
Transportation Impact Study

Wyse Road, Dartmouth

a report by

Fathom Studio

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Project

Wyse Road, Multi-Unit
Development

Prepared for

HRM Planning & Development
Eastern Region, Alderney Gate
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Dartmouth, NS

Submitted By

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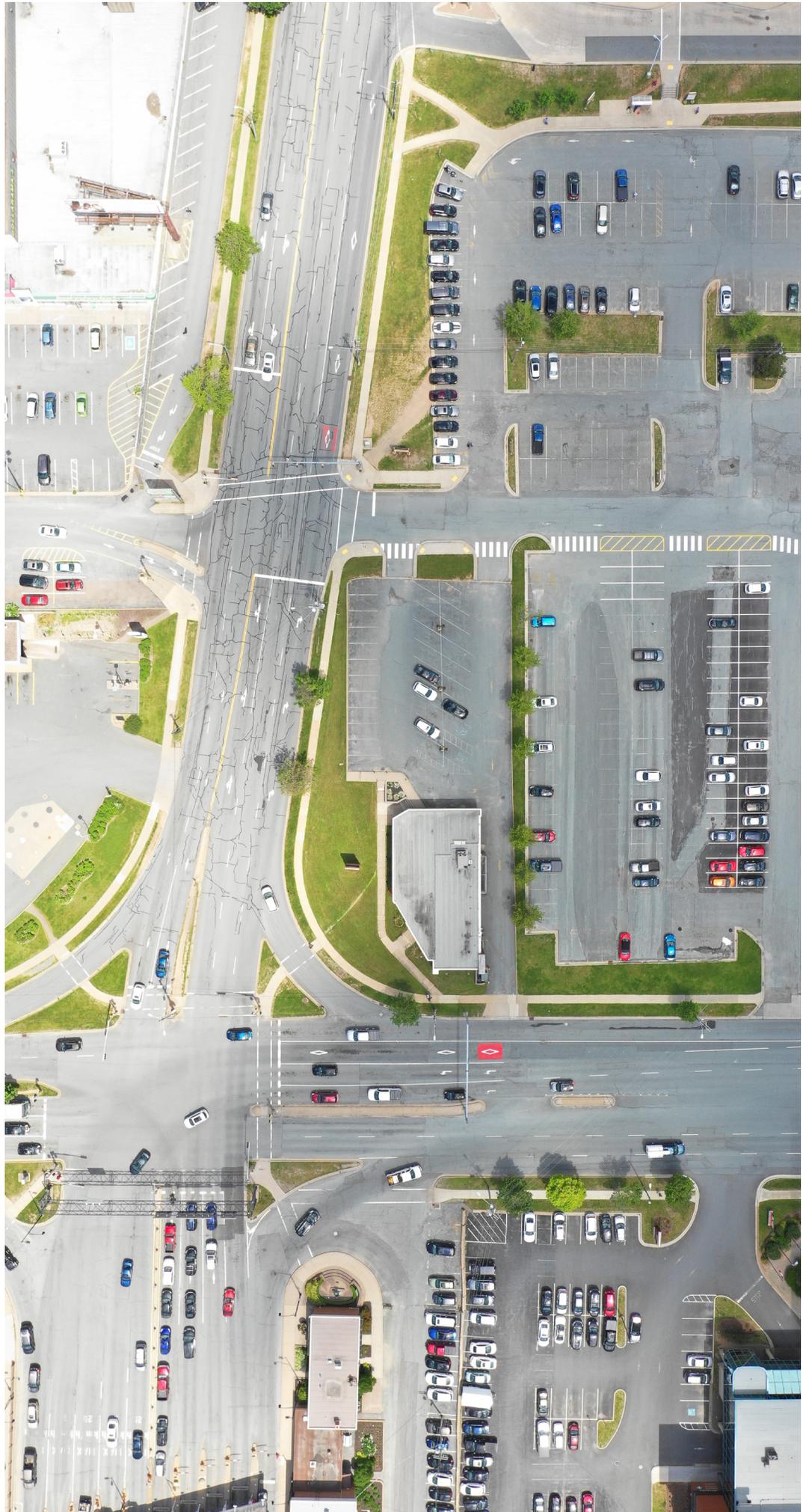


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APPENDICIES

- Appendix A: Traffic Counts**
- Appendix B: Trip Generation**
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Count

Timings

2017

2017

Timings

MAYOR JOHN W. PHIPPS BLVD

1. INTRODUCTION

This Transportation Impact Study follows HRM’s Guidelines for the Preparation of Transportation Impact Studies, 8th Edition and general Traffic and Transportation Engineering principles for such studies. It is intended to address the transportation impacts that may be expected on the road and active transportation networks resulting from the:

- Removal of the former Scotia Bank building located in the northeast corner of the Wyse Road and Nantucket Avenue; and,
- Addition of a new multi-unit residential / commercial / office development as described in the table below.

Transportation Impact Studies are prepared to ensure developments are consistent with the objectives and policies of the Municipal Planning Strategies / Municipal Development Plans and the Regional Plan

Proposed Development	Dunphy Wyse Road Development
Owner	Alex Dunphy
Location	Northeast corner of: Wyse Road and Nantucket Avenue
Building Details	125 Residential Units 9,000 ft ² Commercial / Retail Space 8,000 ft ² Office Space
Parking	~ 105 Car Spaces

Table 1-1:
Project Summary



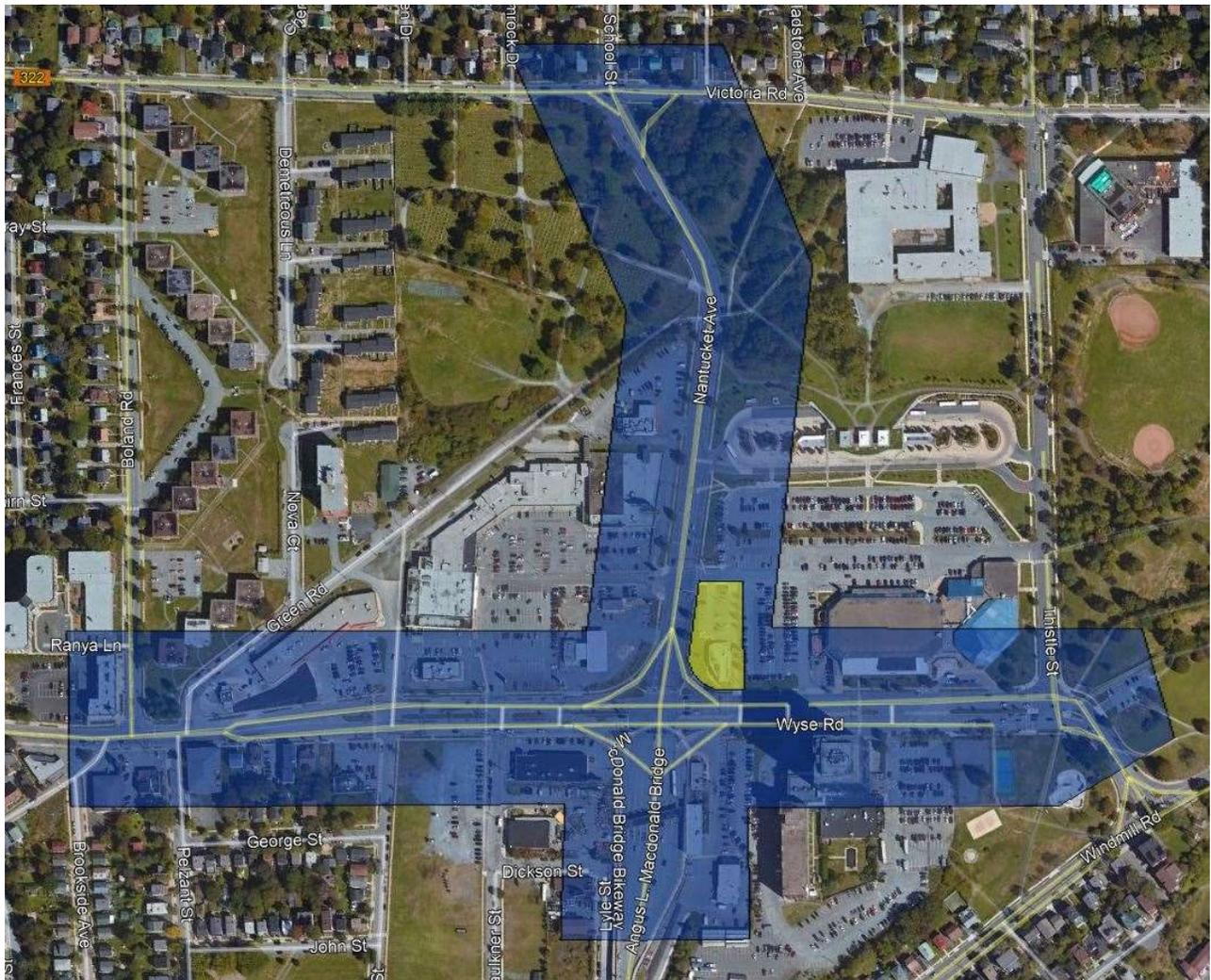
Figure 1-1:
Building Rendering

2. EXISTING CONDITIONS

2.1 Study Area

The study area is located in the northeast quadrant of the Wyse Road and Nantucket Avenue intersection, immediately northeast of the Macdonald Bridge in Dartmouth, Nova Scotia. The yellow area represents the new building development site and the blue represents the primary study area considered in this study for analysis purposes.

Figure 2-1: Study Area



2.2 Roadways and Intersections

The following sections provide a brief summary of each of the key roadways in the study area that are relevant to this study.

Wyse Road

A major roadway that runs parallel to the Halifax Harbour between Windmill Road and Albro Lake Road. In the vicinity of the development, Wyse is a divided multi-lane urban roadway that provides access to various commercial driveways, accommodates significant transit traffic and provides direct access to the Macdonald Bridge vehicle, bicycle and pedestrian lanes through the signalized Nantucket Avenue intersection. Sidewalks are present on both sides of the road and numerous midblock and intersection crosswalks are present in the area. Northbound Wyse Road at Nantucket includes two dedicated left turn lanes and a transit-only left turn lane to the Macdonald Bridge and a shared through right turn lane. The southbound approach includes a double right turn lane to the Macdonald Bridge via a channelized right, two through lanes (shared with the right turn upstream of the intersection) and a dedicated left turn.



Nantucket Avenue

Nantucket is a 4 / 5 lane urban undivided roadway that transitions to the Macdonald Bridge approach and departure lanes on the west side of the Wyse Road intersection. It includes two westbound approach lanes to Wyse Road (through only and shared through / right – left turns are restricted) and three eastbound lanes away from the Bridge. The eastbound curb lanes is restricted to transit bus traffic only through the Wyse Road intersection and becomes a dedicated left turn lane into the Sportplex parking lot. There are sidewalks on both sides of the roadway and a signalized pedestrian actuated traffic signal is located immediately on the uphill (east) side of the Sportsplex / Dartmouth Shopping Center accesses. Nantucket serves the north entrance and exit movements to and from the Dartmouth Bridge Transit Terminal.



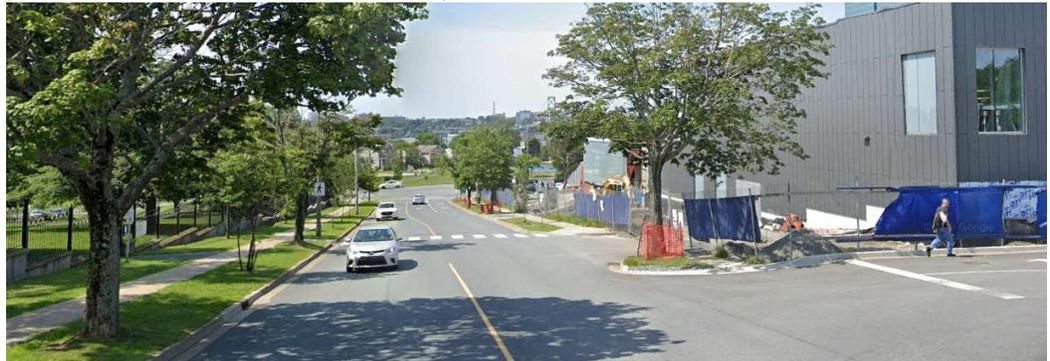
Victoria Road

Victoria Road is the next major traffic roadway east of the development and services traffic between Downtown Dartmouth at its south end and the Circumferential Highway (Hwy 111) at its north end, including its continuation to the north as Windmill Road. It's intersection with Nantucket Drive is signalized and is a primary route between the Macdonald Bridge Woodland Avenue / Highway 118. Near Nantucket, Victoria Road includes a northbound dedicated left and shared through/right lane and a southbound shared through/left with a dedicated right turn channelization and associated approach flare towards the Macdonald Bridge.



Thistle Street

Thistle is a two-lane connector roadway between Wyse Road, through Victoria Road and into residential areas to the east, including and common commuter route using Maple Drive. It services the south entry and exit driveways to the Dartmouth Bridge Transit Terminal and includes an access to the Sportplex Parking lot. Traffic signals are present at both Victoria Road and Wyse Road.



Macdonald Bridge

The Macdonald Bridge is one of the two bridges crossing the Halifax Harbour. The bridge includes lanes with a center reversing lane and is serviced by 5 approach and departure lanes (10 total) as well as bicycle and pedestrian lanes.



2.3 Active Transportation (AT)

The core downtown areas of both Halifax and Dartmouth have documented high cyclist and pedestrian activity (and other travel modes) in most areas. This study area is no exception with many local AT origins and destinations in the surrounding area as well as being located immediately adjacent to critical AT and transit corridors. These include the Dartmouth Bridge Transit Terminal, Dartmouth High and Bicentennial Schools, Dartmouth Common, the recently expanded and renovated Zatzman Sportsplex, Downtown Dartmouth, the Dartmouth waterfront, and various commercial and retail businesses. The development also has direct access to the dedicated bicycle and pedestrian walking lanes that cross the Macdonald Bridge connecting Dartmouth and Halifax.

The majority of routes and intersection crossings are already in place for this development and access points for the development easily connect to existing sidewalk infrastructure.

2.4 Vehicle Traffic

Recent and historical traffic counts were provided from HRM for all intersections in the study area. Most counts were completed during 2017 and 2018 and counts were supplemented by transit data, site observations, and general data associated with counts across the Macdonald and MacKay bridges. The baseline counts used in this analysis are provided in Appendix B of this report and the Figures in Section 4 of this report show the network model incorporating the count volumes.

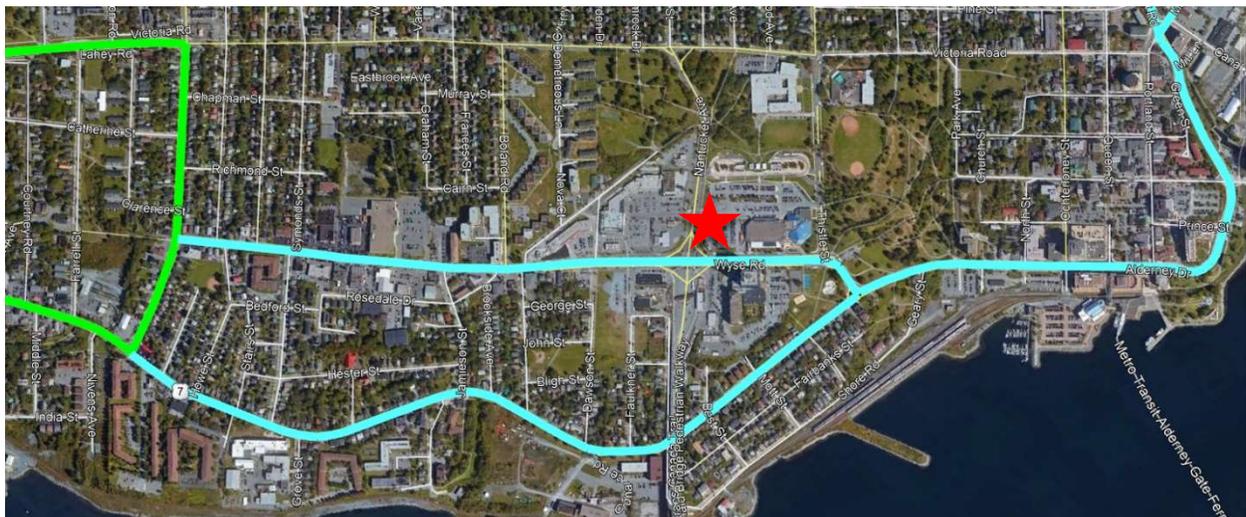
2.5 Transit

The proposed development is located immediately southwest of the Dartmouth Bridge Transit Terminal with less than 200 meters between the development and main transit terminal building. Suffice to say that the development has some of the best transit service available in the region with immediate access to over 20 different routes at the terminal or on connecting roadways. Additional routes are available at the Alderney Gate Terminal include the Alderney Ferry to Halifax which is located about 800 meters to the southeast.



2.6 Truck Routes

Halifax’s By-Law T-400 Respecting the Establishment of Truck Routes for Certain Trucking Motor Vehicles within the HRM identifies Wyse Road and Windmill Road as Daylight routes (shown in blue) between the hours of 7 AM and 9 PM. Adjoining “Full Time” truck routes (shown in green) include Albro Lake Road and portions of Victoria Road and Windmill Road to the north (west) and the Circumferential Highway via Alderney Drive, Prince Albert or Portland Street. These routes provide direct access to the new development, though limited delivery requirements are expected at this site.



3. FUTURE CONDITIONS

3.1 Context

3.1.1 Analysis Time Horizon

Based on recommended HRM guidelines, the base year for this study has been established as 2019 and such studies frequently addresses a 5-year time horizon (2024) which includes background traffic growth, new traffic related to the Wyse Road development and any other significant transportation impacts anticipated during that period. Given the relatively low volume of traffic generated by the development relative to the total traffic on the road network, this study addresses the 2019 base year and the 2024 horizon year with the development in place.

3.1.2 Background Traffic

Traditional background traffic growth rates used for traffic impact studies throughout HRM have been in the 1 – 2% range though actual growth is frequently less than this and even negative in some cases. Recommendations from past regional planning studies suggest a growth rate of 0.5% background traffic growth is more appropriate for projected growth rate. For this study, we have assumed a 0.5% background traffic growth rate over the 5-year horizon to 2024 and to adjust past studies to the 2019 base year.

3.1.3 Analysis Period

This area of Halifax is highly commuter oriented, particularly given the proximity of the Macdonald Bridge. Therefore, the weekday AM and PM peak hours are considered to be the critical periods for the analysis.

3.2 The Development

The proposed development will require removal of the existing building and construction of the new mixed-use development. As there has been little activity at the existing building in recent year and when operational, the single story building generated relative low traffic volumes, no traffic has been eliminated from the network to account for removal of the building.

3.2.1 Trip Generation

The addition of new traffic related to the development is summarized in the table below and a more detailed summary of the trip generation rates, and background calculations are provided in Appendix B of this report.

