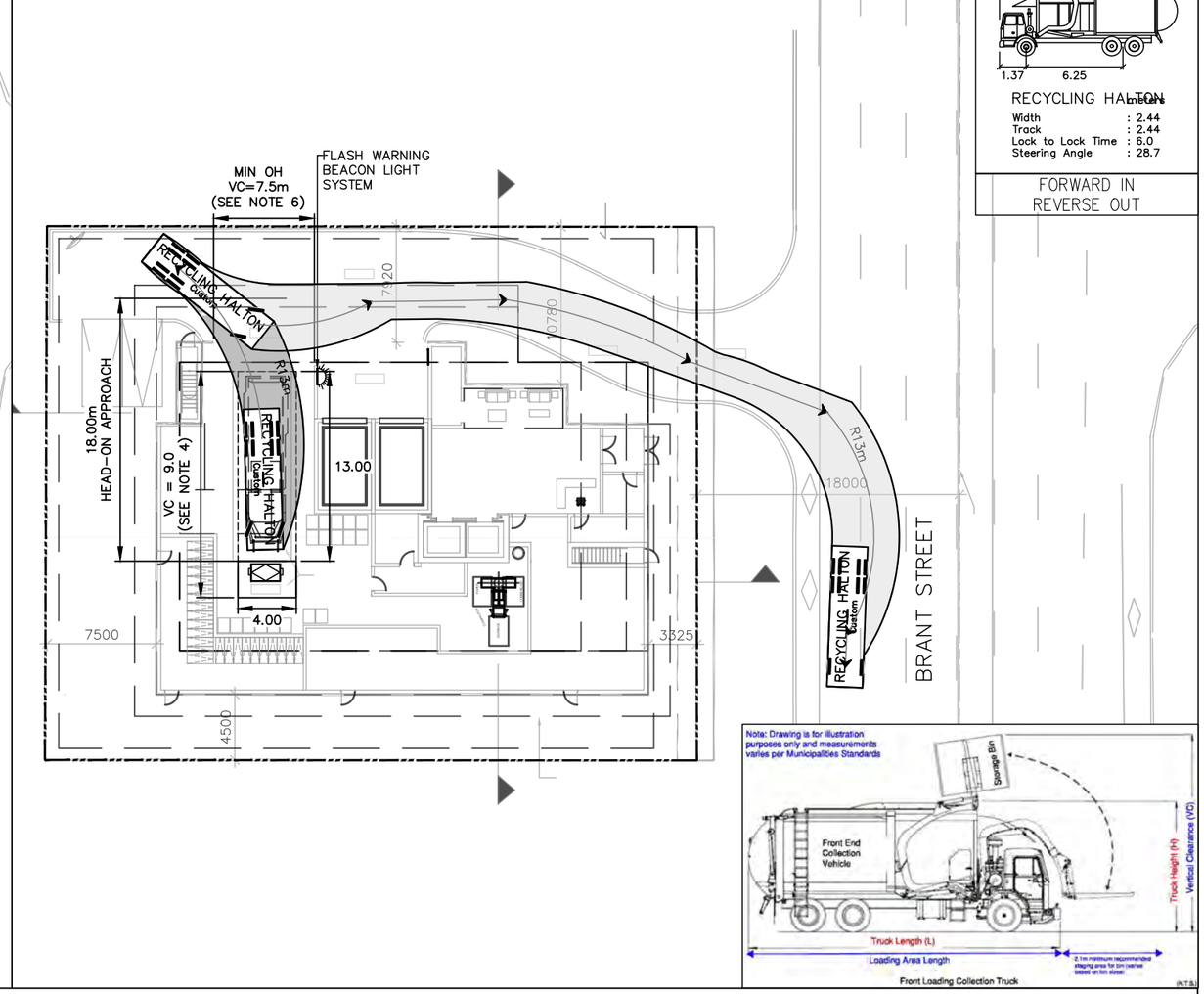
Drawing No. 003

DRAWING NAME: F:\24223\Drafting\24223WF006.dwg

ENTRY PATH



EXIT PATH



RECYCLING HALTON Limited

Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 28.7

FORWARD IN
REVERSE OUT

NOTE:

1. A TRAINED ON-SITE STAFF TO BE AVAILABLE TO MANEUVER THE WASTE COLLECTION BINS FROM THE STAGING AREA TO IN FRONT OF THE TRUCK FOR THE COLLECTION DRIVER, AND ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT WHEN THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE CITY COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
2. FLASHING WARNING LIGHT TO BE ACTIVATED WHEN TRUCKS ENTER AND EXIT THE SITE.
THE SYSTEM TO REMAIN ACTIVATED DURING THE CITY GARBAGE COLLECTION ACTIVITY AND UNTIL THE TRUCK EXITS THE SITE.
3. WARNING SIGN TO BE MOUNTED BELOW THE FLASH LIGHT.

