F.R. Berry & Associates
TRANSPORTATION PLANNING CONSULTANTS

660 Inverness Avenue
London, Ontario N6H 5R4
Tel: (519) 474 2527 Toll Free: 1 888 665 9192 Email: fyberry@rogers.com

February 23, 2022

Our Ref. **2203**

Knutson Development Consultants Inc.
29-30 Ann Street
St. Mary's ON
N4X 1C8

Attn. Mr. R. Knutson

Dear Mr. Knutson:

RE: PROPOSED TOWNHOUSE DEVELOPMENT
UPPER QUEEN STREET, THORNDALE

At your request, I have assessed the potential impact of a proposed 41 unit townhouse development at 233 Upper Queen Street in the community of Thorndale. The location of the site is shown in **Figure 1**.

Existing Conditions
Since most of the traffic generated by the development is likely to access King Street, Middlesex County Road 28, via Agnes Street, I obtained a traffic count for this intersection. Peak hour turning volumes derived from this count are shown in **Figure 2.** Traffic count reports are contained in Appendix A.

Currently, traffic patterns have been disrupted by the Covid-19 pandemic. Accordingly, the count volumes shown in **Figure 2** were adjusted upward by one third as shown in **Figure 3**. The resulting through volumes on County Road 28 are consistent with the latest average daily volumes for County Road 28 as published by the County of Middlesex.

King Street is a two lane arterial street with paved parking lanes, curb and gutter and with sidewalks on both sides. Agnes Street and Upper Queen Street are two lane paved local streets, with grass drainage swales on both sides. Immediately south of King Street, Agnes Street is widened to permit parking on both sides. All streets in the study area have 50km/h speed limits. Land uses in the area are primarily low density residential.

Proposed Development

The site plan for the proposed development is shown in **Figure 4**. 41 townhouse units are proposed with a single access to Upper Queen Street. Based on regression equations contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual, Tenth Edition, for ITE Land Use 220, Multifamily Housing (Low-Rise), the proposed development will generate 20 vehicle trips in the morning peak hour, 5 entering and 15 leaving, and 27 vehicle trips in the afternoon peak hour, 17 entering and 10 leaving.

Based on the turning movements to and from Agnes Street as shown in **Figure 2**, it is estimated that 90 percent of the site generated trips would have an origin and destination to the west on King Street. The assignment of peak hour site generated trips is shown in **Figure 5**. Trips destined to and from the west would use Agnes Street to King Street. Trips to and from the east would use Maria Street to access King Street.

Projected Traffic

Build-out of the proposed development is anticipated in 2024. Existing adjusted traffic volumes from **Figure 3** were projected to 2024 and to 2029, five years beyond build-out, assuming an annual growth rate of 1.5 percent. Growth factors were only applied to through traffic volumes on King Street since the residential area served by Agnes Street is stable and no other developments are anticipated in the area.

Projected background traffic volumes for 2024 and 2029 are shown in **Figures 6** and **7** respectively. Total peak hour traffic volumes are shown in **Figures 8** and **9**. The volumes shown in **Figures 8** and **9** were obtained by adding site generated traffic from **Figure 5** to background traffic from **Figures 6** and **7**.

Analysis

Since existing traffic volumes on Upper Queen Street, Agnes Street and Maria Street are low and well within the capacity of local streets, the intersections of these streets were not analyzed. Local residential streets can accommodate up to 1 000 vehicles daily and about 100 vehicles in the peak hour.

The most significant traffic impact of the proposed development will occur at the intersection of King Street and Agnes Street. Existing and projected traffic demand at this intersection was analyzed for delays, volume to capacity (v/c) ratios and queue lengths using the Synchro analysis program[1]. The results of the analysis are summarized in **Table 1**. Analysis reports are contained in Appendix B.

[1] An earlier version of this program was used in the analysis. The current version contains more detail but the key outputs are virtually identical.

The analysis indicates that the intersection of King Street and Agnes Street currently operates at a good level of service and will continue to do so under projected peak hour conditions. Eastbound and westbound traffic on King Street will be subject to only minor delays while traffic approaching on Agnes Street will be subject to average delays of up to 12.9 seconds under projected 2029 peak hour conditions. Average queue lengths on this approach will not exceed two metres for 95 percent of the time in the afternoon peak hour, less than one car length.

Summary and Conclusions

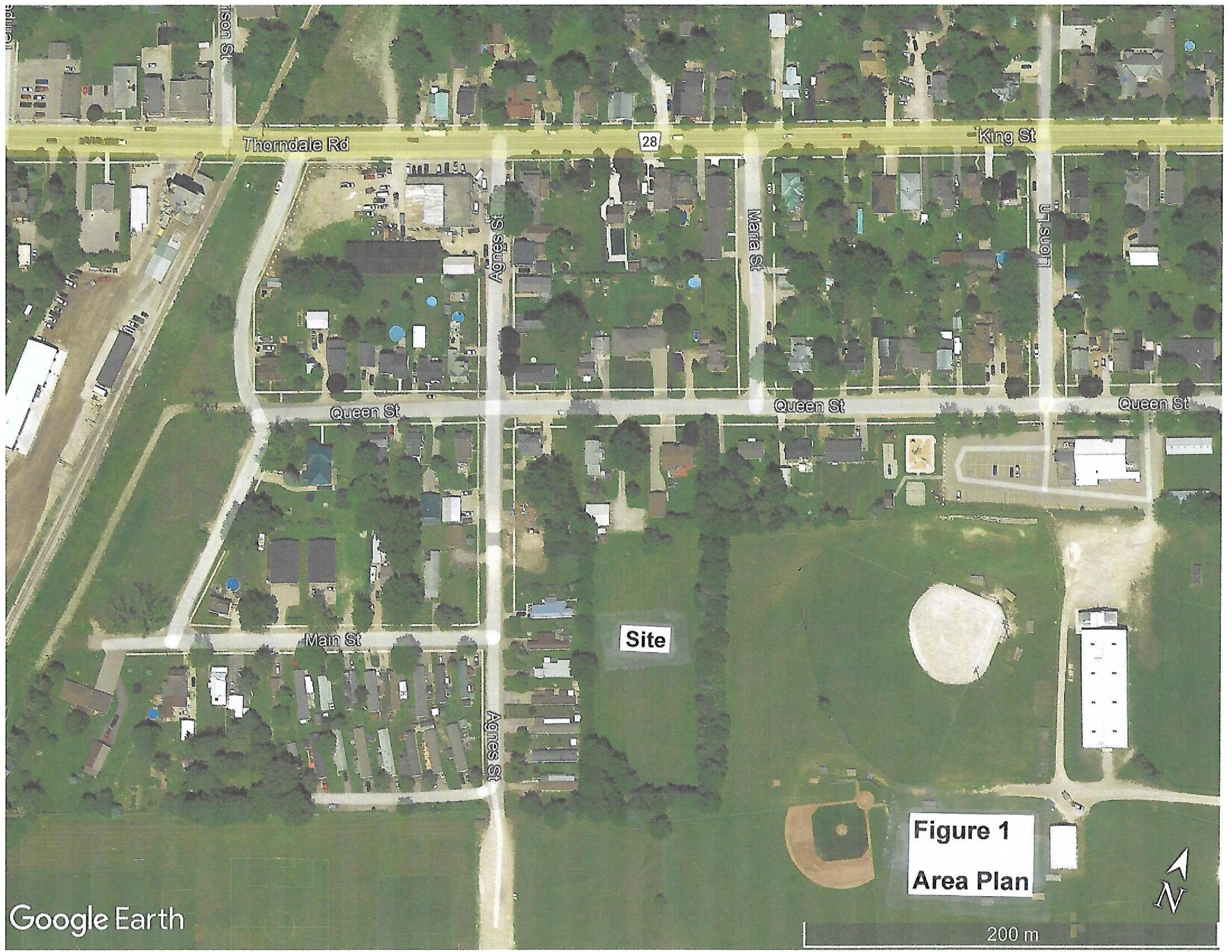
The proposed development will generate 20 vehicle trips in the morning peak hour and 27 vehicle trips in the afternoon peak hour. Ninety percent of these trips are expected to pass through the intersection of King Street and Agnes Street.

