Solmar (Niagara 2) Inc.

200 JOHN ST E/588 CHARLOTTE AVE NIAGARA-ON-THE-LAKE

Transportation Impact Study

July 2020

18145

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LEA Consulting Ltd.
425 University Ave, Suite 400
Toronto, ON, M5G 1T6 Canada
T | 905 470 0015 F | 905 470 0030
WWW.LEA.CA

July 9, 2020

Reference Number: 18145

Mr. Luis Correia
Senior Director
Solmar (Niagara 2) Inc.
122 Romina Drive
Concord, Ontario L4K 4Z7

Dear Mr. Correia,

RE: Transportation Impact Study for the Hotel and Residential Subdivision Development at 200 John St. & 588 Charlotte St., Niagara-on-the-Lake.

LEA Consulting Ltd. is pleased to present the findings of our Transportation Impact Study for the proposed residential subdivision at 200 John St. & 588 Charlotte St. in the Town of Niagara-on-the-Lake.

Should you have any questions regarding this Transportation Impact Study, please feel free to contact Kelsey Waugh at 416-572-1793 ext. 245.

Yours truly,

LEA CONSULTING LTD.

Kelsey Waugh, P.Eng., RSP1
Transportation Engineer

: cs

Encl.: 200 John St. & 588 Charlotte St. Transportation Impact Study

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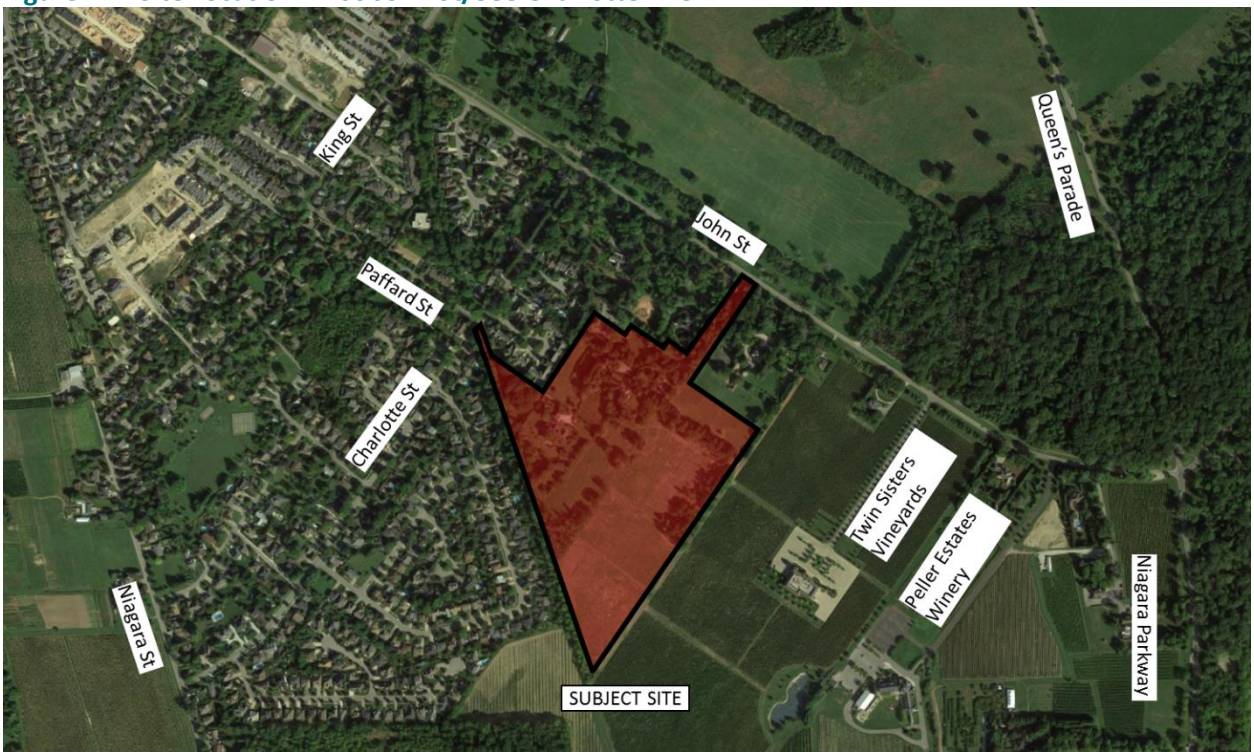
1 INTRODUCTION

LEA Consulting Ltd. (LEA) was retained by Solmar (Niagara 2) Inc., to prepare a Transportation Impact Study (TIS) for the proposed residential development to be located at 200 John St E/588 Charlotte Ave, Niagara-On-The-Lake. **Figure 1-1** below illustrates the site location. For the purposes of this report John Street East and Paffard Street will be referred to as an east-west road. Subsequently all other intersecting roads will be referred to as north-south roads.

LEA submitted a previous TIS for this location in October 2017, which reviewed the combined impacts of the subject site and the adjacent hotel proposal at 144 & 176 John Street. In this updated study, the two sites are separate, and the hotel proposal is considered as a background development application. As the traffic volumes utilized in that study are more than 2 years out of date, updated traffic counts and subsequent analysis have been conducted.

Figure 1-1: Site Location – 200 John St/588 Charlotte Ave.

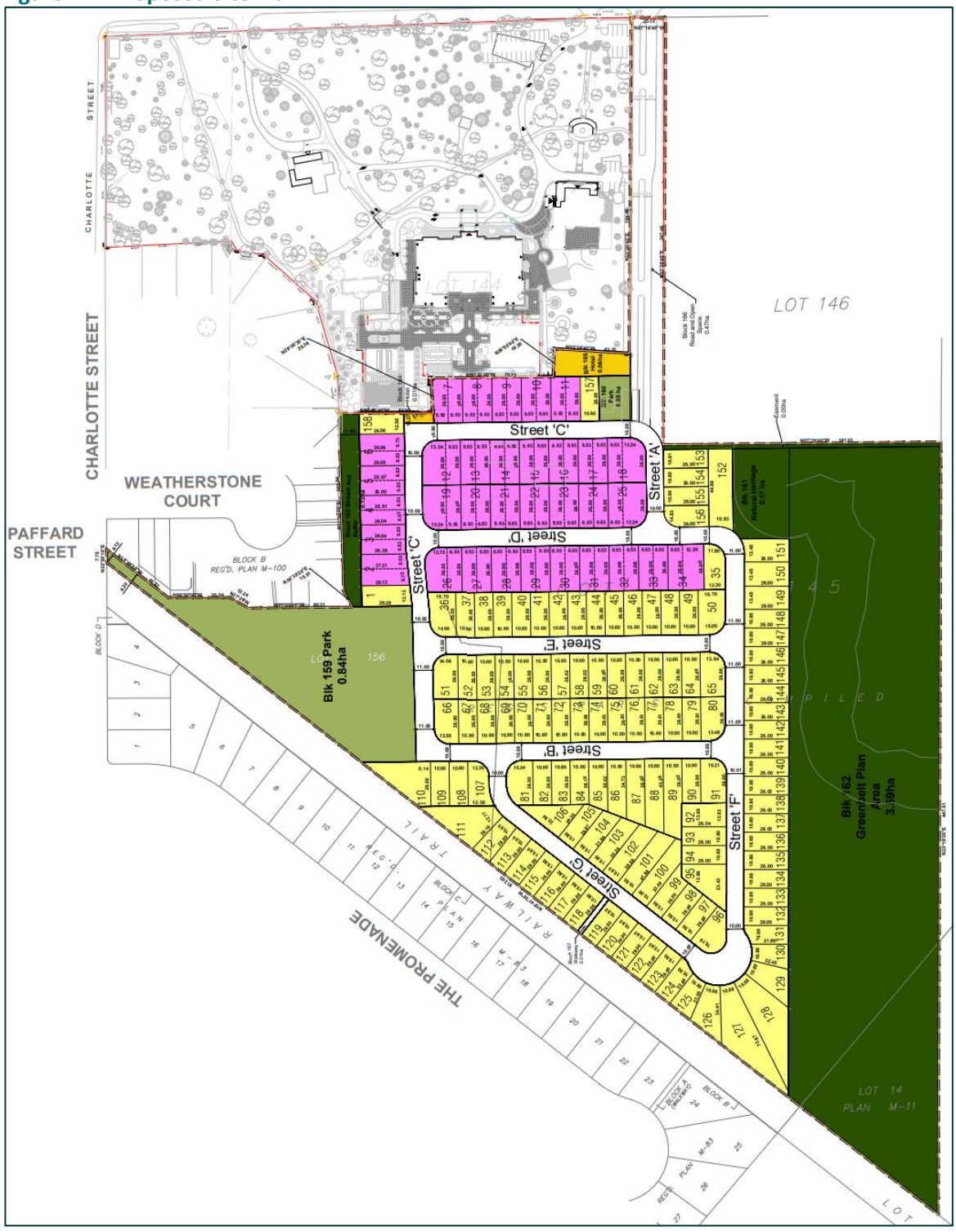


The proposed residential development will consist of a subdivision with approximately 191 single and semi-detached residential units. **Figure 1-2** on the following page illustrates the proposed site plan.

1.1 STUDY AREA

The study area for the proposed development is illustrated in **Figure 1-1** and extends along John Street East from Charlotte Street to Queens' Parade/Niagara Parkway.

Figure 1-2: Proposed Site Plan



(Source: SGL Planning & Design Inc., July 2020)

2 TRANSPORTATION NETWORK

2.1 EXISTING ROAD NETWORK

Given that the study area for this traffic impact is bounded by King Street to the west and Queens Parade to the east, the following existing intersections have been included in this study:

- Charlotte Street and John Street East
- Charlotte Street and Paffard Street
- Charlotte Street and Niagara Street
- John Street East and Queens Parade/Niagara Parkway
- John Street East and Two Sisters Vineyards Entrance
- John Street East and Peller Estates Winery and Restaurant Entrance
- John Street West/John Street East and King Street

Charlotte Street is a northeast-southwest two-lane urban road west of the subject lands, with an assumed speed limit of 50 km/h as there are no posted speed limit signs. It begins south of John Street East and terminates at Niagara Street to the south. For the purposes of this report, Charlotte Street will be referred to as a north-south road.

Niagara Street is a north-south two-lane rural road located southwest of the subject lands. It transitions from Rye Street at the north to Niagara Street to the south, beginning at Paffard Street and terminating at East and West Line. The speed limit is 50 km/h within the study area.

John Street East is a northwest-southeast two-lane rural road north of the subject lands. It transitions from John Street West at King Street, northwest of the subject lands and transitions to Ricardo Street at Queens Parade/Niagara Parkway, south east of the subject lands. Within the study area, John Street East has a posted speed limit of 50 km/h. For the purposes of this report, John Street East will be referred to as a west-east road.

King Street is a two-lane north-south roadway with a rural cross-section north of John Street West and an urban cross-section south of John Street West. The speed limit is not posted within the study area; therefore, it is assumed to be 50 km/h.

Queens Parade/Niagara Parkway is a north-south two-lane rural road east of the subject lands. It transitions from Picton Street at the northwest and terminates in Niagara Falls to the south. Within the study area, Queens Parade/Niagara Parkway has a posted speed limit of 60 km/h.

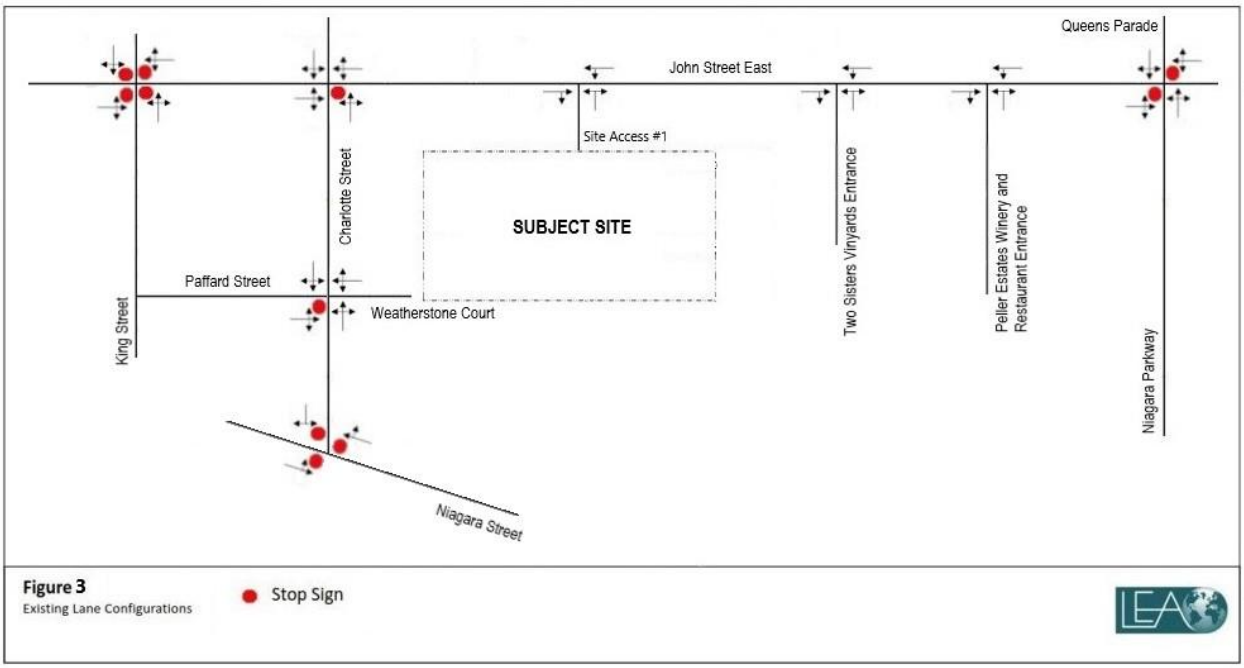
Paffard Street/Weatherstone Court is a northwest-southeast two-lane urban road west of the subject lands. It begins east of King Street and terminates at Charlotte Street. The speed limit is assumed to be 50 km/h as there are no posted speed limit sign. For the purposes of this report, Paffard Street will be referred to as a west-east road.

Two Sisters Vineyards Entrance is a two-lane driveway that begins at John Street East and terminates at the restaurant approximately 300m to the south. Within the study area, the driveway does not have a posted limit, but it is assumed to be 40 km/h.

Peller Estates Winery and Restaurant Entrance is a two-lane driveway that begins at John Street East and terminates at the winery and restaurant approximately 400m to the south. Within the study area, the driveway does not have a posted limit, but it is assumed to be 40 km/h.

Figure 2-1 illustrates a diagram of the existing lane configurations within the study area.

Figure 2-1: Existing Lane Configurations – Unsignalized Intersections



2.2 EXISTING TRANSIT NETWORK

The subject site currently has access to transit services that include Niagara-on-the-Lake Transit. The subject site is approximately 500m from the nearest bus station at John Street West and King Street. **Figure 2-2** illustrates all existing transit services in the area.

Figure 2-2: Existing Transit Network

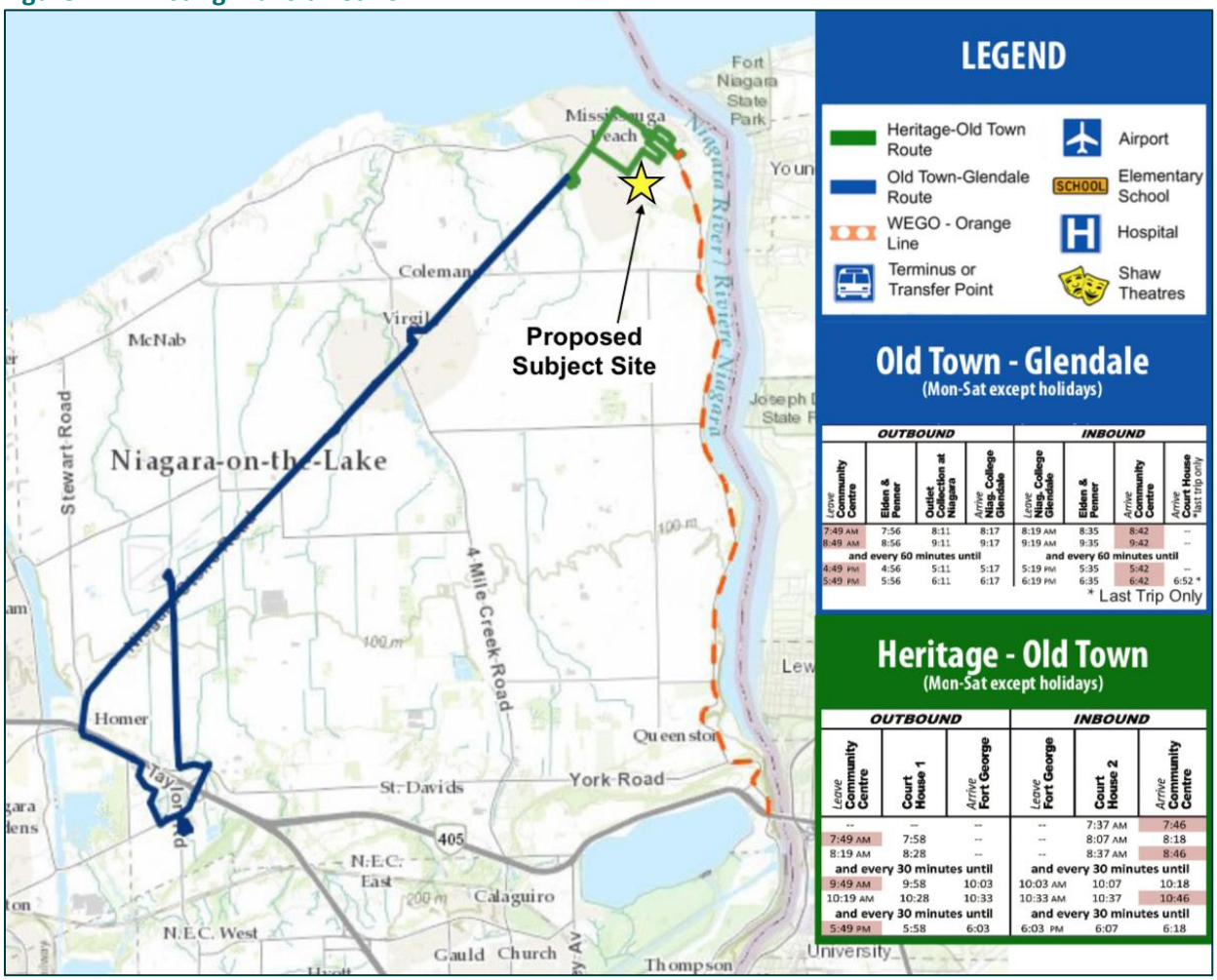


Table 2-1: Service Frequency of Existing Transit Service

Frequency of Transit Service	AM Peak Hour	PM Peak Hour
Heritage-Old Town Route	30 minutes	30 minutes
Old Town-Glendale Route	60 minutes	60 minutes

Community Transport Group (CTG) is the provider of Niagara-on-the-Lake Transit. Buses operate Monday through Saturday from 7:49 a.m. to 6:52 p.m. During the winter (off-season), there is only one bus travelling between Niagara-on-the-Lake Community Centre & Public Library through the old town to Virgil and then onto the Outlet Collection of Niagara and Niagara College.

2.3 TRAFFIC DATA COLLECTION

In order to capture the peak traffic periods in the study area, existing traffic volumes were obtained and collected by LEA between the hours of 7:00 a.m. and 9:00 a.m. and 4:00 p.m. and 6:00 p.m. for the weekday counts and between the hours of 1:00 p.m. and 5:00 p.m. for the Saturday counts.

Table 2-2: Existing Traffic Volumes for Weekday and Saturday Counts

Intersection	Date of Survey	Source
Charlotte Street and John Street East	March 12, 2020	LEA Consulting Ltd.
	March 14, 2020	
John Street East and Queens Parade/Niagara Parkway	March 12, 2020	
	March 14, 2020	
Charlotte Street and Paffard Street	March 12, 2020	
	March 14, 2020	
John Street East and Two Sisters Vineyards Entrance	March 12, 2020	
	March 14, 2020	
John Street East and Peller Estates Winery and Restaurant Entrance	March 12, 2020	
	March 14, 2020	
Charlotte Street and Niagara Street	March 12, 2020	
	March 14, 2020	
John Street West/East and King Street	March 12, 2020	
	March 14, 2020	

The volumes were collected to observe typical weekday and Saturday volumes of the study area. After comparing the March volumes to previous summer counts obtained in 2017, the volumes were observed to be lower than the summer season. This is in line with expectations of tourist volumes and MTO seasonal adjustments for nearby highways. Given this, a seasonal adjustment increase of 44% was applied to existing volumes and carried through the analyses of this report. **Appendix A** includes the survey counts on March 12, 2020 and March 14, 2020 for the intersection at John Street East and Queens Parade/Niagara Parkway.

It should be noted that these volumes were scheduled and collected at the outset of the COVID-19 pandemic, which has been noted to decrease traffic volumes across the country. However, a review of traffic statistics available from Google[1] and Apple[2] Mobility reports indicated that decreases to traffic volumes were not observed until the following week when the Ontario government issued stay at home recommendations. Traffic volumes for March 12th and March 14th noted traffic volumes typical to baseline traffic volumes. Therefore, the collected data is considered to be typical of winter traffic volumes. As noted above, a seasonal variation factor was applied to increase the traffic volumes to be more reflective of potential summer volumes.

2.4 PEAK HOUR FACTORS

According to the Guidelines for Transportation Impact Studies – Niagara Region, the peak hour factor (PHF) is assumed to be 0.92 for all movements on all approaches. Therefore, analysis incorporated for this report applied a PHF of 0.92 for all movements on all approaches.

[1] https://www.google.com/covid19/mobility/
[2] https://www.apple.com/covid19/mobility/

3 EXISTING TRAFFIC CONDITIONS

The existing balanced traffic volumes for the weekday a.m. and p.m. peak hours and the Saturday peak hour are shown in **Figure 3-1,** with the volumes shown with a seasonal increase of 44% applied in **Figure 3-2**. The existing volumes were balanced to the highest and most recent intersection volumes observed.

Figure 3-1: Existing Traffic – Weekday AM, PM and SAT Peak Hours

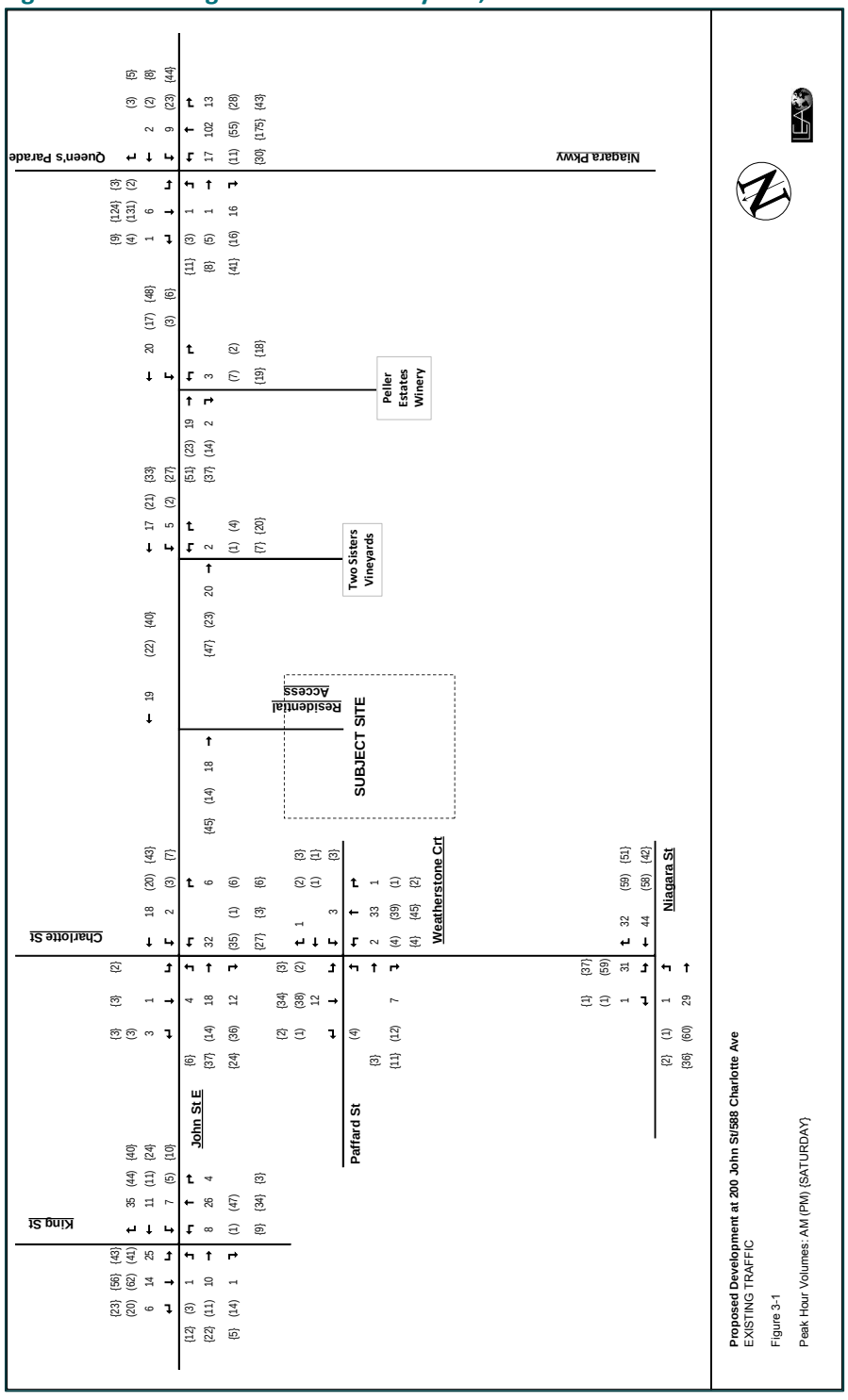
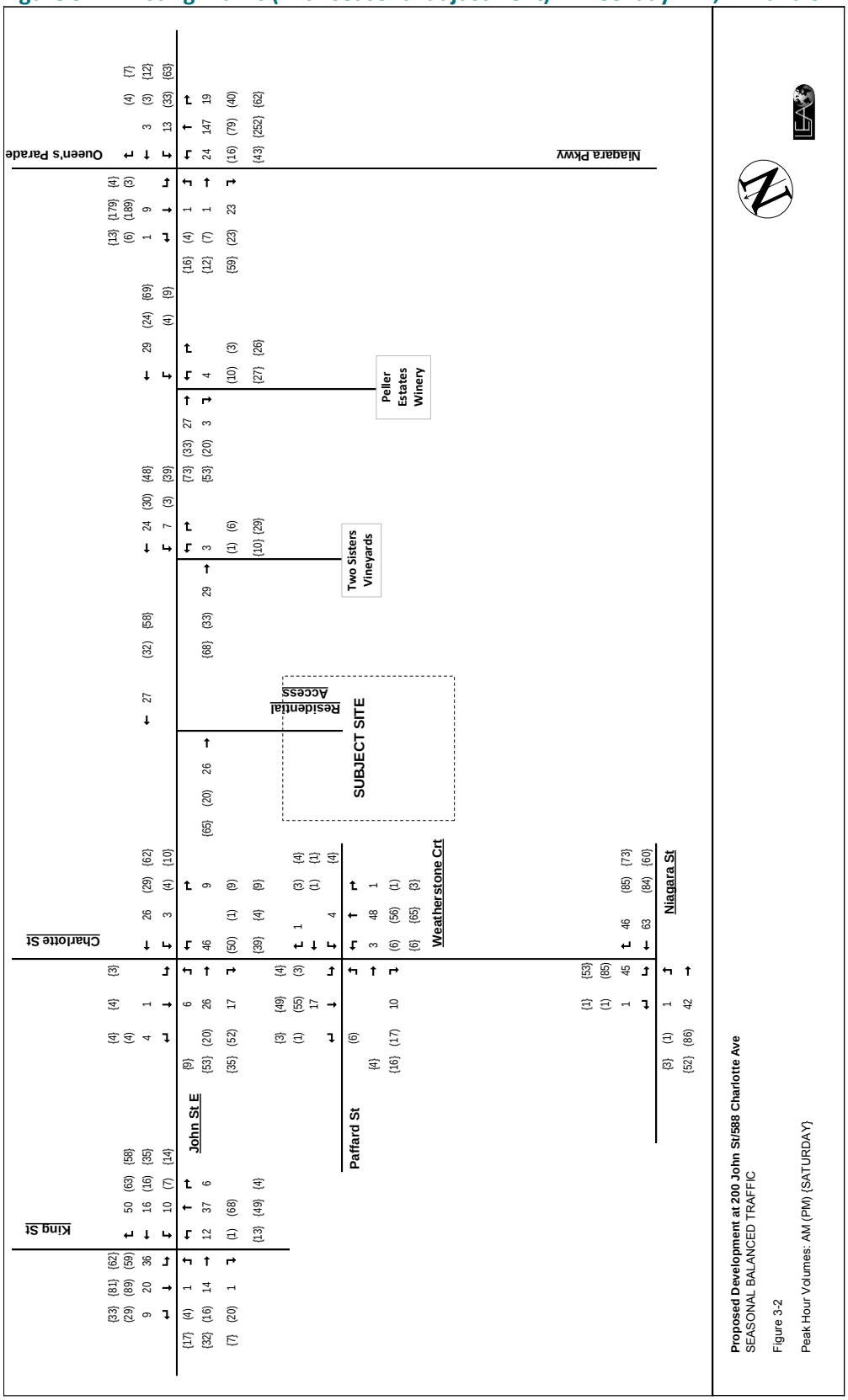


Figure 3-2: Existing Traffic (with seasonal adjustment) – Weekday AM, PM and SAT Peak Hours



3.1 UNSIGNALIZED CAPACITY ANALYSES

Intersection capacity analyses for this report were conducted using Synchro version 9.0 (Build 900), which incorporates the Highway Capacity Manual 2000 methodology. The analyses were undertaken in accordance with the Guidelines for Transportation Impact Studies – Niagara Region.

Table 3-1, **Table 3-2** and **Table 3-3** summarize the results of existing traffic analysis in the weekday a.m., p.m. and Saturday peak hour, with detailed outputs found in **Appendix B**.

Table 3-1: Unsignalized Levels of Service – Existing Traffic Weekday AM Peak Hour

Intersection	Movement of Interest	AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	27	1026	8.6	0.6	0.03	A
	WBLTR	17	667	10.5	0.6	0.03	B
	NBLTR	26	1608	1.0	0.4	0.02	A
Two Sisters Vineyard & John St E	WBTR	34	1580	1.7	0.1	0.01	A
	NBLR	4	952	8.8	0.1	0.00	A
Peller Estates Winery & John St E	NBLR	4	944	8.8	0.1	0.00	A
Charlotte St & John St E	EBLTR	7	1585	1.0	0.1	0.00	A
	WBLTR	31	1562	0.7	0.0	0.00	A
	NBLTR	60	908	9.2	1.6	0.07	A
	SBLTR	5	983	8.7	0.1	0.01	A
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	11	1061	8.4	0.2	0.01	A
	WBLTR	5	911	9.0	0.1	0.01	A
	NBLTR	3	1599	0.4	0.0	0.00	A
King St & John St E	EBLTR	17	811	7.4	-	-	A
	WBLTR	82	901	7.2	-	-	A
	NBLTR	53	814	7.5	-	-	A
	SBLTR	71	829	7.6	-	-	A
Niagara St & Charlotte St	EBLT	47	844	7.4	-	-	A
	WBTR	118	919	7.4	-	-	A
	SBLR	50	772	7.8	-	-	A
Site Access & John St E	NBLR	0	1700	0.0	0.0	0.00	A

The analysis indicates that all the unsignalized intersections in the study area are operating at good overall levels of service.

Table 3-2: Unsignalized Levels of Service – Existing Traffic Weekday PM Peak Hour

Intersection	Movement of Interest	PM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	37	718	10.3	1.2	0.05	B
	WBLTR	43	567	11.9	1.9	0.08	B
	NBLTR	17	1358	1.0	0.3	0.01	A
	SBLTR	3	1457	0.1	0.0	0.00	A
Two Sisters Vineyard & John St E	WBTR	3	1574	0.6	0.0	0.00	A
	NBLR	8	1021	8.6	0.2	0.01	A
Peller Estates Winery & John St E	WBLT	30	1566	1.0	0.1	0.00	A
	NBLR	14	948	8.9	0.3	0.01	A
Charlotte St & John St E	WBLTR	4	1519	0.8	0.1	0.00	A
	NBLTR	65	900	9.3	1.8	0.07	A
	SBLTR	4	1042	8.5	0.1	0.00	A
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	25	944	8.9	0.6	0.03	A
	WBLTR	4	924	8.9	0.1	0.00	A
	NBLTR	7	1542	0.8	0.1	0.00	A
	SBLTR	3	1542	0.4	0.0	0.00	A
King St & John St E	EBLTR	43	760	7.6	-	-	A
	WBLTR	93	800	7.7	-	-	A
	NBLTR	75	771	7.9	-	-	A
	SBLTR	193	804	8.6	-	-	A
Niagara St & Charlotte St	EBLT	94	801	7.9	-	-	A
	WBTR	183	883	8.0	-	-	A
	SBLR	93	719	8.4	-	-	A
Site Access & John St E	NBLR	0	1700	0.0	0.0	0.00	A

During the weekday p.m. peak hour, the analysis indicates all the intersections are operating at good overall levels of service.

