Ainley GROUP CONSULTING ENGINEERS PLANNERS

MEMORANDUM

Ainley & Associates Limited
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To: **Tiago Caldas, Asterisk Engineering Corporation**
Copies to: **Lois-Ann Hayes, Ainley Graham & Associates Limited**

From: **Lilly Chen**

Date: **December 16, 2019**

Ref: **727/737 William Street, Town of Cobourg Transportation Brief**
File: **19636-1 AGA (219076 A&A)**

Per your request, we have prepared the following site specific traffic evaluation for the proposed commercial development expansion on William Street (County Road 2) just north of Boulton Street in the Town of Cobourg. Given the moderate size of the expansion, it is our understanding that a transportation brief is required to assess the following:

- Current traffic conditions in the area including County Road 2/William Street and Boulton Street;
- Future traffic plus the site expansion traffic conditions; and
- Traffic impacts and mitigating measures if any.

Site Location & Accesses

The site is located on William Street just north of Boulton Street, in the Town of Cobourg, County of Northumberland as illustrated in **Figure 1**. The development site expansion plan is illustrated in **Figure 2**. The existing north site access on William Street will remain. The existing southwest site access on Boulton Street will be changed to a service only access with no exit. The existing southeast site access on Boulton Street will be relocated approximately 10 m to the east (measured from centreline to centreline). They are all full-movement accesses.

The proposed relocation of the southeast site access on Boulton Street creates a negative off-set with Sinclair Street. In addition, it is closer to William Street. As per the TAC (Transportation Association of Canada) *Geometric Design Guide for Canadian Roads*, the minimum corner clearance between an access and a cross road is 15 m on a local road (measured from the far side end of the access radius to the near side end of the cross road radius). The proposed corner clearance is approximately 4 m. Therefore, it is not recommended. This will be further reviewed in a later section.

Proposed Expansion Land Use & Phasing

The existing building houses a health-wellness centre, a spa, and a heating and air conditioning store. The size of the existing building is 9129.32 ft^2. It is assumed that 60% are the health-wellness centre and spa uses and 40% is the heating and air conditioning store use. A 3998.06 ft^2 new building is proposed to the north of the existing building. Similar to the existing uses are expected. It is anticipated that the new building will be fully completed and in operation in 2020.

Site Expansion Generated Trips

Trip generation rates have been determined from both the traffic count and the Institute of Transportation Engineer's *Trip Generation Manual* for the existing site.

Based on the existing land uses and applicable ITE land use categories, the following have been employed:

- Health-wellness centre and spa – trip rates correspond to "medical-dental office building" (ITE land use code 720, 60%)
- heating and air conditioning store – trip rates correspond to "building materials and lumber store" (ITE land use code 812, 40%)

The applicable trip rates and corresponding trip estimates for the peak hours of the adjacent road are provided in **Table 1**. In total, the existing development is estimated to generate 21 trips in the AM peak hour and 27 trips in the PM peak hour (both inbound and outbound trips). However, based on traffic counts the existing site generates 36 trips in the AM peak hour and 48 trips in the PM peak hour (both inbound and outbound trips). Given the actual traffic count data is higher than the estimate, trip rates have been calculated based on the traffic count data. It is estimated that the site expansion will generate 16 trips in the AM peak hour and 21 trips in the PM peak hour (both inbound and outbound trips) as per **Table 2**.

Table 1: EXISTING SITE TRIP GENERATION ESTIMATES (ITE)

Land Use	Rate/ Estimate	Unit/ Size	WEEKDAY AM PEAK			WEEKDAY PM PEAK		
			In	Out	Total	In	Out	Total
Health-wellness centre and spa	rate	1000 ft^2 GFA	2.17	0.61	2.78	0.97	2.49	3.46
	estimate	9.129x60%	12	3	15	5	14	19
heating and air conditioning store	rate	1000 ft^2 GFA	0.99	0.58	1.57	0.97	1.09	2.06
	estimate	9.129x40%	4	2	6	4	4	8
	Total	9.129	16	5	21	9	18	27

Table 2: SITE EXPANSION TRIP GENERATION ESTIMATES (TRAFFIC COUNT)

Land Use	Rate/ Estimate	Unit/ Size	WEEKDAY AM PEAK			WEEKDAY PM PEAK		
			In	Out	Total	In	Out	Total
Existing site	actual	9.129	21	15	26	22	26	48
Proposed expansion	rate	1000 ft^2 GFA	2.30	1.64	3.94	2.41	2.85	5.26
	estimate	3.998	9	7	16	10	11	21

The distribution of the trip to be generated by the proposed development expansion has been developed based on the existing traffic pattern at the intersections of William Street at the north site access, Boulton Street at the southeast site access, and William Street at Boulton Street. The following distribution and assignment were developed:

AM Peak hour

- 7% to the east via Boulton Street and the southeast site access
- 19% to the north via William Street and the southeast site access
- 21% to the south via William Street and the southeast site access
- 0% to the south via Sinclair Street and the southeast site acces
- 26% to the south via William Street and the north of site access
- 27 % to the north via William Street and the north of site access
- 0% from the east via Boulton Street and the southeast site access
- 5% from the south via William Street and the southeast site access
- 95% from the north via William Street and the north of site access

PM Peak hour

- 12% to the east via Boulton Street and the southeast site access

- 18% to the north via William Street and the southeast site access
- 24% to the south via William Street and the southeast site access
- 4% to the south via Sinclair Street and the southeast site access
- 27% to the south via William Street and the north of site access
- 15 % to the north via William Street and the north of site access
- 9% from the east via Boulton Street and the southeast site access
- 23% from the south via William Street and the southeast site access
- 68% from the north via William Street and the north of site access

The resulting site generated traffic volumes are illustrated in **Figure 3**.

Existing Road Network

The road network to be addressed by this report consists of William Street (County Road 2), Boulton Street, and Sinclair Street. William Street is under the jurisdiction of the County, whereas Boulton Street and Sinchair Street are under the jurisdiction of the Town.

As per the Town's Official Plan, William Street is an arterial road. Through the study area, William Street has two lanes in each direction and a continued northbound left turn lane. The road has an urban cross-section with curbs, gutters and sidewalks on both sides. The alignment of William Street in the area is relatively straight and flat. The road has a posted speed limit of 50 km/h and hence a design speed of 60 km/h has been assumed (speed limit + 10 km/h for lower speed roads).

Boulton Street is a local as identified in the Town's Official Plan. It has one lane in each direction. The road has an urban cross-section with curbs, gutters on both sides and a sidewalk on the north side. A 50 km/h speed limit is posted on the road in the site area hence a design speed of 60 km/h is applied. West of the site, the posted speed limit is reduced to 40 km/h. The alignment of the road in the area is relatively flat. However, the road has a horizontal curve at approximately 100 m west of the site west limit. "No Parking" signs are posted on the north side of the road.

Sinclair Street is also a local road as per the Town's Official Plan. It has one lane in each direction and an urban cross-section with curbs, gutters on both sides and a sidewalk on the east side. The alignment of the road is relatively flat. However, it has a horizontal curve at just south of Boulton Street. There is no speed limit posted on the road. A 50 km/h posted speed limit was assumed, thus a 60 km/h design speed is applied. "No Parking" signs are posted on the west side of the road.

The intersections of William Street at Boulton Street and at the north site access are "T" intersections with stop control on Boulton Street and the north site access. The configurations of the intersections are as follows:

- Northbound approaches on William Street: one left turn lane and two through lanes
- Southbound approaches on William Street: one through lane and one through-right shared lane
- Eastbound approaches on Boulton Street and the north site access: one left-right shared lane

The intersection of Boulton Street at Sinclair Street is a 4-leg intersection with stop control on Sinclair Street and the southeast site access. Each approach has a single shared lane with no exclusive turn lanes/tapers. Existing road and intersection configurations are illustrated in **Figure 4**.

Existing Traffic Volumes

To assess road improvement needs, typical weekday AM and PM peak hours have been considered.

Traffic counts were conducted at the intersections of William Street with Boulton Street and William Street with the north site access, Boulton Street with Sinclair Street on Wednesday December 4th, 2019 from 7:00 to 10:00 and 15:00 to 18:00. Traffic count information is provided in Appendix A. Given the time of the year, the counts represent the average conditions. To reflect the peak summer condition, the data has been increased by 23 % for William Street, Boulton Street and Sinclair Street. Based on the 2016 traffic volumes on the section of County

Road 28 at Highway 401 from MTO, the Summer Average Weekday Daily Traffic is approximately 23% higher than the Annual Average Daily Traffic.

The resulting 2019 summer weekday AM and PM peak hour volumes are presented in **Figure 5**.

Existing Traffic Operations

The assessment of existing conditions will provide the baseline from which the future traffic volumes and operations can be assessed.

The capacity, and hence operations, of a road system is effectively dictated by its intersections. As such, the analysis focused on the operation of the intersections of William Street with Boulton Street, Boulton Street with Sinclair Street, and William Street with the north site access. The methodology applied was consistent with the *Highway Capacity Manual 2010* method for unsignalized intersections as employed in the software program Synchro 10. The analysis is based on the 2019 traffic volumes, the existing intersection configuration and control.

Table 3 summarizes the results of the analysis showing the level of service (LOS), estimated delays (measured in seconds) and the volume to capacity (v/c) ratio for the critical movement of the intersection. Level of service A, corresponding to minimal delays, is the best whereas level of service F, corresponding to high delays, is generally considered a poor condition. When volume is less than capacity, v/c ratio is less than 1. Otherwise, v/c ratio equals to 1 or more than 1, which means volume reaches capacity or is more than capacity.

For unsignalized intersections, the level of service corresponds to the minor street lane groups given that the major street movements proceed relatively unimpeded. For signalized intersections, the results pertain to the average intersection delay and assume optimal signal timing and phasing to achieve the most efficient overall network operations through signal coordination. If the actual situations are under expectations, adjustments to the signal timing and/or phasing can be readily implemented. Level of service definitions and the corresponding detailed worksheets are included in **Appendix B**.

Table 3: INTERSECTION OPERATIONS – EXISTING 2019 TRAFFIC VOLUMES

INTERSECTION		CONTROL	PM PEAK HOUR			WEEKEND PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
William St & Boulton St	EB	stop	15.1	C	0.19	18.4	C	0.20
	NBL	free	9.1	A	0.02	11.1	B	0.08
William St & N site access	EB	stop	14.8	B	0.02	14.7	B	0.03
	NBL	free	0	A	-	0	A	-
Boulton St & Sinclair St/SE site access	EBL	free	0	A	-	7.3	A	0.00
	NB	stop	9.1	A	0.05	9.2	A	0.03
	SB		9.6	A	0.01	9.7	A	0.02
	WBL	free	7.4	A	0.02	7.4	A	0.02

As per the analysis, good levels of service C or better occur at the intersections under the existing conditions and thus no improvements related to intersection operations are required at this time on the basis of the intersection operational analysis.

Future Background Traffic Volumes

Based on the Town's Official Plan, the Town's 2006 population was 18,210, while employment was 12,057 and the projected future 2031 population will be 22,185, whereas 13,317 for employment; a growth rate of 0.79% per year for population and 0.40% for employment were calculated. For the purpose of this report, a growth rate of 0.79% per year was selected. The resulting 2020 and 2025 background traffic volumes are presented in **Figures 6** and **7** respectively.

Future Total Traffic Volumes
Site expansion traffic volumes were combined with the future background traffic volumes. The resulting future 2020 and 2025 total traffic volumes are illustrated in **Figures 8** and **9** respectively.

Future Traffic Operations
Intersection operational analysis was carried out based on the future total traffic volumes. Given the southeast site access is relocated to the east, future configurations are illustrated in **Figure 10**. **Tables 4** and **5** summarize the results of the analysis.

Table 4: INTERSECTION OPERATIONS – FUTURE 2020 TOTAL TRAFFIC VOLUMES

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
William St & Boulton St	EB	stop	15.2	C	0.20	18.9	C	0.21
	NBL	free	9.1	A	0.02	11.1	B	0.08
William St & N site access	EB	stop	15.1	C	0.04	15.5	C	0.05
	NBL	free	0	A	-	0	A	-
Boulton St & SE site access	EBL	free	0	A	-	7.4	A	0.00
	SB	stop	9.3	A	0.01	9.3	A	0.03
Boulton St & Sinclair St/SE site access	NB	stop	9.1	A	0.05	9.1	A	0.03
	WBL	free	7.4	A	0.02	7.4	A	0.02

Table 5: INTERSECTION OPERATIONS – FUTURE 2025 TOTAL TRAFFIC VOLUMES

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
William St & Boulton St	EB	stop	15.8	C	0.21	19.8	C	0.23
	NBL	free	9.2	A	0.02	11.4	B	0.09
William St & N site access	EB	stop	15.4	C	0.04	16.0	C	0.05
	NBL	free	0	A	-	0	A	-
Boulton St & SE site access	EBL	free	0	A	-	7.4	A	0.00
	SB	stop	9.3	A	0.01	9.4	A	0.03
Boulton St & Sinclair St/SE site access	NB	stop	9.1	A	0.05	9.2	A	0.03
	WBL	free	7.4	A	0.02	7.4	A	0.02

As per the analyses, good levels of service C or better continue to occur at the intersections and thus no improvements related to intersection operations are required on the basis of the intersection operational analysis.

Queue Length Analysis
Given the short corner clearance between the southeast site access and William Street on Boulton Street, the 95th percentile queue lengths were reviewed for the 2025 total conditions. The 95th percentile queues averaged from five SimTraffic runs are presented in **Table 6**. Each SimTraffic run was for duration of 60 minutes with 15 minutes of seeding time.

Table 6: 2025 95th PERCENTILE QUEUE LENGTHS & STORAGE LENGTHS

INTERSECTION	TURN LANE	95th PERCENTILE QUEUE (m)		STORAGE LANE LENGTH (m)	
		AM	PM	EX./PROP.	RECOMMENDED
William St & Boulton St	EB	18.2	19.0	15/5	As existing
William St & N site access	EB	15.0	11.5	10/10	As existing
Boulton St & SE site access	SB	8.3	12.0	4/4	As existing

As indicated in **Table 6**, all existing turn lane storage lengths are shorter than the future 2025 95th percentile queue lengths. The proposed relocation of the southeast site entrance to the east would shorten the eastbound storage length on Boulton Street at William Street. Therefore, it is not recommended.

Turn Lane Requirements

Despite the good levels of service, the need for a left turn lane at the intersections of Boulton Street with the southeast site access, and Boulton Street with Sinclair Street was reviewed. Based on MTO left turn lane warrant criteria, the 2025 total traffic volumes and a design speed of 60 km/h, no left turn lanes are warranted.

With respect to the need for a right turn lane, MTO criteria indicate that they should be considered when the turning volume exceeds 60 vehicles per hour at an unsignalized intersection. Based on the projected traffic volumes, no right turn lanes are warranted at the intersections.

Sight Line Analysis

The alignments of William Street and Boulton Street at the site accesses are relatively straight and flat although there is a horizontal curve to the west of the site on Boulton Street.

Based on the TAC *Geometric Design Guide for Canadian Roads*, the minimum stopping sight distance for a design speed of 60 km/h is 85 metres. This requirement provides sufficient distance for an approaching vehicle to observe a stationary hazard on the road (i.e. a vehicle stopped at an intersection waiting to complete a turn for example) and bring their vehicle to a complete stop prior to the hazard.

The available sight lines along William Street as determined at the north site access are more than 200 m to the south and to the north the signalized intersection of William Street with Heath Street is visible (approximately 80m).

Similarly, the available sightlines along Boulton Street as determined at the southwest site access are approximately 110 m to the west (limited by a horizontal curve) and to the east the intersection of William Street with Boulton Street is visible (approximately 55 m).

The available sightlines along Boulton Street as determined at the southeast site access are approximately 150 m to the west (limited by a horizontal curve) and to the east, although the intersection of William Street with Boulton Street is visible, the distance is approximately 20m which is insufficient for a design speed of 25 km/h. A design speed of 25 km/h is assumed for vehicles making a turn at an intersection. The minimum sight distance for a design speed of 25 km/h is 25 metres.

Therefore, sightlines are in excess of the minimum sight distance requirements at the north site access and at the southwest site access. At the southeast site access, the sightline to the east is in sufficient. As a result, relocation of the southeast site access to the east is not recommended.

Summary

This study has addressed the transportation impacts associated with the proposed development expansion on William Street and Boulton Street, in the Town of Cobourg, County of Nothumberland. It is estimated that the site

expansion will generate 16 and 21 trips during the AM and PM peak hours respectively.

Site access locations were reviewed. The proposed southeast site access location does not meet the minimum corner clearance requirement.

To address the potential impacts of the proposed development expansion, peak hour operations at the intersections of William Street at Boulton Street, William Street at the north site access, and Boulton Street at Sinclair Street/southeast site access were reviewed for the existing 2019 and future 2020 and 2025 summer conditions. Based on the assessment, it was determined that all three/four intersections will provide good levels of service (LOS C or better) with delays less than 20 seconds.

The need for a left turn lane or right turn lane was reviewed at the study area key intersections based on MTO warrant criteria. It was determined that no left turn lanes or right turn lanes are warranted.

