

# West Meadow Subdivision Picton

Traffic Impact Study Update

Prepared For:  
10838772 Canada Ltd. (West Meadow)

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# WEST MEADOW SUBDIVISION PICTON TRAFFIC IMPACT STUDY UPDATE

PROJECT NO. 223103

**Prepared For:**

10838772 Canada Ltd. (West Meadow).

**By:**



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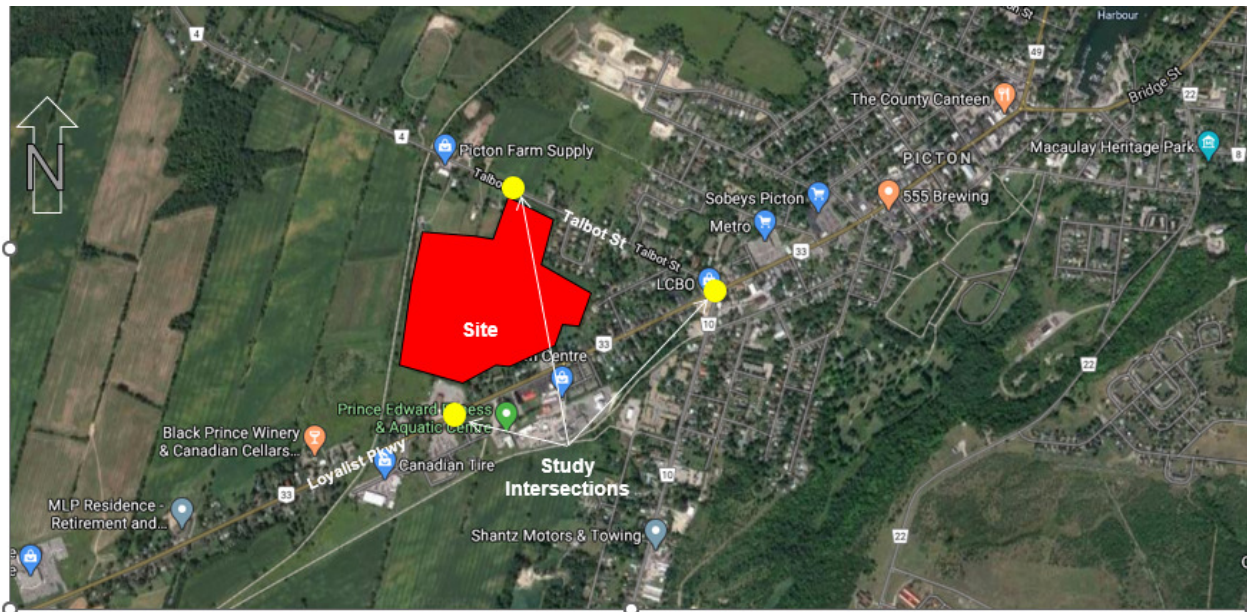
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## 1 Introduction

The original Traffic Impact Study was completed in January 2018 by Paradigm Transportation Solutions Limited with traffic count data collected in 2016. Subsequently the Subdivision and timing were revised. We completed an addendum to the traffic impact study in September 2021 to reflect the revisions. Currently the Subdivision has been updated to include more units and higher density. The area intersection configurations have changed. As a result, a traffic impact study update is required. The Subdivision is located on the north side of Loyalist Parkway and west side of Talbot Street, in Picton, Prince Edward County as illustrated in Figure 1.

**Figure 1: Site Location**



Source: Google Maps

As per our previous traffic impact studies for the projects in the area, the purpose of this study is to address the following:

- Current traffic conditions on Talbot Street, Picton Main Street / Loyalist Parkway;
- Development site, its trip generation, distribution and assignment;
- Future background traffic condition for the full build-out and 5 years after full build-out of the site;
- Future background traffic plus development site traffic condition for the full build-out and 5 years after full build-out of the site; and
- Traffic impacts and mitigating measures.

## 2 Study Area

The land uses to the south of the site are mostly commercial, to the east and north of the site are mostly residential/future residential; whereas to the west are mostly rural/agricultural lands.

The road network to be addressed by this study consists of Picton Main Street / Loyalist Parkway (Highway 33), Talbot Street (CR 4). Direct accesses to Talbot Street, and Loyalist Parkway for the proposed subdivision will be provided. Both streets are under the jurisdiction of the County of Prince Edward.

## 2.1 Existing Road Network

Through the study area, Picton Main Street / Loyalist Parkway is an arterial road as identified in the County's Picton Urban Centre Secondary Plan. The road is oriented east-west, providing one travel lane in each direction east of Cold Storage Road and two lanes in each direction west of Cold Storage Road. The road has an urban cross section with curbs, gutters and sidewalks on both sides. Between Cold Storage Road and Talbot Street, a parking lane is provided on both sides on Picton Main Street. The road is relatively straight and flat. The two-lane section of Picton Main Street has a posted speed limit of 50 km/h. Thus, a design speed of 60 km/h applies (posted speed limit + 10 km/h for lower speed roads). The 4-lane section of Loyalist Parkway has a posted speed limit of 60 km/h and a design speed of 70 km/h.

