185 Main Street Transportation Study
Erin, Ontario

2584343 Ontario Inc.

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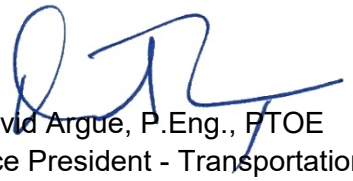

David Argue, P.Eng., PTOE
Vice President - Transportation

Executive Summary

2584343 Ontario Inc (the Client) is proposing a new 70 unit, residential townhouse development located at 185 Main Street in Erin. The development is located at the northeast quadrant of Main Street and Scotch Street. The client is submitting a Zoning By-law Amendment application to the Town of Erin and the County of Wellington. This Transportation Study forms part of the application.

The proposed development will consist of 54 units in six 3-storey stacked townhouse blocks in Phase 1 and 16 units in two 3-storey townhouse blocks in Phase 2. Access is proposed via two driveways on English Street at the west side of the site and two driveways on Scotch Street at the east side of the site. Pedestrian connections will be provided to Main Street and Daniel Street.

Existing and Future Road Network Operations

The road network is capable of accommodating the development without any additional improvements. Under existing, background, and total conditions, during the weekday AM and PM peak hours, all study intersections are operating and will operate with excess capacity and level of service C or better.

Site traffic is projected to add 34 trips in the weekday AM peak hour and 43 trips in the weekday PM peak hour. This additional traffic increase will be minor.

English Street is currently a one-way northbound street. A review was requested of changing it to two-way operation. In our opinion, English Street could be converted to two-way operation.

Site Plan Review

The site is well designed to accommodate pedestrians, cyclists and vehicles.

Parking Review

The proposed parking supply of 159 spaces will comply with Town's Zoning By-law requirements.

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Abbreviations

The following summarizes abbreviations that are utilized within this report:

- Burnside – R.J. Burnside & Associates Limited
- County – County of Wellington
- Directions
  - EB – Eastbound
  - SB – Southbound
  - NB – Northbound
  - WB – Westbound
- ITE – Institute of Transportation Engineers
- LOS – level of service
- LUC – Land Use Code
- PHF – Peak Hour Factor
- TOR – Terms of Reference
- Town – Town of Erin
- Traffic Movements
  - LT – shared left-through movement
  - LTR – shared left-through-right movement
  - LR – shared left-right movement
- v/c – volume to capacity ratio

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1.0 Introduction

1.1 Background

2584343 Ontario Inc (the Client) is proposing a townhouse development consisting of 70 townhomes with 54 townhome units in Phase 1 and 16 townhome units in Phase 2 at 185 Main Street in Erin. The location of the development is located at the northeast quadrant of Main Street and Scotch Street as illustrated in Figure 1.

Figure 1: Site Location

For the purposes of this study, we have assumed that all 70 townhomes in Phase 1 and Phase 2 will be fully built.

The street network is at a skew to the cardinal directions. Main Street (County Road 124) is generally considered an east-west road; therefore, Main Street and Daniel Street are considered east-west roads. English Street and Scotch Street are considered a north-south road for the purposes of this study.

The client is submitting a Zoning By-law Amendment application for the development proposal and requires a number of studies to be submitted as part of the application including a transportation study. As part of the submission, they retained R.J. Burnside & Associates Limited (Burnside) to undertake the transportation study. Our findings for the transportation study are presented within this report.

1.2 Scope of Work

The traffic impact study scope of work below was confirmed with staff from the County of Wellington (County) and the Town of Erin (Town) prior to conducting this study.

Analysis Scenarios	• Existing traffic conditions • 2025 background and total traffic conditions
Analysis Time Periods	• Weekday AM peak hour (7:00 AM – 9:00 AM) • Weekday PM peak hour (4:00 PM – 6:00 PM)
Analysis Intersections (Study Area)	• Main Street / Scotch Street • Main Street / English Street • Daniel Street / English Street • Daniel Street / Scotch Street

1.3 Intersection Analysis Methodology

Stop controlled intersection operations were assessed for intersections in the study area using the software program Synchro 9, which employs methodology from the Highway Capacity Manual (HCM 2000 and HCM 2010), published by the Transportation Research Board National Research Council.

Synchro 9 can analyze both signalized and unsignalized intersections in a road corridor or network taking into account the spacing, interaction, queues and operations between intersections. The analysis has utilized the HCM2000 methodology.

Stop controlled intersection analysis considers two separate measures of performance:

- The capacity of the intersection's critical movements, which is based on a volume to capacity ratio.
- The level of service for the critical movements, which is based on the average control delay per vehicle for the various critical movements within the intersection. The link between LOS and delay (in seconds) for stop-controlled intersections is summarized below.

Level of Service	Control Delay per Vehicle(s)
A	0 – 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

2.0 Existing Site Conditions

2.1 Site Context

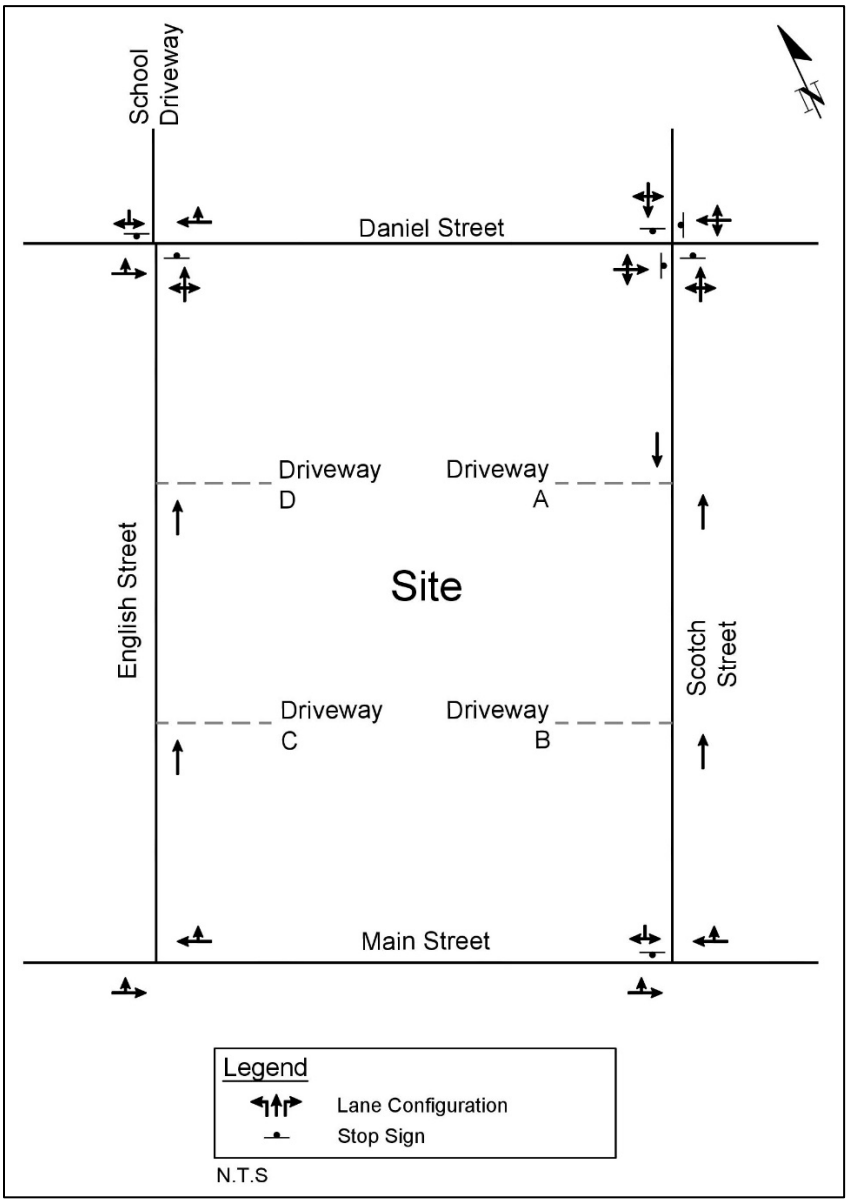
The existing site is vacant, but was previously occupied by a school that was relocated. The site is bounded by Main Street to the south, Scotch Street to the east, Daniel Street to the north and English Street to the west. The site is generally surrounded by residential housing with Erin Public School located to the northwest. Across Main Street from the site is Erin Agricultural Society and Masonic Lodge.

2.2 Existing Road Network

The existing road network is described below and is illustrated in Figure 2, including existing traffic control.

Main Street (County Road 124)	Main Street is an east-west arterial road under the jurisdiction of the County. The roadway consists of a 2 lane urban cross section with a posted speed limit of 60 km/h. A sidewalk is provided on both sides of the road. Parking is provided for along the south side of the road.
Daniel Street	Daniel Street is an east-west local road under the jurisdiction of the Town. The roadway consists of 2 lane semi-urban cross section with an assumed speed limit of 50 km/h. A sidewalk is provided on the south side of the road. On the east leg of the intersection with English Street, there is a pedestrian crossing marked.
English Street	English Street is a one-way northbound, north-south local road under the jurisdiction of the Town. The roadway consists of 2 lane semi-urban cross section with an assumed unposted speed limit of 50 km/h. At the intersection with Daniel Street, there is a driveway to Erin Public school that is slightly off-set.
Scotch Street	Scotch Street is a north-south local road under the jurisdiction of the Town. The roadway consists of 2 lane semi-urban cross section with an assumed unposted speed limit of 50 km/h. A sidewalk is provided on the west side of the road.

