

80 Maple Street - Wellington Traffic Impact Study

July 2022

Prepared for:

SG Real Estate Developments
36-620 Davenport Road
Waterloo, ON N2V 2C2
c/o Gracison Developments

Submitted by:

The Greer Galloway Group Inc.
1620 Wallbridge-Loyalist Road
Belleville, ON K8N 4Z5

T: (613) 966-3068
F: (613) 966-3087
www.greergalloway.com
Project Number: 2236549

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1 TRAFFIC IMPACT STUDY

The Greer Galloway Group has been asked to provide a Traffic Impact Study for the proposed development located on the 80 Maple Street property in the community of Wellington in Prince Edward County. A previous traffic brief was prepared by Greer Galloway in 2021 for the same property. This document is an update to that study and reflect changes to the proposed development and related conditions over the past year.

The goal of this document is to assess potential effects on traffic resulting from the proposed development and identify any roadway improvements that may be required to ensure that roadways will continue to operate at an acceptable level of service upon completion of the development.

2 BACKGROUND / DEVELOPMENT DETAILS

Relevant property information includes:

- Located on the north side of Wellington in Prince Edward County.
- North of the Maple Street dead end, east of Lake Breeze Court.
- Backs onto the Millennium Recreational Trail to the north.
- Previous property zoning suggests it was used for an industrial use at some point but has remained generally unused for at least the previous 10 years based on aerial imaging.
- The property is approximately 1.9 hectares (4.7 acres) in size and is currently vacant.
- An existing water crossing at the end of Maple Street to the Millennium Trail currently provides access to the property.

Relevant information for the proposed development includes:

- Six stacked townhouse buildings arranged around a central parking lot.
- Sixteen units per building for a total of 96 suites.
- Parking for 120 vehicles.
- Access to the property will be from Lake Breeze Court.

The 90 degree bend in Lake Breeze Court will be reconstructed to a T-intersection extending the municipal road north across the Millennium Trail to connect to future development lands to the north. The relative timing of this proposed development and lands to the north is not known however it is presumed that the proposed access to the subject lands will be provided independent of the development to the north. The road extension is referred to as Street A.

Access to the Millennium Recreational Trail will be maintained from the end of Maple Street along the east side of the property.

A series of images are provided to illustrate various elements of the subject lands and proposed development.

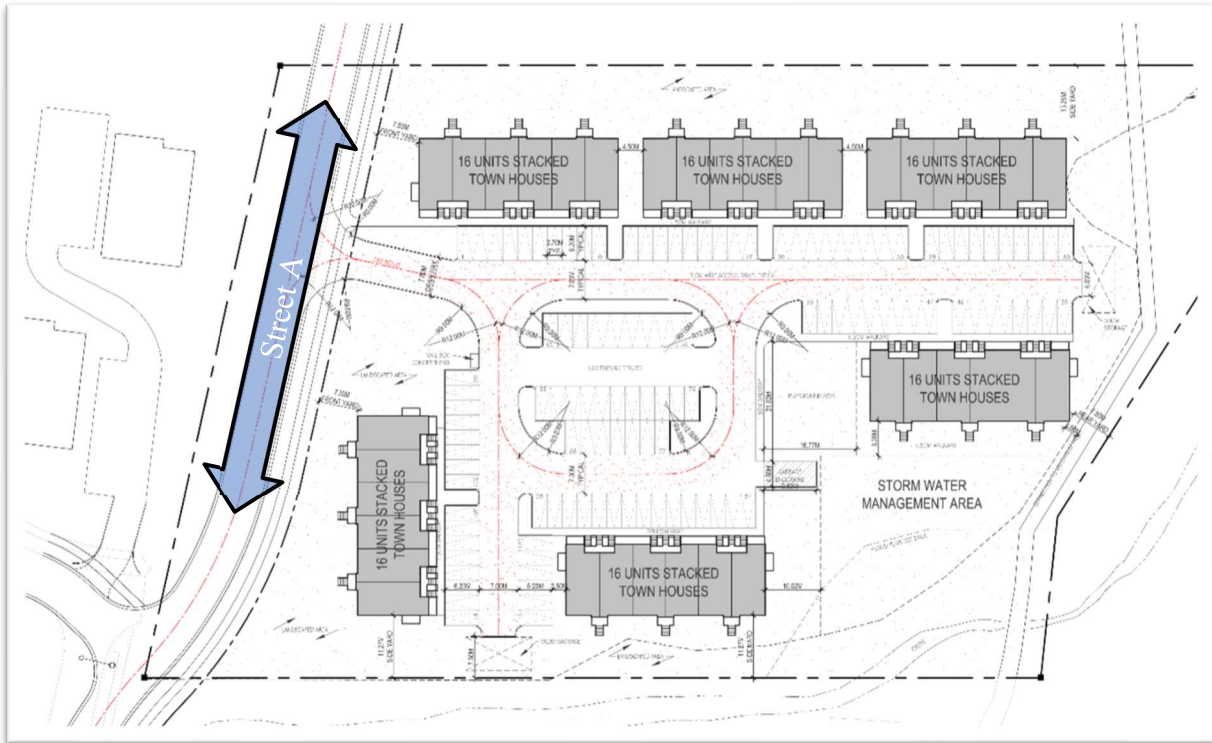
Image 1: Property Boundary & Subject Intersection (County GIS)