Queue lengths were reviewed. All the 95th percentile queue lengths are longer than the existing available spaces. The relocation of the southeast site access to the east would make the available space shorter. Therefore, it is not recommended.

Sightlines were reviewed on Second Street at the site access. Sufficient sightlines are provided at the north site access and at the southwest site access. However, sightline to the east is insufficient at the proposed southeast site access. Therefore, relocation of the southeast site access to the east is not recommended.

We trust that the above meets with your purpose. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

AINLEY & ASSOCIATES LIMITED

Lilly Chen

Lilly Chen, P. Eng.
Senior Transportation Engineer

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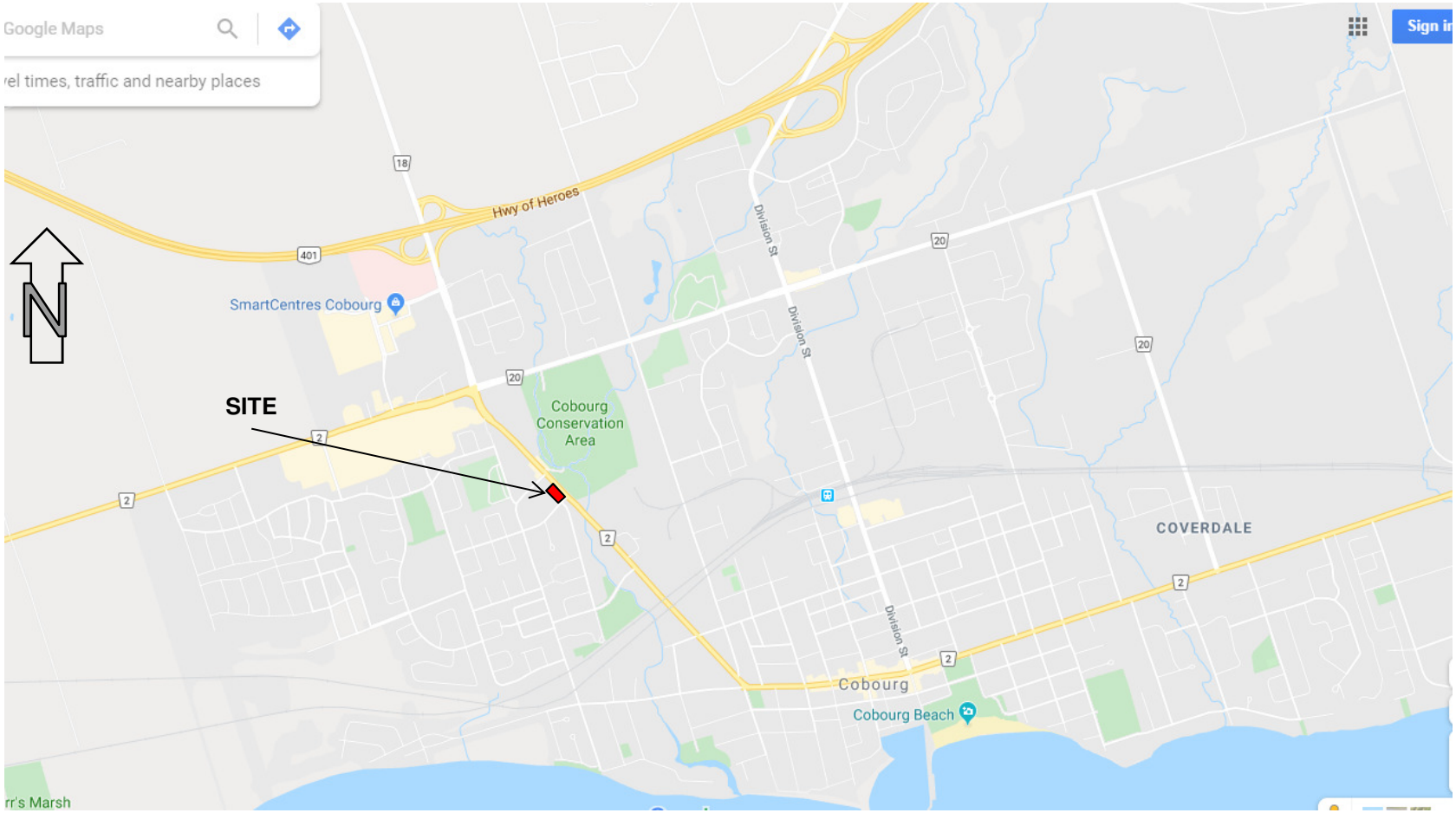

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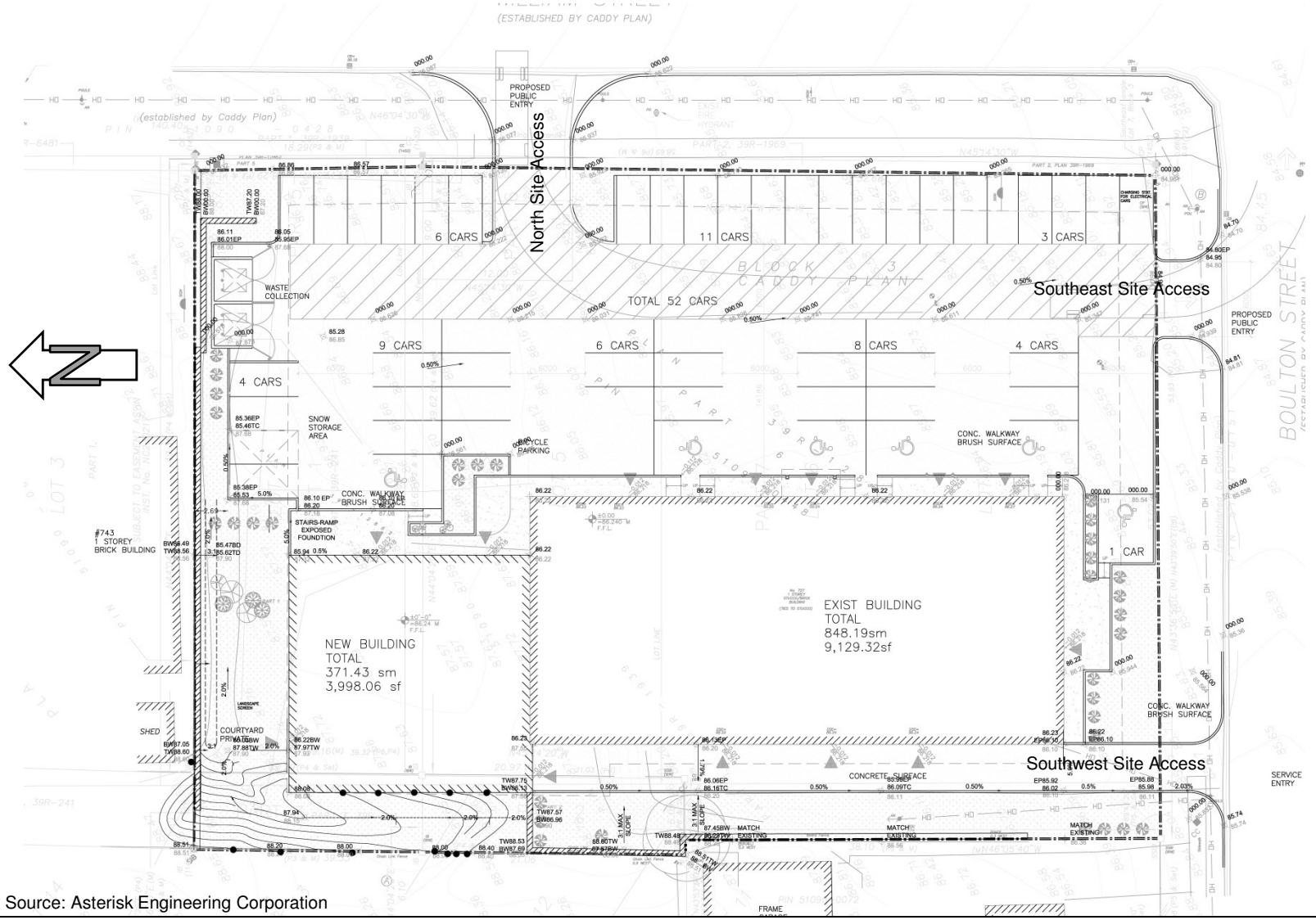

Source: Asterisk Engineering Corporation

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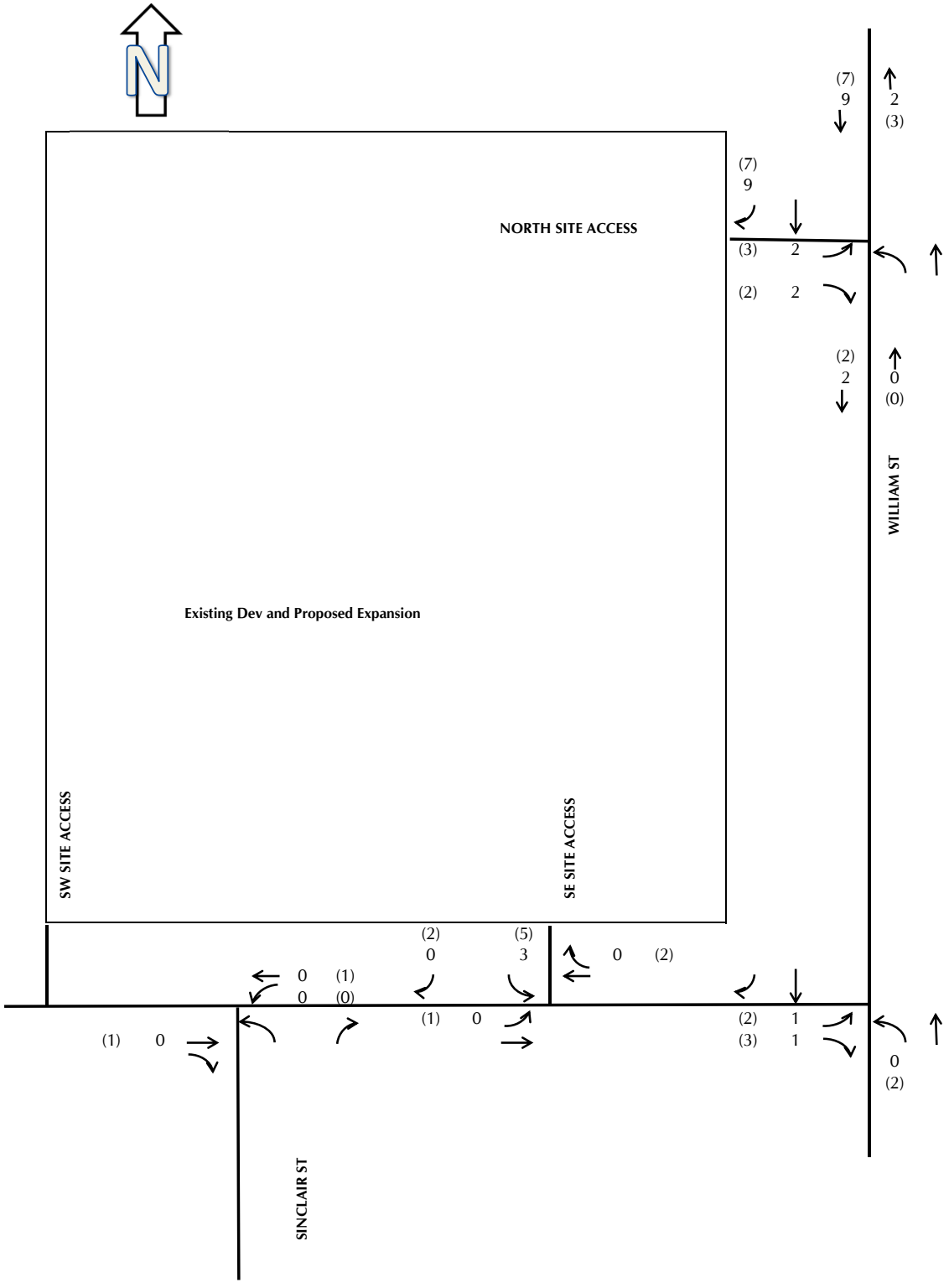
TOWN OF COBOURG

727/737 WILLIAM STREET TRANSPORTATION BRIEF

FIGURE 2 – SITE EXPANSION CONCEPT PLAN



100 (100) AM (PM) Peak Hour

Figure 3

Site Expansion Generated Traffic Volumes

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Town of Cobourg

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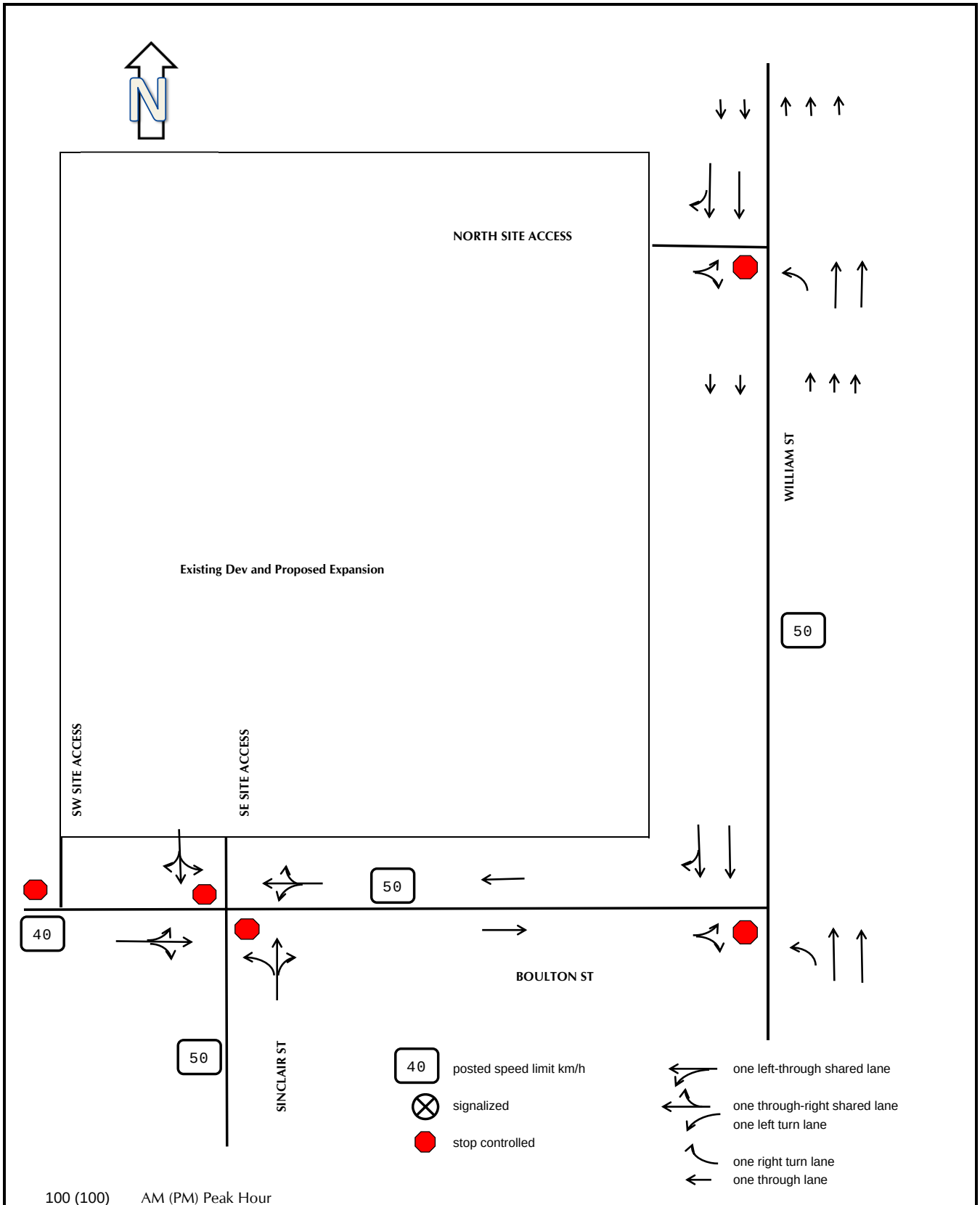