Table 3-1: Trip Generation Summary

	ITE Land Use Type	AM Peak			PM Peak		
		Enter	Exit	Total	Enter	Exit	Total
Apartments	ITE 222	10	28	38	32	20	52
Office	ITE 710	11	1	12	2	10	12
Misc. Retail	ITE 820	17	16	33	11	13	24
Internal Capture Trips	-	0	0	0	-7	-7	-14
Sub-Total		38	45	83	45	43	88
Trip Reduction Factor	-	-8	-9	-17	-9	-9	-18
TOTAL		30	36	76	36	34	70

Given the proximity to Bridge transit hub and access to the robust active transportation network, it is expected that the development will generation traffic at rates significantly less that those estimated for “typical” mixed use developments. In the case of this development, trip reduction is expected to impact both origin related traffic (i.e. residents traveling from the development to work) as well as destination-based trips (i.e. people traveling to the office or retail portions of the development). In addition, the development is at a location that should incentivize using alternate modes of travel given the congestion frequently experienced on the Macdonald Bridge.

For these reasons, an additional trip reduction factor of 20% has been applied to the overall trip generation assumption, though in reality we would expect the reduction factor to be significantly higher and therefore result in less trips that is being assumed in this study.

3.3 Trip Distribution and Assignment

It is assumed that traffic will distribute itself through the network in a similar manner to the existing traffic. The new building will have a mix of inbound peak traffic and outbound peak traffic (i.e. primarily inbound office traffic and outbound residential traffic in the AM).

The adjacent intersections can experience some level of congestions related to access to the Macdonald Bridge, it is anticipated the entry and exit movements from the development may vary day-to-day depending on the volume of traffic on the adjacent streets. It is also anticipated that some drivers may elect to use different driveways accessed from the Sportsplex parking lot depending on routing and congestion levels in the area, though most of the traffic accessing the site is expected to use the Nantucket Avenue Driveway. The trip assignment assumptions and results are reflected in the spreadsheets included in Appendix C of this report.

4. ANALYSIS

4.1 Transportation Modelling

A microscopic traffic model was prepared using the Synchro/SimTraffic platform for the AM and PM peak hours of analysis. Detailed output for each of the scenarios is provided in Appendix D of the report. The analysis included the following models for each peak:

- 2019 Existing Conditions; and,
- 2024 with Background and Development Traffic.

The trip assignment process suggests that there will some distribution of traffic to different intersections connecting the development to Nantucket Avenue, Wyse Road and Thistle Street. It is expected that the majority of traffic will enter and exit the site at the Nantucket Avenue intersection. With the exception of the intersection of Wyse Road with the Macdonald Bridge, the intersections in the study area operate at a reasonably good level of service with limited delays and queues. These individual intersections are discussed in greater detail below and detailed results for all intersections for each analysis scenario are provided in Appendix D of this report.

4.2 Nantucket Ave/Sportsplex/Mall Driveway

The majority of traffic is expected to enter and exit the site through this intersection, particularly given the pedestrian half-signals on the east side of the intersection that helps facilitate left turn movements into and out of the development. Signals at this intersection are pedestrian actuated with minimum green time requirements on Nantucket Road to service peak hour traffic volumes.

Traffic entering and existing the site also benefits from traffic signal operations at the Wyse Road intersection with the Macdonald Bridge which results in frequent gaps in traffic in Nantucket. The Synchro modeling results suggest that the AM peak experiences maximum volume to capacity ratio's of about 0.50 (50% capacity) today and 0.51 under 2024 development conditions with an overall intersection capacity utilization of about 53%. 95% queues on the Sportsplex driveway are about 3 vehicles and delays suggest a level of Service of B. PM peak results at this intersection are slightly better than the AM peak, presumably because volumes on Nantucket are metered to a certain extent by the signals at Wyse Road exiting the Macdonald Bridge.

4.3 Nantucket Ave. / Victoria Road

The first major intersection to the north of the site has very limited impact from development-based traffic which composes less than 1% of the overall traffic at the intersection in the 2024 development scenario. The heaviest movements during the AM peak hour are the southbound right turn and northbound left turn from Victoria to Nantucket and the modelling results suggest an overall intersection capacity utilization of about 73% with volume to capacity ratios remaining less than 0.60 on all movements.

PM peak traffic is impacted by the heavier volume of eastbound traffic on Nantucket making a left turn onto Victoria Road resulting in a movement v/c ratio of 0.88 and some substantial queuing. Opposing traffic on Maple is limited though so the movement operates with limited delay. Overall capacity utilization is around 77% at this intersection.

4.4 Wyse Rd / Macdonald Bridge / Nantucket

This intersection is one of the highest volume intersections in HRM and is characterized by double right and left turn lanes and dual through movements on each approach. Operations vary significantly day-to-day depending on the peak traffic characteristics that are often dependent on driver choices on the approaching network. The AM peak hour frequently experiences some congestion as vehicles enter onto the Macdonald Bridge from all three approaches, though queues often extend across the Macdonald Bridge from the Halifax side of the Harbour which contributes to congestion at this intersection. Exacerbating the challenges are the left turn bus movements from the northbound dedicated bus lane on Wyse Road onto the Macdonald Bridge which frequently blocks the southbound right turn movements onto the Bridge from Wyse Road.

For all these reasons, this is a difficult intersection to accurately model. The modelling result suggest that in the absence of backups on the Macdonald Bridge that limits the effectiveness of the intersection, the intersection operates with an overall capacity utilization of about 82% in the AM and PM peaks. Numerous movements operate with a V/C ratio over 0.9 and substantial queuing and delays can occur. Development related traffic at this intersection composes less than 1% of total traffic through the intersection during the peak hours and therefore would not be noticeable.

4.5 Wyse Road and Thistle Street

This is the first intersection south of the proposed development and similar to other intersections in the study area, has a little impact related to the development. Development traffic composes about 1% of total traffic through the intersection during the peak hours and therefore has negligible impacts on operations. V/C ratios and overall intersection capacity utilization remain below 50% during the AM peak hour with limited delay and queuing. During the PM peak the heavier southbound left to Thistle competes with the northbound through movement on Wyse resulting in v/c ratios of about 0.8, though the traffic signals help keep delays and queue lengths at reasonable levels.

5. CONCLUSIONS

This report has analyzed the impacts of the removal of an existing building and the addition of a new multi-unit residential development with office and retail space. The analysis shows that the development contributes a very small amount of traffic to the adjacent driveways and intersections relative to the overall traffic on the road network. Furthermore, the results show very little change to key performance parameters such as delays, queue length or volume to capacity ratios between conditions before and after the development is in place.

The surrounding road network is characterized by high volumes of commuter-based traffic, most notably related to volumes onto and off the Macdonald Bridge between Dartmouth and Halifax. This commuter traffic is quite consistent during the weekdays, though the intensity of traffic on the three directional approaches to the Bridge can vary significantly.

In general, the development fits very well into the surrounding environment being directly located on a number of core transportation routes, and has direct access to robust transit and active transportation networks. It is expected that residents of this development are highly likely to utilize both the transit and AT networks which in turn help to reduce additional vehicle traffic on the roadway.

We trust that this report satisfies the Halifax requirements for the preparation of Transportation Impact Studies. Should there be any questions or comments regarding the content of the study, please do not hesitate to contact the undersigned.

Sincerely,

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Senior Transportation Engineer

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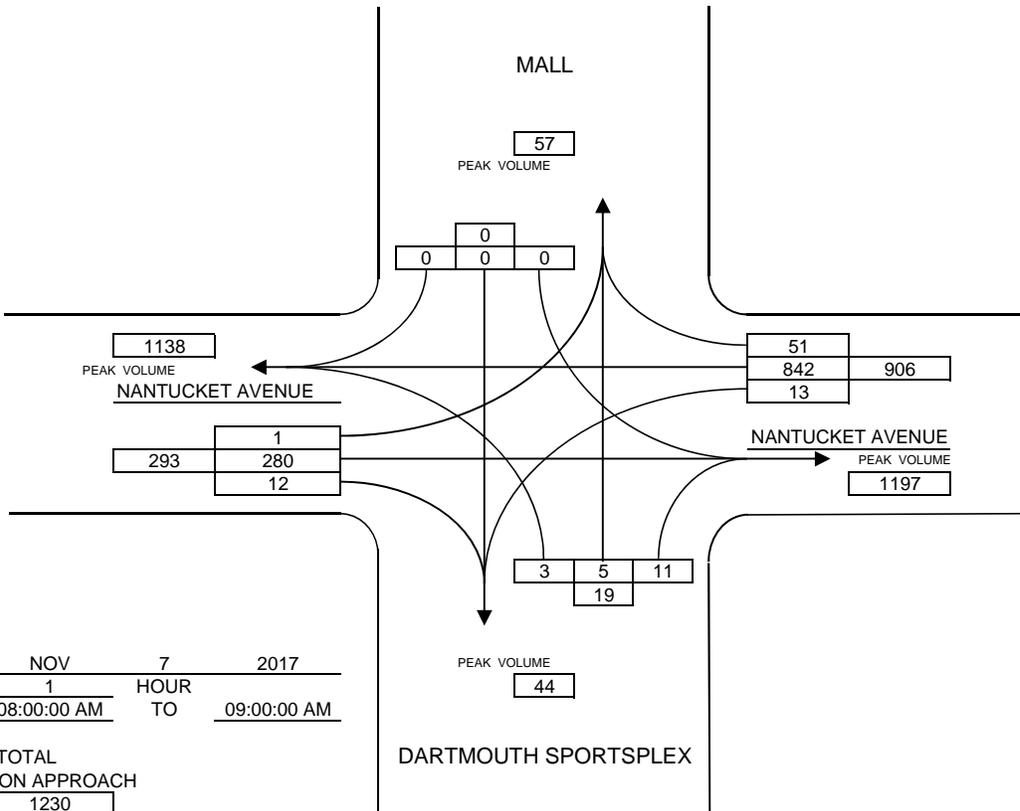
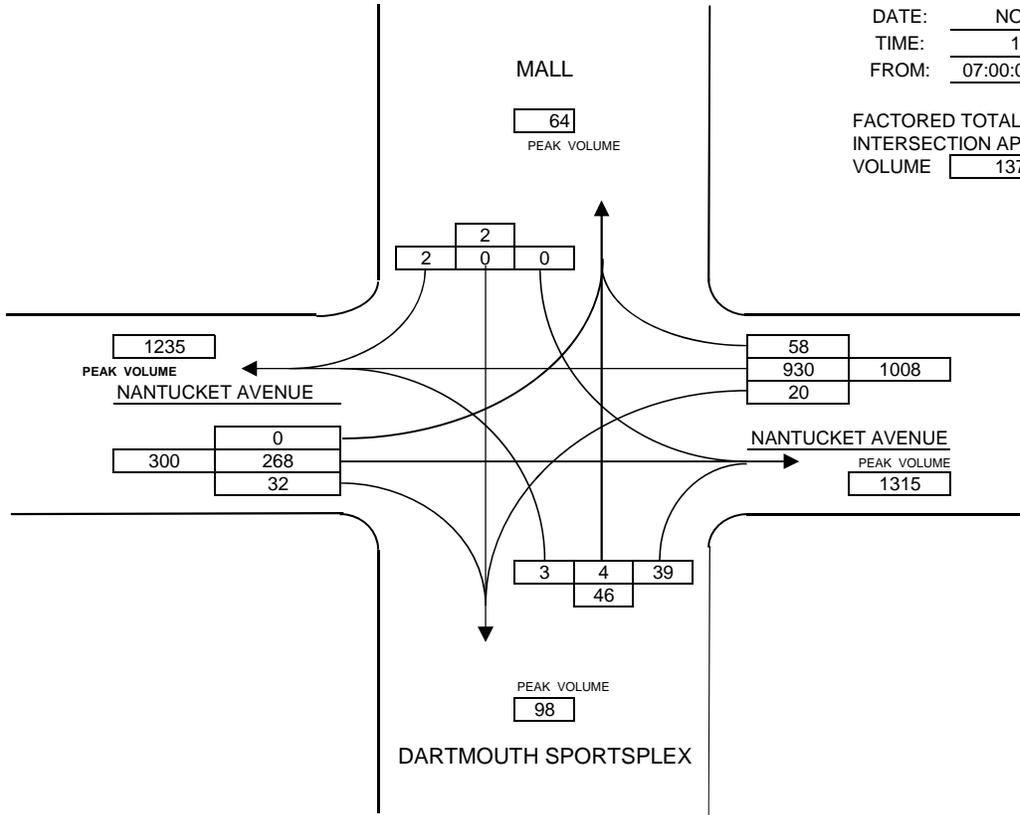
APPENDIX A

Traffic Counts

VEHICULAR GRAPHIC SUMMARY SHEET

NANTUCKET AVENUE AT DARTMOUTH SPORTSPLEX

INTERSECTION :



MANUAL TRAFFIC COUNTS

INTERSECTION:				NANTUCKET AVENUE AT DARTMOUTH SPORTSPLEX								WEATHER		CLOUDY	
												RECORDER		KS	
DAY	DATE	MONTH	YEAR												
TUES	7	NOV	2017												

TIME: 15 MIN INTERVALS		NANTUCKET AVENUE FROM THE EAST			NANTUCKET AVENUE FROM THE WEST			MALL FROM THE NORTH			DARTMOUTH SPORTSPLEX FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	0	92	19	0	183	3	0	0	3	0	0	8	308
04:15:00 PM	04:30:00 PM	1	98	9	0	197	1	0	0	3	0	0	8	317
04:30:00 PM	04:45:00 PM	0	103	16	0	201	2	0	0	4	1	0	13	340
04:45:00 PM	05:00:00 PM	0	108	22	1	200	2	0	0	2	0	0	12	347

TOTAL	1	401	66	1	781	8	0	0	12	1	0	41	1312
PEAK	468			790			12			42			
15 MIN PEAK	520			812			16			56			
PEAK HOUR FACTOR	0.9			0.97			0.75			0.75			
TWO WAY TOTALS	1290			1204			79			51			FACTOR
													1.01
													1325

DAY	DATE	MONTH	YEAR
TUES	7	NOV	2017

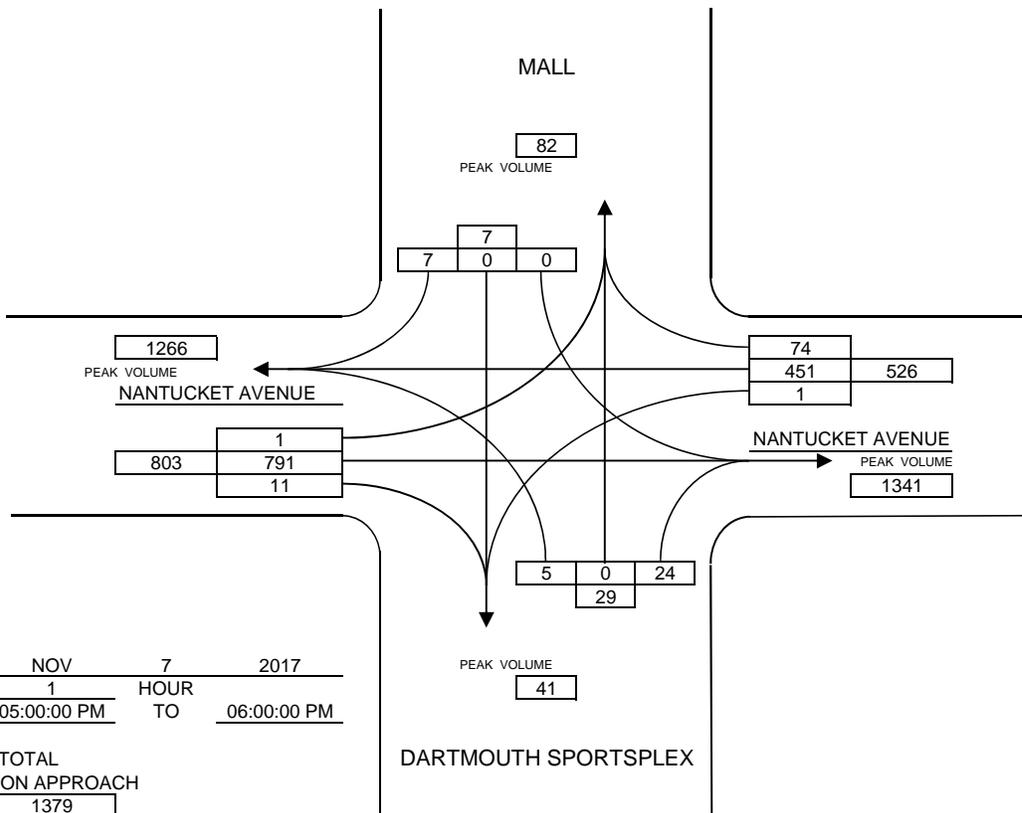
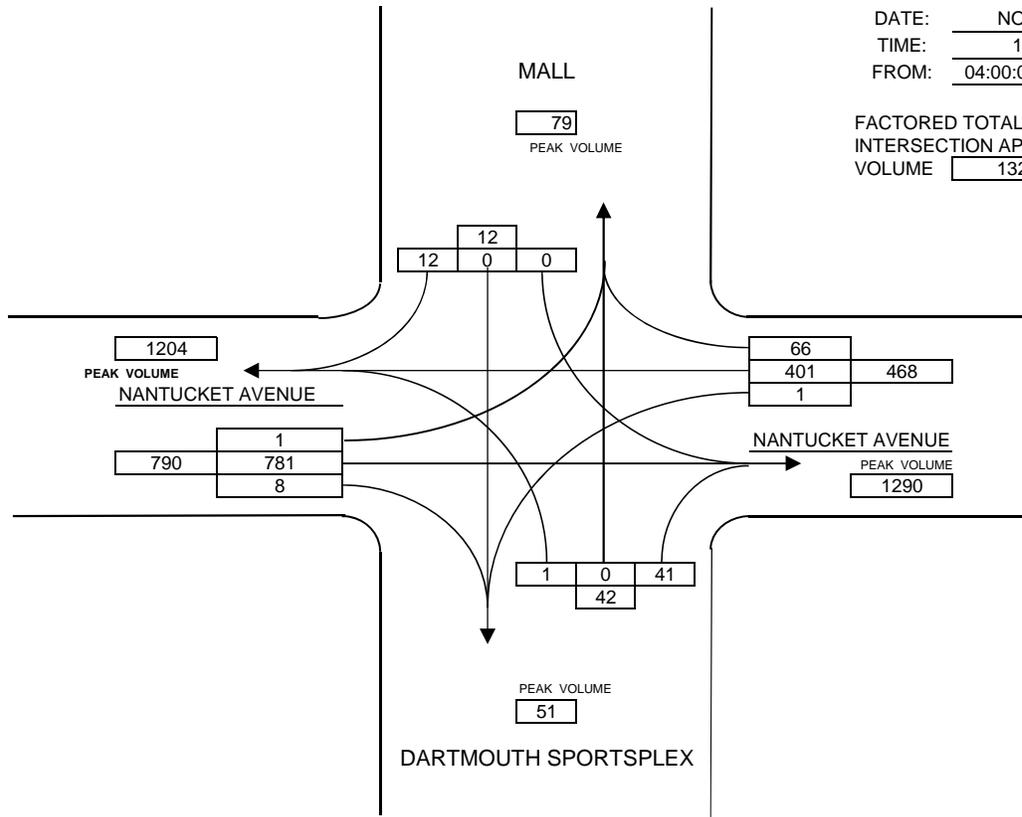
TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	0	104	15	1	215	2	0	0	3	2	0	11	353
05:15:00 PM	05:30:00 PM	1	118	23	0	183	1	0	0	1	0	0	8	335
05:30:00 PM	05:45:00 PM	0	120	19	0	194	4	0	0	2	2	0	3	344
05:45:00 PM	06:00:00 PM	0	109	17	0	199	4	0	0	1	1	0	2	333