Figure 2: Existing Lane Configuration and Traffic Control

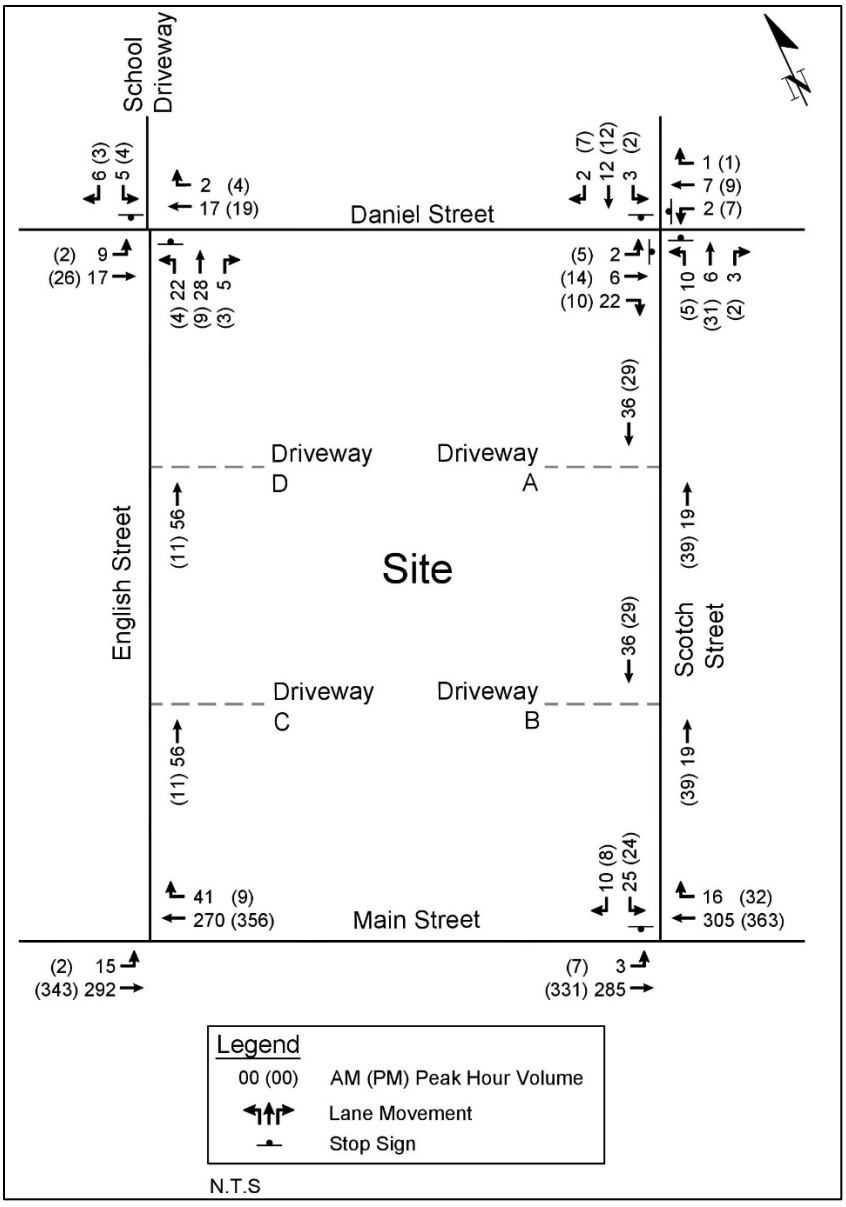


2.3 Existing Traffic Volumes

Existing traffic counts at the intersections identified in Section 1.2 were undertaken for the weekday morning AM peak period (7:00 AM to 9:00 AM) and afternoon PM peak period (4:00 PM to 6:00 PM) peak period. The weekday AM and PM peak hours were selected as these are typical peak traffic periods for this particular type of development. The counts were undertaken on Tuesday, September 24, 2019.

The existing traffic counts are illustrated in Figure 3 and the traffic counts are provided in Appendix A.

Figure 3: Existing Traffic Volumes



3.0 Future Background Conditions

3.1 Background Traffic Growth

Following consultation with Town and County staff, a growth rate of 2% compounded annually was applied all the movements, except for the school driveway as it is established.

3.2 Background Development

As discussed with County staff, there are no other planned background developments in the study area within the horizon year.

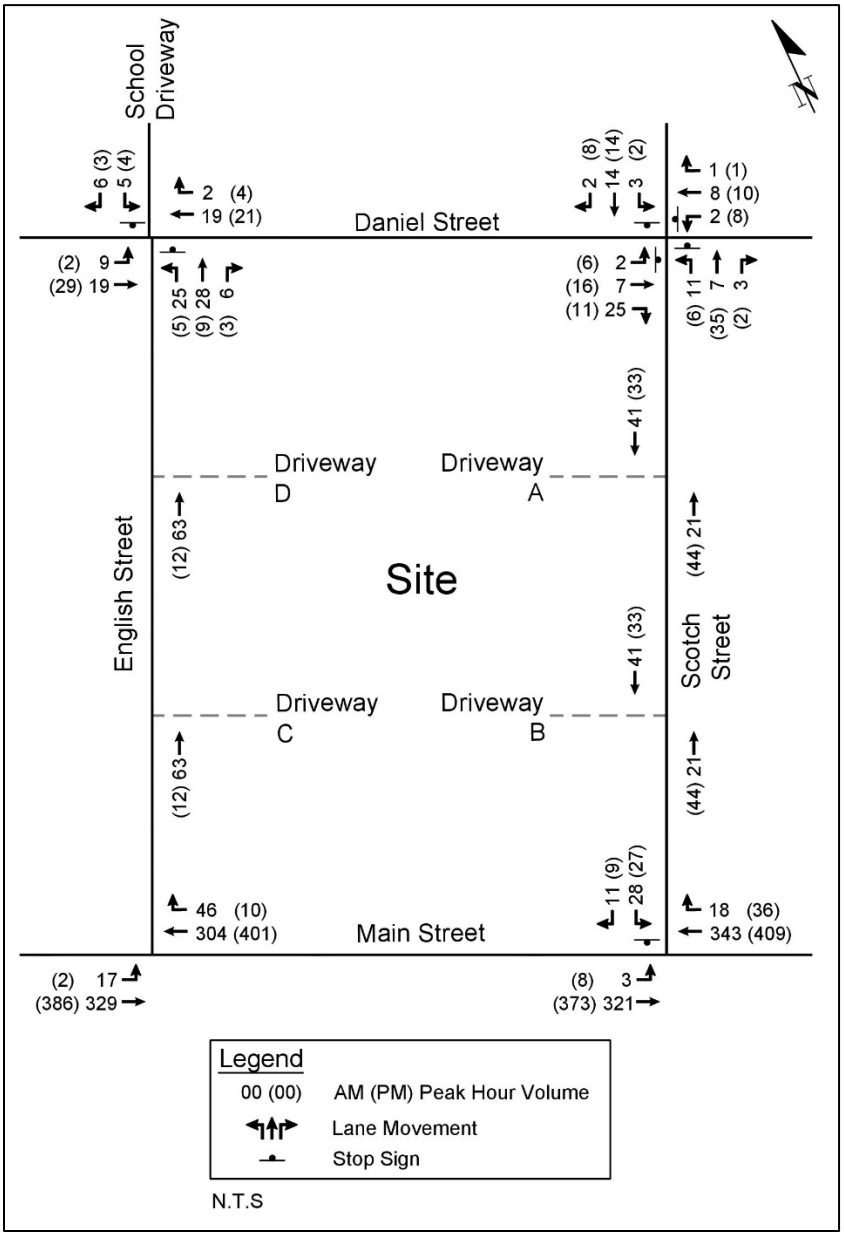
3.3 Future Road Network

There are no planned road network improvements within the study area for the horizon year of 2025 other than the potential for a sewer on Daniel Street.

3.4 Background Traffic Volumes

Background traffic volumes consist of the application of growth per annum (up to horizon year 2025) to existing traffic volumes shown in Figure 3. The resulting background traffic volumes are illustrated in Figure 4.