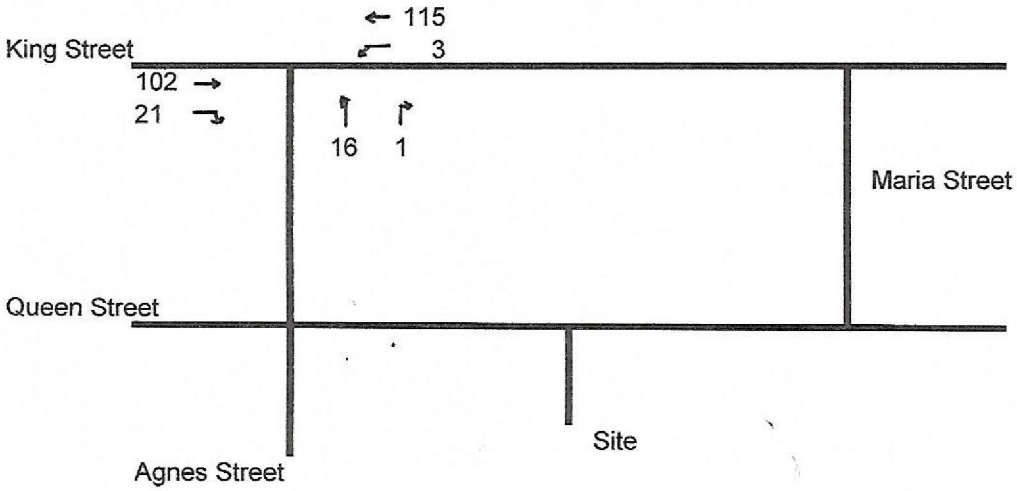
The addition of site generated trips to traffic flow on Upper Queen Street, Agnes Street and Maria Street will have no significant impact on traffic flow and safety on these streets. While volumes will increase, they will still be well within the capacity of local streets.

The intersection of King Street and Agnes Street will continue to operate at a good level of service with minimal impact to through traffic on King Street.

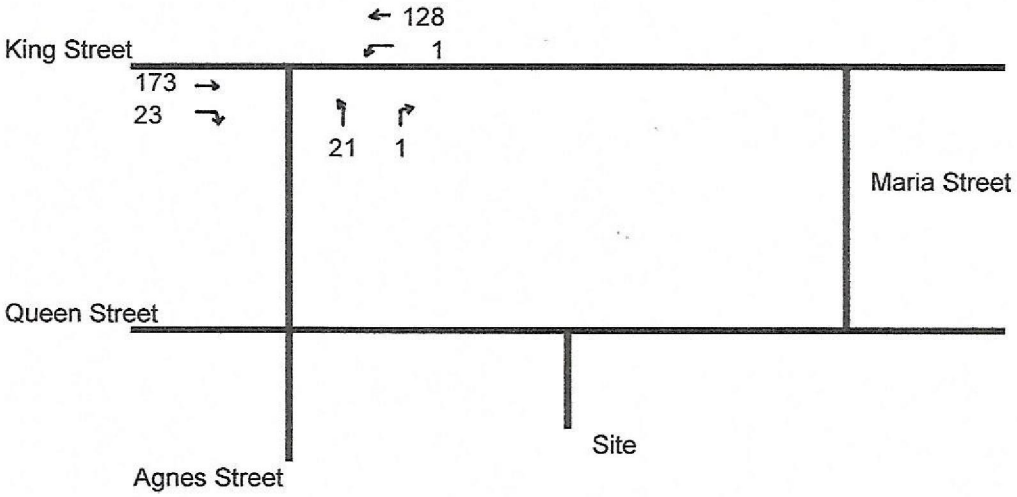
Very truly yours
F. R. Berry & Associates

Frank R. Berry, P.Eng.
Principal


Thorndale Rd
28
King St
Queen St
Queen St
Queen St
Main St
Site
Agnes St
Mana St
Figure 1
Area Plan
Google Earth
200 m
N