Table 3-3: Unsignalized Levels of Service – Existing Traffic Saturday Peak Hour

Intersection	Movement of Interest	SAT Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	94	600	12.1	4.2	0.16	B
	WBLTR	89	345	19.0	7.7	0.26	C
	NBLTR	47	1362	1.2	0.8	0.03	A
	SBLTR	4	1218	0.2	0.1	0.00	A
Two Sisters Vineyard & John St E	WBTR	42	1499	3.5	0.7	0.03	A
	NBLR	43	904	9.2	1.1	0.05	A
Peller Estates Winery & John St E	WBLT	10	1493	0.9	0.2	0.01	A
	NBLR	57	874	9.4	1.6	0.07	A
Charlotte St & John St E	EBLTR	10	1535	0.7	0.1	0.01	A
	WBLTR	11	1498	1.1	0.2	0.01	A
	NBLTR	56	782	10.0	1.8	0.07	A
	SBLTR	11	790	9.6	0.3	0.01	A
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	21	946	8.9	0.5	0.02	A
	WBLTR	9	854	9.3	0.2	0.01	A
	NBLTR	7	1549	0.7	0.1	0.00	A
	SBLTR	4	1529	0.5	0.1	0.00	A
King St & John St E	EBLTR	61	717	8.0	-	-	A
	WBLTR	116	778	8.0	-	-	A
	NBLTR	67	738	8.0	-	-	A
	SBLTR	191	781	8.7	-	-	A
Niagara St & Charlotte St	EBLT	60	831	7.5	-	-	A
	WBTR	144	926	7.5	-	-	A
	SBLR	59	753	7.9	-	-	A
Site Access & John St E	NBLR	0	1700	0	0	0	A

During the weekday p.m. peak hour, the analysis indicates all the intersections are operating at good overall levels of service.

4 FUTURE BACKGROUND TRAFFIC

The traffic impact study considers a 5-year horizon. As determined through consultation with the Town, the traffic study applies a 2% compound growth rate for future corridor traffic growth. Future background traffic includes the traffic added to the network from other future developments within and surrounding the study. The existing traffic volumes plus the addition of future background corridor growth and background developments is illustrated in **Figure 4-1**.

4.1 BACKGROUND DEVELOPMENTS

There were three background developments identified within the vicinity of the subject site that must be included in the analysis. Details are summarized in **Table 4-1**.

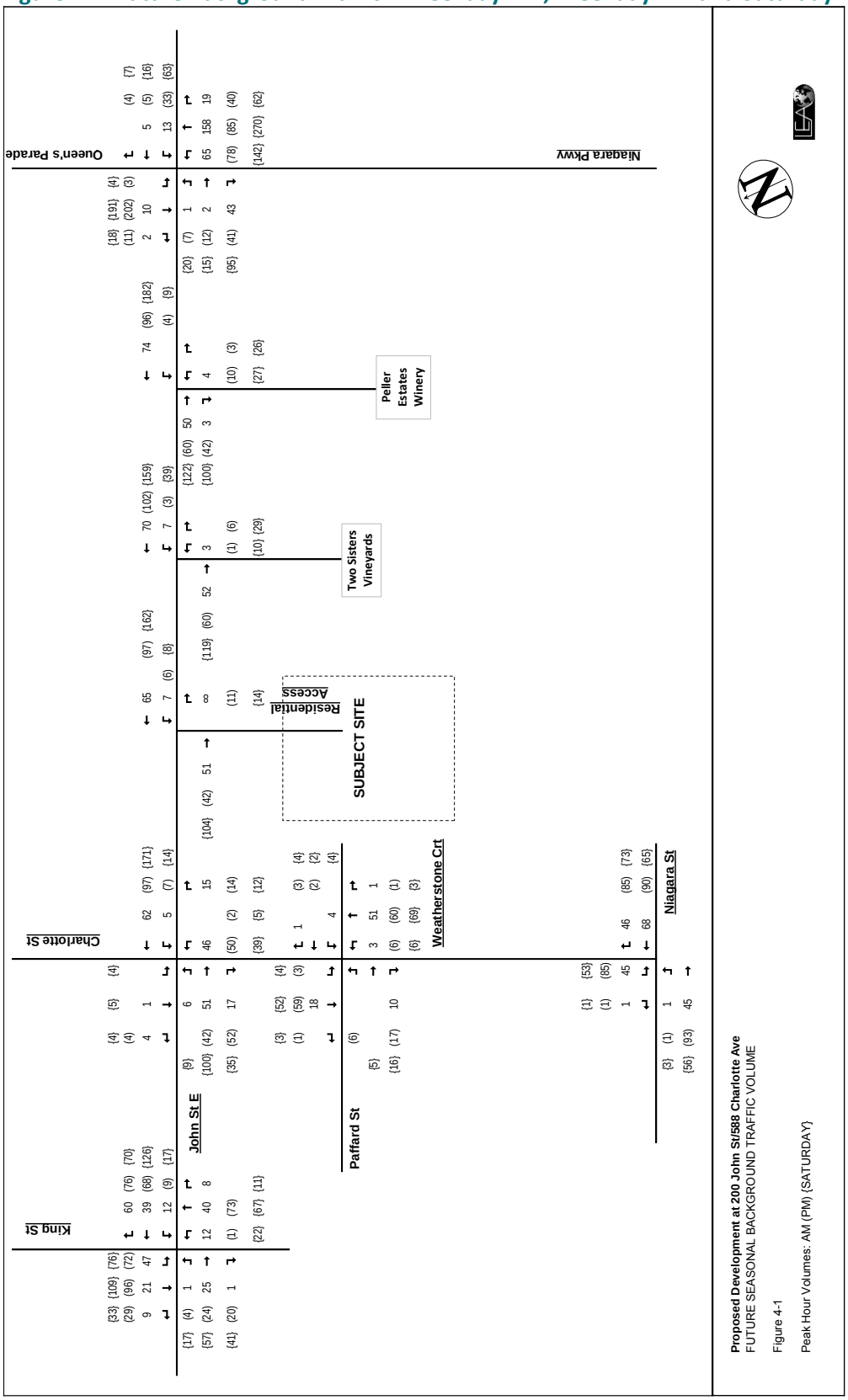
Table 4-1: List of Background Developments

Development	Location	Type of Development	Application Status	Source
Averton Square	120 John St W	20 single-family detached units and 94 apartment units	Site Plan Approved	Pillar and Post Transportation Impact Study (03 June 2016)
Windsor Apartments	128, 134 and 174 Anne St	120 apartment units	Site Plan Approved	Pillar and Post Transportation Impact Study (03 June 2016)
Randwood Hotel	144 and 176 John Street	Hotel and Convention Centre	Draft Plan under Review	Solmar and LEA Consulting Report

The volumes associated with the developments were obtained from the transportation study prepared for the respective developments, which are provided in **Appendix C**. It should be noted that the Averton Square and Windsor Apartment studies only analyzed the Saturday peak period. Site trip generations were taken into consideration for the Saturday peak period of this analysis report; however, the weekday a.m. and p.m. peak hour trip generation rates were obtained from the Institute of the Transportation Engineers (ITE) Trip Generation Manual 10th Edition for single-family detached and apartment land use. Additional details on trip generation rates is described in **Section 5.1**.

The Randwood Hotel proposal was previously submitted as part of the December 2017 TIS in combination with the subject site. As these applications are proceeding separately, the Hotel proposal has been assumed as a future background development.

Figure 4-1: Future Background Traffic – Weekday AM, Weekday PM and Saturday Peak Hours



4.2 INTERSECTION CAPACITY ANALYSIS – HORIZON 2025

Intersection capacity analyses were performed for the background traffic growth to 2025. **Table 4-2** and **Table 4-3** summarize the analysis results for the future background traffic in weekday a.m. and p.m. peak periods, detailed outputs can be found in **Appendix D**. **Table 4-4** summarizes the analysis results for the future background traffic for the Saturday peak period.

Table 4-2: Unsignalized Levels of Service – Future Background Traffic Weekday AM Peak Hour

Intersection	Movement of Interest	AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	50	1014	8.7	1.2	0.05	A
	WBLTR	19	536	12.0	0.8	0.04	B
	NBLTR	71	1606	2.2	1.1	0.04	A
Two Sisters Vineyard & John St E	WBTR	8	1547	0.7	0.1	0.01	A
	NBLR	4	876	9.1	0.1	0.00	A
Peller Estates Winery & John St E	NBLR	4	858	9.2	0.1	0.00	A
Charlotte St & John St E	EBLTR	7	1535	0.7	0.1	0.00	A
	WBLTR	5	1527	0.5	0.1	0.00	A
	NBLTR	66	839	9.7	1.9	0.08	A
	SBLTR	5	926	8.9	0.1	0.01	A
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	11	1058	8.4	0.2	0.01	A
	WBLTR	5	899	9.0	0.1	0.01	A
	NBLTR	3	1596	0.3	0.0	0.00	A
King St & John St E	EBLTR	29	784	7.5	-	-	A
	WBLTR	120	865	7.6	-	-	A
	NBLTR	65	797	7.7	-	-	A
	SBLTR	84	791	7.9	-	-	A
Niagara St & Charlotte St	EBLT	50	843	7.4	-	-	A
	WBTR	124	915	7.5	-	-	A
	SBLR	50	768	7.8	-	-	A
Site Access & John St E	WBLT	8	1551	0.8	0.1	0.01	A
	NBLR	9	1013	8.6	0.2	0.01	A

Under the future background traffic conditions, the capacity analysis indicates all the unsignalized intersections in the study area are expected to operate with good overall levels of service in the weekday a.m. peak period.

Table 4-3: Unsignalized Levels of Service – Future Background Traffic Weekday PM Peak Hour

Intersection	Movement of Interest	PM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	66	631	11.4	2.6	0.10	B
	WBLTR	45	407	14.9	2.8	0.11	B
	NBLTR	85	1336	3.4	1.5	0.06	A
	SBLTR	3	1449	0.1	0.0	0.00	A
Two Sisters Vineyard & John St E	WBTR	3	1536	0.2	0.0	0.00	A
	NBLR	8	969	8.7	0.2	0.01	A
Peller Estates Winery & John St E	WBLT	4	1528	0.3	0.1	0.00	A
	NBLR	14	841	9.4	0.4	0.02	A
Charlotte St & John St E	WBLTR	8	1489	0.6	0.1	0.01	A
	NBLTR	71	791	10.0	2.2	0.09	B
	SBLTR	4	949	8.8	0.1	0.00	A
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	25	934	9.0	0.6	0.03	A
	WBLTR	5	868	9.2	0.1	0.01	A
	NBLTR	7	1537	0.7	0.1	0.00	A
	SBLTR	3	1523	0.3	0.0	0.00	A
King St & John St E	EBLTR	52	709	8.0	-	-	A
	WBLTR	167	754	8.6	-	-	A
	NBLTR	92	728	8.3	-	-	A
	SBLTR	214	750	9.2	-	-	A
Niagara St & Charlotte St	EBLT	102	800	8.0	-	-	A
	WBTR	190	878	8.1	-	-	A
	SBLR	93	712	8.4	-	-	A
Site Access & John St E	WBLT	7	1559	0.5	0.1	0.00	A
	NBLR	12	1021	8.6	0.3	0.01	A

Under the future background traffic conditions, the capacity analysis indicates all the unsignalized intersections in the study area will operate at good overall levels of service in the weekday p.m. peak period.

Table 4-4: Unsignalized Levels of Service – Future Background Traffic Saturday Peak Hour

Intersection	Movement of Interest	SAT Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	141	493	15.2	8.9	0.29	C
	WBLTR	93	200	37.7	17.0	0.46	E
	NBLTR	154	1340	3.2	3.0	0.11	A
	SBLTR	4	1199	0.2	0.1	0.00	A
Two Sisters Vineyard & John St E	WBTR	42	1429	1.7	0.7	0.03	A
	NBLR	43	798	9.8	1.3	0.05	A
Peller Estates Winery & John St E	WBLT	10	1423	0.4	0.2	0.01	A
	NBLR	57	741	10.3	1.9	0.08	B
Charlotte St & John St E	EBLTR	10	1388	0.5	0.2	0.01	A
	WBLTR	15	1435	0.6	0.2	0.01	A
	NBLTR	60	621	11.4	2.4	0.10	B
	SBLTR	13	617	11.0	0.5	0.02	B
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	22	923	9.0	0.6	0.02	A
	WBLTR	10	824	9.4	0.3	0.01	A
	NBLTR	7	1544	0.6	0.1	0.00	A
	SBLTR	4	1506	0.5	0.1	0.00	A
King St & John St E	EBLTR	125	656	9.0	-	-	A
	WBLTR	231	693	10.0	-	-	A
	NBLTR	112	638	9.1	-	-	A
	SBLTR	237	675	10.4	-	-	B
Niagara St & Charlotte St	EBLT	64	830	7.6	-	-	A
	WBTR	150	921	7.5	-	-	A
	SBLR	59	748	7.9	-	-	A
Site Access & John St E	WBLT	9	1476	0.4	0.1	0.01	A
	NBLR	15	940	8.9	0.4	0.02	A

Under the future background traffic conditions, the capacity analysis indicates that the majority of the unsignalized intersections in the study area will operate at good overall levels of service in the Saturday peak period, with the exception of the westbound movements at the intersection of John Street East and Queens Parade/Niagara Parkway during Saturday peak hours. There was no increase in westbound left traffic between the existing and future conditions, yet the increase in conflicting movements from background traffic increased the delay for the movement to 37.7 seconds in the Saturday peak hour. This level of delay is observed only in the Saturday peak hour and is expected to operate in good condition in the AM and PM peak hours.

The westbound left traffic, which travels from downtown along Ricardo St for 1.8km without intersecting any other intersections provides one of the few routes between Niagara on the Lake and Niagara Falls. The delay for a left turn at a two-way stop-controlled intersection may lead to drivers utilizing alternate routes through Downtown Niagara-on-the-Lake.

5 TRIP GENERATION AND DISTRIBUTION

5.1 TRIP GENERATION

The proposed development consists of a residential plan of subdivision with 191 units. **Table 5-1** summarizes the trip generation volumes for the proposed development during weekday a.m. and p.m. peak hours and Saturday a.m. and p.m. peak hours for full build-out.

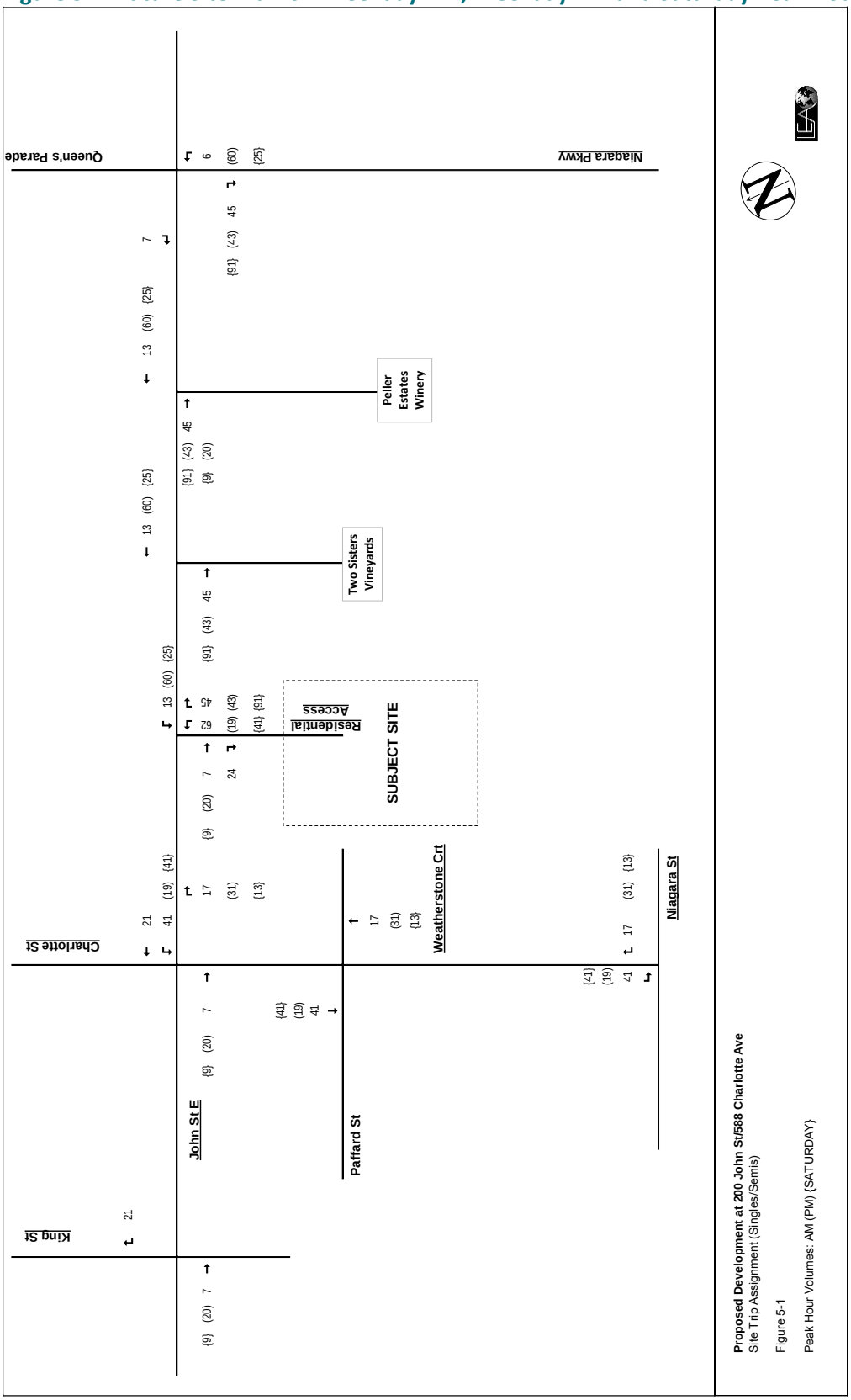
Table 5-1: Trip Generation Summary

Weekday AM Peak Hour					
	Units		**In**	**Out**	**Total**
Singles and Semis	191	Trip Rate / Unit	0.19	0.56	0.75
		Trips Generated	37	107	144
Weekday PM Peak Hour					
	Units		**In**	**Out**	**Total**
Singles and Semis	191	Trip Rate / Unit	0.57	0.33	0.90
		Trips Generated	110	62	172
Saturday Peak Hour					
	Units		**In**	**Out**	**Total**
Singles and Semis	191	Trip Rate / Unit	0.24	0.69	0.94
		Trips Generated	46	132	178

5.2 TRIP DISTRIBUTION AND TRIP ASSIGNMENT

The trip distribution for the proposed development was derived from TTS 2016 data for the weekday a.m. and p.m. peak periods and Saturday peak period. Traffic assignment for the proposed development is derived from existing traffic patterns coupled with transportation planning judgments. **Figure 5-1** illustrate the projected site traffic volumes and their traffic assignments for study horizon year in 2025.

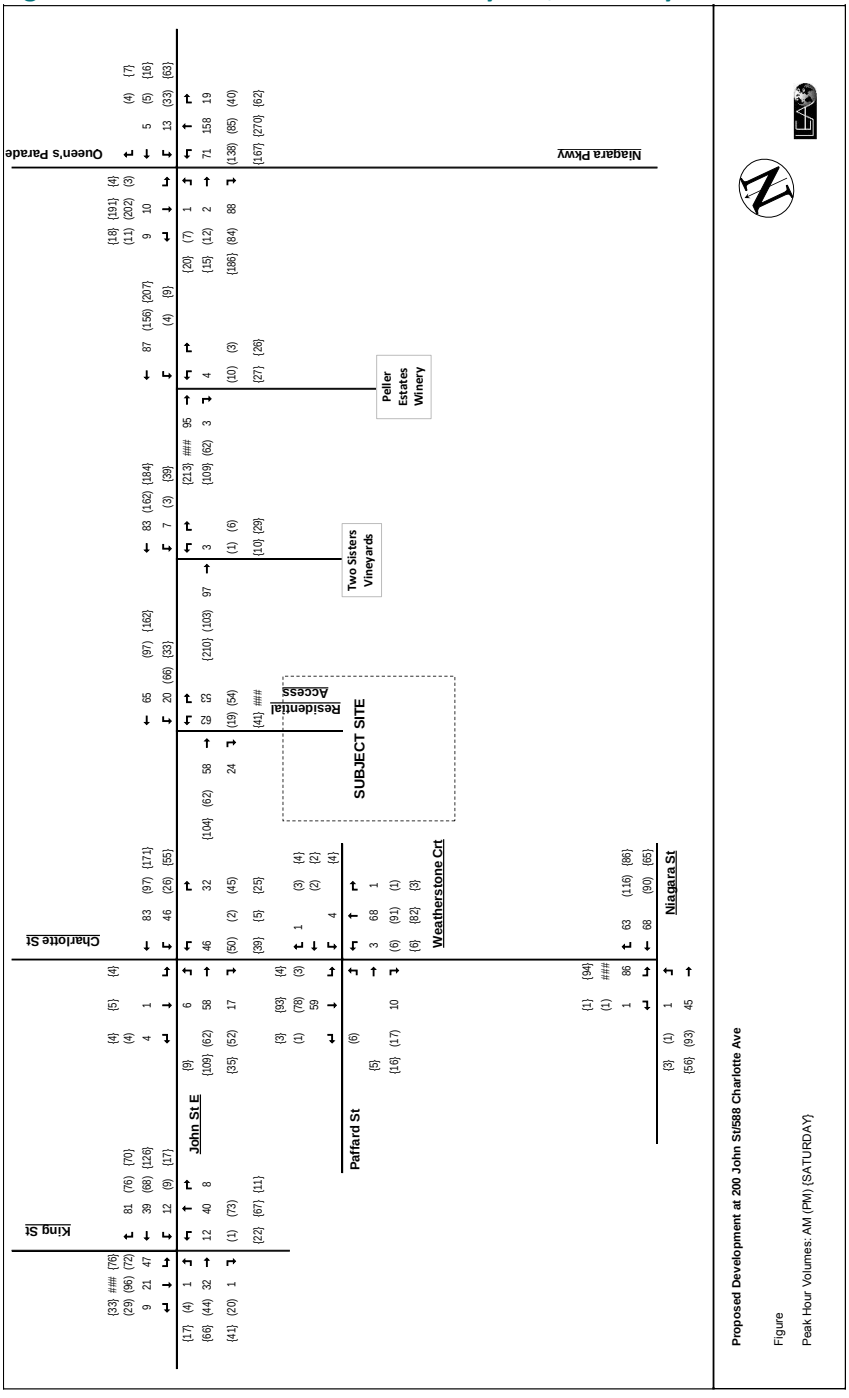
Figure 5-1: Future Site Traffic – Weekday AM, Weekday PM and Saturday Peak Hours



6 FUTURE TOTAL TRAFFIC CONDITIONS

Future total traffic analyses were performed for the 2025 planning horizon. The intersection capacity analyses were performed for the future total traffic conditions using future total traffic volumes, existing signal timings and existing lane configurations. The existing traffic volumes plus the addition of future background corridor growth and background developments is illustrated in **Figure 6-1**.

Figure 6-1: Future Site Traffic – Weekday AM, Weekday PM and Saturday Peak Hours



6.1 UNSIGNALIZED CAPACITY ANALYSES

Table 6-1 and **Table 6-2** summarize the intersection capacity analysis results for critical movements during the weekday a.m. and p.m. peak hours, respectively. **Table 6-3** summarizes the intersection capacity analysis result for critical movements during the Saturday peak hour. Detailed outputs can be found in **Appendix E**.

Table 6-1: Unsignalized Levels of Service – Future Total Traffic Weekday AM Peak Hour

Intersection	Movement of Interest	AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	99	1034	8.9	2.4	0.10	A
	WBLTR	19	474	12.9	0.9	0.04	B
	NBLTR	77	1595	2.4	1.2	0.05	A
Two Sisters Vineyard & John St E	WBTR	8	1486	0.6	0.1	0.01	A
	NBLR	4	811	9.5	0.1	0.00	A
Peller Estates Winery & John St E	NBLR	4	789	9.6	0.1	0.01	A
Charlotte St & John St E	EBLTR	7	1505	0.6	0.1	0.00	A
	WBLTR	50	1517	2.8	0.8	0.03	A
	NBLTR	85	756	10.4	2.9	0.11	B
	SBLTR	5	862	9.2	0.1	0.01	A
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	11	1000	8.6	0.3	0.01	A
	WBLTR	5	827	9.4	0.1	0.01	A
	NBLTR	3	1538	0.3	0.0	0.00	A
King St & John St E	EBLTR	37	752	7.7	-	-	A
	WBLTR	143	833	7.9	-	-	A
	NBLTR	114	824	7.8	-	-	A
	SBLTR	84	754	8.0	-	-	A
Niagara St & Charlotte St	EBLT	50	809	7.6	-	-	A
	WBTR	142	892	7.6	-	-	A
	SBLR	94	758	8.1	-	-	A
Site Access & John St E	WBLT	22	1518	1.8	0.3	0.01	A
	NBLR	125	878	9.8	3.8	0.14	A

During the weekday p.m. peak hour future total traffic conditions, the intersection capacity analysis indicates that majority of the unsignalized intersections within the study area are expected to operate at good overall levels of service.

Table 6-2: Unsignalized Levels of Service – Future Total Traffic Weekday PM Peak Hour

Intersection	Movement of Interest	PM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	66	631	11.4	2.6	0.10	B
	WBLTR	45	407	14.9	2.8	0.11	B
	NBLTR	85	1336	3.4	1.5	0.06	A
	SBLTR	3	1449	0.1	0.0	0.00	A
Two Sisters Vineyard & John St E	WBTR	3	1536	0.2	0.0	0.00	A
	NBLR	8	969	8.7	0.2	0.01	A
Peller Estates Winery & John St E	WBLT	4	1528	0.3	0.1	0.00	A
	NBLR	14	841	9.4	0.4	0.02	A
Charlotte St & John St E	WBLTR	8	1489	0.6	0.1	0.01	A
	NBLTR	71	791	10.0	2.2	0.09	B
	SBLTR	4	949	8.8	0.1	0.00	A
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	25	934	9.0	0.6	0.03	A
	WBLTR	5	868	9.2	0.1	0.01	A
	NBLTR	7	1537	0.7	0.1	0.00	A
	SBLTR	3	1523	0.3	0.0	0.00	A
King St & John St E	EBLTR	52	709	8.0	-	-	A
	WBLTR	167	754	8.6	-	-	A
	NBLTR	92	728	8.3	-	-	A
	SBLTR	214	750	9.2	-	-	A
Niagara St & Charlotte St	EBLT	102	800	8.0	-	-	A
	WBTR	190	878	8.1	-	-	A
	SBLR	93	712	8.4	-	-	A
Site Access & John St E	WBLT	7	1559	0.5	0.1	0.00	A
	NBLR	12	1021	8.6	0.3	0.01	A

During the weekday p.m. peak hour future total traffic conditions, the intersection capacity analysis indicates that majority of the unsignalized intersections within the study area are expected to operate at good levels of service.

Table 6-3: Unsignalized Levels of Service – Future Total Traffic Saturday Peak Hour

Intersection	Movement of Interest	SAT Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Niagara Parkway/Queens Parade & John St E	EBLTR	240	566	16.0	16.0	0.42	C
	WBLTR	93	139	72.3	28.2	0.67	F
	NBLTR	182	1340	3.7	3.6	0.14	A
	SBLTR	4	1199	0.2	0.1	0.00	A
Two Sisters Vineyard & John St E	WBTR	42	1314	1.6	0.8	0.03	A
	NBLR	43	692	10.5	1.5	0.06	B
Peller Estates Winery & John St E	WBLT	10	1309	0.4	0.2	0.01	A
	NBLR	57	637	11.2	2.2	0.09	B
Charlotte St & John St E	EBLTR	10	1388	0.5	0.2	0.01	A
	WBLTR	60	1424	2.1	1.0	0.04	A
	NBLTR	74	579	12.1	3.3	0.13	B
	SBLTR	13	533	11.9	0.6	0.02	B
Charlotte St & Paffard St/Weatherstone Crt	EBLTR	22	868	9.3	0.6	0.03	A
	WBLTR	10	775	9.7	0.3	0.01	A
	NBLTR	7	1488	0.5	0.1	0.00	A
	SBLTR	4	1489	0.3	0.1	0.00	A
King St & John St E	EBLTR	135	606	9.6	-	-	A
	WBLTR	231	642	10.7	-	-	B
	NBLTR	211	655	10.0	-	-	B
	SBLTR	237	640	10.9	-	-	B
Niagara St & Charlotte St	EBLT	64	798	7.7	-	-	A
	WBTR	164	893	7.8	-	-	A
	SBLR	103	742	8.3	-	-	A
Site Access & John St E	WBLT	36	1447	1.5	0.6	0.02	A
	NBLR	159	808	10.5	5.5	0.20	B

During the Saturday peak hour future total traffic conditions, the intersection capacity analysis indicates that all but one of the unsignalized intersections within the study area are expected to operate at good overall levels of service. As found in the future background traffic conditions, users attempting to complete the westbound left-thru-right movements at John Street East and Queens Parade/Niagara Parkway are expected to experience more delay than in existing conditions. While the AM and PM peak hours expected to operate in good conditions, the Saturday peak hour is expected to operate with a delay of 72.3 seconds, an increase of approximately 30 seconds over the future background. The increase in due to additional traffic expected to make the eastbound right movement, but the overall westbound movement is expected to operate with residual capacity in the peak hour.

It should be noted that in the previous TIS for this development, in combination with the hotel development, recommended a roundabout for the Niagara Parkway and John Street intersection. This was based on delay levels for the westbound movements exceeding 6 minutes under the future background and future total conditions. The roundabout was found to improve the overall operations

for the intersection. While preliminary discussions with the Town and other agencies indicated the roundabout has potential, they requested lower cost options be considered in future discussions.

Reviewing conditions for the updated traffic counts, obtained in March 2020, demonstrates that the westbound volumes are significantly lower in winter conditions than in summer conditions. While the movement is expected to experience some additional delay, the condition is only noted for Saturday peak hours and is considered to be an acceptable condition for a short period of the overall traffic operations. The overall conditions for winter volume traffic counts, even with a seasonal variation factor applied, indicates that a roundabout is not justified.

Given the updated analysis, a roundabout is not deemed to be necessary to accommodate the proposed residential development.

7 PARKING REQUIREMENTS

The proposed development is subjected to Zoning By-law (No. 4316-09). Based on the zoning by-law parking standards, the proposed development is required to provide 382 residential parking spaces. **Table 7-1** outlines the parking rates as indicated by Zoning By-law 04316-09.

Table 7-1: Zoning By-Law Parking Standards

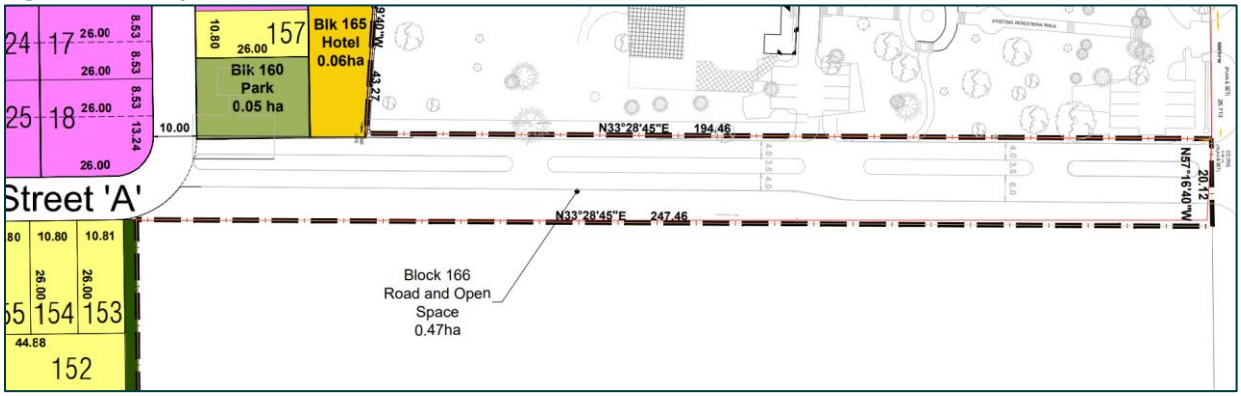
Type of Use	Total GFA (m^2) or Number of Units	Niagara-on-the-Lake By-Law 4316-09 Parking Rates	Minimum Parking Supply
Residential Subdivision – Singles/Semis	191	2 spaces / unit	382
Total	**191**		**382**

Zoning by-law 4316-09 provides a minimum of 382 spaces for the proposed development. 191 Semi and Single units have been proposed, which are expected to provide at the by-law rate. Therefore, the site meets or exceeds the minimum requirement for parking according to by-law 4316-09.

8 ACCESS CONFIGURATION

The proposed access for the subject site is off John Street, as illustrated in **Figure 8-1**. The volume of trips on the roads and the volume of trips generated by the subject site are not expected to be substantial. The proposed access is expected to operate with minimal delay and congestion and is considered appropriate for the development. For the entire length of the access, a lane of at least 4m will be provided in either direction along with a 3.5m median with three breaks separating the inbound and outbound lanes. For the first 100m of the access from John Street, the outbound lane will be 6m to allow emergency vehicles to maintain access until the median is terminated. A pedestrian pathway will be provided separate from the proposed access to allow connectivity to John Street.

Figure 8-1: Proposed John Street Access



A secondary emergency access is planned for the west property limit of the subject site and will connect the site to Charlotte Street at Paffard Street, just north of the existing railway trail.

All internal roadways are intended to be privately owned and maintained. The roadways will maintain a minimum 6m pavement and a sidewalk of 1.5m or larger on at least one side of the roadway.

9 CONCLUSIONS

- The proposed development will consist of 191 single and semi-detached residential units. A two-way site access is proposed off John Street East near the northeast limits of the property.
- The study has found that the proposed, combined development is expected to generate 144 trips during the weekday a.m. peak hour, 191 trips during the weekday p.m. peak hour, and 178 trips during the Saturday peak hour.
- Under existing and future traffic conditions, most unsignalized intersections within the study area were found to be operating at good overall levels of service during both the weekday a.m. and p.m. peak hours.
- The eastbound and westbound turn movements at John Street E and Queens Parade/Niagara Parkway may experience some additional delay in the future scenarios. A review of updated traffic counts demonstrated that these delays were relatively minor and considered to be an acceptable condition for a short period of the overall traffic operations. Thus, a roundabout was found to not be justified for this location. Discussions can continue should any mitigation be required by the Town.