Talbot Street is collector road and an activity route as identified in the County's Picton Urban Centre Secondary Plan. North of Georgy Wright Boulevard, it has a rural cross-section with gravel shoulders on both sides. South of George Wright Boulevard, Talbot Street has an urban cross section with curbs and gutters on both sides. A sidewalk is provided on both sides from the site access to Picton Main Street. The road is relatively straight and flat at the site access. The posted speed limit on the road is 50 km/h; hence a 60 km/h design speed applies. For the purpose of this report, Talbot Street is treated as oriented north-south.

George Wright Boulevard will function as a collector road. At the time of traffic counts (July 2023), the road was under construction with the section just north of the commercial plaza north of Loyalist Parkway blocked. The road should have one lane in each direction, an urban cross section and a posted speed limit of 50 km/h. A sidewalk will be provided on both sides.

The intersection of Picton Main Street at Talbot Street is a 4-leg signalized intersection. The configuration of the intersection is as follows:

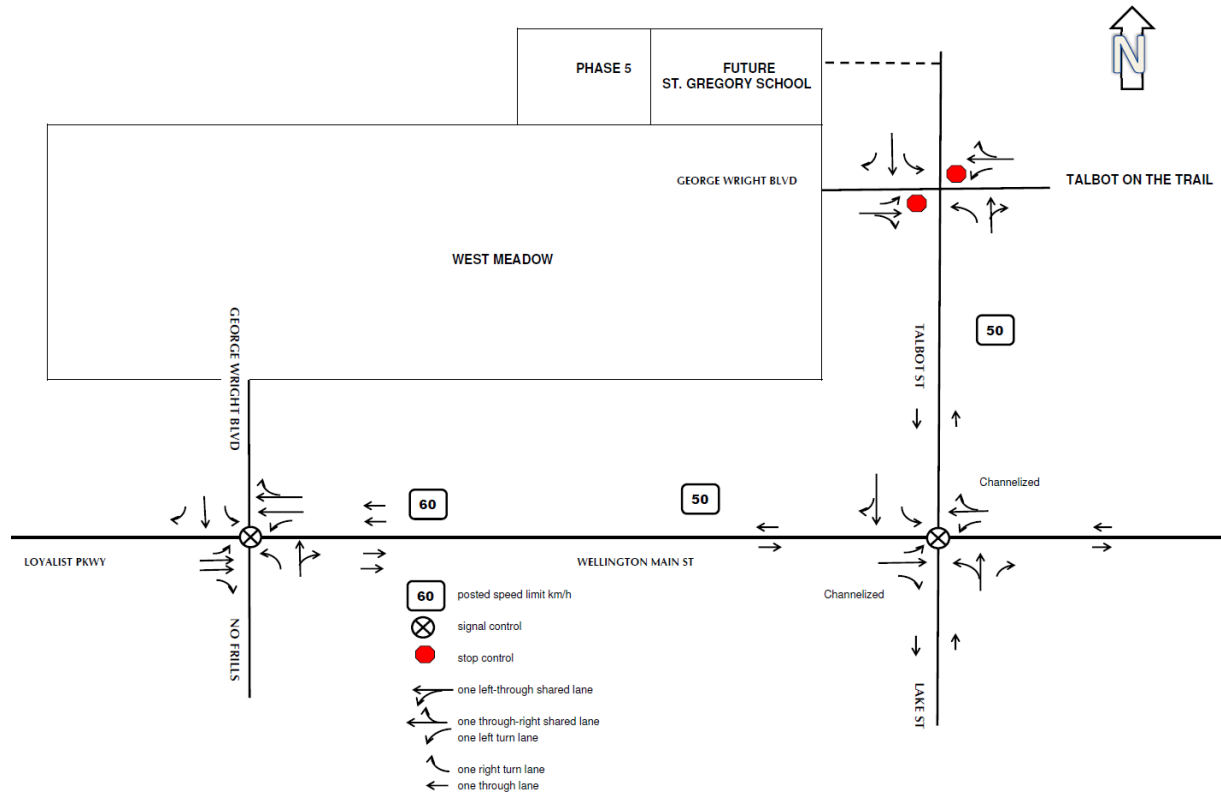
- Eastbound approach on Picton Main Street has one left turn lane, one through lane and one channelized right turn lane
- Westbound approach on Picton Main Street has one left turn lane, one through lane and one channelized right turn lane
- Northbound approach on Lake Street has one left-through shared lane and one right turn lane
- Southbound approach on Talbot Street has one left turn lane and one through-right shared lane.

The intersection of Talbot Street at George Wright Boulevard is a 4-leg intersection with stop control on George Wright Boulevard. An exclusive left turn lane is provided on each approach. A southbound right turn lane is also provided.

The intersection of Loyalist Parkway at George Wright Boulevard is a 4-leg signalized intersection. An exclusive left turn lane is provided on each approach; and an exclusive right turn lane is also provided on the eastbound and southbound approaches.

Existing configurations are illustrated in Figure 2.

**Figure 2: Existing Configurations**



## 2.2 Future Road Network

It is assumed that the construction of George Wright Boulevard will be completed in early 2024.