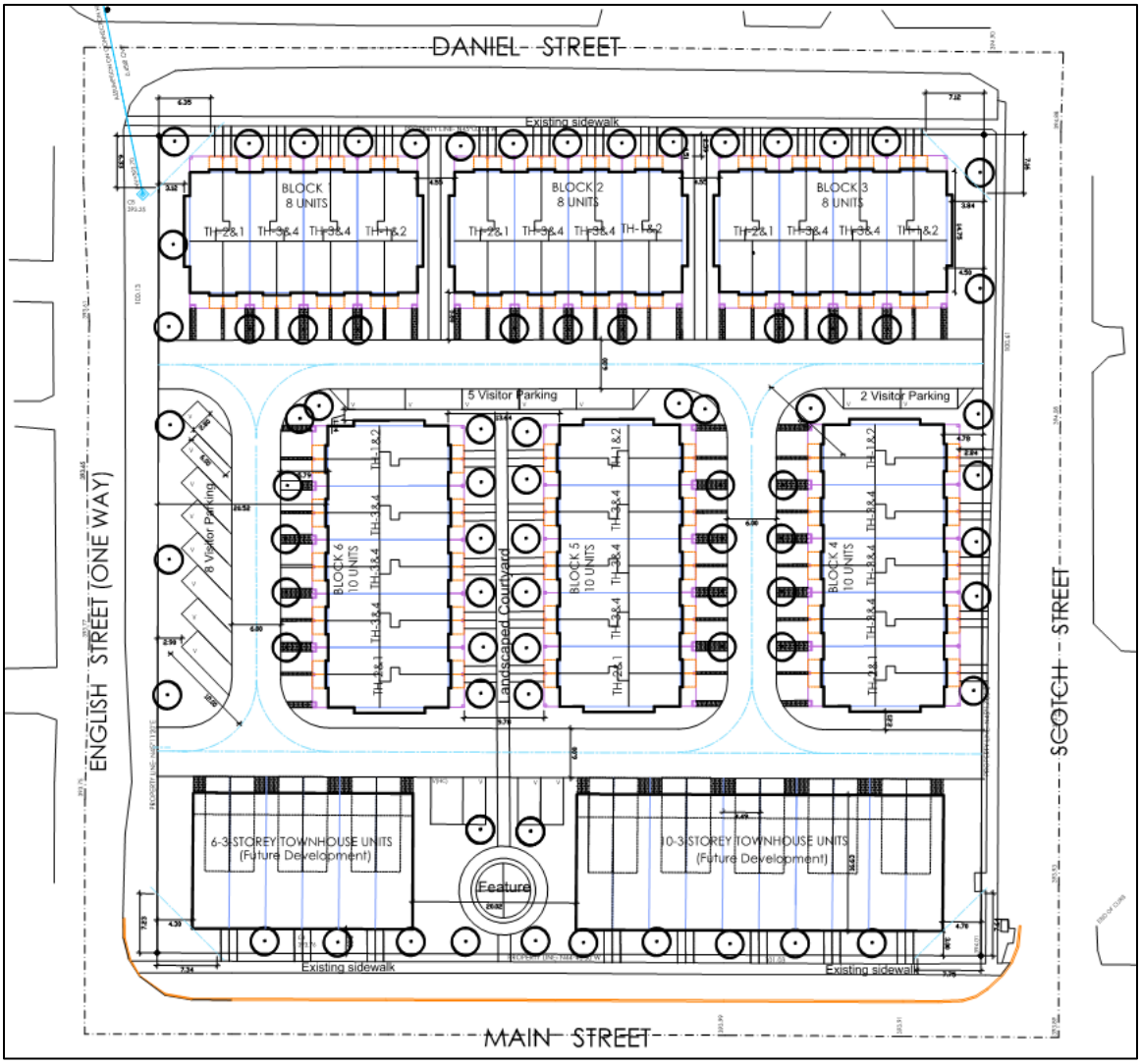
Figure 4: 2025 Background Traffic Volumes



4.0 Proposed Development

Based on the latest site plan, dated October 1, 2019, from RN Design the proposed development will consist of 70 residential townhouses. A total of 159 surface parking spaces are proposed. Access to the site is to be provided via two driveways on English Street and two driveways on Scotch Street. The proposed site plan is shown in Figure 5.

Figure 5: Site Plan



4.1 Trip Generation

Trip generation for the proposed townhouse development were based upon the information contained in the publication *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). The Land Use Code (LUC) for Multifamily Housing Low Rise (220) was used in the generation of new trips, which are summarized in Table 1 for a 70 unit development.

Table 1: Site Trip Generation

Land uses	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Low-Rise Multifamily Housing (LUC220)						
Total Trips	8	26	34	27	16	43

4.2 Trip Distribution & Assignment

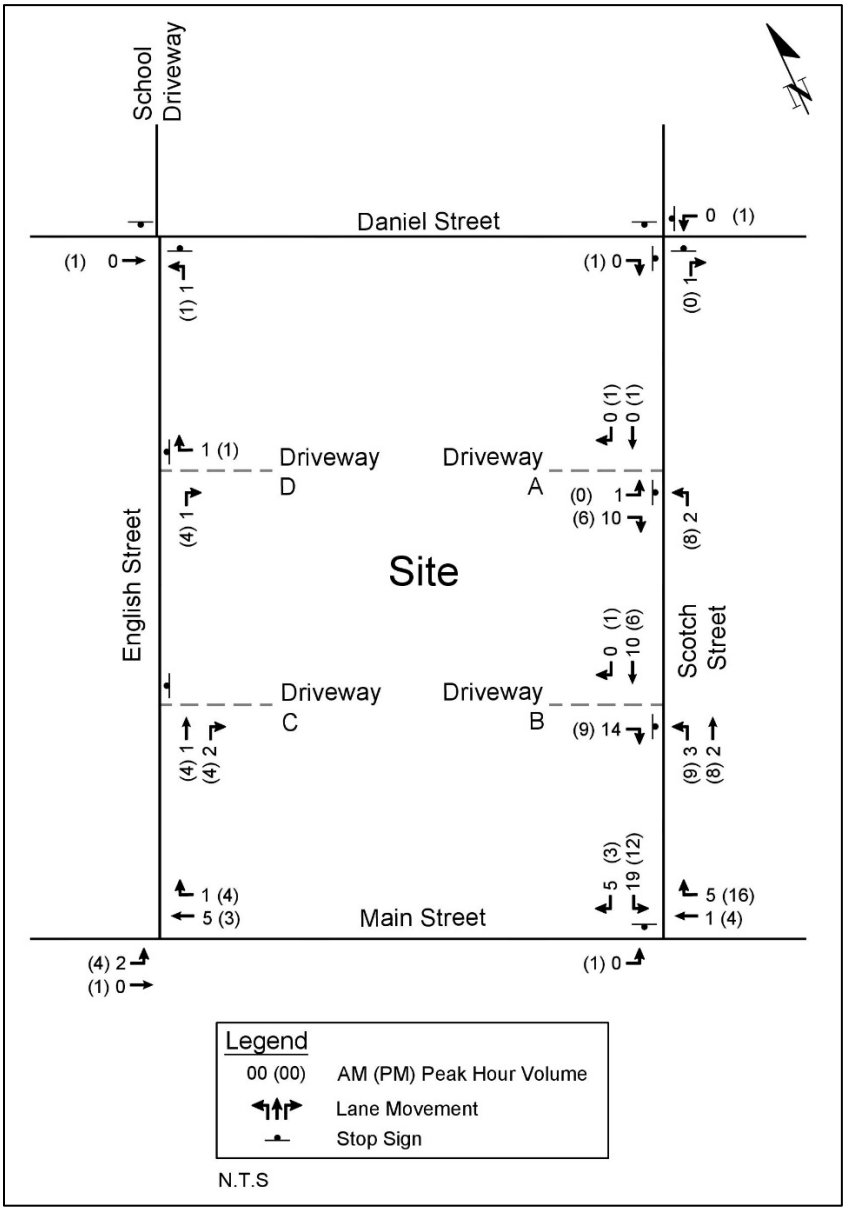
Trip distribution and assignment were based upon existing traffic patterns, available road network, and a review of the 2016 Transportation Tomorrow Survey. The estimated distribution of site trips is summarized in Table 2.

Table 2: Trip Distribution

To/From	Via	Distribution
West	Main Street	20%
	Daniel Street	5%
East	Main Street	73%
	Daniel Street	2%
	Total	100%

The site trip assignment is illustrated in Figure 6.

