

TABLE 1 – SITE TRIP GENERATION ESTIMATES

Land Use	Rate/ Estimate	Unit/ Size	WEEKDAY AM PEAK			WEEKDAY PM PEAK		
			In	Out	Total	In	Out	Total
Senior adult housing - attached	rate	unit	0.07	0.13	0.20	0.14	0.12	0.26
	estimate	56	4	7	11	8	7	15

The distribution of the trip to be generated by the proposed development has been developed based on the existing traffic pattern at the intersections of Victoria Avenue at Second Street and King Street West at Birch Street. The following distribution was developed:

AM Peak hour

- 39% to the east via King Street West
- 15% to the west via King Street West
- 6% to the east via Second Street
- 39% to the south via Victoria Avenue
- 1 % to the north via Victoria Avenue
- 24% from the east via King Street West
- 29% from the west via King Street West
- 0% from the east via Second Street
- 47% from the south via Victoria Avenue
- 0% from the north via Victoria Avenue

PM Peak hour

- 21% to the east via King Street West
- 12% to the west via King Street West
- 3% to the east via Second Street
- 52% to the south via Victoria Avenue
- 12 % to the north via Victoria Avenue
- 58% from the east via King Street West
- 15% from the west via King Street West
- 3% from the east via Second Street
- 15% from the south via Victoria Avenue
- 9% from the north via Victoria Avenue

As there will be one site access via Birch Street, thus, all site traffic is assigned to it. 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 King Street West (Highway 2/County Road 2), Birch Street, Victoria Avenue, and Second Street. King Street West is under the jurisdiction of the County, whereas Birch Street, Victoria Avenue and Second Street are under the jurisdiction of the Town.

As per the Town’s Official Plan, King Street West is an arterial road. Through the study area, King Street West has one lane in each direction. The road has an urban cross-section with bike lanes, mountable curbs and sidewalks on both sides. The alignment of King Street West 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).

Victoria Avenue is a collector as identified in the Town’s Official Plan. It has one lane in each direction and a parking lane on the west side. The road has an urban cross-section with curbs, gutters and sidewalks on both

sides. There is no speed limit posted on the road. A 50 km/h posted speed limit was assumed hence a design speed of 60 km/h is applied. The alignment of the road in the area is relatively straight and flat.

Birch Street and Second Street are local roads as per the Town's Official Plan. Both roads also have one lane in each direction. The roads have a rural cross-section with minimal gravel shoulders. The alignments of both roads are relatively straight and flat. There is no speed limit posted on the roads. A 50 km/h posted speed limit was assumed, thus a 60 km/h design speed is applied. No sidewalks are provided on both roads.

The intersections of King Street West at Birch Street and Second Street at Birch Street are "T" intersections with stop control on Birch Street. Whereas, the intersection of Victoria Avenue at Second Street is a 4-leg intersection with stop control on Second Street. 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 King Street West with Birch Street and Second Street with Victoria Avenue on Tuesday November 5th, 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 %. Based on the 2016 traffic volumes on the section of Highway 2 at Highway 401 interchange from MTO, the Summer Average Weekday Daily Traffic is approximately 23% higher than the Annual Average Daily Traffic.

Traffic volumes at the intersection of Second Street with Birch Street were estimated based on the existing development level in the area and the existing traffic volumes at the intersections of King Street West with Birch Street, Second Street with Victoria Avenue. 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 (both with and without the subject site) 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 King Street West with Birch Street, Second Street with Victoria Avenue, and Second Street with Birch Street. 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 2 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 2 – INTERSECTION OPERATIONS – EXISTING 2019 TRAFFIC VOLUMES

INTERSECTION		CONTROL	PM PEAK HOUR			WEEKEND PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.8	A	0.00	7.8	A	0.01
	SB	stop	11.4	B	0.04	12.4	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.00
	EB	stop	8.9	A	0.02	9.1	A	0.03
	WB		9.5	A	0.01	9.5	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.4	A	0.01	8.5	A	0.01
	WBL	free	7.2	A	0.00	7.2	A	0.00

As per the analysis, excellent levels of service B 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

As per the Town's direction, a growth rate of 1% per year has been used. The resulting 2020 and 2025 background traffic volumes are presented in Figures 6 and 7 respectively.

Future Background Traffic Operations

Intersection operational analysis was carried out for the 2020 and 2025 background traffic volumes. Tables 3 and 4 summarize the results of the analysis.

TABLE 3 – INTERSECTION OPERATIONS – 2020 BACKGROUND TRAFFIC VOLUMES

INTERSECTION		CONTROL	PM PEAK HOUR			WEEKEND PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.8	A	0.00	7.9	A	0.01
	SB	stop	11.4	B	0.04	12.5	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.00
	EB	stop	8.9	A	0.02	9.1	A	0.03
	WB		9.5	A	0.01	9.5	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.4	A	0.01	8.5	A	0.01
	WBL	free	7.2	A	0.00	7.2	A	0.00

TABLE 4 – INTERSECTION OPERATIONS – 2025 BACKGROUND TRAFFIC VOLUMES

INTERSECTION		CONTROL	PM PEAK HOUR			WEEKEND PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.9	A	0.00	7.9	A	0.01
	SB	stop	11.6	B	0.05	12.7	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.01
	EB	stop	9.0	A	0.02	9.1	A	0.03
	WB		9.6	A	0.01	9.6	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.4	A	0.01	8.5	A	0.01
	WBL	free	7.2	A	0.00	7.2	A	0.00

Despite the increase in background traffic volumes, excellent levels of service B or better are provided at the intersections under the 2020 and 2025 background conditions and thus no improvements related to intersection operations are required at this time on the basis of the intersection operational analysis.

Future Total Traffic Volumes

Site 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 site access is added on Second Street on the opposite side of Birch Street, future configurations are illustrated in Figure 10. Tables 5 and 6 summarize the results of the analysis.

TABLE 5 – 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
King St W & Birch St	EBL	free	7.8	A	0.00	7.9	A	0.01
	SB	stop	11.5	B	0.05	12.4	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.00
	EB	stop	9.0	A	0.03	9.1	A	0.03
	WB		9.6	A	0.01	9.5	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.6	A	0.01	8.7	A	0.02
	EBL	free	0	A	-	0	A	-
	WBL		7.2	A	0.00	7.2	A	0.00
	SB	stop	8.9	A	0.01	8.8	A	0.01

TABLE 6 – 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
King St W & Birch St	EBL	free	7.9	A	0.00	7.9	A	0.01
	SB	stop	11.7	B	0.05	12.9	B	0.04
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.01
	EB	stop	9.0	A	0.03	9.2	A	0.04
	WB		9.7	A	0.01	9.7	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.6	A	0.01	8.7	A	0.02
	EBL	free	0	A	-	0	A	-
	WBL		7.2	A	0.00	7.2	A	0.00
	SB	stop	8.9	A	0.01	8.8	A	0.01

As per the analyses, excellent levels of service B 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.

Transportation Impacts

Despite the excellent levels of service, the need for a left turn lane at the intersections of King Street West with Birch Street, Victoria Avenue with Second Street and Second Street with Birch 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 Second Street at the site access are relatively straight and flat.

Based on the TAC *Geometric Design Guide for Canadian Roads*, the minimum stopping sight distance for design speeds 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 Second Street as determined at the site access are more than 200 m to the east and to the west the end of the road is visible. Therefore, sightlines are in excess of the minimum sight distance requirements.

Summary

This study has addressed the transportation impacts associated with the proposed development on Second Street at Birch Street, in the Town of Gananoque, County of Leeds and Grenville. It is estimated that the site will generate 11 and 15 trips during the AM and PM peak hours respectively.

To address the potential impacts of the proposed development, peak hour operations at the intersections of King Street West at Birch Street, Victoria Avenue at Second Street, and Second Street at Birch Street were reviewed for the existing 2019 and future 2020 and 2025 summer conditions. Based on the assessment, it was determined that all three intersections will provide excellent levels of service (LOS B or better) with delays less than 13 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.

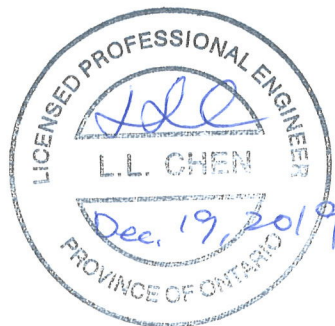
Sightlines were reviewed on Second Street at the site access. Sufficient sightlines are provided on Second Street for a design speed of 60 km/h.

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

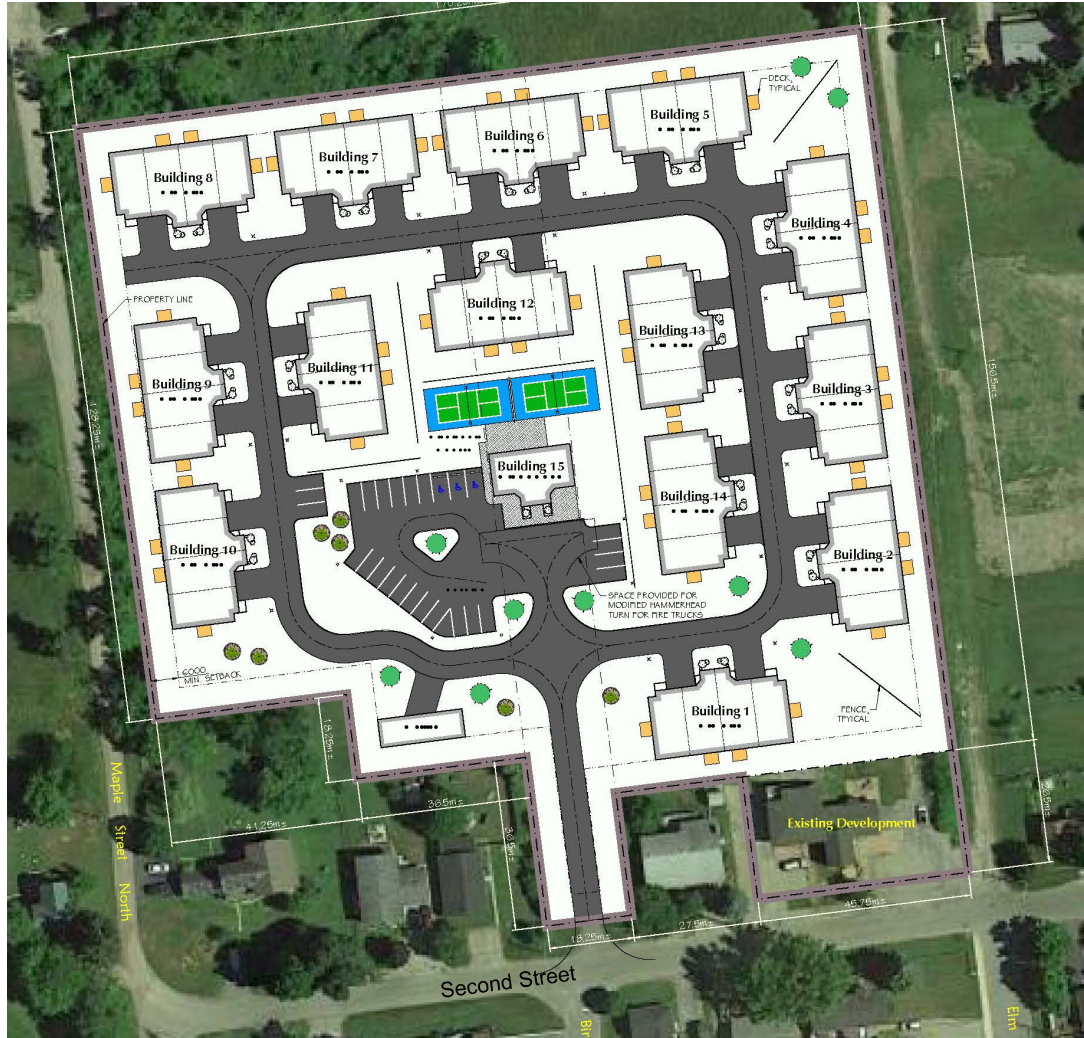
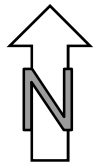
**Lilly Chen, P. Eng.
Senior Transportation Engineer**