Image 2: Property Location – Aerial (Google Earth 2017)



Image 3: 2022 Development Concept Plan



(Note: The concept plan is likely to change over time. This report will only need to be revised if the changes are significant and are likely to directly impact traffic the content of this report.)

3 EXISTING CONDITIONS / STUDY AREA

As it exists today, the property is accessed via the north end of Maple Street crossing Lane Creek. The existing bridge north of Maple Street that provides access to the property will be closed to vehicular traffic and will be maintained for pedestrian / recreational access only.

A new entrance will be constructed on the west side of the property, connecting to Lake Breeze Court via the new Street A. The proposed Lake Breeze Court/ Street A intersection and the existing Lake Breeze Court/ Niles Street intersection are described below.

Being unposted urban roads, the speed limit is assumed to be 50 km/h for all study roads, including Lake Breeze Court, Niles Street and Street A. The Prince Edward County GIS Viewer shows a 50 km/h speed limit for Lake Breeze Court and Niles Street.

3.1 LAKE BREEZE COURT / STREET A

Lake Breeze Court starts at Niles Street, runs north roughly 130m where it turns to the left and continues west 215m to its end. It is an urban, local dead-end road with single-family homes along its length and a multi-unit residential property (Lakebreeze Terrace) at 57 Lake Breeze Court. The present access to Lakebreeze Terrace is straight ahead of the north-south segment of Lake Breeze Court.

Provision has been made at the bend for a future connection to the east. The existing concrete barrier curb has been constructed with radii, guide rail and signage that suggests a road / entrance connection has been planned for some time. See the StreetView image below.

Image 4: StreetView of Lake Breeze Court and Lake Breeze Terrace Condominium



It is understood that this intersection will be realigned further east, so that the north-south portion of Lake Breeze Court continues into Street A along the west side of the proposed development. The east-west portion of Lake Breeze Court will become a minor road with a stop sign providing stop control for eastbound traffic.

Existing traffic activity on Lake Breeze Court is sufficiently low that neither modelling nor assessment of the level of service for this intersection is necessary. If concerns are identified when considering other, higher volume adjacent intersections, expanding the investigation will be considered.

3.2 LAKE BREEZE COURT / NILES STREET

This is a “T” intersection with the south limit of Lake Breeze Court (minor street) being stop controlled and Niles Street (major street) being uncontrolled.

- To the south is CML Snider Elementary School.

- To the east is a Municipal recreational property.
- To the west are single family residential homes.

Niles Street runs east – west from County Road 2 (Belleville Street) 950m west to West Street, providing connections to the village core via Wharf Street.

While most of the east-west village traffic will use Wellington Main Street, Niles Street can provide an alternative route when traffic is congested in the downtown area.

It is noted that CML Snider Elementary School is immediately to the south and that a school zone is posted for Niles Street in this area. No reduced speed signs were observed.

Image 5: StreetView of Niles Street at Lake Breeze Court. Left is CML Snider School.



* This intersection is the focus of this document and will be investigated in subsequent sections.

3.3 OTHER INTERSECTIONS

It is felt unlikely that the proposed development will affect other downstream intersections in a manner that will warrant any change in current traffic control. Functional levels of service at these intersections are expected to remain more or less unchanged as a result of the development trip generation.