Figure 4

Existing Configurations

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Town of Cobourg

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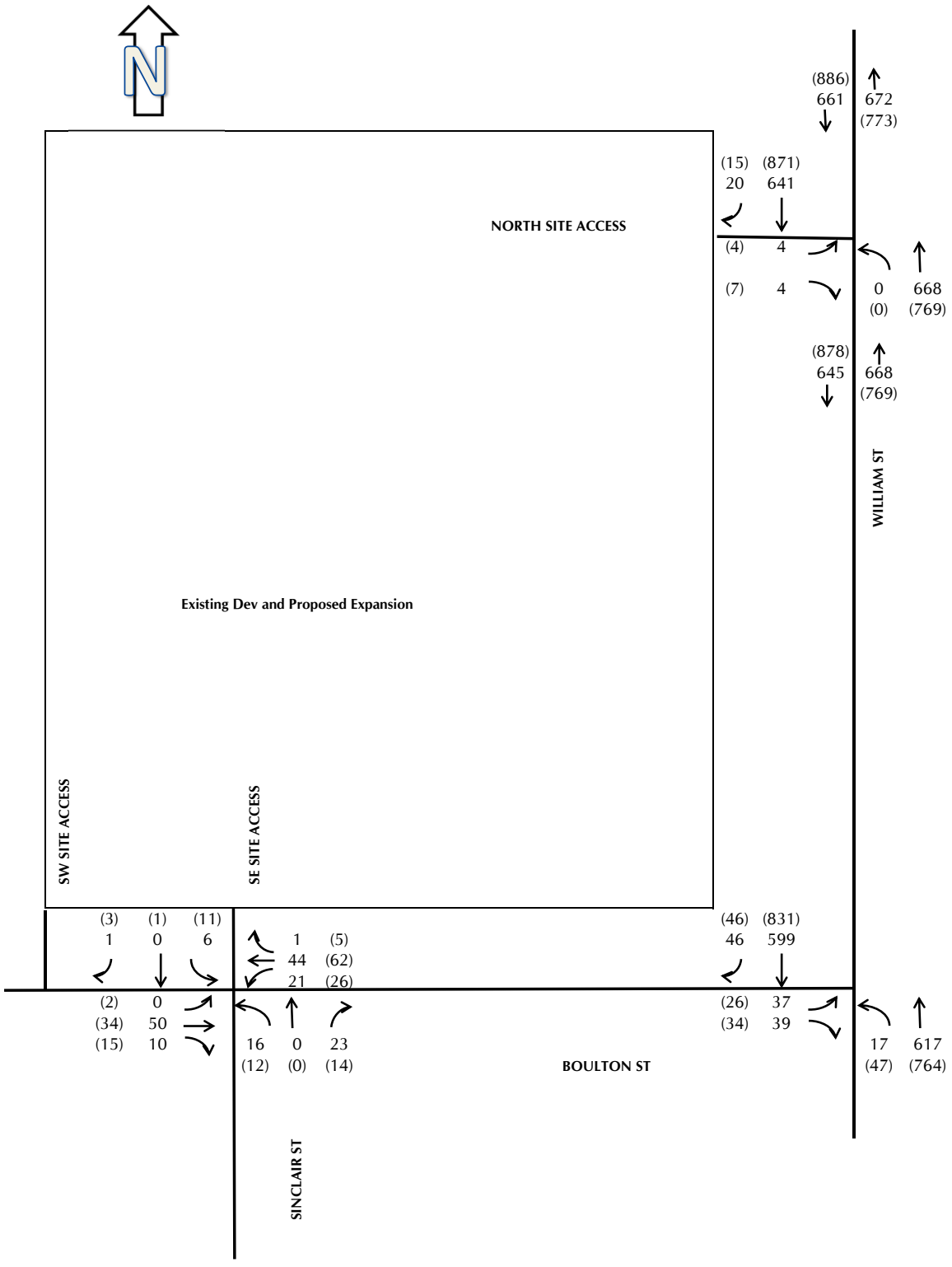

100 (100) AM (PM) Peak Hour

Figure 5

Existing 2019 Traffic Volumes

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Town of Cobourg

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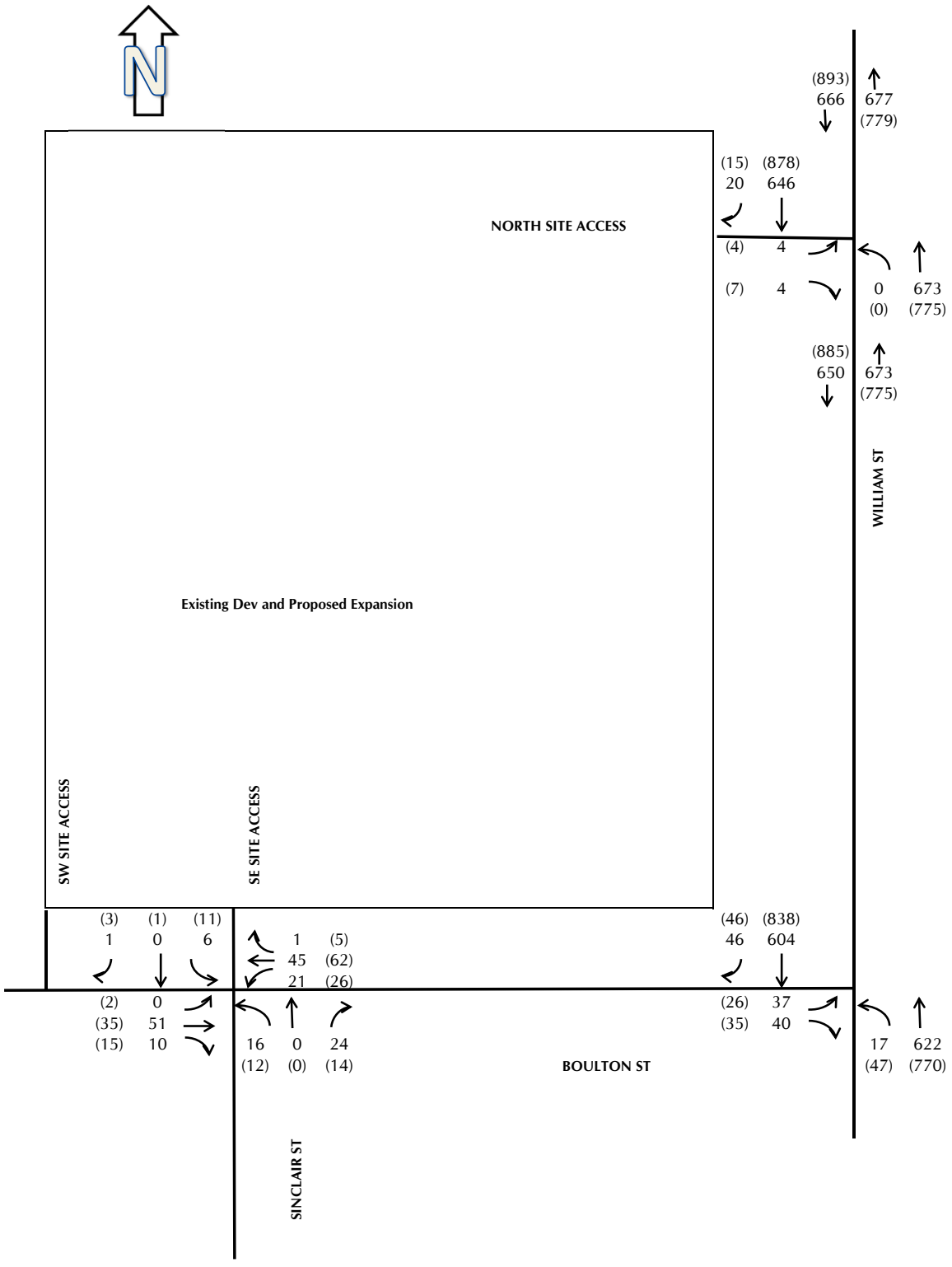

100 (100) AM (PM) Peak Hour

Figure 6

2020 Background Traffic Volumes

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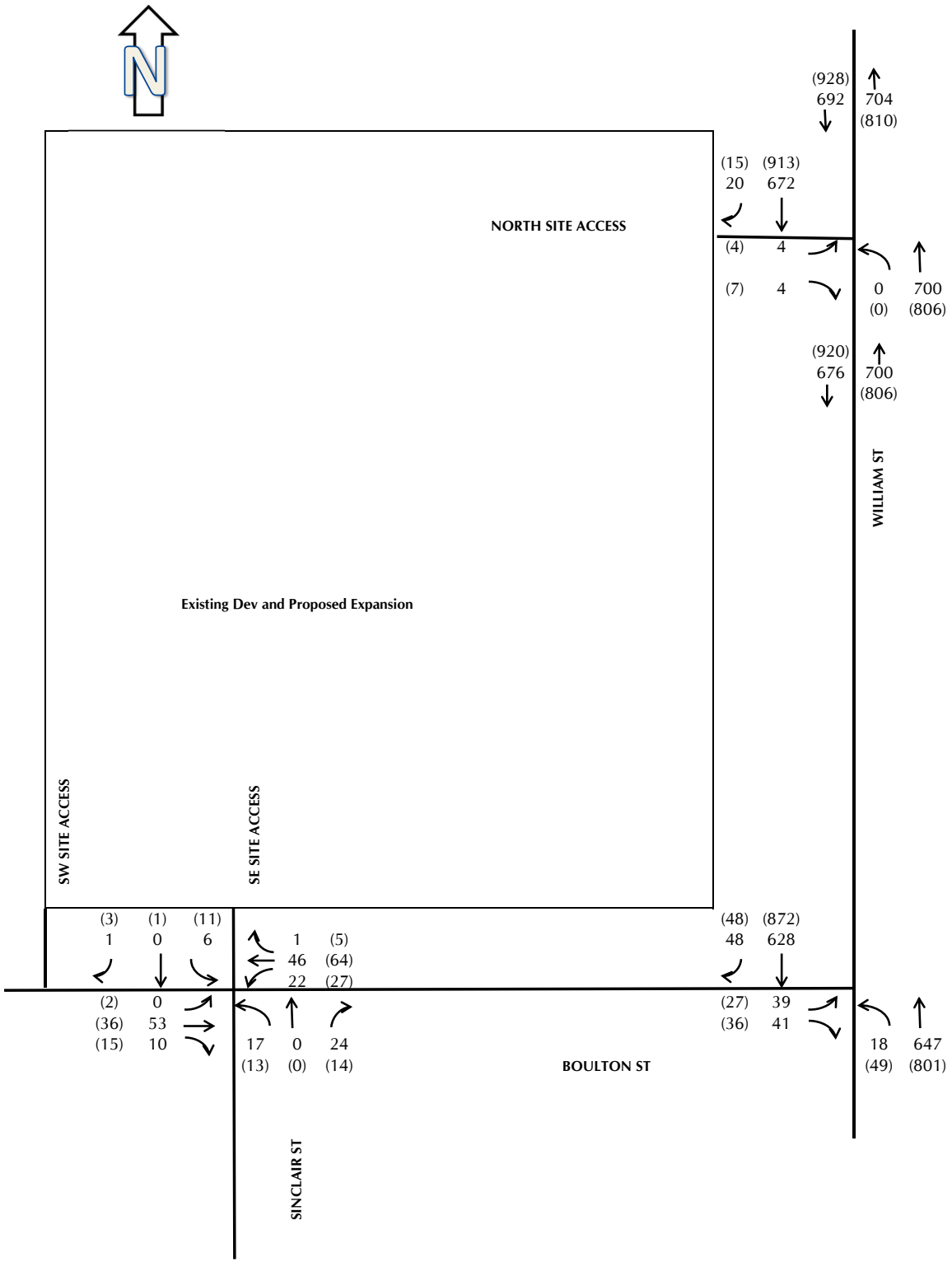

100 (100) AM (PM) Peak Hour

Figure 7

2025 Background Traffic Volumes

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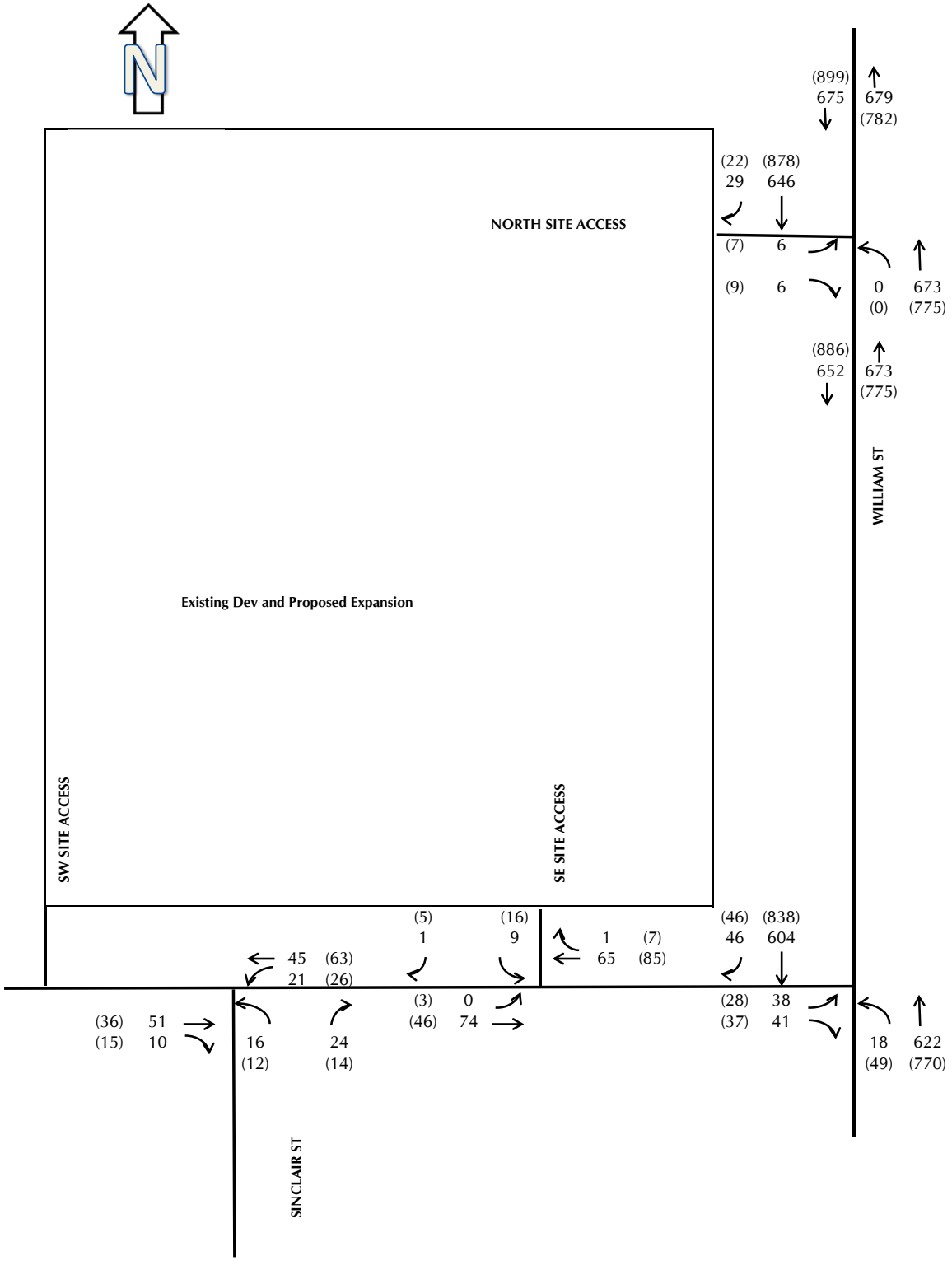

100 (100) AM (PM) Peak Hour

Figure 8

2020 Total Traffic Volumes

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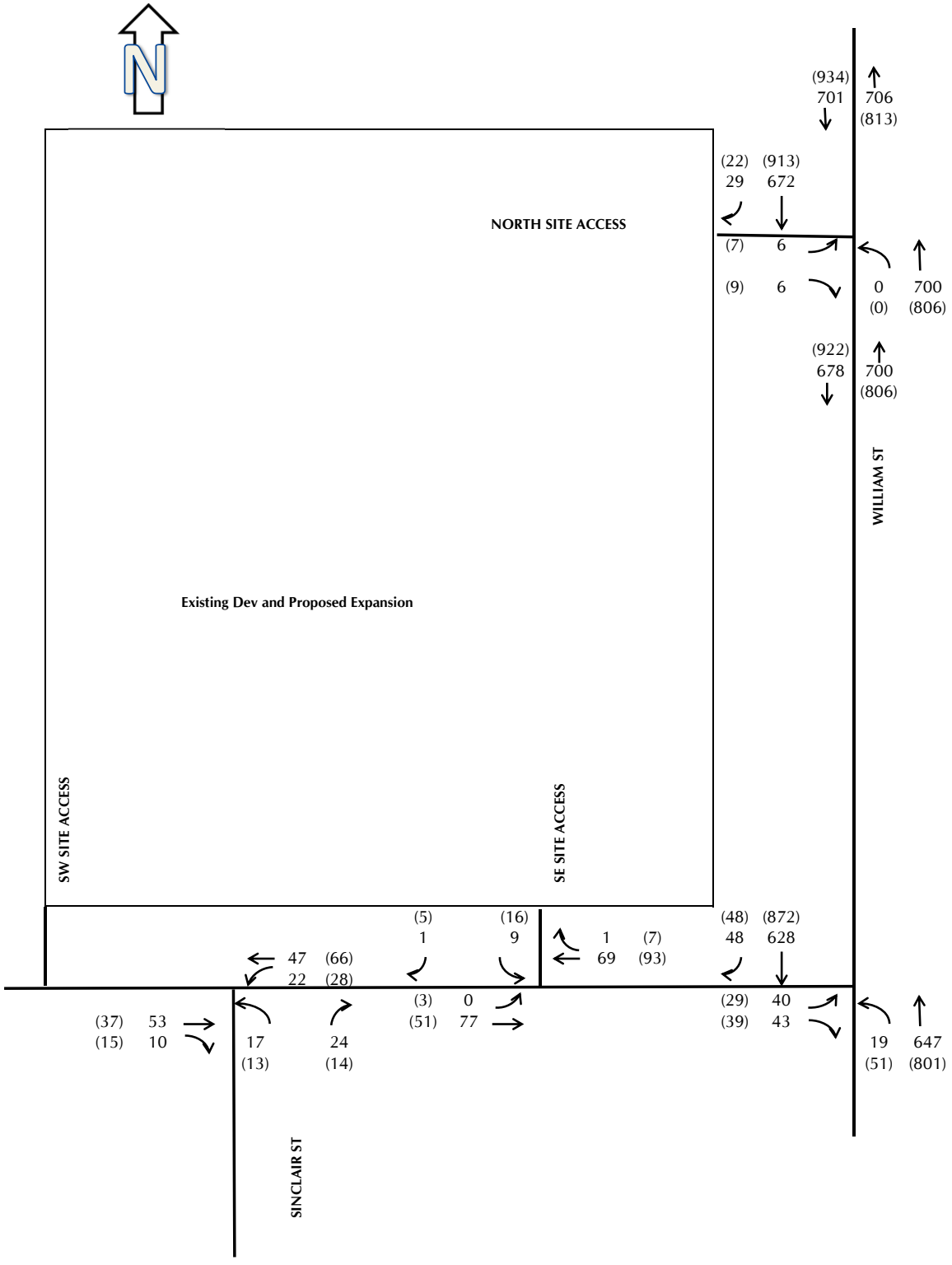