PER HALTON REGION WASTE COLLECTION GUIDELINE
4. LOADING AREA SHALL HAVE A 9.0m VERTICAL LOADING CLEARANCE.
5. FOR 93 UNITS, 1 3yd³ BIN IS REQUIRED FOR COMPACTED GARBAGE (TO BE COLLECTED TWICE A WEEK).
6. ACCESS DRIVEWAYS MUST BE A MIN. 6m WIDE AT THE POINT OF INGRESS/EGRESS TO THE SITE AND A MIN. 7.5m VERTICAL CLEARANCE THROUGHOUT THE PRIVATE DRIVEWAY.
7. TRUCK MUST HAVE A TURNING RADIUS OF 13m
8. A MIN. 18m HEAD-ON STRAIGHT APPROACH TO THE COLLECTION POINT IS REQUIRED
9. A 10m² BULK WASTE STORAGE AREA FOR LARGE ITEMS IS REQUIRED.

WATCH FOR TURNING TRUCKS WHEN FLASHING

(600x300)
BLACK LEGEND & BORDER,
WHITE REFL. BACKGROUND.

DRAWN BY: ZSYED PLOT DATE: December 23, 2025

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Project No. 24223

Date Dec 23, 2025

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BURLINGTON ONTARIO

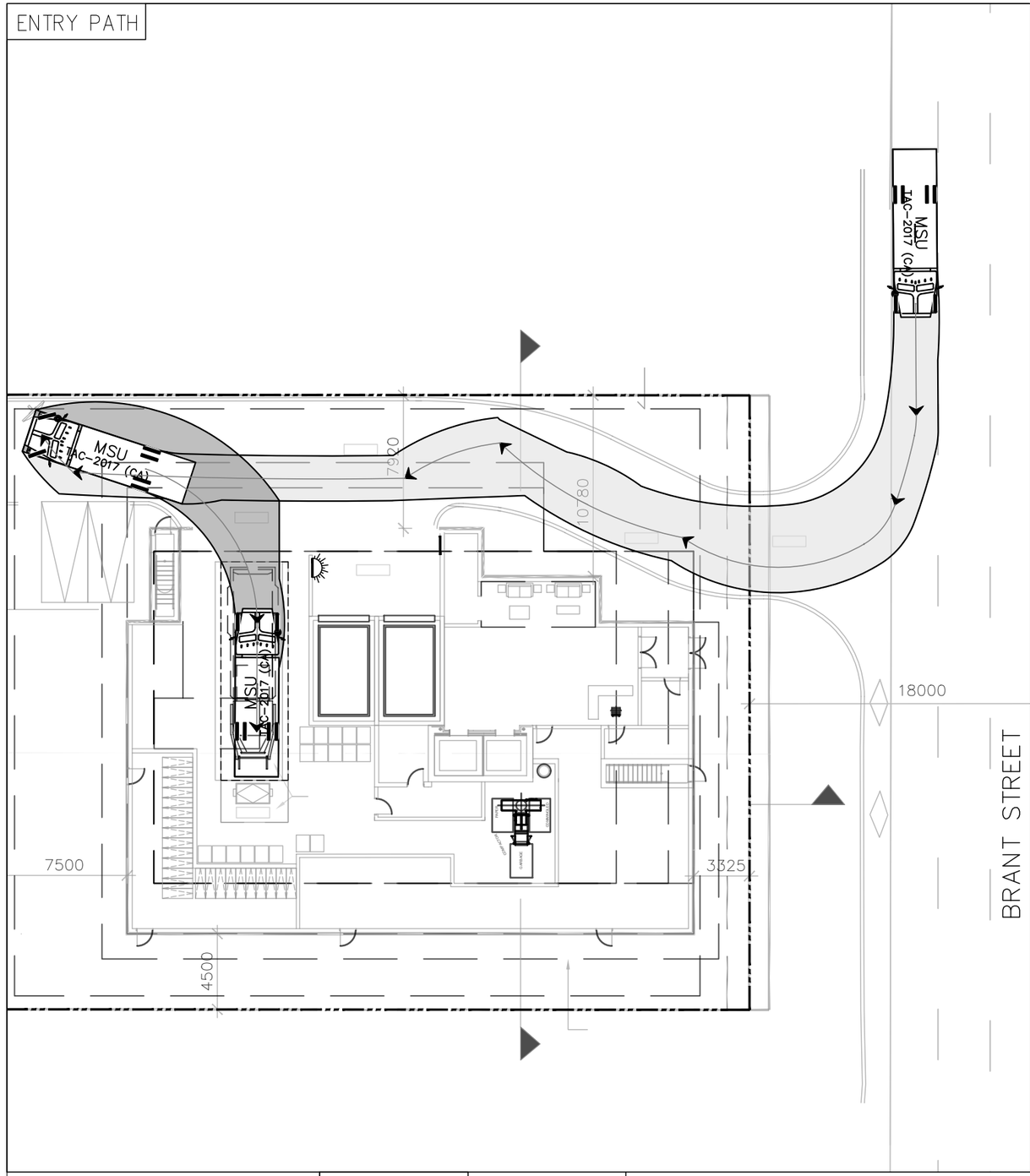
4 0 4 8 12m
1: 400