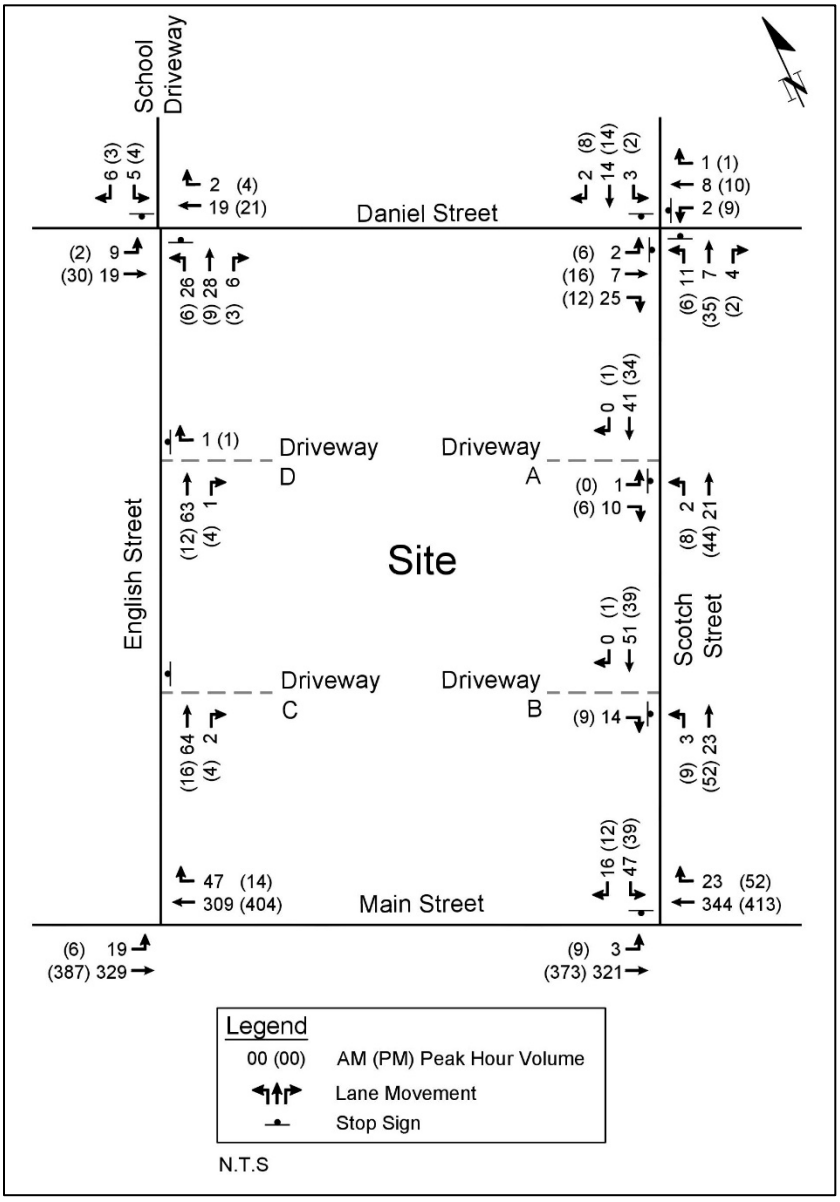
Figure 6: Site Traffic



5.0 Total Traffic Conditions

Total traffic volumes consist of background traffic volumes for horizon year 2025 in Figure 4 plus new site traffic illustrated in Figure 6. The resulting 2025 total traffic volumes are shown in Figure 7.

Figure 7: 2025 Total Traffic Volumes



6.0 Traffic Operations Analysis

Traffic operation analyses were conducted under existing and future traffic conditions for the weekday AM and PM peak hours at all study intersections. Detailed Synchro reports are provided in Appendices B to D for the existing, background and total operations, respectively.

6.1 Main Street / Scotch Street Intersection

The existing and future traffic operations for Main Street / Scotch Street intersection are summarized in Table 3.

Table 3: Main Street / Scotch Street Intersection Operations

Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
	v/c	LOS	v/c	LOS
Existing Conditions				
EBLT	0.00	A	0.01	A
SBLR	0.13	C	0.08	B
Background 2025 Conditions				
EBLT	0.00	A	0.01	A
SBLR	0.17	C	0.11	C
Total 2025 Conditions				
EBLT	0.00	A	0.01	A
SBLR	0.28	C	0.15	C

Under all study conditions, during both peak hours all critical movements are operating and will continue to operate with excess capacity and level of service C or better. No changes are required.

6.2 Main Street / English Street Intersection

The existing and future traffic operations for the Main Street / English Street intersection are summarized in Table 4.

Table 4: Main Street / English Street Intersection Operations

Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
	v/c	LOS	v/c	LOS
Existing Conditions				
EBLT	0.02	A	0.00	A
Background 2025 Conditions				
EBLT	0.02	A	0.00	A
Total 2025 Conditions				
EBLT	0.03	A	0.01	A

Under all study conditions, during both peak hours all critical movements are operating and will continue to operate with excess capacity and level of service A or better. No changes are required to the road network.

6.3 Daniel Street / English Street Intersection

The existing and future traffic operation at Daniel Street / English Street intersection are summarized in Table 5.

Table 5: Daniel Street / English Street Intersection Operations

Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
	v/c	LOS	v/c	LOS
Existing Conditions				
EBLT	0.01	A	0.00	A
NBLTR	0.11	B	0.03	A
SBLR	0.02	A	0.01	A
Background 2025 Conditions				
EBLT	0.01	A	0.00	A
NBLTR	0.11	B	0.03	A
SBLR	0.02	A	0.01	A
Total 2025 Conditions				
EBLT	0.01	A	0.00	A
NBLTR	0.11	B	0.03	A
SBLR	0.02	A	0.01	A

Under all study conditions, during both peak hours all movements are operating and will continue to operate with excess capacity and level of service B or better.

6.4 Daniel Street / Scotch Street Intersection

The existing and future traffic operations for the Daniel Street / Scotch Street intersection are summarized in Table 6.

Table 6: Daniel /Scotch Intersection Operations

Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
	v/c	LOS	v/c	LOS
Existing Conditions				
EBLTR	0.04	A	0.04	A
WBLTR	0.02	A	0.03	A
NBLTR	0.03	A	0.06	A
SBLTR	0.03	A	0.03	A

Table 6: Daniel /Scotch Intersection Operations continued

Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
	v/c	LOS	v/c	LOS
Background 2025 Conditions				
EBLTR	0.04	A	0.04	A
WBLTR	0.02	A	0.03	A
NBLTR	0.03	A	0.06	A
SBLTR	0.03	A	0.03	A
Total 2025 Conditions				
EBLTR	0.04	A	0.05	A
WBLTR	0.02	A	0.03	A
NBLTR	0.03	A	0.06	A
SBLTR	0.03	A	0.03	A

Under all study conditions, during both peak hours all movements are operating and will continue to operate with excess capacity and level of service A or better.

6.5 Driveway A / Scotch Street

The total 2025 traffic operations for the proposed Driveway A / Scotch Street intersection are summarized in Table 7.

Table 7: Driveway A / Scotch Street Intersection Operations

Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
	v/c	LOS	v/c	LOS
Total 2025 Conditions				
EBLR	0.01	A	0.01	A
NBLT	0.00	A	0.01	A

Under total 2025 conditions, during both peak hours all movements will operate with excess capacity and level of service A or better.

6.6 Driveway B / Scotch Street

The total 2025 traffic operations for the proposed Driveway B / Scotch Street intersection are summarized in Table 8.

Table 8: Driveway B / Scotch Street Intersection Operations

Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
	v/c	LOS	v/c	LOS
Total 2025 Conditions				
EBLR	0.01	A	0.01	A
NBLT	0.00	A	0.01	A

Under total 2025 conditions, during both peak hours all movements will operate with excess capacity and level of service A or better.

6.7 Driveways C and D

Driveways C and D operations have not been accessed as it is low traffic volumes turning onto a one-way street. Given how the other intersections operate, these two driveways to English Street will operate well and at level of service A for critical movements.

6.8 Conversion of English Street to Two-way

English Street is a one-way northbound street. We were requested to review the feasibility of changing it to two-way operation. In our opinion, English Street could become a two-way street. It is expected that some traffic may divert to southbound movements. The critical intersection operation would be at Main Street.

It is expected operations at the Main Street / English Street intersection (with English Street as two-way) would be better than operations at the Main Street / Scotch Street intersection where level of service for critical movements was and will be level service C or better during the weekday AM and PM peak hours.

7.0 Site Plan Review

7.1 Site Circulation

The site is well designed to accommodate pedestrians, cyclists and vehicles. There are proposed sidewalk connections to the existing external sidewalk network on Main Street and Daniel Street. Cyclist can access the site via all driveways. It is recommended that stop signs be provided at all site driveways for outbound movements.

The proposed geometrics for the internal streets and site driveways will accommodate the expected design vehicles such as a refuse truck for curb side pickup.

7.2 Parking

The Town's Zoning By-law 07-67 (ZBL) was reviewed to determine the parking supply requirements. Townhouses require 1.5 spaces per dwelling unit. A minimum parking supply of 115 spaces are required for 70 residential units. Proposed are 159 parking spaces; therefore, the proposed supply meets and exceeds the zoning requirements. An excerpt of the ZBL is contained in Appendix E.

8.0 Conclusion

There is sufficient capacity in the road network to accommodate the development without any additional road improvements. Under existing, background, and total conditions, during the morning and afternoon peak hours, all study intersections are operating and will operate with excess capacity and level of service C or better.

Site traffic is projected to add 34 trips in the AM peak hour and 43 trips in the PM peak hour. This additional traffic increase will be minor.

English Street is currently a one-way northbound street. A review was requested of changing it to two-way operation. In our opinion, English Street could be converted to two-way operation.

The proposed vehicular parking supply will meet or exceed ZBL requirements and meet future demand.

The site is well designed to accommodate pedestrians, cyclists and vehicles.