TOTAL	1	451	74	1	791	11	0	0	7	5	0	24	1365
PEAK	526			803			7			29			
15 MIN PEAK	568			872			12			52			
PEAK HOUR FACTOR	0.93			0.92			0.58			0.56			
TWO WAY TOTALS	1341			1266			82			41			FACTOR
													1.01
													1379

VEHICULAR GRAPHIC SUMMARY SHEET

NANTUCKET AVENUE AT DARTMOUTH SPORTSPLEX

INTERSECTION :



MANUAL TRAFFIC COUNTS

INTERSECTION: THISTLE STREET AT VICTORIA ROAD

WEATHER: CLEAR

DAY: TUESDAY DATE: 17 MONTH: OCT YEAR: 2017

RECORDER: SS

TIME: 15 MIN INTERVALS		THISTLE STREET FROM THE EAST			THISTLE STREET FROM THE WEST			VICTORIA STREET FROM THE NORTH			VICTORIA STREET FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM	07:15:00 AM	0	59	69	2	20	2	12	18	12	19	92	0	305
07:15:00 AM	07:30:00 AM	0	73	64	8	25	1	13	10	12	17	89	0	312
07:30:00 AM	07:45:00 AM	1	66	56	8	22	1	12	12	14	25	107	1	325
07:45:00 AM	08:00:00 AM	2	79	60	12	26	1	15	18	13	23	85	0	334

TOTAL	3	277	249	30	93	5	52	58	51	84	373	1	1276
PEAK		529			128			161			458		
15 MIN PEAK		564			156			184			532		
PEAK HOUR FACTOR		0.94			0.82			0.88			0.86		
TWO WAY TOTALS		675			540			813			524		FACTOR
													1.01
													1289

DAY: TUESDAY DATE: 17 MONTH: OCT YEAR: 2017

TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
08:00:00 AM	08:15:00 AM	2	48	48	22	18	3	19	28	15	12	74	1	290
08:15:00 AM	08:30:00 AM	3	72	58	23	23	5	19	29	19	10	62	1	324
08:30:00 AM	08:45:00 AM	15	75	55	13	58	5	17	24	14	2	43	1	322
08:45:00 AM	09:00:00 AM	21	61	59	11	42	2	22	31	14	20	46	0	329

TOTAL	41	256	220	69	141	15	77	112	62	44	225	3	1265
PEAK		517			225			251			272		
15 MIN PEAK		580			304			268			348		
PEAK HOUR FACTOR		0.89			0.74			0.94			0.78		
TWO WAY TOTALS		738			587			765			440		FACTOR
													1.01
													1278

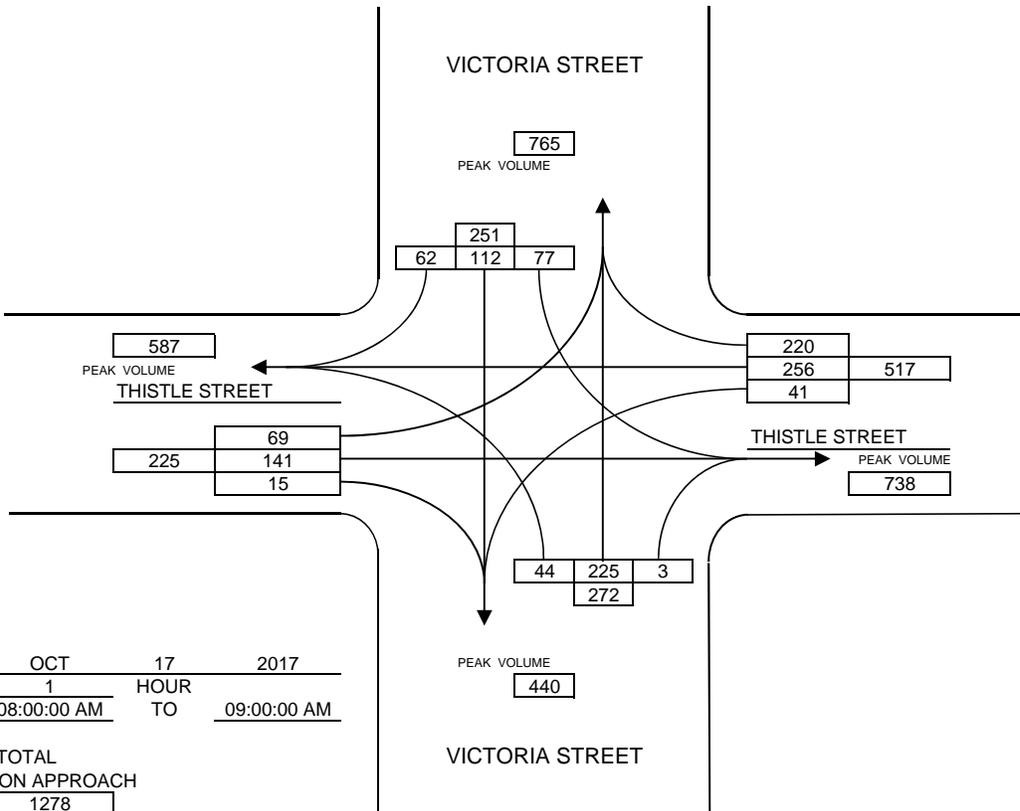
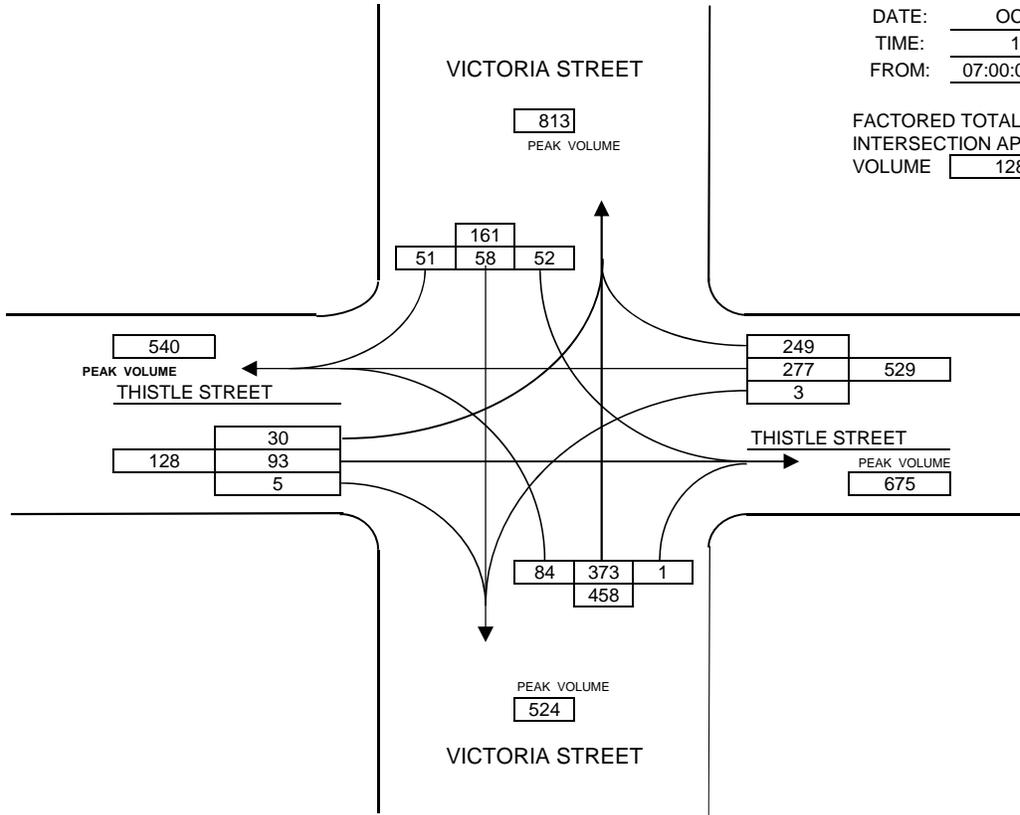
VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION :

THISTLE STREET AT VICTORIA ROAD

DATE: OCT 17 2017
 TIME: 1 HOUR
 FROM: 07:00:00 AM TO 08:00:00 AM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1289



DATE: OCT 17 2017
 TIME: 1 HOUR
 FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1278

MANUAL TRAFFIC COUNTS

INTERSECTION: THISTLE STREET AT VICTORIA ROAD

WEATHER CLEAR
 RECORDER SS

DAY DATE MONTH YEAR
TUESDAY 17 OCT 2017

TIME: 15 MIN INTERVALS		THISTLE STREET FROM THE EAST			THISTLE STREET FROM THE WEST			VICTORIA STREET FROM THE NORTH			VICTORIA STREET FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	1	21	21	11	124	4	50	19	8	5	47	2	313
04:15:00 PM	04:30:00 PM	3	38	40	9	143	3	69	39	8	6	58	3	419
04:30:00 PM	04:45:00 PM	0	24	25	10	111	6	59	25	11	12	77	3	363
04:45:00 PM	05:00:00 PM	1	32	35	7	117	2	66	24	21	14	45	0	364

TOTAL	5	115	121	37	495	15	244	107	48	37	227	8	1459
PEAK		241			547			399			272		
15 MIN PEAK		324			620			464			368		
PEAK HOUR FACTOR		0.74			0.88			0.86			0.74		
TWO WAY TOTALS		988			747			784			399		FACTOR
													1.01
													1474

DAY DATE MONTH YEAR
TUESDAY 17 OCT 2017

TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	0	38	26	8	116	4	64	34	17	11	78	1	397
05:15:00 PM	05:30:00 PM	2	45	25	8	123	9	56	9	9	7	45	0	338
05:30:00 PM	05:45:00 PM	1	32	28	7	112	7	56	29	18	6	36	1	333
05:45:00 PM	06:00:00 PM	0	29	38	9	117	7	57	20	19	4	46	0	346

TOTAL	3	144	117	32	468	27	233	92	63	28	205	2	1414
PEAK		264			527			388			235		
15 MIN PEAK		288			560			460			360		
PEAK HOUR FACTOR		0.92			0.94			0.84			0.65		
TWO WAY TOTALS		967			762			742			357		FACTOR
													1.01
													1428

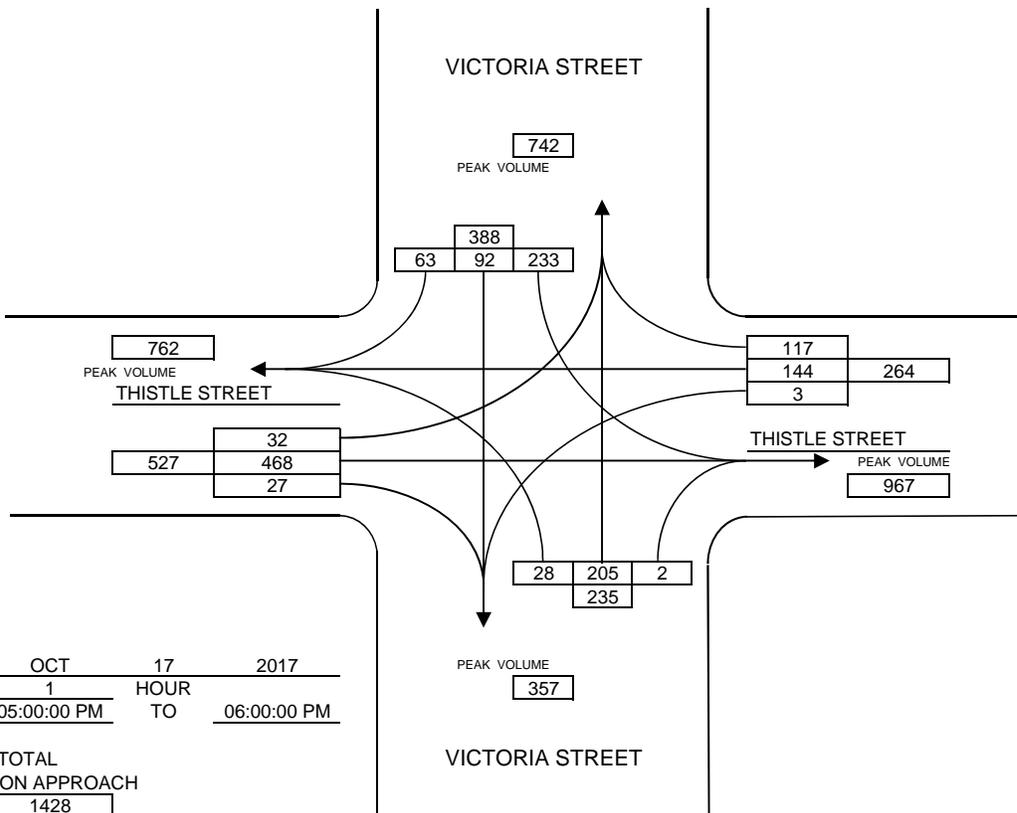
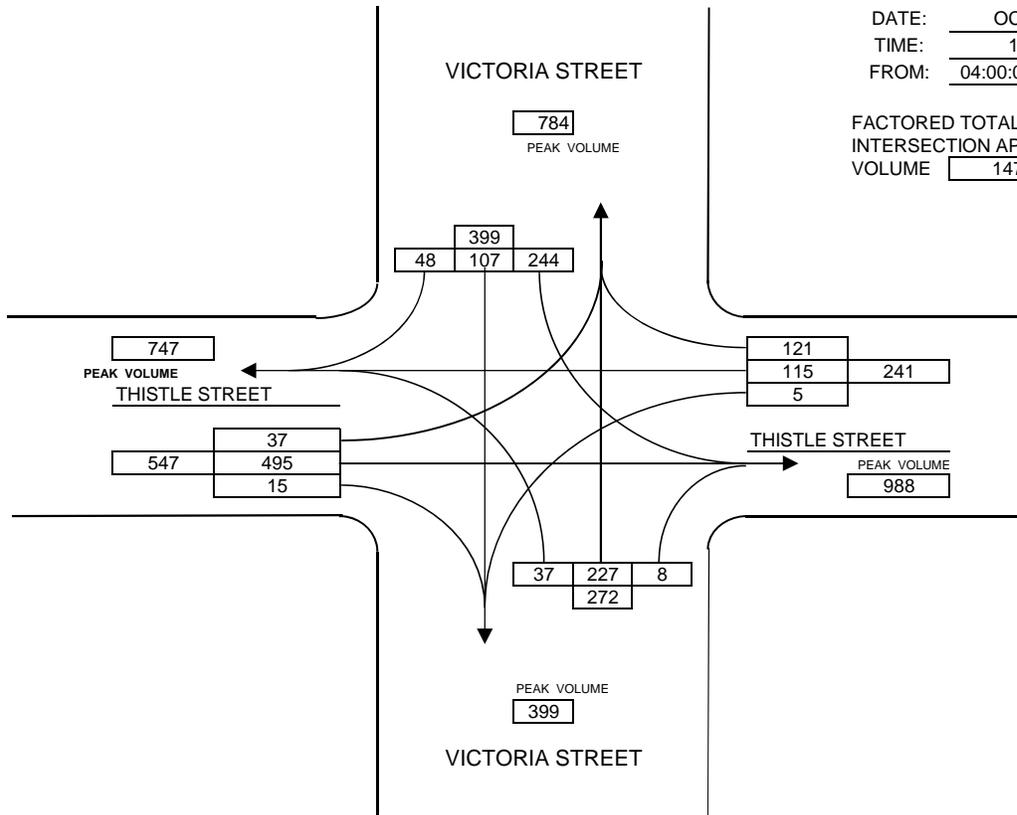
VEHICULAR GRAPHIC SUMMARY SHEET

THISTLE STREET AT VICTORIA ROAD

INTERSECTION :

DATE: OCT 17 2017
 TIME: 1 HOUR
 FROM: 04:00:00 PM TO 05:00:00 PM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1474



DATE: OCT 17 2017
 TIME: 1 HOUR
 FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1428

MANUAL TRAFFIC COUNTS

INTERSECTION: BOLAND ROAD AT WYSE ROAD

WEATHER RECORDER: SUNNY / CLEAR
JS

DAY DATE MONTH YEAR
WED 7 SEPT 2016

STREET: TIME: 15 MIN INTERVALS		BOLAND ROAD			FROM THE WEST			WYSE ROAD			WYSE ROAD			TOTAL
		FROM THE EAST			FROM THE NORTH			FROM THE SOUTH						
		L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM	07:15:00 AM	63	0	28	0	0	0	13	70	0	0	64	58	296
07:15:00 AM	07:30:00 AM	45	0	13	0	0	0	8	87	0	0	110	103	366
07:30:00 AM	07:45:00 AM	69	0	13	0	0	0	33	76	0	0	70	46	307
07:45:00 AM	08:00:00 AM	74	0	19	0	0	0	19	87	0	0	104	99	402

TOTAL	251	0	73	0	0	0	73	320	0	0	348	306	1371
PEAK	324			0			393			654			
15 MIN PEAK	372			0			436			852			
PEAK HOUR FACTOR	0.87			0			0.9			0.77			
TWO WAY TOTALS	703			0			814			1225			FACTOR
													1
													1371

DAY DATE MONTH YEAR
WED 7 SEPT 2016

TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		FROM THE EAST			FROM THE NORTH			FROM THE SOUTH						
		L	S	R	L	S	R	L	S	R	L	S	R	
08:00:00 AM	08:15:00 AM	108	0	24	0	0	0	16	151	0	0	103	69	471
08:15:00 PM	08:30:00 AM	51	0	17	0	0	0	15	84	0	0	116	47	330
08:30:00 AM	08:45:00 AM	79	0	19	0	0	0	17	92	0	0	44	55	306
08:45:00 AM	09:00:00 AM	48	0	8	0	0	0	11	54	0	0	73	40	234

TOTAL	286	0	68	0	0	0	59	381	0	0	336	211	1341
PEAK	354			0			440			547			
15 MIN PEAK	528			0			668			688			
PEAK HOUR FACTOR	0.67			0			0.66			0.8			
TWO WAY TOTALS	624			0			844			1214			FACTOR
													1
													1341

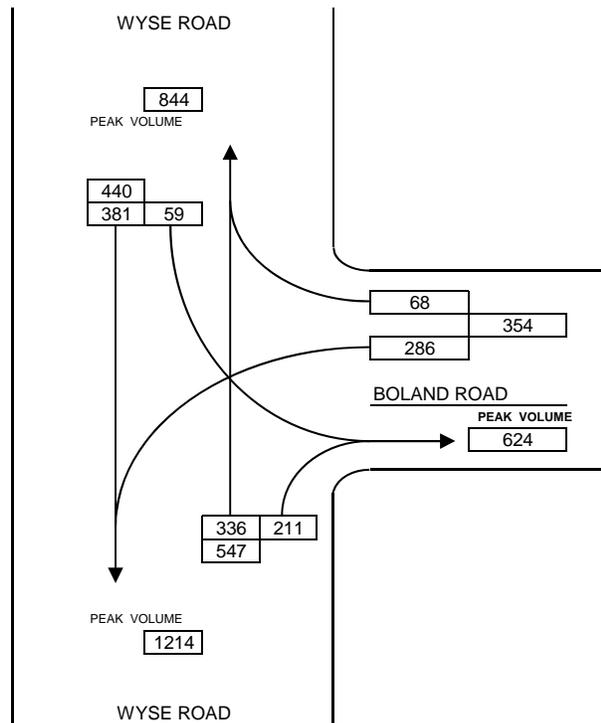
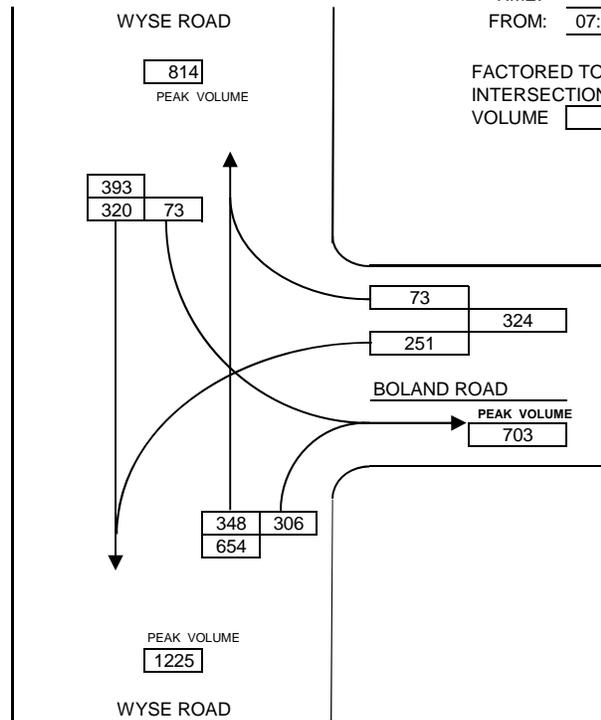
VEHICULAR GRAPHIC SUMMARY SHEET