REGION RECYCLING ANALYSIS
ENTRY & EXIT PATHS
GROUND FLOOR

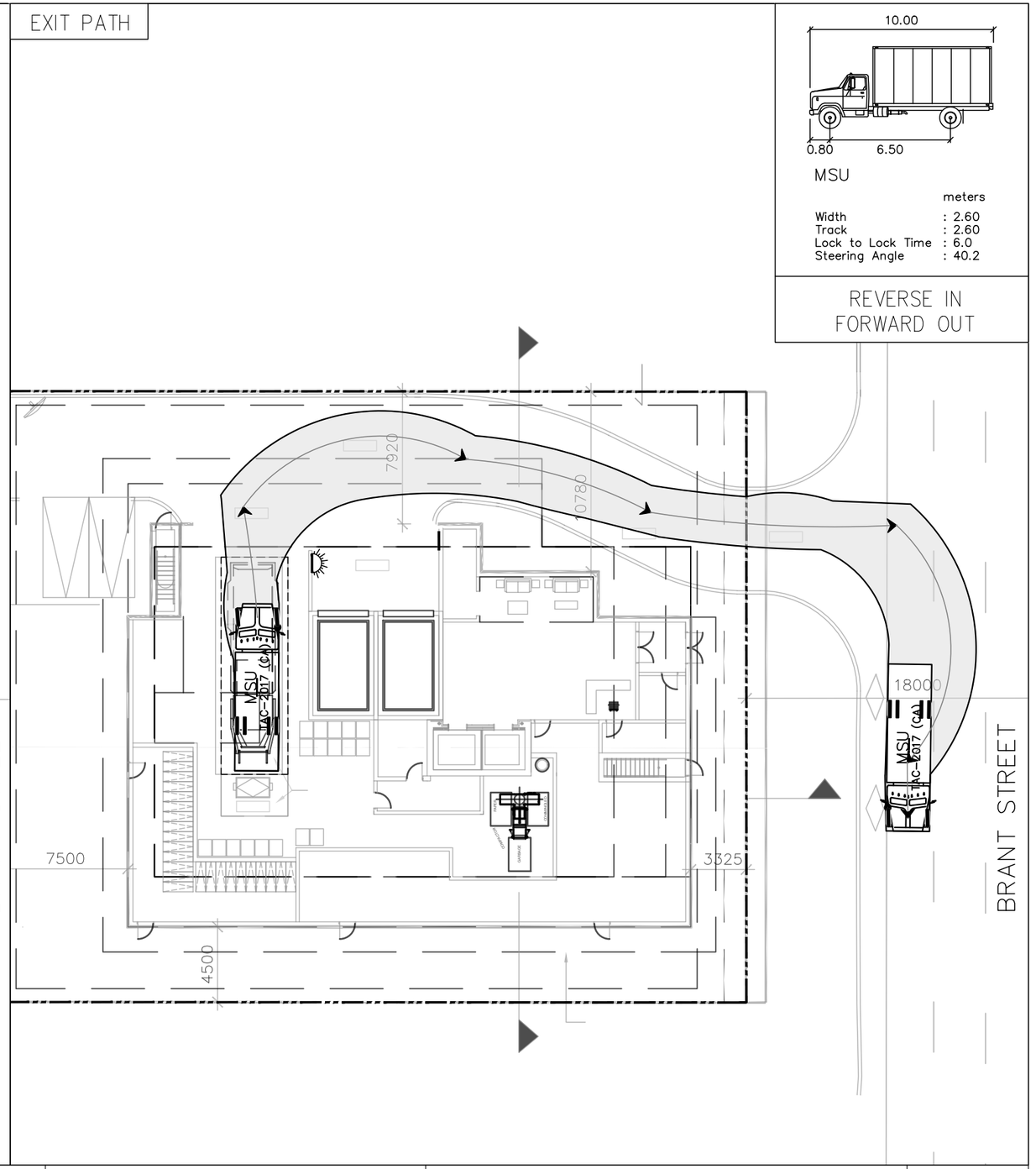
Drawing No. 004

DRAWING NAME: F:\24223\Drafting\24223WF006.dwg

ENTRY PATH



EXIT PATH



MSU

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

REVERSE IN
FORWARD OUT

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Date Dec 23, 2025

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BURLINGTON ONTARIO

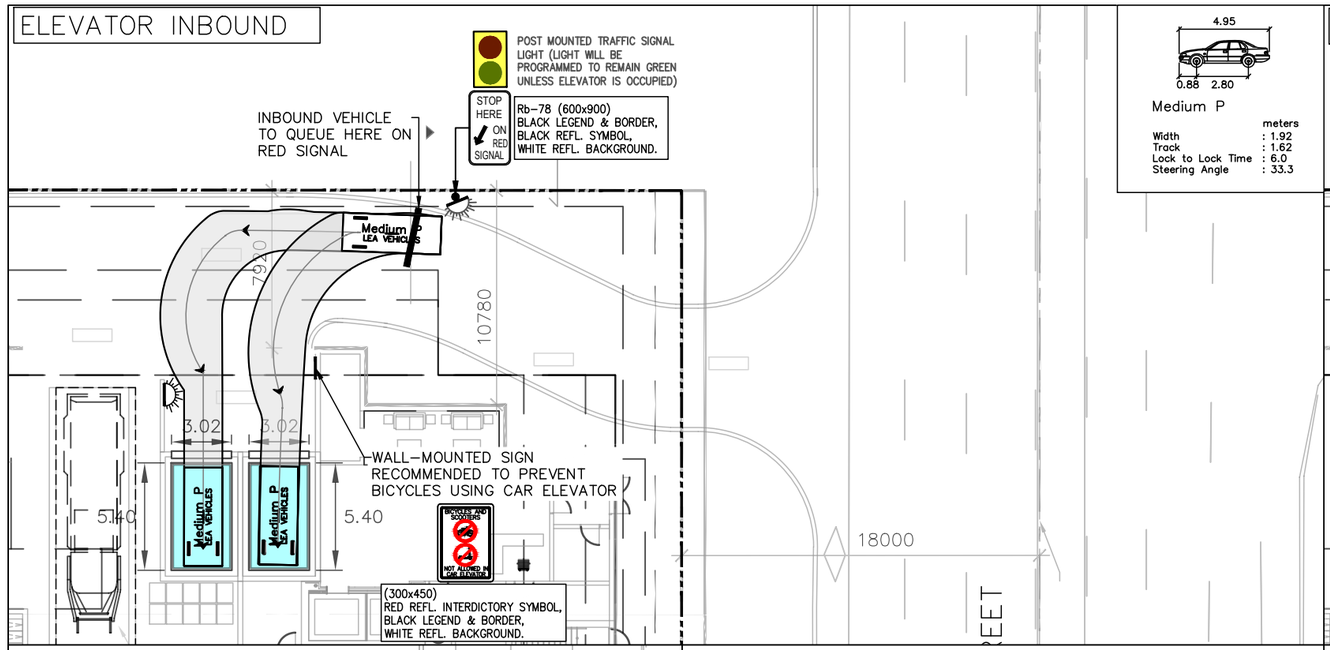
3 0 3 6 9m