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix A

Existing Traffic Counts

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

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: Erin
Site #: 1915700001
Intersection: Main St & Scotch St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

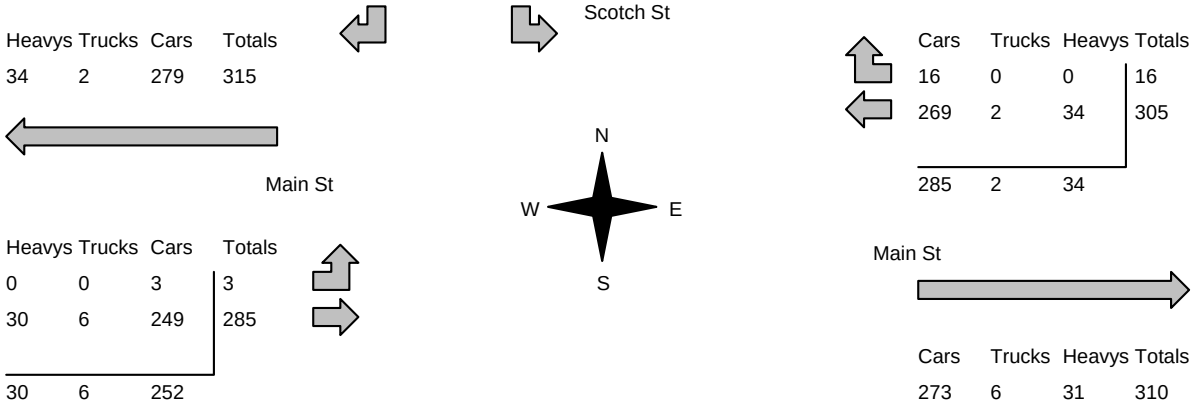
Major Road: Main St runs W/E

North Leg Total: 54
North Entering: 35
North Peds: 8
Peds Cross: ⋈

Heavys	0	1	1
Trucks	0	0	0
Cars	10	24	34
Totals	10	25	

Heavys	0
Trucks	0
Cars	19
Totals	19

East Leg Total: 631
East Entering: 321
East Peds: 2
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 3
West Entering: 288
West Leg Total: 603

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Erin
Site #: 1915700001
Intersection: Main St & Scotch St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Main St runs W/E

North Leg Total: 71
North Entering: 32
North Peds: 3
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	8	24	32
Totals	8	24	

Heavys	0
Trucks	0
Cars	39
Totals	39

East Leg Total: 750
East Entering: 395
East Peds: 0
Peds Cross: ⋈

Scotch St

Heavys	Trucks	Cars	Totals
17	2	352	371

Cars	Trucks	Heavys	Totals
32	0	0	32
344	2	17	363
376	2	17	

Main St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	7	7
20	1	310	331
20	1	317	

Main St

Cars	Trucks	Heavys	Totals
334	1	20	355

Peds Cross: ⋈
West Peds: 3
West Entering: 338
West Leg Total: 709

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

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: Erin
Site #: 1915700002
Intersection: Main St & English St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Main St runs W/E

North Leg Total:	56	Heavys	0	0	0	Heavys	15	East Leg Total:	603
North Entering:	0	Trucks	0	0	0	Trucks	0	East Entering:	311
North Peds:	3	Cars	0	0	0	Cars	41	East Peds:	4
Peds Cross:	⋈	Totals	0	0		Totals	56	Peds Cross:	⧖

English St

Heavys	Trucks	Cars	Totals
23	1	246	270

	Cars	Trucks	Heavys	Totals
	29	0	12	41
	246	1	23	270
	275	1	35	

Main St

Heavys	Trucks	Cars	Totals
3	0	12	15
30	6	256	292
33	6	268	

Main St

Cars	Trucks	Heavys	Totals
256	6	30	292

Peds Cross:	⧖
West Peds:	0
West Entering:	307
West Leg Total:	577

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Erin
Site #: 1915700002
Intersection: Main St & English St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Main St runs W/E

North Leg Total: 11
North Entering: 0
North Peds: 2
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	0	0	0
Totals	0	0	

Heavys	0
Trucks	0
Cars	11
Totals	11

East Leg Total: 708
East Entering: 365
East Peds: 3
Peds Cross: ⧖

English St

Heavys	Trucks	Cars	Totals
19	0	337	356

Cars	Trucks	Heavys	Totals
9	0	0	9
337	0	19	356
346	0	19	

Main St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	2	2
21	0	322	343
21	0	324	

Main St

Cars	Trucks	Heavys	Totals
322	0	21	343

Peds Cross: ⧖
West Peds: 0
West Entering: 345
West Leg Total: 701

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

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: Erin
Site #: 1915700003
Intersection: Daniel St & English St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Daniel St runs W/E

North Leg Total:	50			
North Entering:	11			
North Peds:	4			
Peds Cross:	⋈			
Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	6	0	5	11
Totals	6	0	5	
Heavys	14			
Trucks	0			
Cars	25			
Totals	39			
East Leg Total:	46			
East Entering:	19			
East Peds:	16			
Peds Cross:	⧖			

English St

Heavys	Trucks	Cars	Totals
1	0	44	45

Cars	Trucks	Heavys	Totals
2	0	0	2
17	0	0	17
0	0	0	0
19	0	0	

Daniel St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	9	9
1	0	16	17
0	0	0	0
1	0	25	

Daniel St

Cars	Trucks	Heavys	Totals
26	0	1	27

English St

Peds Cross:	⧖			
West Peds:	2			
West Entering:	26			
West Leg Total:	71			
Cars	0			
Trucks	0			
Heavys	0			
Totals	0			
Cars	21	14	5	40
Trucks	0	0	0	0
Heavys	1	14	0	15
Totals	22	28	5	
Peds Cross:	⋈			
South Peds:	0			
South Entering:	55			
South Leg Total:	55			

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

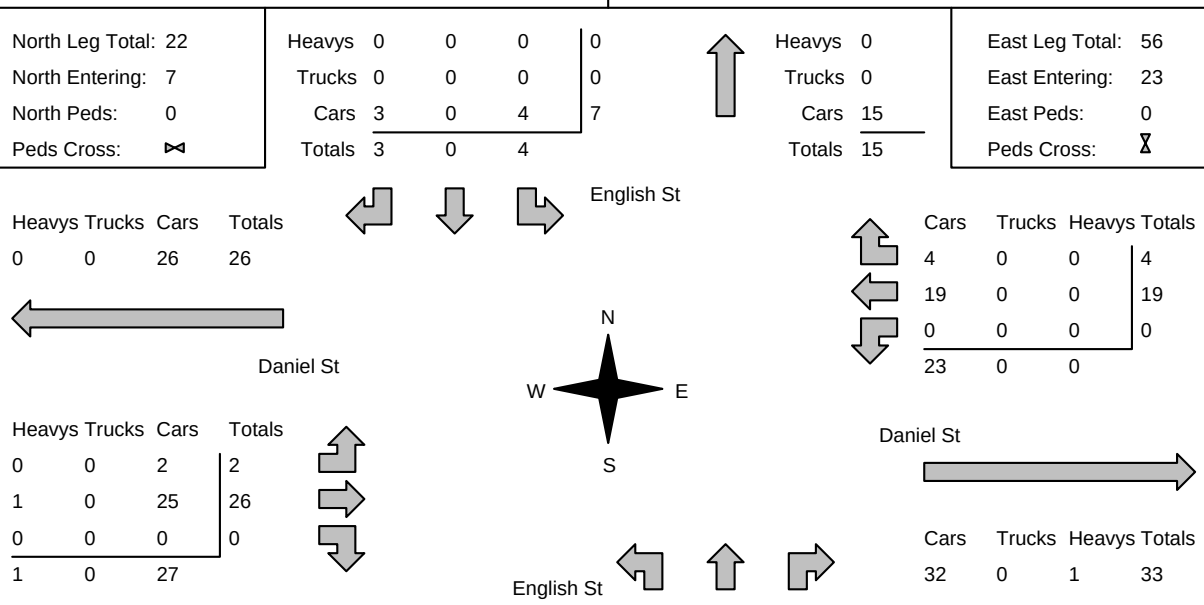
Municipality: Erin
Site #: 1915700003
Intersection: Daniel St & English St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Daniel St runs W/E



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

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: Erin
Site #: 1915700004
Intersection: Scotch St & Daniel St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Scotch St runs N/S

North Leg Total:	26			
North Entering:	17			
North Peds:	9			
Peds Cross:	⋈			
Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	2	12	3	17
Totals	2	12	3	
Heavys	0			
Trucks	0			
Cars	9			
Totals	9			
East Leg Total:	22			
East Entering:	10			
East Peds:	4			
Peds Cross:	⧖			

Scotch St

Heavys	Trucks	Cars	Totals
0	0	19	19

Cars	Trucks	Heavys	Totals
1	0	0	1
7	0	0	7
2	0	0	2
10	0	0	

Daniel St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	2	2
0	0	6	6
1	0	21	22
1	0	29	

Daniel St

Cars	Trucks	Heavys	Totals
12	0	0	12

Scotch St

Peds Cross:	⧖			
West Peds:	7			
West Entering:	30			
West Leg Total:	49			
Cars	35			
Trucks	0			
Heavys	1			
Totals	36			
Cars	10	6	3	19
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	10	6	3	
Peds Cross:	⋈			
South Peds:	5			
South Entering:	19			
South Leg Total:	55			

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Erin
Site #: 1915700004
Intersection: Scotch St & Daniel St
TFR File #: 1
Count date: 24-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