BOLAND ROAD AT WYSE ROAD

INTERSECTION :

DATE: SEPT 7 2016
 TIME: 1 HOUR
 FROM: 07:00:00 AM TO 08:00:00 AM

FACTORED TOTAL INTERSECTION APPROACH VOLUME 1371



DATE: SEPT 7 2016
 TIME: 1 HOUR
 FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL INTERSECTION APPROACH VOLUME 1341

MANUAL TRAFFIC COUNTS

INTERSECTION: BOLAND ROAD AT WYSE ROAD

WEATHER RECORDER: SUNNY / CLEAR
JS

DAY DATE MONTH YEAR
WED 7 SEPT 2016

TIME: 15 MIN INTERVALS		BOLAND ROAD			FROM THE WEST			WYSE ROAD			WYSE ROAD			TOTAL
		FROM THE EAST			FROM THE NORTH			FROM THE SOUTH						
		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	30	0	15	0	0	0	16	63	0	0	97	107	328
04:15:00 PM	04:30:00 PM	41	0	16	0	0	0	11	91	0	0	115	100	374
04:30:00 PM	04:45:00 PM	44	0	14	0	0	0	10	77	0	0	91	89	325
04:45:00 PM	05:00:00 PM	34	0	15	0	0	0	16	91	0	0	82	84	322

TOTAL	149	0	60	0	0	0	53	322	0	0	385	380	1349
PEAK	209			0			375			765			
15 MIN PEAK	232			0			428			860			
PEAK HOUR FACTOR	0.9			0			0.88			0.89			
TWO WAY TOTALS	642			0			820			1236			FACTOR
													1
													1349

DAY DATE MONTH YEAR
WED 7 SEPT 2016

TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		FROM THE EAST			FROM THE NORTH			FROM THE SOUTH						
		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	48	0	20	0	0	0	21	111	0	0	99	85	384
05:15:00 PM	05:30:00 PM	45	0	18	0	0	0	14	90	0	0	99	78	344
05:30:00 PM	05:45:00 PM	56	0	15	0	0	0	21	76	0	0	91	61	320
05:45:00 PM	06:00:00 PM	39	0	15	0	0	0	8	68	0	0	97	67	294

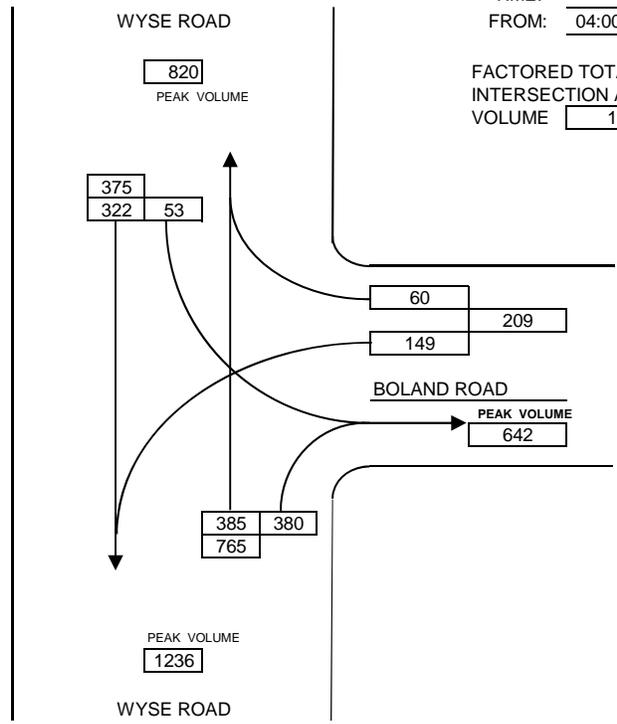
TOTAL	188	0	68	0	0	0	64	345	0	0	386	291	1342
PEAK	256			0			409			677			
15 MIN PEAK	284			0			528			736			
PEAK HOUR FACTOR	0.9			0			0.77			0.92			
TWO WAY TOTALS	611			0			863			1210			FACTOR
													1
													1342

VEHICULAR GRAPHIC SUMMARY SHEET

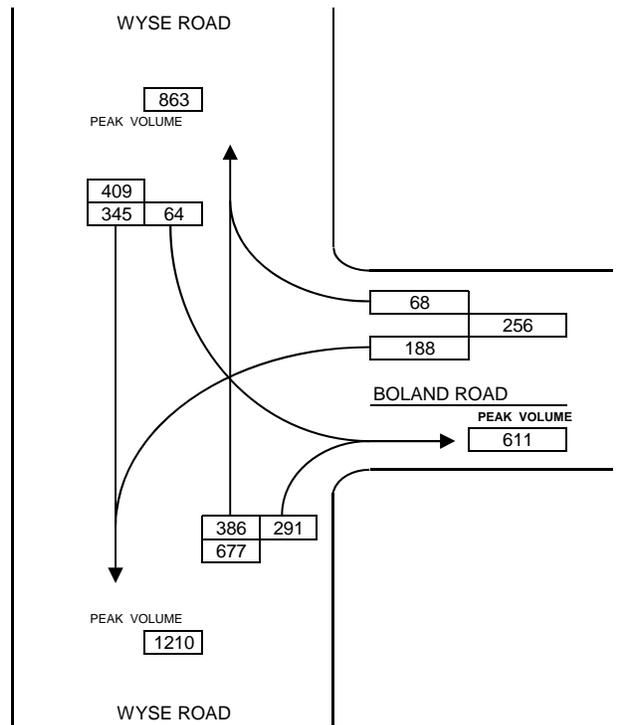
BOLAND ROAD AT WYSE ROAD

INTERSECTION :

DATE: SEPT 7 2016
 TIME: 1 HOUR
 FROM: 04:00:00 PM TO 05:00:00 PM



FACTORED TOTAL INTERSECTION APPROACH VOLUME: 1349



DATE: SEPT 7 2016
 TIME: 1 HOUR
 FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL INTERSECTION APPROACH VOLUME: 1342

Turning Movement Data

Start Time	Wyse Road Southbound						Nantucket Ave Westbound						Wyse Road Northbound						Macdonald Bridge Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:00 AM	175	15	7	0	0	197	2	212	0	0	3	214	2	13	196	0	1	211	100	52	34	0	3	186	808
7:15 AM	201	21	18	0	2	240	3	196	0	0	2	199	6	19	197	0	5	222	120	66	45	0	7	231	892
7:30 AM	140	16	19	0	0	175	2	243	0	0	2	245	6	23	212	0	1	241	120	56	36	0	6	212	873
7:45 AM	177	28	15	0	0	220	2	225	0	0	0	227	6	16	221	0	2	243	125	53	25	0	6	203	893
Hourly Total	693	80	59	0	2	832	9	876	0	0	7	885	20	71	826	0	9	917	465	227	140	0	22	832	3466
8:00 AM	147	20	14	0	1	181	1	239	0	0	6	240	10	25	173	0	0	208	118	79	37	0	6	234	863
8:15 AM	143	34	12	0	1	189	10	194	0	0	6	204	10	27	176	0	4	213	142	61	31	0	5	234	840
8:30 AM	130	40	19	0	1	189	7	192	0	0	2	199	9	24	161	0	4	194	138	82	41	0	5	261	843
8:45 AM	127	40	21	0	2	188	5	155	1	0	2	161	10	32	124	0	1	166	131	56	43	0	2	230	745
Hourly Total	547	134	66	0	5	747	23	780	1	0	16	804	39	108	634	0	9	781	529	278	152	0	18	959	3291
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	80	40	11	0	0	131	8	74	0	0	7	82	15	21	72	0	6	108	119	93	48	0	0	260	581
11:15 AM	74	23	17	0	0	114	19	78	0	0	5	97	10	21	88	0	4	119	100	94	50	0	1	244	574
11:30 AM	76	32	13	0	0	121	10	83	0	0	5	93	15	26	118	0	3	159	128	98	61	0	1	287	660
11:45 AM	70	33	17	0	0	120	21	88	0	0	2	109	19	42	87	0	1	148	96	99	72	0	5	267	644
Hourly Total	300	128	58	0	0	486	58	323	0	0	19	381	59	110	365	0	14	534	443	384	231	0	7	1058	2459
12:00 PM	68	40	14	0	0	122	12	99	1	0	9	112	15	35	92	0	2	142	109	93	79	0	3	281	657
12:15 PM	86	30	14	0	0	130	12	72	0	0	3	84	6	50	113	0	4	169	100	114	69	0	5	283	666
12:30 PM	74	55	19	0	0	148	23	85	0	0	13	108	10	34	93	0	4	137	119	80	51	0	2	250	643
12:45 PM	79	42	17	0	0	138	15	97	0	0	2	112	13	48	93	0	5	154	147	91	66	0	7	304	708
Hourly Total	307	167	64	0	0	538	62	353	1	0	27	416	44	167	391	0	15	602	475	378	265	0	17	1118	2674
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	90	39	17	0	0	146	3	122	0	0	2	125	11	37	106	0	5	154	205	164	82	0	2	451	876
4:15 PM	71	33	10	0	1	114	8	153	0	0	3	161	6	37	128	0	4	171	233	148	63	0	12	444	890
4:30 PM	87	46	16	0	0	149	3	145	1	0	5	149	11	47	106	0	6	164	231	116	71	0	9	418	880
4:45 PM	93	38	12	0	2	143	9	145	0	0	6	154	4	41	95	0	6	140	238	181	72	0	3	491	928
Hourly Total	341	156	55	0	3	552	23	565	1	0	16	589	32	162	435	0	21	629	907	609	288	0	26	1804	3574
5:00 PM	100	31	15	0	0	146	6	128	0	0	1	134	7	50	115	0	1	172	244	147	64	0	1	455	907
5:15 PM	88	27	22	0	0	137	5	143	0	0	3	148	5	32	122	0	5	159	253	173	77	0	0	503	947
5:30 PM	94	32	7	0	0	133	2	127	0	0	1	129	10	19	115	0	0	144	276	153	70	0	0	499	905
5:45 PM	69	31	22	0	0	122	5	146	0	0	3	151	5	25	126	0	3	156	206	146	74	0	0	426	855
Hourly Total	351	121	66	0	0	538	18	544	0	0	8	562	27	126	478	0	9	631	979	619	285	0	1	1883	3614
Grand Total	2539	786	368	0	10	3693	193	3441	3	0	93	3637	221	744	3129	0	77	4094	3798	2495	1361	0	91	7654	19078
Approach %	68.8	21.3	10.0	0.0	-	-	5.3	94.6	0.1	0.0	-	-	5.4	18.2	76.4	0.0	-	-	49.6	32.6	17.8	0.0	-	-	-
Total %	13.3	4.1	1.9	0.0	-	19.4	1.0	18.0	0.0	0.0	-	19.1	1.2	3.9	16.4	0.0	-	21.5	19.9	13.1	7.1	0.0	-	40.1	-
All Vehicles (no classification)	2539	786	368	0	-	3693	193	3441	3	0	-	3637	221	744	3129	0	-	4094	3798	2495	1361	0	-	7654	19078
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	5	-	-

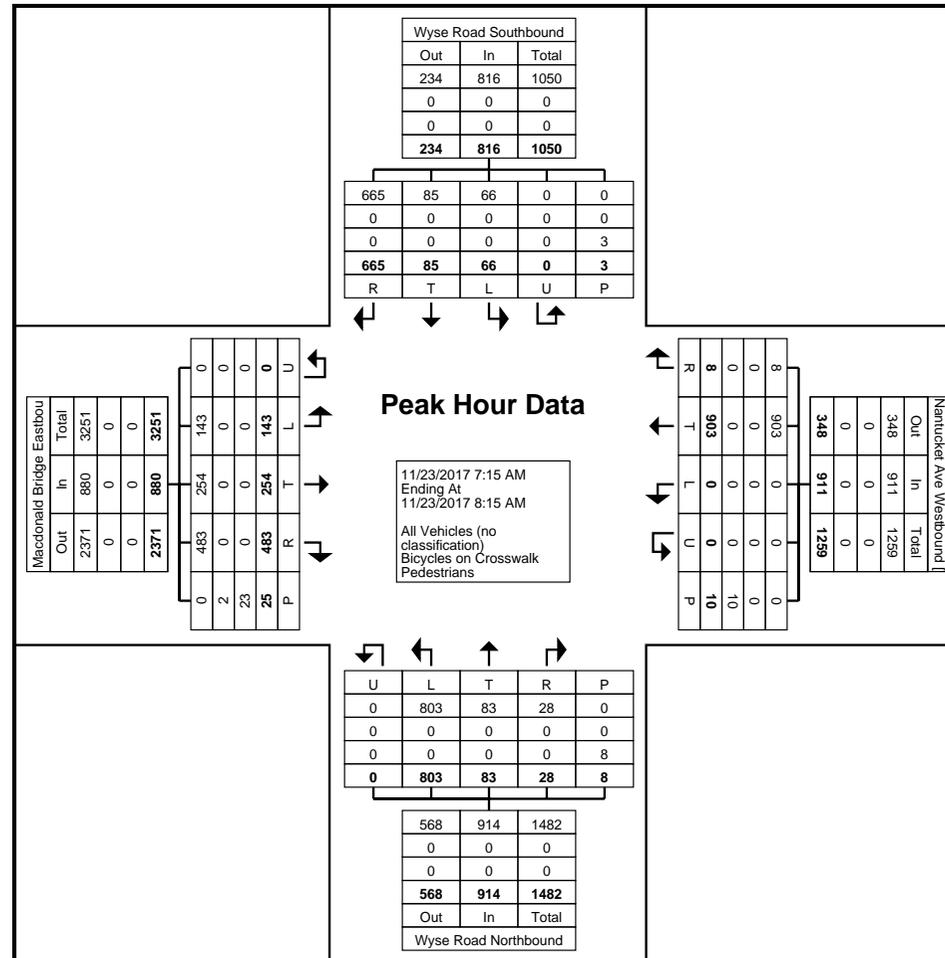
Halifax Regional Municipality (Dartmouth, NS)
PO Box 1749

Halifax, Nova Scotia, Canada B3J 3A5
(902) 490-4866

Count Name: NANTUCKET AVENUE AT WYSE
ROAD
Site Code: 17RQ330
Start Date: 11/23/2017
Page No: 4

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Wyse Road Southbound Southbound						Nantucket Ave Westbound Westbound						Wyse Road Northbound Northbound						Macdonald Bridge Eastbound Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:15 AM	201	21	18	0	2	240	3	196	0	0	2	199	6	19	197	0	5	222	120	66	45	0	7	231	892
7:30 AM	140	16	19	0	0	175	2	243	0	0	2	245	6	23	212	0	1	241	120	56	36	0	6	212	873
7:45 AM	177	28	15	0	0	220	2	225	0	0	0	227	6	16	221	0	2	243	125	53	25	0	6	203	893
8:00 AM	147	20	14	0	1	181	1	239	0	0	6	240	10	25	173	0	0	208	118	79	37	0	6	234	863
Total	665	85	66	0	3	816	8	903	0	0	10	911	28	83	803	0	8	914	483	254	143	0	25	880	3521
Approach %	81.5	10.4	8.1	0.0	-	-	0.9	99.1	0.0	0.0	-	-	3.1	9.1	87.9	0.0	-	-	54.9	28.9	16.3	0.0	-	-	-
Total %	18.9	2.4	1.9	0.0	-	23.2	0.2	25.6	0.0	0.0	-	25.9	0.8	2.4	22.8	0.0	-	26.0	13.7	7.2	4.1	0.0	-	25.0	-
PHF	0.827	0.759	0.868	0.000	-	0.850	0.667	0.929	0.000	0.000	-	0.930	0.700	0.830	0.908	0.000	-	0.940	0.966	0.804	0.794	0.000	-	0.940	0.986
All Vehicles (no classification)	665	85	66	0	-	816	8	903	0	0	-	911	28	83	803	0	-	914	483	254	143	0	-	880	3521
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	8.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	10	-	-	-	-	-	8	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	92.0	-	-



Turning Movement Peak Hour Data Plot (7:15 AM)

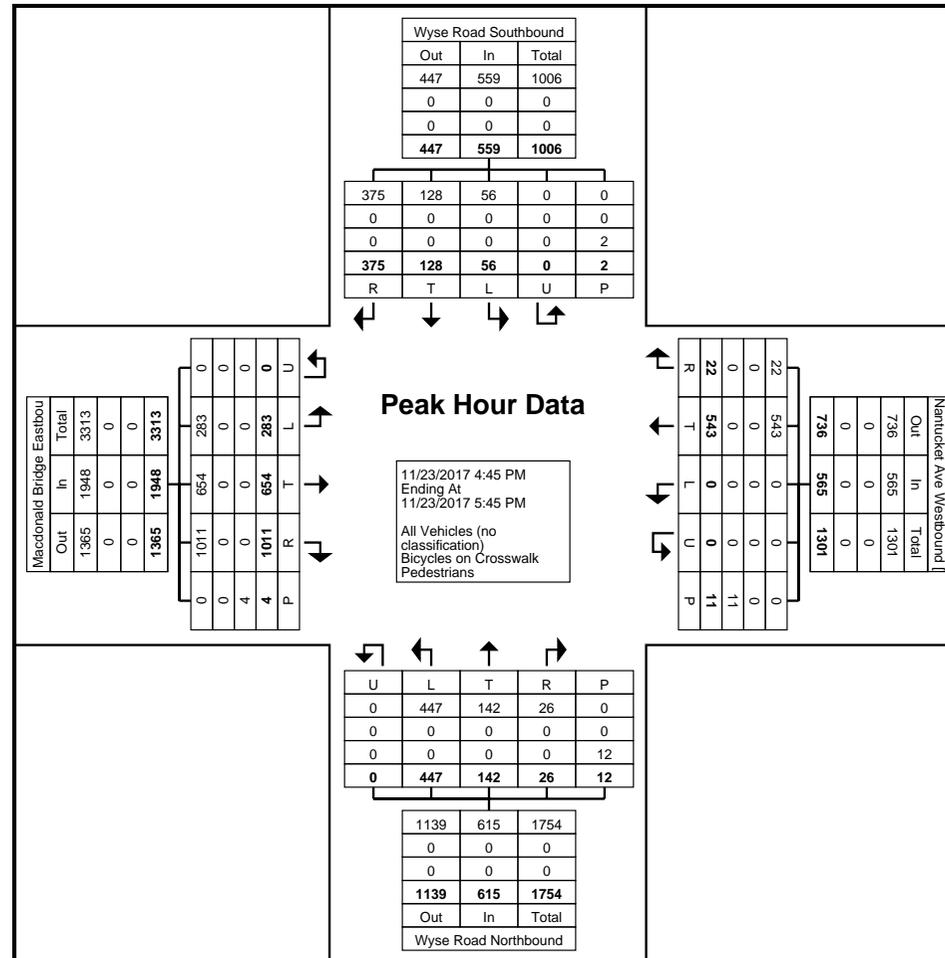
Halifax Regional Municipality (Dartmouth, NS)
PO Box 1749