100 (100) AM (PM) Peak Hour

Figure 9

2025 Total Traffic Volumes

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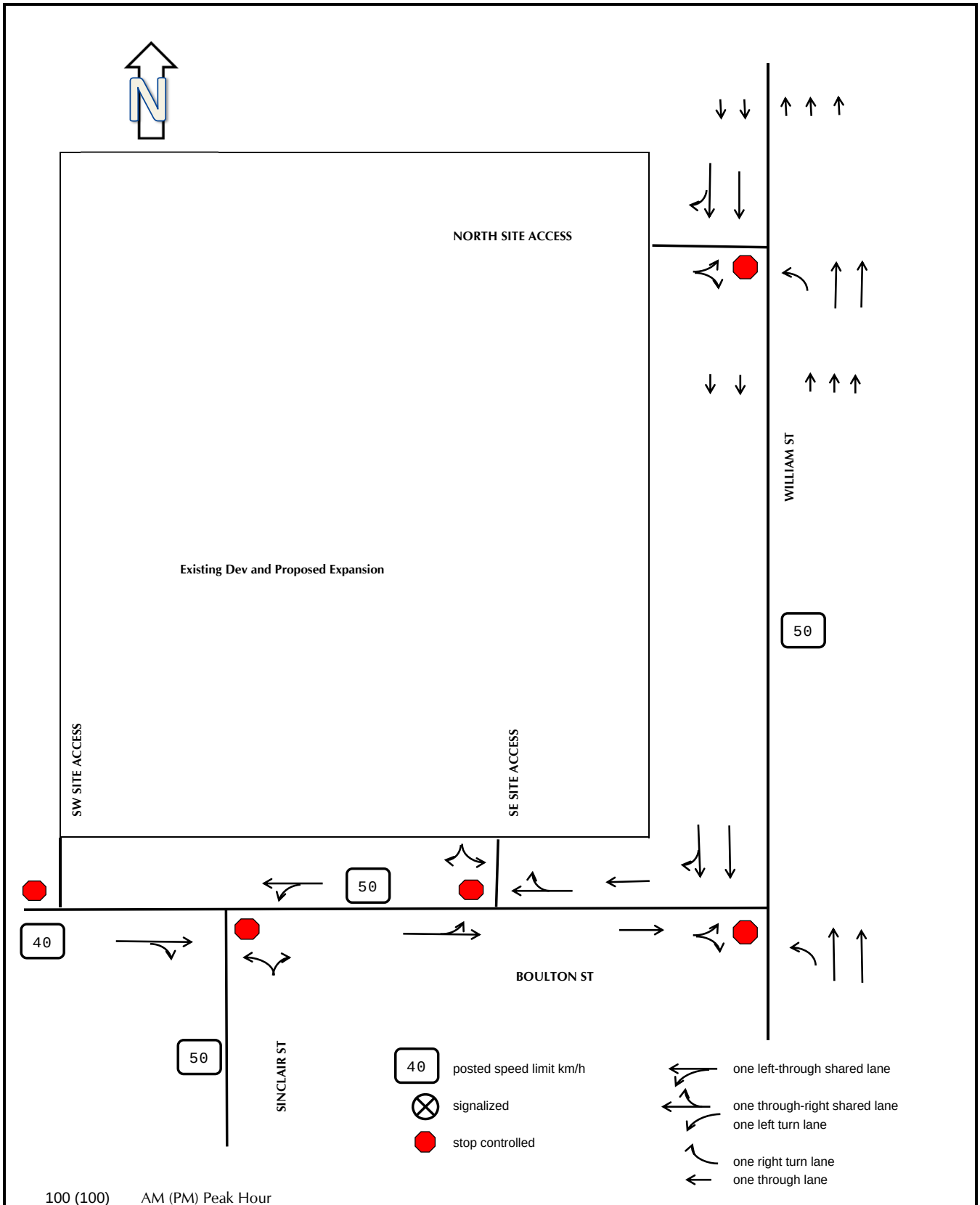

Figure 10

Future Configurations

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Town of Cobourg

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APPENDIX A

Traffic Counts

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 8:30:00
To: 9:30:00

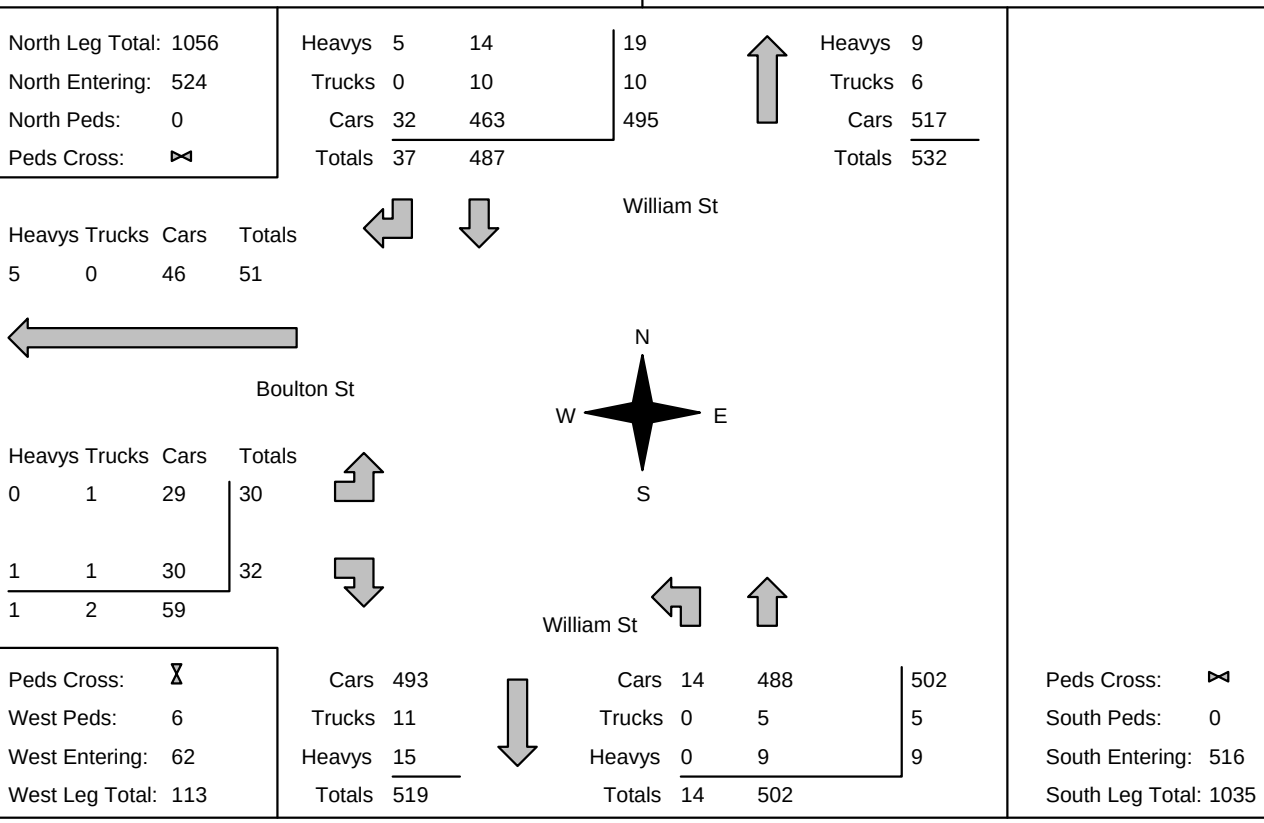
Municipality: Cobourg
Site #: 1920100001
Intersection: William St & Boulton St
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: William St runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:00:00
To: 16:00:00

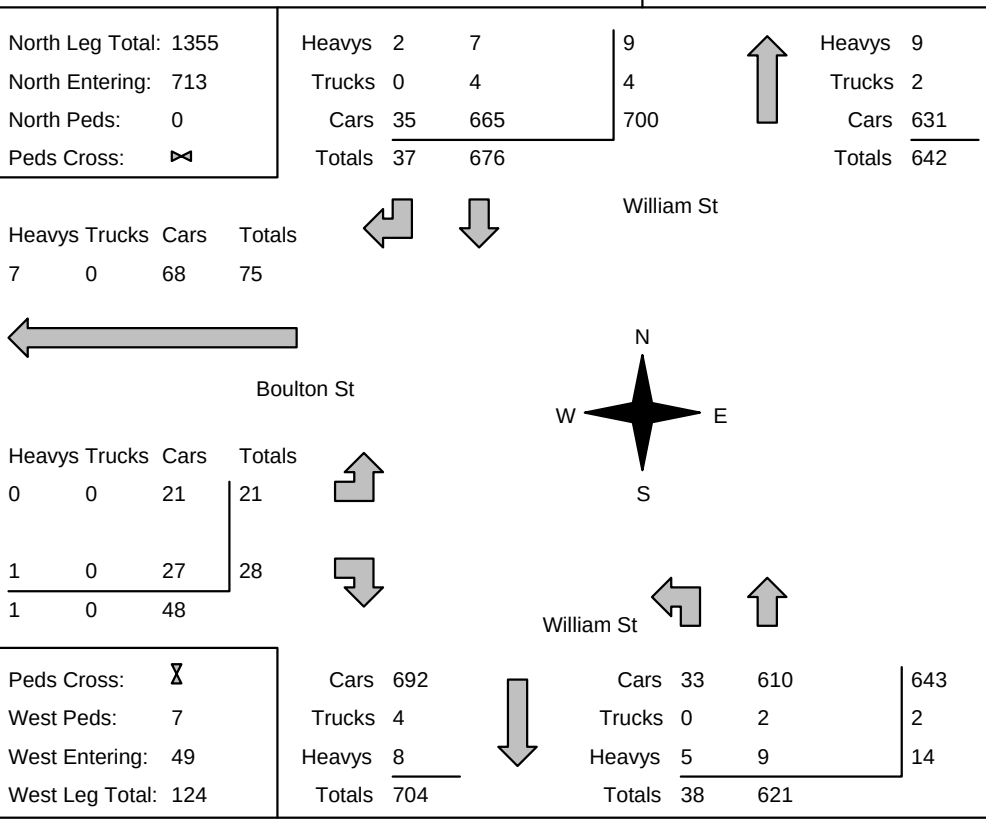
Municipality: Cobourg
Site #: 1920100001
Intersection: William St & Boulton St
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: William St runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

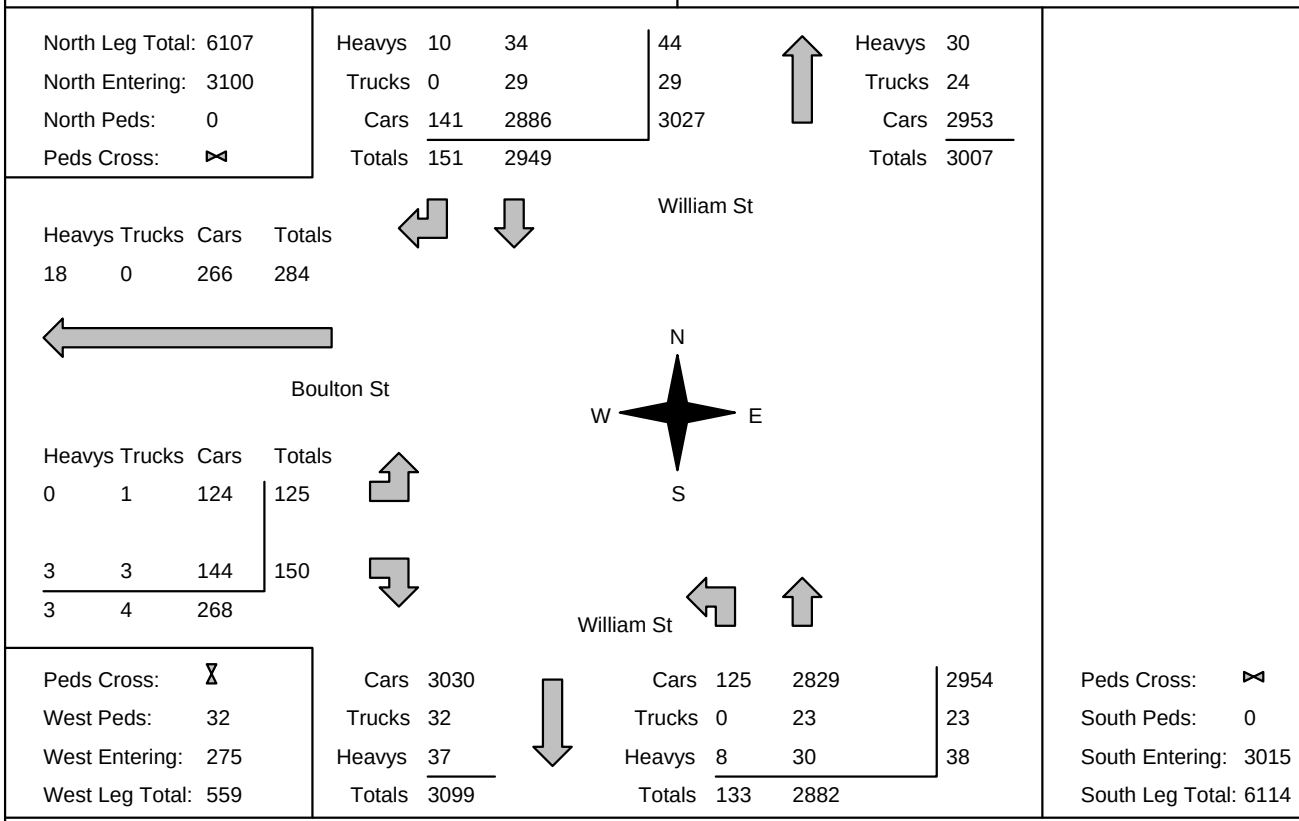
Municipality: Cobourg
Site #: 1920100001
Intersection: William St & Boulton St
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: William St runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: William St & Boulton St | **Count Date:** 4-Dec-19 | **Municipality:** Cobourg

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*0*	*300*	*7*	*307*	*0*
9:00:00	*0*	*467*	*27*	*494*	*0*
10:00:00	*0*	*475*	*28*	*503*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*676*	*37*	*713*	*0*
17:00:00	*0*	*570*	*28*	*598*	*0*
18:00:00	*0*	*461*	*24*	*485*	*0*
Totals:	0	2949	151	3100	0

North/South Total Approaches: 6115

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*10*	*311*	*0*	*321*	*0*
9:00:00	*18*	*440*	*0*	*458*	*0*
10:00:00	*20*	*482*	*0*	*502*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*38*	*621*	*0*	*659*	*0*
17:00:00	*27*	*562*	*0*	*589*	*0*
18:00:00	*20*	*466*	*0*	*486*	*0*
S Totals:	133	2882	0	3015	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*0*	*0*	*0*	*0*	*0*
9:00:00	*0*	*0*	*0*	*0*	*0*
10:00:00	*0*	*0*	*0*	*0*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*0*	*0*	*0*	*0*
17:00:00	*0*	*0*	*0*	*0*	*0*
18:00:00	*0*	*0*	*0*	*0*	*0*
Totals:	0	0	0	0	0

East/West Total Approaches: 275

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*20*	*0*	*17*	*37*	*5*
9:00:00	*31*	*0*	*31*	*62*	*5*
10:00:00	*18*	*0*	*27*	*45*	*4*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*21*	*0*	*28*	*49*	*7*
17:00:00	*20*	*0*	*29*	*49*	*5*
18:00:00	*15*	*0*	*18*	*33*	*6*
W Totals:	125	0	150	275	32