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

Major Road: Scotch St runs N/S

North Leg Total:	63			
North Entering:	26			
North Peds:	10			
Peds Cross:	⋈			
Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	7	17	2	26
Totals	7	17	2	
Heavys	0			
Trucks	0			
Cars	37			
Totals	37			
East Leg Total:	35			
East Entering:	17			
East Peds:	1			
Peds Cross:	⧖			

Scotch St

Heavys	Trucks	Cars	Totals
0	0	21	21

Cars	Trucks	Heavys	Totals
1	0	0	1
9	0	0	9
7	0	0	7
17	0	0	

Daniel St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	5	5
1	0	13	14
0	0	10	10
1	0	28	

Daniel St

Cars	Trucks	Heavys	Totals
17	0	1	18

Scotch St

Peds Cross:	⧖			
West Peds:	2			
West Entering:	29			
West Leg Total:	50			
Cars	34			
Trucks	0			
Heavys	0			
Totals	34			
Cars	5	31	2	38
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	5	31	2	
Peds Cross:	⋈			
South Peds:	3			
South Entering:	38			
South Leg Total:	72			

Comments

BURNSIDE

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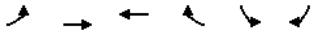
Appendix B

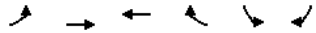
Existing Traffic Operations



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	285	305	16	25	10
Future Volume (Veh/h)	3	285	305	16	25	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	4	401	430	23	35	14
Pedestrians		3	2		8	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	461				860	452
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	461				860	452
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				89	98
cM capacity (veh/h)	1102				319	605

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	405	453	49
Volume Left	4	0	35
Volume Right	0	23	14
cSH	1102	1700	369
Volume to Capacity	0.00	0.27	0.13
Queue Length 95th (m)	0.1	0.0	3.5
Control Delay (s)	0.1	0.0	16.2
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	16.2
Approach LOS			C

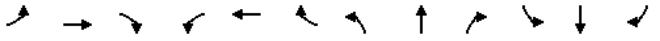
Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	292	270	41	0	0
Future Volume (Veh/h)	15	292	270	41	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	21	406	375	57	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	432				852	404
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	432				852	404
tC, single (s)	4.3				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1038				324	647

Direction, Lane #	EB 1	WB 1
Volume Total	427	432
Volume Left	21	0
Volume Right	0	57
cSH	1038	1700
Volume to Capacity	0.02	0.25
Queue Length 95th (m)	0.5	0.0
Control Delay (s)	0.6	0.0
Lane LOS	A	
Approach Delay (s)	0.6	0.0
Approach LOS		

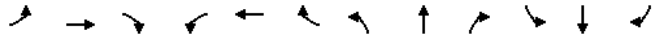
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	17	0	0	17	2	22	28	5	5	0	6
Future Volume (Veh/h)	9	17	0	0	17	2	22	28	5	5	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	15	27	0	0	27	3	35	45	8	8	0	10
Pedestrians		2			16						4	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			2						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	34			27			98	91	43	136	90	34
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	34			27			98	91	43	136	90	34
tC, single (s)	4.1			4.1			7.1	7.0	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.5	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	94	99	99	100	99
cM capacity (veh/h)	1584			1600			859	707	1017	769	794	1038

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	30	88	18
Volume Left	15	0	35	8
Volume Right	0	3	8	10
cSH	1584	1700	784	899
Volume to Capacity	0.01	0.02	0.11	0.02
Queue Length 95th (m)	0.2	0.0	2.9	0.5
Control Delay (s)	2.7	0.0	10.2	9.1
Lane LOS	A		B	A
Approach Delay (s)	2.7	0.0	10.2	9.1
Approach LOS			B	A

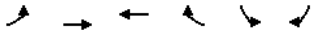
Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	22.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	6	22	2	7	1	10	6	3	3	12	2
Future Volume (vph)	2	6	22	2	7	1	10	6	3	3	12	2
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	9	32	3	10	1	15	9	4	4	18	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	44	14	28	25
Volume Left (vph)	3	3	15	4
Volume Right (vph)	32	1	4	3
Hadj (s)	-0.36	0.00	0.02	-0.04
Departure Headway (s)	3.7	4.1	4.1	4.0
Degree Utilization, x	0.04	0.02	0.03	0.03
Capacity (veh/h)	961	870	861	881
Control Delay (s)	6.8	7.1	7.2	7.1
Approach Delay (s)	6.8	7.1	7.2	7.1
Approach LOS	A	A	A	A

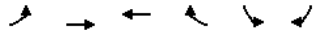
Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	18.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	331	363	32	24	8
Future Volume (Veh/h)	7	331	363	32	24	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	352	386	34	26	9
Pedestrians		3			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	423				772	409
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	423				772	409
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				93	99
cM capacity (veh/h)	1144				367	643

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	359	420	35
Volume Left	7	0	26
Volume Right	0	34	9
cSH	1144	1700	413
Volume to Capacity	0.01	0.25	0.08
Queue Length 95th (m)	0.1	0.0	2.1
Control Delay (s)	0.2	0.0	14.5
Lane LOS	A		B
Approach Delay (s)	0.2	0.0	14.5
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	343	356	9	0	0
Future Volume (Veh/h)	2	343	356	9	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	2	357	371	9	0	0
Pedestrians			3		2	
Lane Width (m)			3.7		0.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	382				742	378
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	382				742	378
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1188				385	674

Direction, Lane #	EB 1	WB 1
Volume Total	359	380
Volume Left	2	0
Volume Right	0	9
cSH	1188	1700
Volume to Capacity	0.00	0.22
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.1	0.0
Lane LOS	A	
Approach Delay (s)	0.1	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	26	0	0	19	4	4	9	3	4	0	3
Future Volume (Veh/h)	2	26	0	0	19	4	4	9	3	4	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Hourly flow rate (vph)	3	39	0	0	29	6	6	14	5	6	0	5
Pedestrians											7	
Lane Width (m)											3.7	
Walking Speed (m/s)											1.1	
Percent Blockage											1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	42			39			82	87	39	96	84	39
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	42			39			82	87	39	96	84	39
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	98	100	99	100	100
cM capacity (veh/h)	1569			1584			900	800	1038	864	803	1031

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	35	25	11
Volume Left	3	0	6	6
Volume Right	0	6	5	5
cSH	1569	1700	863	932
Volume to Capacity	0.00	0.02	0.03	0.01
Queue Length 95th (m)	0.0	0.0	0.7	0.3
Control Delay (s)	0.5	0.0	9.3	8.9
Lane LOS	A		A	A
Approach Delay (s)	0.5	0.0	9.3	8.9
Approach LOS			A	A

Intersection Summary					
Average Delay	3.1				
Intersection Capacity Utilization	15.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	14	10	7	9	1	5	31	2	2	12	7
Future Volume (vph)	5	14	10	7	9	1	5	31	2	2	12	7
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	7	19	14	9	12	1	7	42	3	3	16	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	40	22	52	28
Volume Left (vph)	7	9	7	3
Volume Right (vph)	14	1	3	9
Hadj (s)	-0.12	0.05	-0.01	-0.17
Departure Headway (s)	4.0	4.2	4.1	3.9
Degree Utilization, x	0.04	0.03	0.06	0.03
Capacity (veh/h)	882	843	863	899
Control Delay (s)	7.2	7.3	7.3	7.0
Approach Delay (s)	7.2	7.3	7.3	7.0
Approach LOS	A	A	A	A

Intersection Summary					
Delay	7.2				
Level of Service	A				
Intersection Capacity Utilization	16.8%	ICU Level of Service		A	
Analysis Period (min)	15				

BURNSIDE

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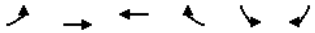
Appendix C

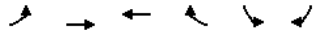
2025 Background Traffic Operations



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	321	343	18	28	11
Future Volume (Veh/h)	3	321	343	18	28	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	4	452	483	25	39	15
Pedestrians		3	2		8	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	516				966	506
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516				966	506
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				86	97
cM capacity (veh/h)	1052				276	564

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	456	508	54
Volume Left	4	0	39
Volume Right	0	25	15
cSH	1052	1700	322
Volume to Capacity	0.00	0.30	0.17
Queue Length 95th (m)	0.1	0.0	4.5
Control Delay (s)	0.1	0.0	18.4
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	18.4
Approach LOS			C

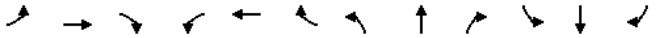
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	329	304	46	0	0
Future Volume (Veh/h)	17	329	304	46	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	24	457	422	64	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	486				959	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	486				959	454
tC, single (s)	4.3				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	990				278	606

Direction, Lane #	EB 1	WB 1
Volume Total	481	486
Volume Left	24	0
Volume Right	0	64
cSH	990	1700
Volume to Capacity	0.02	0.29
Queue Length 95th (m)	0.6	0.0
Control Delay (s)	0.7	0.0
Lane LOS	A	
Approach Delay (s)	0.7	0.0
Approach LOS		