Halifax, Nova Scotia, Canada B3J 3A5
(902) 490-4866

Count Name: NANTUCKET AVENUE AT WYSE
ROAD
Site Code: 17RQ330
Start Date: 11/23/2017
Page No: 10

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Wyse Road Southbound Southbound						Nantucket Ave Westbound Westbound						Wyse Road Northbound Northbound						Macdonald Bridge Eastbound Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
4:45 PM	93	38	12	0	2	143	9	145	0	0	6	154	4	41	95	0	6	140	238	181	72	0	3	491	928
5:00 PM	100	31	15	0	0	146	6	128	0	0	1	134	7	50	115	0	1	172	244	147	64	0	1	455	907
5:15 PM	88	27	22	0	0	137	5	143	0	0	3	148	5	32	122	0	5	159	253	173	77	0	0	503	947
5:30 PM	94	32	7	0	0	133	2	127	0	0	1	129	10	19	115	0	0	144	276	153	70	0	0	499	905
Total	375	128	56	0	2	559	22	543	0	0	11	565	26	142	447	0	12	615	1011	654	283	0	4	1948	3687
Approach %	67.1	22.9	10.0	0.0	-	-	3.9	96.1	0.0	0.0	-	-	4.2	23.1	72.7	0.0	-	-	51.9	33.6	14.5	0.0	-	-	-
Total %	10.2	3.5	1.5	0.0	-	15.2	0.6	14.7	0.0	0.0	-	15.3	0.7	3.9	12.1	0.0	-	16.7	27.4	17.7	7.7	0.0	-	52.8	-
PHF	0.938	0.842	0.636	0.000	-	0.957	0.611	0.936	0.000	0.000	-	0.917	0.650	0.710	0.916	0.000	-	0.894	0.916	0.903	0.919	0.000	-	0.968	0.973
All Vehicles (no classification)	375	128	56	0	-	559	22	543	0	0	-	565	26	142	447	0	-	615	1011	654	283	0	-	1948	3687
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	11	-	-	-	-	-	12	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Turning Movement Peak Hour Data Plot (4:45 PM)

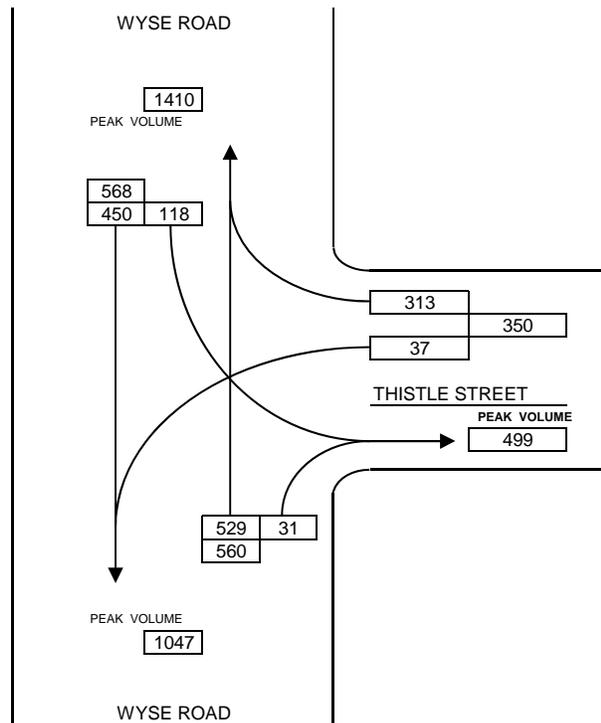
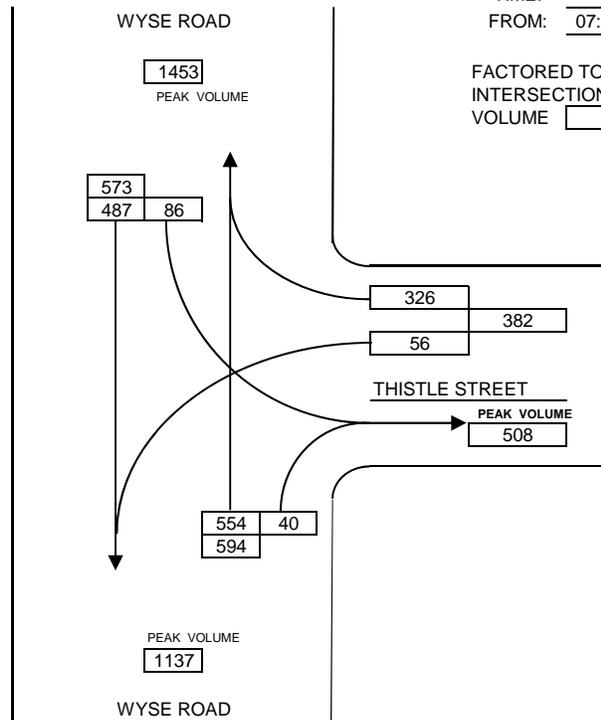
VEHICULAR GRAPHIC SUMMARY SHEET

THISTLE STREET AT WYSE ROAD

INTERSECTION :

DATE: AUG 24 2017
 TIME: 1 HOUR
 FROM: 07:00:00 AM TO 08:00:00 AM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1580



DATE: AUG 24 2017
 TIME: 1 HOUR
 FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1508

MANUAL TRAFFIC COUNTS

INTERSECTION: THISTLE STREET AT WYSE ROAD

WEATHER RECORDER: SUNNY
KS

DAY DATE MONTH YEAR
THURS 24 AUG 2017

TIME: 15 MIN INTERVALS		THISTLE STREET			FROM THE WEST			WYSE ROAD			WYSE ROAD			TOTAL
		FROM THE EAST			FROM THE NORTH			FROM THE SOUTH						
		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	3	0	71	0	0	0	25	153	0	0	122	6	380
04:15:00 PM	04:30:00 PM	14	0	53	0	0	0	51	179	0	0	153	5	455
04:30:00 PM	04:45:00 PM	17	0	49	0	0	0	86	184	0	0	150	9	495
04:45:00 PM	05:00:00 PM	20	0	50	0	0	0	89	165	0	0	159	10	493

TOTAL	54	0	223	0	0	0	251	681	0	0	584	30	1823
PEAK	277			0			932			614			
15 MIN PEAK	296			0			1080			676			
PEAK HOUR FACTOR	0.94			0			0.86			0.91			
TWO WAY TOTALS	558			0			1739			1349			FACTOR
													1.02
													1859

DAY DATE MONTH YEAR
THURS 24 AUG 2017

TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	19	0	45	0	0	0	92	162	0	0	162	14	494
05:15:00 PM	05:30:00 PM	15	0	43	0	0	0	89	171	0	0	167	15	500
05:30:00 PM	05:45:00 PM	16	0	40	0	0	0	88	180	0	0	171	17	512
05:45:00 PM	06:00:00 PM	19	0	41	0	0	0	86	161	0	0	158	15	480

TOTAL	69	0	169	0	0	0	355	674	0	0	658	61	1986
PEAK	238			0			1029			719			
15 MIN PEAK	256			0			1072			752			
PEAK HOUR FACTOR	0.93			0			0.96			0.96			
TWO WAY TOTALS	654			0			1856			1462			FACTOR
													1.02
													2026

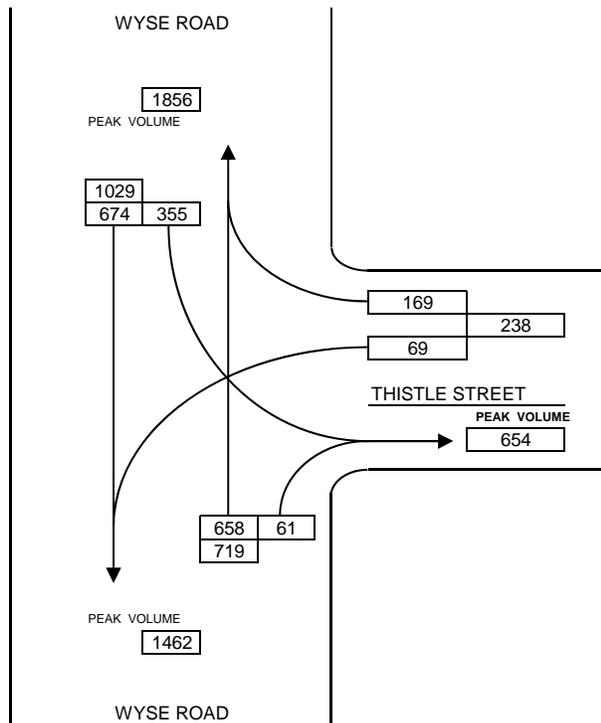
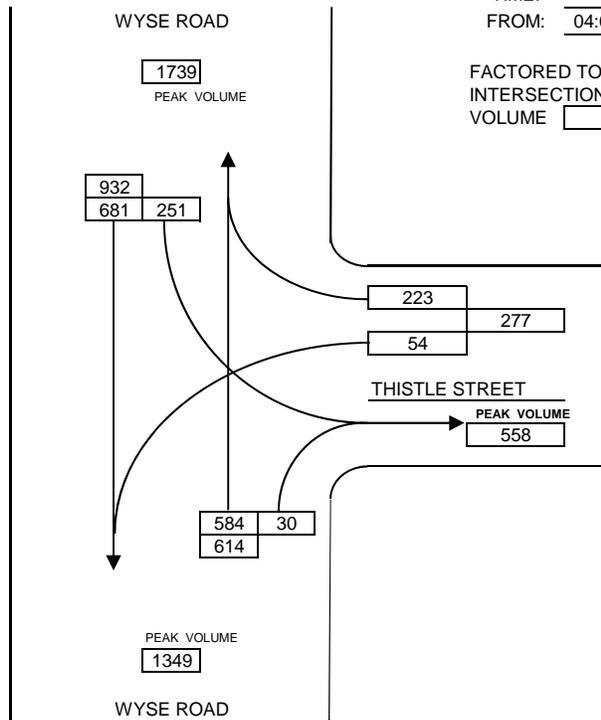
VEHICULAR GRAPHIC SUMMARY SHEET

THISTLE STREET AT WYSE ROAD

INTERSECTION :

DATE: AUG 24 2017
 TIME: 1 HOUR
 FROM: 04:00:00 PM TO 05:00:00 PM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1859



DATE: AUG 24 2017
 TIME: 1 HOUR
 FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 2026

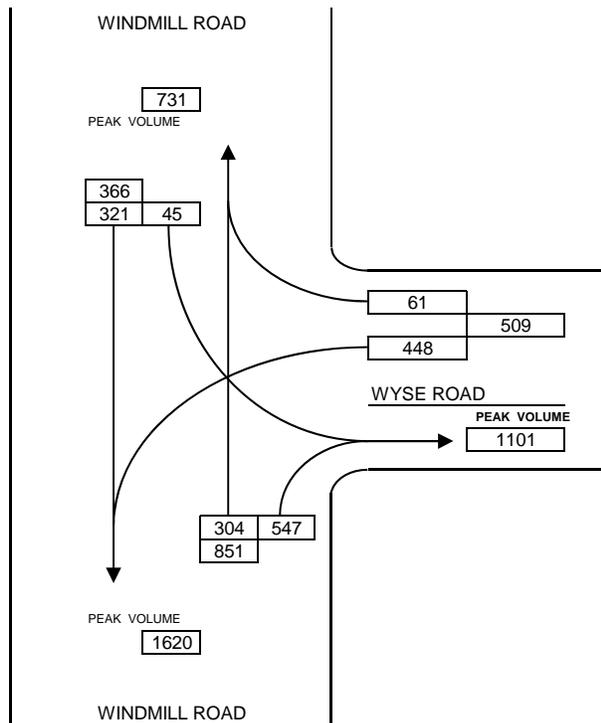
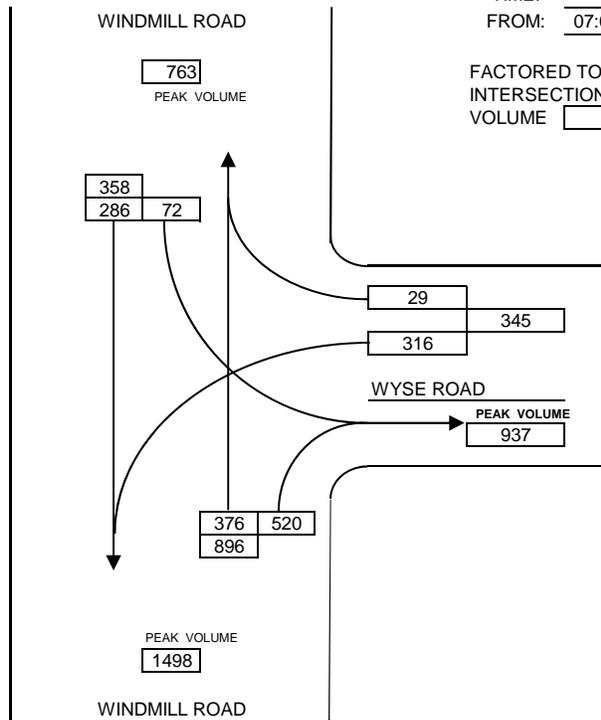
VEHICULAR GRAPHIC SUMMARY SHEET

WINDMILL ROAD AT WYSE ROAD

INTERSECTION :

DATE: NOV 2 2017
 TIME: 1 HOUR
 FROM: 07:00:00 AM TO 08:00:00 AM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1551



DATE: NOV 2 2017
 TIME: 1 HOUR
 FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL
 INTERSECTION APPROACH
 VOLUME 1674

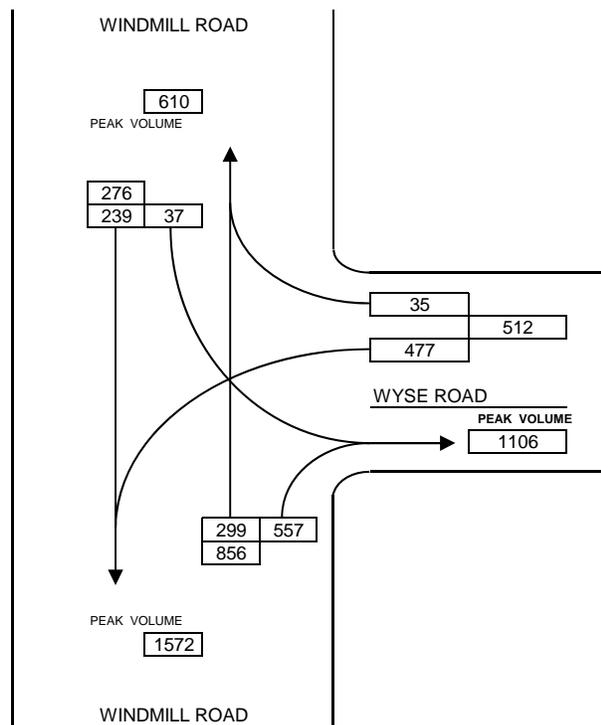
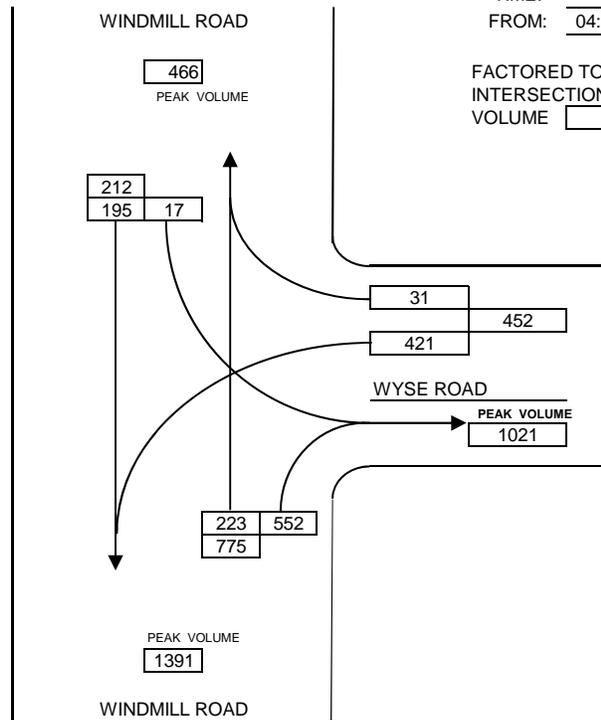
VEHICULAR GRAPHIC SUMMARY SHEET

WINDMILL ROAD AT WYSE ROAD

INTERSECTION :

DATE: NOV 2 2017
 TIME: 1 HOUR
 FROM: 04:00:00 PM TO 05:00:00 PM

FACTORED TOTAL INTERSECTION APPROACH VOLUME 1396



DATE: NOV 2 2017
 TIME: 1 HOUR
 FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL INTERSECTION APPROACH VOLUME 1595

APPENDIX B

Trip Generation

Trip Generation Summary

Alternative: Alternative 1

Phase:

Open Date: 2019-07-24

Project: Wyse Road Development

Analysis Date: 2019-07-24

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
222	Apartments		335	335	670		10	28	38		32	20	52
	125 Dwelling Units												
710	Office		44	44	88		11	1	12		2	10	12
	8 Gross Floor Area 1000 SF												
826	Retail		200	199	399	✓	17	16	33		11	13	24
	9 Gross Leasable Area 1000 SF												
Unadjusted Volume			579	578	1157		38	45	83		45	43	88
Internal Capture Trips			0	0	0		0	0	0		6	6	12
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			579	578	1157		38	45	83		39	37	76

Total Weekday Average Daily Trips Internal Capture = 0 Percent
 Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
 Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 14 Percent

* - Custom rate used for selected time period.