Calculated Values for Traffic Crossing Major Street

Hours Ending:	*7:00*	*8:00*	*9:00*	*10:00*	*15:00*	*16:00*	*17:00*	*18:00*
Crossing Values:	*0*	*20*	*31*	*18*	*0*	*21*	*20*	*15*

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100001

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	45	45	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	102	57	2	1	0	0	4	2	0	0	0	0	2	2	0	0	0	0
7:45:00	0	0	173	71	4	2	0	0	4	0	0	0	0	0	5	3	0	0	0	0
8:00:00	0	0	288	115	7	3	0	0	5	1	0	0	0	0	7	2	0	0	0	0
8:15:00	0	0	386	98	12	5	0	0	6	1	0	0	0	0	8	1	0	0	0	0
8:30:00	0	0	488	102	17	5	0	0	6	0	0	0	0	0	9	1	2	2	0	0
8:45:00	0	0	598	110	25	8	0	0	7	1	0	0	0	0	14	5	5	3	0	0
9:00:00	0	0	741	143	29	4	0	0	10	3	0	0	0	0	16	2	5	0	0	0
9:15:00	0	0	841	100	41	12	0	0	13	3	0	0	0	0	17	1	6	1	0	0
9:30:00	0	0	951	110	49	8	0	0	16	3	0	0	0	0	23	6	7	1	0	0
9:45:00	0	0	1049	98	55	6	0	0	17	1	0	0	0	0	23	0	7	0	0	0
10:00:00	0	0	1198	149	55	0	0	0	20	3	0	0	0	0	24	1	7	0	0	0
10:15:00	0	0	1198	0	55	0	0	0	20	0	0	0	0	0	24	0	7	0	0	0
15:00:00	0	0	1198	0	55	0	0	0	20	0	0	0	0	0	24	0	7	0	0	0
15:15:00	0	0	1370	172	64	9	0	0	23	3	0	0	0	0	26	2	8	1	0	0
15:30:00	0	0	1545	175	77	13	0	0	23	0	0	0	0	0	27	1	9	1	0	0
15:45:00	0	0	1705	160	83	6	0	0	24	1	0	0	0	0	29	2	9	0	0	0
16:00:00	0	0	1863	158	90	7	0	0	24	0	0	0	0	0	31	2	9	0	0	0
16:15:00	0	0	1999	136	93	3	0	0	26	2	0	0	0	0	32	1	10	1	0	0
16:30:00	0	0	2152	153	103	10	0	0	29	3	0	0	0	0	32	0	10	0	0	0
16:45:00	0	0	2289	137	109	6	0	0	29	0	0	0	0	0	32	0	10	0	0	0
17:00:00	0	0	2426	137	117	8	0	0	29	0	0	0	0	0	33	1	10	0	0	0
17:15:00	0	0	2578	152	125	8	0	0	29	0	0	0	0	0	33	0	10	0	0	0
17:30:00	0	0	2688	110	131	6	0	0	29	0	0	0	0	0	33	0	10	0	0	0
17:45:00	0	0	2783	95	138	7	0	0	29	0	0	0	0	0	34	1	10	0	0	0
18:00:00	0	0	2886	103	141	3	0	0	29	0	0	0	0	0	34	0	10	0	0	0
18:15:00	0	0	2886	0	141	0	0	0	29	0	0	0	0	0	34	0	10	0	0	0
18:15:15	0	0	2886	0	141	0	0	0	29	0	0	0	0	0	34	0	10	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100001

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100001

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	2	2	61	61	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0
7:30:00	4	2	139	78	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
7:45:00	6	2	217	78	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	0
8:00:00	9	3	306	89	0	0	0	0	4	2	0	0	1	0	1	1	0	0	0	0
8:15:00	12	3	386	80	0	0	0	0	7	3	0	0	1	0	2	1	0	0	0	0
8:30:00	16	4	482	96	0	0	0	0	9	2	0	0	1	0	5	3	0	0	0	0
8:45:00	20	4	604	122	0	0	0	0	9	0	0	0	1	0	8	3	0	0	0	0
9:00:00	27	7	728	124	0	0	0	0	11	2	0	0	1	0	12	4	0	0	0	0
9:15:00	28	1	852	124	0	0	0	0	14	3	0	0	1	0	13	1	0	0	0	0
9:30:00	30	2	970	118	0	0	0	0	14	0	0	0	1	0	14	1	0	0	0	0
9:45:00	36	6	1086	116	0	0	0	0	15	1	0	0	2	1	16	2	0	0	0	0
10:00:00	45	9	1197	111	0	0	0	0	19	4	0	0	3	1	17	1	0	0	0	0
10:15:00	45	0	1197	0	0	0	0	0	19	0	0	0	3	0	17	0	0	0	0	0
15:00:00	45	0	1197	0	0	0	0	0	19	0	0	0	3	0	17	0	0	0	0	0
15:15:00	53	8	1373	176	0	0	0	0	20	1	0	0	4	1	18	1	0	0	0	0
15:30:00	62	9	1529	156	0	0	0	0	20	0	0	0	8	4	20	2	0	0	0	0
15:45:00	68	6	1670	141	0	0	0	0	20	0	0	0	8	0	23	3	0	0	0	0
16:00:00	78	10	1807	137	0	0	0	0	21	1	0	0	8	0	26	3	0	0	0	0
16:15:00	88	10	1980	173	0	0	0	0	21	0	0	0	8	0	26	0	0	0	0	0
16:30:00	95	7	2114	134	0	0	0	0	21	0	0	0	8	0	27	1	0	0	0	0
16:45:00	99	4	2250	136	0	0	0	0	22	1	0	0	8	0	28	1	0	0	0	0
17:00:00	105	6	2366	116	0	0	0	0	22	0	0	0	8	0	28	0	0	0	0	0
17:15:00	115	10	2529	163	0	0	0	0	22	0	0	0	8	0	28	0	0	0	0	0
17:30:00	118	3	2655	126	0	0	0	0	22	0	0	0	8	0	29	1	0	0	0	0
17:45:00	122	4	2757	102	0	0	0	0	23	1	0	0	8	0	30	1	0	0	0	0
18:00:00	125	3	2829	72	0	0	0	0	23	0	0	0	8	0	30	0	0	0	0	0
18:15:00	125	0	2829	0	0	0	0	0	23	0	0	0	8	0	30	0	0	0	0	0
18:15:15	125	0	2829	0	0	0	0	0	23	0	0	0	8	0	30	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100001

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	4	4	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7:30:00	9	5	0	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	3	2
7:45:00	16	7	0	0	12	5	0	0	0	0	0	0	0	0	0	0	0	0	4	1
8:00:00	20	4	0	0	16	4	0	0	0	0	1	1	0	0	0	0	0	0	5	1
8:15:00	24	4	0	0	20	4	0	0	0	0	1	0	0	0	0	0	0	0	5	0
8:30:00	30	6	0	0	28	8	0	0	0	0	1	0	0	0	0	0	0	0	6	1
8:45:00	40	10	0	0	33	5	0	0	0	0	1	0	0	0	0	0	1	1	7	1
9:00:00	50	10	0	0	46	13	1	1	0	0	1	0	0	0	0	0	1	0	10	3
9:15:00	54	4	0	0	54	8	1	0	0	0	1	0	0	0	0	0	1	0	10	0
9:30:00	59	5	0	0	58	4	1	0	0	0	2	1	0	0	0	0	1	0	12	2
9:45:00	64	5	0	0	64	6	1	0	0	0	2	0	0	0	0	0	1	0	13	1
10:00:00	68	4	0	0	72	8	1	0	0	0	2	0	0	0	0	0	1	0	14	1
10:15:00	68	0	0	0	72	0	1	0	0	0	2	0	0	0	0	0	1	0	14	0
15:00:00	68	0	0	0	72	0	1	0	0	0	2	0	0	0	0	0	1	0	14	0
15:15:00	72	4	0	0	75	3	1	0	0	0	2	0	0	0	0	0	1	0	18	4
15:30:00	78	6	0	0	80	5	1	0	0	0	2	0	0	0	0	0	2	1	19	1
15:45:00	86	8	0	0	89	9	1	0	0	0	2	0	0	0	0	0	2	0	20	1
16:00:00	89	3	0	0	99	10	1	0	0	0	2	0	0	0	0	0	2	0	21	1
16:15:00	95	6	0	0	107	8	1	0	0	0	2	0	0	0	0	0	3	1	22	1
16:30:00	101	6	0	0	114	7	1	0	0	0	3	1	0	0	0	0	3	0	24	2
16:45:00	105	4	0	0	117	3	1	0	0	0	3	0	0	0	0	0	3	0	25	1
17:00:00	109	4	0	0	126	9	1	0	0	0	3	0	0	0	0	0	3	0	26	1
17:15:00	113	4	0	0	131	5	1	0	0	0	3	0	0	0	0	0	3	0	28	2
17:30:00	117	4	0	0	133	2	1	0	0	0	3	0	0	0	0	0	3	0	28	0
17:45:00	121	4	0	0	135	2	1	0	0	0	3	0	0	0	0	0	3	0	30	2
18:00:00	124	3	0	0	144	9	1	0	0	0	3	0	0	0	0	0	3	0	32	2
18:15:00	124	0	0	0	144	0	1	0	0	0	3	0	0	0	0	0	3	0	32	0
18:15:15	124	0	0	0	144	0	1	0	0	0	3	0	0	0	0	0	3	0	32	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period		One Hour Peak	
From:	7:00:00	**From:**	8:30:00
To:	10:00:00	**To:**	9:30:00

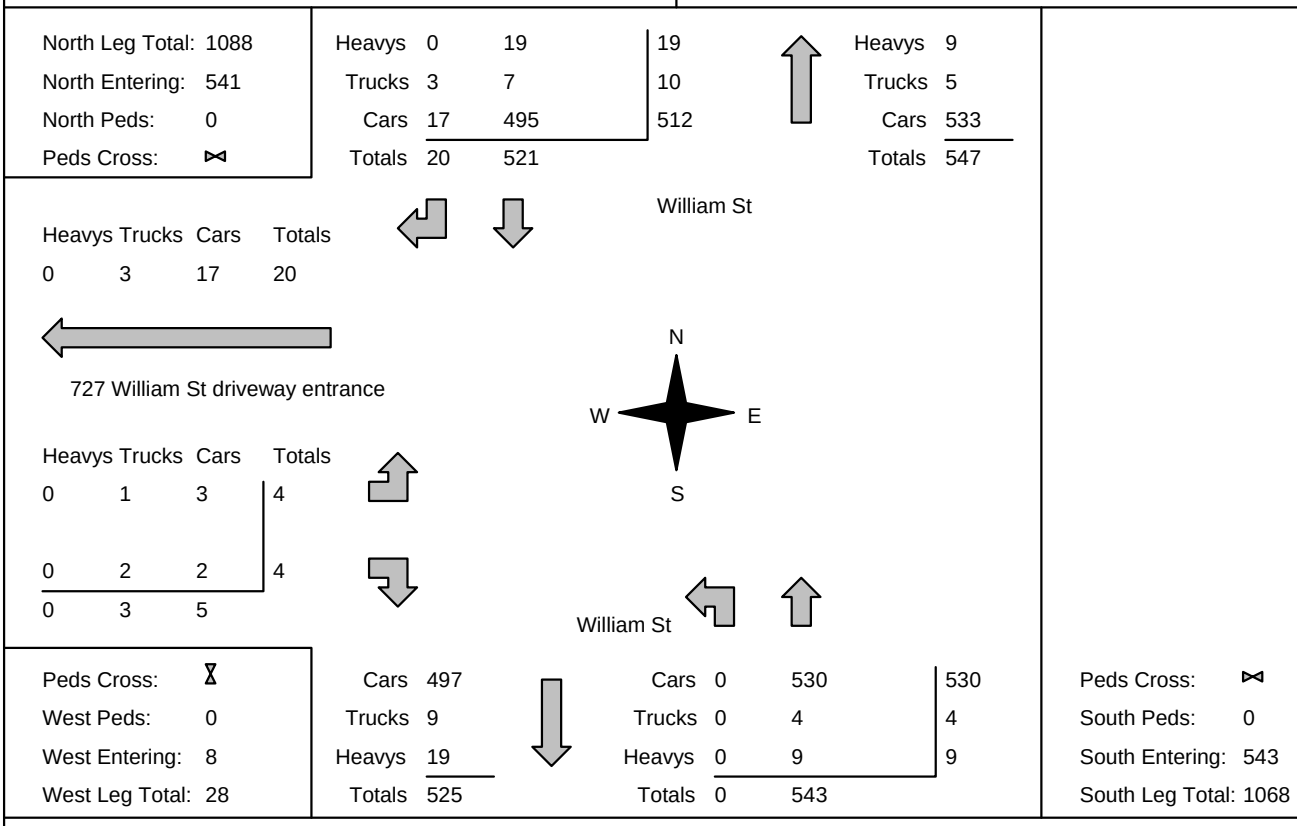
Municipality: Cobourg
Site #: 1920100002
Intersection: William St & 727 William St drivewa
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: William St runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:00:00
To: 16:00:00

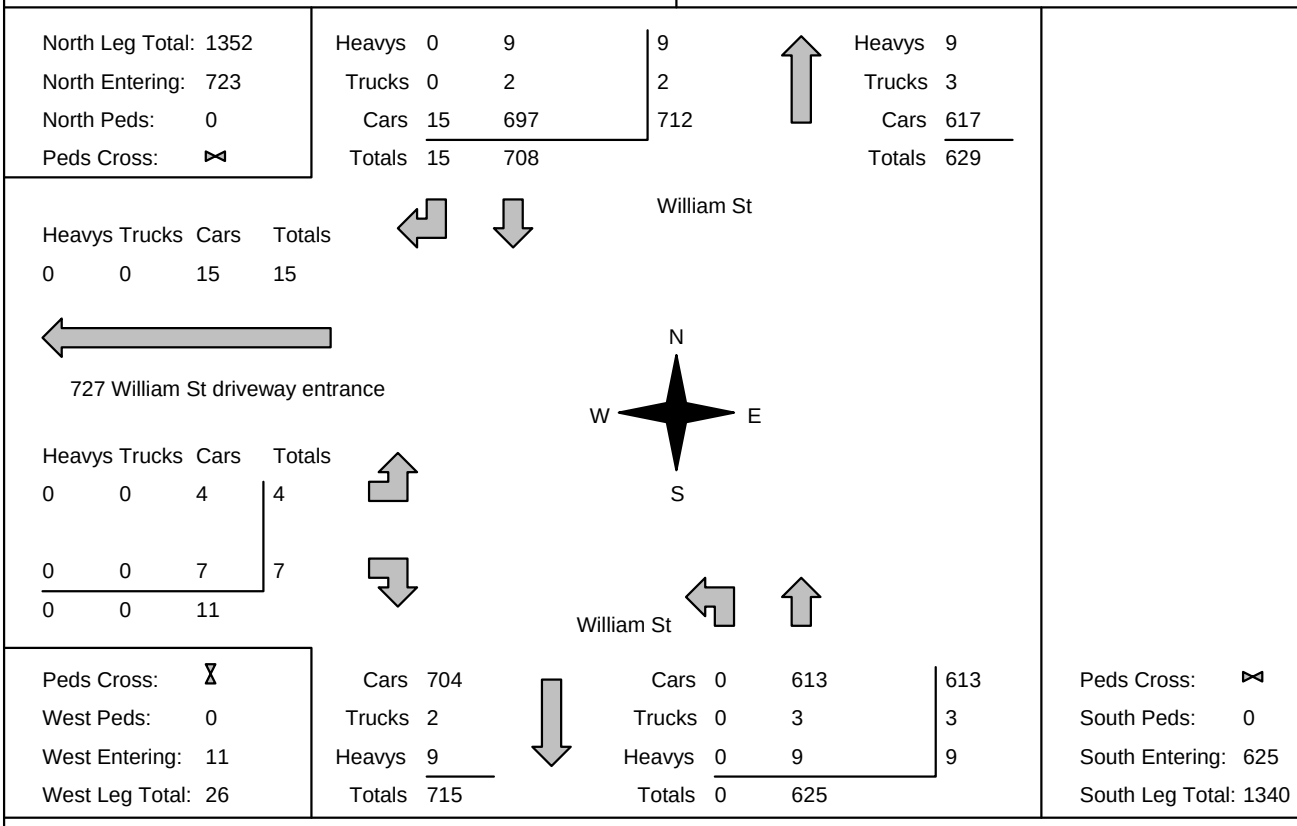
Municipality: Cobourg
Site #: 1920100002
Intersection: William St & 727 William St drivewa
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: William St runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