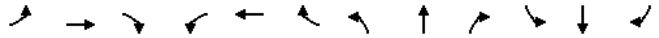
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	19	0	0	19	2	25	28	6	5	0	6
Future Volume (Veh/h)	9	19	0	0	19	2	25	28	6	5	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	15	31	0	0	31	3	40	45	10	8	0	10
Pedestrians		2			16						4	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			2						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	38			31			106	99	47	146	98	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	38			31			106	99	47	146	98	38
tC, single (s)	4.1			4.1			7.1	7.0	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.5	3.3	3.5	4.0	3.3
p0 queue free %	99			100			95	94	99	99	100	99
cM capacity (veh/h)	1579			1595			848	700	1012	756	786	1033

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	46	34	95	18
Volume Left	15	0	40	8
Volume Right	0	3	10	10
cSH	1579	1700	783	888
Volume to Capacity	0.01	0.02	0.12	0.02
Queue Length 95th (m)	0.2	0.0	3.1	0.5
Control Delay (s)	2.4	0.0	10.2	9.1
Lane LOS	A		B	A
Approach Delay (s)	2.4	0.0	10.2	9.1
Approach LOS			B	A

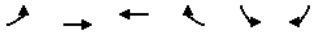
Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	22.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	7	25	2	8	1	11	7	3	3	14	2
Future Volume (vph)	2	7	25	2	8	1	11	7	3	3	14	2
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	10	37	3	12	1	16	10	4	4	21	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	50	16	30	28
Volume Left (vph)	3	3	16	4
Volume Right (vph)	37	1	4	3
Hadj (s)	-0.37	0.00	0.03	-0.04
Departure Headway (s)	3.7	4.1	4.1	4.0
Degree Utilization, x	0.05	0.02	0.03	0.03
Capacity (veh/h)	959	866	855	874
Control Delay (s)	6.9	7.1	7.2	7.2
Approach Delay (s)	6.9	7.1	7.2	7.2
Approach LOS	A	A	A	A

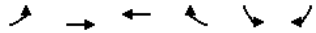
Intersection Summary				
Delay	7.1			
Level of Service	A			
Intersection Capacity Utilization	18.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	373	409	36	27	9
Future Volume (Veh/h)	8	373	409	36	27	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	397	435	38	29	10
Pedestrians		3			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	476				872	460
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	476				872	460
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	98
cM capacity (veh/h)	1093				320	602

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	406	473	39
Volume Left	9	0	29
Volume Right	0	38	10
cSH	1093	1700	364
Volume to Capacity	0.01	0.28	0.11
Queue Length 95th (m)	0.2	0.0	2.7
Control Delay (s)	0.3	0.0	16.1
Lane LOS	A		C
Approach Delay (s)	0.3	0.0	16.1
Approach LOS			C

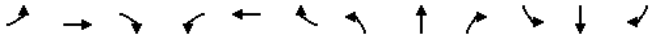
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	386	401	10	0	0
Future Volume (Veh/h)	2	386	401	10	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	2	402	418	10	0	0
Pedestrians			3		2	
Lane Width (m)			3.7		0.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	430				834	425
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	430				834	425
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1140				339	634

Direction, Lane #	EB 1	WB 1
Volume Total	404	428
Volume Left	2	0
Volume Right	0	10
cSH	1140	1700
Volume to Capacity	0.00	0.25
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.1	0.0
Lane LOS	A	
Approach Delay (s)	0.1	0.0
Approach LOS		

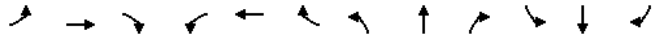
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	25.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	29	0	0	21	4	5	9	3	4	0	3
Future Volume (Veh/h)	2	29	0	0	21	4	5	9	3	4	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Hourly flow rate (vph)	3	44	0	0	32	6	8	14	5	6	0	5
Pedestrians											7	
Lane Width (m)											3.7	
Walking Speed (m/s)											1.1	
Percent Blockage											1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	45			44			90	95	44	104	92	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			44			90	95	44	104	92	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	98	100	99	100	100
cM capacity (veh/h)	1565			1577			889	792	1032	853	795	1027

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	38	27	11
Volume Left	3	0	8	6
Volume Right	0	6	5	5
cSH	1565	1700	857	924
Volume to Capacity	0.00	0.02	0.03	0.01
Queue Length 95th (m)	0.0	0.0	0.7	0.3
Control Delay (s)	0.5	0.0	9.3	8.9
Lane LOS	A		A	A
Approach Delay (s)	0.5	0.0	9.3	8.9
Approach LOS			A	A

Intersection Summary						
Average Delay	3.0					
Intersection Capacity Utilization	15.4%	ICU Level of Service		A		
Analysis Period (min)	15					



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	16	11	8	10	1	6	35	2	2	14	8
Future Volume (vph)	6	16	11	8	10	1	6	35	2	2	14	8
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	8	22	15	11	14	1	8	47	3	3	19	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	45	26	58	33
Volume Left (vph)	8	11	8	3
Volume Right (vph)	15	1	3	11
Hadj (s)	-0.11	0.06	0.00	-0.18
Departure Headway (s)	4.0	4.2	4.1	3.9
Degree Utilization, x	0.05	0.03	0.07	0.04
Capacity (veh/h)	871	833	856	893
Control Delay (s)	7.2	7.3	7.4	7.1
Approach Delay (s)	7.2	7.3	7.4	7.1
Approach LOS	A	A	A	A

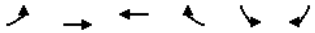
Intersection Summary						
Delay	7.3					
Level of Service	A					
Intersection Capacity Utilization	16.8%	ICU Level of Service		A		
Analysis Period (min)	15					

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix D

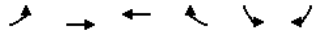
2025 Total Traffic Operations



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	321	344	23	47	16
Future Volume (Veh/h)	3	321	344	23	47	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	4	452	485	32	66	23
Pedestrians		3	2		8	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	525				971	512
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	525				971	512
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				76	96
cM capacity (veh/h)	1044				274	560

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	456	517	89
Volume Left	4	0	66
Volume Right	0	32	23
cSH	1044	1700	316
Volume to Capacity	0.00	0.30	0.28
Queue Length 95th (m)	0.1	0.0	8.6
Control Delay (s)	0.1	0.0	20.8
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	20.8
Approach LOS			C

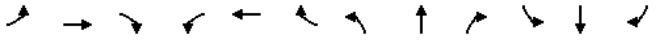
Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	329	309	47	0	0
Future Volume (Veh/h)	19	329	309	47	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	26	457	429	65	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	494				970	462
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	494				970	462
tC, single (s)	4.3				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	97				100	100
cM capacity (veh/h)	983				273	600

Direction, Lane #	EB 1	WB 1
Volume Total	483	494
Volume Left	26	0
Volume Right	0	65
cSH	983	1700
Volume to Capacity	0.03	0.29
Queue Length 95th (m)	0.6	0.0
Control Delay (s)	0.8	0.0
Lane LOS	A	
Approach Delay (s)	0.8	0.0
Approach LOS		

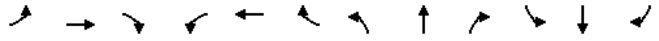
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	19	0	0	19	2	26	28	6	5	0	6
Future Volume (Veh/h)	9	19	0	0	19	2	26	28	6	5	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	15	31	0	0	31	3	42	45	10	8	0	10
Pedestrians		2			16						4	
Lane Width (m)		3.7			3.7						3.7	
Walking Speed (m/s)		1.1			1.1						1.1	
Percent Blockage		0			2						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	38			31			106	99	47	146	98	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	38			31			106	99	47	146	98	38
tC, single (s)	4.1			4.1			7.1	7.0	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.5	3.3	3.5	4.0	3.3
p0 queue free %	99			100			95	94	99	99	100	99
cM capacity (veh/h)	1579			1595			848	700	1012	756	786	1033

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	46	34	97	18
Volume Left	15	0	42	8
Volume Right	0	3	10	10
cSH	1579	1700	784	888
Volume to Capacity	0.01	0.02	0.12	0.02
Queue Length 95th (m)	0.2	0.0	3.2	0.5
Control Delay (s)	2.4	0.0	10.2	9.1
Lane LOS	A		B	A
Approach Delay (s)	2.4	0.0	10.2	9.1
Approach LOS			B	A

Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	22.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	7	25	2	8	1	11	7	4	3	14	2
Future Volume (vph)	2	7	25	2	8	1	11	7	4	3	14	2
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	10	37	3	12	1	16	10	6	4	21	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	50	16	32	28
Volume Left (vph)	3	3	16	4
Volume Right (vph)	37	1	6	3
Hadj (s)	-0.37	0.00	-0.01	-0.04
Departure Headway (s)	3.7	4.1	4.0	4.0
Degree Utilization, x	0.05	0.02	0.04	0.03
Capacity (veh/h)	957	865	863	874
Control Delay (s)	6.9	7.1	7.2	7.2
Approach Delay (s)	6.9	7.1	7.2	7.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.1			
Level of Service	A			
Intersection Capacity Utilization	18.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	10	2	21	41	0
Future Volume (Veh/h)	1	10	2	21	41	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	11	2	23	45	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	72	45	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72	45	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	931	1025	1563			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	12	25	45
Volume Left	1	2	0
Volume Right	11	0	0
cSH	1016	1563	1700
Volume to Capacity	0.01	0.00	0.03
Queue Length 95th (m)	0.3	0.0	0.0
Control Delay (s)	8.6	0.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.6	0.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	14	3	23	51	0
Future Volume (Veh/h)	0	14	3	23	51	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	15	3	25	55	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	86	55	55			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	55	55			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	913	1012	1550			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	28	55
Volume Left	0	3	0
Volume Right	15	0	0
cSH	1012	1550	1700
Volume to Capacity	0.01	0.00	0.03
Queue Length 95th (m)	0.3	0.0	0.0
Control Delay (s)	8.6	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	8.6	0.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	64	2	0	0
Future Volume (Veh/h)	0	0	64	2	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	70	2	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	71	71			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71	71			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	933	991			1528	