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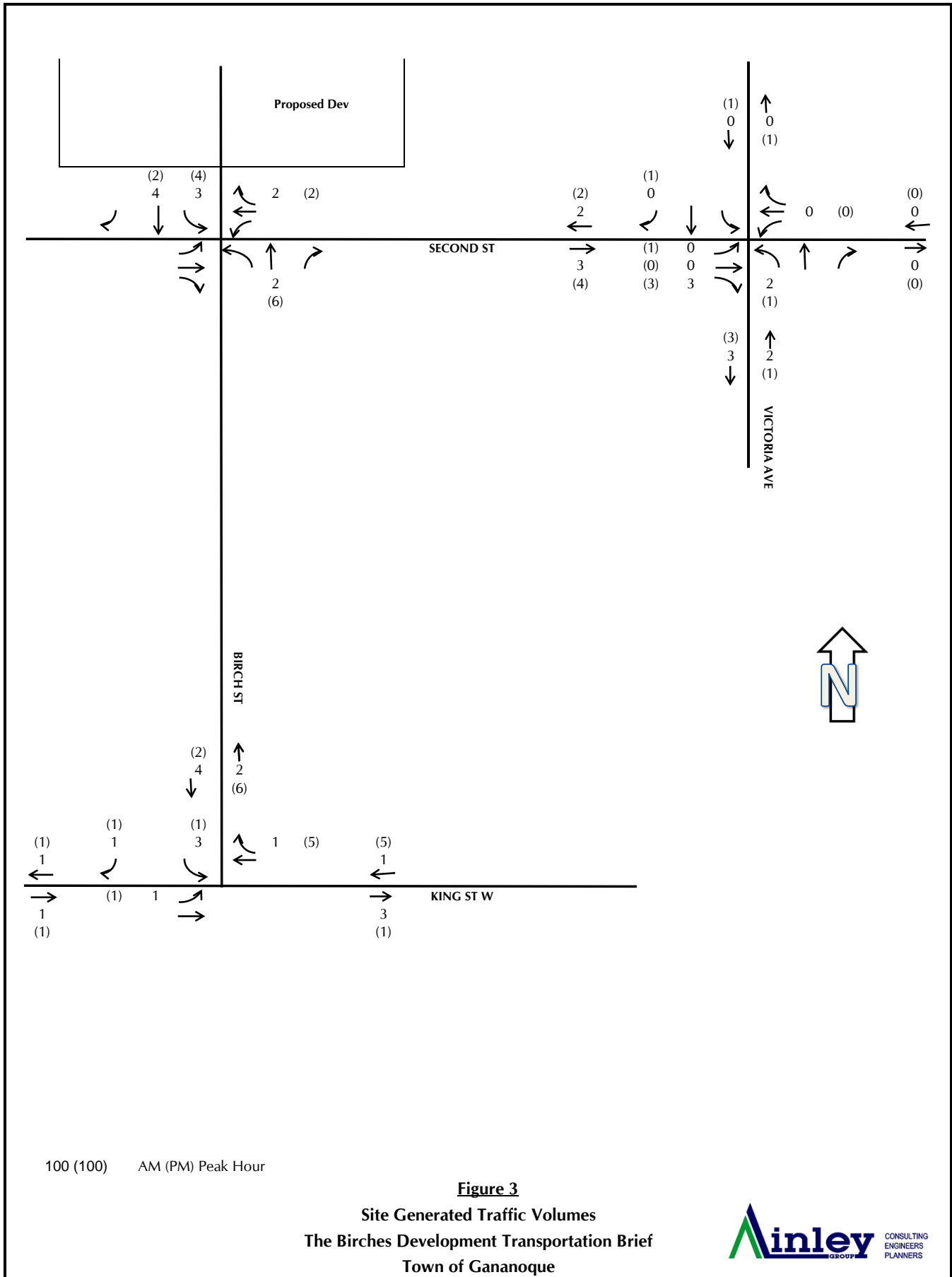
Source: Google Maps