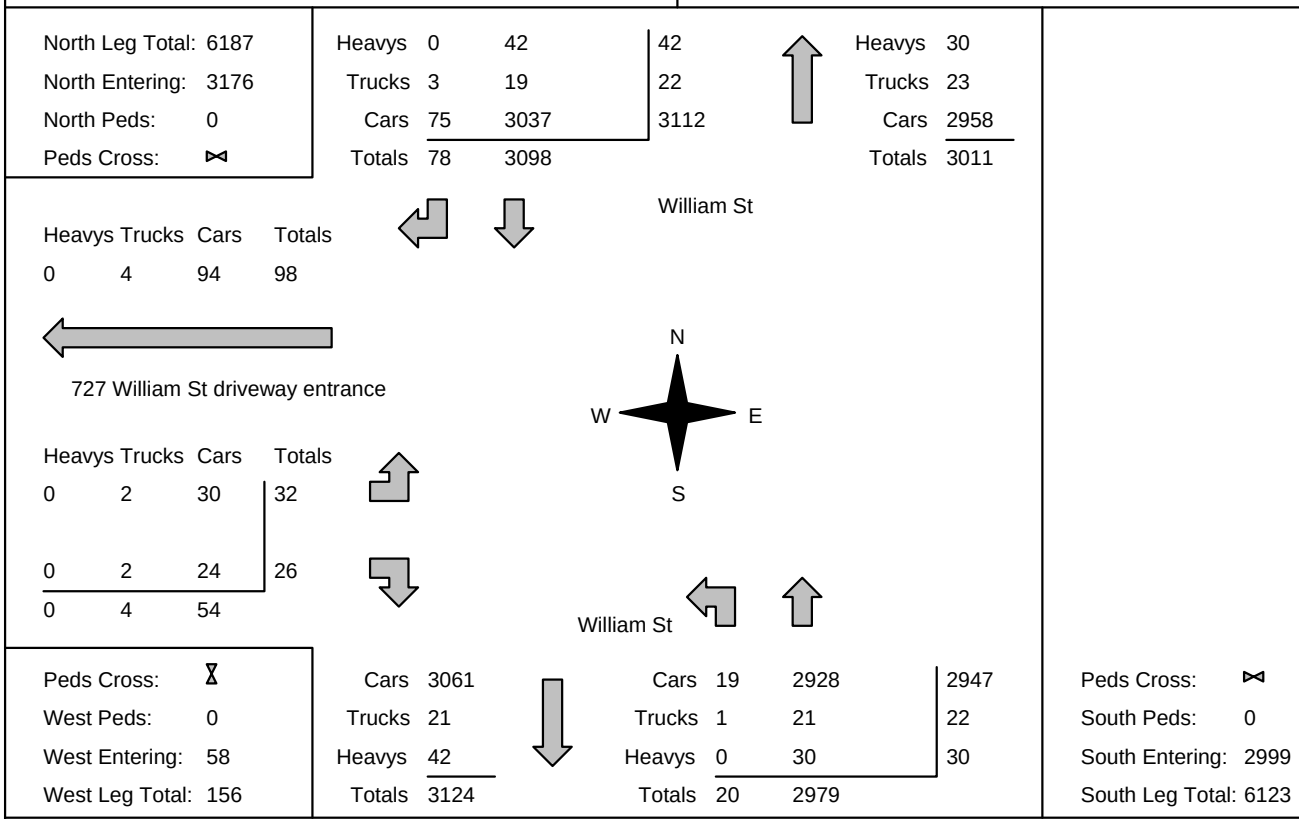
Municipality: Cobourg
Site #: 1920100002
Intersection: William St & 727 William St drivewa
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: William St runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: William St & 727 William St drivew | **Count Date:** 4-Dec-19 | **Municipality:** Cobourg

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*0*	*322*	*15*	*337*	*0*
9:00:00	*0*	*489*	*16*	*505*	*0*
10:00:00	*0*	*504*	*18*	*522*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*708*	*15*	*723*	*0*
17:00:00	*0*	*591*	*8*	*599*	*0*
18:00:00	*0*	*484*	*6*	*490*	*0*
Totals:	0	3098	78	3176	0

North/South Total Approaches: 6175

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*9*	*322*	*0*	*331*	*0*
9:00:00	*0*	*479*	*0*	*479*	*0*
10:00:00	*5*	*500*	*0*	*505*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*625*	*0*	*625*	*0*
17:00:00	*4*	*571*	*0*	*575*	*0*
18:00:00	*2*	*482*	*0*	*484*	*0*
S Totals:	20	2979	0	2999	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*0*	*0*	*0*	*0*	*0*
9:00:00	*0*	*0*	*0*	*0*	*0*
10:00:00	*0*	*0*	*0*	*0*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*0*	*0*	*0*	*0*
17:00:00	*0*	*0*	*0*	*0*	*0*
18:00:00	*0*	*0*	*0*	*0*	*0*
Totals:	0	0	0	0	0

East/West Total Approaches: 58

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*2*	*0*	*1*	*3*	*0*
9:00:00	*5*	*0*	*0*	*5*	*0*
10:00:00	*3*	*0*	*7*	*10*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*4*	*0*	*7*	*11*	*0*
17:00:00	*11*	*0*	*7*	*18*	*0*
18:00:00	*7*	*0*	*4*	*11*	*0*
W Totals:	32	0	26	58	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	*7:00*	*8:00*	*9:00*	*10:00*	*15:00*	*16:00*	*17:00*	*18:00*
Crossing Values:	*0*	*2*	*5*	*3*	*0*	*4*	*11*	*7*

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100002

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	48	48	3	3	0	0	2	2	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	107	59	7	4	0	0	3	1	0	0	0	0	2	2	0	0	0	0
7:45:00	0	0	182	75	10	3	0	0	3	0	0	0	0	0	5	3	0	0	0	0
8:00:00	0	0	312	130	15	5	0	0	3	0	0	0	0	0	7	2	0	0	0	0
8:15:00	0	0	412	100	20	5	0	0	4	1	0	0	0	0	8	1	0	0	0	0
8:30:00	0	0	518	106	21	1	0	0	5	1	0	0	0	0	10	2	0	0	0	0
8:45:00	0	0	642	124	27	6	0	0	6	1	1	1	0	0	18	8	0	0	0	0
9:00:00	0	0	783	141	30	3	0	0	8	2	1	0	0	0	20	2	0	0	0	0
9:15:00	0	0	898	115	36	6	0	0	10	2	3	2	0	0	22	2	0	0	0	0
9:30:00	0	0	1013	115	38	2	0	0	12	2	3	0	0	0	29	7	0	0	0	0
9:45:00	0	0	1120	107	40	2	0	0	12	0	3	0	0	0	29	0	0	0	0	0
10:00:00	0	0	1270	150	46	6	0	0	15	3	3	0	0	0	30	1	0	0	0	0
10:15:00	0	0	1270	0	46	0	0	0	15	0	3	0	0	0	30	0	0	0	0	0
15:00:00	0	0	1270	0	46	0	0	0	15	0	3	0	0	0	30	0	0	0	0	0
15:15:00	0	0	1450	180	50	4	0	0	17	2	3	0	0	0	33	3	0	0	0	0
15:30:00	0	0	1631	181	52	2	0	0	17	0	3	0	0	0	35	2	0	0	0	0
15:45:00	0	0	1799	168	53	1	0	0	17	0	3	0	0	0	37	2	0	0	0	0
16:00:00	0	0	1967	168	61	8	0	0	17	0	3	0	0	0	39	2	0	0	0	0
16:15:00	0	0	2109	142	62	1	0	0	17	0	3	0	0	0	40	1	0	0	0	0
16:30:00	0	0	2270	161	65	3	0	0	19	2	3	0	0	0	40	0	0	0	0	0
16:45:00	0	0	2407	137	67	2	0	0	19	0	3	0	0	0	40	0	0	0	0	0
17:00:00	0	0	2554	147	69	2	0	0	19	0	3	0	0	0	41	1	0	0	0	0
17:15:00	0	0	2711	157	70	1	0	0	19	0	3	0	0	0	41	0	0	0	0	0
17:30:00	0	0	2820	109	72	2	0	0	19	0	3	0	0	0	41	0	0	0	0	0
17:45:00	0	0	2925	105	73	1	0	0	19	0	3	0	0	0	42	1	0	0	0	0
18:00:00	0	0	3037	112	75	2	0	0	19	0	3	0	0	0	42	0	0	0	0	0
18:15:00	0	0	3037	0	75	0	0	0	19	0	3	0	0	0	42	0	0	0	0	0
18:15:15	0	0	3037	0	75	0	0	0	19	0	3	0	0	0	42	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100002

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100002

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	64	64	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
7:30:00	4	4	144	80	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
7:45:00	7	3	227	83	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0
8:00:00	8	1	319	92	0	0	1	0	2	1	0	0	0	0	1	1	0	0	0	0
8:15:00	8	0	408	89	0	0	1	0	4	2	0	0	0	0	2	1	0	0	0	0
8:30:00	8	0	504	96	0	0	1	0	6	2	0	0	0	0	5	3	0	0	0	0
8:45:00	8	0	642	138	0	0	1	0	6	0	0	0	0	0	8	3	0	0	0	0
9:00:00	8	0	781	139	0	0	1	0	8	2	0	0	0	0	12	4	0	0	0	0
9:15:00	8	0	904	123	0	0	1	0	10	2	0	0	0	0	13	1	0	0	0	0
9:30:00	8	0	1034	130	0	0	1	0	10	0	0	0	0	0	14	1	0	0	0	0
9:45:00	8	0	1152	118	0	0	1	0	11	1	0	0	0	0	17	3	0	0	0	0
10:00:00	13	5	1269	117	0	0	1	0	14	3	0	0	0	0	18	1	0	0	0	0
10:15:00	13	0	1269	0	0	0	1	0	14	0	0	0	0	0	18	0	0	0	0	0
15:00:00	13	0	1269	0	0	0	1	0	14	0	0	0	0	0	18	0	0	0	0	0
15:15:00	13	0	1446	177	0	0	1	0	15	1	0	0	0	0	19	1	0	0	0	0
15:30:00	13	0	1605	159	0	0	1	0	15	0	0	0	0	0	21	2	0	0	0	0
15:45:00	13	0	1748	143	0	0	1	0	15	0	0	0	0	0	24	3	0	0	0	0
16:00:00	13	0	1882	134	0	0	1	0	17	2	0	0	0	0	27	3	0	0	0	0
16:15:00	13	0	2055	173	0	0	1	0	17	0	0	0	0	0	27	0	0	0	0	0
16:30:00	16	3	2193	138	0	0	1	0	17	0	0	0	0	0	28	1	0	0	0	0
16:45:00	16	0	2335	142	0	0	1	0	18	1	0	0	0	0	28	0	0	0	0	0
17:00:00	17	1	2451	116	0	0	1	0	18	0	0	0	0	0	28	0	0	0	0	0
17:15:00	18	1	2617	166	0	0	1	0	18	0	0	0	0	0	28	0	0	0	0	0
17:30:00	18	0	2746	129	0	0	1	0	19	1	0	0	0	0	30	2	0	0	0	0
17:45:00	19	1	2851	105	0	0	1	0	21	2	0	0	0	0	30	0	0	0	0	0
18:00:00	19	0	2928	77	0	0	1	0	21	0	0	0	0	0	30	0	0	0	0	0
18:15:00	19	0	2928	0	0	0	1	0	21	0	0	0	0	0	30	0	0	0	0	0
18:15:15	19	0	2928	0	0	0	1	0	21	0	0	0	0	0	30	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100002

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	3	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	3	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	5	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	5	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	5	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	6	1	0	0	3	2	2	0	0	0	2	2	0	0	0	0	0	0	0	0
9:45:00	6	0	0	0	4	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0
10:00:00	8	2	0	0	6	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0
10:15:00	8	0	0	0	6	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
15:00:00	8	0	0	0	6	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
15:15:00	9	1	0	0	9	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0
15:30:00	9	0	0	0	12	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0
15:45:00	9	0	0	0	12	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
16:00:00	12	3	0	0	13	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0
16:15:00	15	3	0	0	14	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0
16:30:00	17	2	0	0	17	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0
16:45:00	21	4	0	0	19	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0
17:00:00	23	2	0	0	20	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0
17:15:00	27	4	0	0	21	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0
17:30:00	28	1	0	0	23	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0
17:45:00	30	2	0	0	23	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
18:00:00	30	0	0	0	24	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0
18:15:00	30	0	0	0	24	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
18:15:15	30	0	0	0	24	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 8:15:00
To: 9:15:00

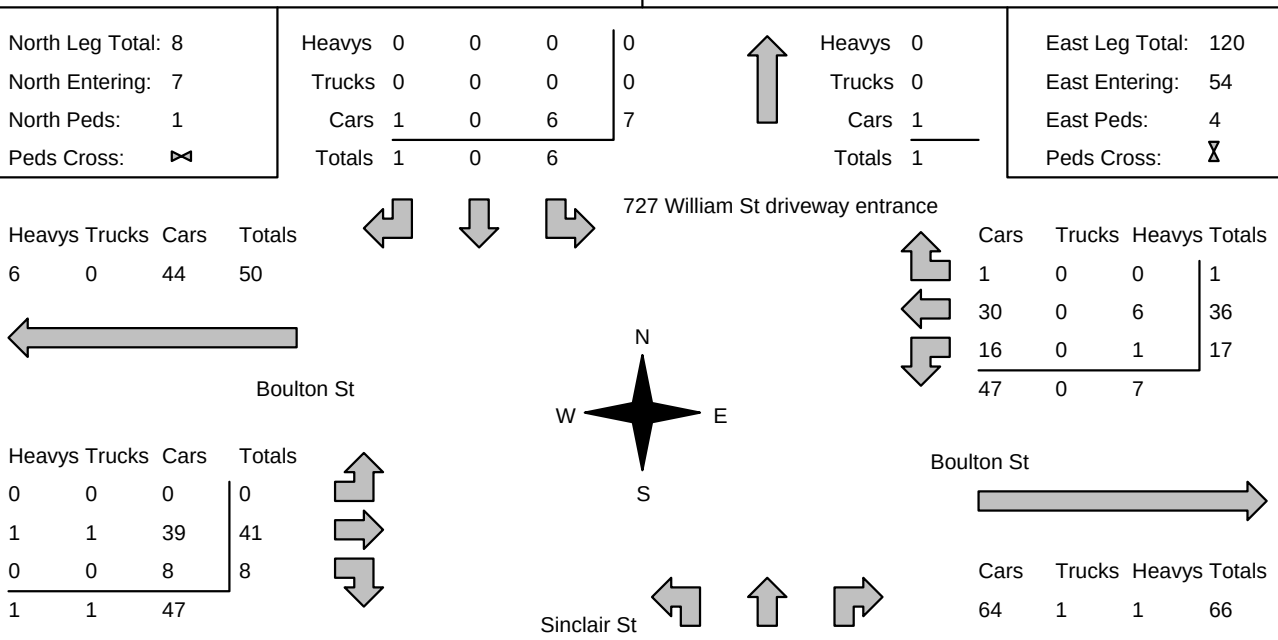
Municipality: Cobourg
Site #: 1920100003
Intersection: Boulton St & 727 William St drivew
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Boulton St runs W/E



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:00:00
To: 16:00:00

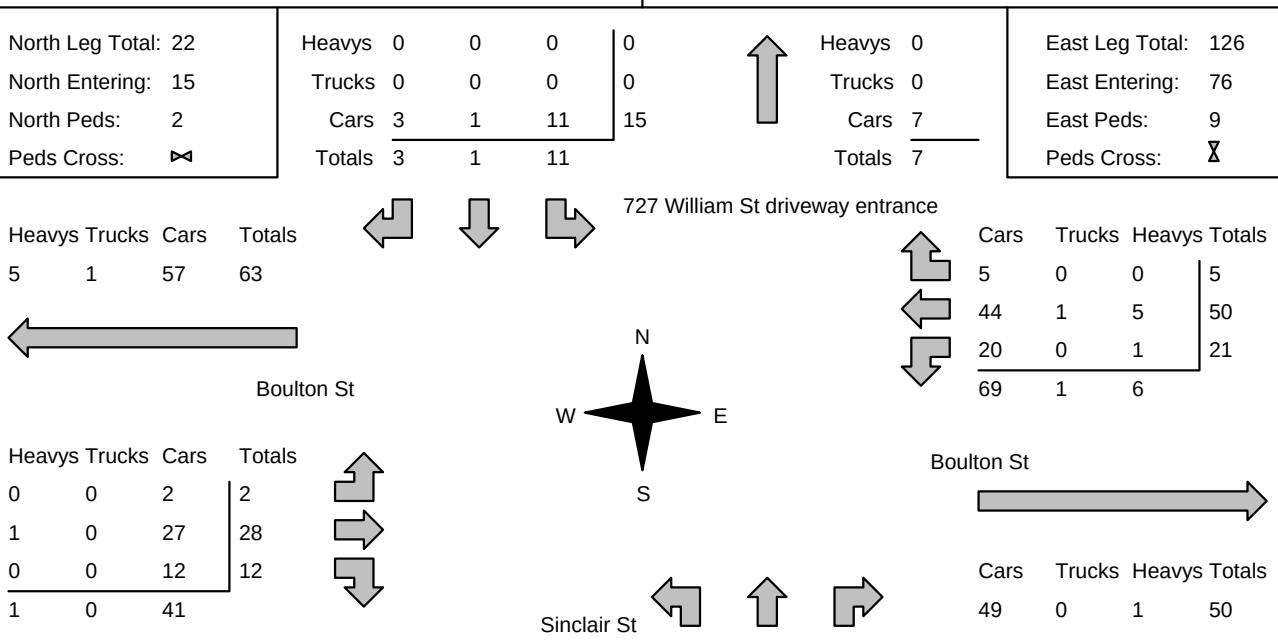
Municipality: Cobourg
Site #: 1920100003
Intersection: Boulton St & 727 William St drivew
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Boulton St runs W/E