If, however, the findings associated with the Lake Breeze Court/ Niles Street intersection and the impact of the proposed development are significant, additional intersections may be considered.

It is noted that in the unlikely event the proposed development is found to contribute to poor levels of service, the opportunity to improve downstream intersections through additional turning

lanes or other traditional measures will be limited due to the existing developed urban environment and limited space available.

4 STUDY HORIZONS

The traffic impacts of the proposed development will be assessed assuming full build out in 2023, and after a five-year horizon to 2028.

With insufficient historical traffic data available to develop an accurate picture of local trends, a general 2% year-over-year growth rate will be applied to Niles Street through traffic to estimate background traffic volumes.

5 OTHER DEVELOPMENTS AND ROAD IMPROVEMENTS

The community of Wellington is growing rapidly with a variety of proposed developments at different stages of approval. As development is community wide, localized impacts to individual intersections are difficult to estimate.

It is our understanding that Street A is likely to be extended north of the Millennium Trail to the Cork and Vine subdivision developments. This appears to be two developments that will be constructed in tandem on one another, with the Fields of Wellington on the west and the Country Club Estates on the east.

For this study, development impacts on background traffic by other developments such as these will not explicitly be considered. However, a generally conservative approach to modelling will be taken to allow for these variations in surrounding conditions.

The intent of this study is to show what impact the subject development specifically may have on existing traffic conditions.

6 SOFTWARE

There are various software packages available for traffic impact evaluations. We will be using the Highway Capacity Software (HCS7) by McTrans.

This is acceptable as the subject intersection is simple in its configuration; signals are not being considered; coordination of intersections and more elaborate network modelling is not required and little difference in output results between software options is anticipated.

As provided on the product website, the Highway Capacity Software (HCS7) includes modules to implement the Highway Capacity Manual procedures for Signalized Intersections, Urban Streets, Alternative Intersections, Roundabouts, Freeway Facilities, Basic Freeway Segments,

Freeway Weaving Segments, Freeway Merge & Diverge Segments, Multilane Highways, Two-Way Stop Control, All-Way Stop Control, and Two-Lane Highways. The Two-Way Stop Controlled module will be used for this assessment.

7 TRAFFIC ANALYSIS

Existing traffic conditions are based on previous traffic counts provided by Prince Edward County; traffic counted by Greer Galloway on December 10th, 2020; and a general knowledge of the local traffic conditions.

7.1 PRINCE EDWARD COUNTY 2019 TRAFFIC RECORDS

The follow is a summary of traffic records provided by Prince Edward County for Niles Street.

- Saturday traffic volumes are highest, reflective of a tourism-based traffic peak vs. the more common weekday commuter traffic highs.
- Niles Street traffic is greater at the Belleville Street intersection than at West Street
- Peak hour at West Street: 114 vehicles; 61 (54%) eastbound; 53 (46%) westbound.
- Peak hour at Belleville Street: 161 vehicles; 109 (68%) eastbound; 52 (32%) westbound.
- No counts specific to Lake Breeze Court were available.