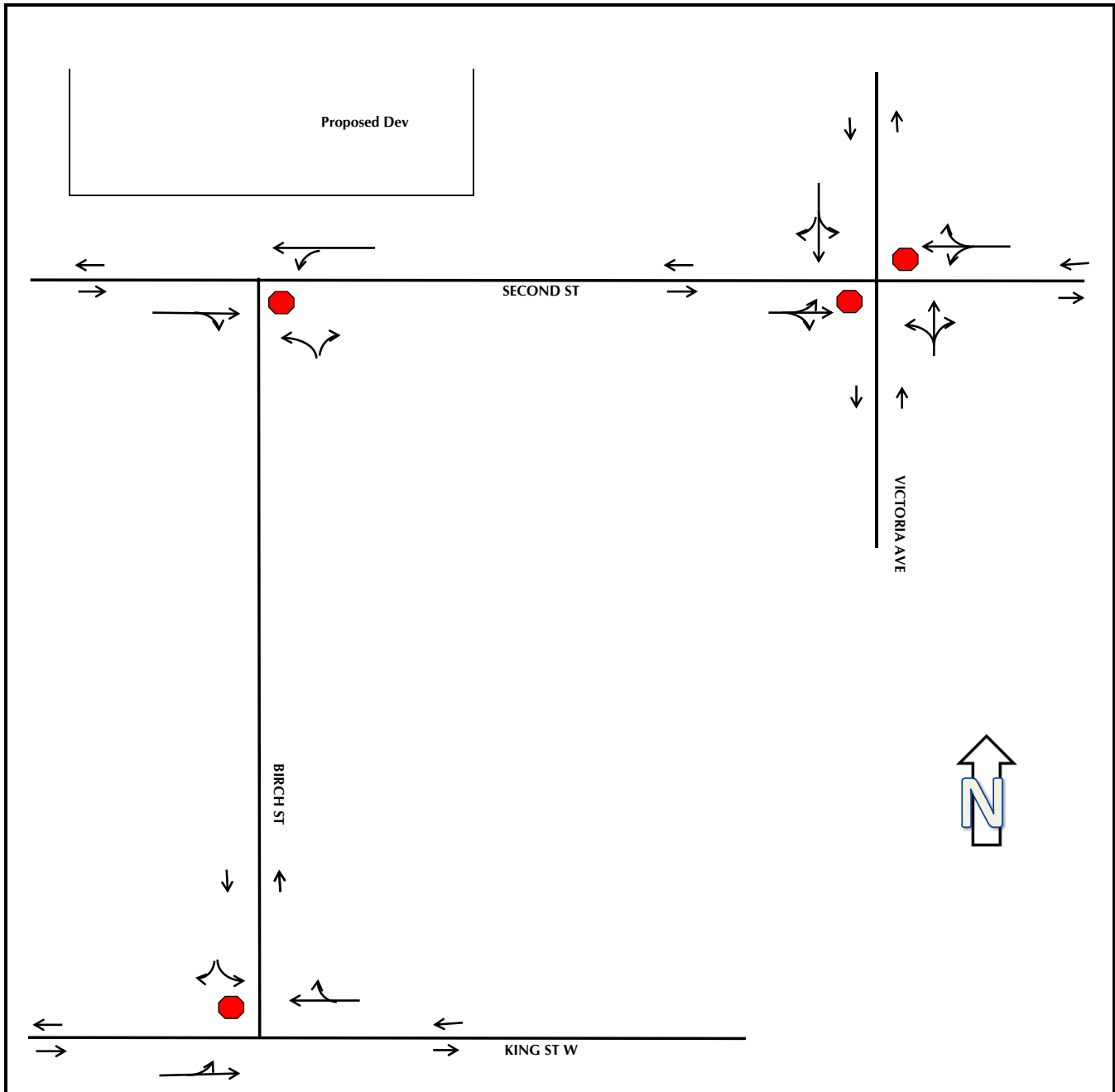


Source: Ball Technical Services



TOWN OF GANANOQUE
THE BIRCHES DEVELOPMENT TRANSPORTATION BRIEF
FIGURE 2 – SITE CONCEPT PLAN













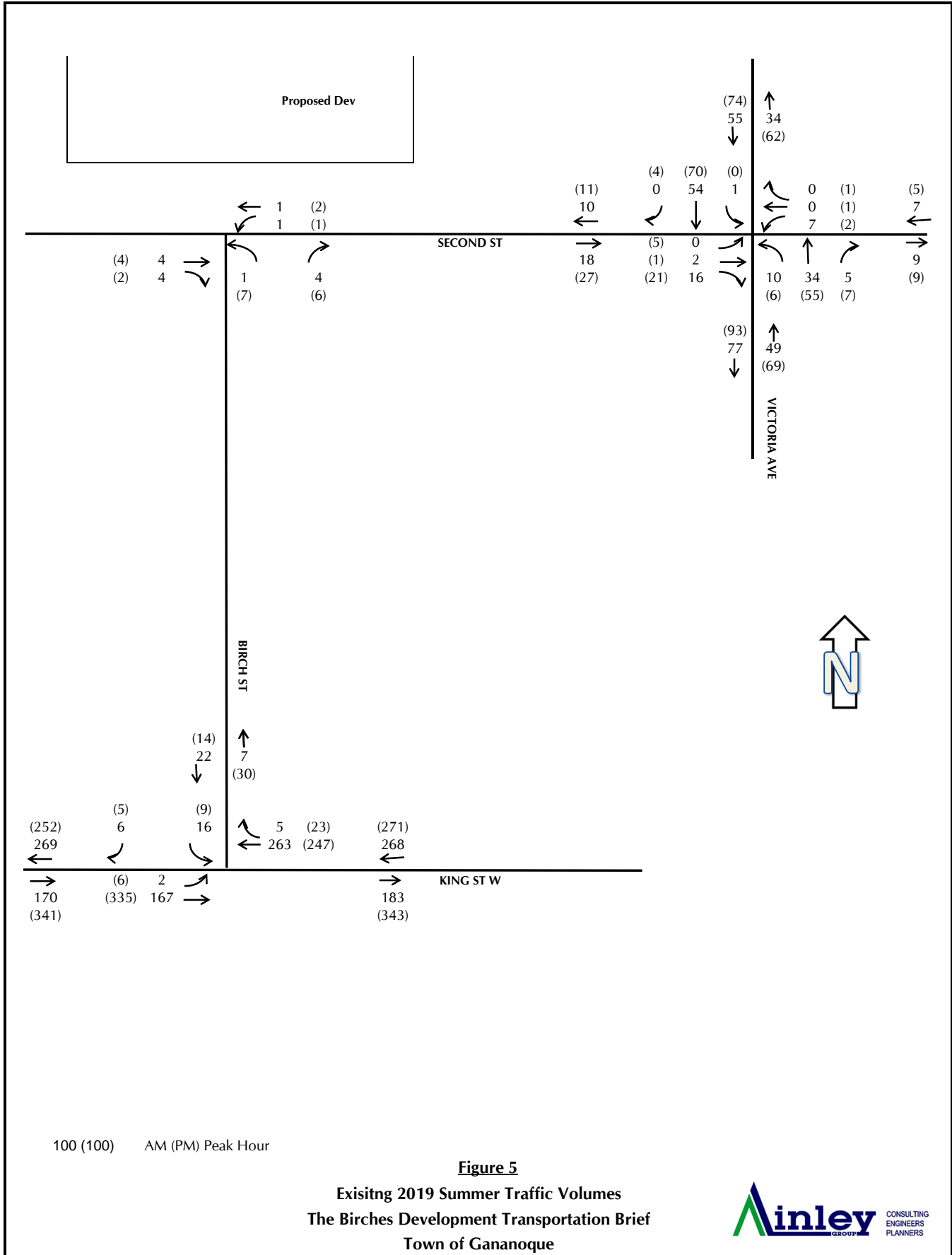
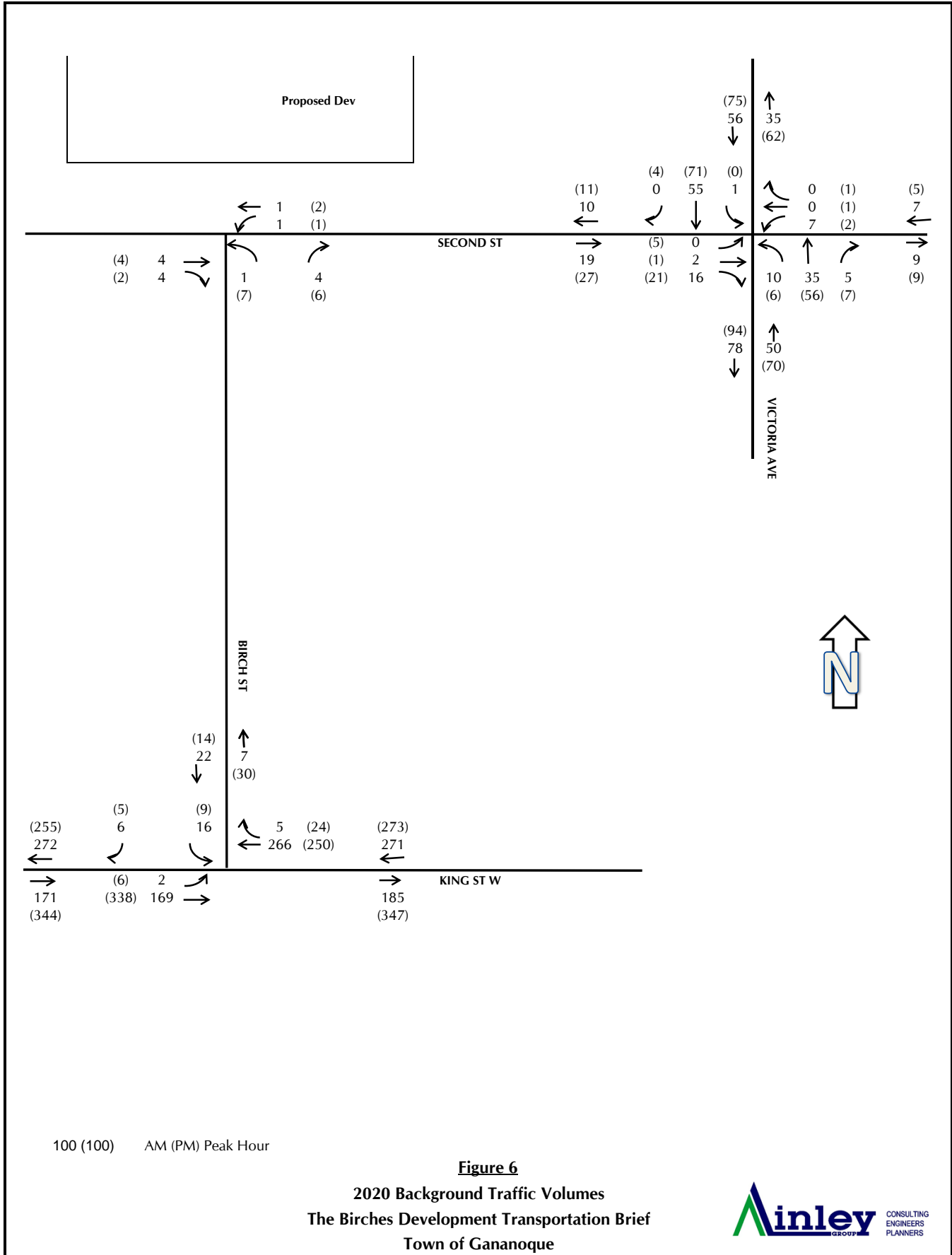
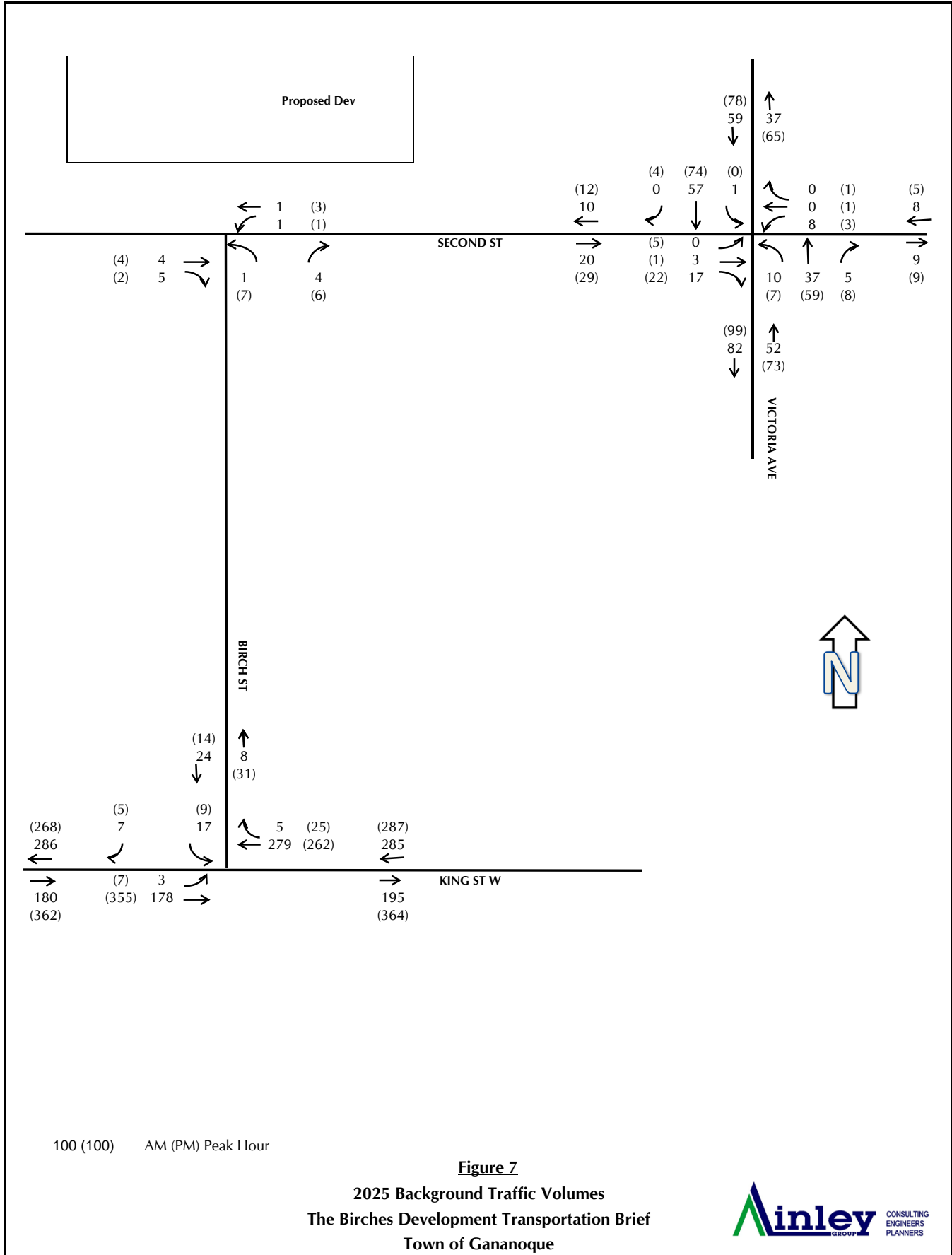
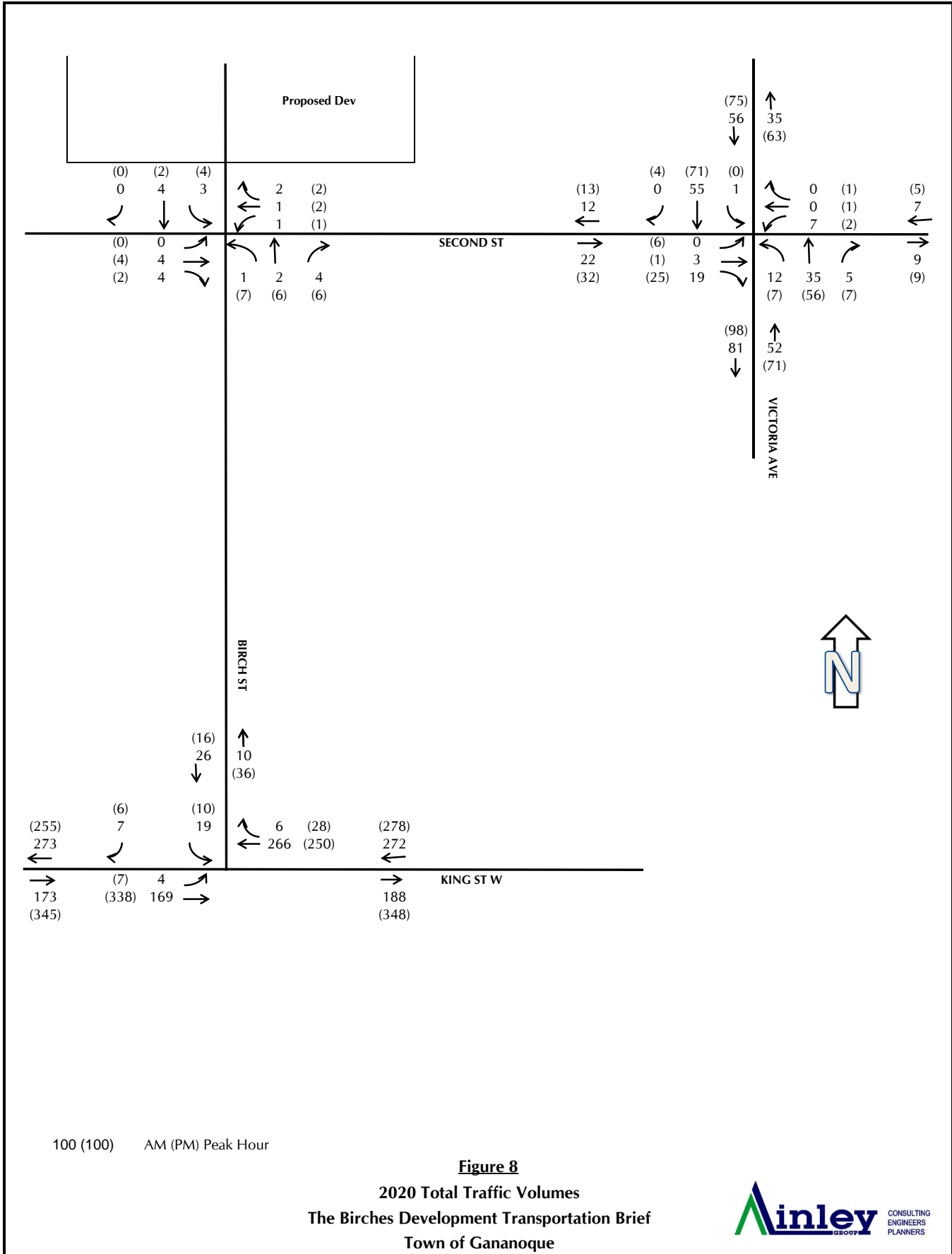
-  signal control
-  stop control
-  one left-through shared lane
-  one through-right shared lane
-  one left turn lane
-  one right turn lane
-  one through lane
-  one left-through-right shared lane