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

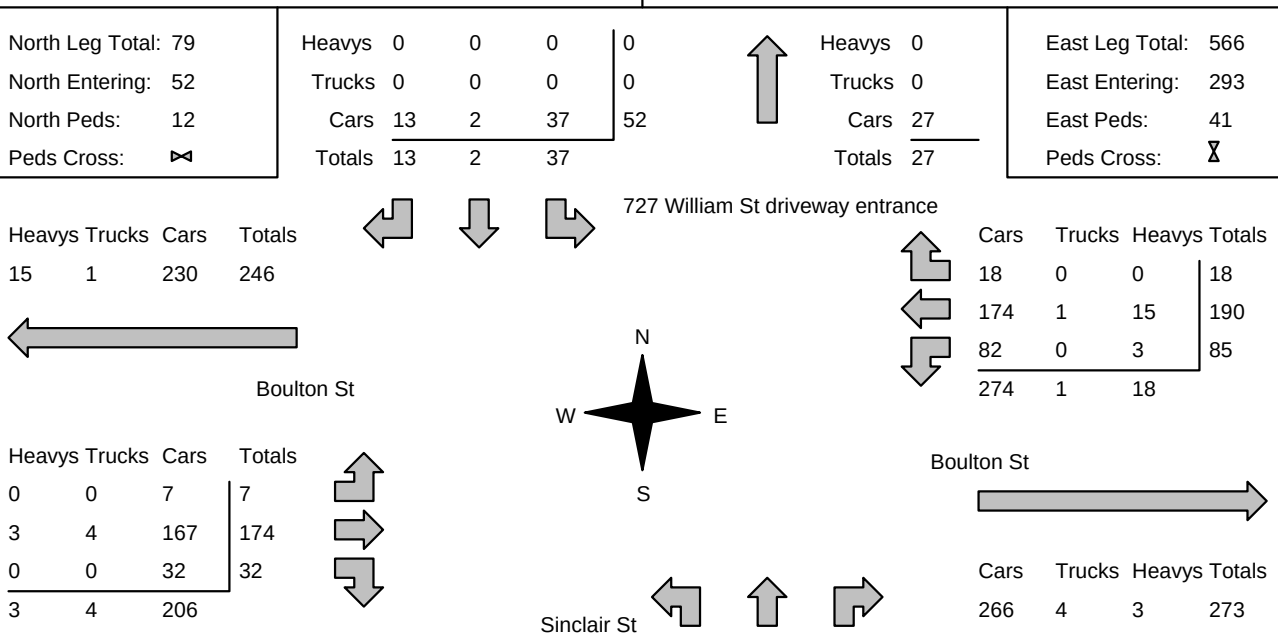
Municipality: Cobourg
Site #: 1920100003
Intersection: Boulton St & 727 William St drivew
TFR File #: 1
Count date: 4-Dec-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Boulton St runs W/E



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Boulton St & 727 William St drivew | **Count Date:** 4-Dec-19 | **Municipality:** Cobourg

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*2*	*0*	*1*	*3*	*0*
9:00:00	*4*	*0*	*0*	*4*	*1*
10:00:00	*6*	*0*	*2*	*8*	*1*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*11*	*1*	*3*	*15*	*2*
17:00:00	*8*	*0*	*5*	*13*	*5*
18:00:00	*6*	*1*	*2*	*9*	*3*
Totals:	37	2	13	52	12

North/South Total Approaches: 159

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*4*	*0*	*9*	*13*	*0*
9:00:00	*14*	*0*	*21*	*35*	*0*
10:00:00	*3*	*0*	*7*	*10*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*10*	*0*	*11*	*21*	*1*
17:00:00	*4*	*1*	*8*	*13*	*1*
18:00:00	*8*	*1*	*6*	*15*	*2*
S Totals:	43	2	62	107	4

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*4*	*13*	*1*	*18*	*5*
9:00:00	*12*	*34*	*1*	*47*	*7*
10:00:00	*14*	*29*	*7*	*50*	*6*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*21*	*50*	*5*	*76*	*9*
17:00:00	*16*	*39*	*2*	*57*	*8*
18:00:00	*18*	*25*	*2*	*45*	*6*
Totals:	85	190	18	293	41

East/West Total Approaches: 506

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*1*	*26*	*2*	*29*	*0*
9:00:00	*1*	*37*	*7*	*45*	*0*
10:00:00	*1*	*32*	*2*	*35*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*2*	*28*	*12*	*42*	*0*
17:00:00	*2*	*31*	*1*	*34*	*0*
18:00:00	*0*	*20*	*8*	*28*	*0*
W Totals:	7	174	32	213	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	*7:00*	*8:00*	*9:00*	*10:00*	*15:00*	*16:00*	*17:00*	*18:00*
Crossing Values:	*0*	*11*	*25*	*15*	*0*	*31*	*21*	*21*

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100003

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	4	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	6	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
9:15:00	8	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
9:30:00	10	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
9:45:00	10	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10:00:00	12	2	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1
10:15:00	12	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
15:00:00	12	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
15:15:00	15	3	1	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
15:30:00	15	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
15:45:00	19	4	1	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0
16:00:00	23	4	1	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	4	1
16:15:00	24	1	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	7	3
16:30:00	26	2	1	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	8	1
16:45:00	30	4	1	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	8	0
17:00:00	31	1	1	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	9	1
17:15:00	34	3	1	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	10	1
17:30:00	34	0	1	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0	11	1
17:45:00	35	1	2	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1
18:00:00	37	2	2	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
18:15:00	37	0	2	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
18:15:15	37	0	2	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100003

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	2	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
7:30:00	1	0	5	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1
7:45:00	2	1	9	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	2
8:00:00	4	2	12	3	1	1	0	0	0	0	0	0	0	0	1	0	0	0	5	1
8:15:00	7	3	17	5	1	0	0	0	0	0	0	0	0	0	1	0	0	0	8	3
8:30:00	9	2	24	7	1	0	0	0	0	0	0	0	0	0	3	2	0	0	9	1
8:45:00	12	3	33	9	1	0	0	0	0	0	0	0	0	0	6	3	0	0	10	1
9:00:00	16	4	41	8	2	1	0	0	0	0	0	0	0	0	6	0	0	0	12	2
9:15:00	23	7	47	6	2	0	0	0	0	0	0	0	1	1	7	1	0	0	12	0
9:30:00	26	3	53	6	3	1	0	0	0	0	0	0	1	0	8	1	0	0	14	2
9:45:00	29	3	60	7	5	2	0	0	0	0	0	0	1	0	9	1	0	0	16	2
10:00:00	29	0	66	6	9	4	0	0	0	0	0	0	1	0	10	1	0	0	18	2
10:15:00	29	0	66	0	9	0	0	0	0	0	0	0	1	0	10	0	0	0	18	0
15:00:00	29	0	66	0	9	0	0	0	0	0	0	0	1	0	10	0	0	0	18	0
15:15:00	36	7	75	9	11	2	0	0	1	1	0	0	2	1	10	0	0	0	22	4
15:30:00	41	5	90	15	13	2	0	0	1	0	0	0	2	0	15	5	0	0	23	1
15:45:00	44	3	98	8	14	1	0	0	1	0	0	0	2	0	15	0	0	0	24	1
16:00:00	49	5	110	12	14	0	0	0	1	0	0	0	2	0	15	0	0	0	27	3
16:15:00	51	2	122	12	14	0	0	0	1	0	0	0	3	1	15	0	0	0	28	1
16:30:00	56	5	134	12	15	1	0	0	1	0	0	0	3	0	15	0	0	0	30	2
16:45:00	60	4	139	5	16	1	0	0	1	0	0	0	3	0	15	0	0	0	31	1
17:00:00	64	4	149	10	16	0	0	0	1	0	0	0	3	0	15	0	0	0	35	4
17:15:00	70	6	161	12	16	0	0	0	1	0	0	0	3	0	15	0	0	0	37	2
17:30:00	74	4	165	4	17	1	0	0	1	0	0	0	3	0	15	0	0	0	39	2
17:45:00	80	6	171	6	17	0	0	0	1	0	0	0	3	0	15	0	0	0	41	2
18:00:00	82	2	174	3	18	1	0	0	1	0	0	0	3	0	15	0	0	0	41	0
18:15:00	82	0	174	0	18	0	0	0	1	0	0	0	3	0	15	0	0	0	41	0
18:15:15	82	0	174	0	18	0	0	0	1	0	0	0	3	0	15	0	0	0	41	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100003

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	1	1	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	2	1	0	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	4	2	0	0	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	6	2	0	0	13	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	7	1	0	0	16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	11	4	0	0	20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	18	7	0	0	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	19	1	0	0	32	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	20	1	0	0	34	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00	21	1	0	0	36	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00	21	0	0	0	37	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00	21	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00:00	21	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15:00	22	1	0	0	39	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1
15:30:00	28	6	0	0	44	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0
15:45:00	30	2	0	0	46	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:00:00	31	1	0	0	48	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:15:00	31	0	0	0	52	4	0	0	0	0	0	0	0	0	0	0	0	0	2	1
16:30:00	31	0	0	0	53	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
16:45:00	33	2	1	1	54	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:00:00	35	2	1	0	56	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:15:00	36	1	1	0	56	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:30:00	39	3	2	1	58	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:45:00	42	3	2	0	60	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
18:00:00	43	1	2	0	62	2	0	0	0	0	0	0	0	0	0	0	0	0	4	2
18:15:00	43	0	2	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
18:15:15	43	0	2	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 4-Dec-19 Site #: 1920100003

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	20	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	1	1	25	5	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0
8:15:00	2	1	29	4	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
8:30:00	2	0	38	9	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
8:45:00	2	0	48	10	4	2	0	0	1	0	0	0	0	0	1	1	0	0	0	0
9:00:00	2	0	60	12	9	5	0	0	2	1	0	0	0	0	1	0	0	0	0	0
9:15:00	2	0	68	8	10	1	0	0	2	0	0	0	0	0	1	0	0	0	0	0
9:30:00	2	0	74	6	10	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0
9:45:00	2	0	82	8	10	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0
10:00:00	3	1	91	9	11	1	0	0	3	0	0	0	0	0	1	0	0	0	0	0
10:15:00	3	0	91	0	11	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0
15:00:00	3	0	91	0	11	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0
15:15:00	4	1	93	2	16	5	0	0	3	0	0	0	0	0	1	0	0	0	0	0
15:30:00	4	0	101	8	17	1	0	0	3	0	0	0	0	0	2	1	0	0	0	0
15:45:00	5	1	111	10	22	5	0	0	3	0	0	0	0	0	2	0	0	0	0	0
16:00:00	5	0	118	7	23	1	0	0	3	0	0	0	0	0	2	0	0	0	0	0
16:15:00	7	2	125	7	23	0	0	0	3	0	0	0	0	0	3	1	0	0	0	0
16:30:00	7	0	135	10	24	1	0	0	4	1	0	0	0	0	3	0	0	0	0	0
16:45:00	7	0	137	2	24	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0
17:00:00	7	0	147	10	24	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0
17:15:00	7	0	153	6	26	2	0	0	4	0	0	0	0	0	3	0	0	0	0	0
17:30:00	7	0	157	4	28	2	0	0	4	0	0	0	0	0	3	0	0	0	0	0
17:45:00	7	0	160	3	30	2	0	0	4	0	0	0	0	0	3	0	0	0	0	0
18:00:00	7	0	167	7	32	2	0	0	4	0	0	0	0	0	3	0	0	0	0	0
18:15:00	7	0	167	0	32	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0
18:15:15	7	0	167	0	32	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0

APPENDIX B

Operational Analyses

LEVEL OF SERVICE

CAPACITY ANALYSIS AT UNSIGNALIZED INTERSECTIONS
Highway Capacity Manual Methodology

The level of service (LOS) for a Two-Way Stop-Controlled (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined on the basis of control delay for each minor-street movement (or shared movement) as well as major-street left turns by using criteria given in the following Table.

The level-of-service (LOS) criteria for All-Way Stop-Controlled (AWSC) intersections are the same as in the following Table. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

The above methods of analysis are taken from Chapters 19 and 20 of the Highway Capacity Manual 2010 respectively, by the Transportation Research Board, December 2010.

Level of Service by Volume-to-Capacity Ratio [1,2]		Control Delay 'd' (s/vehicle)
v/c < or = 1	v/c > 1	
A	F	$0 < d \leq 10$
B	F	$10 < d \leq 15$
C	F	$15 < d \leq 25$
D	F	$25 < d \leq 35$
E	F	$35 < d \leq 50$
F	F	$d > 50$

[1] For TWSC intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street, LOS is not calculated for major-street approaches or for the intersection as a whole.
[2] For AWSC intersections, for approaches and intersectionwide assessment, LOS is defined solely by control delay.

LOS F is assigned if the volume-to-capacity ratio for a movement/lane exceeds 1.0, regardless of the control delay.

280 Pretty River Parkway
Collingwood, Ontario L9Y 4J5
Tel: (705) 445-3451 Fax: (705) 445-0968

LEVEL OF SERVICE

Ainley GROUP CONSULTING ENGINEERS PLANNERS

CAPACITY ANALYSIS AT SIGNALIZED INTERSECTIONS
Highway Capacity Manual Methodology

The capacity of signalized intersections has been determined in terms of delay taken from Chapter 18 of the Highway Capacity Manual 2010, by the Transportation Research Board, December 2010.

To assist in clarifying the arithmetic analysis associated with traffic engineering, it is often useful to refer to "Level of Service". Control delay and volume-to-capacity ratio are used to characterize Level of Service (LOS) for a lane group. For approach-based and intersectionwide assessment, LOS for automobile mode at a signalized intersection is defined solely by control delay. The following table describes in detail the characteristics of each level:

Level of Service	Features	Control Delay 'd' (s/veh)
A	Describes operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favourable or the cycle length is very short. If it is due to favourable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	**$d \leq 10$**
B	Describes operations with control delay between 10 and 20 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favourable or cycle length is short. More vehicles stop than with LOS A.	**$10 < d \leq 20$**
C	Describes operations with control delay between 20 and 35 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favourable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	**$20 < d \leq 35$**
D	Describes operations with control delay between 35 and 55 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop, and individual cycle failures become noticeable.	**$35 < d \leq 55$**
E	Describes operations with control delay between 55 and 80 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavourable, and the cycle length is long. Individual cycle failures are frequent.	**$55 < d \leq 80$**
F	**LOS F** describes operations with control delay exceeding 80 seconds/vehicle or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	**$d > 80$**

A lane group can incur a delay less than 80s/veh when the v/c exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favourable, or both. As a result, both the delay and v/c are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective.