Niles Street/ West Street Intersection

Thursday, May 16th, 2019

Time	# EB	# WB
AM Peak Hour	31	24
Mid-Day Peak Hour	29	22
PM Peak Hour	23	25

Sunday, May 19th, 2019

Time	# EB	# WB
AM Peak Hour	18	21
Mid-Day Peak Hour	34	40
PM Peak Hour	13	17

Friday, May 17th, 2019

Time	# EB	# WB
AM Peak Hour	13	21
Mid-Day Peak Hour	18	27
PM Peak Hour	29	32

Monday, May 20th, 2019

Time	# EB	# WB
AM Peak Hour	18	14
Mid-Day Peak Hour	25	12
PM Peak Hour	25	13

Saturday, May 18th, 2019

Time	# EB	# WB
AM Peak Hour	54	54
Mid-Day Peak Hour	61	53
PM Peak Hour	19	18

Tuesday, May 21st, 2019

Time	# EB	# WB
AM Peak Hour	35	15
Mid-Day Peak Hour	19	26
PM Peak Hour	25	25

Niles Street / Belleville Street Intersection

Thursday, May 16th, 2019

Time	# EB	# WB
AM Peak Hour	44	40
Mid-Day Peak Hour	39	28
PM Peak Hour	40	47

Friday, May 17th, 2019

Time	# EB	# WB
AM Peak Hour	42	19
Mid-Day Peak Hour	40	41
PM Peak Hour	44	41

Saturday, May 18th, 2019

Time	# EB	# WB
AM Peak Hour	67	52
Mid-Day Peak Hour	109	52
PM Peak Hour	23	33

Sunday, May 19th, 2019

Time	# EB	# WB
AM Peak Hour	33	29
Mid-Day Peak Hour	43	46
PM Peak Hour	38	39

Monday, May 20th, 2019

Time	# EB	# WB
AM Peak Hour	23	39
Mid-Day Peak Hour	53	26
PM Peak Hour	35	26

Tuesday, May 21st, 2019

Time	# EB	# WB
AM Peak Hour	36	29
Mid-Day Peak Hour	31	41
PM Peak Hour	55	47

7.2 GREER GALLOWAY 2020 TRAFFIC COUNT

A single day traffic count was conducted at the intersection of Niles Street and Lake Breeze Court on Thursday, December 10th, 2020. Traffic count results are appended.

The peak operating hour of the intersection occurred between 9:00am and 10:00am and included 84 total vehicles. Vehicle movements include 41 eastbound through vehicles, 28 westbound through vehicles, four southbound left turning vehicles, four southbound right turning vehicles, four westbound right turning vehicles and three eastbound left turning vehicles.

During this hour, our counts show an approximately even split between turning movements into and out of Lake Breeze Court, as well as an approximately even distribution between northbound (entering) and southbound (exiting) traffic.

It is noted that this count was taken in December when traffic activity is low relative to summer conditions, and that activity may have been reduced by COVID. Volumes were roughly half of the Saturday Mid-Day Peak Hour at the Belleville Street intersection the year before.

7.4 TRIP DISTRIBUTION ASSIGNMENT

Based on the information available, the following assumptions will be applied to the traffic model of the Lake Breeze Court/ Niles Street intersection:

1. The highest peak hour traffic volume (mid-day Saturday peak at the Belleville Street intersection) will be used to estimate background traffic on Niles Street at the Lake Breeze intersection. A general 2% year-over-year increase will be applied.
2. The distribution of background traffic on Niles Street will be approximated by two-thirds eastbound to one-third westbound, consistent with the above peak hour.

Using the distribution at Belleville Street will increase the amount of eastbound traffic that may be affected by left turn movements into Lake Breeze Court.

3. Turning movements observed at Lake Breeze Court during the peak hour of the Greer Galloway count (9:00am – 10:00 am, Thursday, December 10th) will be used to estimate the background traffic and turning movements on Lake Breeze Court.

As the County count has a peak hour roughly double these counts, these values will be doubled for the intersection analysis.

4. New traffic from the development is assumed from the trip generator. At Niles Street, turning movements are assumed to be split evenly in all directions.

Niles Street background traffic is summarized below:

Peak Hour Background Traffic in 2019 = 161 vehicles

Peak Hour Background Traffic in 2023 = 174 vehicles @ 2% year-over-year growth

Peak Hour Background Traffic in 2028 = 192 vehicles @ 2% year-over-year growth

Eastbound 2023:

66.67% = 116 vehicles

including eastbound left turn = 6 veh

including southbound left turn = 8 veh

remaining through vehicles = 102 veh

Westbound 2023:

33.33% = 58 vehicles

including westbound right turn = 8 veh

including southbound right turn = 8 veh

remaining through vehicles = 42 veh

Eastbound 2028:

66.67% = 128 vehicles

including eastbound left turn = 6 veh

including southbound left turn = 8 veh

remaining through vehicles = 114 veh

Westbound 2028:

33.33% = 64 vehicles

including westbound right turn = 8 veh

including southbound right turn = 8 veh

remaining through vehicles = 48 veh

Modelling scenarios of the subject intersection are summarized below:

2023 Background EXISTING / PEAK HOUR				
	SB-RT	SB-TH	SB-LT	
	8	0	8	
EB-LT 6	Total 174			WB-RT 8
EB-TH 102				WB-TH 42
EB-RT 0				WB-LT 0
	NB-LT 0	NB-TH 0	NB-RT 0	