1: 300

MOVING/DELIVERY VEHICLE (MSU)
ENTRY & EXIT PATHS
GROUND FLOOR

Drawing No. 005

DRAWING NAME: F:\24223\Drafting\24223WF006.dwg

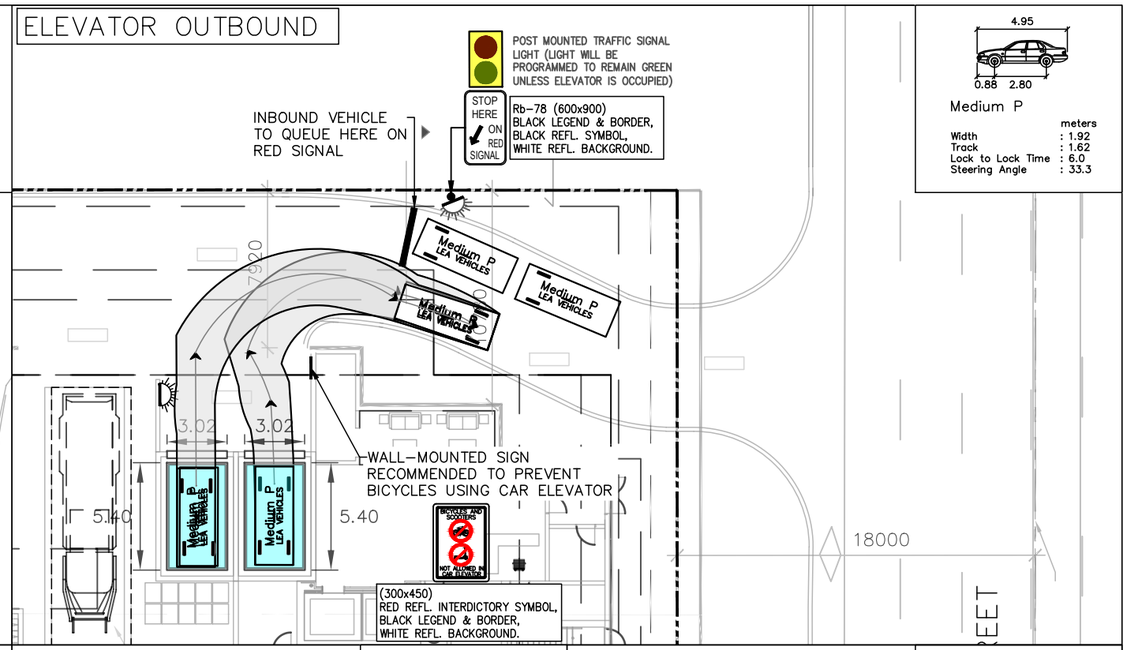
ELEVATOR INBOUND



Medium P

	meters
Width	: 1.92
Track	: 1.62
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

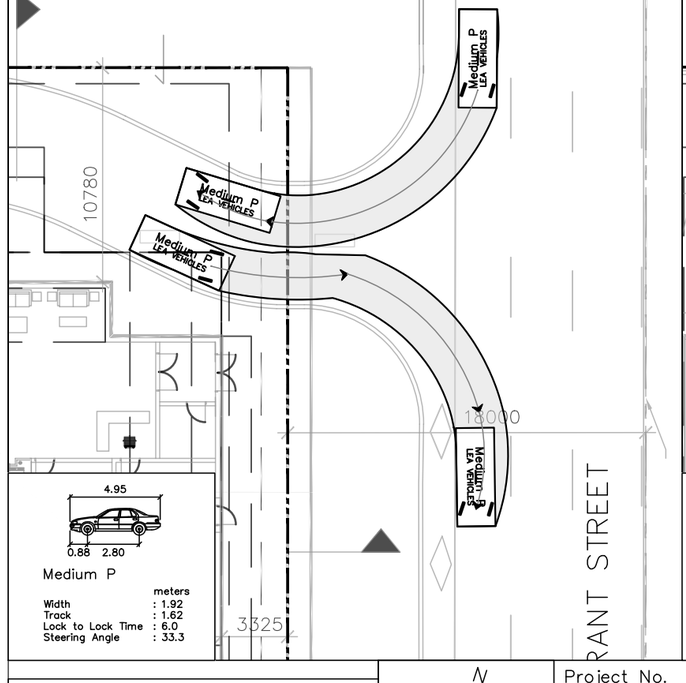
ELEVATOR OUTBOUND



Medium P

	meters
Width	: 1.92
Track	: 1.62
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