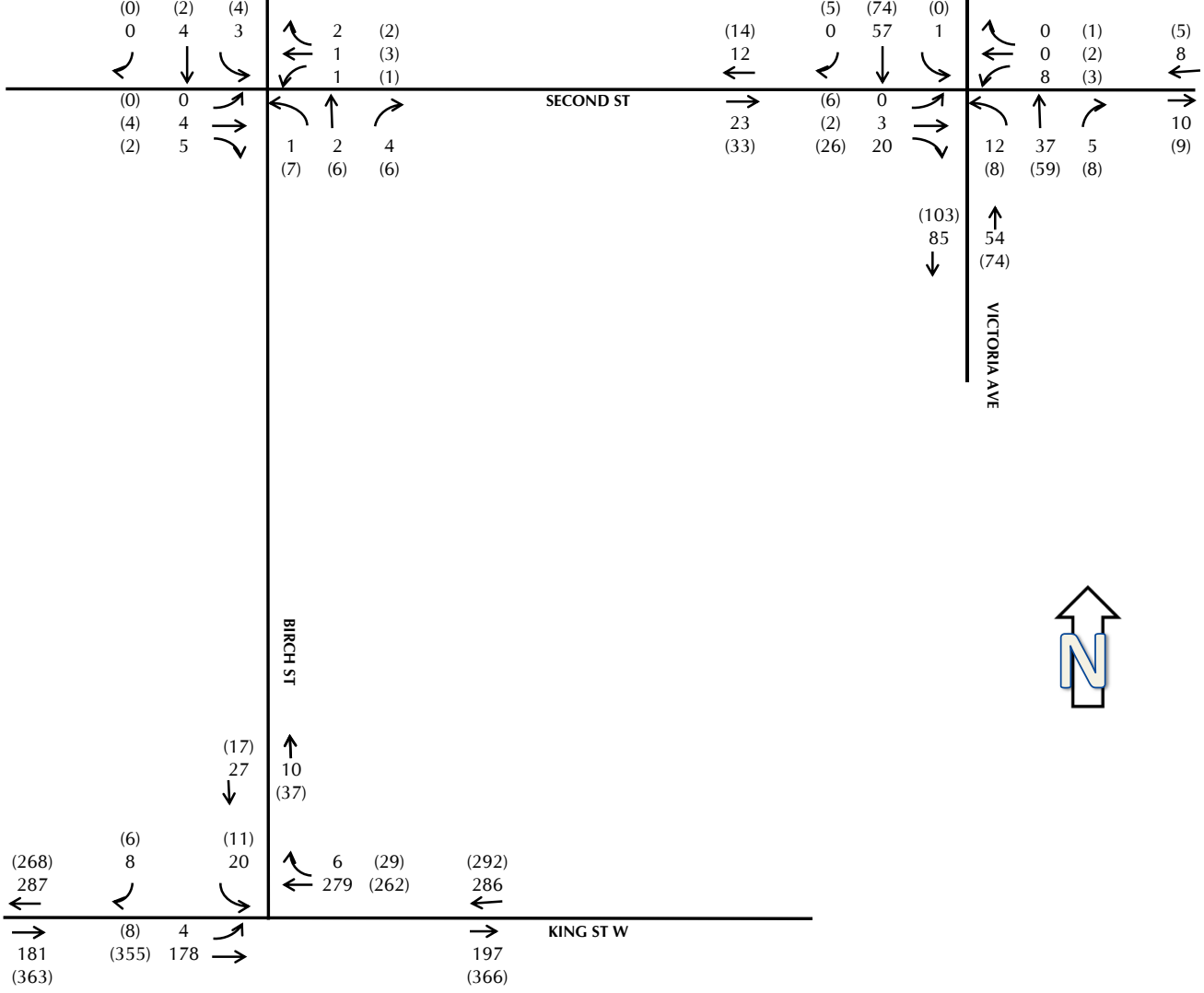
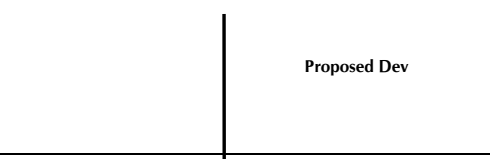
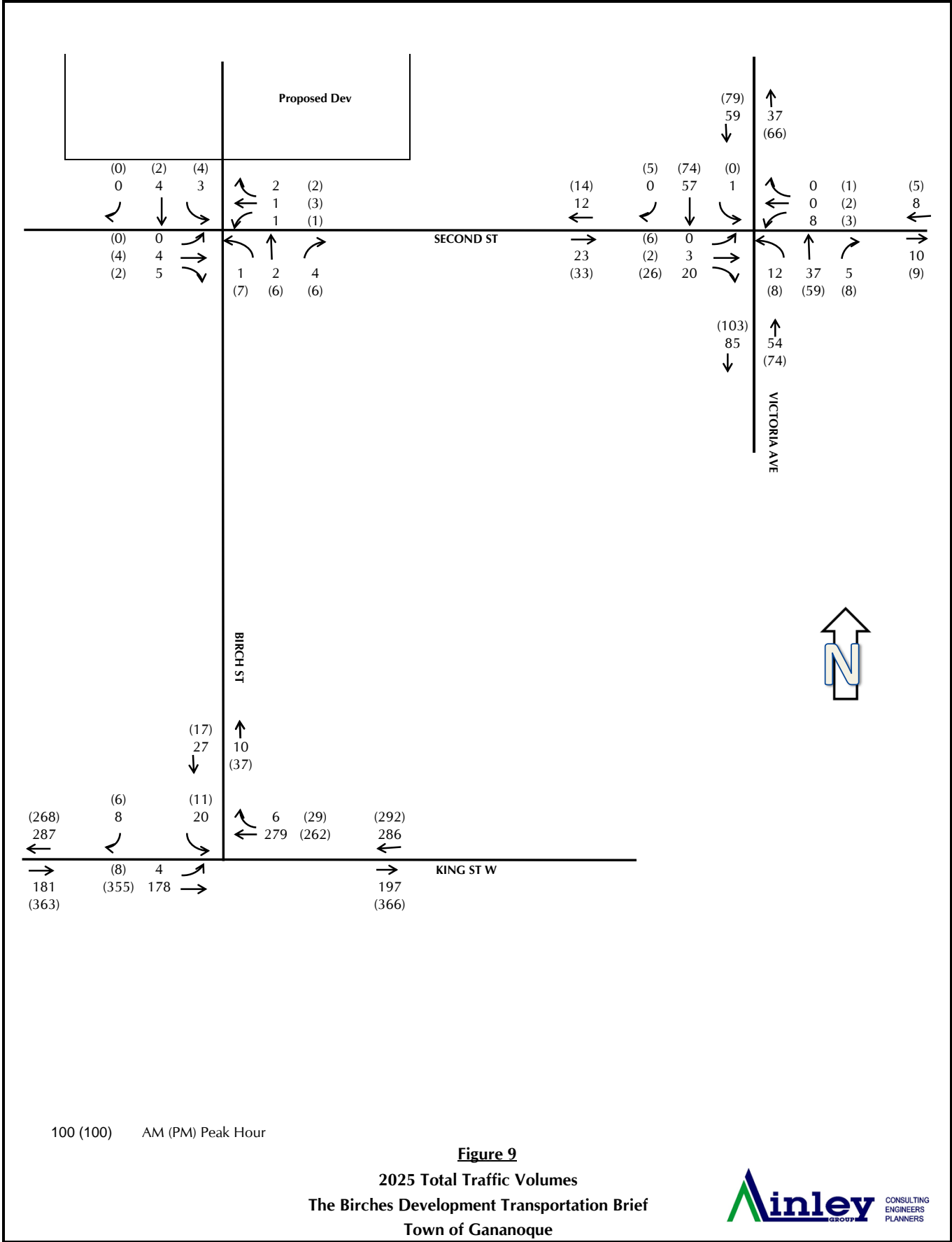
Figure 4
Existing Configurations
The Birches Development Transportation Brief
Town of Gananoque

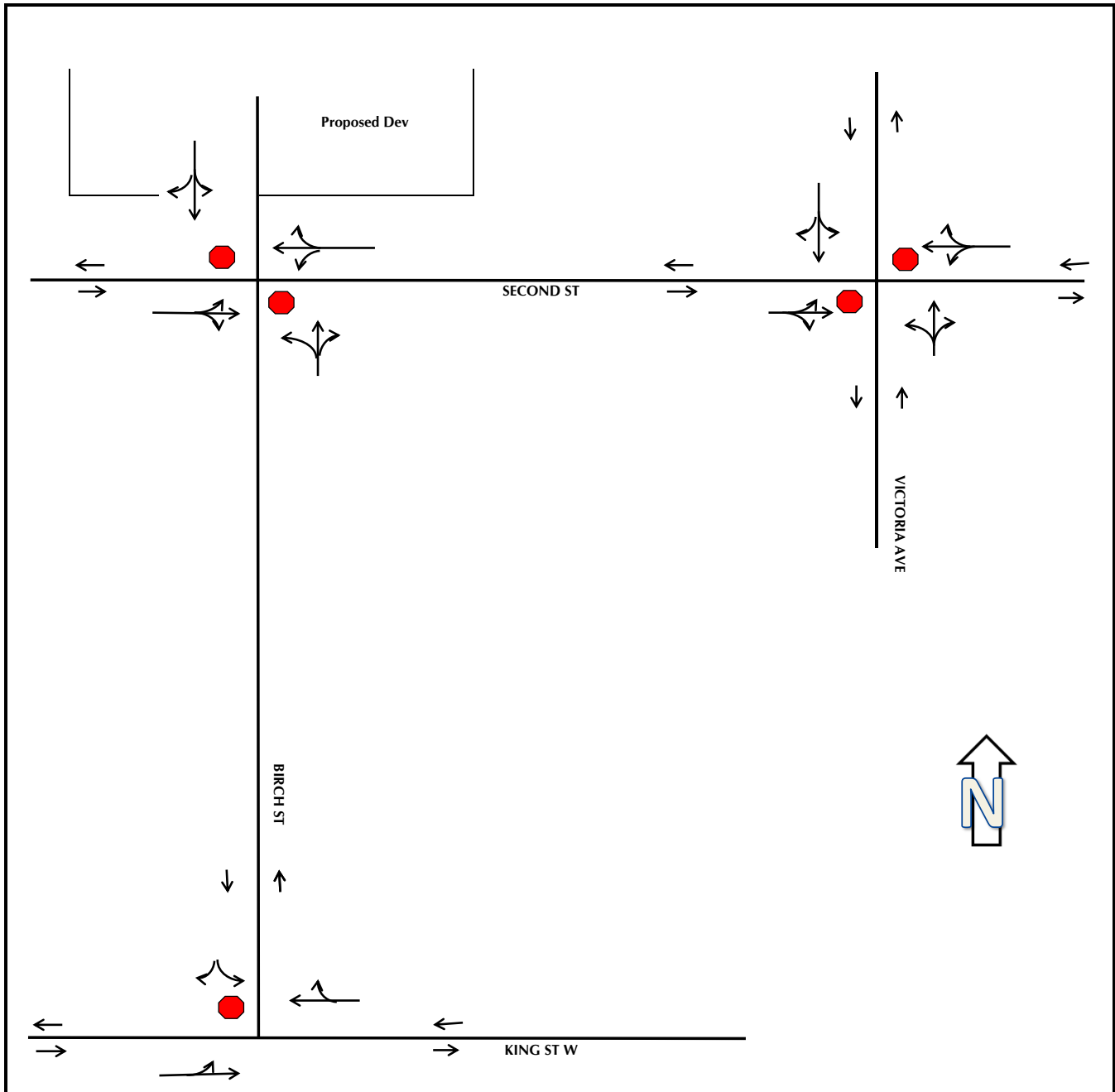




















-  signal control
-  stop control
-  one left-through shared lane
-  one through-right shared lane
-  one left turn lane
-  one right turn lane
-  one through lane
-  one left-through-right shared lane

Figure 10
Future Configurations
The Birches Development Transportation Brief
Town of Gananoque

APPENDIX A
Traffic Counts

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00
To: 10:00:00

One Hour Peak

From: 7:00:00
To: 8:00:00

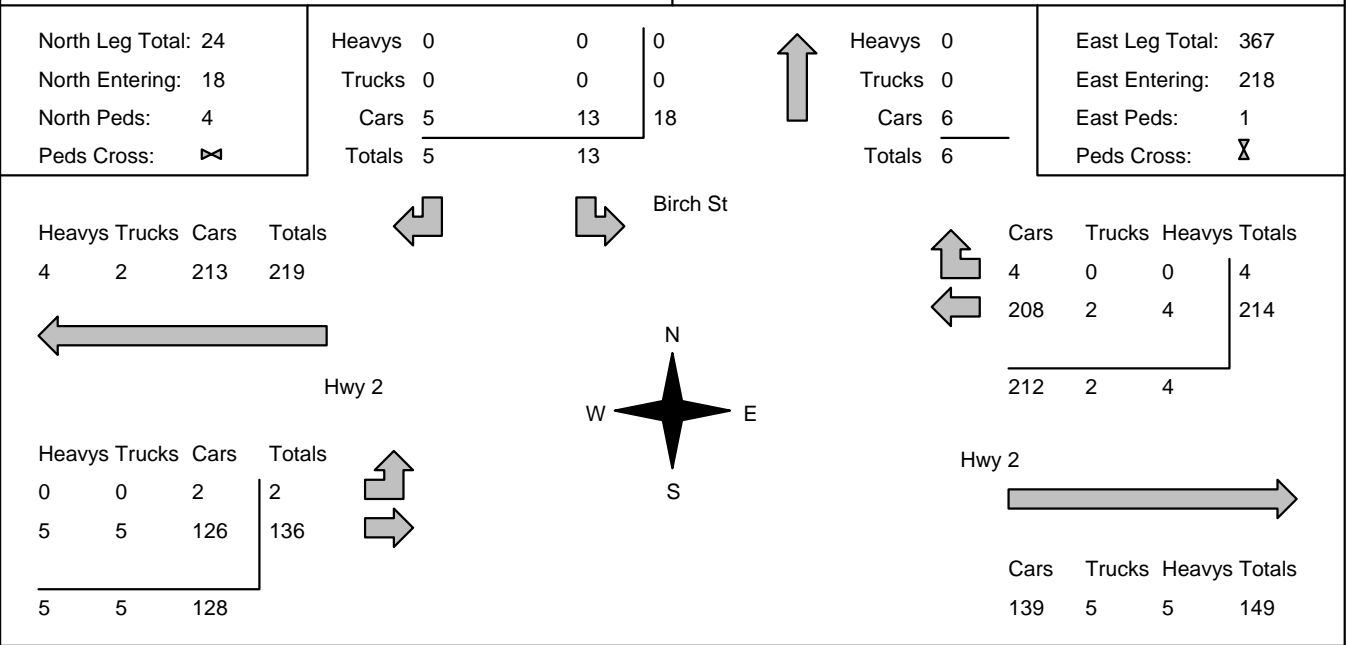
Municipality: Gananoque
Site #: 1918100001
Intersection: Hwy 2 & Birch St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