APPENDIX A

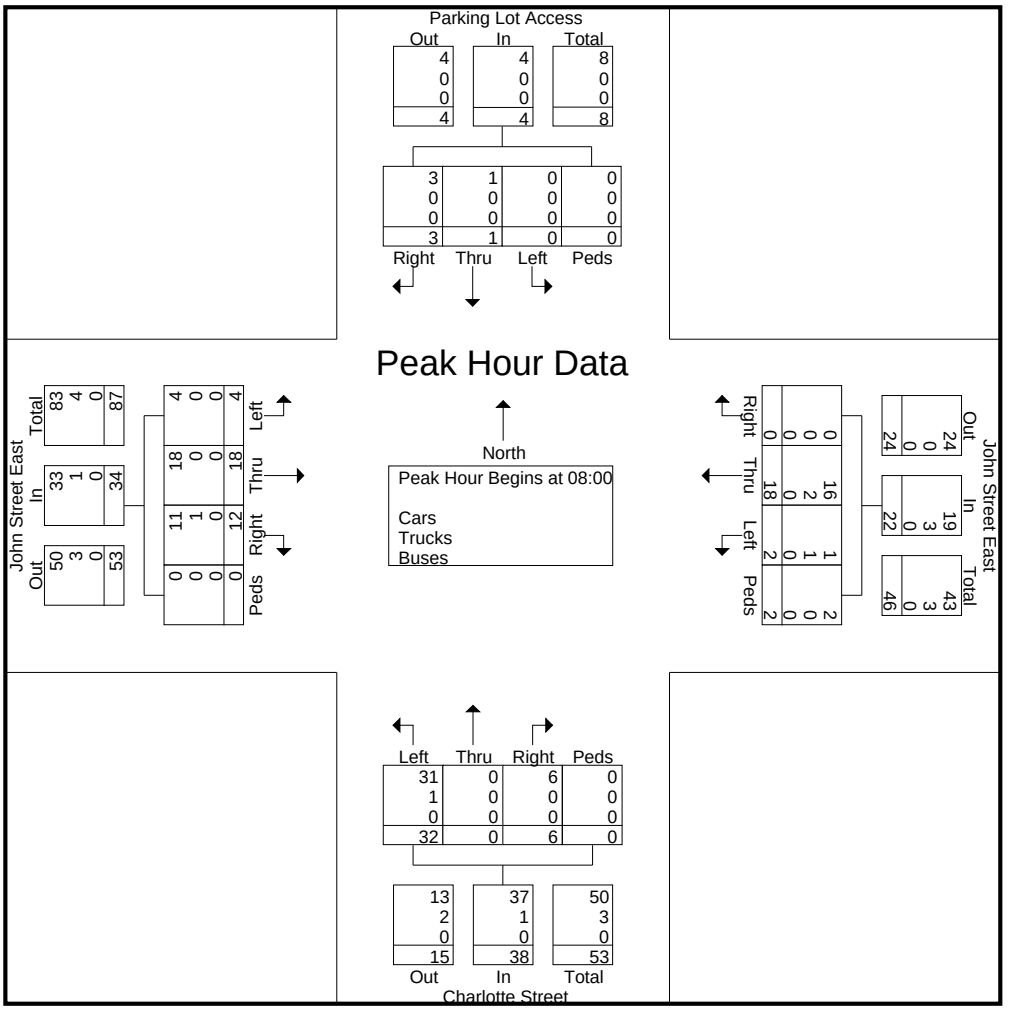
EXISTING TRAFFIC COUNTS (March 2020)

LEA Consulting Ltd.

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

File Name : CharlotteSt&JohnStE-AM
Site Code : 01814506
Start Date : 2020-03-12
Page No : 3

	Parking Lot Access Southbound					John Street East Westbound					Charlotte Street Northbound					John Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	0	**1**	0	1	0	3	0	**1**	4	9	0	1	0	10	1	**6**	3	0	**10**	25
08:15	0	0	1	0	1	**1**	2	0	1	4	5	0	0	0	5	1	2	1	0	4	14
08:30	0	**1**	1	0	**2**	0	5	0	0	5	8	0	1	0	9	0	5	**5**	0	10	26
08:45	0	0	0	0	0	1	**8**	0	0	**9**	**10**	0	**4**	0	**14**	**2**	5	3	0	10	**33**
Total Volume	0	1	3	0	4	2	18	0	2	22	32	0	6	0	38	4	18	12	0	34	98
% App. Total	0	25	75	0		9.1	81.8	0	9.1		84.2	0	15.8	0		11.8	52.9	35.3	0		
PHF	.000	.250	.750	.000	.500	.500	.563	.000	.500	.611	.800	.000	.375	.000	.679	.500	.750	.600	.000	.850	.742
Cars	0	1	3	0	4	1	16	0	2	19	31	0	6	0	37	4	18	11	0	33	93
% Cars	0	100	100	0	100	50.0	88.9	0	100	86.4	96.9	0	100	0	97.4	100	100	91.7	0	97.1	94.9
Trucks	0	0	0	0	0	1	2	0	0	3	1	0	0	0	1	0	0	1	0	1	5
% Trucks	0	0	0	0	0	50.0	11.1	0	0	13.6	3.1	0	0	0	2.6	0	0	8.3	0	2.9	5.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

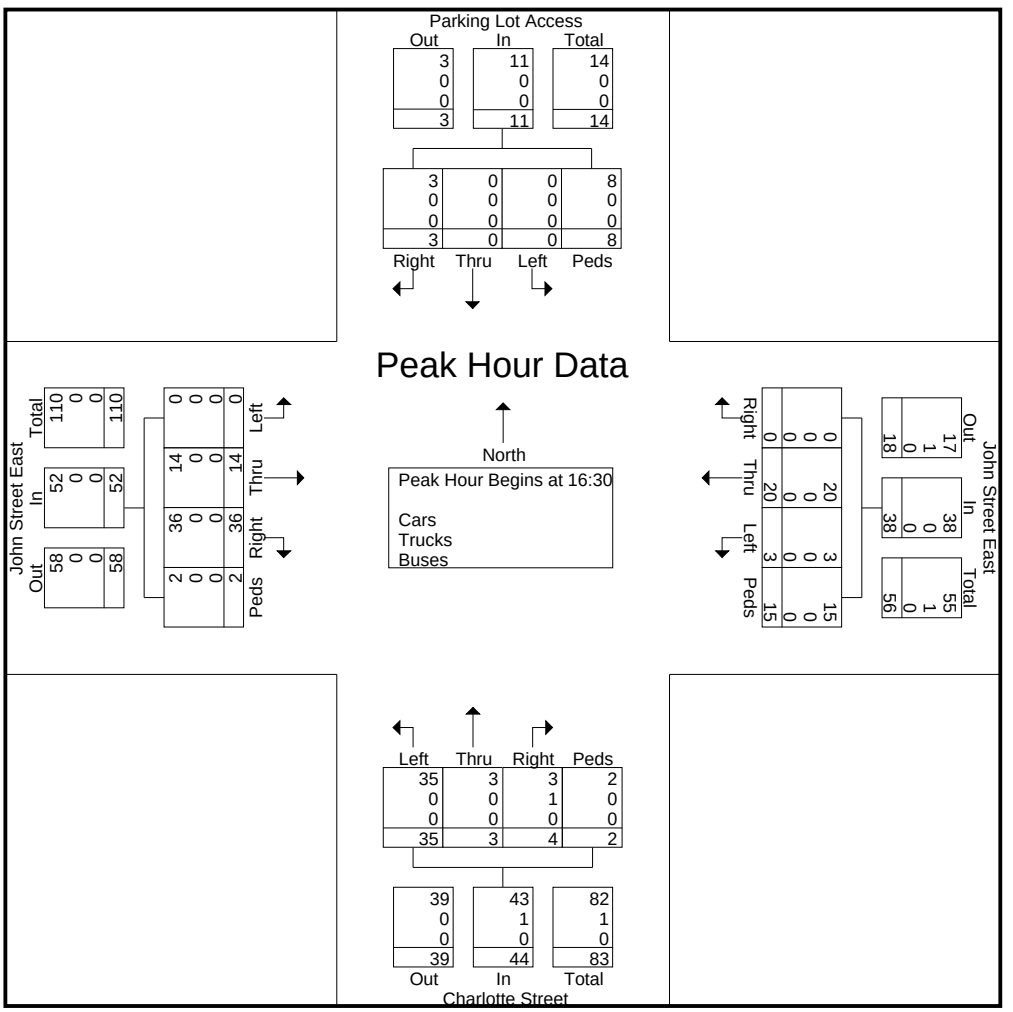


LEA Consulting Ltd.

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

File Name : CharlotteSt&JohnStE-PM
Site Code : 01814506
Start Date : 2020-03-12
Page No : 3

	Parking Lot Access Southbound					John Street East Westbound					Charlotte Street Northbound					John Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	0	**2**	0	2	**2**	**5**	0	1	8	7	**2**	0	0	9	0	3	10	0	13	32
16:45	0	0	1	0	1	1	5	0	4	10	**12**	1	1	0	**14**	0	**4**	9	0	13	38
17:00	0	0	0	0	0	0	5	0	2	7	5	0	1	**2**	8	0	3	**12**	**2**	**17**	32
17:15	0	0	0	**8**	**8**	0	5	0	**8**	**13**	11	0	**2**	0	13	0	4	5	0	9	**43**
Total Volume	0	0	3	8	11	3	20	0	15	38	35	3	4	2	44	0	14	36	2	52	145
% App. Total	0	0	27.3	72.7		7.9	52.6	0	39.5		79.5	6.8	9.1	4.5		0	26.9	69.2	3.8		
PHF	.000	.000	.375	.250	.344	.375	1.00	.000	.469	.731	.729	.375	.500	.250	.786	.000	.875	.750	.250	.765	.843
Cars	0	0	3	8	11	3	20	0	15	38	35	3	3	2	43	0	14	36	2	52	144
% Cars	0	0	100	100	100	100	100	0	100	100	100	100	75.0	100	97.7	0	100	100	100	100	99.3
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	25.0	0	2.3	0	0	0	0	0	0.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

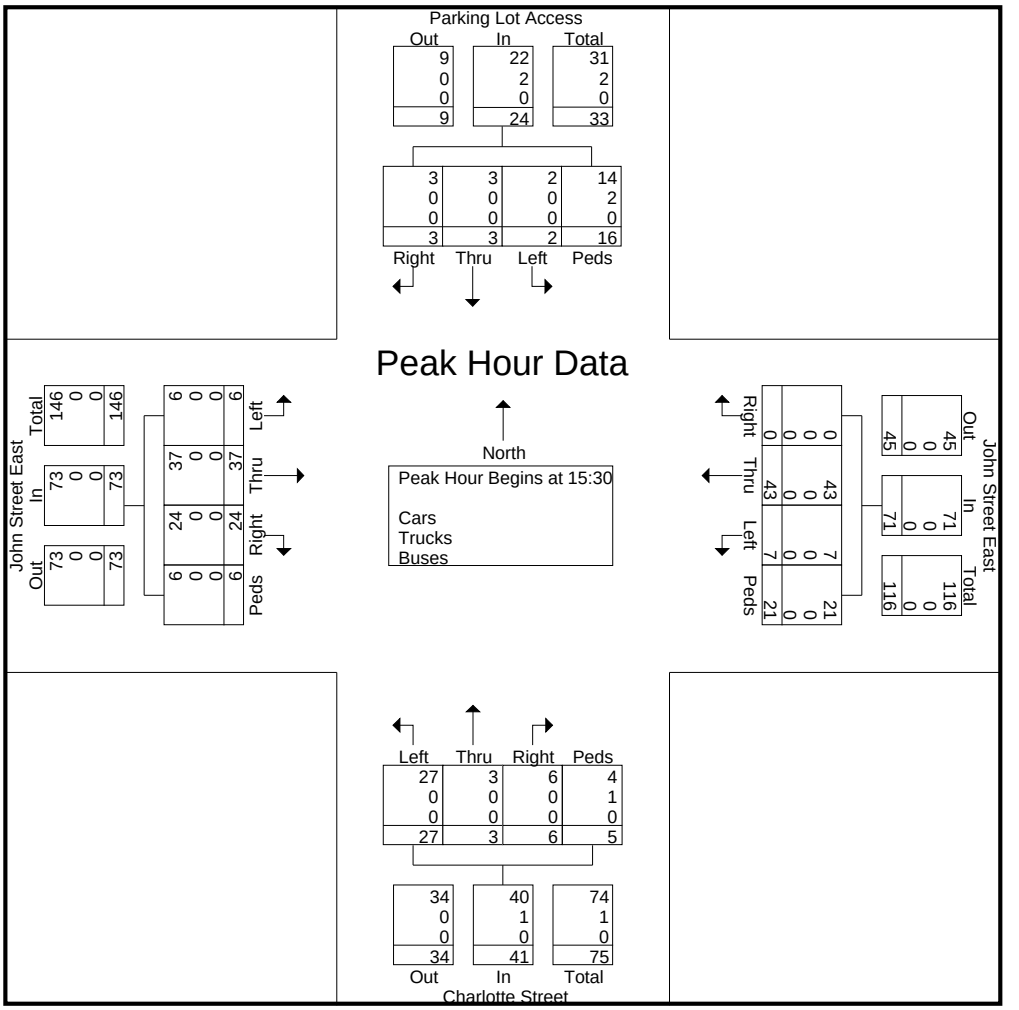


LEA Consulting Ltd.

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

File Name : CharlotteSt&JohnStE-SAT-Midday
Site Code : 18145206
Start Date : 2020-03-14
Page No : 3

	Parking Lot Access Southbound					John Street East Westbound					Charlotte Street Northbound					John Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:00 to 16:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 15:30																					
15:30	0	1	0	3	4	**2**	10	0	5	17	3	1	0	**2**	6	**3**	9	3	0	15	42
15:45	0	0	**1**	**11**	**12**	1	**14**	0	**16**	**31**	6	0	**4**	1	11	1	8	3	**3**	15	**69**
16:00	**1**	0	1	0	2	2	10	0	0	12	**13**	**2**	1	2	**18**	1	**13**	8	2	**24**	56
16:15	1	**2**	1	2	6	2	9	0	0	11	5	0	1	0	6	1	7	**10**	1	19	42
Total Volume	2	3	3	16	24	7	43	0	21	71	27	3	6	5	41	6	37	24	6	73	209
% App. Total	8.3	12.5	12.5	66.7		9.9	60.6	0	29.6		65.9	7.3	14.6	12.2		8.2	50.7	32.9	8.2		
PHF	.500	.375	.750	.364	.500	.875	.768	.000	.328	.573	.519	.375	.375	.625	.569	.500	.712	.600	.500	.760	.757
Cars	2	3	3	14	22	7	43	0	21	71	27	3	6	4	40	6	37	24	6	73	206
% Cars	100	100	100	87.5	91.7	100	100	0	100	100	100	100	100	80.0	97.6	100	100	100	100	100	98.6
Trucks	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
% Trucks	0	0	0	12.5	8.3	0	0	0	0	0	0	0	0	20.0	2.4	0	0	0	0	0	1.4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

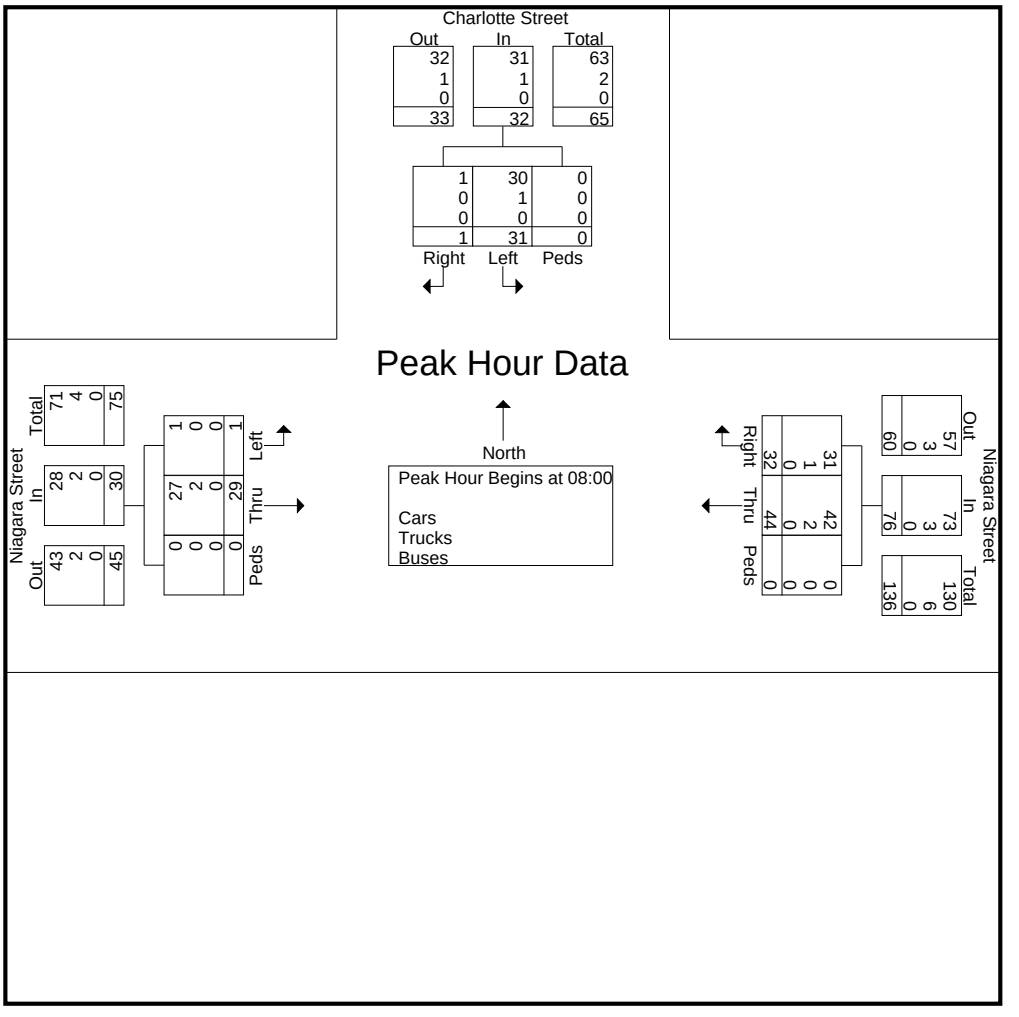


LEA Consulting Ltd.

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

File Name : CharlotteSt&NiagaraSt-AM
Site Code : 1814500
Start Date : 2020-03-12
Page No : 3

	Charlotte Street Southbound				Niagara Street Westbound				Niagara Street Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00													
08:00	5	0	0	5	8	7	0	15	0	6	0	6	26
08:15	7	0	0	7	10	8	0	18	0	5	0	5	30
08:30	**12**	0	0	**12**	11	6	0	17	**1**	6	0	7	36
08:45	7	**1**	0	8	**15**	**11**	0	**26**	0	**12**	0	**12**	**46**
Total Volume	31	1	0	32	44	32	0	76	1	29	0	30	138
% App. Total	96.9	3.1	0		57.9	42.1	0		3.3	96.7	0		
PHF	.646	.250	.000	.667	.733	.727	.000	.731	.250	.604	.000	.625	.750
Cars	30	1	0	31	42	31	0	73	1	27	0	28	132
% Cars	96.8	100	0	96.9	95.5	96.9	0	96.1	100	93.1	0	93.3	95.7
Trucks	1	0	0	1	2	1	0	3	0	2	0	2	6
% Trucks	3.2	0	0	3.1	4.5	3.1	0	3.9	0	6.9	0	6.7	4.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

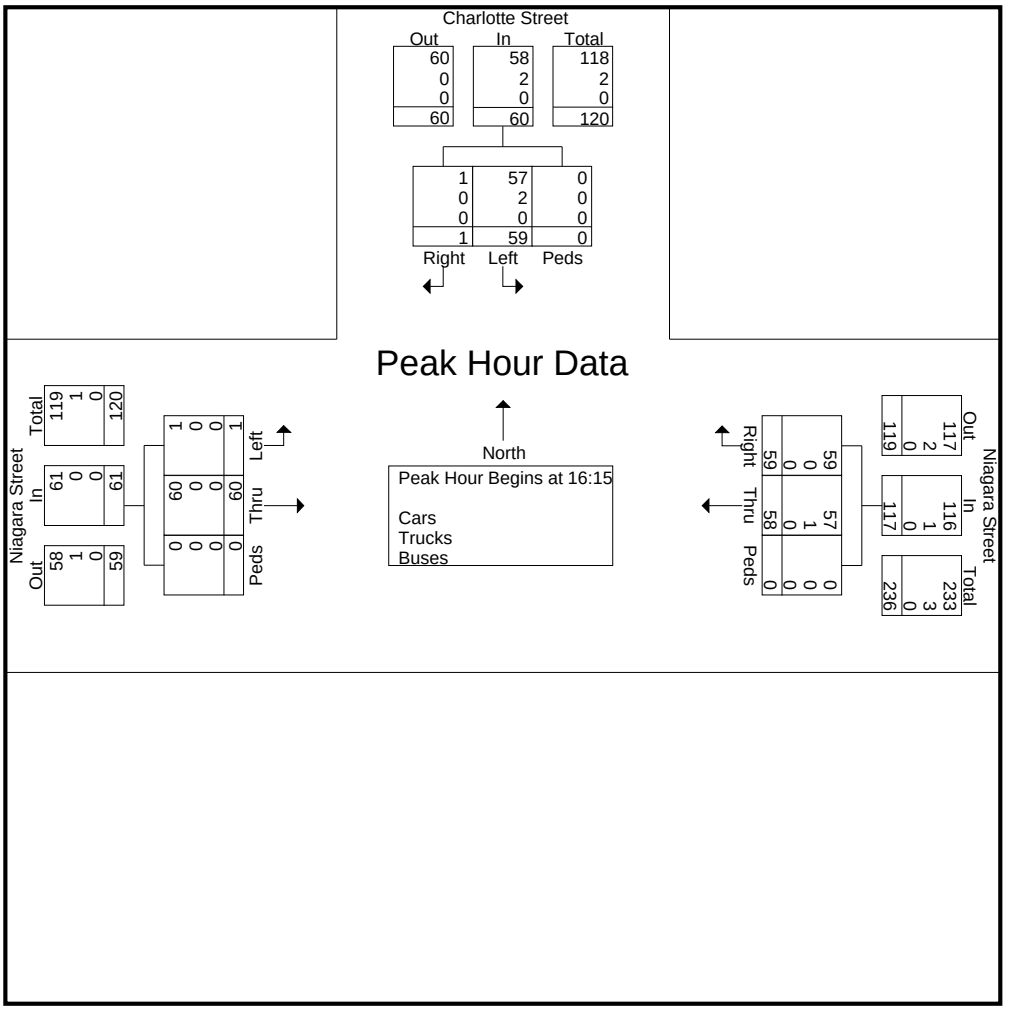


LEA Consulting Ltd.

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

File Name : CharlotteSt&NiagaraSt-PM
Site Code : 1814500
Start Date : 2020-03-12
Page No : 3

	Charlotte Street Southbound				Niagara Street Westbound				Niagara Street Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 16:15													
16:15	**16**	**1**	0	**17**	12	13	0	25	0	11	0	11	53
16:30	15	0	0	15	13	17	0	30	**1**	15	0	16	61
16:45	13	0	0	13	15	**19**	0	**34**	0	11	0	11	58
17:00	15	0	0	15	**18**	10	0	28	0	**23**	0	**23**	**66**
Total Volume	59	1	0	60	58	59	0	117	1	60	0	61	238
% App. Total	98.3	1.7	0		49.6	50.4	0		1.6	98.4	0		
PHF	.922	.250	.000	.882	.806	.776	.000	.860	.250	.652	.000	.663	.902
Cars	57	1	0	58	57	59	0	116	1	60	0	61	235
% Cars	96.6	100	0	96.7	98.3	100	0	99.1	100	100	0	100	98.7
Trucks	2	0	0	2	1	0	0	1	0	0	0	0	3
% Trucks	3.4	0	0	3.3	1.7	0	0	0.9	0	0	0	0	1.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

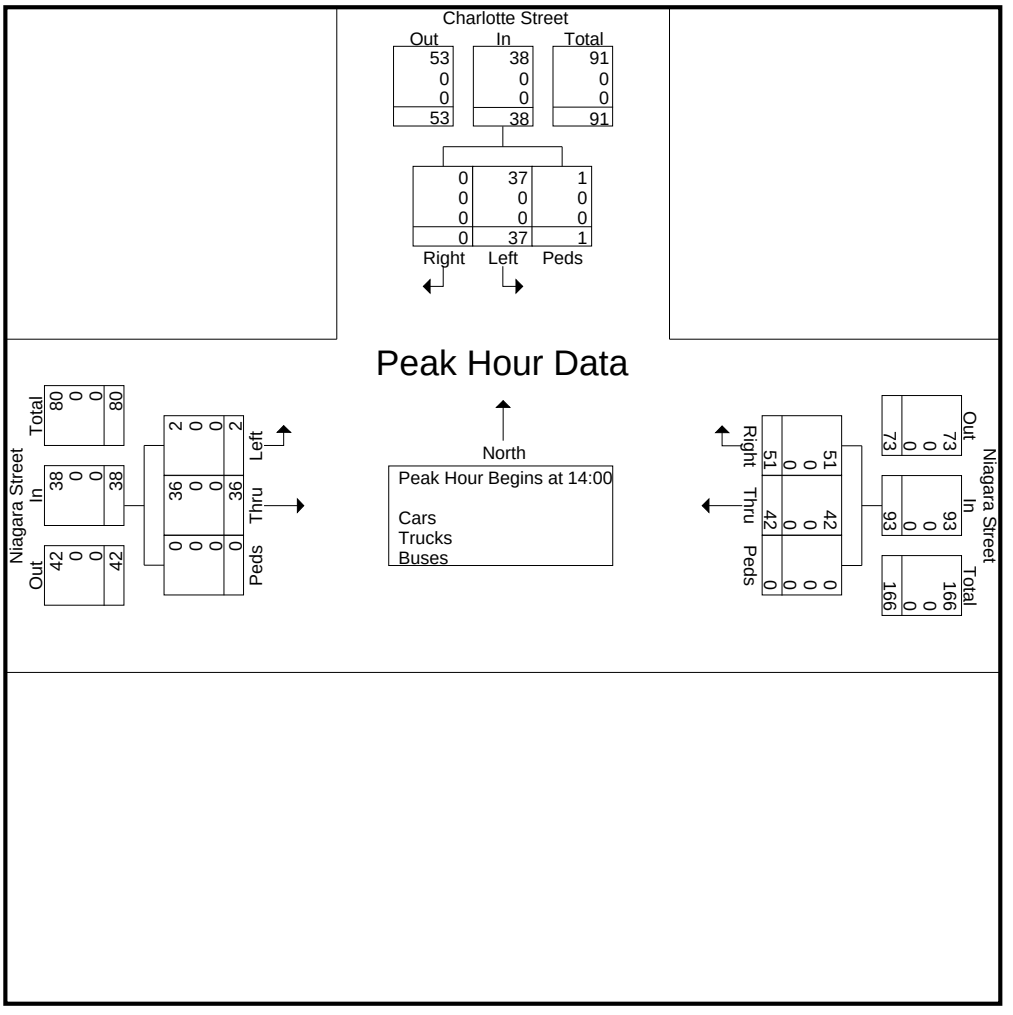


LEA Consulting Ltd.

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

File Name : CharlotteSt&NiagaraSt-SAT-Midday
Site Code : 1814500
Start Date : 2020-03-14
Page No : 3

	Charlotte Street Southbound				Niagara Street Westbound				Niagara Street Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:00 to 16:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 14:00													
14:00	**11**	0	**1**	**12**	9	13	0	22	**1**	6	0	7	41
14:15	7	0	0	7	**11**	11	0	22	1	**11**	0	**12**	41
14:30	9	0	0	9	11	**15**	0	**26**	0	11	0	11	**46**
14:45	10	0	0	10	11	12	0	23	0	8	0	8	41
Total Volume	37	0	1	38	42	51	0	93	2	36	0	38	169
% App. Total	97.4	0	2.6		45.2	54.8	0		5.3	94.7	0		
PHF	.841	.000	.250	.792	.955	.850	.000	.894	.500	.818	.000	.792	.918
Cars	37	0	1	38	42	51	0	93	2	36	0	38	169
% Cars	100	0	100	100	100	100	0	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

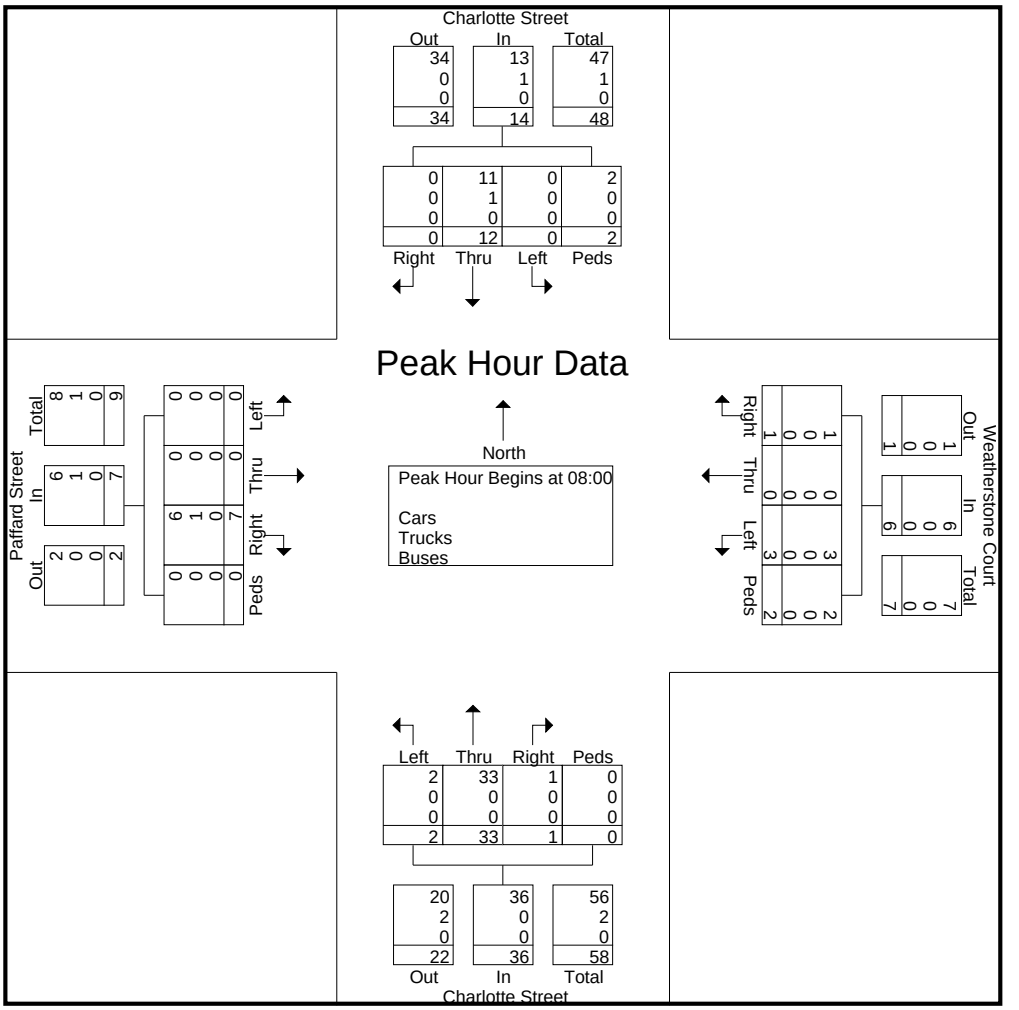


LEA Consulting Ltd.