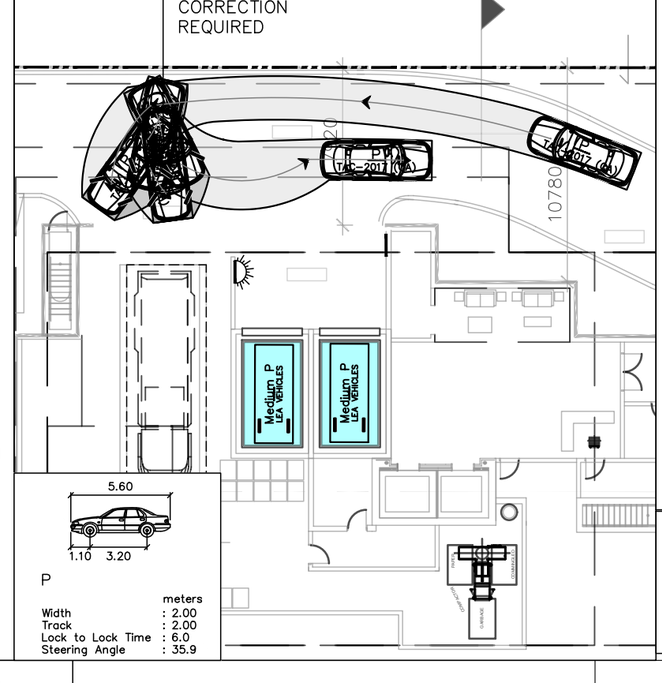
ACCESS ANALYSIS



Medium P

	meters
Width	: 1.92
Track	: 1.62
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

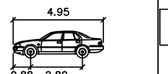
P-TAC TURNAROUND AND EXIT



P

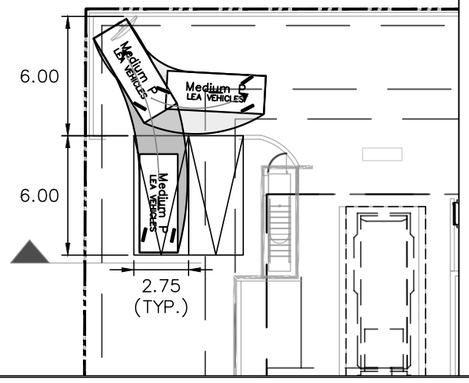
	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

MEDIUM P REVERSE OUT

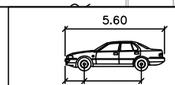


Medium P

	meters
Width	: 1.92
Track	: 1.62
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

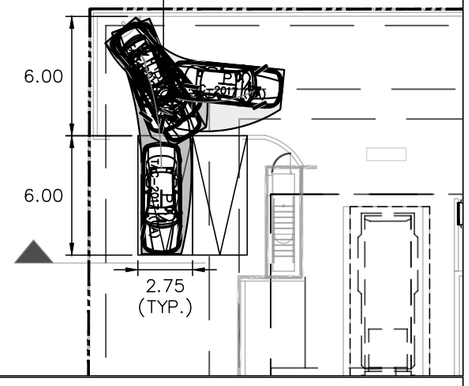


P-TAC REVERSE OUT



P

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



AS PER CITY OF BURLINGTON ZONING BYLAW SECTION 2.26.

1. THE PARKING STALL DIMENSIONS REQUIRE A MINIMUM WIDTH OF 2.75m AND A MINIMUM AREA OF 16.5sqm (EQUATING TO A LENGTH OF 6.0 M FOR A WIDTH OF 2.75 M)
2. THE PARKING WIDTH SHOULD BE INCREASED BY 0.30 M FOR EACH OBSTRUCTED SIDE
3. FURTHER REVIEW OF THE CAR ELEVATOR WILL BE CONDUCTED UPON RECEIVING THE DETAILED SPECIFICATIONS, INCLUDING THE MAXIMUM VEHICLE SIZE AND WEIGHT.

DRAWN BY: ZSYED PLOT DATE: December 23, 2025

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Project No. 24223

Date Dec 23, 2025

1060 BRANT ST
BURLINGTON ONTARIO

3 0 3 6 9m
1:300

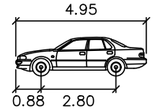
PARKING REVIEW
MEDIUM P-TAC PATHS
GROUND FLOOR