APPENDIX C

Trip Assignment

AM - Counts

						0			
		2018				0		OUT	
						0		0%	
						444		97%	
TOTAL		579				15		3%	
1474		895		Victoria		0		0%	
						135		0	
						0		22	
						593		1052	
						571		86%	
						0		0%	
						324		14%	
								Boland	
						339		157	
						IN			
						TOTAL		496	

						TOTAL		270	
						IN		200	
						70		OUT	
						20		3%	
						300		46%	
TOTAL		470		Nantucket		10		170	
1065		595		Victoria		20		3%	
						160		40	
						105		205	
						80		52%	
						13%		34%	
						85%		505	
						OUT		1005	
						305		IN	
						TOTAL		1310	

						TOTAL		675	
						IN		529	
						146		OUT	
						1		0%	
						373		81%	
TOTAL		652		Thistle		249		277	
813		161		Victoria		32%		52	
						30		93	
						5		66	
						36%		58	
						23%		73%	
						32%		51	
						OUT		412	
						128		IN	
						TOTAL		540	

						TOTAL		1315	
						IN		1008	
						307		OUT	
						39		85%	
						4		9%	
TOTAL		62		Nantucket		58		930	
64		2		Sportaplex		3		7%	
						0		268	
						32		52	
						0%		89%	
						100%		2	
						OUT		935	
						300		IN	
						TOTAL		1235	

						TOTAL		703	
						IN		324	
						379		OUT	
						306		47%	
						348		53%	
TOTAL		421		Boland		73		0	
814		393		Wyse		19%		73	
						81%		320	
						0%		0	
						OUT		0	
						TOTAL			

						TOTAL		1259	
						IN		911	
						348		OUT	
						28		3%	
						83		9%	
TOTAL		234		Nantucket		8		903	
1050		816		Wyse		8%		66	
						10%		85	
						81%		665	
						OUT		2371	
						880		IN	
						TOTAL		3251	

						TOTAL		508	
						IN		382	
						126		OUT	
						40		7%	
						554		93%	
TOTAL		880		Thistle		326		0	
1453		573		Wyse		15%		86	
						85%		487	
						0%		0	
						OUT		0	
						TOTAL			

						TOTAL		937	
						IN		345	
						592		OUT	
						520		58%	
						376		42%	
TOTAL		405		Wyse		29		0	
763		358		Alderney		20%		72	
						80%		286	
						0%		0	
						OUT		0	
						TOTAL			

AM - Baseline

						0			
		2018				0		OUT	
						0		0%	
						442		97%	
						15		3%	
				Victoria		457		TOTAL	
						590		1047	
TOTAL		576							
1467		890		Victoria		0%		0	
						134		0	
						0		22	
						568		86%	
						0%		14%	
						322		Boland	
						337		156	
						OUT		IN	
						TOTAL		493	

						TOTAL		269	
		2019				IN		199	
						70		OUT	
				Nantucket		20		3%	
						298		46%	
						328		51%	
				Victoria		647		TOTAL	
						204		851	
TOTAL		468							
1060		592		Victoria		2%		10	
						159		40	
						104		204	
						80		52%	
						13%		34%	
						502		Nantucket	
						1000		303	
						OUT		IN	
						TOTAL		1303	

						TOTAL		682	
		2017				IN		534	
						147		OUT	
				Thistle		1		0%	
						377		81%	
						85		18%	
				Victoria		463		TOTAL	
						67		529	
TOTAL		659							
821		163		Victoria		47%		52%	
						1%		377	
						81%		18%	
						53		30	
						94		5	
						23%		73%	
						4%		67	
						52		Thistle	
						416		129	
						OUT		IN	
						TOTAL		545	

						TOTAL		1328	
		2017				IN		1018	
						310		OUT	
				Nantucket		39		85%	
						4		9%	
						3		7%	
				Sportaplex		46		TOTAL	
						53		99	
TOTAL		63							
65		2		Mall		0%		0	
						0		271	
						0		32	
						0%		89%	
						11%		53	
						2		Nantucket	
						944		303	
						OUT		IN	
						TOTAL		1247	

						TOTAL		518	
		2017				IN		390	
						129		OUT	
				Thistle		41		7%	
						565		93%	
						0		0%	
				Wyse		606		TOTAL	
						554		1160	
TOTAL		898							
1482		584		Wyse		85%		0%	
						15%		88	
						85%		497	
						0%		0	
						0		TOTAL	
						TOTAL		1160	

						TOTAL		703	
		2016				IN		324	
						379		OUT	
				Boland		306		47%	
						348		53%	
						0		0%	
				Wyse		654		TOTAL	
						571		1225	
TOTAL		421							
814		393		Wyse		23%		0%	
						77%		348	
						73		0	
						251		0	
						0%		0%	
						320		81%	
						0		19%	
						73		0%	
						0		0	
						0		TOTAL	
						TOTAL		1225	

						TOTAL		1259	
		2017				IN		911	
						348		OUT	
				Nantucket		28		3%	
						83		9%	
						803		88%	
				Wyse		914		TOTAL	
						568		1482	
TOTAL		234							
1050		816		Wyse		8%		66	
						143		254	
						483		568	
						85		16%	
						29%		55%	
						665		Macdonald Bridge	
						2371		880	
						OUT		IN	
						TOTAL		3251	

						TOTAL		909	
		2017				IN		335	
						574		OUT	
				Wyse		504		58%	
						365		42%	
						0		0%	
				Alderney		869		TOTAL	
						584		1453	
TOTAL		393							
740		347		Windmill		8%		0%	
						92%		365	
						20%		70	
						80%		277	
						0%		0	
						0		TOTAL	
						TOTAL		1453	

						0			
		2018				0		OUT	
						0		0%	
						453		97%	
TOTAL		591		OUT		15		3%	
1504		913		Victoria		0		0%	
						138		0	
						0		22	
						605		1073	
						64%		582	
						86%		0%	
						36%		331	
								Boland	
						OUT		346	
						160		IN	
						TOTAL		506	

						TOTAL		275	
						IN		204	
						71		OUT	
						20		3%	
						306		46%	
TOTAL		479		OUT		10		173	
1086		607		Victoria		2		10	
						163		41	
						107		209	
						85%		515	
						13%		82	
						52%		13%	
						34%		OUT	
						OUT		1025	
						311		IN	
						TOTAL		1336	

						TOTAL		699	
						IN		548	
						151		OUT	
						1		0%	
						386		81%	
TOTAL		675		OUT		258		287	
842		167		Victoria		32%		54	
						36%		60	
						23%		73%	
						4%		OUT	
						OUT		427	
						133		IN	
						TOTAL		559	

						TOTAL		1362	
						IN		1044	
						318		OUT	
						40		85%	
						4		9%	
TOTAL		64		OUT		60		963	
66		2		Mall		0%		0	
						0%		0	
						100%		2	
						0		278	
						33		54	
						OUT		968	
						311		IN	
						TOTAL		1279	

						TOTAL		721	
						IN		332	
						389		OUT	
						314		47%	
						357		53%	
TOTAL		432		OUT		23%		0%	
835		403		Wyse		75		0	
						257		0	
						0		0%	
						19%		75	
						81%		328	
						0%		0	
						OUT		0	
						TOTAL			

						TOTAL		1291	
						IN		934	
						357		OUT	
						29		3%	
						85		9%	
TOTAL		240		OUT		1%		99%	
1077		837		Wyse		8		926	
						68		147	
						260		495	
						81%		682	
						16%		29%	
						55%		OUT	
						OUT		2431	
						902		IN	
						TOTAL		3333	

						TOTAL		531	
						IN		399	
						132		OUT	
						42		7%	
						579		93%	
TOTAL		920		OUT		85%		0%	
1520		599		Wyse		341		0	
						59		0	
						15%		90	
						85%		509	
						0%		0	
						OUT		0	
						TOTAL			

						TOTAL		932	
						IN		343	
						589		OUT	
						517		58%	
						374		42%	
TOTAL		403		OUT		8%		0%	
759		356		Windmill		29		0	
						314		0	
						20%		72	
						80%		284	
						0%		0	
						OUT		0	
						TOTAL			

					0			
					0	OUT		
				4	100%	0%		
TOTAL	4			0	0%	Victoria		
9	5	Victoria	0%	0	0	5	9	
			100%	5	#####	#####	#####	OUT
			0%	0				Boland
			OUT	0	0	IN		
			TOTAL	0				

					TOTAL	2					
					IN	1	1	OUT			
					Nantucket			0	0%		
					0	0%	Victoria				
TOTAL	5		0%	100%	0%	0	2	100%	IN		TOTAL
9	4	Victoria	0%	0	5	1	2	2	4		
			0%	0	63%	13%	25%	OUT			
			100%	4	Nantucket						
			OUT	7	8	IN					
			TOTAL	15							

					TOTAL	4					
					IN	2	2	OUT			
					Thistle			0	0%		
					1	50%	Victoria				
TOTAL	2		50%	50%	0%	1	1	50%	IN		TOTAL
4	2	Victoria	50%	1	0	1	1	2	4		
			50%	1	0%	50%	50%	OUT			
			0%	0	Thistle						
			OUT	2	2	IN					
			TOTAL	4							

To/From Thistle North

	In	Out		In	Out
	31	36	67	2	2
TEST	31	36			

To/From Thistle South

	In	Out
	2	2

To/From Wyse West

	In	Out
	3	5

To/From Wyse East

	In	Out
	4	5

					TOTAL	3			
					IN	1	2	OUT	
					Boland			2	
					1		Wyse		
TOTAL	1		0	0	1	0	3	TOTAL	
1	0	Wyse		0			1	4	
			0				OUT		
			0						
			OUT	0					
			TOTAL						

					TOTAL	27			
					IN	14	13	OUT	
					Nantucket			1	
					1		Wyse		
TOTAL	3		2	12	0	4	6	TOTAL	
4	1	Wyse		1	0	11	1	7	
			0				OUT		
			0						
			OUT	16	12	IN			
			TOTAL	28					

					TOTAL	9			
					IN	7	2	OUT	
					Thistle			2	
					5		Wyse		
TOTAL	10		5	2			7	TOTAL	
15	5	Wyse		0			7	14	
			5				OUT		
			OUT	0					
			TOTAL						

					TOTAL	14			
					IN	7	7	OUT	
					Wyse			5	
					0		Alderney		
TOTAL	1		1	0	6	0	5	TOTAL	
3	2	Windmill		2			6	11	
			0				OUT		
			0						
			OUT	0					
			TOTAL						

						0			
		2018				0		OUT	
						0		0%	
						453		97%	
TOTAL		591				15		3%	
						138		0	
						0		22	
						610		1078	
1509		918		Victoria		0%		0	
						64%		587	
						86%		0%	
						36%		331	
								Boland	
						OUT		346	
						160		IN	
						TOTAL		506	

						TOTAL		277	
						IN		205	
						72		OUT	
						20		3%	
						306		46%	
TOTAL		484		Nantucket		10		174	
						20		339	
						168		42	
						109		211	
1095		611		Victoria		2%		10	
						13%		82	
						85%		519	
								Nantucket	
						OUT		1032	
						319		IN	
						TOTAL		1351	

						TOTAL		703	
						IN		550	
						1		0%	
						387		81%	
TOTAL		677		Thistle		259		288	
						3		88	
						31		97	
						6		70	
846		169		Victoria		33%		55	
						36%		61	
						31%		53	
								Thistle	
						OUT		429	
						135		IN	
						TOTAL		563	

						TOTAL		1377	
						IN		1051	
						326		OUT	
						48		69%	
						4		6%	
TOTAL		64		Nantucket		60		963	
						28		17	
						0		278	
						46		74	
66		2		Mall		0%		0	
						0%		0	
						100%		2	
								Nantucket	
						OUT		982	
						324		IN	
						TOTAL		1306	

						TOTAL		724	
						IN		333	
						391		OUT	
						316		47%	
						358		53%	
TOTAL		433		Boland		75		0	
						258		0	
						0		0%	
						19%		75	
						81%		328	
						0%		0	
						OUT		0	
						TOTAL			

						TOTAL		1318	
						IN		948	
						370		OUT	
						30		3%	
						86		9%	
TOTAL		243		Nantucket		10		938	
						0		827	
						147		271	
						496		583	
1081		838		Wyse		8%		69	
						10%		87	
						81%		682	
								Macdonald Bridge	
						OUT		2447	
						914		IN	
						TOTAL		3361	

						TOTAL		540	
						IN		406	
						134		OUT	
						44		7%	
						584		93%	
TOTAL		930		Thistle		346		0	
						61		0	
						90		0%	
						15%		90	
						85%		514	
						0%		0	
						OUT		0	
						TOTAL			

						TOTAL		946	
						IN		350	
						596		OUT	
						374		42%	
						0		0%	
TOTAL		404		Wyse		30		0	
						320		0	
						21%		74	
						79%		284	
						0%		0	
						OUT		0	
						TOTAL			

PM - Counts

		2018		0			
		OUT		0		OUT	
TOTAL		1124		752		96%	
1891		767		33		4%	
		IN		Victoria		0.99 SA	
		0%		555		90%	
		72%		212		0%	
		28%		372		42	
		0%		597		1382	
		IN		Boland			
		OUT		245		414	
		IN		TOTAL		659	

		2019		TOTAL		185	
		IN		50		135	
		OUT		20%		40%	
TOTAL		790		10		20	
1390		600		20		20	
		IN		Victoria		SA	
		3%		20		580	
		35%		210		65	
		62%		370		170	
		OUT		525		815	
		IN		TOTAL		1340	

		2017		TOTAL		988	
		IN		241		747	
		OUT		50%		48%	
TOTAL		385		121		115	
784		399		5		37	
		IN		Thistle		1.01 SA	
		61%		244		37	
		27%		107		495	
		12%		48		15	
		OUT		200		547	
		IN		TOTAL		747	

		2017		TOTAL		1341	
		IN		526		815	
		OUT		14%		86%	
TOTAL		75		74		451	
82		7		1		5	
		IN		Mall		1.01 SA	
		0%		0		1	
		0%		0		791	
		100%		7		11	
		OUT		463		803	
		IN		TOTAL		1266	

		2016		TOTAL		642	
		IN		209		433	
		OUT		29%		0%	
TOTAL		445		60		0	
820		375		149		0	
		IN		Boland		1.00 SA	
		14%		53		380	
		86%		322		50%	
		0%		0		0%	
		OUT		0		765	
		IN		TOTAL		1236	

		2017		TOTAL		1301	
		IN		565		736	
		OUT		4%		96%	
TOTAL		447		22		543	
1006		559		0		447	
		IN		Nantucket		SA	
		10%		56		283	
		23%		128		654	
		67%		375		1011	
		OUT		1365		1948	
		IN		TOTAL		3313	

		2017		TOTAL		654	
		IN		238		416	
		OUT		71%		0%	
TOTAL		827		169		0	
1856		1029		69		0	
		IN		Thistle		1.02 SA	
		34%		355		61	
		66%		674		92%	
		0%		0		0%	
		OUT		0		719	
		IN		TOTAL		1462	

		2017		TOTAL		1106	
		IN		512		594	
		OUT		7%		0%	
TOTAL		334		35		0	
610		276		477		0	
		IN		Wyse		0.97 SA	
		13%		37		557	
		87%		239		65%	
		0%		0		0%	
		OUT		0		856	
		IN		TOTAL		1572	

PM - Baseline

		2018		TOTAL		0		
				0	OUT			
				0	0%	Victoria	0.99 SA	
				748	96%	IN		
TOTAL		1118	OUT	33	4%	781	TOTAL	
1881	763	Victoria	0%	0	370	0	42	594
				72%	552	90%	0%	10%
				28%	211	Boland		
				OUT	244	412	IN	
				TOTAL	656			

		2019		TOTAL		184		
				50	IN	134	OUT	
				50	13%	Nantucket	1 SA	
				199	52%	Victoria	IN	
TOTAL		786	OUT	10	20	20	134	35%
1383	597	Victoria	3%	20	577	65	169	398
				35%	209	71%	8%	21%
				62%	368	Nantucket		
				OUT	522	811	IN	
				TOTAL	1333			

		2017		TOTAL		998		
				243	IN	754	OUT	
				8	3%	Thistle	1.01 SA	
				229	83%	Victoria	IN	
TOTAL		389	OUT	122	116	5	37	14%
792	403	Victoria	61%	246	37	500	15	128
				27%	108	7%	90%	3%
				12%	48	Thistle		
				OUT	202	552	IN	
				TOTAL	754			

		2017		TOTAL		1354		
				531	IN	823	OUT	
				24	83%	Nantucket	1.01 SA	
				0	0%	Sportplex	IN	
TOTAL		76	OUT	14%	86%	0%	5	17%
83	7	Mall	0%	0	1	799	11	12
				0%	0	0%	99%	1%
				100%	7	Nantucket		
				OUT	468	811	IN	
				TOTAL	1279			

		2016		TOTAL		642		
				209	IN	433	OUT	
				380	50%	Boland	1.00 SA	
				385	50%	Wyse	IN	
TOTAL		445	OUT	29%	0%	71%	0	0%
820	375	Wyse	14%	53			471	1236
				86%	322			
				0%	0			
				OUT	0			
				TOTAL				

		2017		TOTAL		1301		
				565	IN	736	OUT	
				26	4%	Nantucket	1 SA	
				142	23%	Wyse	IN	
TOTAL		447	OUT	4%	96%	0%	447	73%
1006	559	Wyse	10%	56	283	654	1011	1139
				23%	128	15%	34%	52%
				67%	375	Macdonald Bridge		
				OUT	1365	1948	IN	
				TOTAL	3313			

		2017		TOTAL		667		
				243	IN	424	OUT	
				62	8%	Thistle	1.02 SA	
				671	92%	Wyse	IN	
TOTAL		844	OUT	71%	0%	29%	0	0%
1893	1050	Wyse	34%	362			758	1491
				66%	687			
				0%	0			
				OUT	0			
				TOTAL				

		2017		TOTAL		1073		
				497	IN	576	OUT	
				540	65%	Wyse	0.97 SA	
				290	35%	Alderney	IN	
TOTAL		324	OUT	7%	0%	93%	0	0%
592	268	Windmill	13%	36			695	1525
				87%	232			
				0%	0			
				OUT	0			
				TOTAL				

						0			
		2018				0		OUT	
						0		0%	
						767		96%	
						34		4%	
								Victoria	
								0.99 SA	
								IN	
								801	
								TOTAL	
								1147	
								TOTAL	
								1929	
								782	
								IN	
								Victoria	
								0%	
								0	
								379	
								0	
								43	
								609	
								1410	
								OUT	
								72%	
								566	
								90%	
								0%	
								10%	
								28%	
								216	
								Boland	
								OUT	
								250	
								422	
								IN	
								TOTAL	
								672	

						TOTAL		189	
						IN		51	
								138	
								OUT	
								51	
								13%	
								204	
								52%	
								35%	
								138	
								377	
								Nantucket	
								OUT	
								536	
								831	
								IN	
								TOTAL	
								1367	

						TOTAL		1023	
						IN		250	
								774	
								OUT	
								8	
								3%	
								235	
								83%	
								14%	
								38	
								513	
								16	
								132	
								413	
								OUT	
								61%	
								253	
								38	
								7%	
								90%	
								3%	
								111	
								50	
								Thistle	
								OUT	
								207	
								566	
								IN	
								TOTAL	
								774	

						TOTAL		1389	
						IN		545	
								844	
								OUT	
								25	
								83%	
								0	
								0%	
								5	
								17%	
								30	
								TOTAL	
								78	
								14%	
								86%	
								0%	
								77	
								467	
								1	
								5	
								17%	
								85	
								7	
								IN	
								0%	
								0	
								1	
								819	
								11	
								12	
								42	
								OUT	
								100%	
								7	
								Nantucket	
								OUT	
								479	
								832	
								IN	
								TOTAL	
								1311	

						TOTAL		658	
						IN		214	
								444	
								OUT	
								390	
								50%	
								395	
								50%	
								0%	
								0	
								153	
								0	
								0%	
								784	
								TOTAL	
								456	
								29%	
								0%	
								71%	
								395	
								50%	
								0%	
								0	
								54	
								14%	
								330	
								86%	
								0%	
								0	
								OUT	
								0	
								TOTAL	

						TOTAL		1334	
						IN		579	
								755	
								OUT	
								27	
								4%	
								146	
								23%	
								73%	
								458	
								384	
								Macdonald Bridge	
								OUT	
								1400	
								1997	
								IN	
								TOTAL	
								3397	