** Non-Signalized Intersection **

Major Road: Hwy 2 runs W/E



Peds Cross: ☒
West Peds: 1
West Entering: 138
West Leg Total: 357

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 15:45:00

To: 16:45:00

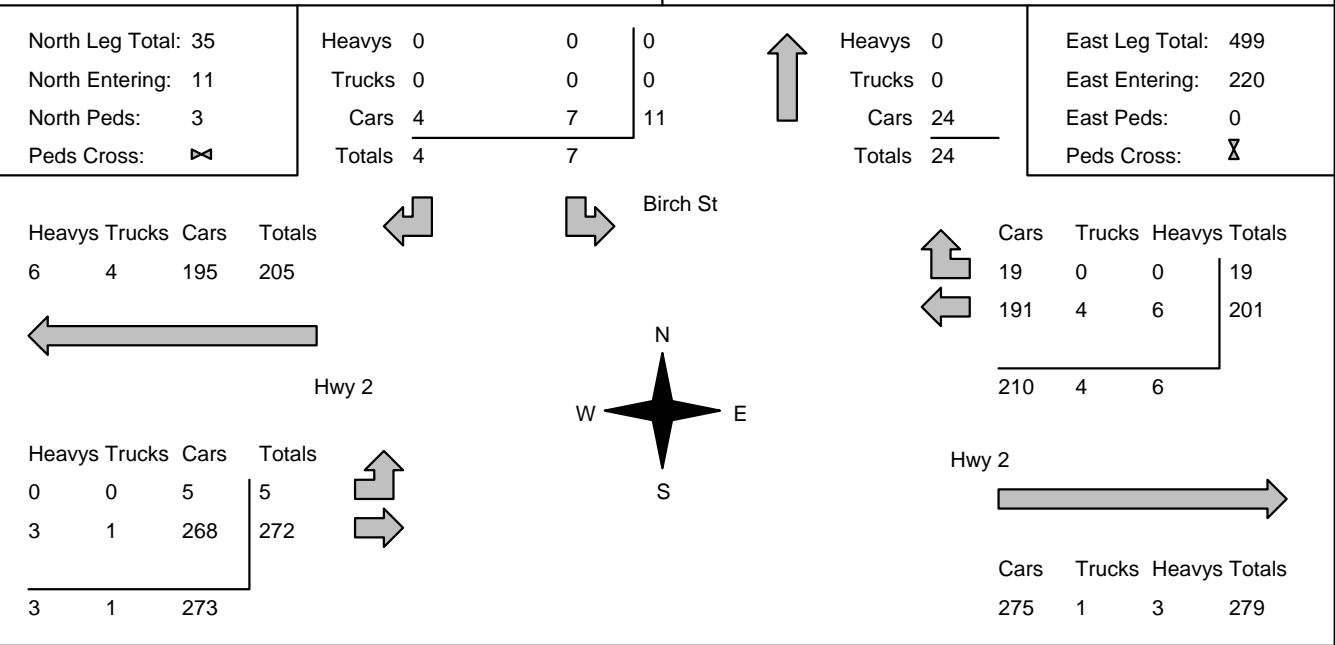
Municipality: Gananoque
Site #: 1918100001
Intersection: Hwy 2 & Birch St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

** Non-Signalized Intersection **

Major Road: Hwy 2 runs W/E



Peds Cross: \times
 West Peds: 2
 West Entering: 277
 West Leg Total: 482

Comments

Accu-Traffic Inc.

Total Count Diagram

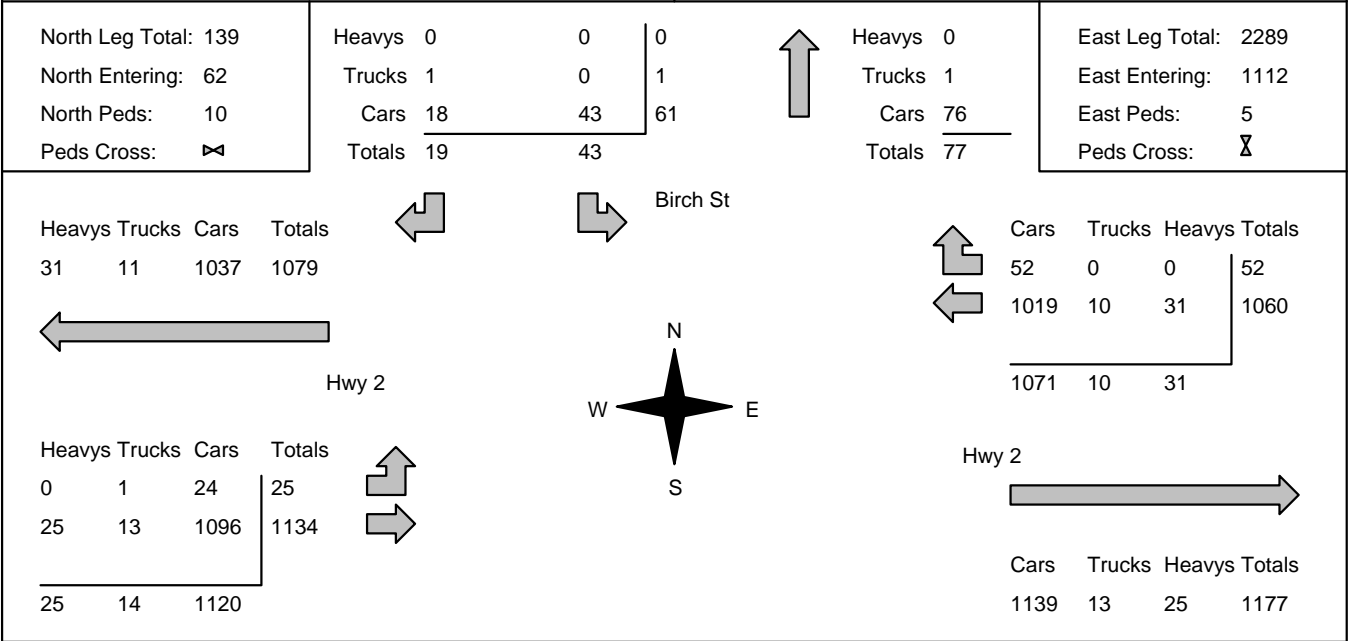
Municipality: Gananoque
Site #: 1918100001
Intersection: Hwy 2 & Birch St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Hwy 2 runs W/E



Peds Cross: ∇
 West Peds: 6
 West Entering: 1159
 West Leg Total: 2238

Comments



Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Hwy 2 & Birch St Count Date: 6-Nov-19 Municipality: Gananoque

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	13	0	5	18	4	18	8:00:00	0	0	0	0	0
9:00:00	8	0	2	10	1	10	9:00:00	0	0	0	0	0
10:00:00	6	0	6	12	0	12	10:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	9	0	4	13	4	13	16:00:00	0	0	0	0	0
17:00:00	4	0	2	6	1	6	17:00:00	0	0	0	0	0
18:00:00	3	0	0	3	0	3	18:00:00	0	0	0	0	0
Totals:	43	0	19	62	10	62	S Totals:	0	0	0	0	0
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	214	4	218	1	356	8:00:00	2	136	0	138	1
9:00:00	0	155	2	157	4	319	9:00:00	2	160	0	162	2
10:00:00	0	159	10	169	0	323	10:00:00	4	150	0	154	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	0	169	10	179	0	429	16:00:00	5	245	0	250	2
17:00:00	0	206	15	221	0	495	17:00:00	4	270	0	274	1
18:00:00	0	157	11	168	0	349	18:00:00	8	173	0	181	0
Totals:	0	1060	52	1112	5	2271	W Totals:	25	1134	0	1159	6
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	15	14	6			0	11	5	3		

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100001

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	1	1	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	1	0	57	38	0	0	0	0	2	2	0	0	0	0	2	2	0	0	0	0
7:45:00	1	0	89	32	0	0	0	0	2	0	0	0	0	0	4	2	0	0	0	0
8:00:00	2	1	126	37	0	0	0	0	5	3	0	0	0	0	5	1	0	0	1	1
8:15:00	3	1	148	22	0	0	0	0	6	1	0	0	0	0	8	3	0	0	2	1
8:30:00	3	0	196	48	0	0	1	1	8	2	0	0	0	0	8	0	0	0	2	0
8:45:00	3	0	230	34	0	0	1	0	8	0	0	0	0	0	8	0	0	0	3	1
9:00:00	3	0	278	48	0	0	1	0	8	0	0	0	0	0	10	2	0	0	3	0
9:15:00	3	0	309	31	0	0	1	0	8	0	0	0	0	0	11	1	0	0	3	0
9:30:00	3	0	344	35	0	0	1	0	8	0	0	0	0	0	12	1	0	0	3	0
9:45:00	6	3	391	47	0	0	1	0	8	0	0	0	0	0	12	0	0	0	3	0
10:00:00	7	1	420	29	0	0	1	0	11	3	0	0	0	0	15	3	0	0	3	0
10:15:00	7	0	420	0	0	0	1	0	11	0	0	0	0	0	15	0	0	0	3	0
15:00:00	7	0	420	0	0	0	1	0	11	0	0	0	0	0	15	0	0	0	3	0
15:15:00	9	2	468	48	0	0	1	0	11	0	0	0	0	0	19	4	0	0	3	0
15:30:00	10	1	522	54	0	0	1	0	11	0	0	0	0	0	21	2	0	0	4	1
15:45:00	11	1	585	63	0	0	1	0	12	1	0	0	0	0	22	1	0	0	4	0
16:00:00	12	1	656	71	0	0	1	0	12	0	0	0	0	0	23	1	0	0	5	1
16:15:00	14	2	723	67	0	0	1	0	12	0	0	0	0	0	23	0	0	0	6	1
16:30:00	15	1	786	63	0	0	1	0	13	1	0	0	0	0	23	0	0	0	6	0
16:45:00	16	1	853	67	0	0	1	0	13	0	0	0	0	0	25	2	0	0	6	0
17:00:00	16	0	923	70	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
17:15:00	18	2	973	50	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
17:30:00	19	1	1013	40	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
17:45:00	21	2	1061	48	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
18:00:00	24	3	1096	35	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
18:15:00	24	0	1096	0	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
18:15:15	24	0	1096	0	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0

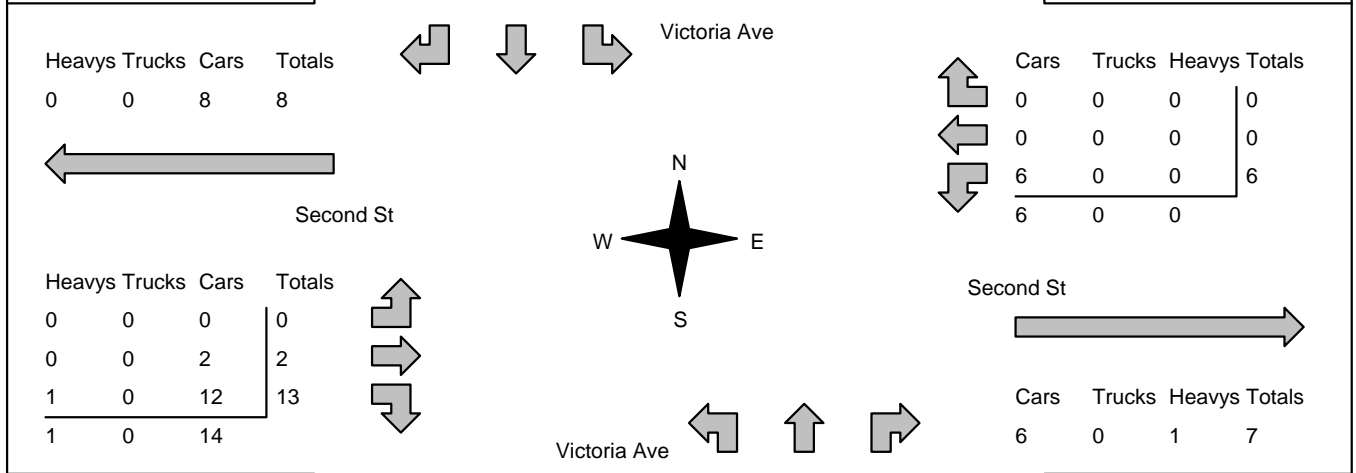
Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 10:00:00	One Hour Peak From: 7:30:00 To: 8:30:00
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Municipality: Gananoque Site #: 1918100002 Intersection: Victoria Ave & Second St TFR File #: 1 Count date: 6-Nov-19	Weather conditions: Person counted: Person prepared: Person checked:
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** Non-Signalized Intersection **	Major Road: Victoria Ave runs N/S
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North Leg Total: 73 North Entering: 45 North Peds: 1 Peds Cross: \bowtie	<table style="margin: auto;"> <tr><td>Heavys</td><td>0</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Cars</td><td>0</td><td>43</td><td>1</td><td>44</td></tr> <tr><td>Totals</td><td>0</td><td>44</td><td>1</td><td></td></tr> </table>	Heavys	0	1	0	1	Trucks	0	0	0	0	Cars	0	43	1	44	Totals	0	44	1		<table style="margin: auto;"> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Trucks</td><td>1</td></tr> <tr><td>Cars</td><td>26</td></tr> <tr><td>Totals</td><td>28</td></tr> </table>	Heavys	1	Trucks	1	Cars	26	Totals	28	East Leg Total: 13 East Entering: 6 East Peds: 4 Peds Cross: \bowtie
Heavys	0	1	0	1																											
Trucks	0	0	0	0																											
Cars	0	43	1	44																											
Totals	0	44	1																												
Heavys	1																														
Trucks	1																														
Cars	26																														
Totals	28																														