Drawing No. 006

DRAWING NAME: F:\24223\Drafting\24223WF006.dwg

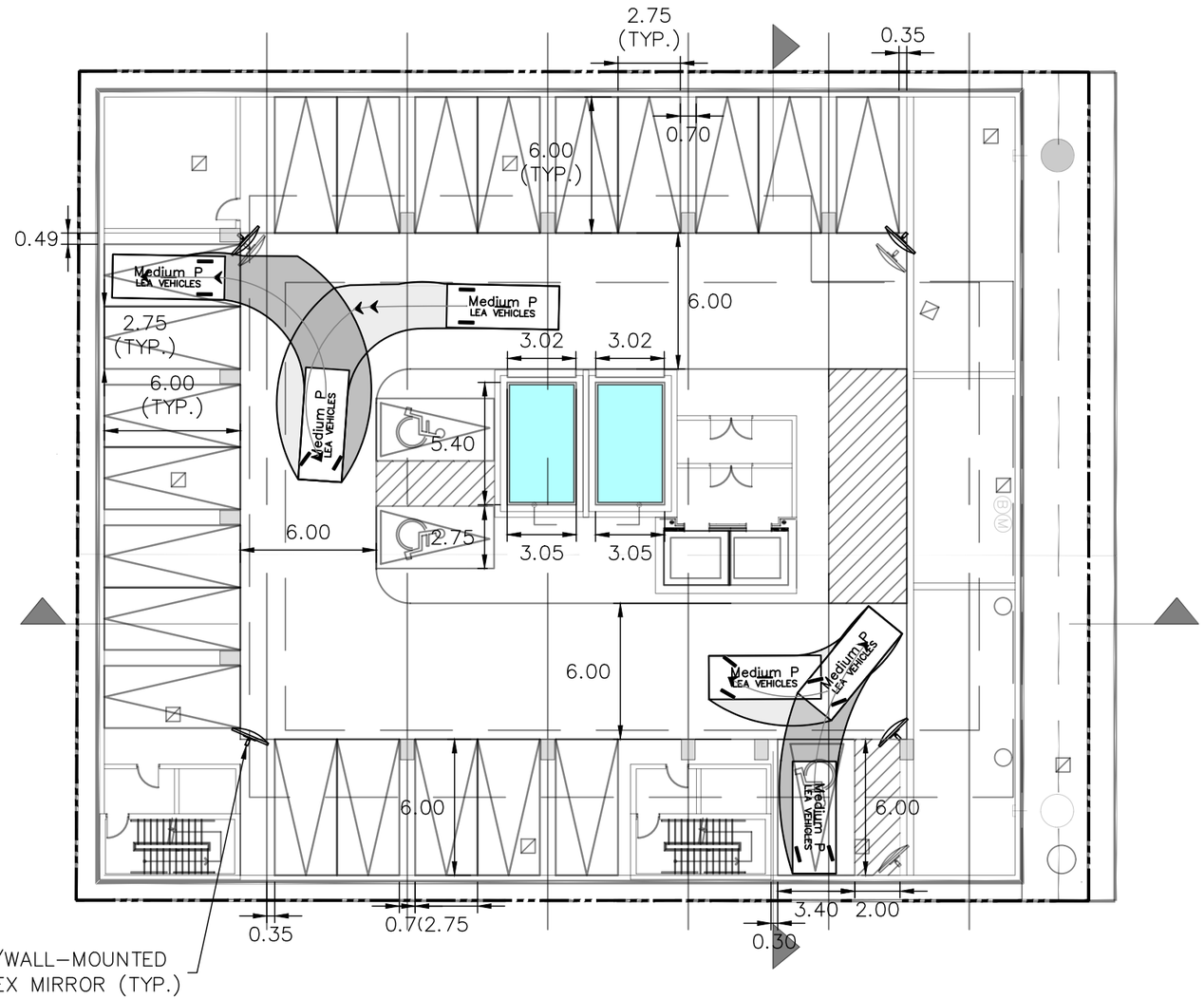
AS PER CITY OF BURLINGTON ZONING BYLAW SECTION 2.26.

1. THE PARKING STALL DIMENSIONS REQUIRE A MINIMUM WIDTH OF 2.75m AND A MINIMUM AREA OF 16.5sqm (EQUATING TO A LENGTH OF 6.0 M FOR A WIDTH OF 2.75 M)
2. THE PARKING WIDTH SHOULD BE INCREASED BY 0.30 M FOR EACH OBSTRUCTED SIDE
3. AS PER THE CORPORATION OF THE CITY OF BURLINGTON SINGLE SPACE ACCESSIBLE PARKING SPACE HAVE A MINIMUM WIDTH OF 4.75m (INCLUDING BARRIER FREE AISLE)
4. FURTHER REVIEW OF THE CAR ELEVATOR WILL BE CONDUCTED UPON RECEIVING THE DETAILED SPECIFICATIONS, INCLUDING THE MAXIMUM VEHICLE SIZE AND WEIGHT.