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

File Name : CharlotteSt&PaffardSt-AM
Site Code : 01814505
Start Date : 2020-03-12
Page No : 3

	Charlotte Street Southbound					Weatherstone Court Westbound					Charlotte Street Northbound					Paffard Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	1	0	**2**	3	**1**	0	0	0	1	0	8	0	0	8	0	0	1	0	1	13
08:15	0	3	0	0	3	1	0	0	**1**	2	0	4	0	0	4	0	0	1	0	1	10
08:30	0	**5**	0	0	**5**	1	0	**1**	1	**3**	0	8	**1**	0	9	0	0	**3**	0	**3**	**20**
08:45	0	3	0	0	3	0	0	0	0	0	**2**	**13**	0	0	**15**	0	0	2	0	2	20
Total Volume	0	12	0	2	14	3	0	1	2	6	2	33	1	0	36	0	0	7	0	7	63
% App. Total	0	85.7	0	14.3		50	0	16.7	33.3		5.6	91.7	2.8	0		0	0	100	0		
PHF	.000	.600	.000	.250	.700	.750	.000	.250	.500	.500	.250	.635	.250	.000	.600	.000	.000	.583	.000	.583	.788
Cars	0	11	0	2	13	3	0	1	2	6	2	33	1	0	36	0	0	6	0	6	61
% Cars	0	91.7	0	100	92.9	100	0	100	100	100	100	100	100	0	100	0	0	85.7	0	85.7	96.8
Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
% Trucks	0	8.3	0	0	7.1	0	0	0	0	0	0	0	0	0	0	0	0	14.3	0	14.3	3.2
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

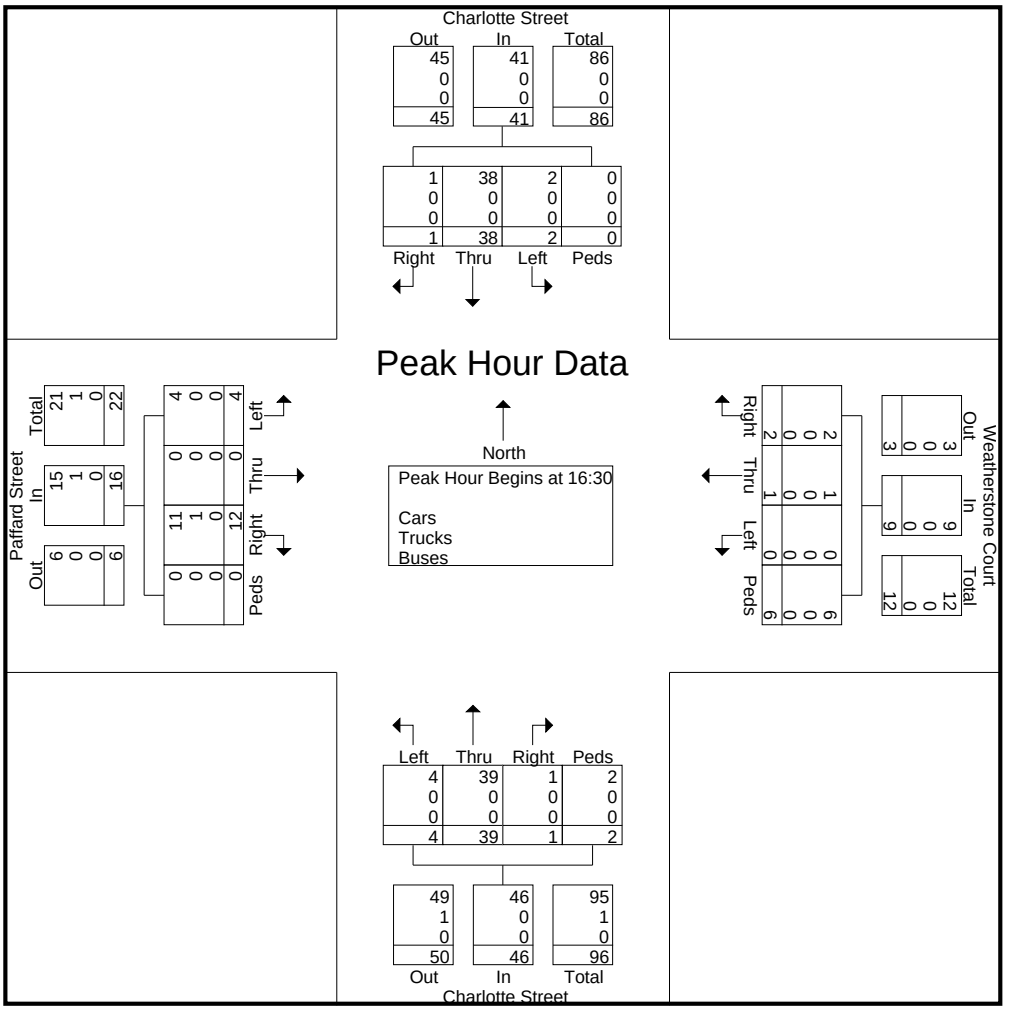


LEA Consulting Ltd.

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

File Name : CharlotteSt&PaffardSt-PM
Site Code : 01814505
Start Date : 2020-03-12
Page No : 3

	Charlotte Street Southbound					Weatherstone Court Westbound					Charlotte Street Northbound					Paffard Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	**1**	**12**	**1**	0	**14**	0	**1**	0	1	2	0	**11**	0	0	11	**2**	0	3	0	5	**32**
16:45	0	9	0	0	9	0	0	**1**	0	1	1	9	**1**	0	11	2	0	**4**	0	**6**	27
17:00	1	11	0	0	12	0	0	0	0	0	**2**	8	0	0	10	0	0	4	0	4	26
17:15	0	6	0	0	6	0	0	1	**5**	**6**	1	11	0	**2**	**14**	0	0	1	0	1	27
Total Volume	2	38	1	0	41	0	1	2	6	9	4	39	1	2	46	4	0	12	0	16	112
% App. Total	4.9	92.7	2.4	0		0	11.1	22.2	66.7		8.7	84.8	2.2	4.3		25	0	75	0		
PHF	.500	.792	.250	.000	.732	.000	.250	.500	.300	.375	.500	.886	.250	.250	.821	.500	.000	.750	.000	.667	.875
Cars	2	38	1	0	41	0	1	2	6	9	4	39	1	2	46	4	0	11	0	15	111
% Cars	100	100	100	0	100	0	100	100	100	100	100	100	100	100	100	100	0	91.7	0	93.8	99.1
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.3	0	6.3	0.9
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

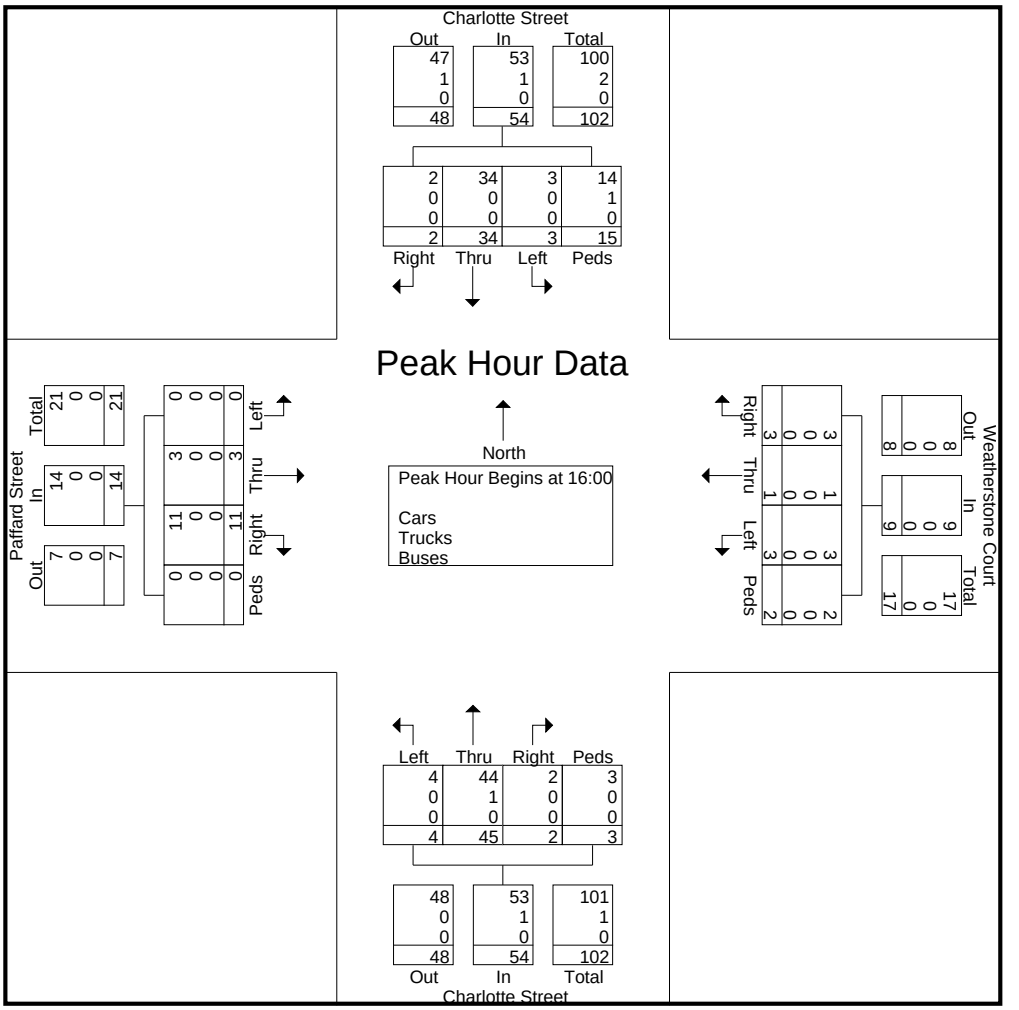


LEA Consulting Ltd.

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

File Name : CharlotteSt&PaffardSt-SAT-Midday
Site Code : 18145205
Start Date : 2020-03-14
Page No : 3

	Charlotte Street Southbound					Weatherstone Court Westbound					Charlotte Street Northbound					Paffard Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:00 to 16:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	**2**	6	**1**	**9**	**18**	0	0	0	**2**	2	0	**18**	0	0	**18**	0	**1**	**4**	0	**5**	**43**
16:15	0	**14**	1	1	16	**2**	0	1	0	**3**	1	4	0	**2**	7	0	1	3	0	4	30
16:30	0	5	0	2	7	1	**1**	0	0	2	1	10	**2**	0	13	0	1	4	0	5	27
16:45	1	9	0	3	13	0	0	**2**	0	2	**2**	13	0	1	16	0	0	0	0	0	31
Total Volume	3	34	2	15	54	3	1	3	2	9	4	45	2	3	54	0	3	11	0	14	131
% App. Total	5.6	63	3.7	27.8		33.3	11.1	33.3	22.2		7.4	83.3	3.7	5.6		0	21.4	78.6	0		
PHF	.375	.607	.500	.417	.750	.375	.250	.375	.250	.750	.500	.625	.250	.375	.750	.000	.750	.688	.000	.700	.762
Cars	3	34	2	14	53	3	1	3	2	9	4	44	2	3	53	0	3	11	0	14	129
% Cars	100	100	100	93.3	98.1	100	100	100	100	100	100	97.8	100	100	98.1	0	100	100	0	100	98.5
Trucks	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Trucks	0	0	0	6.7	1.9	0	0	0	0	0	0	2.2	0	0	1.9	0	0	0	0	0	1.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

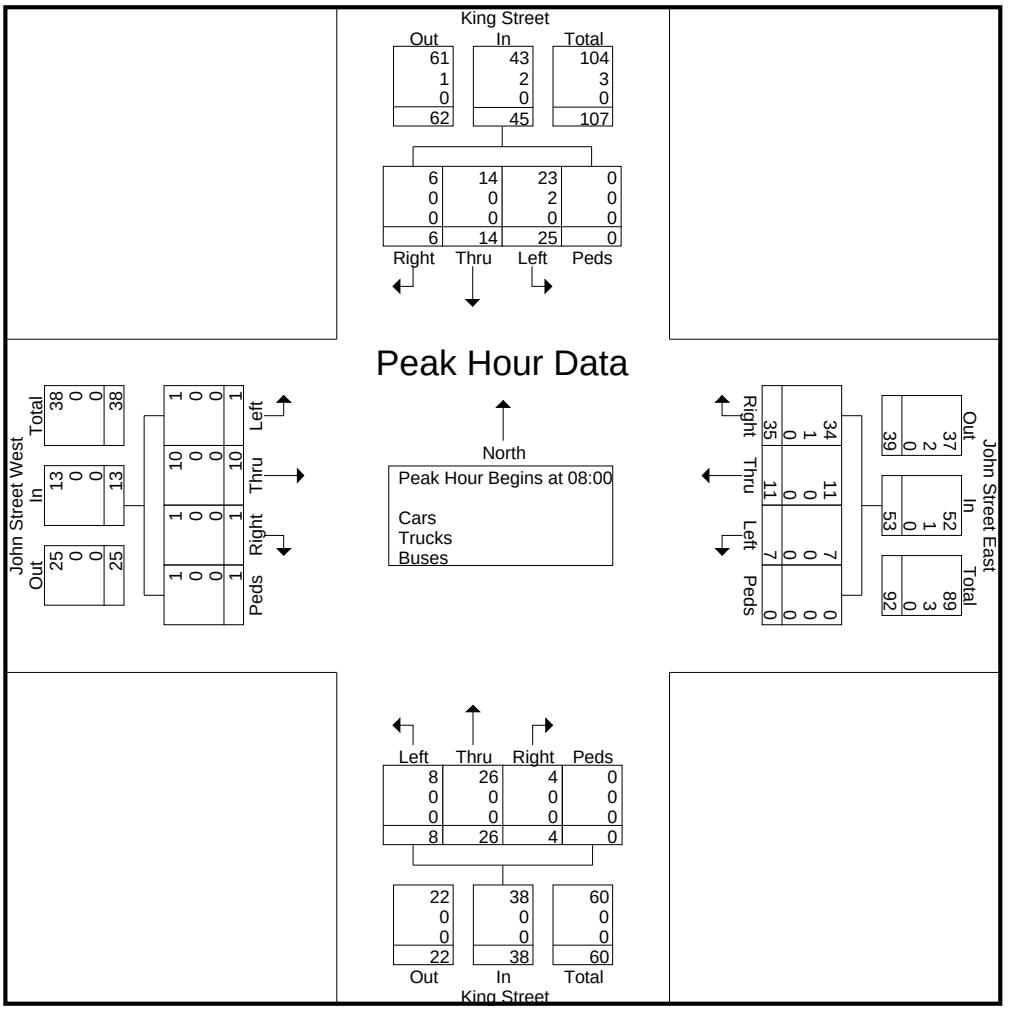


LEA Consulting Ltd.

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

File Name : KingSt&JohnStE-AM
Site Code : 1814500
Start Date : 2020-03-12
Page No : 3

	King Street Southbound					John Street East Westbound					King Street Northbound					John Street West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	**10**	**7**	**2**	0	**19**	2	1	8	0	11	0	4	1	0	5	0	2	0	0	2	37
08:15	3	3	1	0	7	0	**4**	5	0	9	2	7	0	0	9	**1**	1	0	**1**	3	28
08:30	5	1	2	0	8	2	3	9	0	14	**5**	3	0	0	8	0	**5**	0	0	**5**	35
08:45	7	3	1	0	11	**3**	3	**13**	0	**19**	1	**12**	**3**	0	**16**	0	2	**1**	0	3	**49**
Total Volume	25	14	6	0	45	7	11	35	0	53	8	26	4	0	38	1	10	1	1	13	149
% App. Total	55.6	31.1	13.3	0		13.2	20.8	66	0		21.1	68.4	10.5	0		7.7	76.9	7.7	7.7		
PHF	.625	.500	.750	.000	.592	.583	.688	.673	.000	.697	.400	.542	.333	.000	.594	.250	.500	.250	.250	.650	.760
Cars	23	14	6	0	43	7	11	34	0	52	8	26	4	0	38	1	10	1	1	13	146
% Cars	92.0	100	100	0	95.6	100	100	97.1	0	98.1	100	100	100	0	100	100	100	100	100	100	98.0
Trucks	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
% Trucks	8.0	0	0	0	4.4	0	0	2.9	0	1.9	0	0	0	0	0	0	0	0	0	0	2.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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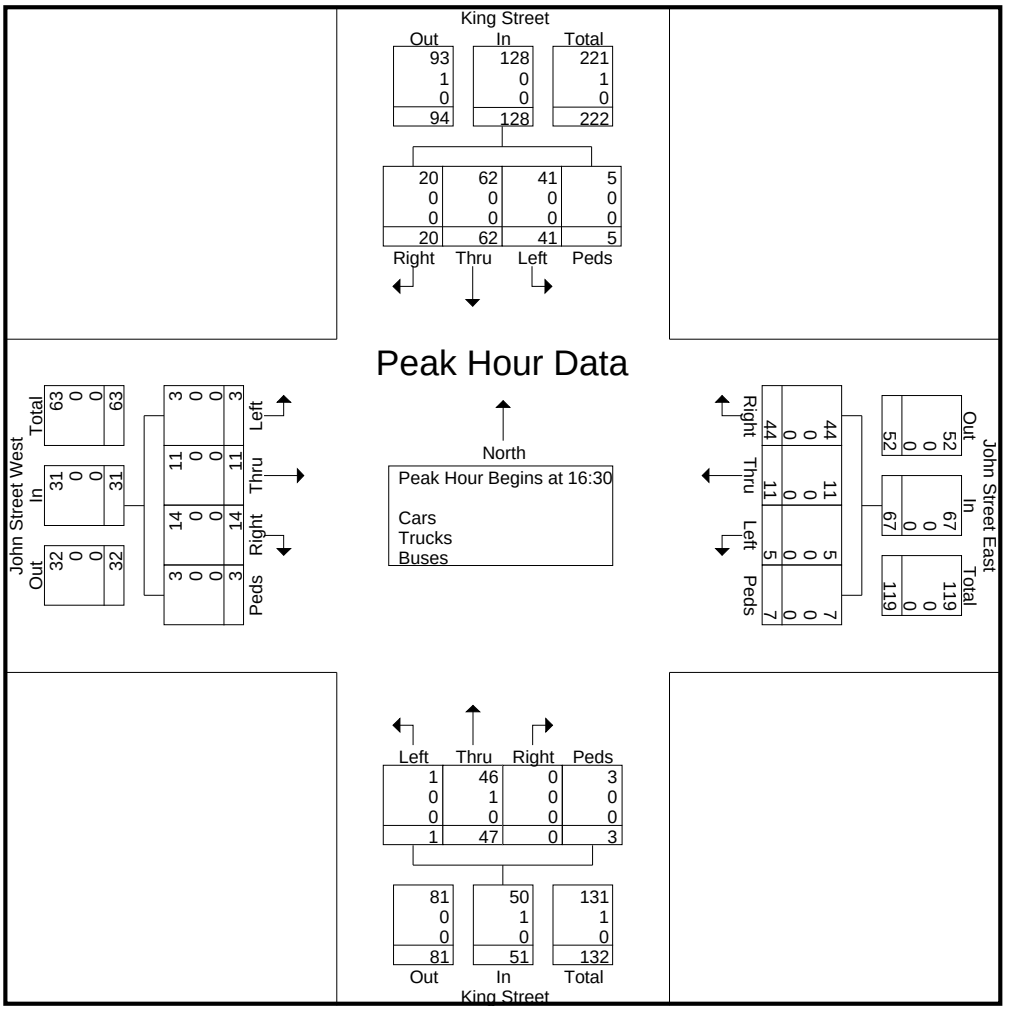
625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : KingSt&JohnStE-PM
Site Code : 1814500
Start Date : 2020-03-12
Page No : 3

	King Street Southbound					John Street East Westbound					King Street Northbound					John Street West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	10	**23**	6	0	**39**	**2**	2	10	**3**	17	0	8	0	1	9	**3**	3	**5**	1	**12**	77
16:45	**13**	12	2	1	28	0	**6**	13	1	**20**	0	**16**	0	0	**16**	0	1	3	0	4	68
17:00	10	12	5	0	27	2	2	6	0	10	0	10	0	0	10	0	**4**	3	0	7	54
17:15	8	15	**7**	**4**	34	1	1	**15**	3	20	**1**	13	0	**2**	16	0	3	3	**2**	8	**78**
Total Volume	41	62	20	5	128	5	11	44	7	67	1	47	0	3	51	3	11	14	3	31	277
% App. Total	32	48.4	15.6	3.9		7.5	16.4	65.7	10.4		2	92.2	0	5.9		9.7	35.5	45.2	9.7		
PHF	.788	.674	.714	.313	.821	.625	.458	.733	.583	.838	.250	.734	.000	.375	.797	.250	.688	.700	.375	.646	.888
Cars	41	62	20	5	128	5	11	44	7	67	1	46	0	3	50	3	11	14	3	31	276
% Cars	100	100	100	100	100	100	100	100	100	100	100	97.9	0	100	98.0	100	100	100	100	100	99.6
Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	2.1	0	0	2.0	0	0	0	0	0	0.4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

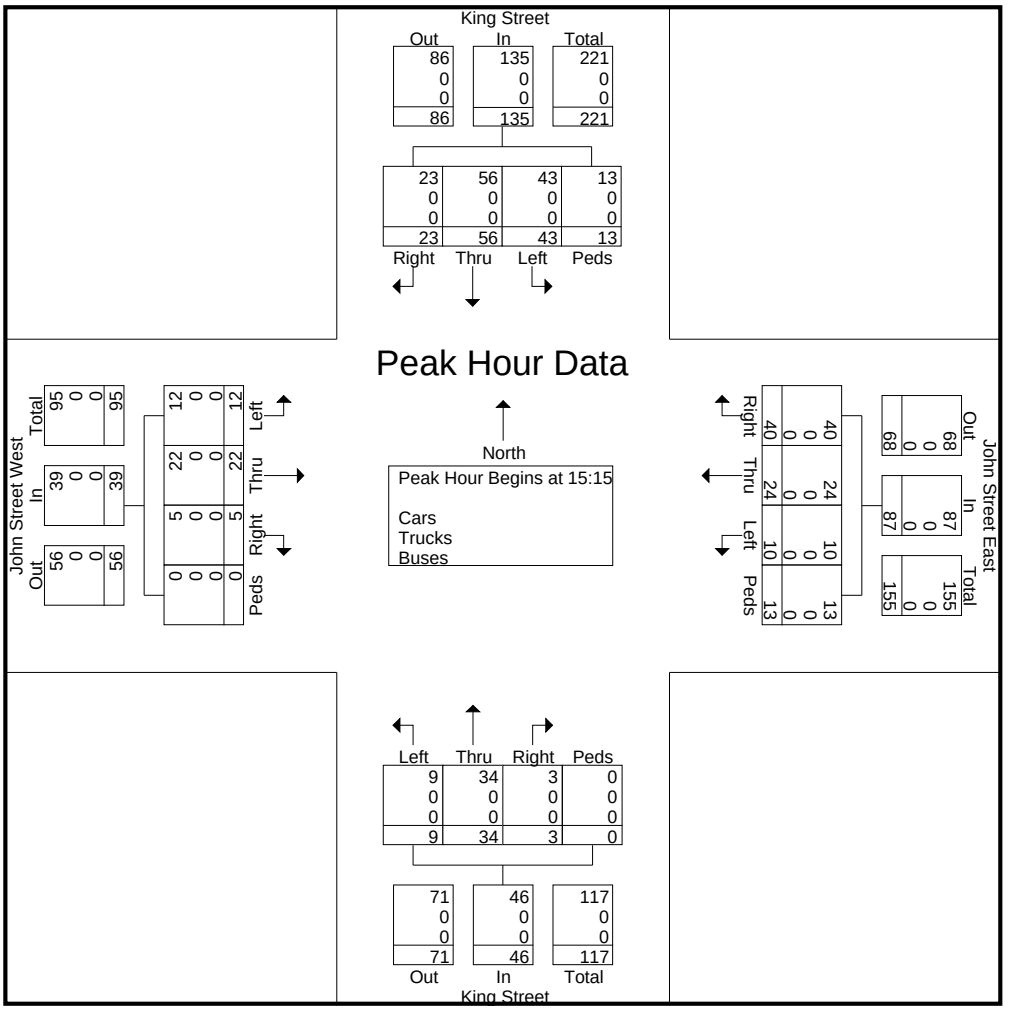


LEA Consulting Ltd.

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

File Name : KingSt&JohnStE-SAT-Midday
Site Code : 1814500
Start Date : 2020-03-14
Page No : 3

	King Street Southbound					John Street East Westbound					King Street Northbound					John Street West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:00 to 16:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 15:15																					
15:15	7	**17**	**7**	3	34	2	6	8	2	18	0	7	**2**	0	9	2	4	1	0	7	68
15:30	9	13	7	**6**	35	2	4	7	**6**	19	**4**	6	0	0	10	**8**	**8**	1	0	**17**	81
15:45	8	10	3	1	22	**3**	**8**	11	3	**25**	2	**13**	1	0	**16**	2	4	**3**	0	9	72
16:00	**19**	16	6	3	**44**	3	6	**14**	2	25	3	8	0	0	11	0	6	0	0	6	**86**
Total Volume	43	56	23	13	135	10	24	40	13	87	9	34	3	0	46	12	22	5	0	39	307
% App. Total	31.9	41.5	17	9.6		11.5	27.6	46	14.9		19.6	73.9	6.5	0		30.8	56.4	12.8	0		
PHF	.566	.824	.821	.542	.767	.833	.750	.714	.542	.870	.563	.654	.375	.000	.719	.375	.688	.417	.000	.574	.892
Cars	43	56	23	13	135	10	24	40	13	87	9	34	3	0	46	12	22	5	0	39	307
% Cars	100	100	100	100	100	100	100	100	100	100	100	100	100	0	100	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

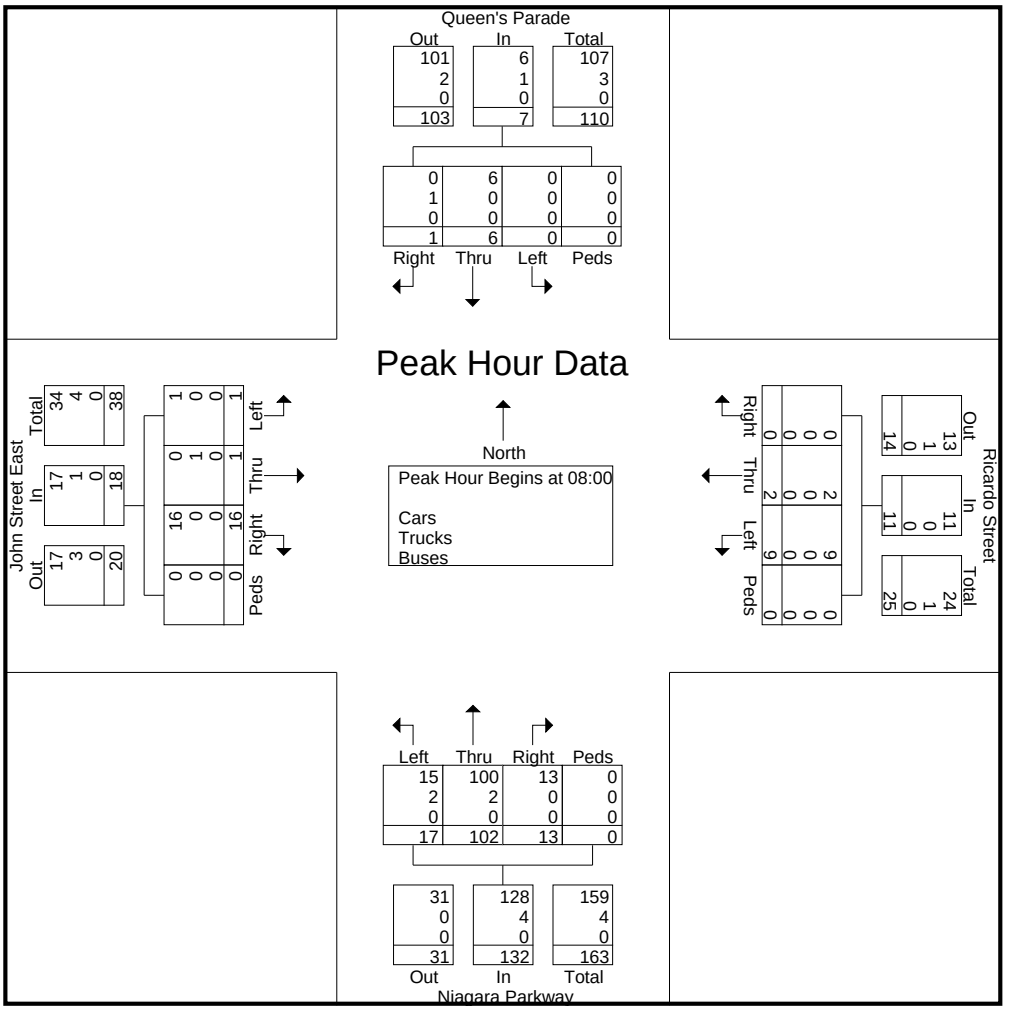


LEA Consulting Ltd.

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

File Name : NiagaraPkwy&JohnStE-AM
Site Code : 1814500
Start Date : 2020-03-12
Page No : 3

	Queen's Parade Southbound					Ricardo Street Westbound					Niagara Parkway Northbound					John Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	**3**	0	0	3	**4**	**1**	0	0	**5**	1	23	3	0	27	0	0	**5**	0	5	40
08:15	0	0	0	0	0	2	0	0	0	2	4	**31**	**4**	0	**39**	0	0	3	0	3	44
08:30	0	0	0	0	0	1	0	0	0	1	**7**	27	3	0	37	**1**	**1**	5	0	**7**	**45**
08:45	0	3	**1**	0	**4**	2	1	0	0	3	5	21	3	0	29	0	0	3	0	3	39
Total Volume	0	6	1	0	7	9	2	0	0	11	17	102	13	0	132	1	1	16	0	18	168
% App. Total	0	85.7	14.3	0		81.8	18.2	0	0		12.9	77.3	9.8	0		5.6	5.6	88.9	0		
PHF	.000	.500	.250	.000	.438	.563	.500	.000	.000	.550	.607	.823	.813	.000	.846	.250	.250	.800	.000	.643	.933
Cars	0	6	0	0	6	9	2	0	0	11	15	100	13	0	128	1	0	16	0	17	162
% Cars	0	100	0	0	85.7	100	100	0	0	100	88.2	98.0	100	0	97.0	100	0	100	0	94.4	96.4
Trucks	0	0	1	0	1	0	0	0	0	0	2	2	0	0	4	0	1	0	0	1	6
% Trucks	0	0	100	0	14.3	0	0	0	0	0	11.8	2.0	0	0	3.0	0	100	0	0	5.6	3.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

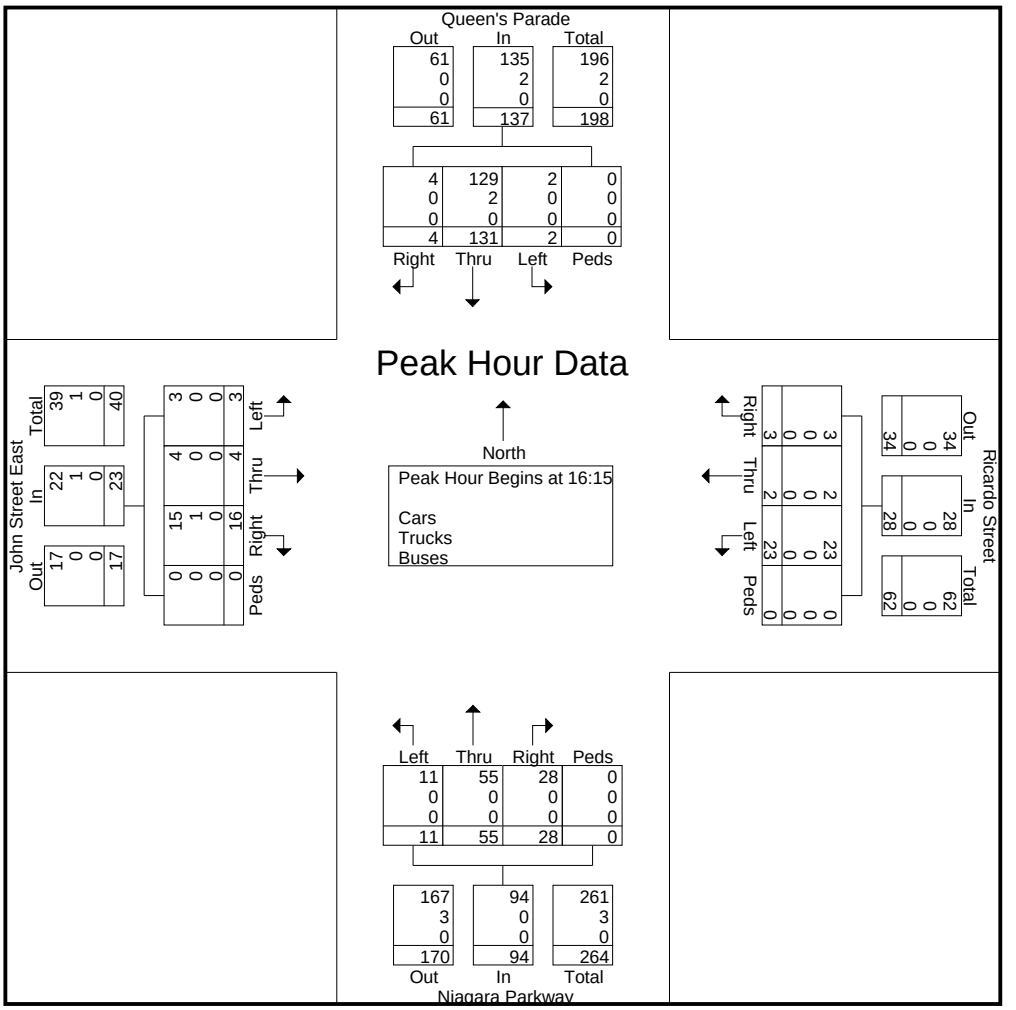


LEA Consulting Ltd.