Given that the area intersections have recently been improved, for the purpose of this study, we have assumed that no significant improvements to Loyalist Parkway and Talbot Street are expected to occur throughout the horizon years, with the exception of routine maintenance.

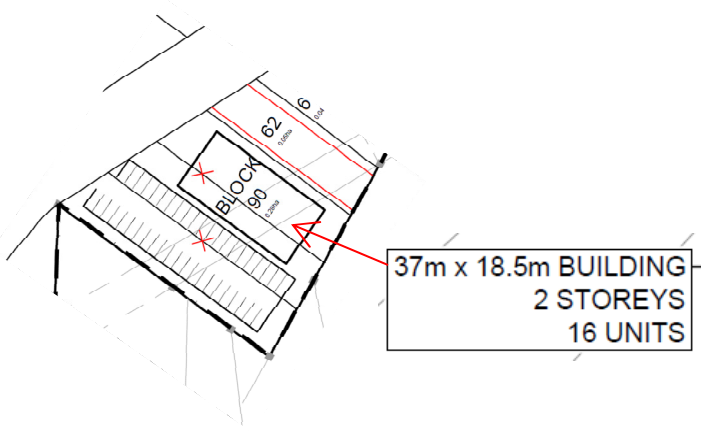
## 3 Proposed Development

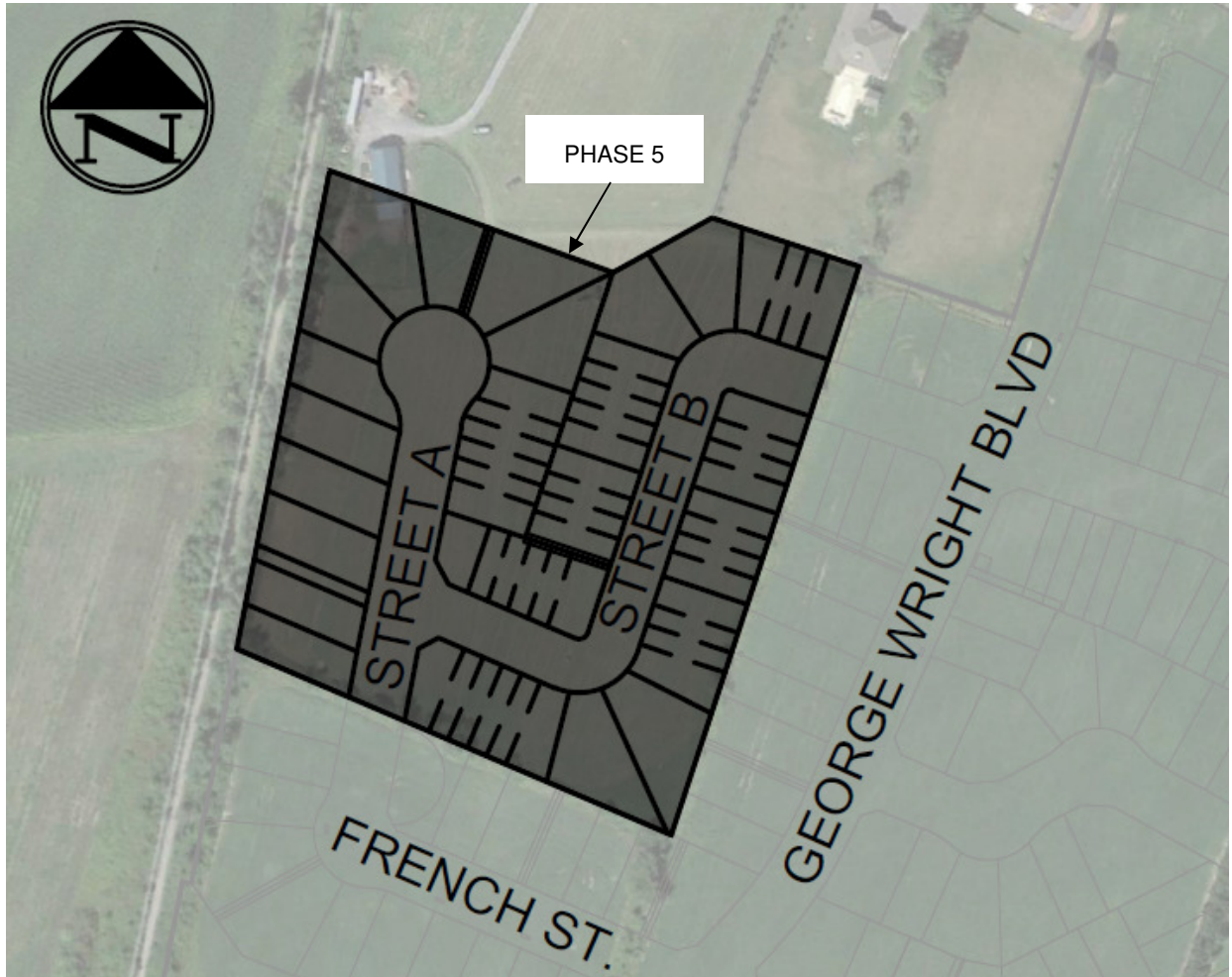
### 3.1 Development Site Plan

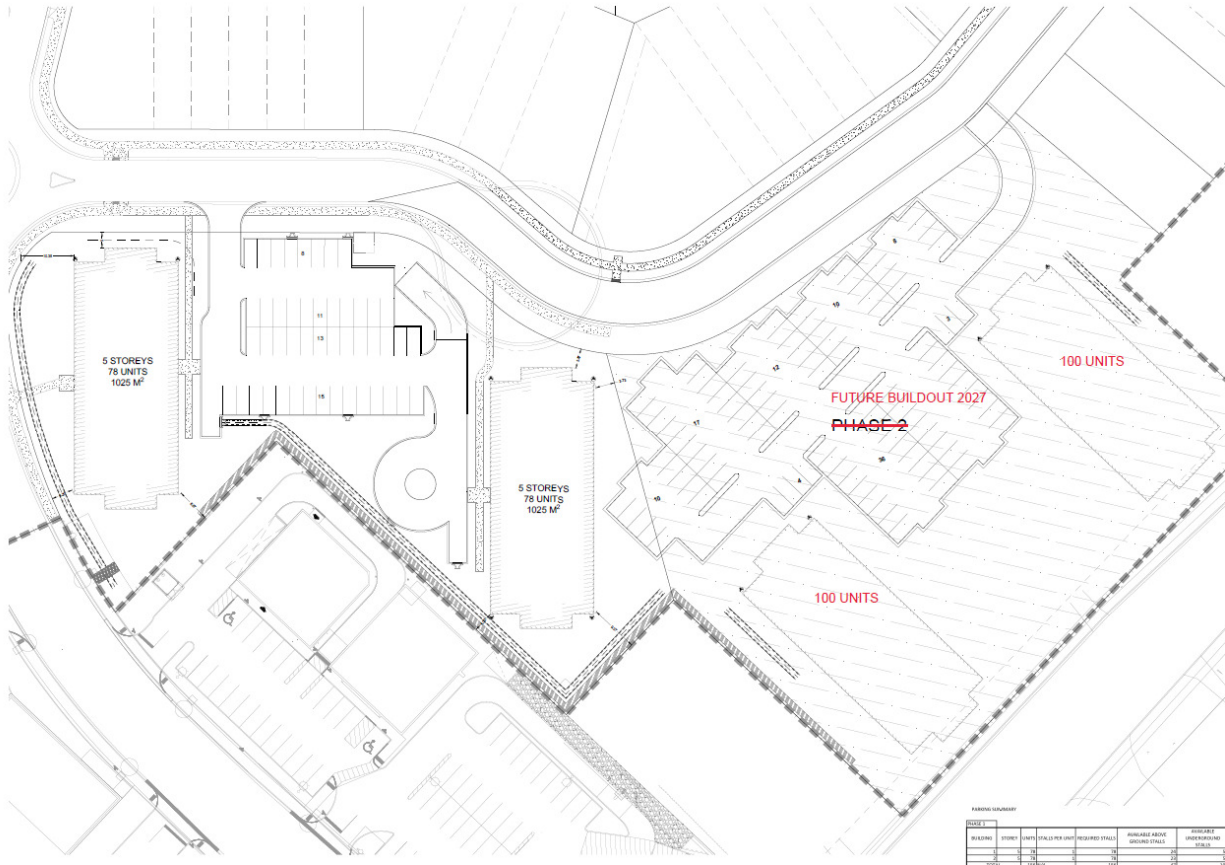
As illustrated in Figure 1, the development is located on the west side of Talbot Street and north side of Loyalist Parkway, in Picton, Prince Edward County.

As per the proposed development site plan provided in Figure 3, two site accesses are provided. Both are existing accesses and will be connected and form a future road – George Wright Boulevard. The distance between George Wright Boulevard and Cold Storage Road on Loyalist Parkway is approximately 360 m. Whereas, the distance between George Wright Boulevard and Argyle Crescent is approximately 200 m on Talbot Street.

Figure 3: Site Plan







Source: Alexander Wilson Architect Inc.

As per the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*, the minimum intersection space on an arterial road is 200 m; and on collector road is 60 m. The distance between George Wright Boulevard and Cold Storage Road (360 m) on Loyalist Parkway meets the minimum intersection space requirements for arterial roads. The distance between George Wright Boulevard and Argyle Crescent (200 m) meets the minimum intersection space requirements for collector roads.

### 3.2 Development Land Use & Phase

As per the updated plan of subdivision in Figure 3, the proposed West Meadow Subdivision is to consist of 147 single family detached units, 6 semi-detached units, 120 free hold townhouse units, 16 apartment units in a two-story building, 156 apartment units in two five-story buildings, and 200 apartment units in two five-story buildings. Phase 1, Phase 3 have been completed. Phases 2 apartment block (156 units) will be completed by 2025 and Phase 5 will be completed in 2026. Phase 4 apartment block (200 units) will be completed in 2027. It is estimated full build out of the development will occur in 2027.