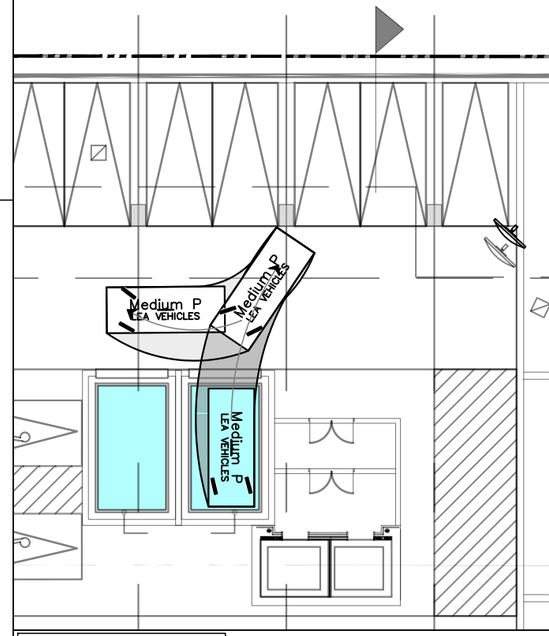


Medium P

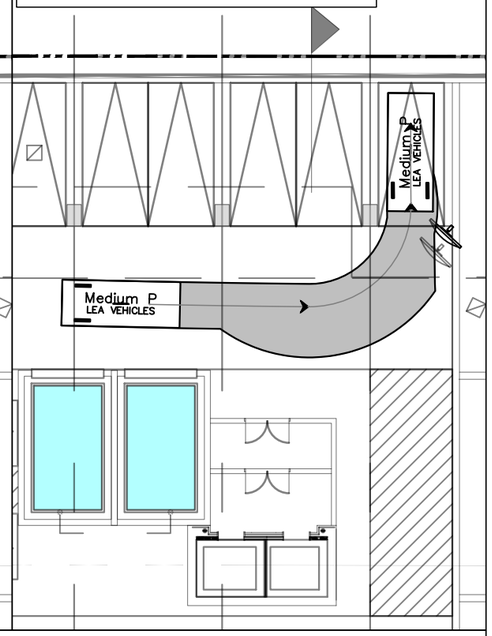
	meters
Width	: 1.92
Track	: 1.62
Lock to Lock Time	: 6.0
Steering Angle	: 33.3



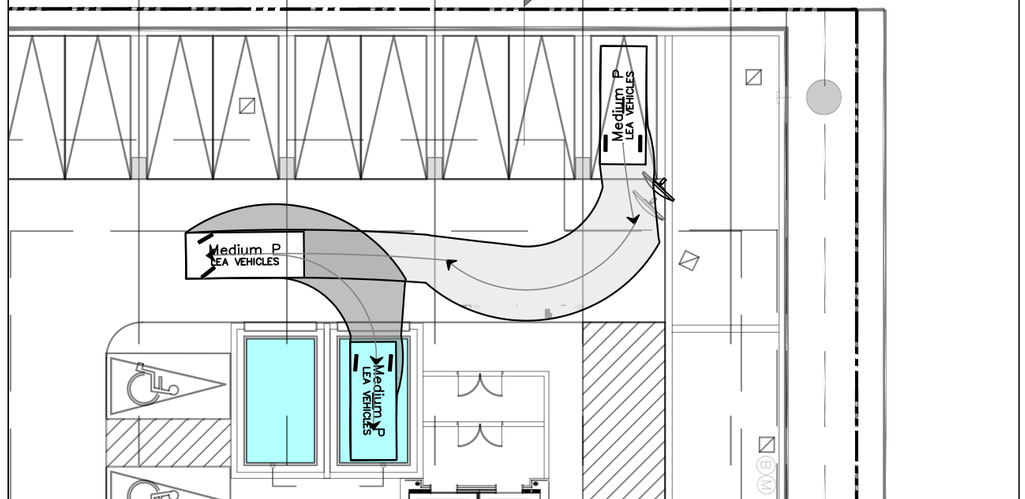
P1- REVERSE OUT FROM ELEVATOR



REVERSE PARK ON THE PARKING SPACE



REVERSE OUT



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2.5 0 2.5 5 7.5m
1:250

PARKING REVIEW
MEDIUM P-TAC PATHS
LEVEL P1

Drawing No. 007

DRAWING NAME: F:\24223\Drafting\24223WF006.dwg