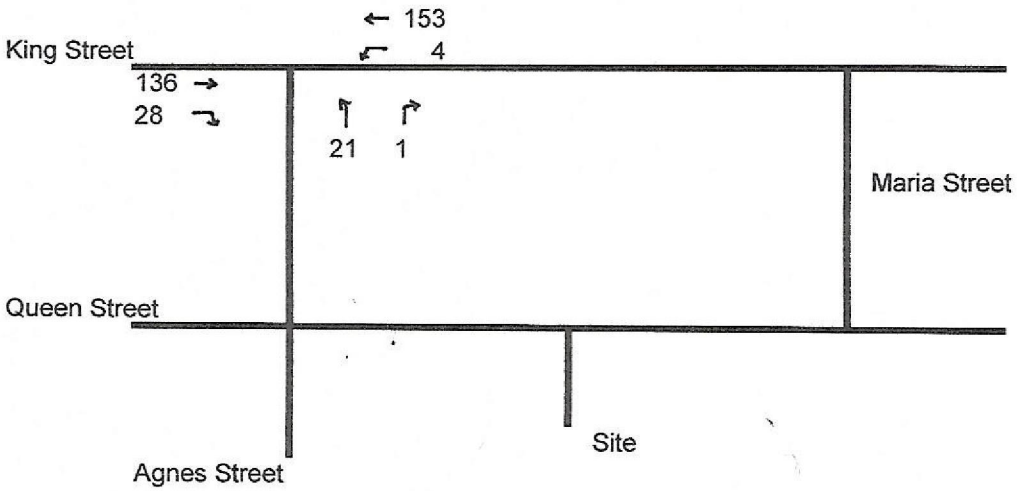
AM Peak Hour



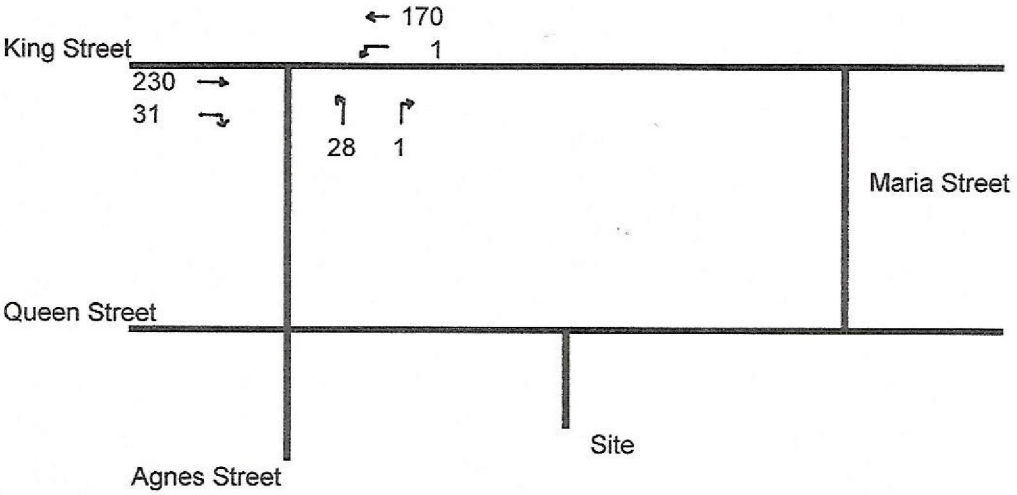
PM Peak Hour

Figure 2

Existing Traffic



AM Peak Hour



PM Peak Hour

Figure 3

Existing Traffic Adjusted

LDS

233 UPPER QUEEN STREET, THORNDALE

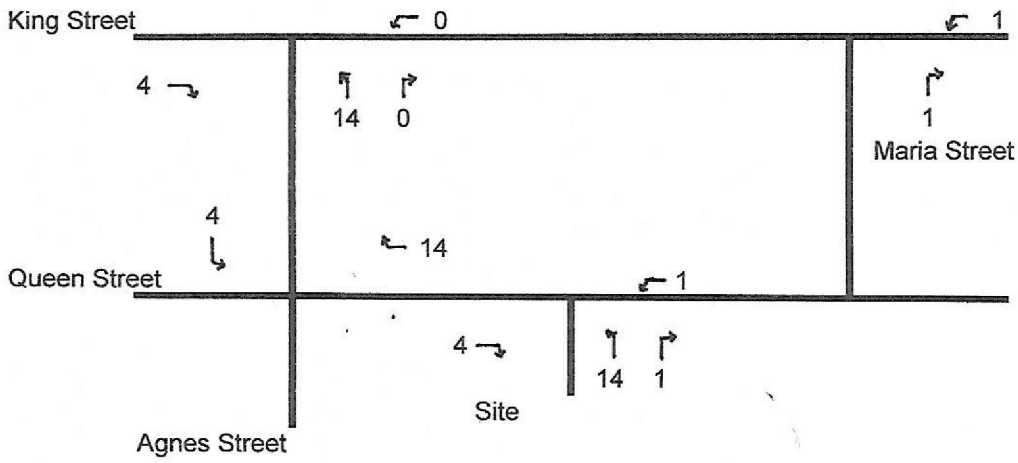
CONCEPT PLAN

1614-00267

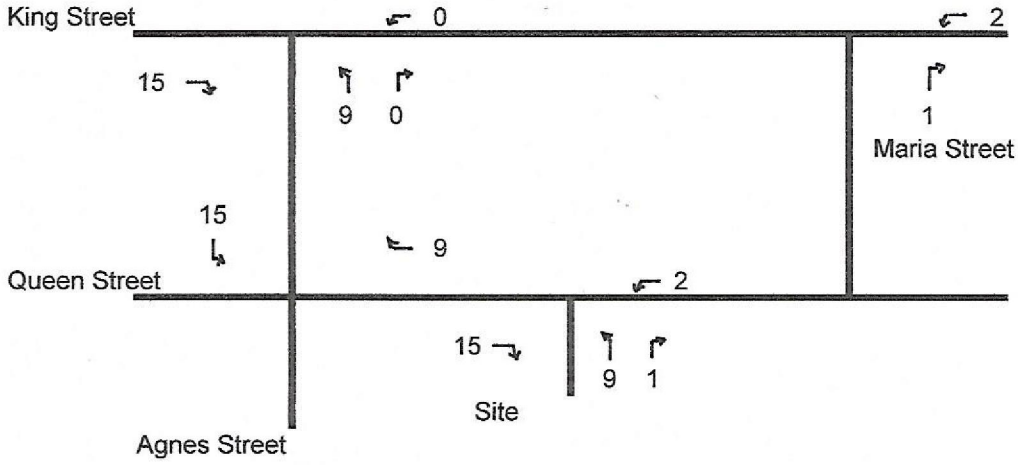
CP2

Figure 4

Site Plan



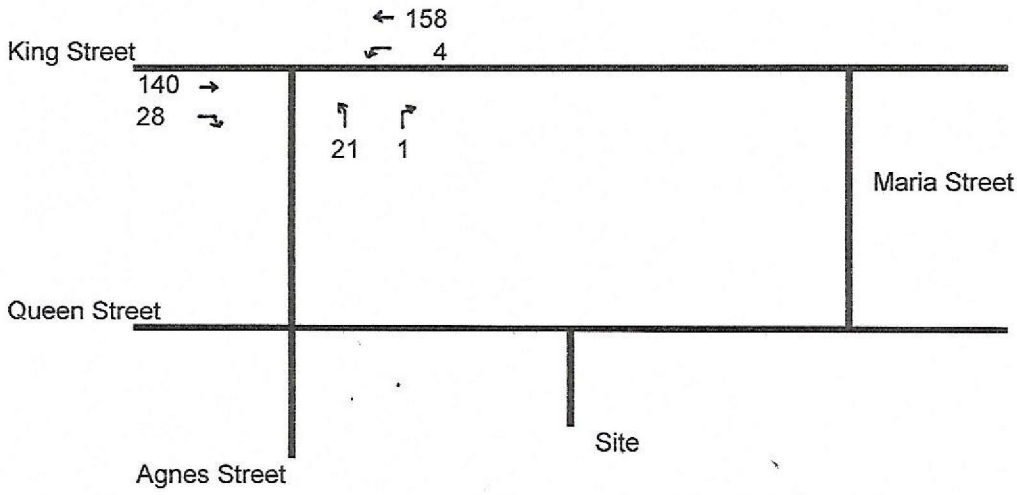
AM Peak Hour



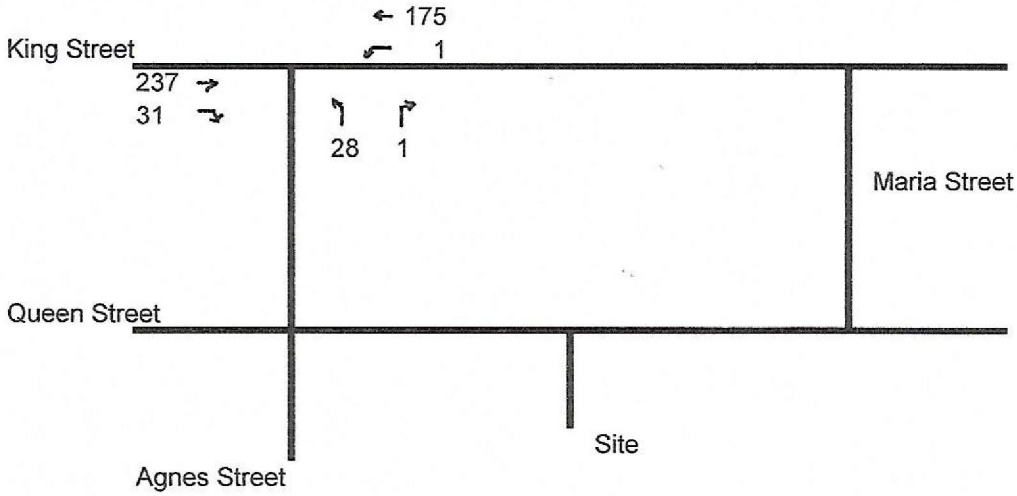
PM Peak Hour

Figure 5

Site Generated Traffic



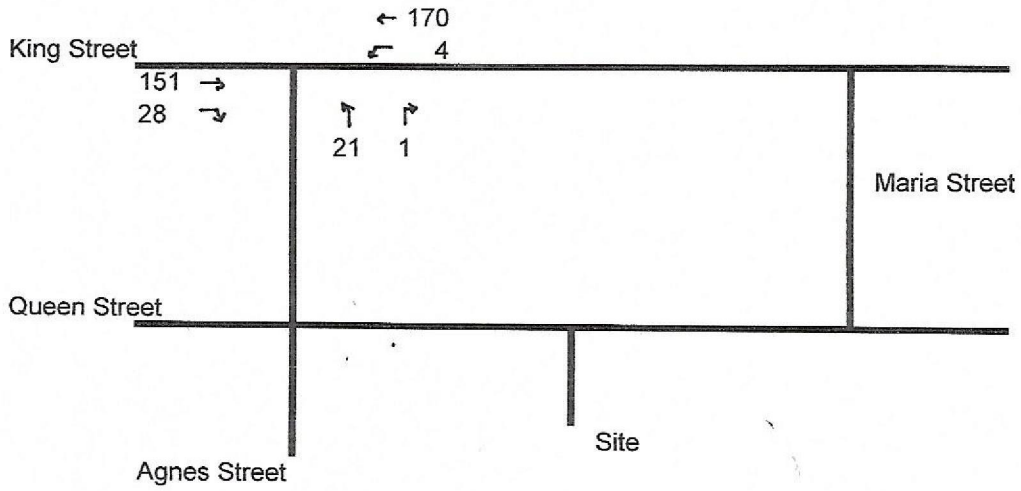
AM Peak Hour



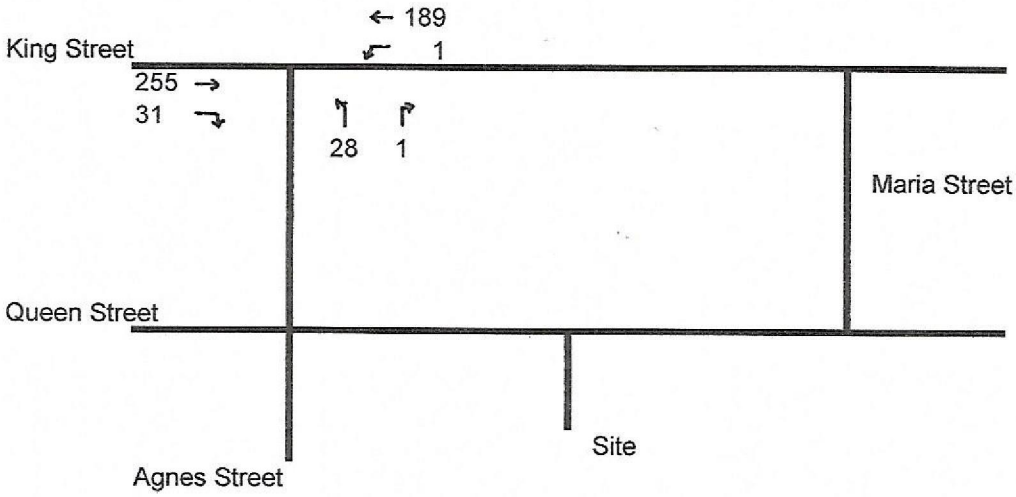