						TOTAL		684	
						IN		249	
								435	
								OUT	
								64	
								8%	
								688	
								92%	
								0%	
								0	
								72	
								0	
								0%	
								752	
								TOTAL	
								865	
								71%	
								0%	
								29%	
								688	
								92%	
								0%	
								0	
								371	
								34%	
								705	
								66%	
								0%	
								0	
								OUT	
								0	
								TOTAL	

						TOTAL		1100	
						IN		509	
								591	
								OUT	
								554	
								65%	
								297	
								35%	
								0%	
								0	
								474	
								0	
								0%	
								851	
								TOTAL	
								332	
								7%	
								0%	
								93%	
								297	
								35%	
								0%	
								0	
								37	
								13%	
								238	
								87%	
								0%	
								0	
								OUT	

						0			
		2018				0		OUT	
						0		0%	
						772		96%	
TOTAL		1154				34		4%	
1943		789		Victoria		381		0	
						0		43	
						614		1420	
						0%		0	
						72%		571	
						90%		0%	
						28%		218	
								Boland	
						OUT		252	
								424	
						TOTAL		676	

						TOTAL		191	
						IN		52	
						139		OUT	
						51		13%	
						204		52%	
TOTAL		811		Nantucket		10		21	
						20		139	
1428		617		Victoria		3%		20	
						597		67	
						174		409	
						35%		214	
						71%		8%	
						62%		382	
								Nantucket	
						OUT		543	
								838	
						TOTAL		1381	

						TOTAL		1027	
						IN		252	
						776		OUT	
						8		3%	
						235		83%	
TOTAL		400		Thistle		126		120	
						5		39	
814		414		Victoria		61%		254	
						27%		111	
						12%		50	
								Thistle	
						OUT		209	
								568	
						TOTAL		778	

						TOTAL		1403	
						IN		552	
						851		OUT	
						32		65%	
						0		0%	
TOTAL		78		Nantucket		14%		85%	
						1%		0	
85		7		Mall		0%		0	
						0%		0	
						100%		7	
								Nantucket	
						OUT		491	
								845	
						TOTAL		1336	

						TOTAL		662	
						IN		216	
						446		OUT	
						392		50%	
						397		50%	
TOTAL		458		Boland		28%		0%	
						72%		0	
844		385		Wyse		14%		54	
						86%		331	
						0%		0	
						OUT		0	
						TOTAL			

						TOTAL		1359	
						IN		591	
						768		OUT	
						29		5%	
						147		23%	
TOTAL		461		Nantucket		4%		96%	
						0%		0	
1037		576		Wyse		10%		59	
						23%		132	
						67%		384	
								Macdonald Bridge	
						OUT		1412	
								2007	
						TOTAL		3419	

						TOTAL		692	
						IN		255	
						437		OUT	
						66		9%	
						693		91%	
TOTAL		874		Thistle		71%		0%	
						29%		74	
1954		1080		Wyse		34%		371	
						66%		709	
						0%		0	
						OUT		0	
						TOTAL			

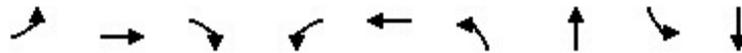
						TOTAL		1113	
						IN		515	
						598		OUT	
						297		35%	
						0		0%	
TOTAL		333		Wyse		7%		0%	
						93%		479	
609		275		Windmill		14%		38	
						86%		238	
						0%		0	
						OUT		0	
						TOTAL			

APPENDIX D

Synchro Output

1: Nantucket/Maple & Victoria
2019 Existing Conditions

AM Peak



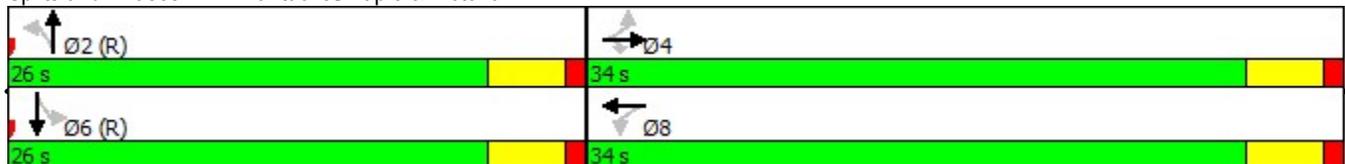
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↖	↗	↖	↗	↖	↗		↕
Traffic Volume (vph)	10	80	502	328	298	159	40	20	169
Future Volume (vph)	10	80	502	328	298	159	40	20	169
Lane Group Flow (vph)	0	98	546	357	346	173	156	0	217
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4			8		2		6
Permitted Phases	4		4	8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	26.0	26.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)		29.5	29.5	29.5	29.5	21.5	21.5		21.5
Actuated g/C Ratio		0.49	0.49	0.49	0.49	0.36	0.36		0.36
v/c Ratio		0.11	0.52	0.56	0.38	0.42	0.23		0.34
Control Delay		8.7	3.0	15.0	10.8	18.6	6.1		15.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		8.7	3.0	15.0	10.8	18.6	6.1		15.6
LOS		A	A	B	B	B	A		B
Approach Delay		3.8			13.0		12.7		15.6
Approach LOS		A			B		B		B
Queue Length 50th (m)		5.7	0.0	27.0	22.6	14.7	3.2		17.4
Queue Length 95th (m)		12.4	13.5	50.3	39.2	30.3	13.8		32.6
Internal Link Dist (m)		111.2			124.5		270.1		84.9
Turn Bay Length (m)			10.0	30.0					
Base Capacity (vph)		879	1055	635	910	408	667		643
Starvation Cap Reductn		0	0	0	0	0	0		0
Spillback Cap Reductn		0	0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0	0		0
Reduced v/c Ratio		0.11	0.52	0.56	0.38	0.42	0.23		0.34

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 10.1
 Intersection Capacity Utilization 71.1%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 1: Nantucket/Maple & Victoria



3: Nantucket & Mall/Sportsplex
2019 Existing Conditions

AM Peak



Lane Group	EBR	WBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	4	271	32	20	939
Future Volume (vph)	5	4	271	32	20	939
Lane Group Flow (vph)	5	49	295	35	0	1107
Turn Type	Perm	NA	NA	Perm	Perm	NA
Protected Phases		8	2			6
Permitted Phases	4			2	6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Act Effect Green (s)	20.5	20.5	60.5	60.5		60.5
Actuated g/C Ratio	0.23	0.23	0.67	0.67		0.67
v/c Ratio	0.01	0.12	0.12	0.03		0.50
Control Delay	0.0	11.7	5.4	1.8		8.1
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	0.0	11.7	5.4	1.8		8.1
LOS	A	B	A	A		A
Approach Delay		11.7	5.0			8.1
Approach LOS		B	A			A
Queue Length 50th (m)	0.0	1.0	8.8	0.0		45.0
Queue Length 95th (m)	0.0	10.0	13.3	2.8		58.6
Internal Link Dist (m)		68.8	76.6			62.0
Turn Bay Length (m)						
Base Capacity (vph)	481	406	2378	1075		2232
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.01	0.12	0.12	0.03		0.50

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 7.5
 Intersection Capacity Utilization 51.3%
 Analysis Period (min) 15

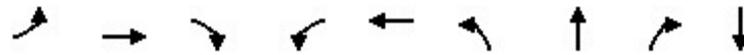
Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 3: Nantucket & Mall/Sportsplex



4: Macdonald Bridge/Nantucket & Wyse
2019 Existing Conditions

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	66	85	665	803	83	143	254	483	903
Future Volume (vph)	66	85	665	803	83	143	254	483	903
Lane Group Flow (vph)	72	454	361	873	120	155	276	525	991
Turn Type	Perm	NA	Prot	Prot	NA	Prot	NA	Perm	NA
Protected Phases		4	4	3	8	5	2		6
Permitted Phases	4							2	
Detector Phase	4	4	4	3	8	5	2	2	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	22.6	22.6	22.6	19.8	42.4	13.6	47.6	47.6	34.0
Total Split (%)	25.1%	25.1%	25.1%	22.0%	47.1%	15.1%	52.9%	52.9%	37.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead		Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None	Max	Max	Max
Act Effct Green (s)	15.2	15.2	15.2	15.3	35.0	9.1	43.2	43.2	29.6
Actuated g/C Ratio	0.17	0.17	0.17	0.18	0.40	0.10	0.50	0.50	0.34
v/c Ratio	0.33	0.86dr	0.88	1.00	0.16	0.84	0.11	0.50	0.83
Control Delay	35.4	23.9	39.5	67.3	13.7	76.4	12.5	3.1	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.8
Total Delay	35.4	23.9	39.5	67.3	13.7	76.4	12.5	3.1	83.1
LOS	D	C	D	E	B	E	B	A	F
Approach Delay		31.2			60.9		17.7		83.1
Approach LOS		C			E		B		F
Queue Length 50th (m)	11.2	22.9	32.0	~60.8	10.5	28.3	9.7	0.0	87.7
Queue Length 95th (m)	23.8	40.1	#84.3	#86.5	21.5	#64.1	14.6	16.4	#122.2
Internal Link Dist (m)		98.2			42.0		84.7		76.6
Turn Bay Length (m)									
Base Capacity (vph)	263	773	453	877	793	184	2517	1048	1198
Starvation Cap Reductn	0	0	0	0	0	0	0	0	306
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.59	0.80	1.00	0.15	0.84	0.11	0.50	1.11

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 87.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 49.0
 Intersection Capacity Utilization 79.2%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D
 ~ Volume exceeds capacity, queue is theoretically infinite.

4: Macdonald Bridge/Nantucket & Wyse
 2019 Existing Conditions

AM Peak

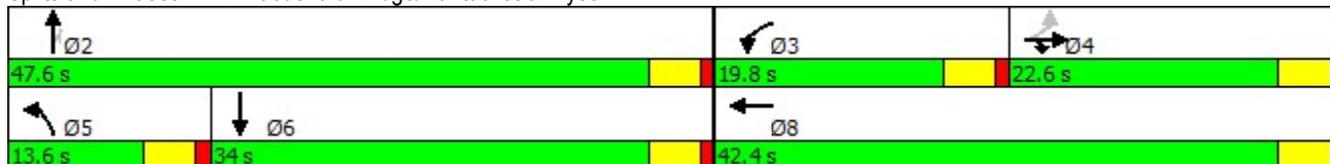
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

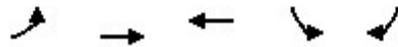
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Macdonald Bridge/Nantucket & Wyse



10: Wyse & Thistle
2019 Existing Conditions

AM Peak

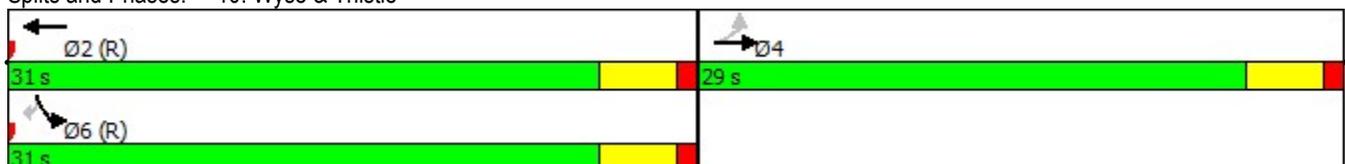


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↖	↖	↗
Traffic Volume (vph)	88	497	565	57	333
Future Volume (vph)	88	497	565	57	333
Lane Group Flow (vph)	96	540	659	62	362
Turn Type	Perm	NA	NA	Prot	Perm
Protected Phases		4	2!	6!	
Permitted Phases	4				6
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	29.0	29.0	31.0	31.0	31.0
Total Split (%)	48.3%	48.3%	51.7%	51.7%	51.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Act Effect Green (s)	24.5	24.5	26.5	26.5	26.5
Actuated g/C Ratio	0.41	0.41	0.44	0.44	0.44
v/c Ratio	0.31	0.37	0.42	0.08	0.40
Control Delay	15.7	13.3	12.0	10.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	13.3	12.0	10.1	2.9
LOS	B	B	B	B	A
Approach Delay		13.7	12.0	4.0	
Approach LOS		B	B	A	
Queue Length 50th (m)	7.2	21.9	22.5	3.9	0.0
Queue Length 95th (m)	17.8	32.9	40.2	9.8	12.6
Internal Link Dist (m)		184.1	98.1	65.2	
Turn Bay Length (m)					30.0
Base Capacity (vph)	305	1445	1556	781	901
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.37	0.42	0.08	0.40

Intersection Summary

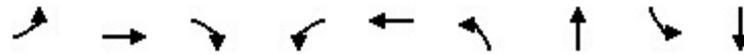
Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:SBL, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 45.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A
 ! Phase conflict between lane groups.

Splits and Phases: 10: Wyse & Thistle



1: Nantucket/Maple & Victoria
2024 With Development

AM Peak



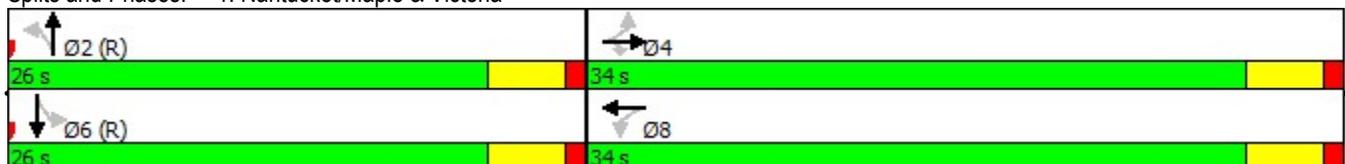
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↖	↗	↖	↗	↖	↗		↕
Traffic Volume (vph)	10	82	519	339	306	168	42	20	174
Future Volume (vph)	10	82	519	339	306	168	42	20	174
Lane Group Flow (vph)	0	100	564	368	355	183	164	0	222
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4			8		2		6
Permitted Phases	4		4	8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	26.0	26.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)		29.5	29.5	29.5	29.5	21.5	21.5		21.5
Actuated g/C Ratio		0.49	0.49	0.49	0.49	0.36	0.36		0.36
v/c Ratio		0.11	0.53	0.58	0.39	0.45	0.24		0.35
Control Delay		8.7	3.2	15.5	10.9	19.2	6.1		15.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		8.7	3.2	15.5	10.9	19.2	6.1		15.7
LOS		A	A	B	B	B	A		B
Approach Delay		4.0			13.3		13.0		15.7
Approach LOS		A			B		B		B
Queue Length 50th (m)		5.8	0.5	28.0	23.3	15.8	3.4		17.9
Queue Length 95th (m)		12.5	14.4	52.4	40.4	32.3	14.2		33.3
Internal Link Dist (m)		111.2			124.5		270.1		84.9
Turn Bay Length (m)			10.0	30.0					
Base Capacity (vph)		879	1059	633	911	404	671		643
Starvation Cap Reductn		0	0	0	0	0	0		0
Spillback Cap Reductn		0	0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0	0		0
Reduced v/c Ratio		0.11	0.53	0.58	0.39	0.45	0.24		0.35

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 10.3
 Intersection Capacity Utilization 73.0%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 1: Nantucket/Maple & Victoria



3: Nantucket & Mall/Sportsplex
2024 With Development

AM Peak



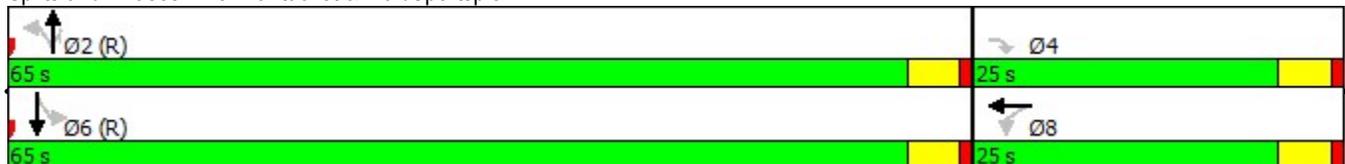
Lane Group	EBR	WBT	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	4	278	46	28	963
Future Volume (vph)	5	4	278	46	28	963
Lane Group Flow (vph)	5	74	302	50	0	1142
Turn Type	Perm	NA	NA	Perm	Perm	NA
Protected Phases		8	2			6
Permitted Phases	4			2	6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Act Effect Green (s)	20.5	20.5	60.5	60.5		60.5
Actuated g/C Ratio	0.23	0.23	0.67	0.67		0.67
v/c Ratio	0.01	0.18	0.13	0.05		0.51
Control Delay	0.0	13.4	5.4	1.6		8.3
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	0.0	13.4	5.4	1.6		8.3
LOS	A	B	A	A		A
Approach Delay		13.4	4.9			8.3
Approach LOS		B	A			A
Queue Length 50th (m)	0.0	3.2	9.1	0.0		47.2
Queue Length 95th (m)	0.0	14.2	13.6	3.4		61.5
Internal Link Dist (m)		68.8	76.6			62.0
Turn Bay Length (m)						
Base Capacity (vph)	475	419	2378	1080		2221
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.01	0.18	0.13	0.05		0.51

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 7.7
 Intersection Capacity Utilization 52.4%
 Analysis Period (min) 15

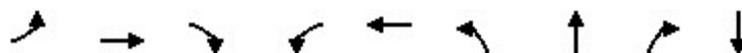
Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 3: Nantucket & Mall/Sportsplex



4: Macdonald Bridge/Nantucket & Wyse
2024 With Development

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations	↖	↗	↘	↙	↘	↖	↗	↘	↗
Traffic Volume (vph)	69	87	682	827	86	147	271	496	938
Future Volume (vph)	69	87	682	827	86	147	271	496	938
Lane Group Flow (vph)	75	466	370	899	126	160	295	539	1031
Turn Type	Perm	NA	Prot	Prot	NA	Prot	NA	Perm	NA
Protected Phases		4	4	3	8	5	2		6
Permitted Phases	4							2	
Detector Phase	4	4	4	3	8	5	2	2	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	22.6	22.6	22.6	22.0	44.6	13.8	45.4	45.4	31.6
Total Split (%)	25.1%	25.1%	25.1%	24.4%	49.6%	15.3%	50.4%	50.4%	35.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead		Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None	Max	Max	Max
Act Effct Green (s)	15.5	15.5	15.5	17.4	37.4	9.3	41.0	41.0	27.2
Actuated g/C Ratio	0.18	0.18	0.18	0.20	0.43	0.11	0.47	0.47	0.31
v/c Ratio	0.34	0.87dr	0.89	0.91	0.16	0.85	0.12	0.52	0.94
Control Delay	35.5	24.4	41.5	49.0	12.4	77.4	13.8	3.5	47.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.9
Total Delay	35.5	24.4	41.5	49.0	12.4	77.4	13.8	3.5	91.9
LOS	D	C	D	D	B	E	B	A	F
Approach Delay		32.2			44.5		18.5		91.9
Approach LOS		C			D		B		F
Queue Length 50th (m)	11.7	24.2	34.3	57.4	10.3	29.2	10.9	0.0	96.9
Queue Length 95th (m)	24.8	41.7	#88.7	#82.0	21.1	#65.6	16.3	17.6	#140.9
Internal Link Dist (m)		98.2			42.0		84.7		76.6
Turn Bay Length (m)									
Base Capacity (vph)	261	773	452	1001	836	188	2384	1028	1098
Starvation Cap Reductn	0	0	0	0	0	0	0	0	236
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.60	0.82	0.90	0.15	0.85	0.12	0.52	1.20

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 87.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 47.5

Intersection LOS: D

Intersection Capacity Utilization 81.4%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

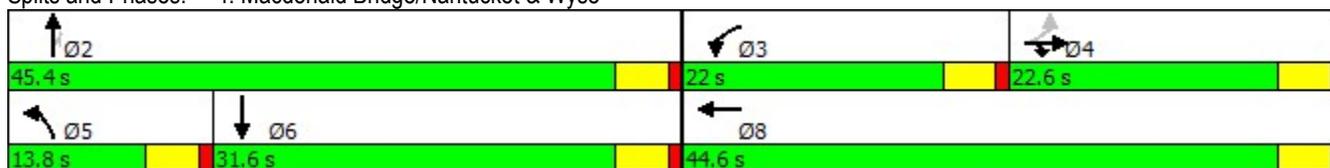
4: Macdonald Bridge/Nantucket & Wyse
 2024 With Development

AM Peak

Queue shown is maximum after two cycles.