### 3.3 Trip Generation

Trip generation rates were determined from the Institute of Transportation Engineer’s *Trip Generation Manual 11<sup>th</sup> edition*. Based on the proposed land use and applicable ITE land use categories, the following have been employed:

- Single family and semi-detached units – trip rates correspond to “single family detached housing” (ITE land use code 210):
- Free hold townhouse units, semi-detached units – trip rates correspond to “single family attached housing” (ITE land use code 215)
- Apartment units in a 2-story building – trip rates correspond to “multifamily housing (low-rise)” (ITE land use code 220).
- Apartment units in a 5-story building – trip rates correspond to “multifamily housing (mid-rise)” (ITE land use code 221).

The applicable trip rates and corresponding trip estimates for the peak hours of the adjacent road are provided in Table 1.

**Table 1: Site Trip Generation Estimates**

Land Use	Rate/ Estimate	Unit/ Size	AM PEAK HOUR			PM PEAK HOUR		
			In	Out	Total	In	Out	Total
Single family detached units	rate	unit	0.18	0.53	0.70	0.59	0.35	0.94
	estimate	147	26	77	103	87	51	138
Semi-detached and free hold townhouse units	rate	unit	0.12	0.36	0.48	0.34	0.23	0.57
	estimate	126	15	45	60	42	30	72
Apartment units in a 2-story building	rate	unit	0.10	0.30	0.40	0.32	0.19	0.51
	estimate	16	2	5	7	5	3	8
Apartment units in a 5-story building	rate	unit	0.09	0.28	0.37	0.24	0.15	0.39
	estimate	356	30	101	131	85	54	139
Total		645	73	228	301	219	138	357
Trips between commercial and residential via George Wright Blvd		5%	-4	-11	-15	-11	-7	-18
External trips			69	217	286	208	131	339

The development is expected to generate 301 trips in the AM peak hour and 357 trips in the PM peak hour (both inbound and out bound trips). It is assumed that 5% of the site traffic would

travel to/from the commercial plaza to the southwest side of the site via George Wright Boulevard (an internal road) during the peak hours.

### 3.4 Trip Distribution / Assignment

The distribution of the trips to be generated by the proposed development was derived from the original report as followings:

#### AM Peak Hour

- 10% to/from the north via Talbot Street;
- 45% to/from the east via Loyalist Parkway;
- 15% to/from the south via Lake Street; and
- 30% to/from the west via Loyalist Parkway.

#### PM Peak Hour

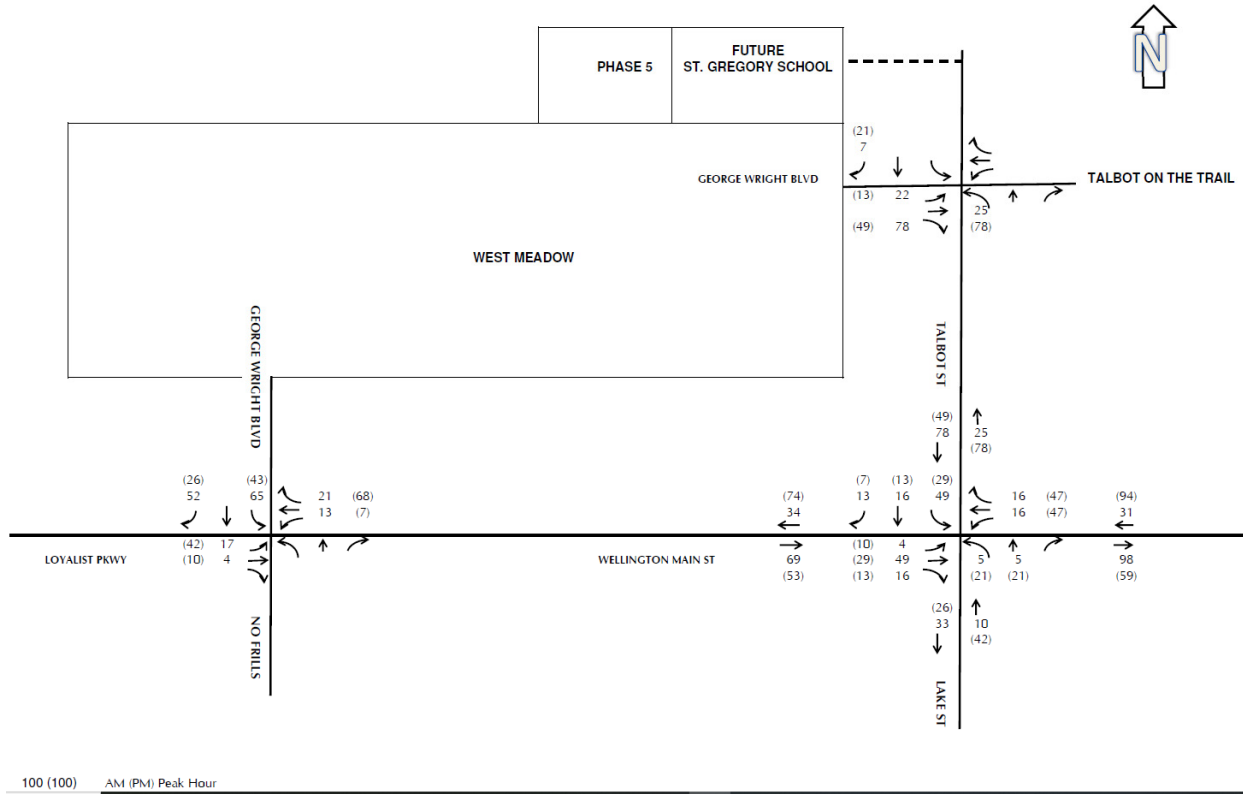
- 10% to/from the north via Talbot Street;
- 45% to/from the east via Loyalist Parkway;
- 20% to/from the south via Lake Street; and
- 25% to/from the west via Loyalist Parkway.