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2019 Existing Traffic Volumes

Intersection	
Int Delay, s/veh	0.9

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	599	46	17	617	37	39
Future Vol, veh/h	599	46	17	617	37	39
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	22	0	1	3	6
Mvmt Flow	651	50	18	671	40	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	707	0	1054	357
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	372	-
Critical Hdwy	-	-	4.1	-	6.86	7.02
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.2	-	3.53	3.36
Pot Cap-1 Maneuver	-	-	901	-	220	628
Stage 1	-	-	-	-	461	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	896	-	214	625
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	449	-
Stage 2	-	-	-	-	664	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.2	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	439	896	-	-	-
HCM Lane V/C Ratio	0.188	0.021	-	-	-
HCM Control Delay (s)	15.1	9.1	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.7	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	641	20	0	668	4	4
Future Vol, veh/h	641	20	0	668	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	15	2	5	25	50
Mvmt Flow	697	22	0	726	4	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	719	0	1071	360
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	-	-	4.14	-	7.3	7.9
Critical Hdwy Stg 1	-	-	-	-	6.3	-
Critical Hdwy Stg 2	-	-	-	-	6.3	-
Follow-up Hdwy	-	-	2.22	-	3.75	3.8
Pot Cap-1 Maneuver	-	-	878	-	182	517
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	878	-	182	517
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	611	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	376	878	-	-	-
HCM Lane V/C Ratio	0.023	-	-	-	-
HCM Control Delay (s)	14.8	0	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	1	16	0	23	0	50	10	21	44	1
Future Vol, veh/h	6	0	1	16	0	23	0	50	10	21	44	1
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	2	5	0	6	17	0
Mvmt Flow	7	0	1	17	0	25	0	54	11	23	48	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	172	161	50	155	156	64	50	0	0	65	0	0
Stage 1	96	96	-	60	60	-	-	-	-	-	-	-
Stage 2	76	65	-	95	96	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	796	735	1024	816	740	1006	1557	-	-	1512	-	-
Stage 1	916	819	-	957	849	-	-	-	-	-	-	-
Stage 2	938	845	-	917	819	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	763	723	1023	805	727	1002	1556	-	-	1512	-	-
Mov Cap-2 Maneuver	763	723	-	805	727	-	-	-	-	-	-	-
Stage 1	915	805	-	957	849	-	-	-	-	-	-	-
Stage 2	911	845	-	901	805	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	9.6	9.1	0	2.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1556	-	-	911	792	1512	-	-
HCM Lane V/C Ratio	-	-	-	0.047	0.01	0.015	-	-
HCM Control Delay (s)	0	-	-	9.1	9.6	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	831	46	47	764	26	34
Future Vol, veh/h	831	46	47	764	26	34
Conflicting Peds, #/hr	0	7	7	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	6	13	2	0	4
Mvmt Flow	903	50	51	830	28	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	960	0	1452	484
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	517	-
Critical Hdwy	-	-	4.36	-	6.8	6.98
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.33	-	3.5	3.34
Pot Cap-1 Maneuver	-	-	649	-	124	523
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	645	-	113	520
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	318	-
Stage 2	-	-	-	-	569	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.6	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	333	645	-	-	-
HCM Lane V/C Ratio	0.196	0.079	-	-	-
HCM Control Delay (s)	18.4	11.1	-	-	-
HCM Lane LOS	C	B	-	-	-
HCM 95th %tile Q(veh)	0.7	0.3	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	871	15	0	769	4	7
Future Vol, veh/h	871	15	0	769	4	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	947	16	0	836	4	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	963	0	1373	482
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	418	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	723	-	139	536
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	638	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	723	-	139	536
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	638	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	384	723	-	-	-
HCM Lane V/C Ratio	0.031	-	-	-	-
HCM Control Delay (s)	14.7	0	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	1	3	12	0	14	2	34	15	26	62	5
Future Vol, veh/h	11	1	3	12	0	14	2	34	15	26	62	5
Conflicting Peds, #/hr	9	0	0	0	0	9	2	0	1	1	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	5	12	0
Mvmt Flow	12	1	3	13	0	15	2	37	16	28	67	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	194	186	72	178	180	55	74	0	0	54	0	0
Stage 1	128	128	-	50	50	-	-	-	-	-	-	-
Stage 2	66	58	-	128	130	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	770	712	996	789	717	1018	1538	-	-	1532	-	-
Stage 1	881	794	-	968	857	-	-	-	-	-	-	-
Stage 2	950	851	-	881	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	739	696	994	772	701	1009	1535	-	-	1531	-	-
Mov Cap-2 Maneuver	739	696	-	772	701	-	-	-	-	-	-	-
Stage 1	878	777	-	966	855	-	-	-	-	-	-	-
Stage 2	927	849	-	860	775	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	9.7	9.2	0.3	2.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1535	-	-	884	776	1531	-	-
HCM Lane V/C Ratio	0.001	-	-	0.032	0.021	0.018	-	-
HCM Control Delay (s)	7.3	0	-	9.2	9.7	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

2020 Total Traffic Volumes

Intersection	
Int Delay, s/veh	1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	604	46	18	622	38	41
Future Vol, veh/h	604	46	18	622	38	41
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	22	0	1	3	6
Mvmt Flow	657	50	20	676	41	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	713	0	1066	360
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	-	-	4.1	-	6.86	7.02
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.2	-	3.53	3.36
Pot Cap-1 Maneuver	-	-	896	-	216	625
Stage 1	-	-	-	-	458	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	891	-	210	622
Mov Cap-2 Maneuver	-	-	-	-	331	-
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	660	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.3	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	437	891	-	-	-
HCM Lane V/C Ratio	0.196	0.022	-	-	-
HCM Control Delay (s)	15.2	9.1	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.7	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	646	29	0	673	6	6
Future Vol, veh/h	646	29	0	673	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	15	2	5	25	50
Mvmt Flow	702	32	0	732	7	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	734	0	1084	367
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	-	-	4.14	-	7.3	7.9
Critical Hdwy Stg 1	-	-	-	-	6.3	-
Critical Hdwy Stg 2	-	-	-	-	6.3	-
Follow-up Hdwy	-	-	2.22	-	3.75	3.8
Pot Cap-1 Maneuver	-	-	867	-	178	511
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	867	-	178	511
Mov Cap-2 Maneuver	-	-	-	-	291	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	609	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	371	867	-	-	-
HCM Lane V/C Ratio	0.035	-	-	-	-
HCM Control Delay (s)	15.1	0	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	9	1	0	74	65	1
Future Vol, veh/h	9	1	0	74	65	1
Conflicting Peds, #/hr	4	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	5	17	0
Mvmt Flow	10	1	0	80	71	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	157	73	73	0	-	0
Stage 1	73	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	839	995	1527	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	944	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	837	994	1526	-	-	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	943	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1526	-	850	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	16	24	51	10	21	45
Future Vol, veh/h	16	24	51	10	21	45
Conflicting Peds, #/hr	0	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	5	0	6	0
Mvmt Flow	17	26	55	11	23	49

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	156	65	0	0	66	0
Stage 1	61	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	840	1005	-	-	1511	-
Stage 1	967	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	827	1001	-	-	1511	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	9.1	0	2.4
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	923	1511	-
HCM Lane V/C Ratio	-	-	0.047	0.015	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	838	48	49	770	28	37
Future Vol, veh/h	838	48	49	770	28	37
Conflicting Peds, #/hr	0	7	7	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	6	13	2	0	4
Mvmt Flow	911	52	53	837	30	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	970	0	1469	489
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	-	-	4.36	-	6.8	6.98
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.33	-	3.5	3.34
Pot Cap-1 Maneuver	-	-	643	-	121	520
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	564	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	639	-	110	517
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	564	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.7	18.9
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	330	639	-	-	-
HCM Lane V/C Ratio	0.214	0.083	-	-	-
HCM Control Delay (s)	18.9	11.1	-	-	-
HCM Lane LOS	C	B	-	-	-
HCM 95th %tile Q(veh)	0.8	0.3	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	878	22	0	775	7	9
Future Vol, veh/h	878	22	0	775	7	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	954	24	0	842	8	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	978	0	1387	489
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	714	-	136	530
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	636	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	714	-	136	530
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	636	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	359	714	-	-	-
HCM Lane V/C Ratio	0.048	-	-	-	-
HCM Control Delay (s)	15.5	0	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	16	5	3	46	85	7
Future Vol, veh/h	16	5	3	46	85	7
Conflicting Peds, #/hr	9	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	4	12	0
Mvmt Flow	17	5	3	50	92	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	163	98	102	0	-	0
Stage 1	98	-	-	-	-	-
Stage 2	65	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	832	963	1503	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	827	961	1500	-	-	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.3	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1500	-	855	-	-
HCM Lane V/C Ratio	0.002	-	0.027	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	12	14	36	15	26	63
Future Vol, veh/h	12	14	36	15	26	63
Conflicting Peds, #/hr	0	9	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	0	5	12
Mvmt Flow	13	15	39	16	28	68

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	172	57	0	0	56	0
Stage 1	48	-	-	-	-	-
Stage 2	124	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.245	-
Pot Cap-1 Maneuver	823	1015	-	-	1530	-
Stage 1	980	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	807	1006	-	-	1529	-
Mov Cap-2 Maneuver	807	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	9.1	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	903	1529	-
HCM Lane V/C Ratio	-	-	0.031	0.018	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

2025 Total Traffic Volumes

Intersection	
Int Delay, s/veh	1.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	628	48	19	647	40	43
Future Vol, veh/h	628	48	19	647	40	43
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	22	0	1	3	6
Mvmt Flow	683	52	21	703	43	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	741	0	1109	374
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	394	-
Critical Hdwy	-	-	4.1	-	6.86	7.02
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.2	-	3.53	3.36
Pot Cap-1 Maneuver	-	-	875	-	202	612
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	870	-	196	609
Mov Cap-2 Maneuver	-	-	-	-	317	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	647	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.3	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	422	870	-	-	-
HCM Lane V/C Ratio	0.214	0.024	-	-	-
HCM Control Delay (s)	15.8	9.2	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.8	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	672	29	0	700	6	6
Future Vol, veh/h	672	29	0	700	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	15	2	5	25	50
Mvmt Flow	730	32	0	761	7	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	762	0	1127	381
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	381	-
Critical Hdwy	-	-	4.14	-	7.3	7.9
Critical Hdwy Stg 1	-	-	-	-	6.3	-
Critical Hdwy Stg 2	-	-	-	-	6.3	-
Follow-up Hdwy	-	-	2.22	-	3.75	3.8
Pot Cap-1 Maneuver	-	-	846	-	166	499
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	846	-	166	499
Mov Cap-2 Maneuver	-	-	-	-	280	-
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	597	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	359	846	-	-	-
HCM Lane V/C Ratio	0.036	-	-	-	-
HCM Control Delay (s)	15.4	0	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	9	1	0	77	69	1
Future Vol, veh/h	9	1	0	77	69	1
Conflicting Peds, #/hr	4	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	5	17	0
Mvmt Flow	10	1	0	84	75	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	165	77	77	0	-	0
Stage 1	77	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	830	990	1522	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	828	989	1521	-	-	-
Mov Cap-2 Maneuver	828	-	-	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1521	-	842	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	17	24	53	10	22	47
Future Vol, veh/h	17	24	53	10	22	47
Conflicting Peds, #/hr	0	4	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	5	0	6	0
Mvmt Flow	18	26	58	11	24	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	163	68	0	0	69	0
Stage 1	64	-	-	-	-	-
Stage 2	99	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.16	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.254	-
Pot Cap-1 Maneuver	832	1001	-	-	1507	-
Stage 1	964	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	819	997	-	-	1507	-
Mov Cap-2 Maneuver	819	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	9.1	0	2.4
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	915	1507	-
HCM Lane V/C Ratio	-	-	0.049	0.016	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	872	48	51	801	29	39
Future Vol, veh/h	872	48	51	801	29	39
Conflicting Peds, #/hr	0	7	7	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	6	13	2	0	4
Mvmt Flow	948	52	55	871	32	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1007	0	1527	507
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	546	-
Critical Hdwy	-	-	4.36	-	6.8	6.98
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.33	-	3.5	3.34
Pot Cap-1 Maneuver	-	-	621	-	110	506
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	550	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	617	-	100	503
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	298	-
Stage 2	-	-	-	-	550	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.7	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	317	617	-	-	-
HCM Lane V/C Ratio	0.233	0.09	-	-	-
HCM Control Delay (s)	19.8	11.4	-	-	-
HCM Lane LOS	C	B	-	-	-
HCM 95th %tile Q(veh)	0.9	0.3	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	913	22	0	806	7	9
Future Vol, veh/h	913	22	0	806	7	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	992	24	0	876	8	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1016	0	1442	508
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	438	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	691	-	126	515
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	691	-	126	515
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	624	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	346	691	-	-	-
HCM Lane V/C Ratio	0.05	-	-	-	-
HCM Control Delay (s)	16	0	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	16	5	3	51	93	7
Future Vol, veh/h	16	5	3	51	93	7
Conflicting Peds, #/hr	9	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	4	12	0
Mvmt Flow	17	5	3	55	101	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	177	107	111	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	817	953	1492	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	812	951	1489	-	-	-
Mov Cap-2 Maneuver	812	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.4	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1489	-	841	-	-
HCM Lane V/C Ratio	0.002	-	0.027	-	-
HCM Control Delay (s)	7.4	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	13	14	37	15	28	66
Future Vol, veh/h	13	14	37	15	28	66
Conflicting Peds, #/hr	0	9	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	0	5	12
Mvmt Flow	14	15	40	16	30	72

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	181	58	0	0	57	0
Stage 1	49	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.245	-
Pot Cap-1 Maneuver	813	1014	-	-	1528	-
Stage 1	979	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	796	1005	-	-	1527	-
Mov Cap-2 Maneuver	796	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	899	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	9.2	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	892	1527	-
HCM Lane V/C Ratio	-	-	0.033	0.02	-
HCM Control Delay (s)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection: 3: Boulton St & William St

Movement	NW	NE
Directions Served	L	LR
Maximum Queue (m)	10.6	17.4
Average Queue (m)	2.8	10.6
95th Queue (m)	9.7	18.2
Link Distance (m)		16.3
Upstream Blk Time (%)		4
Queuing Penalty (veh)		4
Storage Bay Dist (m)	15.0	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: N site access & William St

Movement	NW	NE
Directions Served	T	LR
Maximum Queue (m)	3.0	19.9
Average Queue (m)	0.2	4.5
95th Queue (m)	2.7	15.0
Link Distance (m)	47.0	36.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 7: Boulton St & SE site access

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (m)	8.8	14.5
Average Queue (m)	2.1	1.2
95th Queue (m)	8.3	7.2
Link Distance (m)	34.2	28.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Boulton St & Sinclair St

Movement	NW	SW
Directions Served	LR	LT
Maximum Queue (m)	16.5	5.5
Average Queue (m)	7.0	0.3
95th Queue (m)	14.3	3.0
Link Distance (m)	38.6	28.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 4

Intersection: 3: Boulton St & William St

Movement	SE	SE	NW	NW	NE
Directions Served	T	TR	L	T	LR
Maximum Queue (m)	1.3	5.8	27.3	11.4	17.6
Average Queue (m)	0.0	0.2	8.8	0.4	10.7
95th Queue (m)	0.9	2.1	20.1	5.9	19.0
Link Distance (m)	46.8	46.8		100.1	16.5
Upstream Blk Time (%)					8
Queuing Penalty (veh)					5
Storage Bay Dist (m)			15.0		
Storage Blk Time (%)			2		
Queuing Penalty (veh)			9		

Intersection: 5: N site access & William St

Movement	NE
Directions Served	LR
Maximum Queue (m)	11.7
Average Queue (m)	4.1
95th Queue (m)	11.5
Link Distance (m)	39.7
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Boulton St & SE site access

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (m)	10.2	22.2	7.0
Average Queue (m)	4.7	2.1	0.2
95th Queue (m)	12.0	12.2	3.6
Link Distance (m)	31.1	30.1	16.5
Upstream Blk Time (%)		1	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Boulton St & Sinclair St

Movement	NW	NE	SW
Directions Served	LR	TR	LT
Maximum Queue (m)	10.3	3.6	10.3
Average Queue (m)	5.0	0.1	0.6
95th Queue (m)	12.0	1.8	4.7
Link Distance (m)	39.8	45.8	30.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

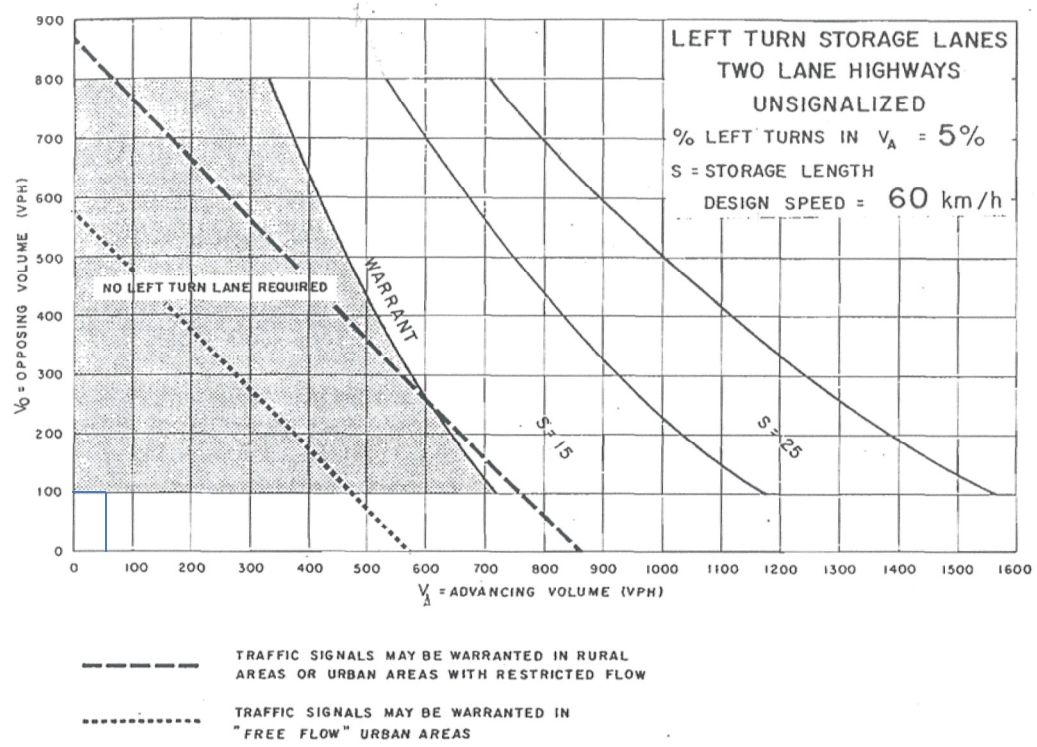
Network Summary

Network wide Queuing Penalty: 14

APPENDIX C

Left Turn Lane Warrants

Boulton Street & southeast site access 2025 Total PM Peak Hour Volumes



Boulton Street & Sinclair St 2025 Total PM Peak Hour Volumes