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

File Name : NiagaraPkwy&JohnStE-PM
Site Code : 18145
Start Date : 2020-03-12
Page No : 3

	Queen's Parade Southbound					Ricardo Street Westbound					Niagara Parkway Northbound					John Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	26	**1**	0	27	4	0	0	0	4	2	11	9	0	22	**1**	**2**	**6**	0	**9**	62
16:30	**1**	24	1	0	26	**8**	**1**	1	0	**10**	**5**	**16**	**12**	0	**33**	1	1	6	0	8	77
16:45	0	30	1	0	31	7	1	**2**	0	10	2	15	1	0	18	1	0	3	0	4	63
17:00	1	**51**	1	0	**53**	4	0	0	0	4	2	13	6	0	21	0	1	1	0	2	**80**
Total Volume	2	131	4	0	137	23	2	3	0	28	11	55	28	0	94	3	4	16	0	23	282
% App. Total	1.5	95.6	2.9	0		82.1	7.1	10.7	0		11.7	58.5	29.8	0		13	17.4	69.6	0		
PHF	.500	.642	1.00	.000	.646	.719	.500	.375	.000	.700	.550	.859	.583	.000	.712	.750	.500	.667	.000	.639	.881
Cars	2	129	4	0	135	23	2	3	0	28	11	55	28	0	94	3	4	15	0	22	279
% Cars	100	98.5	100	0	98.5	100	100	100	0	100	100	100	100	0	100	100	100	93.8	0	95.7	98.9
Trucks	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
% Trucks	0	1.5	0	0	1.5	0	0	0	0	0	0	0	0	0	0	0	0	6.3	0	4.3	1.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

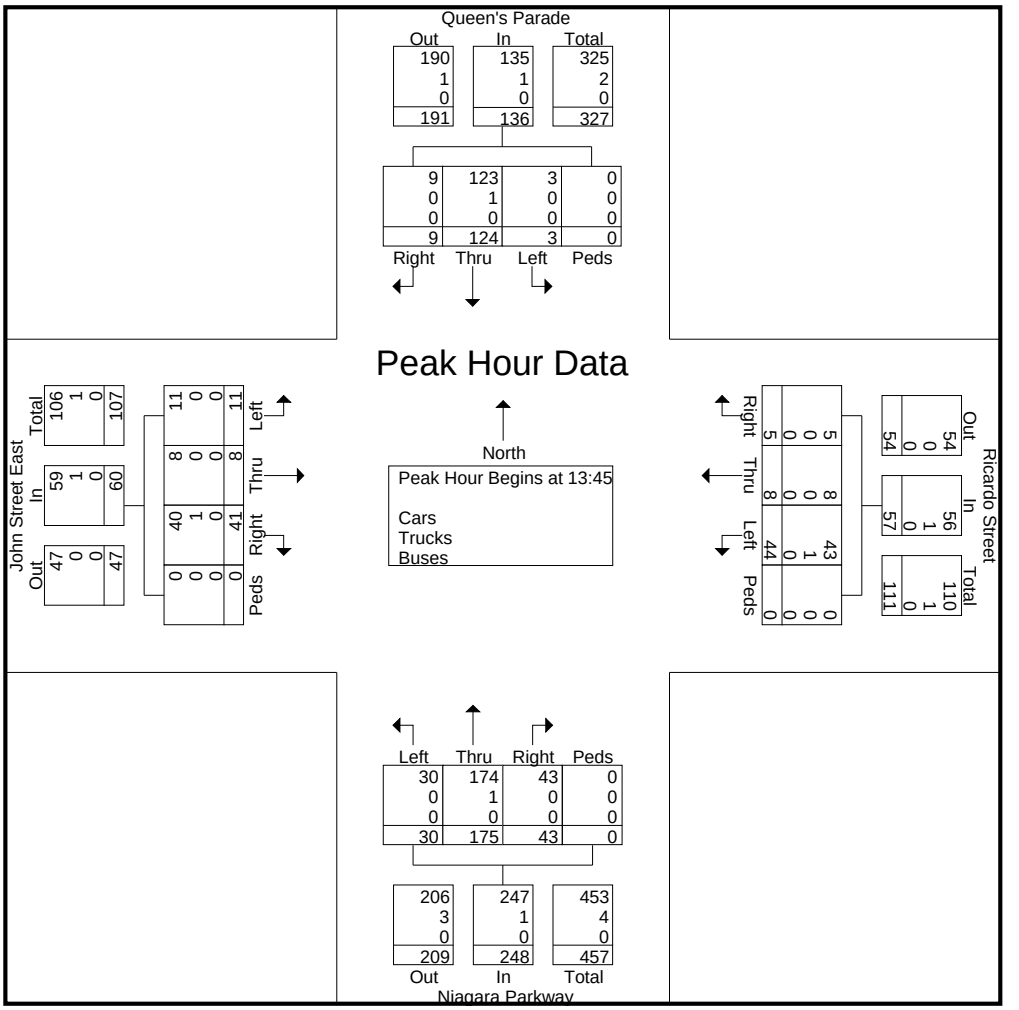


LEA Consulting Ltd.

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

File Name : NiagaraPkwy&JohnStE-SAT-Midday
Site Code : 1814500
Start Date : 2020-03-14
Page No : 3

	Queen's Parade Southbound					Ricardo Street Westbound					Niagara Parkway Northbound					John Street East Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:00 to 16:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 13:45																					
13:45	**1**	26	3	0	30	**12**	**3**	0	0	15	5	**54**	10	0	**69**	5	2	13	0	**20**	**134**
14:00	1	**41**	0	0	**42**	8	3	**2**	0	13	7	40	9	0	56	**6**	1	6	0	13	124
14:15	0	21	2	0	23	12	2	2	0	**16**	8	43	**12**	0	63	0	**4**	**14**	0	18	120
14:30	1	36	**4**	0	41	12	0	1	0	13	**10**	38	12	0	60	0	1	8	0	9	123
Total Volume	3	124	9	0	136	44	8	5	0	57	30	175	43	0	248	11	8	41	0	60	501
% App. Total	2.2	91.2	6.6	0		77.2	14	8.8	0		12.1	70.6	17.3	0		18.3	13.3	68.3	0		
PHF	.750	.756	.563	.000	.810	.917	.667	.625	.000	.891	.750	.810	.896	.000	.899	.458	.500	.732	.000	.750	.935
Cars	3	123	9	0	135	43	8	5	0	56	30	174	43	0	247	11	8	40	0	59	497
% Cars	100	99.2	100	0	99.3	97.7	100	100	0	98.2	100	99.4	100	0	99.6	100	100	97.6	0	98.3	99.2
Trucks	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	4
% Trucks	0	0.8	0	0	0.7	2.3	0	0	0	1.8	0	0.6	0	0	0.4	0	0	2.4	0	1.7	0.8
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

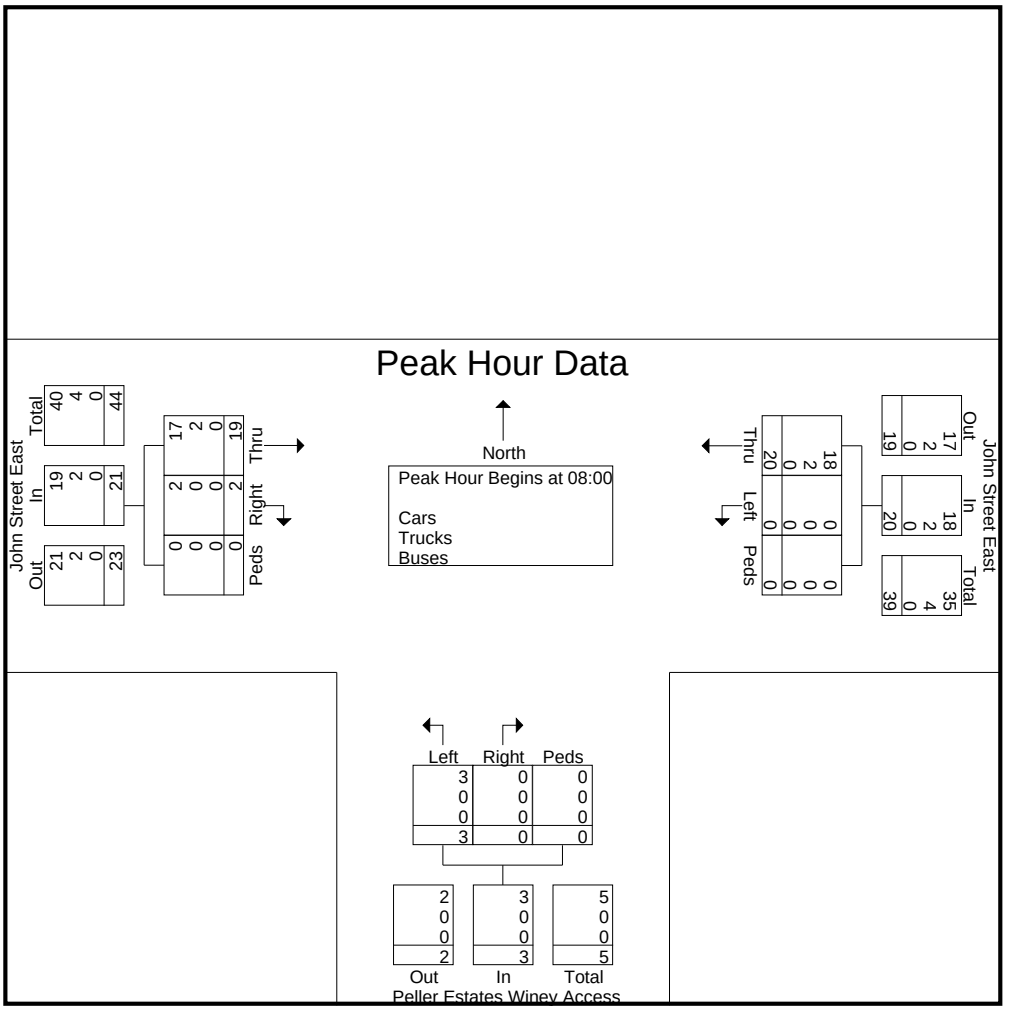


LEA Consulting Ltd.

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

File Name : PellerEstateWineryAccess&JohnStE-AM
Site Code : 01814501
Start Date : 2020-03-12
Page No : 3

	John Street East Westbound				Peller Estates Winey Access Northbound				John Street East Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00													
08:00	0	2	0	2	0	0	0	0	**7**	0	0	7	9
08:15	0	3	0	3	0	0	0	0	2	0	0	2	5
08:30	0	**8**	0	**8**	1	0	0	1	7	**1**	0	**8**	**17**
08:45	0	7	0	7	**2**	0	0	**2**	3	1	0	4	13
Total Volume	0	20	0	20	3	0	0	3	19	2	0	21	44
% App. Total	0	100	0		100	0	0		90.5	9.5	0		
PHF	.000	.625	.000	.625	.375	.000	.000	.375	.679	.500	.000	.656	.647
Cars	0	18	0	18	3	0	0	3	17	2	0	19	40
% Cars	0	90.0	0	90.0	100	0	0	100	89.5	100	0	90.5	90.9
Trucks	0	2	0	2	0	0	0	0	2	0	0	2	4
% Trucks	0	10.0	0	10.0	0	0	0	0	10.5	0	0	9.5	9.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0



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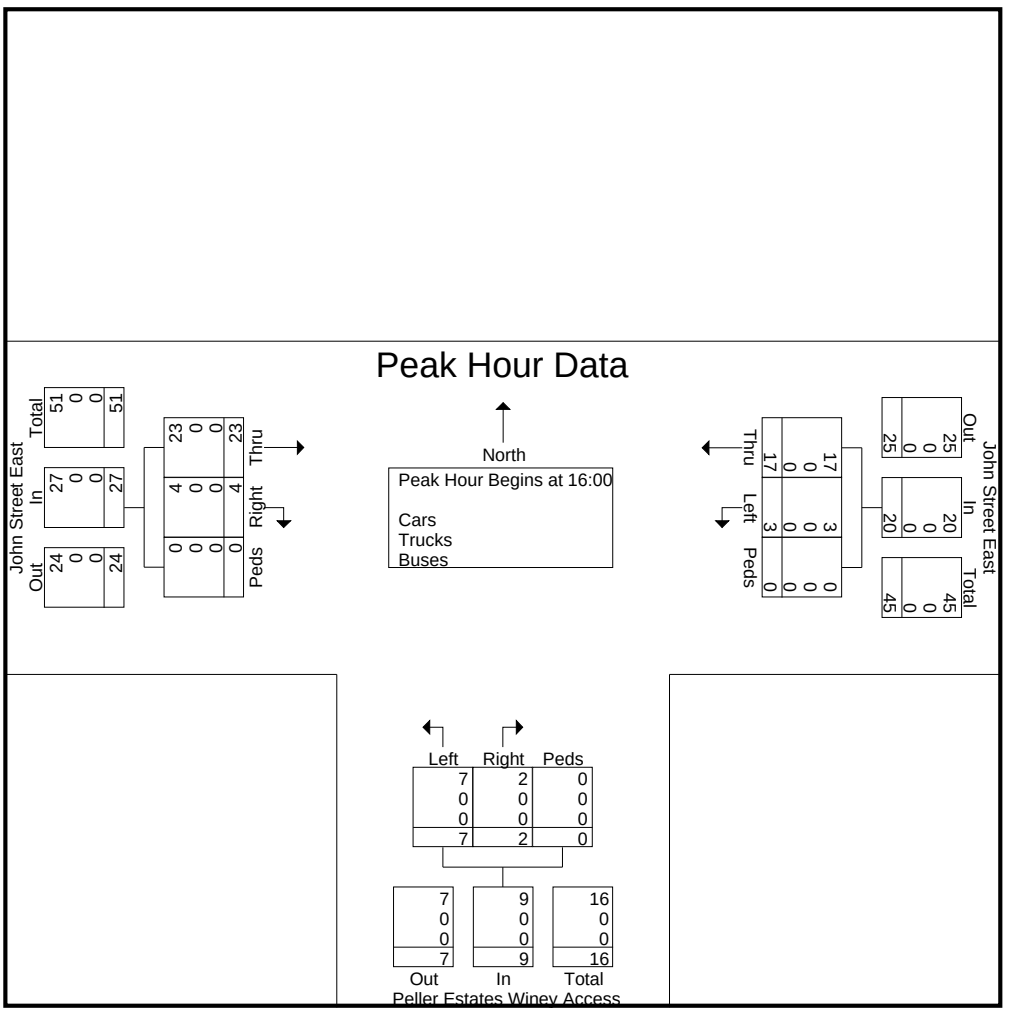
625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : PellerEstateWineryAccess&JohnStE-PM
Site Code : 01814501
Start Date : 2020-03-12
Page No : 3

	John Street East Westbound				Peller Estates Winey Access Northbound				John Street East Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 16:00													
16:00	0	**5**	0	5	**3**	0	0	**3**	4	0	0	4	12
16:15	**2**	4	0	**6**	3	0	0	3	**12**	**2**	0	**14**	**23**
16:30	1	4	0	5	0	**2**	0	2	4	0	0	4	11
16:45	0	4	0	4	1	0	0	1	3	2	0	5	10
Total Volume	3	17	0	20	7	2	0	9	23	4	0	27	56
% App. Total	15	85	0		77.8	22.2	0		85.2	14.8	0		
PHF	.375	.850	.000	.833	.583	.250	.000	.750	.479	.500	.000	.482	.609
Cars	3	17	0	20	7	2	0	9	23	4	0	27	56
% Cars	100	100	0	100	100	100	0	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0



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625 Cochrane Drive, 9th Floor
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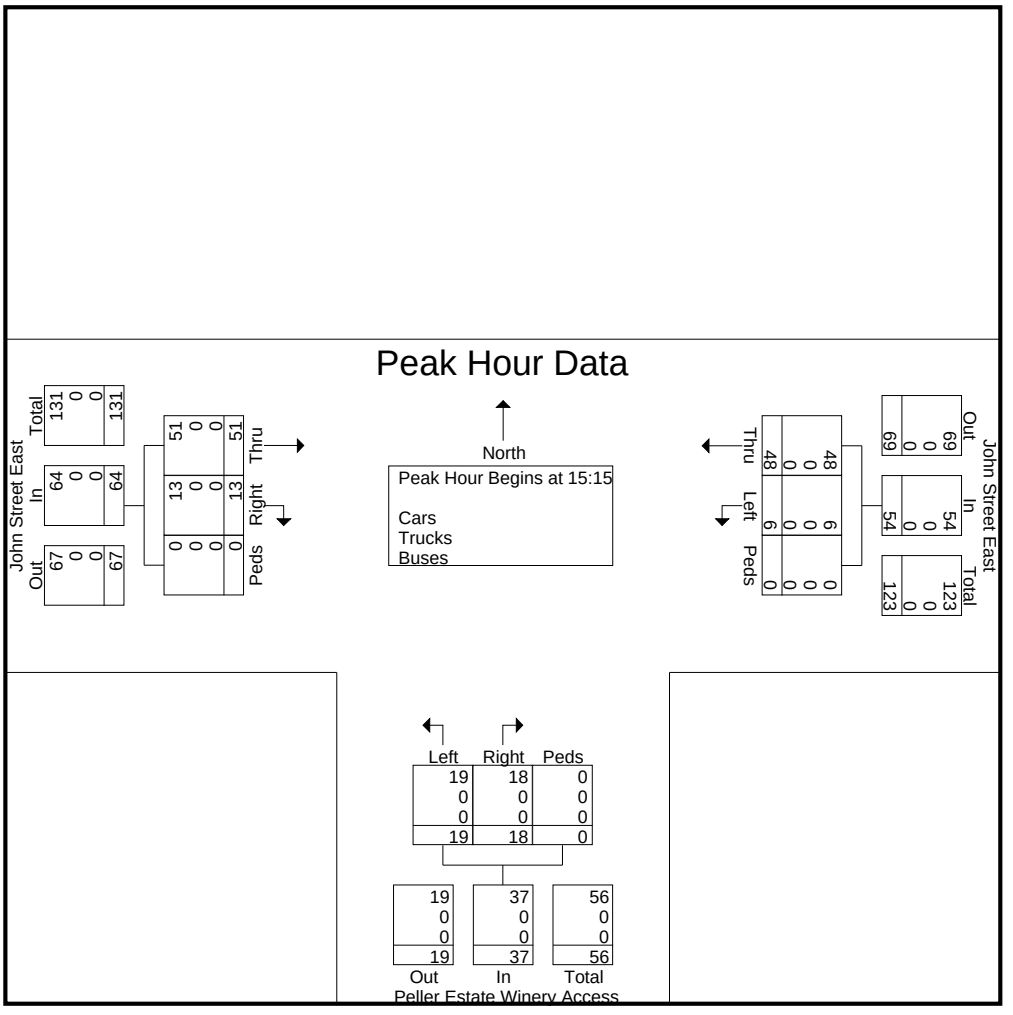
File Name : PellerEstateWineryAccess&JohnStE-SAT-Midday
Site Code : 18145214
Start Date : 2020-03-14
Page No : 3

	John Street East Westbound				Peller Estate Winery Access Northbound				John Street East Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:00 to 16:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 15:15													
15:15	1	**14**	0	**15**	5	5	0	10	13	2	0	15	40
15:30	**3**	9	0	12	5	0	0	5	11	3	0	14	31
15:45	0	13	0	13	2	4	0	6	11	**5**	0	16	35
16:00	2	12	0	14	**7**	**9**	0	**16**	**16**	3	0	**19**	**49**
Total Volume	6	48	0	54	19	18	0	37	51	13	0	64	155
% App. Total	11.1	88.9	0		51.4	48.6	0		79.7	20.3	0		
PHF	.500	.857	.000	.900	.679	.500	.000	.578	.797	.650	.000	.842	.791
Cars	6	48	0	54	19	18	0	37	51	13	0	64	155
% Cars	100	100	0	100	100	100	0	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

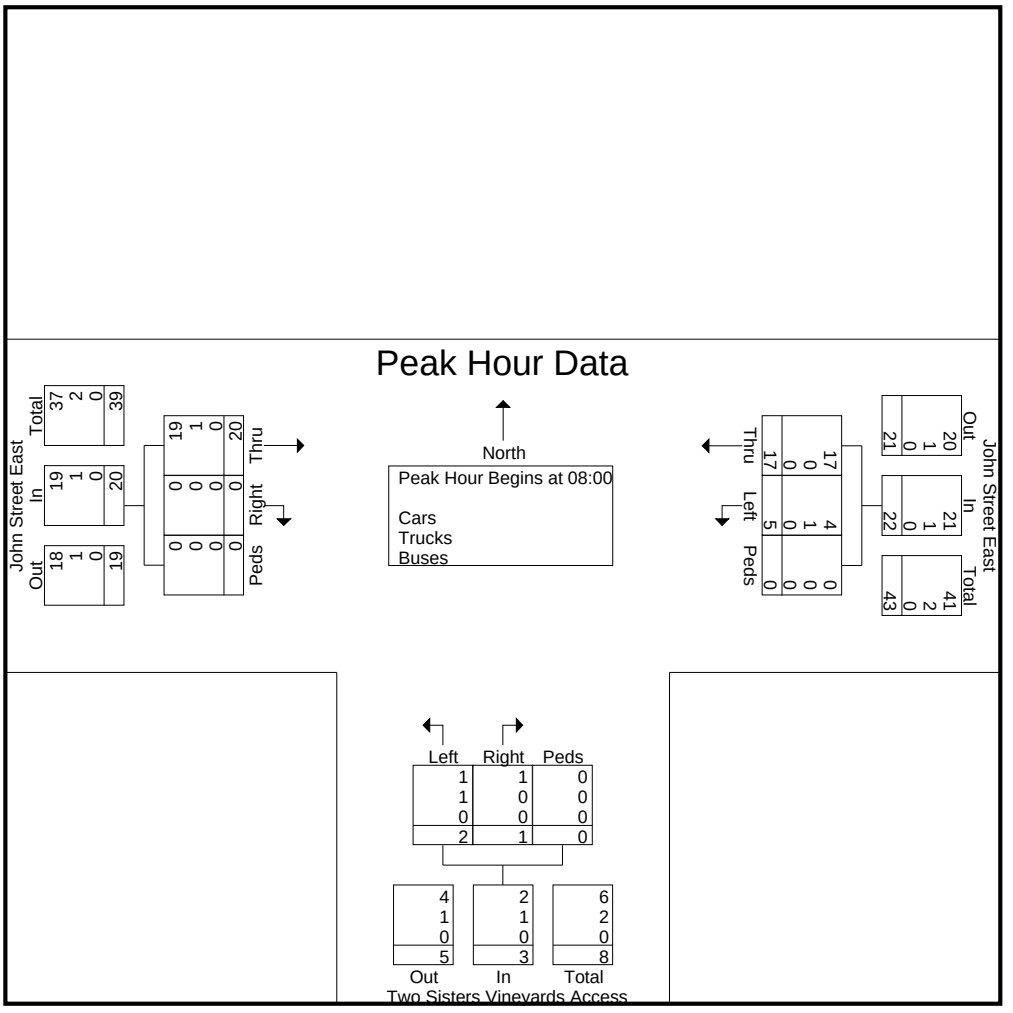


LEA Consulting Ltd.

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

File Name : TwoSisterVineyardsAccess&JohnStE-AM
Site Code : 01814514
Start Date : 2020-03-12
Page No : 3

	John Street East Westbound				Two Sisters Vineyards Access Northbound				John Street East Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00													
08:00	0	2	0	2	0	0	0	0	**7**	0	0	**7**	9
08:15	0	3	0	3	0	0	0	0	2	0	0	2	5
08:30	**3**	5	0	8	0	**1**	0	1	6	0	0	6	15
08:45	2	**7**	0	**9**	**2**	0	0	**2**	5	0	0	5	**16**
Total Volume	5	17	0	22	2	1	0	3	20	0	0	20	45
% App. Total	22.7	77.3	0		66.7	33.3	0		100	0	0		
PHF	.417	.607	.000	.611	.250	.250	.000	.375	.714	.000	.000	.714	.703
Cars	4	17	0	21	1	1	0	2	19	0	0	19	42
% Cars	80.0	100	0	95.5	50.0	100	0	66.7	95.0	0	0	95.0	93.3
Trucks	1	0	0	1	1	0	0	1	1	0	0	1	3
% Trucks	20.0	0	0	4.5	50.0	0	0	33.3	5.0	0	0	5.0	6.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

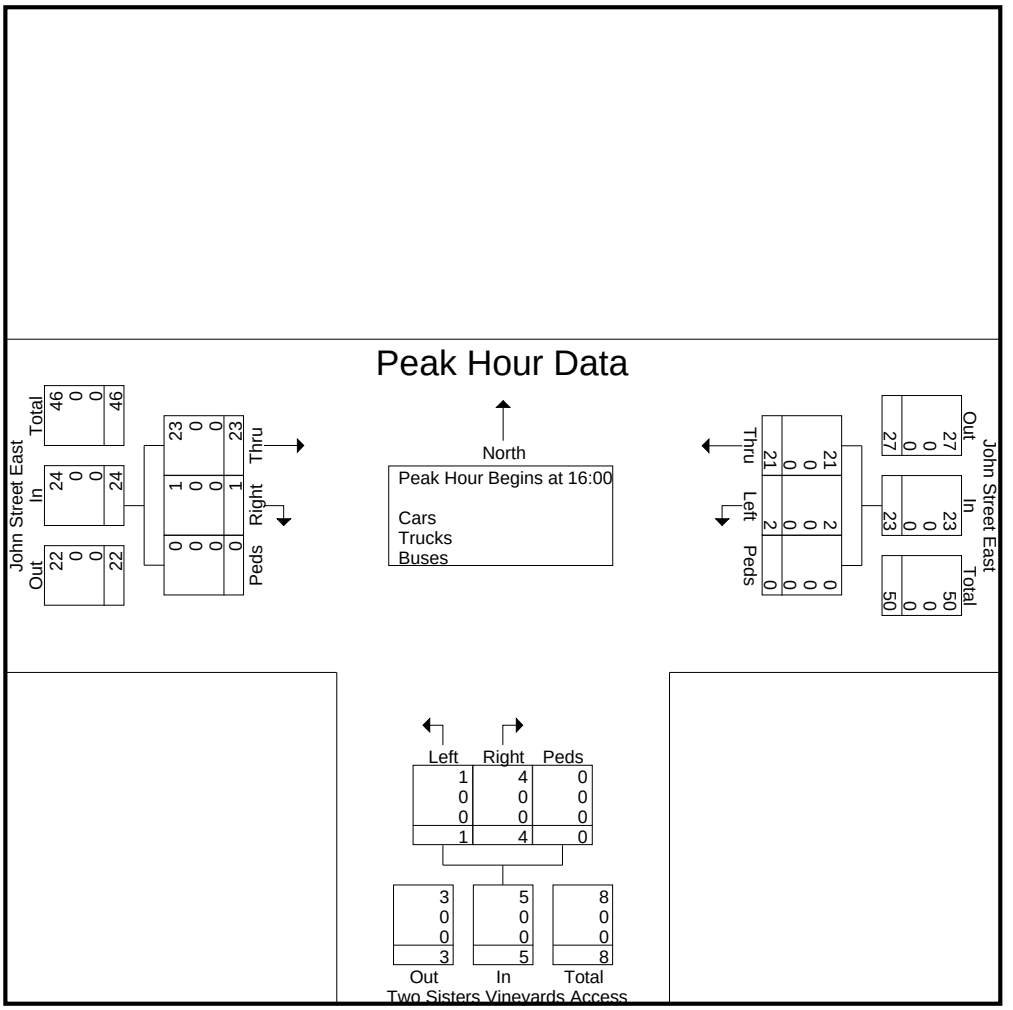


LEA Consulting Ltd.

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

File Name : TwoSisterVineyardsAccess&JohnStE-PM
Site Code : 01814514
Start Date : 2020-03-12
Page No : 3

	John Street East Westbound				Two Sisters Vineyards Access Northbound				John Street East Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 16:00													
16:00	**1**	**7**	0	**8**	0	**1**	0	1	3	**1**	0	4	13
16:15	0	5	0	5	**1**	1	0	**2**	**14**	0	0	**14**	**21**
16:30	0	4	0	4	0	1	0	1	2	0	0	2	7
16:45	1	5	0	6	0	1	0	1	4	0	0	4	11
Total Volume	2	21	0	23	1	4	0	5	23	1	0	24	52
% App. Total	8.7	91.3	0		20	80	0		95.8	4.2	0		
PHF	.500	.750	.000	.719	.250	1.00	.000	.625	.411	.250	.000	.429	.619
Cars	2	21	0	23	1	4	0	5	23	1	0	24	52
% Cars	100	100	0	100	100	100	0	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

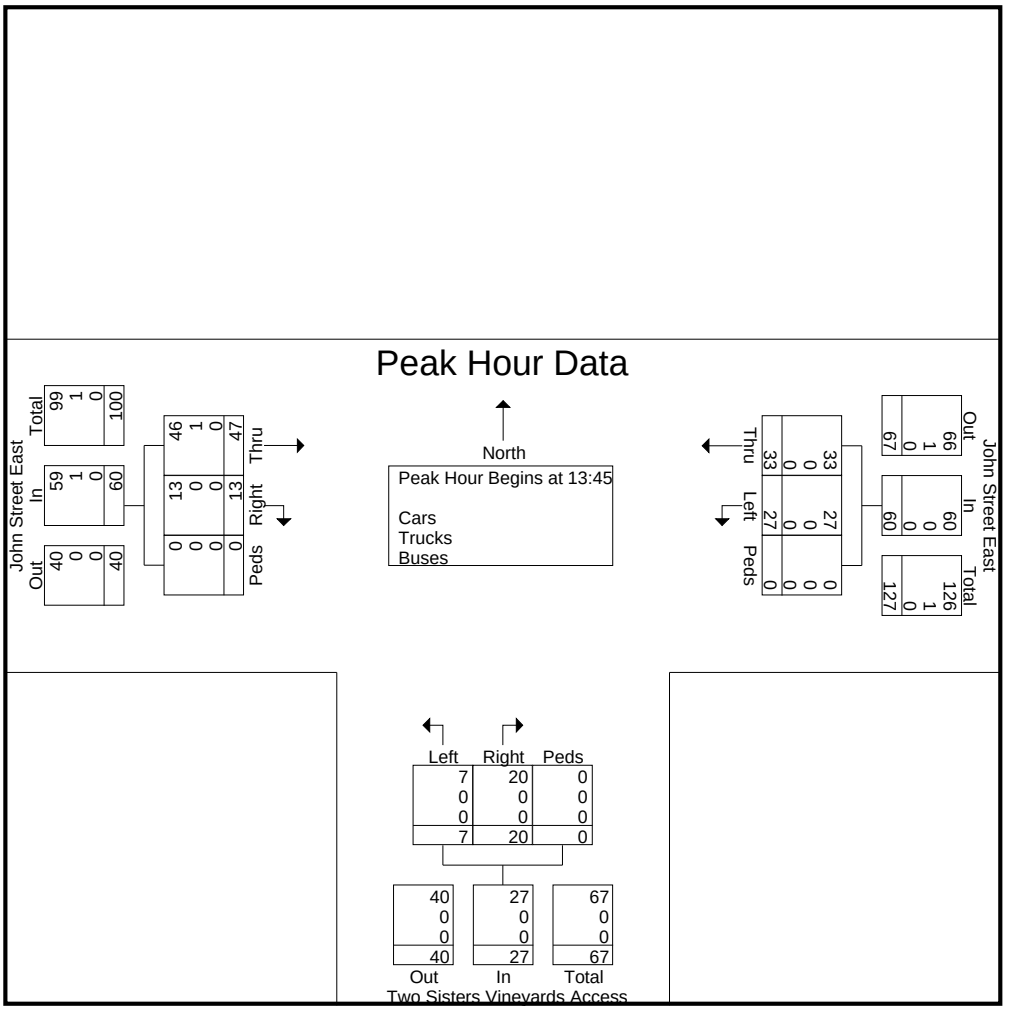


LEA Consulting Ltd.