PM Peak Hour

Figure 6

Background Traffic 2024



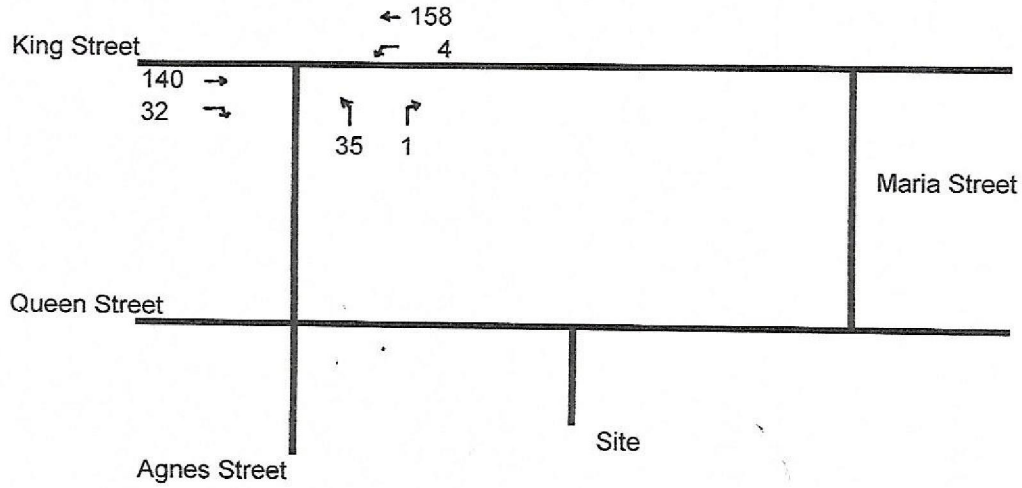
AM Peak Hour



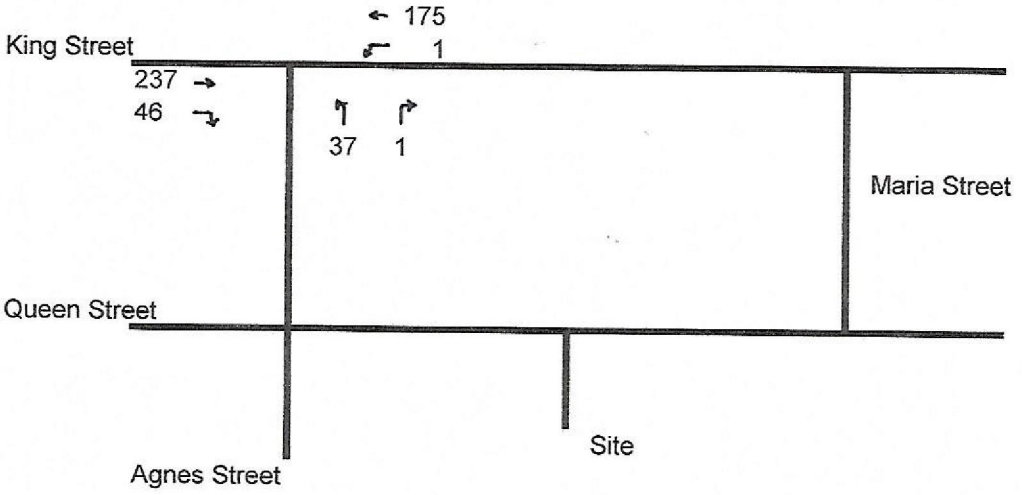
PM Peak Hour

Figure 7

Background Traffic 2029



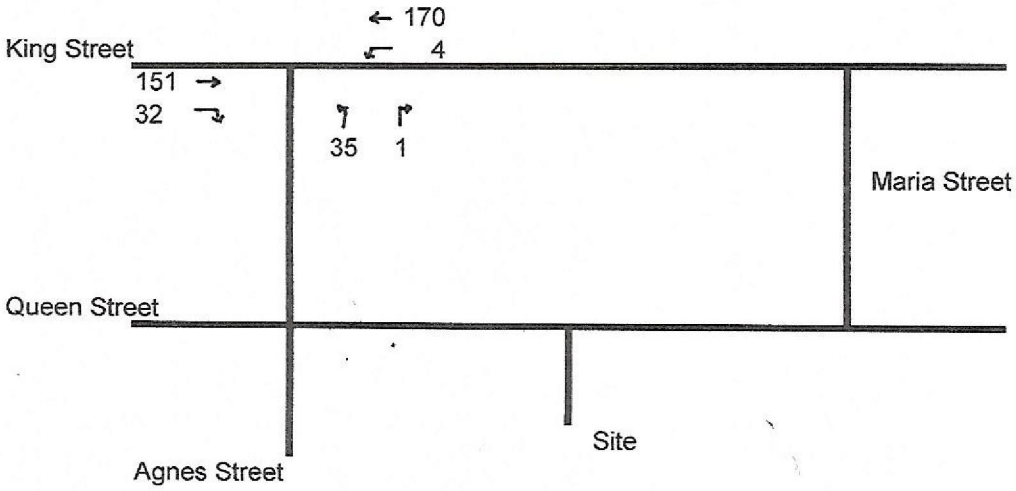
AM Peak Hour



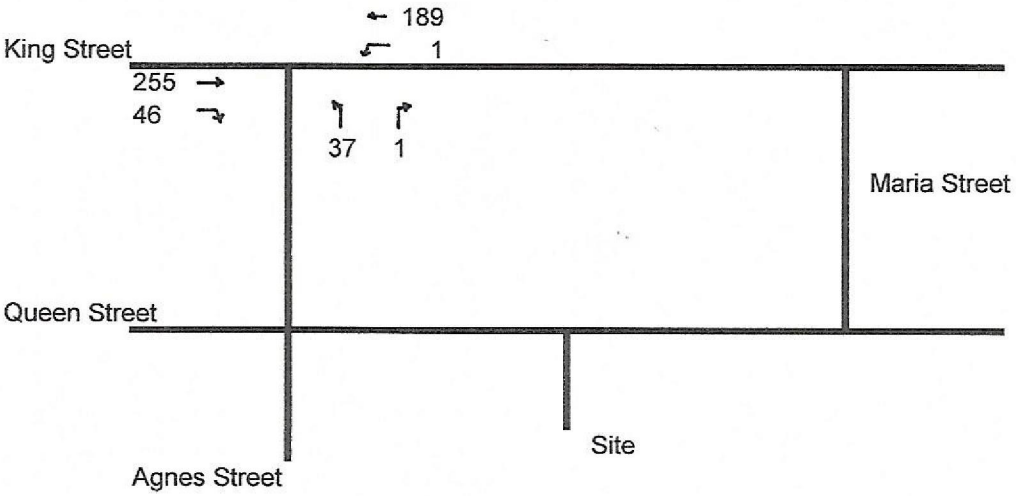
PM Peak Hour

Figure 8

Total Traffic 2024



AM Peak Hour



PM Peak Hour

Figure 9

Total Traffic 2029

Intersection	AM Peak Hour				PM Peak Hour			
	v/c	Del.	LofS	Q	v/c	Del.	LofS	Q
Adjusted 2022								
Eastbound TR	0.10	0.0	A	0.0	0.17	0.0	A	0.0
Westbound LT	0.00	0.2	A	0.1	0.00	0.1	A	0.0
Northbound LR	0.04	10.9	B	0.9	0.06	11.8	B	1.4
Intersec'n Utilization			23.0%				26.2%	
LofS			A				A	
Total 2024								
Eastbound TR	0.11	0.0	A	0.0	0.18	0.0	A	0.0
Westbound LT	0.00	0.2	A	0.1	0.00	0.1	A	0.0
Northbound LR	0.06	11.2	B	1.5	0.08	12.5	B	1.9
Ave. Intersec'n Delay			23.3%				27.7%	
LofS			A				A	
Total 2029								
Eastbound TR	0.12	0.0	A	0.0	0.19	0.0	A	0.0
Westbound LT	0.00	0.2	A	0.1	0.00	0.0	A	0.0
Northbound LR	0.07	11.4	B	1.6	0.08	12.9	B	2.0
Ave. Intersec'n Delay			24.0%				28.8%	
LofS			A				A	

Note: Del. - ave. delay (secs.)

LofS - level of service

v/c - volume to capacity ratio

Average Intersection Delay (secs.)