2028 Background EXISTING / PEAK HOUR				
	SB-RT	SB-TH	SB-LT	
	8	0	8	
EB-LT 6	Total 192			WB-RT 8
EB-TH 114				WB-TH 48
EB-RT 0				WB-LT 0
	NB-LT 0	NB-TH 0	NB-RT 0	

New Development Traffic EXISTING / PEAK HOUR				
	SB-RT	SB-TH	SB-LT	
	14	0	14	
EB-LT 19	Total 66			WB-RT 19
EB-TH 0				WB-TH 0
EB-RT 0				WB-LT 0
	NB-LT 0	NB-TH 0	NB-RT 0	

New Development Traffic EXISTING / PEAK HOUR				
	SB-RT	SB-TH	SB-LT	
	14	0	14	
EB-LT 19	Total 66			WB-RT 19
EB-TH 0				WB-TH 0
EB-RT 0				WB-LT 0
	NB-LT 0	NB-TH 0	NB-RT 0	

2023 Background + New Development EXISTING / PEAK HOUR				
	SB-RT	SB-TH	SB-LT	
	22	0	22	
EB-LT 25	Total 240			WB-RT 27
EB-TH 102				WB-TH 42
EB-RT 0				WB-LT 0
	NB-LT 0	NB-TH 0	NB-RT 0	

2028 Background + New Development EXISTING / PEAK HOUR				
	SB-RT	SB-TH	SB-LT	
	22	0	22	
EB-LT 25	Total 258			WB-RT 27
EB-TH 114				WB-TH 48
EB-RT 0				WB-LT 0
	NB-LT 0	NB-TH 0	NB-RT 0	

8 LEVEL OF SERVICE

Un-signalized intersection capacity analysis techniques based on the Highway Capacity Manual were utilized to determine the level of service (LOS) at the subject intersection. The LOS of an

intersection is determined by the average total delay for specific turning movements - in particular, the left turn movements to and from the minor road.

A level of service "F" is considered an undesirable delay. These high delays are indicative of insufficient gaps of suitable size to permit vehicles to execute their turning movement in the preferred amount of time.

Level of Service	Average Total Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	> 50

Table 4: Definition of Level of Service for Un-signalized Intersections

A summary of the level of service results are provided below and detailed HCS7 output files are attached for reference.

8.1 2023 BACKGROUND TRAFFIC RESULTS

- Eastbound Left Turn
 - o Volume/Capacity Ratio: 0.00
 - o 95% Queue Length: 0.0
 - o Control Delay: (s/veh): 7.3
 - o Level of Service: A
- Southbound Left / Right Turn
 - o Volume/Capacity Ratio: 0.02
 - o 95% Queue Length: 0.1
 - o Control Delay: (s/veh): 9.1
 - o Level of Service: A

8.2 2023 BACKGROUND WITH DEVELOPMENT RESULTS

- Eastbound Left Turn
 - o Volume/Capacity Ratio: 0.02
 - o 95% Queue Length: 0.1
 - o Control Delay: (s/veh): 7.4
 - o Level of Service: A
- Southbound Left / Right Turn
 - o Volume/Capacity Ratio: 0.06
 - o 95% Queue Length: 0.2
 - o Control Delay: (s/veh): 9.5
 - o Level of Service: A

8.3 2028 BACKGROUND WITH DEVELOPMENT RESULTS

- Eastbound Left Turn
 - o Volume/Capacity Ratio: 0.02
 - o 95% Queue Length: 0.1
 - o Control Delay: (s/veh): 7.4
 - o Level of Service: A
- Southbound Left / Right Turn
 - o Volume/Capacity Ratio: 0.06
 - o 95% Queue Length: 0.2
 - o Control Delay: (s/veh): 9.5
 - o Level of Service: A

9 OTHER CONSIDERATIONS

Other considerations might include a left turn lane warrant analysis, right turn lane analysis and line of sight assessment.

In this case where volumes are small, the road network is well established with no existing operational or safety concerns to our knowledge and the proposed development having a negligible effect on the subject intersection, these elements are felt to be unnecessary.

However, a general overview of the sightlines at the subject intersection is provided below.