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

File Name : TwoSisterVineyardsAccess&JohnStE-SAT-Midday
Site Code : 18145201
Start Date : 2020-03-14
Page No : 3

	John Street East Westbound				Two Sisters Vineyards Access Northbound				John Street East Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:00 to 16:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 13:45													
13:45	3	8	0	11	**3**	**5**	0	**8**	15	1	0	16	35
14:00	7	8	0	15	1	5	0	6	10	1	0	11	32
14:15	6	**11**	0	**17**	1	5	0	6	**16**	3	0	**19**	**42**
14:30	**11**	6	0	17	2	5	0	7	6	**8**	0	14	38
Total Volume	27	33	0	60	7	20	0	27	47	13	0	60	147
% App. Total	45	55	0		25.9	74.1	0		78.3	21.7	0		
PHF	.614	.750	.000	.882	.583	1.00	.000	.844	.734	.406	.000	.789	.875
Cars	27	33	0	60	7	20	0	27	46	13	0	59	146
% Cars	100	100	0	100	100	100	0	100	97.9	100	0	98.3	99.3
Trucks	0	0	0	0	0	0	0	0	1	0	0	1	1
% Trucks	0	0	0	0	0	0	0	0	2.1	0	0	1.7	0.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0



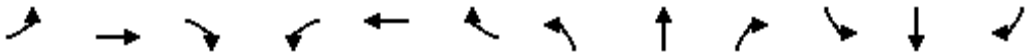
APPENDIX B

EXISTING TRAFFIC CAPACITY ANALYSIS

APPENDIX B

EXISTING TRAFFIC CAPACITY ANALYSIS

Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	23	13	3	0	24	147	19	0	9	1
Future Volume (Veh/h)	1	1	23	13	3	0	24	147	19	0	9	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	25	14	3	0	26	160	21	0	10	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	234	244	10	258	234	170	11			181		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	234	244	10	258	234	170	11			181		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	98	100	100	98			100		
cM capacity (veh/h)	709	648	1071	669	656	873	1608			1394		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	17	207	11
Volume Left	1	14	26	0
Volume Right	25	0	21	1
cSH	1026	667	1608	1394
Volume to Capacity	0.03	0.03	0.02	0.00
Queue Length 95th (m)	0.6	0.6	0.4	0.0
Control Delay (s)	8.6	10.5	1.0	0.0
Lane LOS	A	B	A	
Approach Delay (s)	8.6	10.5	1.0	0.0
Approach LOS	A	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	30.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	29	0	7	24	3	1
Future Volume (Veh/h)	29	0	7	24	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	0	8	26	3	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			32		74	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		74	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1580		925	1042

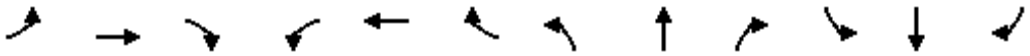
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	34	4
Volume Left	0	8	3
Volume Right	0	0	1
cSH	1700	1580	952
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.1
Control Delay (s)	0.0	1.7	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	8.8
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	27	3	0	29	4	0
Future Volume (Veh/h)	27	3	0	29	4	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	3	0	32	4	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			32		62	30
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		62	30
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1580		944	1044

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	32	4
Volume Left	0	0	4
Volume Right	3	0	0
cSH	1700	1580	944
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

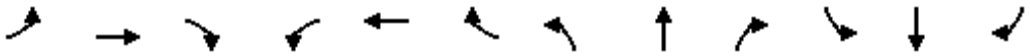
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	26	17	3	26	0	46	0	9	0	1	4
Future Volume (Veh/h)	6	26	17	3	26	0	46	0	9	0	1	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	28	18	3	28	0	50	0	10	0	1	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	28			46			90	85	37	95	94	28
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	28			46			90	85	37	95	94	28
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			94	100	99	100	100	100
cM capacity (veh/h)	1585			1562			887	800	1035	875	791	1047

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	31	60	5
Volume Left	7	3	50	0
Volume Right	18	0	10	4
cSH	1585	1562	908	983
Volume to Capacity	0.00	0.00	0.07	0.01
Queue Length 95th (m)	0.1	0.0	1.6	0.1
Control Delay (s)	1.0	0.7	9.2	8.7
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.7	9.2	8.7
Approach LOS			A	A

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	20.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	4	0	1	3	48	0	0	17	0
Future Volume (Veh/h)	0	0	10	4	0	1	3	48	0	0	17	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	11	4	0	1	3	52	0	0	18	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	77	76	18	87	76	52	18			52		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	77	76	18	87	76	52	18			52		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	910	813	1061	888	813	1016	1599			1554		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	5	55	18
Volume Left	0	4	3	0
Volume Right	11	1	0	0
cSH	1061	911	1599	1554
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (m)	0.2	0.1	0.0	0.0
Control Delay (s)	8.4	9.0	0.4	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.4	9.0	0.4	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	15.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	35	0	0	27	0	0
Future Volume (Veh/h)	35	0	0	27	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	0	0	29	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			38		67	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			38		67	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1572		938	1034

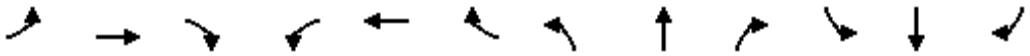
Direction, Lane #	EB 1	WB 1
Volume Total	38	29
Volume Left	0	0
Volume Right	0	0
cSH	1700	1572
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	35	0	0	27	0	0
Future Volume (Veh/h)	35	0	0	27	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	0	0	29	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			38		67	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			38		67	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1572		938	1034

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	38	29	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

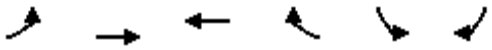
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	14	1	10	16	50	12	37	0	36	20	9
Future Volume (vph)	1	14	1	10	16	50	12	37	0	36	20	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	15	1	11	17	54	13	40	0	39	22	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	17	82	53	71
Volume Left (vph)	1	11	13	39
Volume Right (vph)	1	54	0	10
Hadj (s)	0.01	-0.33	0.08	0.06
Departure Headway (s)	4.3	3.9	4.3	4.2
Degree Utilization, x	0.02	0.09	0.06	0.08
Capacity (veh/h)	811	901	814	829
Control Delay (s)	7.4	7.2	7.5	7.6
Approach Delay (s)	7.4	7.2	7.5	7.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.4			
Level of Service	A			
Intersection Capacity Utilization	21.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	1	42	63	46	45	1
Future Volume (vph)	1	42	63	46	45	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	46	68	50	49	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	47	118	50
Volume Left (vph)	1	0	49
Volume Right (vph)	0	50	1
Hadj (s)	0.04	-0.22	0.22
Departure Headway (s)	4.2	3.8	4.5
Degree Utilization, x	0.05	0.13	0.06
Capacity (veh/h)	844	919	772
Control Delay (s)	7.4	7.4	7.8
Approach Delay (s)	7.4	7.4	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	35	0	0	27	0	0
Future Volume (Veh/h)	35	0	0	27	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	0	0	29	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			38		67	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			38		67	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1572		938	1034

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	38	29	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

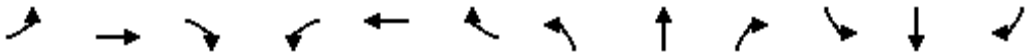
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

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

APPENDIX B

EXISTING TRAFFIC CAPACITY ANALYSIS

Weekday PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	7	23	33	3	4	16	79	40	3	189	6
Future Volume (Veh/h)	4	7	23	33	3	4	16	79	40	3	189	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	8	25	36	3	4	17	86	43	3	205	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	362	378	208	385	360	108	212			129		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	362	378	208	385	360	108	212			129		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	97	93	99	100	99			100		
cM capacity (veh/h)	583	546	832	544	559	946	1358			1457		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	37	43	146	215
Volume Left	4	36	17	3
Volume Right	25	4	43	7
cSH	718	567	1358	1457
Volume to Capacity	0.05	0.08	0.01	0.00
Queue Length 95th (m)	1.2	1.9	0.3	0.0
Control Delay (s)	10.3	11.9	1.0	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	10.3	11.9	1.0	0.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	32.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	33	1	3	30	1	6
Future Volume (Veh/h)	33	1	3	30	1	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	1	3	33	1	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			37		76	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			37		76	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1574		926	1036

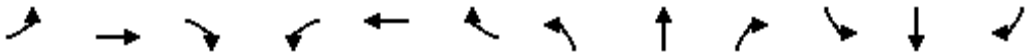
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	37	36	8
Volume Left	0	3	1
Volume Right	1	0	7
cSH	1700	1574	1021
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.0	0.6	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.6	8.6
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	14.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	33	6	4	24	10	3
Future Volume (Veh/h)	33	6	4	24	10	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	7	4	26	11	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			43		74	40
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			43		74	40
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1566		928	1032

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	43	30	14
Volume Left	0	4	11
Volume Right	7	0	3
cSH	1700	1566	948
Volume to Capacity	0.03	0.00	0.01
Queue Length 95th (m)	0.0	0.1	0.3
Control Delay (s)	0.0	1.0	8.9
Lane LOS		A	A
Approach Delay (s)	0.0	1.0	8.9
Approach LOS			A

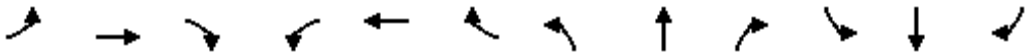
Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization		14.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	20	52	4	29	0	50	1	9	0	0	4
Future Volume (Veh/h)	0	20	52	4	29	0	50	1	9	0	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	22	57	4	32	0	54	1	10	0	0	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	32			79			94	90	50	101	119	32
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	32			79			94	90	50	101	119	32
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			94	100	99	100	100	100
cM capacity (veh/h)	1580			1519			883	797	1018	869	769	1042

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	79	36	65	4
Volume Left	0	4	54	0
Volume Right	57	0	10	4
cSH	1580	1519	900	1042
Volume to Capacity	0.00	0.00	0.07	0.00
Queue Length 95th (m)	0.0	0.1	1.8	0.1
Control Delay (s)	0.0	0.8	9.3	8.5
Lane LOS		A	A	A
Approach Delay (s)	0.0	0.8	9.3	8.5
Approach LOS			A	A

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	21.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	17	0	1	3	6	56	0	3	55	1
Future Volume (Veh/h)	6	0	17	0	1	3	6	56	0	3	55	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	0	18	0	1	3	7	61	0	3	60	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	145	142	60	160	142	61	61			61		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	145	142	60	160	142	61	61			61		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	98	100	100	100	100			100		
cM capacity (veh/h)	817	745	1005	788	744	1004	1542			1542		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	4	68	64
Volume Left	7	0	7	3
Volume Right	18	3	0	1
cSH	944	924	1542	1542
Volume to Capacity	0.03	0.00	0.00	0.00
Queue Length 95th (m)	0.6	0.1	0.1	0.0
Control Delay (s)	8.9	8.9	0.8	0.4
Lane LOS	A	A	A	A
Approach Delay (s)	8.9	8.9	0.8	0.4
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	18.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	29	0	0	32	0	0
Future Volume (Veh/h)	29	0	0	32	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	0	0	35	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			32		67	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		67	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1580		938	1042

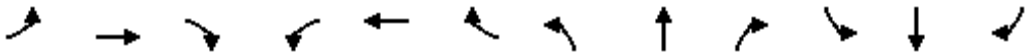
Direction, Lane #	EB 1	WB 1
Volume Total	32	35
Volume Left	0	0
Volume Right	0	0
cSH	1700	1580
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	29	0	0	32	0	0
Future Volume (Veh/h)	29	0	0	32	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	0	0	35	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			32		67	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		67	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1580		938	1042

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	35	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1580	1700
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

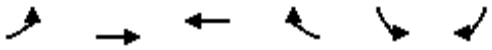
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	16	20	7	16	63	1	68	0	59	89	29
Future Volume (vph)	4	16	20	7	16	63	1	68	0	59	89	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	17	22	8	17	68	1	74	0	64	97	32

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	43	93	75	193
Volume Left (vph)	4	8	1	64
Volume Right (vph)	22	68	0	32
Hadj (s)	-0.25	-0.39	0.04	0.00
Departure Headway (s)	4.4	4.2	4.4	4.3
Degree Utilization, x	0.05	0.11	0.09	0.23
Capacity (veh/h)	760	800	771	804
Control Delay (s)	7.6	7.7	7.9	8.6
Approach Delay (s)	7.6	7.7	7.9	8.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.1		
Level of Service		A		
Intersection Capacity Utilization		29.5%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	1	86	84	85	85	1
Future Volume (vph)	1	86	84	85	85	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	93	91	92	92	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	94	183	93
Volume Left (vph)	1	0	92
Volume Right (vph)	0	92	1
Hadj (s)	0.04	-0.27	0.23
Departure Headway (s)	4.4	4.0	4.7
Degree Utilization, x	0.11	0.20	0.12
Capacity (veh/h)	801	883	719
Control Delay (s)	7.9	8.0	8.4
Approach Delay (s)	7.9	8.0	8.4
Approach LOS	A	A	A

Intersection Summary				
Delay	8.1			
Level of Service	A			
Intersection Capacity Utilization	21.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	29	0	0	32	0	0
Future Volume (Veh/h)	29	0	0	32	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	0	0	35	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			32		67	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		67	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1580		938	1042

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	35	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1580	1700
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

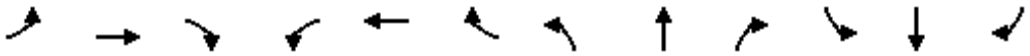
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

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

APPENDIX B

EXISTING TRAFFIC CAPACITY ANALYSIS

Saturday Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	12	59	63	12	7	43	252	62	4	179	13
Future Volume (Veh/h)	16	12	59	63	12	7	43	252	62	4	179	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	13	64	68	13	8	47	274	67	4	195	14
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	626	645	202	682	618	308	209			341		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	626	645	202	682	618	308	209			341		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	97	92	79	97	99	97			100		
cM capacity (veh/h)	371	376	839	318	389	732	1362			1218		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	94	89	388	213
Volume Left	17	68	47	4
Volume Right	64	8	67	14
cSH	600	345	1362	1218
Volume to Capacity	0.16	0.26	0.03	0.00
Queue Length 95th (m)	4.2	7.7	0.8	0.1
Control Delay (s)	12.1	19.0	1.2	0.2
Lane LOS	B	C	A	A
Approach Delay (s)	12.1	19.0	1.2	0.2
Approach LOS	B	C		

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	51.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	68	19	39	48	10	29
Future Volume (Veh/h)	68	19	39	48	10	29
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	21	42	52	11	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			95		220	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			95		220	84
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		99	97
cM capacity (veh/h)			1499		746	975

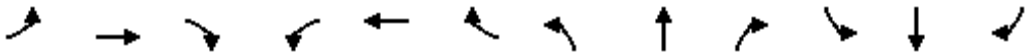
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	95	94	43
Volume Left	0	42	11
Volume Right	21	0	32
cSH	1700	1499	904
Volume to Capacity	0.06	0.03	0.05
Queue Length 95th (m)	0.0	0.7	1.1
Control Delay (s)	0.0	3.5	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	3.5	9.2
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	73	19	9	69	27	26
Future Volume (Veh/h)	73	19	9	69	27	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	21	10	75	29	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			100		184	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			100		184	90
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	97
cM capacity (veh/h)			1493		799	968

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	100	85	57
Volume Left	0	10	29
Volume Right	21	0	28
cSH	1700	1493	874
Volume to Capacity	0.06	0.01	0.07
Queue Length 95th (m)	0.0	0.2	1.6
Control Delay (s)	0.0	0.9	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	0.9	9.4
Approach LOS			A

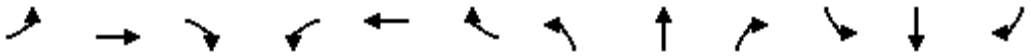
Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		20.8%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	53	35	10	62	0	39	4	9	3	4	4
Future Volume (Veh/h)	9	53	35	10	62	0	39	4	9	3	4	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	58	38	11	67	0	42	4	10	3	4	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	67			96			192	186	77	198	205	67
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	67			96			192	186	77	198	205	67
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			94	99	99	100	99	100
cM capacity (veh/h)	1535			1498			753	699	984	742	682	997

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	106	78	56	11
Volume Left	10	11	42	3
Volume Right	38	0	10	4
cSH	1535	1498	782	790
Volume to Capacity	0.01	0.01	0.07	0.01
Queue Length 95th (m)	0.1	0.2	1.8	0.3
Control Delay (s)	0.7	1.1	10.0	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	1.1	10.0	9.6
Approach LOS			A	A

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	4	16	4	1	4	6	65	0	4	49	3
Future Volume (Veh/h)	0	4	16	4	1	4	6	65	0	4	49	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	17	4	1	4	7	71	0	4	53	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	152	148	54	166	149	71	56			71		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152	148	54	166	149	71	56			71		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	98	99	100	100	100			100		
cM capacity (veh/h)	807	739	1012	777	737	991	1549			1529		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	9	78	60
Volume Left	0	4	7	4
Volume Right	17	4	0	3
cSH	946	854	1549	1529
Volume to Capacity	0.02	0.01	0.00	0.00
Queue Length 95th (m)	0.5	0.2	0.1	0.1
Control Delay (s)	8.9	9.3	0.7	0.5
Lane LOS	A	A	A	A
Approach Delay (s)	8.9	9.3	0.7	0.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	15.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	65	0	0	58	0	0
Future Volume (Veh/h)	65	0	0	58	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	0	0	63	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			71		134	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			71		134	71
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1529		860	991

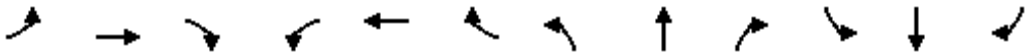
Direction, Lane #	EB 1	WB 1
Volume Total	71	63
Volume Left	0	0
Volume Right	0	0
cSH	1700	1529
Volume to Capacity	0.04	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	65	0	0	58	0	0
Future Volume (Veh/h)	65	0	0	58	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	0	0	63	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			71		134	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			71		134	71
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1529		860	991

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	71	63	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1529	1700
Volume to Capacity	0.04	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

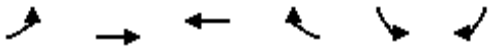
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	32	7	14	35	58	13	49	0	62	81	33
Future Volume (vph)	17	32	7	14	35	58	13	49	0	62	81	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	35	8	15	38	63	14	53	0	67	88	36

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	61	116	67	191
Volume Left (vph)	18	15	14	67
Volume Right (vph)	8	63	0	36
Hadj (s)	0.01	-0.27	0.08	-0.01
Departure Headway (s)	4.7	4.3	4.6	4.4
Degree Utilization, x	0.08	0.14	0.09	0.23
Capacity (veh/h)	717	778	738	781
Control Delay (s)	8.0	8.0	8.0	8.7
Approach Delay (s)	8.0	8.0	8.0	8.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	29.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	3	52	60	73	53	1
Future Volume (vph)	3	52	60	73	53	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	57	65	79	58	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	60	144	59
Volume Left (vph)	3	0	58
Volume Right (vph)	0	79	1
Hadj (s)	0.04	-0.30	0.22
Departure Headway (s)	4.2	3.8	4.5
Degree Utilization, x	0.07	0.15	0.07
Capacity (veh/h)	831	926	753
Control Delay (s)	7.5	7.5	7.9
Approach Delay (s)	7.5	7.5	7.9
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	65	0	0	58	0	0
Future Volume (Veh/h)	65	0	0	58	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	0	0	63	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			71		134	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			71		134	71
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1529		860	991

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	71	63	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1529	1700
Volume to Capacity	0.04	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

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

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

APPENDIX C

BACKGROUND DEVELOPMENT TRIP GENERATION

5.0 TRIP GENERATION AND DISTRIBUTION

5.1 TRIP GENERATION

The proposed development consists of a six-storey hotel with 145 units, and a residential plan of subdivision with 169 units. **Table** 11 summarizes the trip generation volumes for the proposed development during weekday a.m. and p.m. peak hours and Saturday a.m. and p.m. peak hours for full build-out.

Weekday AM Peak Hour					
	Units		**In**	**Out**	**Total**
Hotel	145	Trip Rate / Unit	0.31	0.22	0.53
		Trips Generated	47	33	80
Singles and Semis	144	Trip Rate / Unit	0.19	0.56	0.75
		Trips Generated	29	82	111
Townhouses	25	Trip Rate / Unit	0.07	0.37	0.44
		Trips Generated	4	13	17
Total Proposed Development Trip Generation Weekday AM Peak Hour			80	128	208
Weekday PM Peak Hour					
	Units		**In**	**Out**	**Total**
Hotel	145	Trip Rate / Unit	0.31	0.29	0.60
		Trips Generated	43	52	85
Singles and Semis	144	Trip Rate / Unit	0.63	0.37	1.00
		Trips Generated	83	47	130
Townhouses	25	Trip Rate / Unit	0.35	0.17	0.52
		Trips Generated	13	6	19
Total Proposed Development Trip Generation Weekday PM Peak Hour			139	105	234
Saturday Peak Hour					
	Units		**In**	**Out**	**Total**
Hotel	145	Trip Rate / Unit	0.40	0.32	0.72
		Trips Generated	51	53	104
Singles and Semis	144	Trip Rate / Unit	0.50	0.43	0.93
		Trips Generated	36	101	137
Townhouses	25	Trip Rate / Unit	0.25	0.22	0.47
		Trips Generated	32	18	50
Total Proposed Development Trip Generation Saturday Peak Hour			119	172	291

Table 11: Trip Generation Summary

5.2 TRIP DISTRIBUTION AND TRIP ASSIGNMENT

The trip distribution for the proposed hotel development was derived from existing traffic volumes, as there are multiple hotels located along John Street East and it is expected that distribution for the proposed hotel would have similar characteristics as the volumes generated by these hotels. The trip distribution for the residential development was derived from TTS 2011 data for the weekday a.m. and p.m. peak periods and the Saturday peak period. The site trip distribution and assignment figures can be found in **Appendix F**.

Figures 11, **12 and 13** illustrate the projected site traffic volumes and their traffic assignments for the completion of the development, year 2022.

Pillar and Post, Niagara-on-the-Lake
Traffic Impact Study Update

Paradigm Transportation Solutions Limited

June 2016

3 Development Concept

The existing Pillar and Post Inn includes a 122 room hotel, restaurant, spa, and meeting/event facilities located within one building structure on the north side of John Street West, west of King Street. A total of 79 parking spaces are provided on the existing Inn property, inclusive of 5 disabled parking spaces and 11 valet parking spaces. An additional 58 demarcated parking spaces are located in a parking lot on the subject lands.

All of the existing land uses, except a 929 square metre (10,000 square foot) portion of the warehouse, will be removed in order to permit the redevelopment to go forward on this parcel. The redevelopment is proposed to include an 836 square metre (9,000 square foot) multipurpose building (The Garden Pavilion), two outdoor event spaces (north and south tents), gardens, a 929 square metre (10,000 square foot) two-storey administration building, and a two-level parking garage.

The maximum occupancy for each event space within the redevelopment will be as follows:

- The Garden Pavilion: 200 persons;
- North event tent: 200 persons; and
- South event tent: 200 persons.

Vehicular access to the redevelopment will be limited to parking garage access only via one all-turns connection to John Street West via the existing Regent Street right-of-way for the upper garage level and one all-turns private driveway connection to Anne Street for the lower garage level. An additional driveway connection to Anne Street will provide access to the nine parking stalls/service area adjacent to the multipurpose building.

The overall site plan has been designed to meet the objective of the Town to create a pedestrian-oriented Town and more specifically, a pedestrian-centric environment on John Street West between King Street and Regent Street. This is proposed via relocating parking away from the main travel portions of the roadways and into a parking structure, the use of various surface treatments, the installation of sidewalks along the limits of the site and provision of curb letdowns at the intersections of King Street and John Street West and John Street West and Regent Street. The existing transit stop located on the southwest corner of King Street and John Street West will be retained. The final location will be determined during final site plan design.

The proposed site plan is shown in **Figure 3.1**.

3.1 Proposed Parking Provisions

The existing 58 demarcated parking stalls located on the south side of John Street will be removed in order to permit the redevelopment to proceed. In

order to accommodate the parking needs of the site, a two-level parking garage with a total of 243 stalls is proposed on the southwest portion of the redeveloped property. The upper level will have 125 stalls, including three disabled stalls. Access to the upper level is proposed via the existing Regent Street right-of-way south of John Street. The upper level stalls will primarily serve hotel patrons and event attendees at all times. The lower level will have 118 stalls, including five disabled stalls. Direct access to the lower level will be provided via a private driveway connection to Anne Street. The lower level stalls will primarily serve the employee and valet parking requirements during the week and the valet and event attendees/hotel patron parking requirements on the weekend when event activity is highest and employee parking requirements are at their lowest. Nine additional spaces are provided adjacent to the multipurpose building for use by service vehicles.

3.2 Existing and Future Site Activity

This section outlines the existing event activity and future event activity and provides a comparison in order to determine the amount of additional traffic, if any, that will be generated by the site upon completion of the redevelopment.

3.2.1 Existing Event Activity

During the summer season, the following typically occurs each Saturday:

- Two weddings are held in the Rose Garden; however, this could be as high as four on the busiest weekends;
- Each wedding is approximately 30 minutes in length and can occur during the following times:
  - 12:00 PM to 1:00 PM;
  - 1:00 PM to 2:00 PM;
  - 2:00 PM to 3:00 PM; or
  - 3:00 PM to 4:00 PM.
- These times are outside the peak hour of the adjacent streets (typically 4:15 PM to 5:15 PM); therefore, they contribute minimal traffic to the network during the peak hour of the adjacent street traffic.

posed Site Plan Figure 3.1

- Wedding receptions typically occur begin around 6:00 PM and conclude at 11:00 PM;
- Approximately 30 percent of the wedding guests stay onsite at the hotel;
- An additional 25 percent of wedding guests stay at one of the other "sister" Vintage hotels within Niagara-on-the-Lake. Shuttle service is provided between the properties or some guests may walk between properties; and
- Event arrival and departure times are staggered which minimizes the potential for the wedding and reception spaces to be fully occupied at the same time

3.2.2 Future Event Activity

Based on site capacity and future market conditions, the following is expected to occur on a typical Saturday during the summer:

- The existing hotel activity is expected to remain static;
- The wedding ceremonies currently held in the Rose Garden will be relocated to the gardens on the south side of John Street West;
- The times available for the wedding ceremonies are not expected to change and will still occur between noon and 4:00 PM;
- A maximum of three receptions can be accommodated on-site at any given time (within the multi-purpose building and the two tents). The maximum attendance will be 200 persons per event space, or 600 total persons. The receptions will typically take place on Saturday evenings between 6:00 PM and 11:00 PM;
- Approximately 30 percent of the wedding guests will continue to stay onsite at the hotel; and
- An additional 25 percent of wedding guests will continue to stay one of the other "sister" hotels within Niagara-on-the-Lake with shuttle service provided between the properties.

It is expected that for weddings that also have their reception at the Inn, guests will either remain onsite between the ceremony and reception or will use the provided shuttle service to return to their hotel or explore the Town in between the ceremony and reception.

3.2.3 Existing Staff Activity

Currently about 38 number of staff working the afternoon shift on Saturday. These staff typically arrive about 3:00 PM and depart between 9:00 PM and 11:00 PM; therefore, they generate little to no traffic during the peak hour.

The Administration building currently has about 80 staff members working Monday through Friday from about 9 AM to 5 PM. Four administration/

reservation staff work the afternoon shift on Saturdays from 3:00 PM to 11:00 PM; therefore, they typically generate no traffic during the peak hour.

3.2.4 Future Staff Activity

The number of Saturday afternoon shift in-house staff is expected to increase by approximately 23, for a total of 61 staff, upon completion of the redevelopment. These staff members will typically arrive at approximately 3:00 PM and will depart at about 11:00 PM.

The number of administration staff is expected to increase by about 20 persons, to 100, upon completion of the redevelopment. These additional staff members will predominantly work Monday through Friday from about 9:00 AM to 5:00 PM. One or two additional staff may work on a Saturday depending on event planning demands.

3.2.5 Existing Valet Parking Activity

The peak times for valet parking demand are the 11:00 AM check-out time and the 3:00 PM check-in time. The number of guests using the valet parking service varies each weekend but is typically between 10 and 20 over the course of a typical Saturday.

3.5.6 Future Valet Parking Activity

Since the number of rooms available at the Inn will not change with the redevelopment, the number of valet parking trips is not expected to change.

3.5.7 Existing Warehouse/Delivery Activity

At present, trips to and from the warehouse are made on an as-needed basis and tend to be limited during events. Conservative estimates indicate that about five trips are made between the existing site and the warehouse on a typical Saturday during the peak hours of the study area intersections (3:45 PM to 5:15 PM).

During a typical week, the Inn receives approximately five deliveries/ pickups for food, beverage, linen and garbage collection. Saturday deliveries/pickups do occasionally occur and are typically in the order of no more than two over the course of the day.

3.5.8 Future Warehouse Activity

Since the warehouse trips are made on an as-needed basis, it is difficult to determine how many trips will be made on Saturday upon completion of the redevelopment. However, it is safe to assume that the number should remain static during the peak hours of the study area intersections.

The number of Saturday deliveries/pickups to the Inn is expected to remain unchanged upon completion of the redevelopment.

3.3 Development Trip Generation

In order to provide conservative estimates of the trips generated by the site upon completion of the redevelopment, the following was assumed:

- The three event spaces would be fully occupied at 200 persons each;
- The start of all three events would coincide with the peak hour of the study area intersections;
- One hundred percent of the event attendees would drive to the venue;
- Auto occupancy would be two persons per vehicle (for event attendees);
- 90 percent of the event trips would arrive during the peak hour and 10 percent would depart during the peak hour;
- A total of 20 inbound valet trips would be made during the peak hour;
- A total of 20 staff trips, 10 inbound and 10 outbound, were assumed to occur during the peak hour. (Although evening staff begin their shift at approximately 3:00 PM and should already be onsite, the additional trips were assigned to account for extra staff that may be required during periods of peak activity); and
- A total of 10 warehouse trips, five inbound and five outbound, would be made during the peak hour.

The resulting trip generation is shown in **Table 3.1** below and indicates that a total of 350 trips could be generated by the site during the Saturday peak hour in 2023.

TABLE 3.1: ESTIMATED SITE TRIP GENERATION

Pillar and Post Inn	In	Out	Total
Saturday Peak Hour Event Space	270	30	300
Valet	20	0	20
Staff	10	10	20
Warehouse	5	5	10
TOTAL	**305**	**45**	**350**

3.4 Development Trip Distribution and Assignment

The trips were assigned to the roadway network based on the existing distribution of traffic within the study area as calculated using the existing Saturday peak hour volumes shown in **Figure 2.4**.

The trip distribution is summarized in **Table 3.2**.

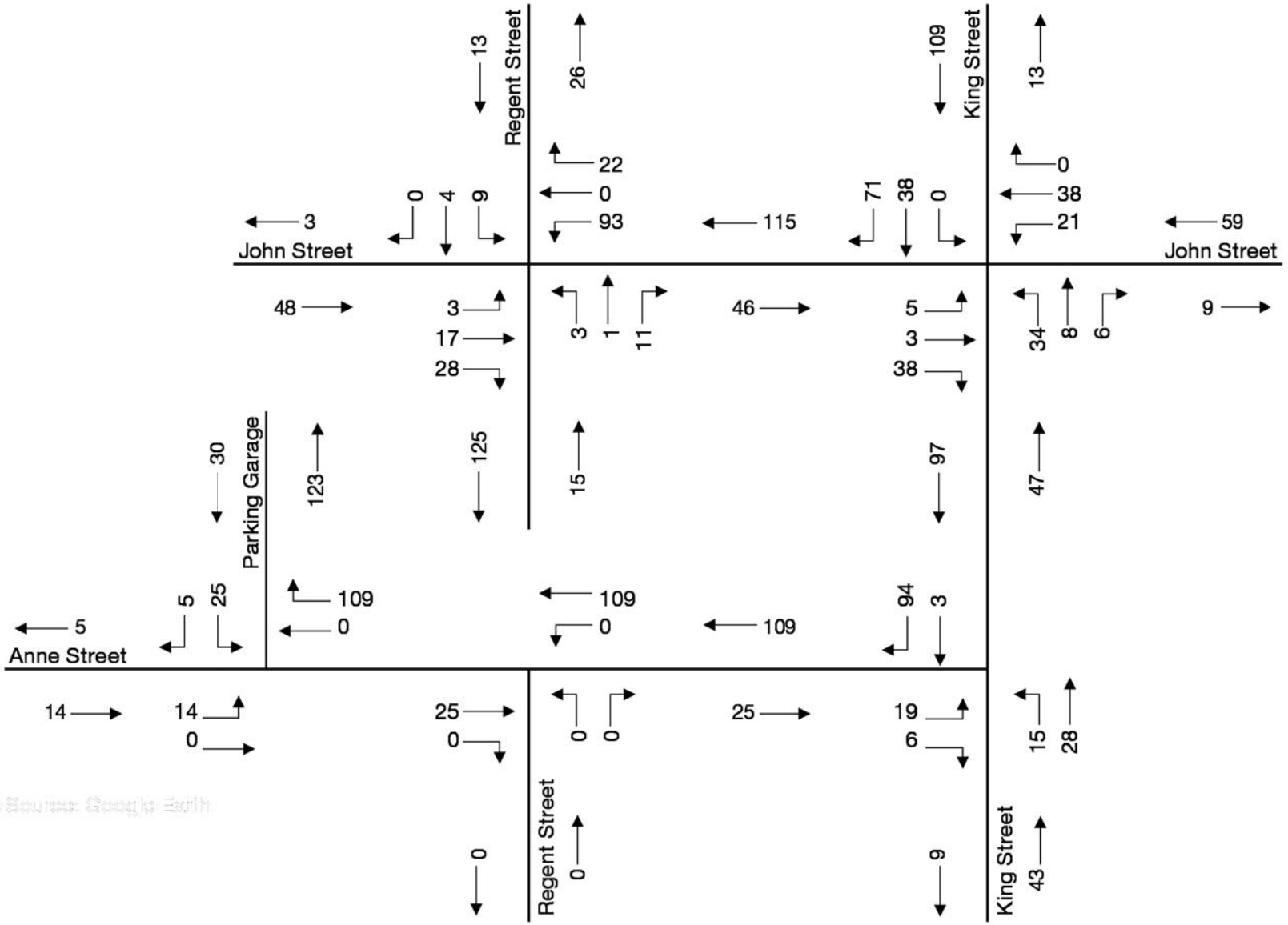
TABLE 3.2: TRIP DISTRIBUTION

Route	Direction	Saturday Peak Hour	
		Inbound	Outbound
John Street	West	15%	13%
	East	21%	23%
Regent Street	North	3%	4%
King Street	North	39%	32%
	South	15%	22%
Anne Street	West	7%	6%
	Total	**100%**	**100%**

The trip assignment was further refined based on the availability of parking at the site as follows:

- 125 spaces on the upper level of the parking garage, accessed via the Regent Street right-of-way;
- 88 spaces on the lower level of the parking garage, accessed via Anne Street;
- 20 valet spaces on the lower level of the parking garage, accessed via Anne Street. All trips would be made between the valet spaces on the existing site and the parking garage via the King Street and John Street West and King Street and Anne Street intersections;
- 10 staff spaces on the lower level of the parking garage, accessed via Anne Street;
- All warehousing trips would utilize the Anne Street parking garage access. All trips would be made between the spaces on the parking lot on the west side of the existing site and the parking garage via the John Street West and Regent Street, King Street and John Street West and King Street and Anne Street intersections;
- 25 spaces on the west side of the existing Pillar and Post; and
- 38 spaces (not including disabled and valet spaces) on east side of the existing Pillar and Post.

Note that this assignment assumed that the parking garage and lots had zero occupancy at the start of the peak hour. While this is highly unlikely, this approach to trip assignment was taken in order to provide a worst-case analyses of the site's impact to the surrounding roadway network.



Saturday Peak Hour Site-Generated Trip Assignment

Pillar and Post, Niagara-on-the-Lake, Traffic Impact Study Update
151090

Figure 3.2

4 Assessment of Future Traffic Conditions

This section provides information regarding the background and future total traffic volumes and resulting analyses for the 2023 horizon.

The future traffic volumes in the vicinity of the development will likely consist of increased non-site traffic volumes (background traffic) and the traffic generated by the proposed development.

4.1 2023 Background Traffic Growth

4.1.1 2023 General Background Traffic

In order to derive the 2023 background traffic volumes, a growth rate of 1.0 percent per annum compounded for eight years, for a total growth of 8.3 percent, was applied to the existing traffic volumes on John Street West, Anne Street and Regent Street. A growth rate of 1.2 percent per annum compounded for eight years, for a total growth of 10 percent, was applied to the existing traffic volumes on King Street. Note that these growth rate were provided by the Town during the pre-study consultation. The resulting 2023 AM and PM peak our general background traffic volumes are shown in **Figure 4.1**.

It should be noted that in order to remain conservative in the estimates of traffic that may be generated by the redevelopment, the existing trips generated by the site were not netted out before applying the general background traffic growth. This results in double-counting of trips with an origin or destination from/to this site; however, it helps to ensure that the worst-case scenario is analyzed.

4.1.2 Other Area Developments

During the pre-study consultation with the Town, it was noted that there are two residential developments within the study area that are currently approved. The Town has asked for traffic from these developments to be included in the 2023 background traffic forecasts over and above the general background traffic growth. The locations of the residential developments are shown in **Figure 4.2** and information regarding each is as follows:

Averton Square

The Averton Square development is located at 120 John Street West. It is bounded by John Street West, Anne Street, Gate Street and Victoria Street. The development will include 20 single-family detached units and 94 apartment units.