Q - maximum queue length (metres)

(95th percentile)

Table 1

Level of Service
King Street
and Agnes Street

APPENDIX A

TRAFFIC COUNTS

Thorndale Rd @ Agnes St

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

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

Municipality: Thorndale
Site #: 0000000004
Intersection: Thorndale Rd & Agnes St
TFR File #: 4
Count date: 26-Jan-2022

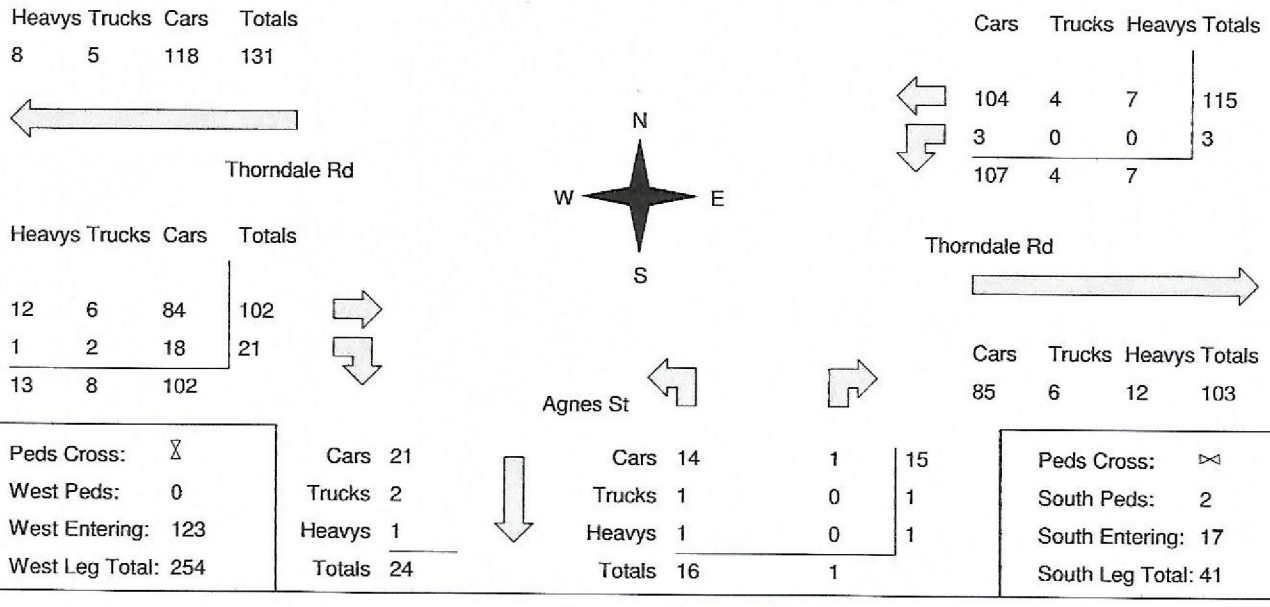
Weather conditions:
Clear/Wet

Person(s) who counted:
Cam

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

Major Road: Thorndale Rd runs W/E

East Leg Total: 221
East Entering: 118
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 123
West Leg Total: 254

Peds Cross: ⋈
South Peds: 2
South Entering: 17
South Leg Total: 41

Comments

Thorndale Rd @ Agnes St

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:45:00
To: 13:45:00

Municipality: Thorndale
Site #: 0000000004
Intersection: Thorndale Rd & Agnes St
TFR File #: 4
Count date: 26-Jan-2022

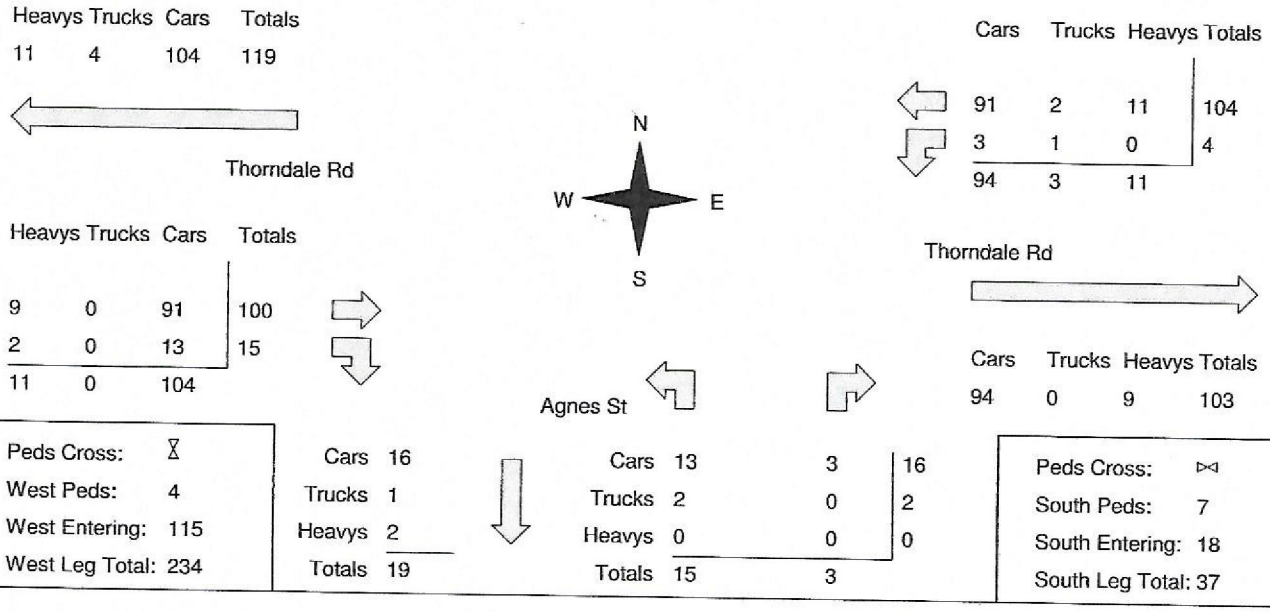
Weather conditions:
Clear/Wet

Person(s) who counted:
Cam

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

Major Road: Thorndale Rd runs W/E

East Leg Total: 211
East Entering: 108
East Peds: 1
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 4
West Entering: 115
West Leg Total: 234

Cars 16
Trucks 1
Heavys 2
Totals 19

Cars 13 3 16
Trucks 2 0 2
Heavys 0 0 0
Totals 15 3

Peds Cross: ⋈
South Peds: 7
South Entering: 18
South Leg Total: 37

Comments

Thorndale Rd @ Agnes St

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: Thorndale
Site #: 0000000004
Intersection: Thorndale Rd & Agnes St
TFR File #: 4
Count date: 26-Jan-2022