9.1 SIGHTLINE REQUIREMENTS

According to the MTO Highway Access Management Guideline for a posted 50 km/h two-lane public highway, the minimum entering sight distance for a driver stopped at the minor street and wanting to make a turn onto the major street is 225m (Table 7), and the stopping sight distance for a motorist travelling on the major road is 105m (Table 9).

It is noted that the four-way stop intersection of Maple Street/ Niles Street is approximately 140m (measured with Google Maps) east of the Lake Breeze Court/ Niles Street intersection, which is within the recommended entering sight distance. However, as it is stop-controlled in all directions and visible from Lake Breeze Court, no concerns arise.

Both entering and stopping sight distances are satisfied west of the subject intersection.

10 CONCLUSION

Based on the traffic impact considerations detailed herein, we draw the following conclusions regarding the impact of the proposed development on the existing municipal road system immediately adjacent to the site.

To the best of our knowledge the existing roadways adjacent to the proposed development operate well and no issues have been raised or observed in this regard.

All level of service measurables are good for both existing conditions as well as with the additional traffic projected from the proposed development.

The limited impact on the Niles Street and Lake Breeze Court intersection suggests that no further investigation is required on the proposed development entrance or other downstream intersections.

If there are any questions or comments, please direct them to the undersigned.

Respectfully Submitted,



Matthew McIntosh, P.Eng.
Project Manager / Senior Engineer

Nathan Jianopoulos

Nathan Jianopoulos, E.I.T.

Attachments

1. Traffic Count: Thursday, December 10th, 2020
2. Intersection Model Results: 2023 Background
3. Intersection Model Results: 2023 Background with Proposed Development
4. Intersection Model Results: 2028 Background with Proposed Development

LAKE BREEZE CT/NILES INTERSECTION TRAFFIC SURVEY
 Thursday, December 10th, 2020

	East Bound			South Bound			West Bound			Total EB	Hourly	Total WB	Hourly	Total
	L	T	R	L	T	R	L	T	R					
7:00	-	-		-		-		-	-	-	-	-	-	-
7:15	0	0		1		0		1	0	1	-	1	-	-
7:30	0	3		0		0		0	0	3	-	0	-	-
7:45	0	1		2		0		4	0	3	-	4	-	-
8:00	1	4		2		3		6	3	7	14	12	17	31
8:15	4	2		0		0		5	1	6	19	6	22	41
8:30	0	5		3		3		3	0	8	24	6	28	52
8:45	0	5		0		0		4	0	5	26	4	28	54
9:00	1	6		0		3		7	2	7	26	12	28	54
9:15	2	18		2		0		10	0	22	42	10	32	74
9:30	0	11		1		0		6	2	12	46	8	34	80
9:45	0	6		1		1		5	0	7	48	6	36	84
10:00	0	5		1		2		4	1	6	47	7	31	78
10:15	Break													
10:30	0	6		2		1		3	1	8	-	5	-	-
10:45	2	8		4		0		5	2	14	-	7	-	-
11:00	1	11		0		0		4	0	12	-	4	-	-
11:15	0	7		2		1		2	0	9	43	3	19	62
11:30	0	8		0		1		7	2	8	43	10	24	67
11:45	0	9		3		0		5	1	12	41	6	23	64
12:00	2	8		1		0		6	2	11	40	8	27	67
12:15	1	4		2		0		5	1	7	38	6	30	68
12:30	1	4		1		0		4	1	6	36	5	25	61
12:45	0	9		2		0		2	2	11	35	4	23	58
13:00	0	10		1		2		6	1	11	35	9	24	59
13:15	1	12		0		1		3	2	13	41	6	24	65
13:30	1	10		3		0		5	2	14	49	7	26	75
13:45	1	12		0		1		3	0	13	51	4	26	77
14:00	1	4		0		1		8	2	5	45	11	28	73
14:15	Break													
14:30	1	7		2		0		6	0	10	-	6	-	-
14:45	1	8		0		0		13	0	9	-	13	-	-
15:00	0	8		1		0		5	1	9	-	6	-	-
15:15	0	4		0		0		6	1	4	32	7	32	64
15:30	1	6		2		1		6	2	9	31	9	35	66
15:45	1	8		0		0		3	1	9	31	4	26	57
16:00	1	3		1		1		4	1	5	27	6	26	53
16:15	1	11		2		0		9	2	14	37	11	30	67
16:30	1	6		1		1		5	3	8	36	9	30	66
16:45	0	8		0		1		2	1	8	35	4	30	65
17:00	0	3		2		0		10	0	5	35	10	34	69
17:15	2	10		1		1		4	1	13	34	6	29	63
17:30	0	3		1		0		5	2	4	30	7	27	57
17:45	0	4		2		0		6	3	6	28	9	32	60
18:00	1	4		1		2		1	0	6	29	3	25	54