Site traffic assignment was also derived from the original report as follows:

- 20% of westbound and 50% of eastbound and southbound site trips would use the site access at Talbot Street; and
- The remaining site trips would use the access at Loyalist Parkway.

The resulting site generated new trips are illustrated in Figure 4.

**Figure 4: Site Generated Traffic Volumes**



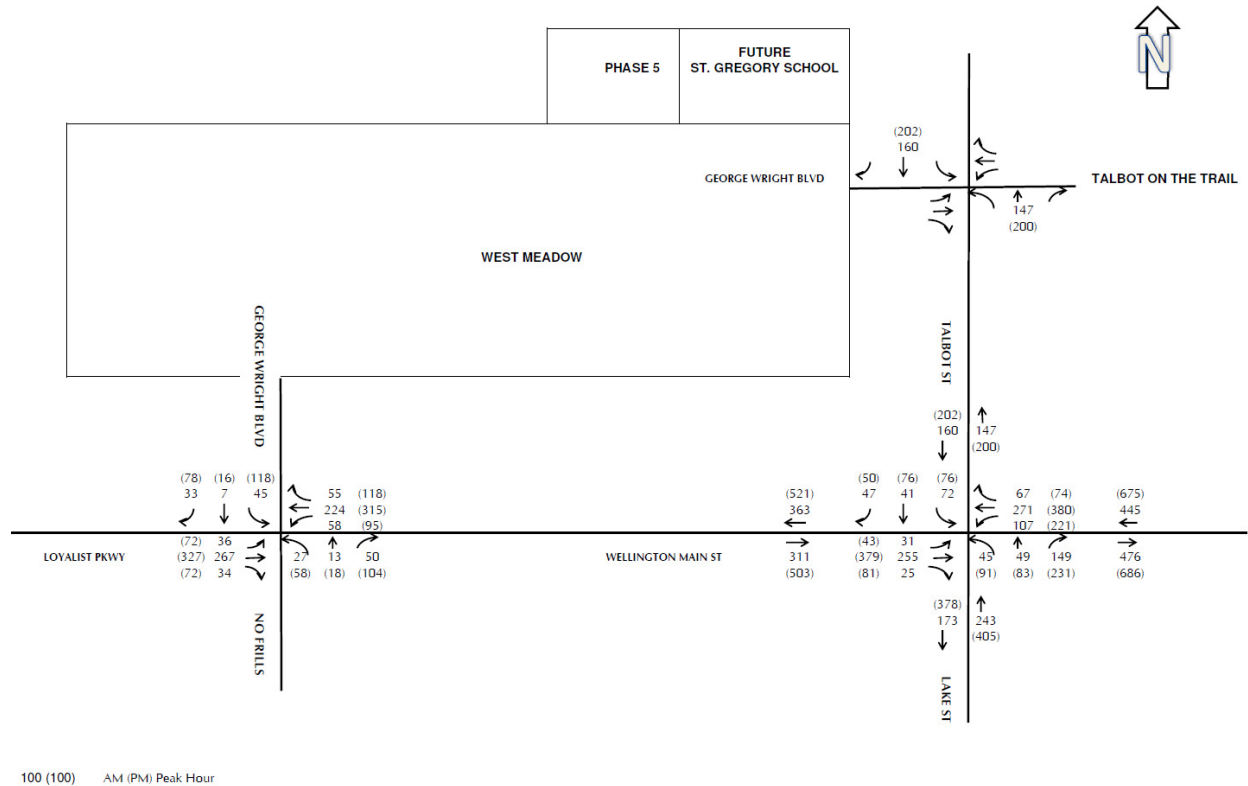
## 4 Traffic Volumes

### 4.1 Existing Traffic Volumes

Existing intersection turning movement traffic counts were provided by the County for the St. Gregory Catholic Elementary School to be constructed (assume 2025 occupancy) located northeast of the site. The data was collected on Tuesday, July 18, 2023 from 7:00 to 9:00 and 15:00 to 17:00 at the intersections of Loyalist Parkway with George Wright Boulevard and Talbot Street with Picton Main Street. Traffic count data is provided in Appendix A. Given the July count represents peak summer conditions, no seasonal variation factor is required.

The resulting 2023 traffic volumes are presented in Figure 5.

**Figure 5: Existing 2023 Traffic Volumes**



## 4.2 Background Traffic Projections

Given that full build-out and occupancy of the proposed development is assumed to occur in 2027, a 5-year horizon (2032) was addressed to consider the future transportation needs.

Background traffic volumes expected for the 2027 and 2032 horizon years have been determined from the 2023 volumes and future growth projections.