Peds Cross: \bowtie West Peds: 1 West Entering: 15 West Leg Total: 23	<table style="margin: auto;"> <tr><td>Cars</td><td>61</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>2</td></tr> <tr><td>Totals</td><td>63</td></tr> </table>	Cars	61	Trucks	0	Heavys	2	Totals	63	<table style="margin: auto;"> <tr><td>Cars</td><td>8</td><td>26</td><td>3</td><td>37</td></tr> <tr><td>Trucks</td><td>0</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Heavys</td><td>0</td><td>1</td><td>1</td><td>2</td></tr> <tr><td>Totals</td><td>8</td><td>28</td><td>4</td><td></td></tr> </table>	Cars	8	26	3	37	Trucks	0	1	0	1	Heavys	0	1	1	2	Totals	8	28	4		Peds Cross: \bowtie South Peds: 6 South Entering: 40 South Leg Total: 103
Cars	61																														
Trucks	0																														
Heavys	2																														
Totals	63																														
Cars	8	26	3	37																											
Trucks	0	1	0	1																											
Heavys	0	1	1	2																											
Totals	8	28	4																												

Comments

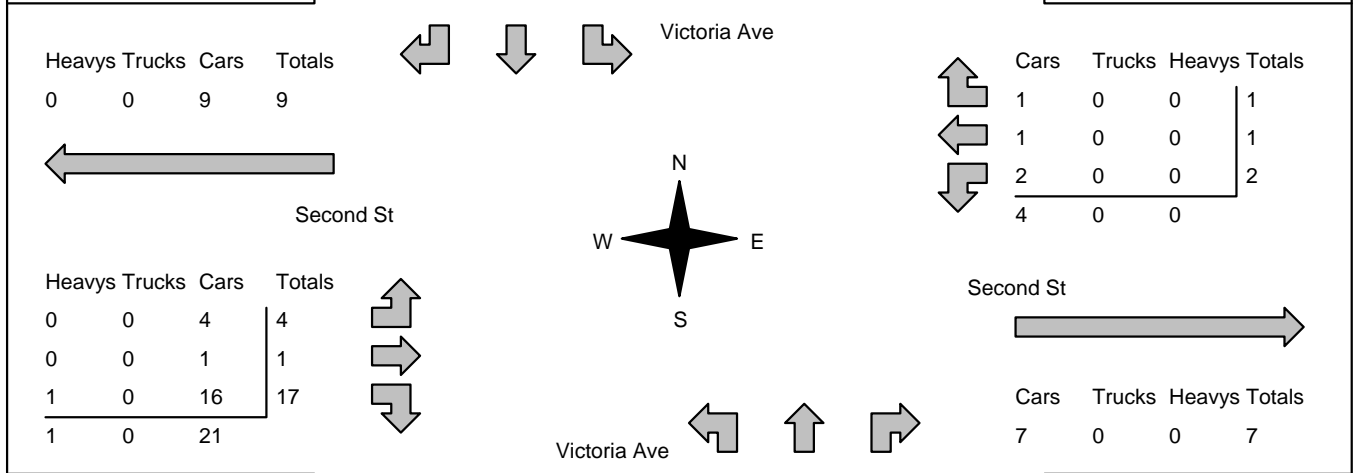
Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 15:00:00 To: 18:00:00	One Hour Peak From: 15:00:00 To: 16:00:00
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Municipality: Gananoque Site #: 1918100002 Intersection: Victoria Ave & Second St TFR File #: 1 Count date: 6-Nov-19	Weather conditions: Person counted: Person prepared: Person checked:
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** Non-Signalized Intersection **	Major Road: Victoria Ave runs N/S
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North Leg Total: 110 North Entering: 60 North Peds: 6 Peds Cross: ☒	<table style="border-collapse: collapse; margin: auto;"> <tr><td>Heavys</td><td>0</td><td>1</td><td>0</td><td style="border-left: 1px solid black;">1</td></tr> <tr><td>Trucks</td><td>0</td><td>1</td><td>0</td><td style="border-left: 1px solid black;">1</td></tr> <tr><td>Cars</td><td>3</td><td>55</td><td>0</td><td style="border-left: 1px solid black;">58</td></tr> <tr><td>Totals</td><td>3</td><td>57</td><td>0</td><td style="border-left: 1px solid black;"></td></tr> </table>	Heavys	0	1	0	1	Trucks	0	1	0	1	Cars	3	55	0	58	Totals	3	57	0		<table style="border-collapse: collapse; margin: auto;"> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Cars</td><td>48</td></tr> <tr><td>Totals</td><td>50</td></tr> </table>	Heavys	0	Trucks	2	Cars	48	Totals	50	East Leg Total: 11 East Entering: 4 East Peds: 2 Peds Cross: ☒
Heavys	0	1	0	1																											
Trucks	0	1	0	1																											
Cars	3	55	0	58																											
Totals	3	57	0																												
Heavys	0																														
Trucks	2																														
Cars	48																														
Totals	50																														



Peds Cross: ☒ West Peds: 2 West Entering: 22 West Leg Total: 31			Peds Cross: ☒ South Peds: 1 South Entering: 56 South Leg Total: 132
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Comments

Accu-Traffic Inc.

Total Count Diagram

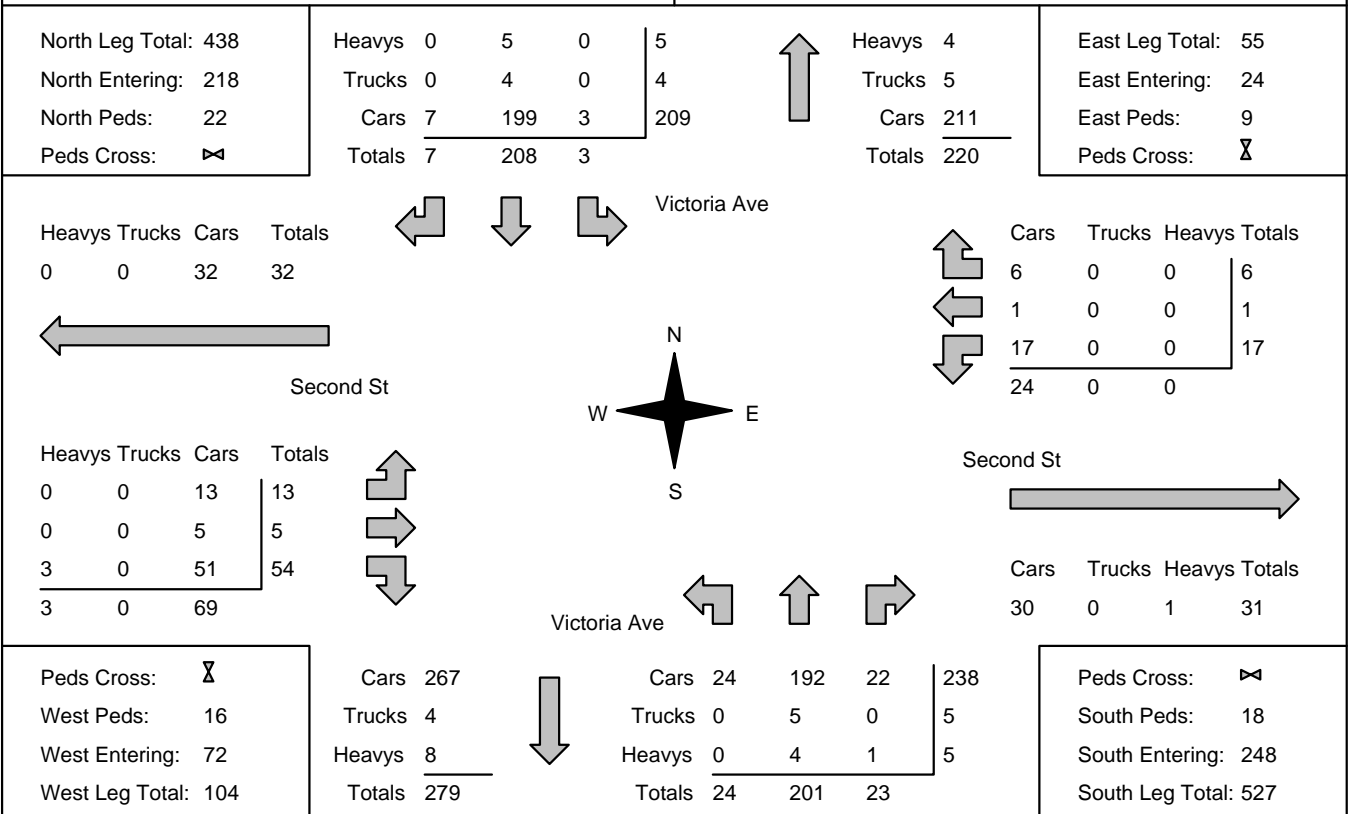
Municipality: Gananoque
Site #: 1918100002
Intersection: Victoria Ave & Second St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Victoria Ave runs N/S



Comments



Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Victoria Ave & Second St Count Date: 6-Nov-19 Municipality: Gananoque

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	1	30	0	31	2	54	8:00:00	4	17	2	23	1
9:00:00	1	44	1	46	3	83	9:00:00	5	29	3	37	8
10:00:00	0	31	2	33	1	66	10:00:00	1	30	2	33	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	0	57	3	60	6	116	16:00:00	5	45	6	56	1
17:00:00	0	33	1	34	6	92	17:00:00	5	46	7	58	4
18:00:00	1	13	0	14	4	55	18:00:00	4	34	3	41	4
Totals:	3	208	7	218	22	466	S Totals:	24	201	23	248	18
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	7	0	0	7	3	15	8:00:00	0	1	7	8	2
9:00:00	2	0	2	4	3	13	9:00:00	1	1	7	9	4
10:00:00	1	0	1	2	1	12	10:00:00	0	1	9	10	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	2	1	1	4	2	26	16:00:00	4	1	17	22	2
17:00:00	1	0	2	3	0	18	17:00:00	7	0	8	15	4
18:00:00	4	0	0	4	0	12	18:00:00	1	1	6	8	4
Totals:	17	1	6	24	9	96	W Totals:	13	5	54	72	16
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	15	3		0	14	18	14			

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100002

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	Cum
7:00:00	0	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	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
7:30:00	0	0	8	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7:45:00	2	2	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
8:00:00	4	2	17	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
8:15:00	7	3	31	14	3	1	0	0	0	0	0	0	0	0	1	1	1	1	7	6	6
8:30:00	8	1	34	3	4	1	0	0	1	1	0	0	0	0	1	0	1	0	7	0	0
8:45:00	9	1	39	5	4	0	0	0	1	0	0	0	0	0	1	0	1	0	7	0	0
9:00:00	9	0	43	4	4	0	0	0	1	0	0	0	0	0	2	1	1	0	9	2	2
9:15:00	10	1	48	5	4	0	0	0	2	1	0	0	0	0	3	1	1	0	9	0	0
9:30:00	10	0	53	5	4	0	0	0	2	0	0	0	0	0	3	0	1	0	9	0	0
9:45:00	10	0	60	7	6	2	0	0	2	0	0	0	0	0	3	0	1	0	9	0	0
10:00:00	10	0	70	10	6	0	0	0	3	1	0	0	0	0	3	0	1	0	9	0	0
10:15:00	10	0	70	0	6	0	0	0	3	0	0	0	0	0	3	0	1	0	9	0	0
15:00:00	10	0	70	0	6	0	0	0	3	0	0	0	0	0	3	0	1	0	9	0	0
15:15:00	11	1	79	9	8	2	0	0	3	0	0	0	0	0	3	0	1	0	9	0	0
15:30:00	11	0	97	18	9	1	0	0	3	0	0	0	0	0	3	0	1	0	10	1	1
15:45:00	13	2	106	9	10	1	0	0	4	1	0	0	0	0	3	0	1	0	10	0	0
16:00:00	15	2	113	7	12	2	0	0	5	1	0	0	0	0	3	0	1	0	10	0	0
16:15:00	17	2	122	9	14	2	0	0	5	0	0	0	0	0	3	0	1	0	13	3	3
16:30:00	18	1	141	19	15	1	0	0	5	0	0	0	0	0	4	1	1	0	14	1	1
16:45:00	18	0	150	9	16	1	0	0	5	0	0	0	0	0	4	0	1	0	14	0	0
17:00:00	20	2	158	8	19	3	0	0	5	0	0	0	0	0	4	0	1	0	14	0	0
17:15:00	20	0	170	12	19	0	0	0	5	0	0	0	0	0	4	0	1	0	16	2	2
17:30:00	21	1	175	5	21	2	0	0	5	0	0	0	0	0	4	0	1	0	18	2	2
17:45:00	24	3	184	9	21	0	0	0	5	0	0	0	0	0	4	0	1	0	18	0	0
18:00:00	24	0	192	8	22	1	0	0	5	0	0	0	0	0	4	0	1	0	18	0	0
18:15:00	24	0	192	0	22	0	0	0	5	0	0	0	0	0	4	0	1	0	18	0	0
18:15:15	24	0	192	0	22	0	0	0	5	0	0	0	0	0	4	0	1	0	18	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 ≤ 10
B	F	10 < d ≤ 15
C	F	15 < d ≤ 25
D	F	25 < d ≤ 35
E	F	35 < d ≤ 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.