HCS7 Two-Way Stop-Control Report																
General Information								Site Information								
Analyst	Nathan Jianopoulos							Intersection	Niles Street/ Lake Breeze							
Agency/Co.	Greer Galloway Group							Jurisdiction	Prince Edward County							
Date Performed	06/21/2022							East/West Street	Niles Street							
Analysis Year	2023							North/South Street	Lake Breeze Court							
Time Analyzed								Peak Hour Factor	0.92							
Intersection Orientation	East-West							Analysis Time Period (hrs)	0.25							
Project Description	80 Maple Street - Background															
Lanes																
<p style="text-align: center;">Major Street: East-West</p>																
Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration	LT								TR				LR			
Volume (veh/h)	6		102				42		8				8		8	
Percent Heavy Vehicles (%)	3												3		3	
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															
Critical and Follow-up Headways																
Base Critical Headway (sec)	4.1												7.1		6.2	
Critical Headway (sec)	4.13												6.43		6.23	
Base Follow-Up Headway (sec)	2.2												3.5		3.3	
Follow-Up Headway (sec)	2.23												3.53		3.33	
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)	7												17			
Capacity, c (veh/h)	1544												901			
v/c Ratio	0.00												0.02			
95% Queue Length, Q ₉₅ (veh)	0.0												0.1			
Control Delay (s/veh)	7.3												9.1			
Level of Service (LOS)	A												A			
Approach Delay (s/veh)	0.4												9.1			
Approach LOS	A															

HCS7 Two-Way Stop-Control Report																
General Information								Site Information								
Analyst	Nathan Jianopoulos							Intersection	Niles Street/ Lake Breeze							
Agency/Co.	Greer Galloway Group							Jurisdiction	Prince Edward County							
Date Performed	06/21/2022							East/West Street	Niles Street							
Analysis Year	2023							North/South Street	Lake Breeze Court							
Time Analyzed								Peak Hour Factor	0.92							
Intersection Orientation	East-West							Analysis Time Period (hrs)	0.25							
Project Description	80 Maple Street - Background With Development															
Lanes																
<p style="text-align: center;">Major Street: East-West</p>																
Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration	LT								TR				LR			
Volume (veh/h)		25	102				42	27						22		22
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															
Critical and Follow-up Headways																
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)		27												48		
Capacity, c (veh/h)		1518												855		
v/c Ratio		0.02												0.06		
95% Queue Length, Q ₉₅ (veh)		0.1												0.2		
Control Delay (s/veh)		7.4												9.5		
Level of Service (LOS)		A												A		
Approach Delay (s/veh)	1.6												9.5			
Approach LOS	A												A			

HCS7 Two-Way Stop-Control Report																
General Information								Site Information								
Analyst	Nathan Jianopoulos							Intersection	Niles Street/ Lake Breeze							
Agency/Co.	Greer Galloway Group							Jurisdiction	Prince Edward County							
Date Performed	06/21/2022							East/West Street	Niles Street							
Analysis Year	2028							North/South Street	Lake Breeze Court							
Time Analyzed								Peak Hour Factor	0.92							
Intersection Orientation	East-West							Analysis Time Period (hrs)	0.25							
Project Description	80 Maple Street - Background With Development															
Lanes																
<p style="text-align: center;">Major Street: East-West</p>																
Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration	LT								TR				LR			
Volume (veh/h)		25	114				48	27						22		22
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															
Critical and Follow-up Headways																
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)		27												48		
Capacity, c (veh/h)		1510												840		
v/c Ratio		0.02												0.06		
95% Queue Length, Q ₉₅ (veh)		0.1												0.2		
Control Delay (s/veh)		7.4												9.5		
Level of Service (LOS)		A												A		
Approach Delay (s/veh)	1.5												9.5			
Approach LOS	A												A			