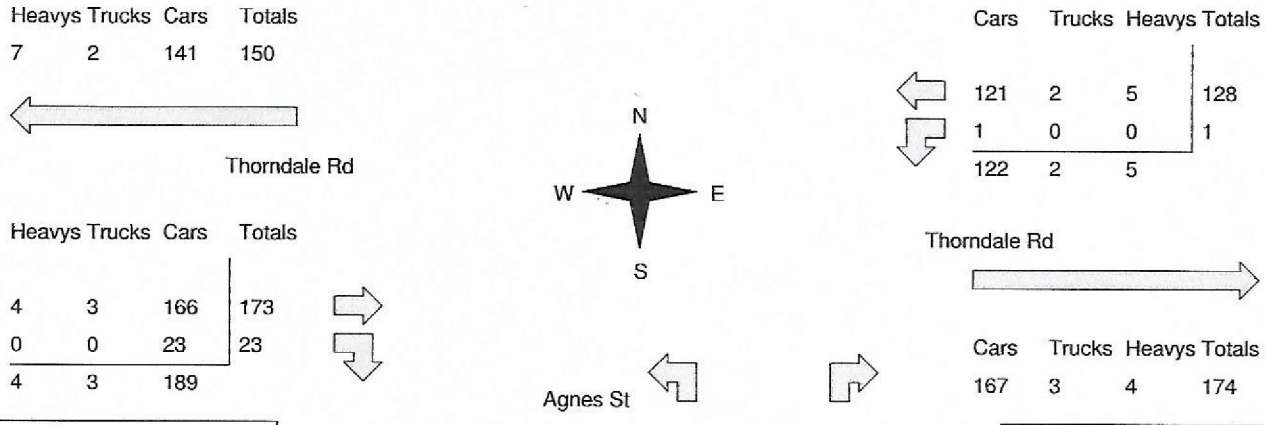
Weather conditions:
Clear/Wet

Person(s) who counted:
Cam

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

Major Road: Thorndale Rd runs W/E

East Leg Total: 303
East Entering: 129
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 196
West Leg Total: 346

Cars 24
Trucks 0
Heavys 0
Totals 24

Cars 20 1 21
Trucks 0 0 0
Heavys 2 0 2
Totals 22 1

Peds Cross: ⋈
South Peds: 2
South Entering: 23
South Leg Total: 47

Comments

Thorndale Rd @ Agnes St

Total Count Diagram

Municipality: Thorndale
Site #: 0000000004
Intersection: Thorndale Rd & Agnes St
TFR File #: 4
Count date: 26-Jan-2022

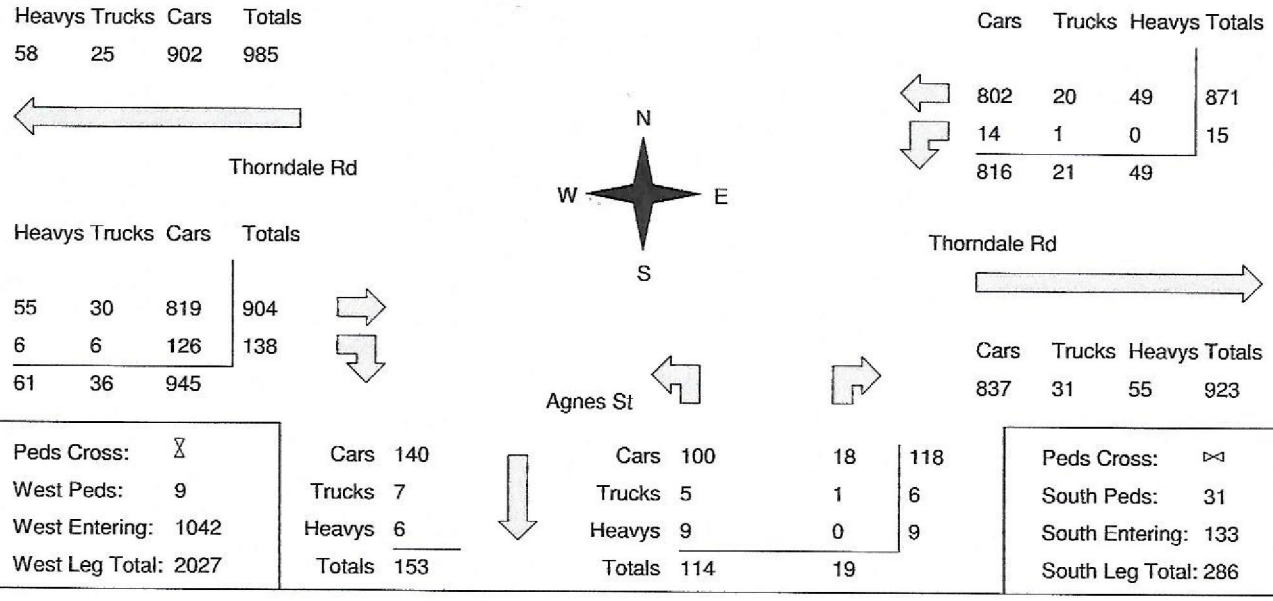
Weather conditions:
Clear/Wet

Person(s) who counted:
Cam

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

Major Road: Thorndale Rd runs W/E

East Leg Total: 1809
East Entering: 886
East Peds: 6
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 9
West Entering: 1042
West Leg Total: 2027

Cars 140
Trucks 7
Heavys 6
Totals 153

Cars 100 18 118
Trucks 5 1 6
Heavys 9 0 9
Totals 114 19

Peds Cross: ⋈
South Peds: 31
South Entering: 133
South Leg Total: 286

Comments

Thorndale Rd @ Agnes St

Municipality: Thorndale
Major Road: Thorndale Rd
Minor Road: Agnes St

Date: Jan 26, 2022

Major Road Runs: East/West
Weather Conditions: Clear/Wet
Person No. 1 Cam
Person No. 2