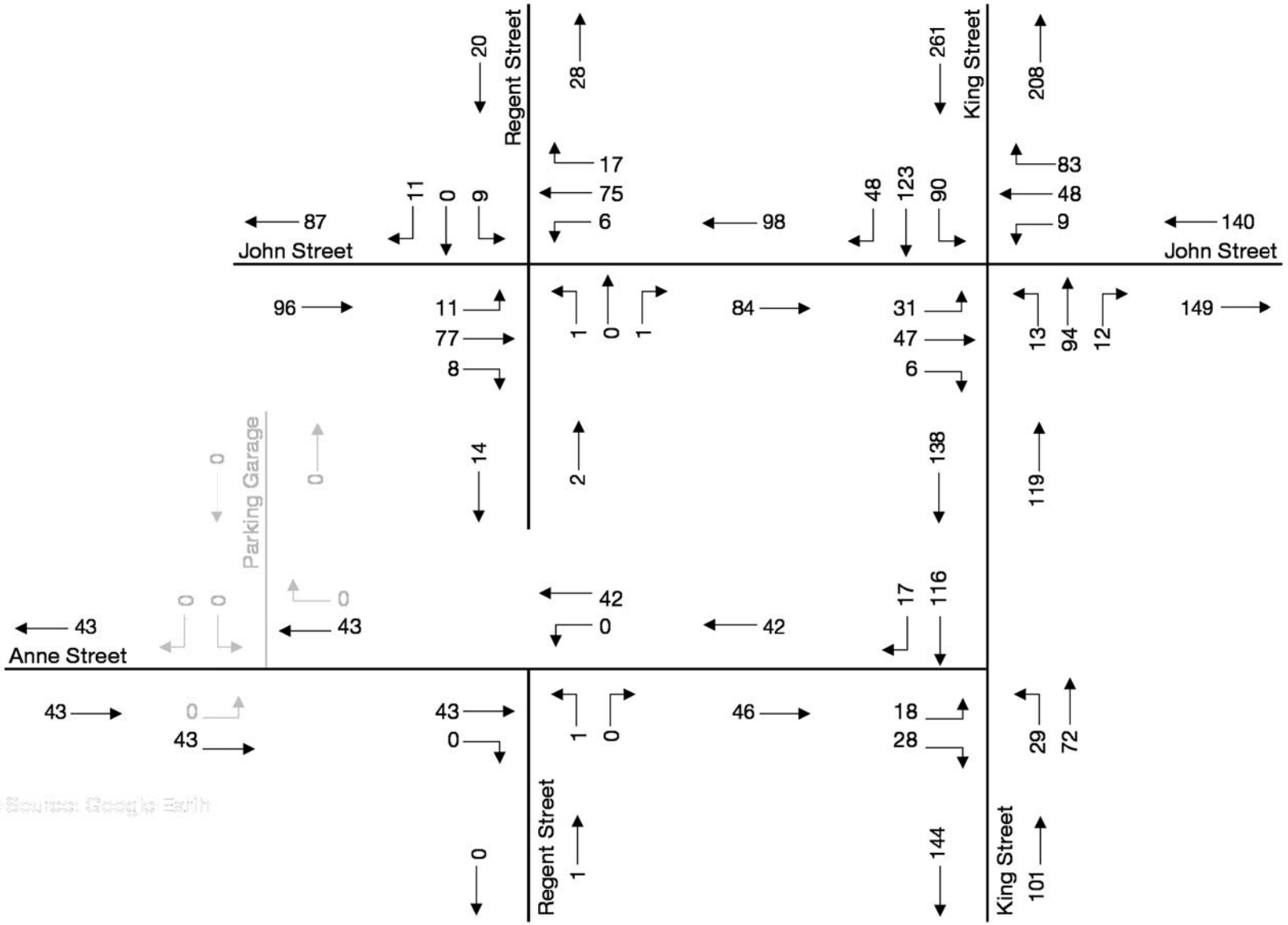
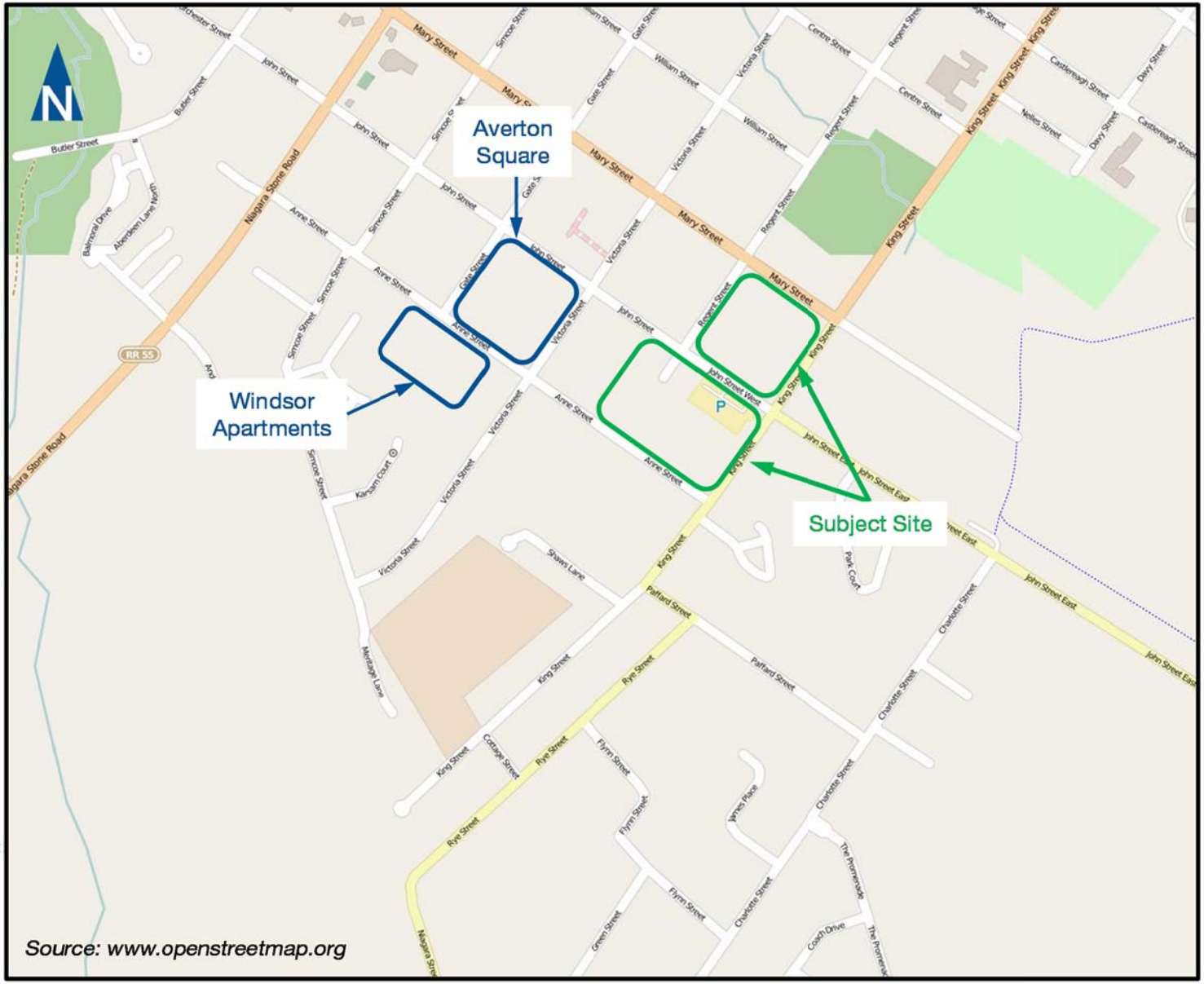


Image Source: Google Earth

2023 Saturday Peak Hour General Background Traffic Volumes



Location of Other Area Developments

Status: This development currently has Registered Subdivision and Site Plan Approval.

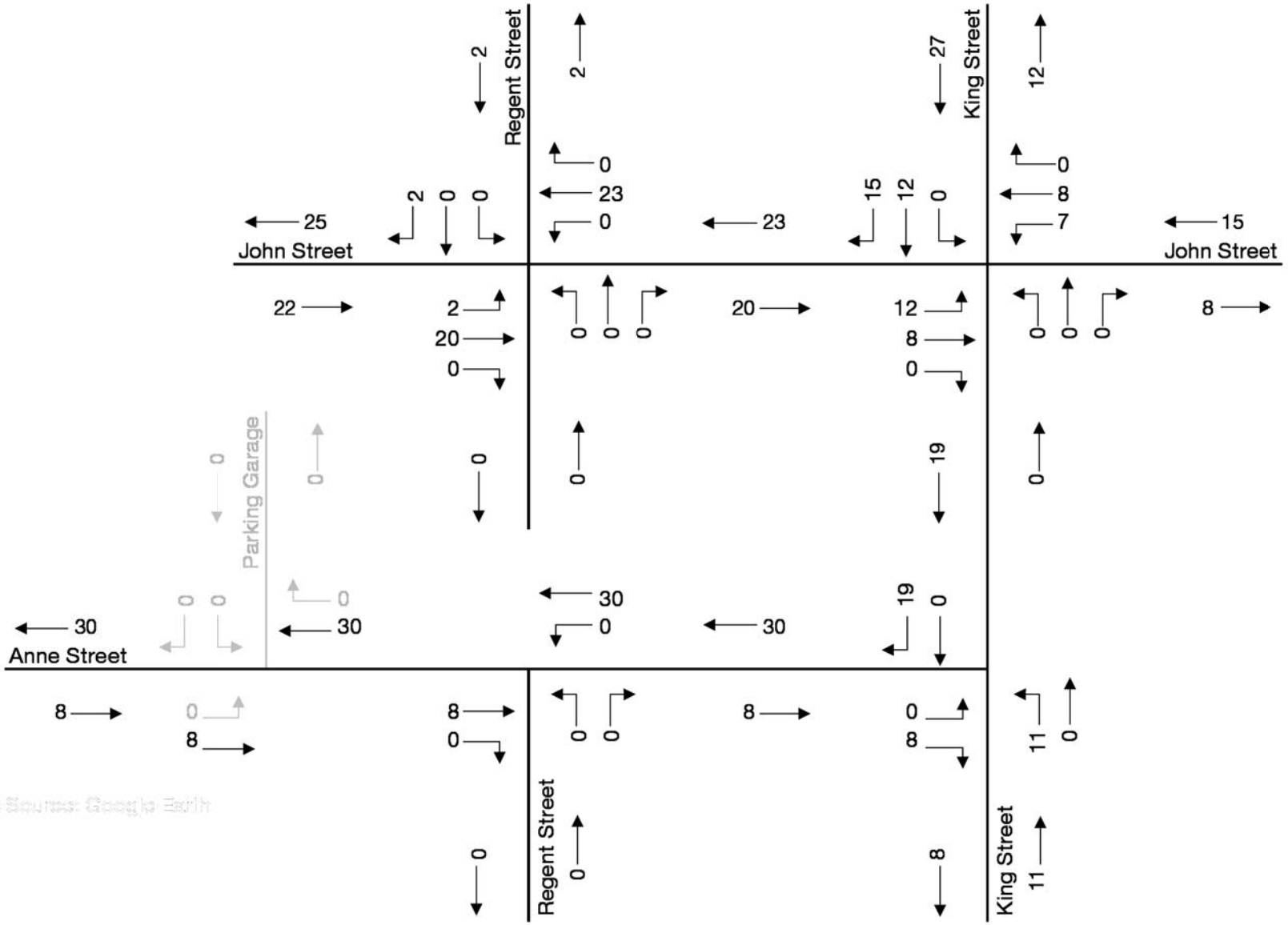
Windsor Apartments

The Windsor Apartments are located at 128, 134 and 174 Anne Street. The entrance will be located on Anne Street. The development will include 120 apartment units.

Status: This development currently has Site Plan Approval.

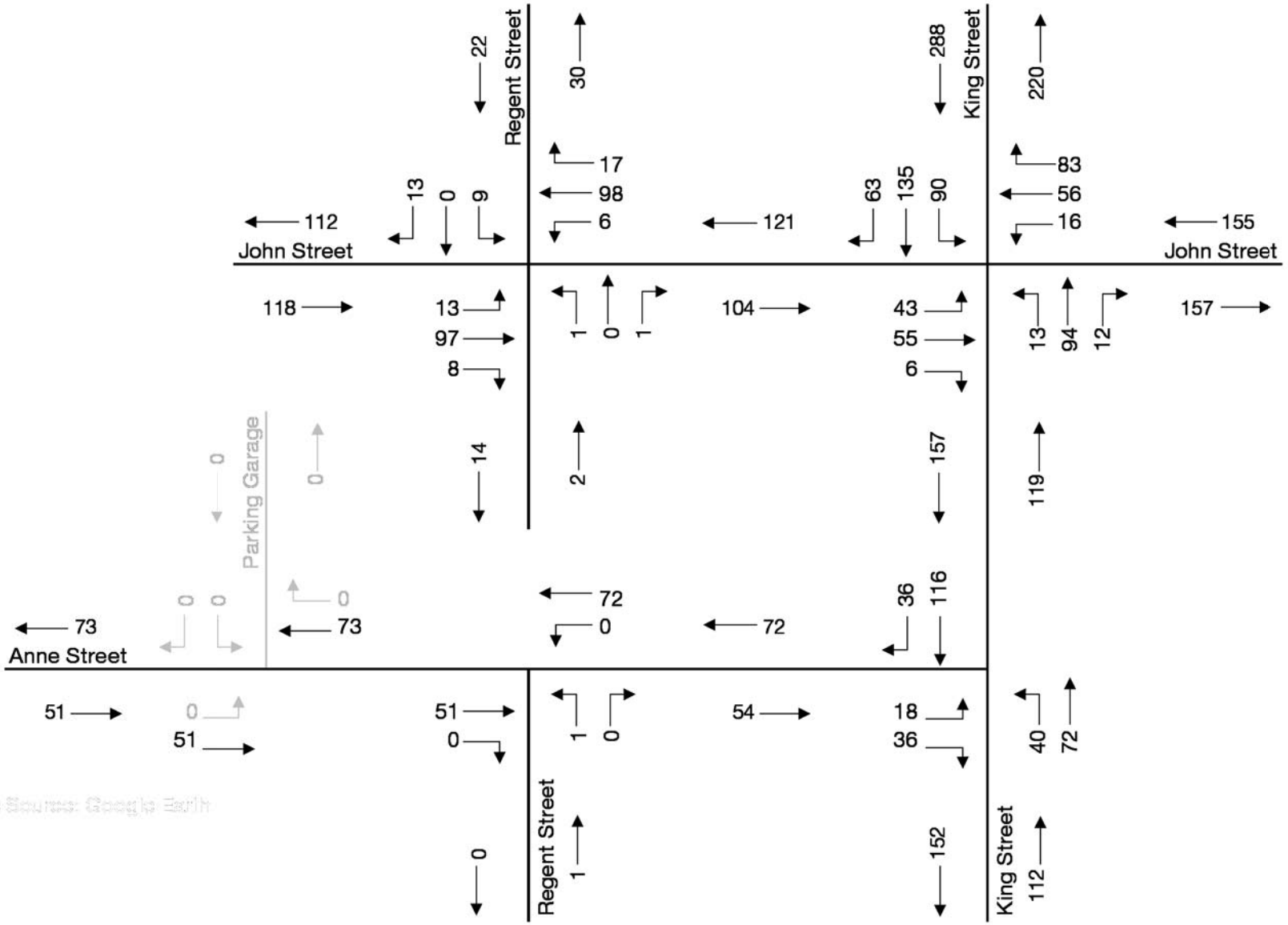
The trips generated by these developments for the Saturday peak hour were estimated using ITE LUC 210 Single Family Detached, LUC 220 Apartments, and LUC 230 Residential Townhouse / Condominium. The trips were assigned to the roadway network based on the same distribution and assumptions as the site-generated trips. The resulting other area Saturday peak hour development assignment of trips is provided in **Figure 4.3**.

The area development traffic was added to the general background traffic to produce the resulting 2023 Saturday peak hour total background traffic forecasts shown in **Figure 4.4**.



Other Area Development Trip Assignment

Figure 4.3



2023 Saturday Peak Hour Total Background Traffic Volumes

4.2 2023 Background Traffic Operations

Synchro 9 level of service analyses were conducted for the study area intersections using the 2023 background traffic volumes illustrated in **Figure 4.4**.

The 2023 background traffic intersection operations are summarized in **Table 4.1** indicating the Saturday peak hour levels of service (LOS), volume to capacity ratios (v/c) and 95th percentile back of queue estimates (where appropriate). The following is noted from the analysis:

- The intersection of King Street and John Street West will continue to operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 background traffic volumes; and
- The intersection of John Street West and Regent Street will continue to operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 background traffic volumes;
- The intersection of King Street and Anne Street will continue to operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 background traffic volumes; and
- The intersection of Anne Street and Regent Street will continue to operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 background traffic volumes.

Detailed Synchro reports are provided in **Appendix D**.

TABLE 4.1: 2023 BACKGROUND PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Saturday Peak Hour	King Street & John Street West	AWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	B	>	**B**	**A**
			Delay	<	9	>	**9**	<	9	>	**9**	<	9	>	**9**	<	11	>	**11**	**10**
			V/C	<	0.17	>		<	0.23	>		<	0.18	>		<	0.42	>		**0.42**
			Queue	<	16.2	>		<	16.2	>		<	14.5	>		<	25.5	>		
	John Street West & Regent Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	1	>	**1**	<	0	>	**0**	<	10	>	**10**	<	10	>	**10**	**1**
			V/C	<	0.01	>		<	0.00	>		<	0.00	>		<	0.03	>		**0.03**
			Queue	<	0.0	>		<	0.0	>		<	2.7	>		<	14.0	>		
	King Street & Anne Street	OWSC	LOS	<		A	**A**					<	A		**A**		A	>	**A**	**A**
			Delay	<		10	**10**					<	3		**3**		0	>	**0**	**3**
			V/C	<		0.07						<	0.03				0.10	>		**0.10**
			Queue	<		14.8						<	8.6					>		
	Anne Street & Regent Street	OWSC	LOS		A	>	**A**	<	A		**A**	<		A	**A**					**A**
			Delay		0	>	**0**	<	0		**0**	<		9	**9**					**0**
			V/C		0.03	>		<	0.00			<		0.00						**0.03**
			Queue		0.0	>		<	0.0			<		2.8						

Signal - Traffic Control Signals
OWSC - One-Way Stop Control
TWSC - Two-Way Stop Control
AWSC - All-Way Stop Control

MOE - Measure of Effectiveness
LOS - Level of Service
V/C - Volume to Capacity Ratio
Queue - 95th Percentile Queue Length (m)

 # - Queue exceeds capacity
< - Shared Left-Turn Lane
> - Shared Right-Turn Lane

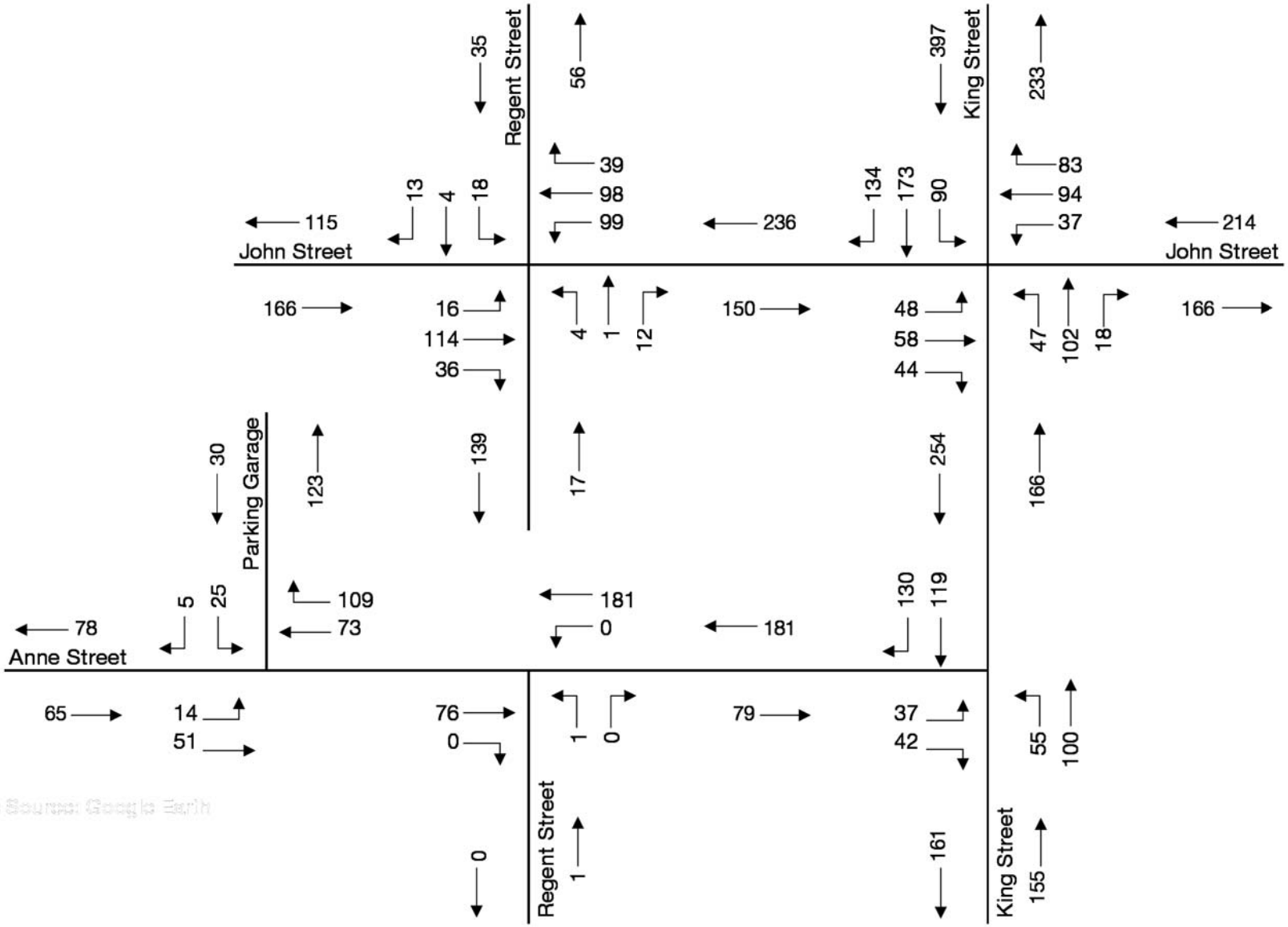
4.3 2023 Future Total Traffic Operations

The site-generated traffic (**Figure 3.2**) was added to the 2023 background traffic (**Figure 4.4**) to produce the 2023 future total traffic volumes shown in **Figure 4.5**.

Synchro 9 level of service analyses were conducted for the study area intersections using the 2023 future total traffic volumes illustrated in **Figure 4.5**. Stop sign control was assumed for the site driveway connections to John Street West and Anne Street.

The 2023 future total traffic intersection operations are summarized in **Table 4.2** indicating the Saturday peak hour existing levels of service (LOS), volume to capacity ratios (v/c) and 95th percentile back of queue estimates (where appropriate). The following is noted from the analysis:

- The intersection of King Street and John Street West will continue to operate with acceptable levels of service during the Saturday peak hour upon reaching the 2023 future total traffic volumes;
- The intersection of John Street West and Regent Street will continue to operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 future total traffic volumes;
- The intersection of King Street and Anne Street will continue to operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 future total traffic volumes;



2023 Saturday Peak Hour Future Total Traffic Volumes

- The intersection of Anne Street and Regent Street will continue to operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 future total traffic volumes;
- The parking garage driveway connection to Anne Street will operate with acceptable levels of service on all approaches during the Saturday peak hour upon reaching the 2023 future total traffic volumes;
- A stop sign will provide adequate traffic control for the parking garage driveway connection to Anne Street; and
- The inclusion of the site-generated trips increases the overall delay at the study area intersections four seconds or less during the Saturday peak hour.

Detailed Synchro reports are provided in **Appendix E**.

TABLE 4.2: 2023 FUTURE TOTAL PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Saturday Peak Hour	King Street & John Street West	AWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	B	>	**B**	<	C	>	**C**	**A**
			Delay	<	11	>	**11**	<	12	>	**12**	<	11	>	**11**	<	18	>	**18**	**14**
			V/C	<	0.27	>		<	0.37	>		<	0.30	>		<	0.65	>		**0.65**
			Queue	<	17.0			<	20.4	>		<	18.2	>		<	33.9	>		
	John Street West & Regent Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	B	>	**B**	<	B	>	**B**	**A**
			Delay	<	1	>	**1**	<	4	>	**4**	<	11	>	**11**	<	13	>	**13**	**4**
			V/C	<	0.01	>		<	0.08	>		<	0.03	>		<	0.07	>		**0.08**
			Queue	<	4.4	>		<	14.8	>		<	11.6	>		<	13.2	>		
	King Street & Anne Street	OWSC	LOS	<		B	**B**					<	A		**A**		A	>	**A**	**A**
			Delay	<		11	**11**					<	3		**3**		0	>	**0**	**3**
			V/C	<		0.13						<	0.05				0.16	>		**0.16**
			Queue	<		13.7						<	16.0				3.3	>		
	Anne Street & Regent Street	OWSC	LOS		A	>	**A**	<		A	**A**	<		B	**B**					**A**
			Delay		0	>	**0**	<		0	**0**	<		10	**10**					**0**
			V/C		0.05	>		<		0.00		<		0.00						**0.05**
			Queue		0.0	>		<		0.0		<		3.0						
	Anne Street & Parking Garage	OWSC	LOS		A	>	**A**	<	A		**A**					<	A		**A**	**A**
			Delay		2	>	**2**	<	0		**0**					<	10		**10**	**1**
			V/C		0.01	>		<	0.12							<	0.04			**0.12**
			Queue		5.4	>		<	0.0							<	14.4			

Signal - Traffic Control Signals
OWSC - One-Way Stop Control
TWSC - Two-Way Stop Control
AWSC - All-Way Stop Control

MOE - Measure of Effectiveness
LOS - Level of Service
V/C - Volume to Capacity Ratio
Queue - 95th Percentile Queue Length (m)

 # - Queue exceeds capacity
< - Shared Left-Turn Lane
> - Shared Right-Turn Lane

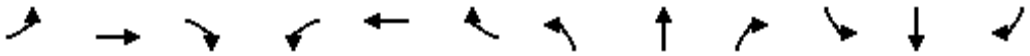
APPENDIX D

FUTURE BACKGROUND TRAFFIC CAPACITY ANALYSIS

APPENDIX D

FUTURE BACKGROUND TRAFFIC CAPACITY ANALYSIS

Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	2	43	13	5	0	65	158	19	0	10	2
Future Volume (Veh/h)	1	2	43	13	5	0	65	158	19	0	10	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	2	47	14	5	0	71	172	21	0	11	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	339	347	12	384	338	182	13			193		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	339	347	12	384	338	182	13			193		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	97	99	100	96			100		
cM capacity (veh/h)	590	551	1069	529	558	860	1606			1380		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	50	19	264	13
Volume Left	1	14	71	0
Volume Right	47	0	21	2
cSH	1014	536	1606	1380
Volume to Capacity	0.05	0.04	0.04	0.00
Queue Length 95th (m)	1.2	0.8	1.1	0.0
Control Delay (s)	8.7	12.0	2.2	0.0
Lane LOS	A	B	A	
Approach Delay (s)	8.7	12.0	2.2	0.0
Approach LOS	A	B		

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	34.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	52	0	7	70	3	1
Future Volume (Veh/h)	52	0	7	70	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	0	8	76	3	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			57		149	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			57		149	57
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1547		839	1009

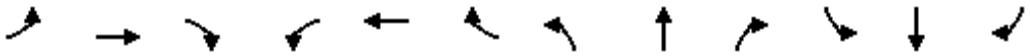
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	57	84	4
Volume Left	0	8	3
Volume Right	0	0	1
cSH	1700	1547	876
Volume to Capacity	0.03	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.1
Control Delay (s)	0.0	0.7	9.1
Lane LOS		A	A
Approach Delay (s)	0.0	0.7	9.1
Approach LOS			A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	3	0	74	4	0
Future Volume (Veh/h)	50	3	0	74	4	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	3	0	80	4	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			57		136	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			57		136	56
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1547		858	1011

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	57	80	4
Volume Left	0	0	4
Volume Right	3	0	0
cSH	1700	1547	858
Volume to Capacity	0.03	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

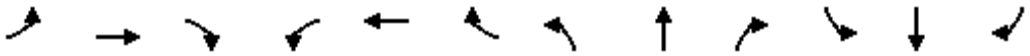
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	51	17	5	62	0	46	0	15	0	1	4
Future Volume (Veh/h)	6	51	17	5	62	0	46	0	15	0	1	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	55	18	5	67	0	50	0	16	0	1	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	67			73			160	155	64	171	164	67
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	67			73			160	155	64	171	164	67
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			94	100	98	100	100	100
cM capacity (veh/h)	1535			1527			797	731	1000	775	723	997

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	72	66	5
Volume Left	7	5	50	0
Volume Right	18	0	16	4
cSH	1535	1527	839	926
Volume to Capacity	0.00	0.00	0.08	0.01
Queue Length 95th (m)	0.1	0.1	1.9	0.1
Control Delay (s)	0.7	0.5	9.7	8.9
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	0.5	9.7	8.9
Approach LOS			A	A

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	22.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	4	0	1	3	51	8	0	18	0
Future Volume (Veh/h)	0	0	10	4	0	1	3	51	8	0	18	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	11	4	0	1	3	55	9	0	20	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	86	90	20	96	86	60	20			64		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	86	90	20	96	86	60	20			64		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	897	799	1058	876	803	1006	1596			1538		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	5	67	20
Volume Left	0	4	3	0
Volume Right	11	1	9	0
cSH	1058	899	1596	1538
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (m)	0.2	0.1	0.0	0.0
Control Delay (s)	8.4	9.0	0.3	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.4	9.0	0.3	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	16.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	54	0	7	58	0	0
Future Volume (Veh/h)	54	0	7	58	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	0	8	63	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			59		138	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		138	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1545		851	1007

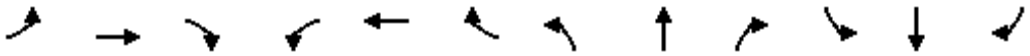
Direction, Lane #	EB 1	WB 1
Volume Total	59	71
Volume Left	0	8
Volume Right	0	0
cSH	1700	1545
Volume to Capacity	0.03	0.01
Queue Length 95th (m)	0.0	0.1
Control Delay (s)	0.0	0.9
Lane LOS		A
Approach Delay (s)	0.0	0.9
Approach LOS		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	12.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	42	24	10	48	16	8
Future Volume (Veh/h)	42	24	10	48	16	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	26	11	52	17	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			72		133	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		133	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			1528		855	1007

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	72	63	26
Volume Left	0	11	17
Volume Right	26	0	9
cSH	1700	1528	902
Volume to Capacity	0.04	0.01	0.03
Queue Length 95th (m)	0.0	0.2	0.7
Control Delay (s)	0.0	1.3	9.1
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.1
Approach LOS			A

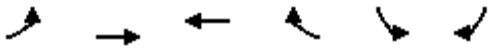
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	25	1	12	39	60	12	40	8	47	21	9
Future Volume (vph)	1	25	1	12	39	60	12	40	8	47	21	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	27	1	13	42	65	13	43	9	51	23	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	29	120	65	84
Volume Left (vph)	1	13	13	51
Volume Right (vph)	1	65	9	10
Hadj (s)	0.02	-0.27	-0.01	0.08
Departure Headway (s)	4.4	4.0	4.3	4.4
Degree Utilization, x	0.04	0.13	0.08	0.10
Capacity (veh/h)	784	865	797	791
Control Delay (s)	7.5	7.6	7.7	7.9
Approach Delay (s)	7.5	7.6	7.7	7.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.7		
Level of Service		A		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	1	45	68	46	45	1
Future Volume (vph)	1	45	68	46	45	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	49	74	50	49	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	50	124	50
Volume Left (vph)	1	0	49
Volume Right (vph)	0	50	1
Hadj (s)	0.04	-0.21	0.22
Departure Headway (s)	4.2	3.9	4.5
Degree Utilization, x	0.06	0.13	0.06
Capacity (veh/h)	843	915	768
Control Delay (s)	7.4	7.5	7.8
Approach Delay (s)	7.4	7.5	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay		7.5	
Level of Service		A	
Intersection Capacity Utilization		16.4%	ICU Level of Service
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	0	7	65	0	8
Future Volume (Veh/h)	50	0	7	65	0	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	0	8	71	0	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			54		141	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		141	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	99
cM capacity (veh/h)			1551		847	1013

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	54	79	9
Volume Left	0	8	0
Volume Right	0	0	9
cSH	1700	1551	1013
Volume to Capacity	0.03	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.2
Control Delay (s)	0.0	0.8	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.8	8.6
Approach LOS			A

Intersection Summary			
Average Delay		1.0	
Intersection Capacity Utilization		19.3%	ICU Level of Service
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

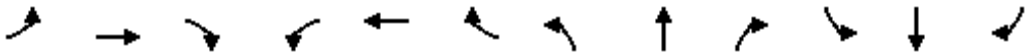
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

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

APPENDIX D

FUTURE BACKGROUND TRAFFIC CAPACITY ANALYSIS

Weekday PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	12	41	33	5	4	78	85	40	3	202	11
Future Volume (Veh/h)	7	12	41	33	5	4	78	85	40	3	202	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	13	45	36	5	4	85	92	43	3	220	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	522	537	226	567	522	114	232			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	522	537	226	567	522	114	232			135		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	97	94	91	99	100	94			100		
cM capacity (veh/h)	436	421	813	381	429	939	1336			1449		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	66	45	220	235
Volume Left	8	36	85	3
Volume Right	45	4	43	12
cSH	631	407	1336	1449
Volume to Capacity	0.10	0.11	0.06	0.00
Queue Length 95th (m)	2.6	2.8	1.5	0.0
Control Delay (s)	11.4	14.9	3.4	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	11.4	14.9	3.4	0.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	41.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	60	1	3	102	1	6
Future Volume (Veh/h)	60	1	3	102	1	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	1	3	111	1	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			66		182	66
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			66		182	66
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1536		805	998