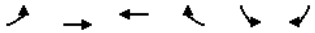
Direction, Lane #	WB 1	NB 1
Volume Total	0	72
Volume Left	0	0
Volume Right	0	2
cSH	1700	1700
Volume to Capacity	0.00	0.04
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS	A	

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	63	1	0	0
Future Volume (Veh/h)	0	1	63	1	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	68	1	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	68	68			69	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	68	68			69	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	936	995			1532	

Direction, Lane #	WB 1	NB 1
Volume Total	1	69
Volume Left	0	0
Volume Right	1	1
cSH	995	1700
Volume to Capacity	0.00	0.04
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	8.6	0.0
Lane LOS	A	
Approach Delay (s)	8.6	0.0
Approach LOS	A	

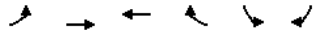
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	13.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	373	413	52	39	12
Future Volume (Veh/h)	9	373	413	52	39	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	10	397	439	55	41	13
Pedestrians		3			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	497				886	472
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	497				886	472
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				87	98
cM capacity (veh/h)	1074				314	592

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	407	494	54
Volume Left	10	0	41
Volume Right	0	55	13
cSH	1074	1700	354
Volume to Capacity	0.01	0.29	0.15
Queue Length 95th (m)	0.2	0.0	4.1
Control Delay (s)	0.3	0.0	17.0
Lane LOS	A		C
Approach Delay (s)	0.3	0.0	17.0
Approach LOS			C

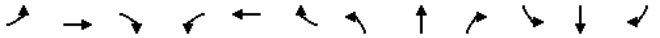
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	387	404	14	0	0
Future Volume (Veh/h)	6	387	404	14	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	6	403	421	15	0	0
Pedestrians			3		2	
Lane Width (m)			3.7		0.0	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	438				848	430
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	438				848	430
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1133				331	629

Direction, Lane #	EB 1	WB 1
Volume Total	409	436
Volume Left	6	0
Volume Right	0	15
cSH	1133	1700
Volume to Capacity	0.01	0.26
Queue Length 95th (m)	0.1	0.0
Control Delay (s)	0.2	0.0
Lane LOS	A	
Approach Delay (s)	0.2	0.0
Approach LOS		

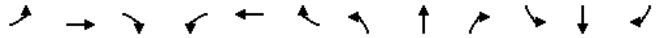
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	30	0	0	21	4	6	9	3	4	0	3
Future Volume (Veh/h)	2	30	0	0	21	4	6	9	3	4	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Hourly flow rate (vph)	3	45	0	0	32	6	9	14	5	6	0	5
Pedestrians											7	
Lane Width (m)											3.7	
Walking Speed (m/s)											1.1	
Percent Blockage											1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	45			45			91	96	45	105	93	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			45			91	96	45	105	93	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	98	100	99	100	100
cM capacity (veh/h)	1565			1576			888	791	1031	852	794	1027

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	38	28	11
Volume Left	3	0	9	6
Volume Right	0	6	5	5
cSH	1565	1700	857	924
Volume to Capacity	0.00	0.02	0.03	0.01
Queue Length 95th (m)	0.0	0.0	0.8	0.3
Control Delay (s)	0.5	0.0	9.3	8.9
Lane LOS	A		A	A
Approach Delay (s)	0.5	0.0	9.3	8.9
Approach LOS			A	A

Intersection Summary					
Average Delay	3.1				
Intersection Capacity Utilization	15.4%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	16	12	9	10	1	6	35	2	2	14	8
Future Volume (vph)	6	16	12	9	10	1	6	35	2	2	14	8
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	8	22	16	12	14	1	8	47	3	3	19	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	46	27	58	33
Volume Left (vph)	8	12	8	3
Volume Right (vph)	16	1	3	11
Hadj (s)	-0.12	0.07	0.00	-0.18
Departure Headway (s)	4.0	4.2	4.1	3.9
Degree Utilization, x	0.05	0.03	0.07	0.04
Capacity (veh/h)	873	832	854	892
Control Delay (s)	7.2	7.3	7.4	7.1
Approach Delay (s)	7.2	7.3	7.4	7.1
Approach LOS	A	A	A	A

Intersection Summary					
Delay	7.3				
Level of Service	A				
Intersection Capacity Utilization	16.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	6	8	44	34	1
Future Volume (Veh/h)	0	6	8	44	34	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	7	9	48	37	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	104	38	38			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	104	38	38			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	889	1035	1572			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	7	57	38
Volume Left	0	9	0
Volume Right	7	0	1
cSH	1035	1572	1700
Volume to Capacity	0.01	0.01	0.02
Queue Length 95th (m)	0.2	0.1	0.0
Control Delay (s)	8.5	1.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.5	1.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	9	9	52	39	1
Future Volume (Veh/h)	0	9	9	52	39	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	10	10	57	42	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	120	42	43			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	120	42	43			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	871	1028	1566			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	67	43
Volume Left	0	10	0
Volume Right	10	0	1
cSH	1028	1566	1700
Volume to Capacity	0.01	0.01	0.03
Queue Length 95th (m)	0.2	0.1	0.0
Control Delay (s)	8.5	1.1	0.0
Lane LOS	A	A	
Approach Delay (s)	8.5	1.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	16	4	0	0
Future Volume (Veh/h)	0	0	16	4	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	17	4	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	19	19			21	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	19	19			21	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	998	1059			1595	

Direction, Lane #	WB 1	NB 1
Volume Total	0	21
Volume Left	0	0
Volume Right	0	4
cSH	1700	1700
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS	A	

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	12	4	0	0
Future Volume (Veh/h)	0	1	12	4	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	13	4	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	15	15			17	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15	15			17	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1004	1065			1600	

Direction, Lane #	WB 1	NB 1
Volume Total	1	17
Volume Left	0	0
Volume Right	1	4
cSH	1065	1700
Volume to Capacity	0.00	0.01
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	8.4	0.0
Lane LOS	A	
Approach Delay (s)	8.4	0.0
Approach LOS	A	

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

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix E

Zoning By-Law Excerpt

confused with traffic lights or be otherwise hazardous to traffic;

.3 A *structure*, not more than 4.5 metres in *height* and not more than 15m^2 in area may be *erect*ed in the *parking area* for the *use* of *parking lot* attendants;

.4 All *parking area*s shall be provided with curbing, wheel stops or other devices to prevent *motor vehicle*s from being parked or driven within required *setback* areas or onto required landscaped open spaces.

.5 The *parking area* shall be *setback* a minimum of 1.5 metres from the *street* line, and the area between the *street line* and the *parking area* shall be used for no purpose other than landscaping.

TABLE 1 - OFF STREET PARKING REQUIREMENTS

A) TYPE OF USE / BUILDING	B) MINIUMUM PARKING REQUIRED
1. A residential *building* or portion of a *building* with no more than 4 *dwelling unit*s, or a *street townhouse dwelling*	1 space per *dwelling unit*
2. *Apartment* or cluster *townhouse dwelling*, or any other multiple unit residential building or portion of a *building* containing 5 or more *dwelling unit*s	1.5 spaces per *dwelling* unit
3. Medical or *Veterinary Clinic*	6 spaces per practitioner for the first 5 practitioners (or fraction thereof plus 4 spaces for each additional practitioner).
4. *Bed & Breakfast Establishment* or *Boarding House*	1 space per *dwelling* unit plus 1 space per room for rent
5. *Automotive Service Station*	4 spaces per service bay, minimum 6 spaces
6. *Bank* or *Financial Institution*	1 space per 15.0m^2 GFA
7. *Tavern*/Bar	1 space per 4 *person* capacity
8. *Restaurant*s Full Service Dining Room Drive In /Drive thru	 1 space per 4 *person* capacity 10 waiting spaces, plus 1 space per 4 *person* capacity
9. *Personal Service Shop*s	1 space per 40m^2 GFA
10. Business / Professional Office	1 space per 40m^2 GFA
11. Hotel or Motel	1.5 spaces per quest room plus 1 space for each 10m^2 GFA devoted to public *use*
12. Church; Church Hall, Auditorium; Arena; Hall; Stadium; *Club*; Recreation Centre; Theatre; Other Places of Entertainment, Recreation or Assembly	The greater of: 1 space per 5 *person* capacity OR 1 space per 9.3m^2 GFA
13. Car Wash Manual Automatic	 1 space plus 3 waiting spaces per bay 1 space plus 6 waiting spaces per bay
14. Gas Bar	1 space per fuel pump island plus 2 waiting spaces per island

R.J. Burnside & Associates Limited