LEVEL OF SERVICE



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 <i>cycle failures</i> (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.

2019 Existing Traffic Volumes

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	2	167	263	5	16	6
Future Vol, veh/h	2	167	263	5	16	6
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
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	4	3	0	0	0
Mvmt Flow	2	182	286	5	17	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	295	0	0	480	294
Stage 1	-	-	-	293	-
Stage 2	-	-	-	187	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1278	-	-	548	750
Stage 1	-	-	-	762	-
Stage 2	-	-	-	850	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1273	-	-	543	747
Mov Cap-2 Maneuver	-	-	-	543	-
Stage 1	-	-	-	757	-
Stage 2	-	-	-	847	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	587
HCM Lane V/C Ratio	0.002	-	-	-	0.041
HCM Control Delay (s)	7.8	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	4	1	1	1	4
Future Vol, veh/h	4	4	1	1	1	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	4	1	1	1	4

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	8	0	9
Stage 1	-	-	-	-	6
Stage 2	-	-	-	-	3
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1612	-	1011
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	1020
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1612	-	1010
Mov Cap-2 Maneuver	-	-	-	-	1010
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	1020

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1063	-	-	1612	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	16	7	0	0	10	34	5	1	54	0
Future Vol, veh/h	0	2	16	7	0	0	10	34	5	1	54	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	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	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	2	17	8	0	0	11	37	5	1	59	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	125	130	66	143	128	45	60	0	0	46	0	0
Stage 1	62	62	-	66	66	-	-	-	-	-	-	-
Stage 2	63	68	-	77	62	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	854	764	981	831	766	1031	1556	-	-	1575	-	-
Stage 1	954	847	-	950	844	-	-	-	-	-	-	-
Stage 2	953	842	-	937	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	847	754	975	802	756	1026	1555	-	-	1569	-	-
Mov Cap-2 Maneuver	847	754	-	802	756	-	-	-	-	-	-	-
Stage 1	946	845	-	940	835	-	-	-	-	-	-	-
Stage 2	945	833	-	912	845	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.9		9.5		1.5		0.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	944	802	1569	-
HCM Lane V/C Ratio	0.007	-	-	0.021	0.009	0.001	-
HCM Control Delay (s)	7.3	0	-	8.9	9.5	7.3	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	6	335	247	23	9	5
Future Vol, veh/h	6	335	247	23	9	5
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
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	1	5	0	0	0
Mvmt Flow	7	364	268	25	10	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	296	0	-	0	662 286
Stage 1	-	-	-	-	284 -
Stage 2	-	-	-	-	378 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1277	-	-	-	430 758
Stage 1	-	-	-	-	769 -
Stage 2	-	-	-	-	697 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1273	-	-	-	424 755
Mov Cap-2 Maneuver	-	-	-	-	424 -
Stage 1	-	-	-	-	761 -
Stage 2	-	-	-	-	695 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	503
HCM Lane V/C Ratio	0.005	-	-	-	0.03
HCM Control Delay (s)	7.8	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	2	1	2	7	6
Future Vol, veh/h	4	2	1	2	7	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	1	2	8	7

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	6	0	9
Stage 1	-	-	-	-	5
Stage 2	-	-	-	-	4
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1615	-	1011
Stage 1	-	-	-	-	1018
Stage 2	-	-	-	-	1019
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1615	-	1010
Mov Cap-2 Maneuver	-	-	-	-	1010
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	1019

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1040	-	-	1615	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	21	2	1	1	6	55	7	0	70	4
Future Vol, veh/h	5	1	21	2	1	1	6	55	7	0	70	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	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	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	5	1	23	2	1	1	7	60	8	0	76	4

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	165	164	81	171	162	72	82	0	0	70	0	0
Stage 1	80	80	-	80	80	-	-	-	-	-	-	-
Stage 2	85	84	-	91	82	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	804	732	968	797	734	996	1528	-	-	1544	-	-
Stage 1	934	832	-	934	832	-	-	-	-	-	-	-
Stage 2	928	829	-	921	831	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	794	725	965	772	727	989	1525	-	-	1541	-	-
Mov Cap-2 Maneuver	794	725	-	772	727	-	-	-	-	-	-	-
Stage 1	927	830	-	927	826	-	-	-	-	-	-	-
Stage 2	916	823	-	897	829	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	9.1		9.5			0.7			0		
HCM LOS	A		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1525	-	-	917	804	1541	-	-
HCM Lane V/C Ratio	0.004	-	-	0.032	0.005	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2020 Background Traffic Volumes

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	2	169	266	5	16	6
Future Vol, veh/h	2	169	266	5	16	6
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
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	4	3	0	0	0
Mvmt Flow	2	184	289	5	17	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	298	0	0	485	297
Stage 1	-	-	-	296	-
Stage 2	-	-	-	189	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1275	-	-	545	747
Stage 1	-	-	-	759	-
Stage 2	-	-	-	848	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1270	-	-	540	744
Mov Cap-2 Maneuver	-	-	-	540	-
Stage 1	-	-	-	754	-
Stage 2	-	-	-	845	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1270	-	-	-	584
HCM Lane V/C Ratio	0.002	-	-	-	0.041
HCM Control Delay (s)	7.8	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	4	1	1	1	4
Future Vol, veh/h	4	4	1	1	1	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	4	1	1	1	4

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	8	0	9
Stage 1	-	-	-	-	6
Stage 2	-	-	-	-	3
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1612	-	1011
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	1020
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1612	-	1010
Mov Cap-2 Maneuver	-	-	-	-	1010
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	1020

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1063	-	-	1612	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	16	7	0	0	10	35	5	1	55	0
Future Vol, veh/h	0	2	16	7	0	0	10	35	5	1	55	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	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	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	2	17	8	0	0	11	38	5	1	60	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	127	132	67	145	130	46	61	0	0	47	0	0
Stage 1	63	63	-	67	67	-	-	-	-	-	-	-
Stage 2	64	69	-	78	63	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	851	762	980	828	764	1029	1555	-	-	1573	-	-
Stage 1	953	846	-	948	843	-	-	-	-	-	-	-
Stage 2	952	841	-	936	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	844	752	974	799	754	1024	1554	-	-	1567	-	-
Mov Cap-2 Maneuver	844	752	-	799	754	-	-	-	-	-	-	-
Stage 1	945	844	-	938	834	-	-	-	-	-	-	-
Stage 2	944	832	-	911	844	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.9		9.5		1.5		0.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	943	799	1567	-	-
HCM Lane V/C Ratio	0.007	-	-	0.021	0.01	0.001	-	-
HCM Control Delay (s)	7.3	0	-	8.9	9.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	6	338	250	24	9	5
Future Vol, veh/h	6	338	250	24	9	5
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
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	1	5	0	0	0
Mvmt Flow	7	367	272	26	10	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	301	0	-	0	669 290
Stage 1	-	-	-	-	288 -
Stage 2	-	-	-	-	381 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1272	-	-	-	426 754
Stage 1	-	-	-	-	766 -
Stage 2	-	-	-	-	695 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1268	-	-	-	420 751
Mov Cap-2 Maneuver	-	-	-	-	420 -
Stage 1	-	-	-	-	758 -
Stage 2	-	-	-	-	693 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1268	-	-	-	498
HCM Lane V/C Ratio	0.005	-	-	-	0.031
HCM Control Delay (s)	7.9	0	-	-	12.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	2	1	2	7	6
Future Vol, veh/h	4	2	1	2	7	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	1	2	8	7

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	6	0	9
Stage 1	-	-	-	-	5
Stage 2	-	-	-	-	4
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1615	-	1011
Stage 1	-	-	-	-	1018
Stage 2	-	-	-	-	1019
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1615	-	1010
Mov Cap-2 Maneuver	-	-	-	-	1010
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	1019

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1040	-	-	1615	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	21	2	1	1	6	56	7	0	71	4
Future Vol, veh/h	5	1	21	2	1	1	6	56	7	0	71	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	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	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	5	1	23	2	1	1	7	61	8	0	77	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	167	166	82	173	164	73	83	0	0	71	0	0
Stage 1	81	81	-	81	81	-	-	-	-	-	-	-
Stage 2	86	85	-	92	83	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	802	730	967	794	732	995	1527	-	-	1542	-	-
Stage 1	932	832	-	932	832	-	-	-	-	-	-	-
Stage 2	927	828	-	920	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	792	723	964	769	725	988	1524	-	-	1539	-	-
Mov Cap-2 Maneuver	792	723	-	769	725	-	-	-	-	-	-	-
Stage 1	925	830	-	925	826	-	-	-	-	-	-	-
Stage 2	915	822	-	896	828	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		9.5		0.6		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	916	801	1539	-	-
HCM Lane V/C Ratio	0.004	-	-	0.032	0.005	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2025 Background Traffic Volumes

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	3	178	279	5	17	7
Future Vol, veh/h	3	178	279	5	17	7
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
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	4	3	0	0	0
Mvmt Flow	3	193	303	5	18	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	312	0	-	0	510 311
Stage 1	-	-	-	-	310 -
Stage 2	-	-	-	-	200 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1260	-	-	-	527 734
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	838 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1255	-	-	-	521 731
Mov Cap-2 Maneuver	-	-	-	-	521 -
Stage 1	-	-	-	-	743 -
Stage 2	-	-	-	-	835 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1255	-	-	-	569
HCM Lane V/C Ratio	0.003	-	-	-	0.046
HCM Control Delay (s)	7.9	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	5	1	1	1	4
Future Vol, veh/h	4	5	1	1	1	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	5	1	1	1	4

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	9	0	10
Stage 1	-	-	-	-	7
Stage 2	-	-	-	-	3
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1611	-	1010
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	1020
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1611	-	1009
Mov Cap-2 Maneuver	-	-	-	-	1009
Stage 1	-	-	-	-	1015
Stage 2	-	-	-	-	1020

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1061	-	-	1611	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	17	8	0	0	10	37	5	1	57	0
Future Vol, veh/h	0	3	17	8	0	0	10	37	5	1	57	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	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	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	3	18	9	0	0	11	40	5	1	62	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	131	136	69	150	134	48	63	0	0	49	0	0
Stage 1	65	65	-	69	69	-	-	-	-	-	-	-
Stage 2	66	71	-	81	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	846	759	977	822	760	1027	1553	-	-	1571	-	-
Stage 1	951	845	-	946	841	-	-	-	-	-	-	-
Stage 2	950	840	-	932	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	839	749	971	792	750	1022	1552	-	-	1565	-	-
Mov Cap-2 Maneuver	839	749	-	792	750	-	-	-	-	-	-	-
Stage 1	943	843	-	936	832	-	-	-	-	-	-	-
Stage 2	942	831	-	905	843	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		9.6		1.4		0.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	930	792	1565	-	-
HCM Lane V/C Ratio	0.007	-	-	0.023	0.011	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	9.6	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	6	355	262	25	9	5
Future Vol, veh/h	6	355	262	25	9	5
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
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	1	5	0	0	0
Mvmt Flow	7	386	285	27	10	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	315	0	-	0	702 304
Stage 1	-	-	-	-	302 -
Stage 2	-	-	-	-	400 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1257	-	-	-	407 740
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	681 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1254	-	-	-	402 737
Mov Cap-2 Maneuver	-	-	-	-	402 -
Stage 1	-	-	-	-	747 -
Stage 2	-	-	-	-	679 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1254	-	-	-	480
HCM Lane V/C Ratio	0.005	-	-	-	0.032
HCM Control Delay (s)	7.9	0	-	-	12.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	2	1	3	7	6
Future Vol, veh/h	4	2	1	3	7	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	1	3	8	7