Given that specific developments will be considered, a background growth rate of 0.76% is assumed on Talbot Street, Loyalist Parkway/Picton Main Street from 2020 to 2035 based on the traffic data on County Road and the population projections in the County's *Picton Urban Centre Secondary Plan* as per our previous report *Traffic Impact Study Talbot on the Trail Subdivision County of Prince Edward*.

Two specific developments within and adjacent to the study area have been considered. They are illustrated in Figure 6 and are listed below:

- 1) St. Gregory Elementary School located on southwest side of Talbot Street to the northwest of the site – traffic volumes were derived from the report *St. Gregory Catholic Elementary School Transportation Impact Study* by WSP dated September 29, 2023 and provided in Appendix B. The development is expected to be completed in 2025.
- 2) Talbot on the Trail Subdivision located on the northeast side of Talbot Street opposite of the site – traffic volumes were derived from our previous report *Traffic Impact Study Talbot on the Trail Subdivision County of Prince Edward* dated May 2020 and provided in Appendix B. The development is expected to be completed in 2025 (updated from 2027 in the Talbot on the Trail report).

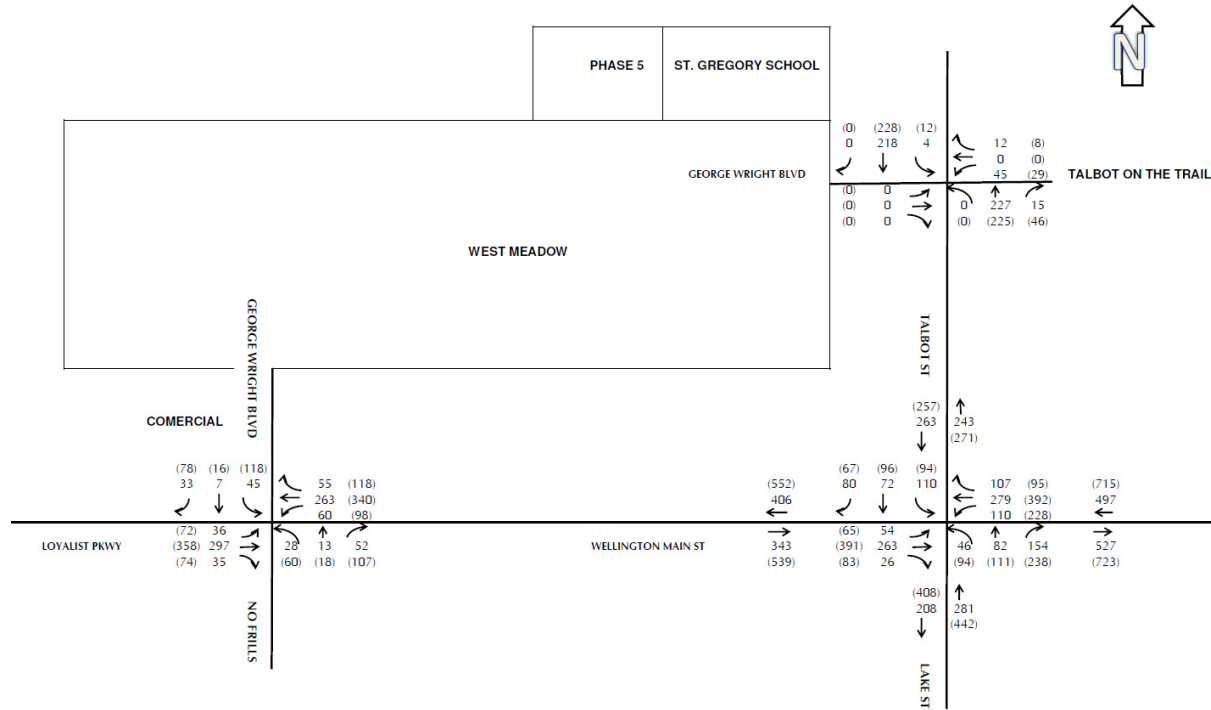
**Figure 6: Background Development Locations**