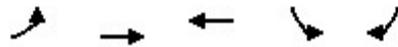
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Macdonald Bridge/Nantucket & Wyse



10: Wyse & Thistle
2024 With Development

AM Peak

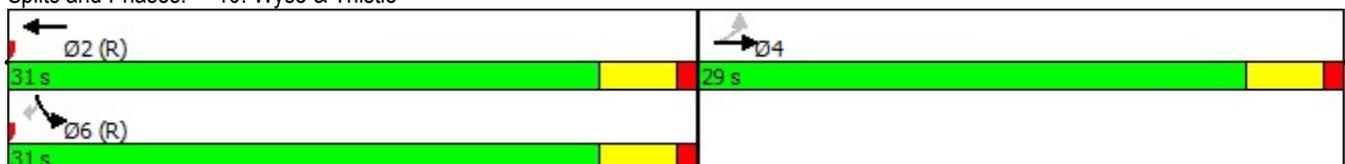


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗	↕	↖	↗
Traffic Volume (vph)	90	514	584	61	346
Future Volume (vph)	90	514	584	61	346
Lane Group Flow (vph)	98	559	683	66	376
Turn Type	Perm	NA	NA	Prot	Perm
Protected Phases		4	2!	6!	
Permitted Phases	4				6
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	29.0	29.0	31.0	31.0	31.0
Total Split (%)	48.3%	48.3%	51.7%	51.7%	51.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Act Effect Green (s)	24.5	24.5	26.5	26.5	26.5
Actuated g/C Ratio	0.41	0.41	0.44	0.44	0.44
v/c Ratio	0.33	0.39	0.44	0.08	0.41
Control Delay	16.1	13.5	12.1	10.1	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	13.5	12.1	10.1	3.0
LOS	B	B	B	B	A
Approach Delay		13.9	12.1	4.0	
Approach LOS		B	B	A	
Queue Length 50th (m)	7.4	22.8	23.5	4.2	0.0
Queue Length 95th (m)	18.3	34.2	41.7	10.2	12.8
Internal Link Dist (m)		184.1	98.1	65.2	
Turn Bay Length (m)					30.0
Base Capacity (vph)	298	1445	1555	781	909
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.39	0.44	0.08	0.41

Intersection Summary

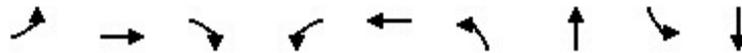
Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:SBL, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 10.7
 Intersection Capacity Utilization 46.5%
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 10: Wyse & Thistle



1: Nantucket/Maple & Victoria
2019 Existing Conditions

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	20	209	368	134	199	577	65	20	20
Future Volume (vph)	20	209	368	134	199	577	65	20	20
Lane Group Flow (vph)	0	249	400	146	270	627	255	0	55
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4			8		2		6
Permitted Phases	4		4	8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.6	22.6	22.6	22.6	22.6	37.4	37.4	37.4	37.4
Total Split (%)	37.7%	37.7%	37.7%	37.7%	37.7%	62.3%	62.3%	62.3%	62.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)		18.1	18.1	18.1	18.1	32.9	32.9		32.9
Actuated g/C Ratio		0.30	0.30	0.30	0.30	0.55	0.55		0.55
v/c Ratio		0.46	0.58	0.49	0.48	0.85	0.26		0.06
Control Delay		20.4	8.4	24.0	19.2	25.9	3.0		5.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		20.4	8.4	24.0	19.2	25.9	3.0		5.6
LOS		C	A	C	B	C	A		A
Approach Delay		13.0			20.9		19.3		5.6
Approach LOS		B			C		B		A
Queue Length 50th (m)		23.1	7.5	13.7	23.0	55.2	3.5		2.1
Queue Length 95th (m)		41.8	28.9	29.7	42.6	#120.3	12.4		6.3
Internal Link Dist (m)		111.2			124.5		270.1		84.9
Turn Bay Length (m)			10.0	30.0					
Base Capacity (vph)		538	694	297	559	736	994		877
Starvation Cap Reductn		0	0	0	0	0	0		0
Spillback Cap Reductn		0	0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0	0		0
Reduced v/c Ratio		0.46	0.58	0.49	0.48	0.85	0.26		0.06

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 17.2
 Intersection Capacity Utilization 75.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Nantucket/Maple & Victoria



3: Nantucket & Mall/Sportsplex
2019 Existing Conditions

PM Peak



Lane Group	EBR	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	7	0	1	799	11	330	456
Future Volume (vph)	7	0	1	799	11	330	456
Lane Group Flow (vph)	8	31	0	869	12	0	937
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		2			6
Permitted Phases	4		2		2	6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5
Lead/Lag							
Lead-Lag Optimize?							
Act Effct Green (s)	20.5	20.5		60.5	60.5		60.5
Actuated g/C Ratio	0.23	0.23		0.67	0.67		0.67
v/c Ratio	0.01	0.08		0.38	0.01		0.95dl
Control Delay	0.0	13.1		7.1	1.8		13.1
Queue Delay	0.0	0.0		1.3	0.0		0.0
Total Delay	0.0	13.1		8.3	1.8		13.1
LOS	A	B		A	A		B
Approach Delay		13.1		8.3			13.1
Approach LOS		B		A			B
Queue Length 50th (m)	0.0	0.7		32.1	0.0		48.6
Queue Length 95th (m)	0.0	7.9		42.3	1.3		73.3
Internal Link Dist (m)		68.8		76.6			62.0
Turn Bay Length (m)							
Base Capacity (vph)	692	393		2272	1070		1301
Starvation Cap Reductn	0	0		1116	0		0
Spillback Cap Reductn	0	0		0	0		0
Storage Cap Reductn	0	0		0	0		0
Reduced v/c Ratio	0.01	0.08		0.75	0.01		0.72

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 10.8
 Intersection Capacity Utilization 62.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

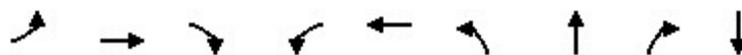
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Nantucket & Mall/Sportsplex



4: Macdonald Bridge/Nantucket & Wyse
2019 Existing Conditions

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	56	128	375	447	142	283	654	1011	543
Future Volume (vph)	56	128	375	447	142	283	654	1011	543
Lane Group Flow (vph)	61	343	204	486	182	308	711	1099	614
Turn Type	Perm	NA	Prot	Prot	NA	Prot	NA	Perm	NA
Protected Phases		4	4	3	8	5	2		6
Permitted Phases	4							2	
Detector Phase	4	4	4	3	8	5	2	2	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	14.6	37.1	24.8	52.9	52.9	28.1
Total Split (%)	25.0%	25.0%	25.0%	16.2%	41.2%	27.6%	58.8%	58.8%	31.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead		Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None	Max	Max	Max
Act Effct Green (s)	10.1	10.1	10.1	10.1	24.7	17.9	48.5	48.5	26.1
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.30	0.22	0.59	0.59	0.32
v/c Ratio	0.42	0.62	0.57	0.79	0.33	0.80	0.24	0.91	0.55
Control Delay	41.7	18.7	11.9	46.5	22.4	47.4	8.7	18.9	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Total Delay	41.7	18.7	11.9	46.5	22.4	47.4	8.7	18.9	27.2
LOS	D	B	B	D	C	D	A	B	C
Approach Delay		18.8			39.9		19.6		27.2
Approach LOS		B			D		B		C
Queue Length 50th (m)	9.4	11.7	0.0	27.6	21.5	46.3	18.1	53.8	44.1
Queue Length 95th (m)	21.2	25.0	20.2	#47.7	38.1	#89.8	29.6	#209.1	69.1
Internal Link Dist (m)		98.2			42.0		84.7		76.6
Turn Bay Length (m)									
Base Capacity (vph)	262	836	475	614	729	437	3000	1211	1119
Starvation Cap Reductn	0	0	0	0	0	0	0	0	193
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.41	0.43	0.79	0.25	0.70	0.24	0.91	0.66

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 82.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 24.0

Intersection LOS: C

Intersection Capacity Utilization 77.7%

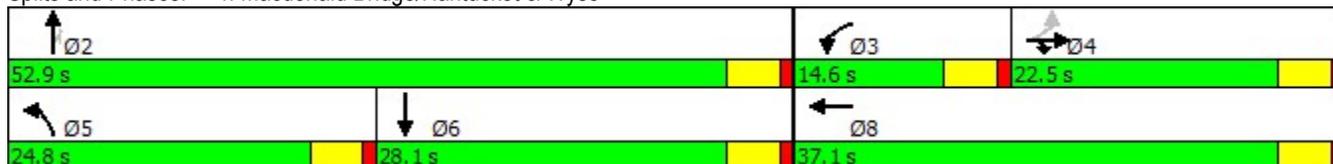
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

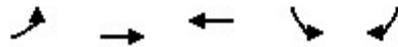
Queue shown is maximum after two cycles.

Splits and Phases: 4: Macdonald Bridge/Nantucket & Wyse



10: Wyse & Thistle
2019 Existing Conditions

PM Peak



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	362	687	671	70	172
Future Volume (vph)	362	687	671	70	172
Lane Group Flow (vph)	393	747	796	76	187
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7			6	
Permitted Phases		4	8		6
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5
Total Split (s)	29.0	55.0	26.0	25.0	25.0
Total Split (%)	36.3%	68.8%	32.5%	31.3%	31.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Act Effect Green (s)	24.5	50.5	21.5	20.5	20.5
Actuated g/C Ratio	0.31	0.63	0.27	0.26	0.26
v/c Ratio	0.73	0.33	0.84	0.17	0.34
Control Delay	34.0	7.4	37.0	24.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	7.4	37.0	24.4	5.9
LOS	C	A	D	C	A
Approach Delay		16.6	37.0	11.3	
Approach LOS		B	D	B	
Queue Length 50th (m)	55.6	26.0	62.3	9.4	0.0
Queue Length 95th (m)	#90.2	35.5	#92.3	20.2	15.0
Internal Link Dist (m)		184.1	98.1	65.2	
Turn Bay Length (m)					30.0
Base Capacity (vph)	542	2233	947	453	544
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.73	0.33	0.84	0.17	0.34

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 23.3
 Intersection Capacity Utilization 56.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

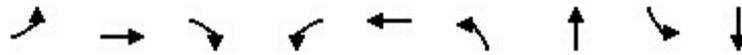
95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Wyse & Thistle



1: Nantucket/Maple & Victoria
2024 with Development

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↖	↗	↖	↗	↖	↗		↕
Traffic Volume (vph)	20	214	382	139	204	597	67	21	21
Future Volume (vph)	20	214	382	139	204	597	67	21	21
Lane Group Flow (vph)	0	255	415	151	277	649	262	0	57
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4			8		2		6
Permitted Phases	4		4	8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.6	22.6	22.6	22.6	22.6	37.4	37.4	37.4	37.4
Total Split (%)	37.7%	37.7%	37.7%	37.7%	37.7%	62.3%	62.3%	62.3%	62.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)		18.1	18.1	18.1	18.1	32.9	32.9		32.9
Actuated g/C Ratio		0.30	0.30	0.30	0.30	0.55	0.55		0.55
v/c Ratio		0.47	0.60	0.52	0.50	0.88	0.26		0.07
Control Delay		20.6	8.9	24.9	19.5	29.2	3.0		5.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		20.6	8.9	24.9	19.5	29.2	3.0		5.7
LOS		C	A	C	B	C	A		A
Approach Delay		13.4			21.4		21.7		5.7
Approach LOS		B			C		C		A
Queue Length 50th (m)		23.7	8.5	14.3	23.8	59.1	3.6		2.2
Queue Length 95th (m)		42.7	31.1	30.9	43.9	#126.9	12.7		6.5
Internal Link Dist (m)		111.2			124.5		270.1		84.9
Turn Bay Length (m)			10.0	30.0					
Base Capacity (vph)		538	697	292	559	735	996		874
Starvation Cap Reductn		0	0	0	0	0	0		0
Spillback Cap Reductn		0	0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0	0		0
Reduced v/c Ratio		0.47	0.60	0.52	0.50	0.88	0.26		0.07

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 18.5
 Intersection Capacity Utilization 77.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Nantucket/Maple & Victoria



3: Nantucket & Mall/Sportsplex
2024 with Development

PM Peak



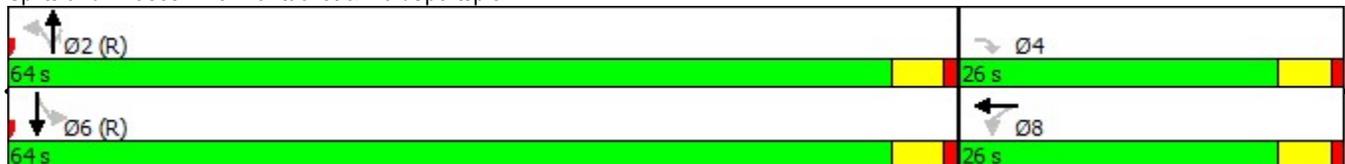
Lane Group	EBR	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↗	↔		↖	↗		↔
Traffic Volume (vph)	7	0	1	819	24	38	467
Future Volume (vph)	7	0	1	819	24	38	467
Lane Group Flow (vph)	8	53	0	891	26	0	633
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		2			6
Permitted Phases	4		2		2	6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	26.0	26.0	64.0	64.0	64.0	64.0	64.0
Total Split (%)	28.9%	28.9%	71.1%	71.1%	71.1%	71.1%	71.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5
Lead/Lag							
Lead-Lag Optimize?							
Act Effect Green (s)	21.5	21.5		59.5	59.5		59.5
Actuated g/C Ratio	0.24	0.24		0.66	0.66		0.66
v/c Ratio	0.01	0.12		0.40	0.02		0.32
Control Delay	0.0	14.3		7.7	2.2		6.6
Queue Delay	0.0	0.0		1.4	0.0		0.0
Total Delay	0.0	14.3		9.0	2.2		6.6
LOS	A	B		A	A		A
Approach Delay		14.3		8.9			6.6
Approach LOS		B		A			A
Queue Length 50th (m)	0.0	2.5		34.7	0.0		21.2
Queue Length 95th (m)	0.0	11.8		45.6	2.5		29.8
Internal Link Dist (m)		68.8		76.6			62.0
Turn Bay Length (m)							
Base Capacity (vph)	693	425		2234	1055		1969
Starvation Cap Reductn	0	0		1078	0		0
Spillback Cap Reductn	0	0		0	0		0
Storage Cap Reductn	0	0		0	0		0
Reduced v/c Ratio	0.01	0.12		0.77	0.02		0.32

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 8.1
 Intersection Capacity Utilization 54.6%
 Analysis Period (min) 15

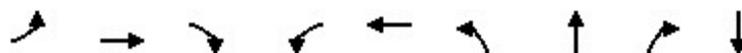
Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 3: Nantucket & Mall/Sportsplex



4: Macdonald Bridge/Nantucket & Wyse
2024 with Development

PM Peak



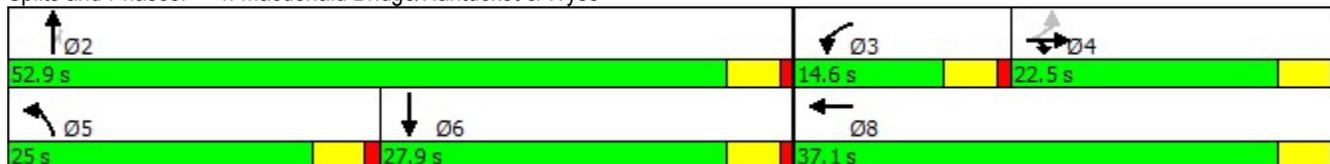
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	59	132	384	460	147	290	680	1038	567
Future Volume (vph)	59	132	384	460	147	290	680	1038	567
Lane Group Flow (vph)	64	352	208	500	192	315	739	1128	643
Turn Type	Perm	NA	Prot	Prot	NA	Prot	NA	Perm	NA
Protected Phases		4	4	3	8	5	2		6
Permitted Phases	4							2	
Detector Phase	4	4	4	3	8	5	2	2	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	14.6	37.1	25.0	52.9	52.9	27.9
Total Split (%)	25.0%	25.0%	25.0%	16.2%	41.2%	27.8%	58.8%	58.8%	31.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead		Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None	Max	Max	Max
Act Effct Green (s)	10.3	10.3	10.3	10.1	24.9	18.2	48.5	48.5	25.8
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.30	0.22	0.59	0.59	0.31
v/c Ratio	0.44	0.62	0.58	0.82	0.34	0.81	0.25	0.93	0.58
Control Delay	42.2	18.7	11.8	48.3	22.4	47.7	8.9	22.7	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Total Delay	42.2	18.7	11.8	48.3	22.4	47.7	8.9	22.7	28.2
LOS	D	B	B	D	C	D	A	C	C
Approach Delay		18.8			41.1		21.6		28.2
Approach LOS		B			D		C		C
Queue Length 50th (m)	10.0	12.0	0.0	28.7	22.7	47.4	19.2	65.9	47.3
Queue Length 95th (m)	22.0	25.5	20.2	#50.2	39.6	#92.4	31.2	#222.6	73.2
Internal Link Dist (m)		98.2			42.0		84.7		76.6
Turn Bay Length (m)									
Base Capacity (vph)	259	839	477	612	727	441	2992	1207	1103
Starvation Cap Reductn	0	0	0	0	0	0	0	0	177
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.42	0.44	0.82	0.26	0.71	0.25	0.93	0.69

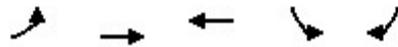
Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 82.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	

Queue shown is maximum after two cycles.

Splits and Phases: 4: Macdonald Bridge/Nantucket & Wyse





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	371	709	693	74	181
Future Volume (vph)	371	709	693	74	181
Lane Group Flow (vph)	403	771	825	80	197
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7			6	
Permitted Phases		4	8		6
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5
Total Split (s)	29.0	56.0	27.0	24.0	24.0
Total Split (%)	36.3%	70.0%	33.8%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Act Effect Green (s)	24.5	51.5	22.5	19.5	19.5
Actuated g/C Ratio	0.31	0.64	0.28	0.24	0.24
v/c Ratio	0.74	0.34	0.83	0.19	0.37
Control Delay	35.0	7.0	35.5	25.4	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	7.0	35.5	25.4	6.2
LOS	C	A	D	C	A
Approach Delay		16.6	35.5	11.7	
Approach LOS		B	D	B	
Queue Length 50th (m)	57.5	26.0	64.1	10.1	0.0
Queue Length 95th (m)	#98.7	35.2	#94.1	21.5	15.7
Internal Link Dist (m)		184.1	98.1	65.2	
Turn Bay Length (m)					30.0
Base Capacity (vph)	542	2278	991	431	534
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.34	0.83	0.19	0.37

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 22.9
 Intersection Capacity Utilization 57.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Wyse & Thistle