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	6	0	10
Stage 1	-	-	-	-	5
Stage 2	-	-	-	-	5
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1615	-	1010
Stage 1	-	-	-	-	1018
Stage 2	-	-	-	-	1018
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1615	-	1009
Mov Cap-2 Maneuver	-	-	-	-	1009
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	1018

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1040	-	-	1615	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	22	3	1	1	7	59	8	0	74	4
Future Vol, veh/h	5	1	22	3	1	1	7	59	8	0	74	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	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	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	5	1	24	3	1	1	8	64	9	0	80	4

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	176	175	85	183	173	77	86	0	0	75	0	0
Stage 1	84	84	-	87	87	-	-	-	-	-	-	-
Stage 2	92	91	-	96	86	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	791	722	963	783	724	990	1523	-	-	1537	-	-
Stage 1	929	829	-	926	827	-	-	-	-	-	-	-
Stage 2	920	823	-	916	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	781	716	960	758	717	983	1520	-	-	1534	-	-
Mov Cap-2 Maneuver	781	716	-	758	717	-	-	-	-	-	-	-
Stage 1	922	827	-	920	821	-	-	-	-	-	-	-
Stage 2	908	817	-	891	825	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	9.1		9.6			0.7		0		
HCM LOS	A		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1520	-	-	912	785	1534	-	-
HCM Lane V/C Ratio	0.005	-	-	0.033	0.007	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2020 Total Traffic Volumes

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	4	169	266	6	19	7
Future Vol, veh/h	4	169	266	6	19	7
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
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	4	3	0	0	0
Mvmt Flow	4	184	289	7	21	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	300	0	-	0	490 298
Stage 1	-	-	-	-	297 -
Stage 2	-	-	-	-	193 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1273	-	-	-	541 746
Stage 1	-	-	-	-	758 -
Stage 2	-	-	-	-	845 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1268	-	-	-	535 743
Mov Cap-2 Maneuver	-	-	-	-	535 -
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	842 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1268	-	-	-	579
HCM Lane V/C Ratio	0.003	-	-	-	0.049
HCM Control Delay (s)	7.8	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM 2010 TWSC
5: Birch St/Site Access & Second St

12/19/2019

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	4	1	1	2	1	2	4	3	4	0
Future Vol, veh/h	0	4	4	1	1	2	1	2	4	3	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	4	1	1	2	1	2	4	3	4	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	8	0	0	12	11	6	13	12	2
Stage 1	-	-	-	-	-	-	6	6	-	4	4	-
Stage 2	-	-	-	-	-	-	6	5	-	9	8	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1619	-	-	1612	-	-	1005	884	1077	1004	883	1082
Stage 1	-	-	-	-	-	-	1016	891	-	1018	892	-
Stage 2	-	-	-	-	-	-	1016	892	-	1012	889	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1619	-	-	1612	-	-	1000	883	1077	997	882	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	1000	883	-	997	882	-
Stage 1	-	-	-	-	-	-	1016	891	-	1018	891	-
Stage 2	-	-	-	-	-	-	1010	891	-	1005	889	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	8.6	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1003	1619	-	-	1612	-	-	928
HCM Lane V/C Ratio	0.008	-	-	-	0.001	-	-	0.008
HCM Control Delay (s)	8.6	0	-	-	7.2	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	19	7	0	0	12	35	5	1	55	0
Future Vol, veh/h	0	3	19	7	0	0	12	35	5	1	55	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	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	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	3	21	8	0	0	13	38	5	1	60	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	131	136	67	151	134	46	61	0	0	47	0	0
Stage 1	63	63	-	71	71	-	-	-	-	-	-	-
Stage 2	68	73	-	80	63	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	846	759	980	821	760	1029	1555	-	-	1573	-	-
Stage 1	953	846	-	944	840	-	-	-	-	-	-	-
Stage 2	947	838	-	934	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	838	748	974	787	749	1024	1554	-	-	1567	-	-
Mov Cap-2 Maneuver	838	748	-	787	749	-	-	-	-	-	-	-
Stage 1	943	844	-	932	829	-	-	-	-	-	-	-
Stage 2	938	827	-	905	844	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		9.6		1.7		0.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	935	787	1567	-	-
HCM Lane V/C Ratio	0.008	-	-	0.026	0.01	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	9.6	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	7	338	250	28	10	6
Future Vol, veh/h	7	338	250	28	10	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
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	1	5	0	0	0
Mvmt Flow	8	367	272	30	11	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	305	0	-	0	673 292
Stage 1	-	-	-	-	290 -
Stage 2	-	-	-	-	383 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1267	-	-	-	424 752
Stage 1	-	-	-	-	764 -
Stage 2	-	-	-	-	694 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1263	-	-	-	418 749
Mov Cap-2 Maneuver	-	-	-	-	418 -
Stage 1	-	-	-	-	756 -
Stage 2	-	-	-	-	692 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1263	-	-	-	501
HCM Lane V/C Ratio	0.006	-	-	-	0.035
HCM Control Delay (s)	7.9	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	2	1	2	2	7	6	6	4	2	0
Future Vol, veh/h	0	4	2	1	2	2	7	6	6	4	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	2	1	2	2	8	7	7	4	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	6	0	0	11	11	5	17	11	3
Stage 1	-	-	-	-	-	-	5	5	-	5	5	-
Stage 2	-	-	-	-	-	-	6	6	-	12	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1618	-	-	1615	-	-	1007	884	1078	998	884	1081
Stage 1	-	-	-	-	-	-	1017	892	-	1017	892	-
Stage 2	-	-	-	-	-	-	1016	891	-	1009	891	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1618	-	-	1615	-	-	1004	883	1078	986	883	1081
Mov Cap-2 Maneuver	-	-	-	-	-	-	1004	883	-	986	883	-
Stage 1	-	-	-	-	-	-	1017	892	-	1017	891	-
Stage 2	-	-	-	-	-	-	1013	890	-	996	891	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.4			8.7			8.8		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	983	1618	-	-	1615	-	-	949
HCM Lane V/C Ratio	0.021	-	-	-	0.001	-	-	0.007
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	8.8
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	1	25	2	1	1	7	56	7	0	71	4
Future Vol, veh/h	6	1	25	2	1	1	7	56	7	0	71	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	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	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	7	1	27	2	1	1	8	61	8	0	77	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	169	168	82	177	166	73	83	0	0	71	0	0
Stage 1	81	81	-	83	83	-	-	-	-	-	-	-
Stage 2	88	87	-	94	83	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	799	728	967	790	730	995	1527	-	-	1542	-	-
Stage 1	932	832	-	930	830	-	-	-	-	-	-	-
Stage 2	925	827	-	918	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	789	721	964	762	723	988	1524	-	-	1539	-	-
Mov Cap-2 Maneuver	789	721	-	762	723	-	-	-	-	-	-	-
Stage 1	925	830	-	923	824	-	-	-	-	-	-	-
Stage 2	913	821	-	890	828	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		9.5		0.7		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	916	797	1539	-	-
HCM Lane V/C Ratio	0.005	-	-	0.038	0.005	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2025 Total Traffic Volumes

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	4	178	279	6	20	8
Future Vol, veh/h	4	178	279	6	20	8
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
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	4	3	0	0	0
Mvmt Flow	4	193	303	7	22	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	314	0	-	0	513 312
Stage 1	-	-	-	-	311 -
Stage 2	-	-	-	-	202 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1258	-	-	-	525 733
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	837 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1253	-	-	-	519 730
Mov Cap-2 Maneuver	-	-	-	-	519 -
Stage 1	-	-	-	-	742 -
Stage 2	-	-	-	-	834 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1253	-	-	-	566
HCM Lane V/C Ratio	0.003	-	-	-	0.054
HCM Control Delay (s)	7.9	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	5	1	1	2	1	2	4	3	4	0
Future Vol, veh/h	0	4	5	1	1	2	1	2	4	3	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	5	1	1	2	1	2	4	3	4	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	9	0	0	13	12	7	14	13	2
Stage 1	-	-	-	-	-	-	7	7	-	4	4	-
Stage 2	-	-	-	-	-	-	6	5	-	10	9	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1619	-	-	1611	-	-	1004	883	1075	1002	881	1082
Stage 1	-	-	-	-	-	-	1015	890	-	1018	892	-
Stage 2	-	-	-	-	-	-	1016	892	-	1011	888	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1619	-	-	1611	-	-	999	882	1075	995	880	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	999	882	-	995	880	-
Stage 1	-	-	-	-	-	-	1015	890	-	1018	891	-
Stage 2	-	-	-	-	-	-	1010	891	-	1004	888	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.8			8.6			8.9		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1002	1619	-	-	1611	-	-	926
HCM Lane V/C Ratio	0.008	-	-	-	0.001	-	-	0.008
HCM Control Delay (s)	8.6	0	-	-	7.2	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	20	8	0	0	12	37	5	1	57	0
Future Vol, veh/h	0	3	20	8	0	0	12	37	5	1	57	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	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	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	3	22	9	0	0	13	40	5	1	62	0

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	135	140	69	156	138	48	63	0	0	49	0	0
Stage 1	65	65	-	73	73	-	-	-	-	-	-	-
Stage 2	70	75	-	83	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	841	755	977	815	757	1027	1553	-	-	1571	-	-
Stage 1	951	845	-	942	838	-	-	-	-	-	-	-
Stage 2	945	836	-	930	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	833	744	971	781	746	1022	1552	-	-	1565	-	-
Mov Cap-2 Maneuver	833	744	-	781	746	-	-	-	-	-	-	-
Stage 1	941	843	-	930	827	-	-	-	-	-	-	-
Stage 2	936	825	-	900	843	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	9		9.7			1.6			0.1		
HCM LOS	A		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	934	781	1565	-	-
HCM Lane V/C Ratio	0.008	-	-	0.027	0.011	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	8	355	262	29	11	6
Future Vol, veh/h	8	355	262	29	11	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
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	1	5	0	0	0
Mvmt Flow	9	386	285	32	12	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	320	0	-	0	708 306
Stage 1	-	-	-	-	304 -
Stage 2	-	-	-	-	404 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1251	-	-	-	404 739
Stage 1	-	-	-	-	753 -
Stage 2	-	-	-	-	679 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1248	-	-	-	398 736
Mov Cap-2 Maneuver	-	-	-	-	398 -
Stage 1	-	-	-	-	744 -
Stage 2	-	-	-	-	677 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1248	-	-	-	475
HCM Lane V/C Ratio	0.007	-	-	-	0.039
HCM Control Delay (s)	7.9	0	-	-	12.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	2	1	3	2	7	6	6	4	2	0
Future Vol, veh/h	0	4	2	1	3	2	7	6	6	4	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	2	1	3	2	8	7	7	4	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5	0	0	6	0	0	12	12	5	18	12	4
Stage 1	-	-	-	-	-	-	5	5	-	6	6	-
Stage 2	-	-	-	-	-	-	7	7	-	12	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1616	-	-	1615	-	-	1005	883	1078	996	883	1080
Stage 1	-	-	-	-	-	-	1017	892	-	1016	891	-
Stage 2	-	-	-	-	-	-	1015	890	-	1009	891	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1616	-	-	1615	-	-	1002	882	1078	984	882	1080
Mov Cap-2 Maneuver	-	-	-	-	-	-	1002	882	-	984	882	-
Stage 1	-	-	-	-	-	-	1017	892	-	1016	890	-
Stage 2	-	-	-	-	-	-	1012	889	-	996	891	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.2			8.7			8.8		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	982	1616	-	-	1615	-	-	947
HCM Lane V/C Ratio	0.021	-	-	-	0.001	-	-	0.007
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	8.8
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	2	26	3	2	1	8	59	8	0	74	5
Future Vol, veh/h	6	2	26	3	2	1	8	59	8	0	74	5
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	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	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	7	2	28	3	2	1	9	64	9	0	80	5

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	179	178	86	188	176	77	87	0	0	75	0	0
Stage 1	85	85	-	89	89	-	-	-	-	-	-	-
Stage 2	94	93	-	99	87	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	787	719	962	777	721	990	1522	-	-	1537	-	-
Stage 1	928	828	-	923	825	-	-	-	-	-	-	-
Stage 2	918	822	-	912	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	775	712	959	747	714	983	1519	-	-	1534	-	-
Mov Cap-2 Maneuver	775	712	-	747	714	-	-	-	-	-	-	-
Stage 1	921	826	-	916	818	-	-	-	-	-	-	-
Stage 2	904	815	-	882	825	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	9.2		9.7			0.8		0		
HCM LOS	A		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	903	766	1534	-	-
HCM Lane V/C Ratio	0.006	-	-	0.041	0.009	-	-	-
HCM Control Delay (s)	7.4	0	-	9.2	9.7	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX C

Left Turn Lane Warrants

King Street W & Birth St 2025 Total PM Peak Hour Volumes

AT-GRADE INTERSECTIONS

APPENDIX A