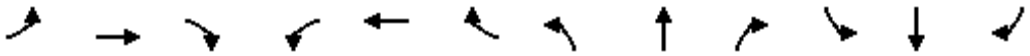
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	66	114	8
Volume Left	0	3	1
Volume Right	1	0	7
cSH	1700	1536	969
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.0	0.2	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	8.7
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	60	6	4	96	10	3
Future Volume (Veh/h)	60	6	4	96	10	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	7	4	104	11	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			72		180	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		180	68
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1528		807	995

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	72	108	14
Volume Left	0	4	11
Volume Right	7	0	3
cSH	1700	1528	841
Volume to Capacity	0.04	0.00	0.02
Queue Length 95th (m)	0.0	0.1	0.4
Control Delay (s)	0.0	0.3	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	9.4
Approach LOS			A

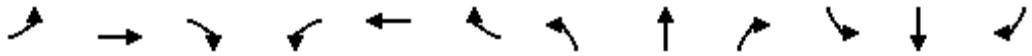
Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		18.3%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	42	52	7	97	0	50	2	14	0	0	4
Future Volume (Veh/h)	0	42	52	7	97	0	50	2	14	0	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	57	8	105	0	54	2	15	0	0	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	105			103			200	196	74	212	224	105
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			103			200	196	74	212	224	105
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			93	100	98	100	100	100
cM capacity (veh/h)	1486			1489			753	696	987	730	671	949

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	103	113	71	4
Volume Left	0	8	54	0
Volume Right	57	0	15	4
cSH	1486	1489	791	949
Volume to Capacity	0.00	0.01	0.09	0.00
Queue Length 95th (m)	0.0	0.1	2.2	0.1
Control Delay (s)	0.0	0.6	10.0	8.8
Lane LOS		A	B	A
Approach Delay (s)	0.0	0.6	10.0	8.8
Approach LOS			B	A

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	27.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	17	0	2	3	6	60	10	3	59	1
Future Volume (Veh/h)	6	0	17	0	2	3	6	60	10	3	59	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	0	18	0	2	3	7	65	11	3	64	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	159	160	64	173	156	70	65			76		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	159	160	64	173	156	70	65			76		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	98	100	100	100	100			100		
cM capacity (veh/h)	799	727	1000	772	732	992	1537			1523		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	5	83	68
Volume Left	7	0	7	3
Volume Right	18	3	11	1
cSH	934	868	1537	1523
Volume to Capacity	0.03	0.01	0.00	0.00
Queue Length 95th (m)	0.6	0.1	0.1	0.0
Control Delay (s)	9.0	9.2	0.7	0.3
Lane LOS	A	A	A	A
Approach Delay (s)	9.0	9.2	0.7	0.3
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	45	0	7	91	0	0
Future Volume (Veh/h)	45	0	7	91	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	0	8	99	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			49		164	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			49		164	49
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1558		822	1020

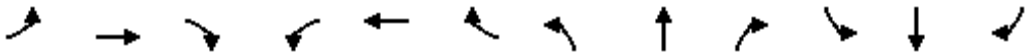
Direction, Lane #	EB 1	WB 1
Volume Total	49	107
Volume Left	0	8
Volume Right	0	0
cSH	1700	1558
Volume to Capacity	0.03	0.01
Queue Length 95th (m)	0.0	0.1
Control Delay (s)	0.0	0.6
Lane LOS		A
Approach Delay (s)	0.0	0.6
Approach LOS		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	34	22	9	82	21	10
Future Volume (Veh/h)	34	22	9	82	21	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	24	10	89	23	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			61		158	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			61		158	49
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	99
cM capacity (veh/h)			1542		828	1020

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	61	99	34
Volume Left	0	10	23
Volume Right	24	0	11
cSH	1700	1542	881
Volume to Capacity	0.04	0.01	0.04
Queue Length 95th (m)	0.0	0.1	0.9
Control Delay (s)	0.0	0.8	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	0.8	9.2
Approach LOS			A

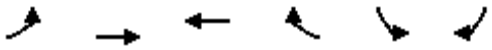
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	24	20	9	68	76	1	73	11	72	96	29
Future Volume (vph)	4	24	20	9	68	76	1	73	11	72	96	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	26	22	10	74	83	1	79	12	78	104	32

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	52	167	92	214
Volume Left (vph)	4	10	1	78
Volume Right (vph)	22	83	12	32
Hadj (s)	-0.20	-0.25	-0.04	0.02
Departure Headway (s)	4.6	4.4	4.6	4.5
Degree Utilization, x	0.07	0.21	0.12	0.27
Capacity (veh/h)	709	754	728	750
Control Delay (s)	8.0	8.6	8.3	9.2
Approach Delay (s)	8.0	8.6	8.3	9.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.7			
Level of Service	A			
Intersection Capacity Utilization	34.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	1	93	90	85	85	1
Future Volume (vph)	1	93	90	85	85	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	101	98	92	92	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	102	190	93
Volume Left (vph)	1	0	92
Volume Right (vph)	0	92	1
Hadj (s)	0.04	-0.26	0.23
Departure Headway (s)	4.4	4.0	4.8
Degree Utilization, x	0.12	0.21	0.12
Capacity (veh/h)	800	878	712
Control Delay (s)	8.0	8.1	8.4
Approach Delay (s)	8.0	8.1	8.4
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
Level of Service	A		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	44	0	6	97	0	11
Future Volume (Veh/h)	44	0	6	97	0	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	0	7	105	0	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			48		167	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			48		167	48
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1559		820	1021

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	48	112	12
Volume Left	0	7	0
Volume Right	0	0	12
cSH	1700	1559	1021
Volume to Capacity	0.03	0.00	0.01
Queue Length 95th (m)	0.0	0.1	0.3
Control Delay (s)	0.0	0.5	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	8.6
Approach LOS			A

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		20.0%	ICU Level of Service
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

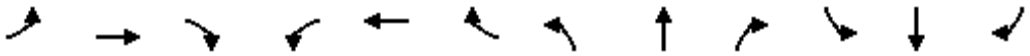
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

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

APPENDIX D

FUTURE BACKGROUND TRAFFIC CAPACITY ANALYSIS

Saturday Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	95	63	16	7	142	270	62	4	191	18
Future Volume (Veh/h)	20	15	95	63	16	7	142	270	62	4	191	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	16	103	68	17	8	154	293	67	4	208	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	877	894	218	972	870	326	228			360		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	877	894	218	972	870	326	228			360		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	94	87	61	93	99	89			100		
cM capacity (veh/h)	230	247	822	176	255	715	1340			1199		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	93	514	232
Volume Left	22	68	154	4
Volume Right	103	8	67	20
cSH	493	200	1340	1199
Volume to Capacity	0.29	0.46	0.11	0.00
Queue Length 95th (m)	8.9	17.0	3.0	0.1
Control Delay (s)	15.2	37.7	3.2	0.2
Lane LOS	C	E	A	A
Approach Delay (s)	15.2	37.7	3.2	0.2
Approach LOS	C	E		

Intersection Summary				
Average Delay	7.5			
Intersection Capacity Utilization	58.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	119	21	39	159	10	29
Future Volume (Veh/h)	119	21	39	159	10	29
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	23	42	173	11	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			152		398	140
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			152		398	140
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		98	96
cM capacity (veh/h)			1429		590	907

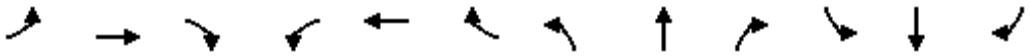
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	152	215	43
Volume Left	0	42	11
Volume Right	23	0	32
cSH	1700	1429	798
Volume to Capacity	0.09	0.03	0.05
Queue Length 95th (m)	0.0	0.7	1.3
Control Delay (s)	0.0	1.7	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	9.8
Approach LOS			A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	122	22	9	182	27	26
Future Volume (Veh/h)	122	22	9	182	27	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	133	24	10	198	29	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			157		363	145
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			157		363	145
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	97
cM capacity (veh/h)			1423		632	902

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	157	208	57
Volume Left	0	10	29
Volume Right	24	0	28
cSH	1700	1423	741
Volume to Capacity	0.09	0.01	0.08
Queue Length 95th (m)	0.0	0.2	1.9
Control Delay (s)	0.0	0.4	10.3
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	10.3
Approach LOS			B

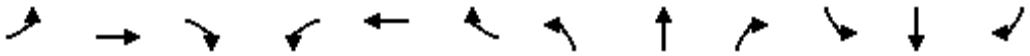
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	100	35	14	171	0	39	5	12	4	5	4
Future Volume (Veh/h)	9	100	35	14	171	0	39	5	12	4	5	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	109	38	15	186	0	42	5	13	4	5	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	186			147			370	364	128	380	383	186
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	186			147			370	364	128	380	383	186
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			93	99	99	99	99	100
cM capacity (veh/h)	1388			1435			572	554	922	559	541	856

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	157	201	60	13
Volume Left	10	15	42	4
Volume Right	38	0	13	4
cSH	1388	1435	621	617
Volume to Capacity	0.01	0.01	0.10	0.02
Queue Length 95th (m)	0.2	0.2	2.4	0.5
Control Delay (s)	0.5	0.6	11.4	11.0
Lane LOS	A	A	B	B
Approach Delay (s)	0.5	0.6	11.4	11.0
Approach LOS			B	B

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	26.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	16	4	2	4	6	69	13	4	52	3
Future Volume (Veh/h)	0	5	16	4	2	4	6	69	13	4	52	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	5	17	4	2	4	7	75	14	4	57	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	168	170	58	182	164	82	60			89		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	168	170	58	182	164	82	60			89		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	98	99	100	100	100			100		
cM capacity (veh/h)	787	718	1007	758	723	978	1544			1506		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	10	96	64
Volume Left	0	4	7	4
Volume Right	17	4	14	3
cSH	923	824	1544	1506
Volume to Capacity	0.02	0.01	0.00	0.00
Queue Length 95th (m)	0.6	0.3	0.1	0.1
Control Delay (s)	9.0	9.4	0.6	0.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.0	9.4	0.6	0.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	17.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	104	0	8	154	0	0
Future Volume (Veh/h)	104	0	8	154	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	0	9	167	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			113		298	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			113		298	113
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1476		689	940

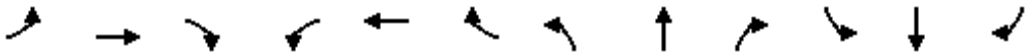
Direction, Lane #	EB 1	WB 1
Volume Total	113	176
Volume Left	0	9
Volume Right	0	0
cSH	1700	1476
Volume to Capacity	0.07	0.01
Queue Length 95th (m)	0.0	0.1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	91	26	10	144	26	13
Future Volume (Veh/h)	91	26	10	144	26	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	28	11	157	28	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			127		292	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			127		292	113
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	99
cM capacity (veh/h)			1459		694	940

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	127	168	42
Volume Left	0	11	28
Volume Right	28	0	14
cSH	1700	1459	760
Volume to Capacity	0.07	0.01	0.06
Queue Length 95th (m)	0.0	0.2	1.3
Control Delay (s)	0.0	0.5	10.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.0
Approach LOS			B

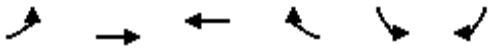
Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization		24.8%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	57	41	17	126	70	22	67	14	76	109	33
Future Volume (vph)	17	57	41	17	126	70	22	67	14	76	109	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	62	45	18	137	76	24	73	15	83	118	36

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	125	231	112	237
Volume Left (vph)	18	18	24	83
Volume Right (vph)	45	76	15	36
Hadj (s)	-0.15	-0.15	0.00	0.01
Departure Headway (s)	5.0	4.8	5.1	5.0
Degree Utilization, x	0.17	0.31	0.16	0.33
Capacity (veh/h)	656	693	638	675
Control Delay (s)	9.0	10.0	9.1	10.4
Approach Delay (s)	9.0	10.0	9.1	10.4
Approach LOS	A	A	A	B

Intersection Summary				
Delay	9.8			
Level of Service	A			
Intersection Capacity Utilization	39.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	3	56	65	73	53	1
Future Volume (vph)	3	56	65	73	53	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	61	71	79	58	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	64	150	59
Volume Left (vph)	3	0	58
Volume Right (vph)	0	79	1
Hadj (s)	0.04	-0.28	0.22
Departure Headway (s)	4.2	3.8	4.6
Degree Utilization, x	0.08	0.16	0.07
Capacity (veh/h)	830	921	748
Control Delay (s)	7.6	7.5	7.9
Approach Delay (s)	7.6	7.5	7.9
Approach LOS	A	A	A

Intersection Summary			
Delay		7.6	
Level of Service		A	
Intersection Capacity Utilization		17.9%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	104	0	8	162	0	14
Future Volume (Veh/h)	104	0	8	162	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	0	9	176	0	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			113		307	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			113		307	113
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1476		681	940

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	113	185	15
Volume Left	0	9	0
Volume Right	0	0	15
cSH	1700	1476	940
Volume to Capacity	0.07	0.01	0.02
Queue Length 95th (m)	0.0	0.1	0.4
Control Delay (s)	0.0	0.4	8.9
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	8.9
Approach LOS			A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

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

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

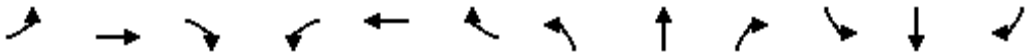
APPENDIX E

FUTURE TOTAL TRAFFIC CAPACITY ANALYSIS

APPENDIX E

FUTURE TOTAL TRAFFIC CAPACITY ANALYSIS

Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	2	88	13	5	0	71	158	19	0	10	9
Future Volume (Veh/h)	1	2	88	13	5	0	71	158	19	0	10	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	2	96	14	5	0	77	172	21	0	11	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	355	363	16	450	358	182	21			193		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	355	363	16	450	358	182	21			193		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	91	97	99	100	95			100		
cM capacity (veh/h)	574	537	1063	454	541	860	1595			1380		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	99	19	270	21
Volume Left	1	14	77	0
Volume Right	96	0	21	10
cSH	1034	474	1595	1380
Volume to Capacity	0.10	0.04	0.05	0.00
Queue Length 95th (m)	2.4	0.9	1.2	0.0
Control Delay (s)	8.9	12.9	2.4	0.0
Lane LOS	A	B	A	
Approach Delay (s)	8.9	12.9	2.4	0.0
Approach LOS	A	B		

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	34.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	97	0	7	83	3	1
Future Volume (Veh/h)	97	0	7	83	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	0	8	90	3	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			105		211	105
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			105		211	105
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1486		773	949

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	105	98	4
Volume Left	0	8	3
Volume Right	0	0	1
cSH	1700	1486	811
Volume to Capacity	0.06	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.1
Control Delay (s)	0.0	0.6	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	0.6	9.5
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	95	3	0	87	4	0
Future Volume (Veh/h)	95	3	0	87	4	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	3	0	95	4	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			106		200	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		200	104
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1485		789	950

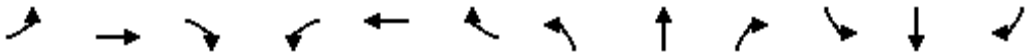
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	106	95	4
Volume Left	0	0	4
Volume Right	3	0	0
cSH	1700	1485	789
Volume to Capacity	0.06	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	58	17	46	83	0	46	0	32	0	1	4
Future Volume (Veh/h)	6	58	17	46	83	0	46	0	32	0	1	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	63	18	50	90	0	50	0	35	0	1	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	90			81			280	276	72	311	285	90
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	90			81			280	276	72	311	285	90
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			92	100	96	100	100	100
cM capacity (veh/h)	1505			1517			649	608	990	601	601	968

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	88	140	85	5
Volume Left	7	50	50	0
Volume Right	18	0	35	4
cSH	1505	1517	756	862
Volume to Capacity	0.00	0.03	0.11	0.01
Queue Length 95th (m)	0.1	0.8	2.9	0.1
Control Delay (s)	0.6	2.8	10.4	9.2
Lane LOS	A	A	B	A
Approach Delay (s)	0.6	2.8	10.4	9.2
Approach LOS			B	A

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	31.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	4	0	1	3	68	8	0	59	0
Future Volume (Veh/h)	0	0	10	4	0	1	3	68	8	0	59	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	11	4	0	1	3	74	9	0	64	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	150	153	64	160	148	78	64			83		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	150	153	64	160	148	78	64			83		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	99	100	100	100			100		
cM capacity (veh/h)	816	737	1000	796	742	982	1538			1514		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	5	86	64
Volume Left	0	4	3	0
Volume Right	11	1	9	0
cSH	1000	827	1538	1514
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (m)	0.3	0.1	0.0	0.0
Control Delay (s)	8.6	9.4	0.3	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.6	9.4	0.3	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	78	0	7	120	0	0
Future Volume (Veh/h)	78	0	7	120	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	85	0	8	130	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			85		231	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		231	85
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1512		753	974

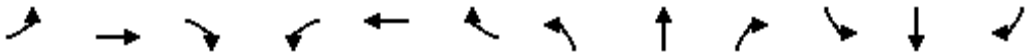
Direction, Lane #	EB 1	WB 1
Volume Total	85	138
Volume Left	0	8
Volume Right	0	0
cSH	1700	1512
Volume to Capacity	0.05	0.01
Queue Length 95th (m)	0.0	0.1
Control Delay (s)	0.0	0.5
Lane LOS		A
Approach Delay (s)	0.0	0.5
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	66	24	10	110	16	8
Future Volume (Veh/h)	66	24	10	110	16	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	26	11	120	17	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			98		227	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			98		227	85
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			1495		756	974

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	98	131	26
Volume Left	0	11	17
Volume Right	26	0	9
cSH	1700	1495	819
Volume to Capacity	0.06	0.01	0.03
Queue Length 95th (m)	0.0	0.2	0.7
Control Delay (s)	0.0	0.7	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	0.7	9.5
Approach LOS			A

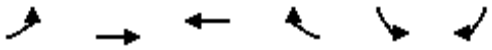
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	32	1	12	39	81	12	40	53	47	21	9
Future Volume (vph)	1	32	1	12	39	81	12	40	53	47	21	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	35	1	13	42	88	13	43	58	51	23	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	143	114	84
Volume Left (vph)	1	13	13	51
Volume Right (vph)	1	88	58	10
Hadj (s)	0.02	-0.32	-0.25	0.08
Departure Headway (s)	4.5	4.1	4.1	4.5
Degree Utilization, x	0.05	0.16	0.13	0.11
Capacity (veh/h)	752	833	824	754
Control Delay (s)	7.7	7.9	7.8	8.0
Approach Delay (s)	7.7	7.9	7.8	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.9		
Level of Service		A		
Intersection Capacity Utilization		30.6%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	1	45	68	63	86	1
Future Volume (vph)	1	45	68	63	86	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	49	74	68	93	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	50	142	94
Volume Left (vph)	1	0	93
Volume Right (vph)	0	68	1
Hadj (s)	0.04	-0.25	0.23
Departure Headway (s)	4.3	3.9	4.5
Degree Utilization, x	0.06	0.15	0.12
Capacity (veh/h)	809	892	758
Control Delay (s)	7.6	7.6	8.1
Approach Delay (s)	7.6	7.6	8.1
Approach LOS	A	A	A

Intersection Summary				
Delay		7.8		
Level of Service		A		
Intersection Capacity Utilization		18.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	24	20	65	62	53
Future Volume (Veh/h)	50	24	20	65	62	53
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	26	22	71	67	58
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			80		182	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			80		182	67
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		92	94
cM capacity (veh/h)			1518		796	997

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	80	93	125
Volume Left	0	22	67
Volume Right	26	0	58
cSH	1700	1518	878
Volume to Capacity	0.05	0.01	0.14
Queue Length 95th (m)	0.0	0.3	3.8
Control Delay (s)	0.0	1.8	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.8	9.8
Approach LOS			A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

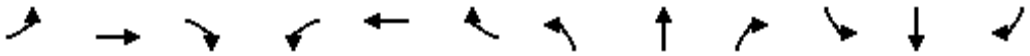
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

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

APPENDIX E

FUTURE TOTAL TRAFFIC CAPACITY ANALYSIS

Weekday PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	12	84	33	5	4	138	85	40	3	202	11
Future Volume (Veh/h)	7	12	84	33	5	4	138	85	40	3	202	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	13	91	36	5	4	150	92	43	3	220	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	652	667	226	743	652	114	232			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652	667	226	743	652	114	232			135		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	96	89	86	99	100	89			100		
cM capacity (veh/h)	343	336	813	261	343	939	1336			1449		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	112	45	285	235
Volume Left	8	36	150	3
Volume Right	91	4	43	12
cSH	644	287	1336	1449
Volume to Capacity	0.17	0.16	0.11	0.00
Queue Length 95th (m)	4.8	4.2	2.9	0.0
Control Delay (s)	11.8	19.9	4.7	0.1
Lane LOS	B	C	A	A
Approach Delay (s)	11.8	19.9	4.7	0.1
Approach LOS	B	C		

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	103	1	3	162	1	6
Future Volume (Veh/h)	103	1	3	162	1	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	112	1	3	176	1	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			113		294	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			113		294	112
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1476		695	940

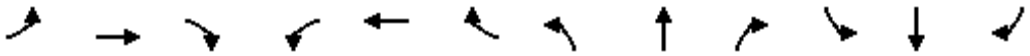
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	113	179	8
Volume Left	0	3	1
Volume Right	1	0	7
cSH	1700	1476	901
Volume to Capacity	0.07	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.0	0.1	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.0
Approach LOS			A

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		20.9%	ICU Level of Service
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	103	6	4	156	10	3
Future Volume (Veh/h)	103	6	4	156	10	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	112	7	4	170	11	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			119		294	116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			119		294	116
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1469		696	937

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	119	174	14
Volume Left	0	4	11
Volume Right	7	0	3
cSH	1700	1469	736
Volume to Capacity	0.07	0.00	0.02
Queue Length 95th (m)	0.0	0.1	0.4
Control Delay (s)	0.0	0.2	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	10.0
Approach LOS			A

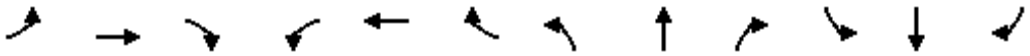
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	62	52	26	97	0	50	2	45	0	0	4
Future Volume (Veh/h)	0	62	52	26	97	0	50	2	45	0	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	67	57	28	105	0	54	2	49	0	0	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	105			124			260	256	96	306	285	105
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			124			260	256	96	306	285	105
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			92	100	95	100	100	100
cM capacity (veh/h)	1486			1463			679	635	961	603	612	949

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	124	133	105	4
Volume Left	0	28	54	0
Volume Right	57	0	49	4
cSH	1486	1463	786	949
Volume to Capacity	0.00	0.02	0.13	0.00
Queue Length 95th (m)	0.0	0.4	3.5	0.1
Control Delay (s)	0.0	1.7	10.3	8.8
Lane LOS		A	B	A
Approach Delay (s)	0.0	1.7	10.3	8.8
Approach LOS			B	A

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	32.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	17	0	2	3	6	91	10	3	78	1
Future Volume (Veh/h)	6	0	17	0	2	3	6	91	10	3	78	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	0	18	0	2	3	7	99	11	3	85	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	214	216	86	228	210	104	86			110		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214	216	86	228	210	104	86			110		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	98	100	100	100	100			100		
cM capacity (veh/h)	735	678	973	710	682	950	1510			1480		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	5	117	89
Volume Left	7	0	7	3
Volume Right	18	3	11	1
cSH	892	821	1510	1480
Volume to Capacity	0.03	0.01	0.00	0.00
Queue Length 95th (m)	0.7	0.1	0.1	0.0
Control Delay (s)	9.2	9.4	0.5	0.3
Lane LOS	A	A	A	A
Approach Delay (s)	9.2	9.4	0.5	0.3
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	21.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	96	0	7	110	0	0
Future Volume (Veh/h)	96	0	7	110	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	104	0	8	120	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			104		240	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		240	104
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1488		744	951

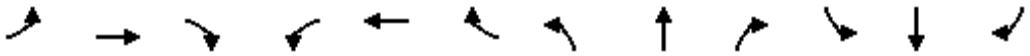
Direction, Lane #	EB 1	WB 1
Volume Total	104	128
Volume Left	0	8
Volume Right	0	0
cSH	1700	1488
Volume to Capacity	0.06	0.01
Queue Length 95th (m)	0.0	0.1
Control Delay (s)	0.0	0.5
Lane LOS		A
Approach Delay (s)	0.0	0.5
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	85	22	9	101	21	10
Future Volume (Veh/h)	85	22	9	101	21	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	24	10	110	23	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			116		234	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			116		234	104
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	99
cM capacity (veh/h)			1473		749	951

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	116	120	34
Volume Left	0	10	23
Volume Right	24	0	11
cSH	1700	1473	804
Volume to Capacity	0.07	0.01	0.04
Queue Length 95th (m)	0.0	0.2	1.0
Control Delay (s)	0.0	0.7	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.7	9.7
Approach LOS			A

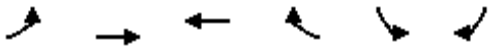
Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization		22.5%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	44	20	9	68	76	1	73	54	72	96	29
Future Volume (vph)	4	44	20	9	68	76	1	73	54	72	96	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	48	22	10	74	83	1	79	59	78	104	32

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	74	167	139	214
Volume Left (vph)	4	10	1	78
Volume Right (vph)	22	83	59	32
Hadj (s)	-0.13	-0.25	-0.22	0.02
Departure Headway (s)	4.8	4.6	4.5	4.7
Degree Utilization, x	0.10	0.21	0.18	0.28
Capacity (veh/h)	674	724	742	726
Control Delay (s)	8.4	8.8	8.5	9.5
Approach Delay (s)	8.4	8.8	8.5	9.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.9			
Level of Service	A			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	1	93	90	116	104	1
Future Volume (vph)	1	93	90	116	104	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	101	98	126	113	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	102	224	114
Volume Left (vph)	1	0	113
Volume Right (vph)	0	126	1
Hadj (s)	0.04	-0.30	0.23
Departure Headway (s)	4.5	4.0	4.8
Degree Utilization, x	0.13	0.25	0.15
Capacity (veh/h)	777	863	699
Control Delay (s)	8.1	8.3	8.7
Approach Delay (s)	8.1	8.3	8.7
Approach LOS	A	A	A

Intersection Summary			
Delay	8.4		
Level of Service	A		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	44	51	66	97	19	54
Future Volume (Veh/h)	44	51	66	97	19	54
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	55	72	105	21	59
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			103		324	76
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			103		324	76
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		97	94
cM capacity (veh/h)			1489		637	986

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	103	177	80
Volume Left	0	72	21
Volume Right	55	0	59
cSH	1700	1489	862
Volume to Capacity	0.06	0.05	0.09
Queue Length 95th (m)	0.0	1.2	2.3
Control Delay (s)	0.0	3.3	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	3.3	9.6
Approach LOS			A

Intersection Summary			
Average Delay		3.8	
Intersection Capacity Utilization		26.5%	ICU Level of Service
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

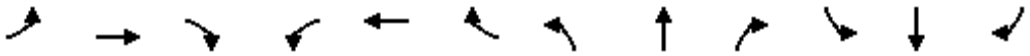
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

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

APPENDIX E

FUTURE TOTAL TRAFFIC CAPACITY ANALYSIS

Saturday Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	186	63	16	7	167	270	62	4	191	18
Future Volume (Veh/h)	20	15	186	63	16	7	167	270	62	4	191	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	16	202	68	17	8	182	293	67	4	208	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	933	950	218	1126	926	326	228			360		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	933	950	218	1126	926	326	228			360		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	93	75	41	93	99	86			100		
cM capacity (veh/h)	206	224	822	116	231	715	1340			1199		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	240	93	542	232
Volume Left	22	68	182	4
Volume Right	202	8	67	20
cSH	566	139	1340	1199
Volume to Capacity	0.42	0.67	0.14	0.00
Queue Length 95th (m)	16.0	28.2	3.6	0.1
Control Delay (s)	16.0	72.3	3.7	0.2
Lane LOS	C	F	A	A
Approach Delay (s)	16.0	72.3	3.7	0.2
Approach LOS	C	F		

Intersection Summary				
Average Delay	11.4			
Intersection Capacity Utilization	70.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	210	21	39	184	10	29
Future Volume (Veh/h)	210	21	39	184	10	29
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	228	23	42	200	11	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			251		524	240
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		524	240
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		98	96
cM capacity (veh/h)			1314		498	799

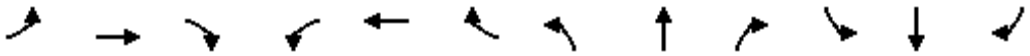
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	251	242	43
Volume Left	0	42	11
Volume Right	23	0	32
cSH	1700	1314	692
Volume to Capacity	0.15	0.03	0.06
Queue Length 95th (m)	0.0	0.8	1.5
Control Delay (s)	0.0	1.6	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.6	10.5
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	213	22	9	207	27	26
Future Volume (Veh/h)	213	22	9	207	27	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	232	24	10	225	29	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			256		489	244
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			256		489	244
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	96
cM capacity (veh/h)			1309		534	795

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	256	235	57
Volume Left	0	10	29
Volume Right	24	0	28
cSH	1700	1309	637
Volume to Capacity	0.15	0.01	0.09
Queue Length 95th (m)	0.0	0.2	2.2
Control Delay (s)	0.0	0.4	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	11.2
Approach LOS			B

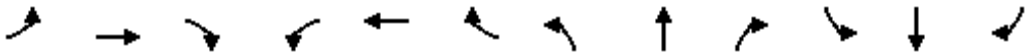
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	109	35	55	171	0	39	5	25	4	5	4
Future Volume (Veh/h)	9	109	35	55	171	0	39	5	25	4	5	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	118	38	60	186	0	42	5	27	4	5	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	186			156			470	463	137	492	482	186
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	186			156			470	463	137	492	482	186
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			91	99	97	99	99	100
cM capacity (veh/h)	1388			1424			479	472	911	451	460	856

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	166	246	74	13
Volume Left	10	60	42	4
Volume Right	38	0	27	4
cSH	1388	1424	579	533
Volume to Capacity	0.01	0.04	0.13	0.02
Queue Length 95th (m)	0.2	1.0	3.3	0.6
Control Delay (s)	0.5	2.1	12.1	11.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.5	2.1	12.1	11.9
Approach LOS			B	B

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	37.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	16	4	2	4	6	82	13	4	93	3
Future Volume (Veh/h)	0	5	16	4	2	4	6	82	13	4	93	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	5	17	4	2	4	7	89	14	4	101	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	226	228	102	240	222	96	104			103		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	226	228	102	240	222	96	104			103		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	98	99	100	100	100			100		
cM capacity (veh/h)	721	667	953	693	672	960	1488			1489		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	10	110	108
Volume Left	0	4	7	4
Volume Right	17	4	14	3
cSH	868	775	1488	1489
Volume to Capacity	0.03	0.01	0.00	0.00
Queue Length 95th (m)	0.6	0.3	0.1	0.1
Control Delay (s)	9.3	9.7	0.5	0.3
Lane LOS	A	A	A	A
Approach Delay (s)	9.3	9.7	0.5	0.3
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	18.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	126	0	8	195	0	0
Future Volume (Veh/h)	126	0	8	195	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	137	0	9	212	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			137		367	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			137		367	137
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1447		629	911

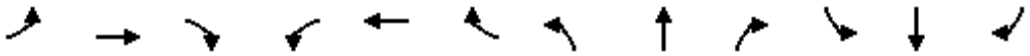
Direction, Lane #	EB 1	WB 1
Volume Total	137	221
Volume Left	0	9
Volume Right	0	0
cSH	1700	1447
Volume to Capacity	0.08	0.01
Queue Length 95th (m)	0.0	0.1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	113	26	10	185	26	13
Future Volume (Veh/h)	113	26	10	185	26	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	123	28	11	201	28	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			151		360	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			151		360	137
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	98
cM capacity (veh/h)			1430		634	911

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	151	212	42
Volume Left	0	11	28
Volume Right	28	0	14
cSH	1700	1430	705
Volume to Capacity	0.09	0.01	0.06
Queue Length 95th (m)	0.0	0.2	1.4
Control Delay (s)	0.0	0.5	10.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.4
Approach LOS			B

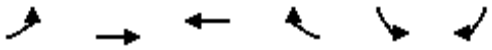
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	66	41	17	126	70	22	67	105	76	109	33
Future Volume (vph)	17	66	41	17	126	70	22	67	105	76	109	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	72	45	18	137	76	24	73	114	83	118	36

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	135	231	211	237
Volume Left (vph)	18	18	24	83
Volume Right (vph)	45	76	114	36
Hadj (s)	-0.14	-0.15	-0.27	0.01
Departure Headway (s)	5.3	5.1	5.0	5.2
Degree Utilization, x	0.20	0.33	0.29	0.34
Capacity (veh/h)	606	642	655	640
Control Delay (s)	9.6	10.7	10.0	10.9
Approach Delay (s)	9.6	10.7	10.0	10.9
Approach LOS	A	B	B	B

Intersection Summary				
Delay	10.4			
Level of Service	B			
Intersection Capacity Utilization	47.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	3	56	65	86	94	1
Future Volume (vph)	3	56	65	86	94	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	61	71	93	102	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	64	164	103
Volume Left (vph)	3	0	102
Volume Right (vph)	0	93	1
Hadj (s)	0.04	-0.31	0.23
Departure Headway (s)	4.4	3.9	4.6
Degree Utilization, x	0.08	0.18	0.13
Capacity (veh/h)	798	893	742
Control Delay (s)	7.7	7.8	8.3
Approach Delay (s)	7.7	7.8	8.3
Approach LOS	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	104	22	33	162	41	105
Future Volume (Veh/h)	104	22	33	162	41	105
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	24	36	176	45	114
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			137		373	125
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			137		373	125
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		93	88
cM capacity (veh/h)			1447		612	926

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	137	212	159
Volume Left	0	36	45
Volume Right	24	0	114
cSH	1700	1447	808
Volume to Capacity	0.08	0.02	0.20
Queue Length 95th (m)	0.0	0.6	5.5
Control Delay (s)	0.0	1.5	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.5	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

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

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