Period Ending	North Approach							East Approach							South Approach							West Approach							Veh. Summary	
	Cars			Trucks			Ped.	Cars			Trucks			Ped.	Cars			Trucks			Ped.	Cars			Trucks			Ped.		
	Left	Thru	Right	Left	Thru	Right	Cross.	Left	Thru	Right	Left	Thru	Right	Cross.	Left	Thru	Right	Left	Thru	Right	Cross.	Left	Thru	Right	Left	Thru	Right	Cross.	15	60
7:15	0	0	0	0	0	0	0	0	15	0	0	1	0	0	2	0	0	1	0	0	0	0	12	2	0	5	0	0	38	
7:30	0	0	0	0	0	0	0	0	13	0	0	1	0	0	0	0	1	2	0	0	0	0	18	0	0	2	0	0	37	
7:45	0	0	0	0	0	0	0	0	37	0	0	2	0	0	2	0	0	1	0	0	0	0	23	5	0	6	1	0	77	
8:00	0	0	0	0	0	0	0	0	30	0	0	2	0	0	4	0	1	0	0	0	0	0	16	2	0	1	0	0	56	208
8:15	0	0	0	0	0	0	0	1	30	0	0	4	0	0	0	0	0	0	0	0	0	0	23	2	0	3	2	0	65	235
8:30	0	0	0	0	0	0	0	0	25	0	0	2	0	0	3	0	0	0	0	0	1	0	18	3	0	5	0	0	56	254
8:45	0	0	0	0	0	0	0	1	21	0	0	2	0	0	5	0	1	1	0	0	0	0	18	7	0	2	0	0	58	235
9:00	0	0	0	0	0	0	0	1	28	0	0	3	0	0	6	0	0	1	0	0	1	0	25	6	0	8	1	0	79	258
11:15	0	0	0	0	0	0	0	0	14	0	0	4	0	0	2	0	2	0	0	0	0	0	12	1	0	2	0	0	37	
11:30	0	0	0	0	0	0	0	0	29	0	0	1	0	0	4	0	1	0	0	0	0	0	26	4	0	1	1	0	67	
11:45	0	0	0	0	0	0	0	1	18	0	0	1	0	0	2	0	2	0	0	0	0	0	17	4	0	2	0	0	47	
12:00	0	0	0	0	0	0	0	0	20	0	0	0	0	4	3	0	1	0	0	0	3	0	30	3	0	2	2	0	61	212
12:15	0	0	0	0	0	0	0	2	18	0	0	3	0	0	2	0	1	0	0	0	0	0	15	4	0	5	0	1	50	225
12:30	0	0	0	0	0	0	0	0	28	0	0	1	0	0	1	0	1	0	0	0	0	0	22	7	0	2	0	2	62	220
12:45	0	0	0	0	0	0	0	0	28	0	0	2	0	1	0	0	0	0	0	0	2	0	19	6	0	3	0	1	58	231
13:00	0	0	0	0	0	0	0	0	29	0	1	5	0	0	5	0	1	1	0	0	0	0	22	2	0	2	0	3	68	238
13:15	0	0	0	0	0	0	0	0	11	0	0	3	0	0	1	0	1	1	0	0	2	0	19	4	0	3	1	0	44	232
13:30	0	0	0	0	0	0	0	0	22	0	0	4	0	0	4	0	1	0	0	0	3	0	17	4	0	3	0	0	55	225
13:45	0	0	0	0	0	0	0	3	29	0	0	1	0	1	3	0	0	0	0	0	2	0	33	3	0	1	1	1	74	241
14:00	0	0	0	0	0	0	0	0	26	0	0	3	0	0	4	0	0	1	0	0	3	0	20	5	0	3	0	0	62	235
15:15	0	0	0	0	0	0	0	0	24	0	0	4	0	0	3	0	1	0	0	0	0	0	22	3	0	5	0	0	62	
15:30	0	0	0	0	0	0	0	2	15	0	0	6	0	0	7	0	0	2	0	0	0	0	24	5	0	2	0	0	63	
15:45	0	0	0	0	0	0	0	1	25	0	0	2	0	0	4	0	1	0	0	0	3	0	26	6	0	4	1	1	70	
16:00	0	0	0	0	0	0	0	0	22	0	0	1	0	0	6	0	1	0	0	0	0	0	46	6	0	1	0	0	83	278
16:15	0	0	0	0	0	0	0	0	38	0	0	1	0	0	7	0	0	1	0	0	0	0	32	5	0	2	0	0	86	302
16:30	0	0	0	0	0	0	0	1	32	0	0	0	0	0	6	0	0	1	0	0	2	0	37	4	0	2	0	0	83	322
16:45	0	0	0	0	0	0	0	0	29	0	0	5	0	0	1	0	0	0	0	0	0	0	51	8	0	2	0	0	96	348
17:00	0	0	0	0	0	0	0	0	28	0	0	3	0	0	4	0	0	0	0	0	4	0	33	5	0	1	0	0	74	339
17:15	0	0	0	0	0	0	0	1	34	0	0	1	0	0	2	0	1	0	0	0	3	0	42	2	0	3	0	0	86	339
17:30	0	0	0	0	0	0	0	0	28	0	0	0	0	0	4	0	0	1	0	0	0	0	44	2	0	1	2	0	82	338
17:45	0	0	0	0	0	0	0	0	28	0	0	1	0	0	1	0	0	0	0	1	1	0	33	4	0	1	0	0	69	311
18:00	0	0	0	0	0	0	0	0	28	0	0	0	0	0	2	0	0	0	0	0	1	0	24	2	0	0	0	0	56	293

APPENDIX B

LEVEL OF SERVICE ANALYSIS

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	136	28	4	153	21	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	148	30	4	166	23	1
Pedestrians					10	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			188		348	173
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			188		348	173
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		96	100
cM capacity (veh/h)			1388		623	870

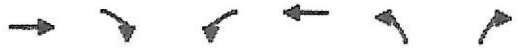
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	178	171	24
Volume Left	0	4	23
Volume Right	30	0	1
cSH	1700	1388	631
Volume to Capacity	0.10	0.00	0.04
Queue Length 95th (m)	0.0	0.1	0.9
Control Delay (s)	0.0	0.2	10.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	10.9
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	230	31	1	170	28	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	250	34	1	185	30	1
Pedestrians					10	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			294		464	277
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			294		464	277
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	100
cM capacity (veh/h)			1271		556	761

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	284	186	32
Volume Left	0	1	30
Volume Right	34	0	1
cSH	1700	1271	561
Volume to Capacity	0.17	0.00	0.06
Queue Length 95th (m)	0.0	0.0	1.4
Control Delay (s)	0.0	0.1	11.8
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	11.8
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	140	32	4	158	35	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	35	4	172	38	1
Pedestrians					10	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			197		360	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			197		360	180
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		94	100
cM capacity (veh/h)			1378		613	862

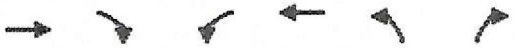
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	187	176	39
Volume Left	0	4	38
Volume Right	35	0	1
cSH	1700	1378	618
Volume to Capacity	0.11	0.00	0.06
Queue Length 95th (m)	0.0	0.1	1.5
Control Delay (s)	0.0	0.2	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	11.2
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	237	46	1	175	37	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	258	50	1	190	40	1
Pedestrians					10	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			318		485	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			318		485	293
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		92	100
cM capacity (veh/h)			1245		519	746

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	308	191	41
Volume Left	0	1	40
Volume Right	50	0	1
cSH	1700	1245	524
Volume to Capacity	0.18	0.00	0.08
Queue Length 95th (m)	0.0	0.0	1.9
Control Delay (s)	0.0	0.1	12.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	12.5
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	151	32	4	170	35	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	164	35	4	185	38	1
Pedestrians					10	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			209		385	192
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			209		385	192
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		94	100
cM capacity (veh/h)			1364		593	849

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	199	189	39
Volume Left	0	4	38
Volume Right	35	0	1
cSH	1700	1364	598
Volume to Capacity	0.12	0.00	0.07
Queue Length 95th (m)	0.0	0.1	1.6
Control Delay (s)	0.0	0.2	11.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	11.4
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	255	46	1	189	37	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	277	50	1	205	40	1
Pedestrians					10	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			337		520	312
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			337		520	312
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		92	100
cM capacity (veh/h)			1225		495	728

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	327	207	41
Volume Left	0	1	40
Volume Right	50	0	1
cSH	1700	1225	500
Volume to Capacity	0.19	0.00	0.08
Queue Length 95th (m)	0.0	0.0	2.0
Control Delay (s)	0.0	0.0	12.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.0	12.9
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		