Source: Google Maps

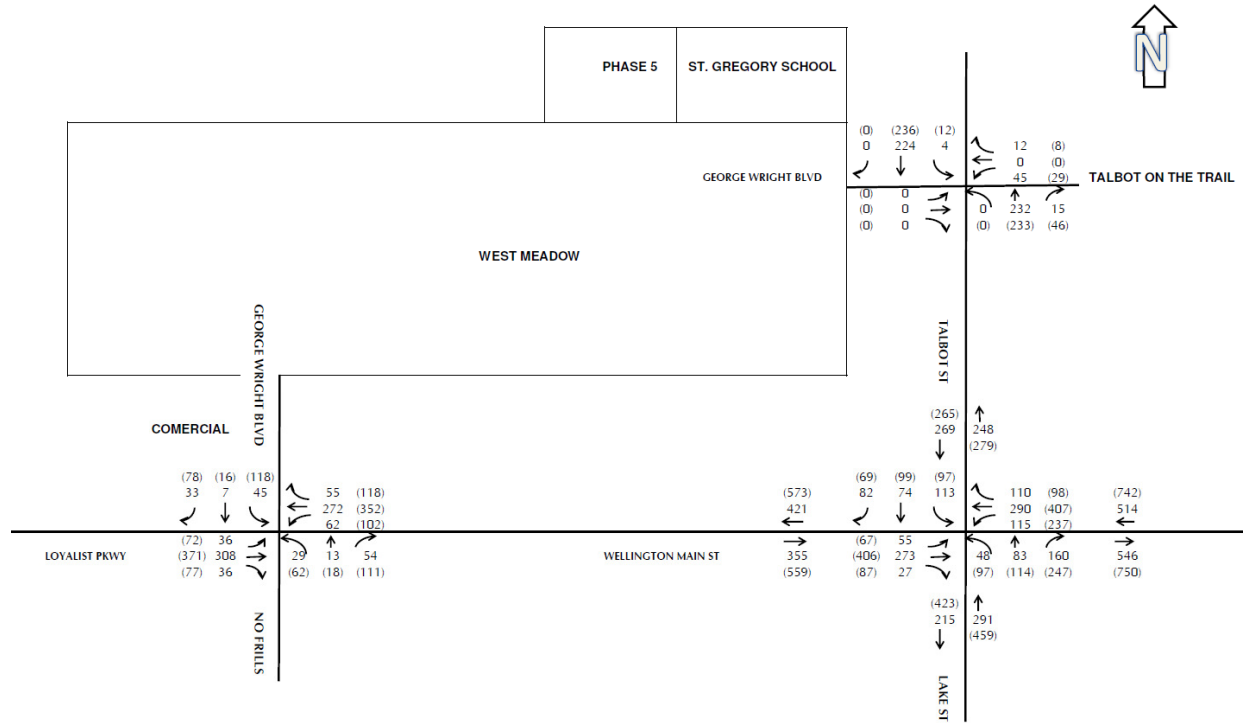
The resulting 2027 and 2032 background peak hour traffic volumes are illustrated in Figures 7 and 8 respectively.

**Figure 7: 2027 Background Traffic Volumes**



100 (100) AM (PM) Peak Hour

**Figure 8: 2032 Background Traffic Volumes**

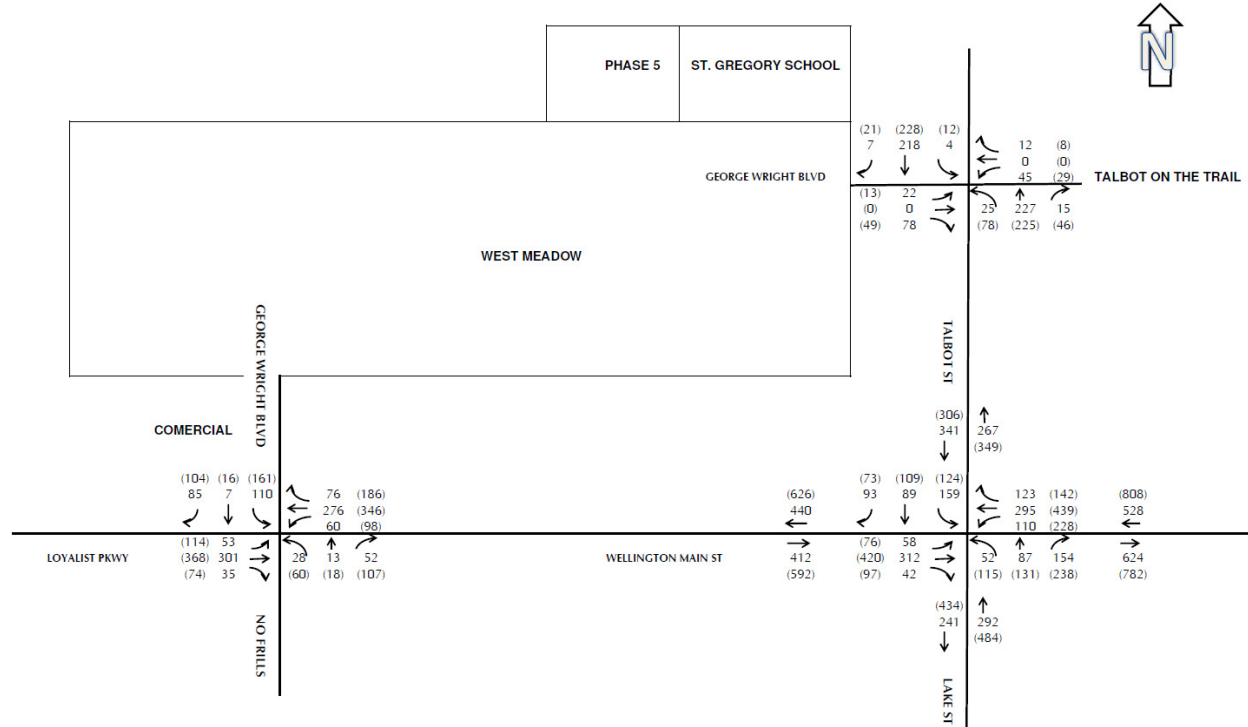


100 (100) AM (PM) Peak Hour

### 4.3 Total Traffic Projections

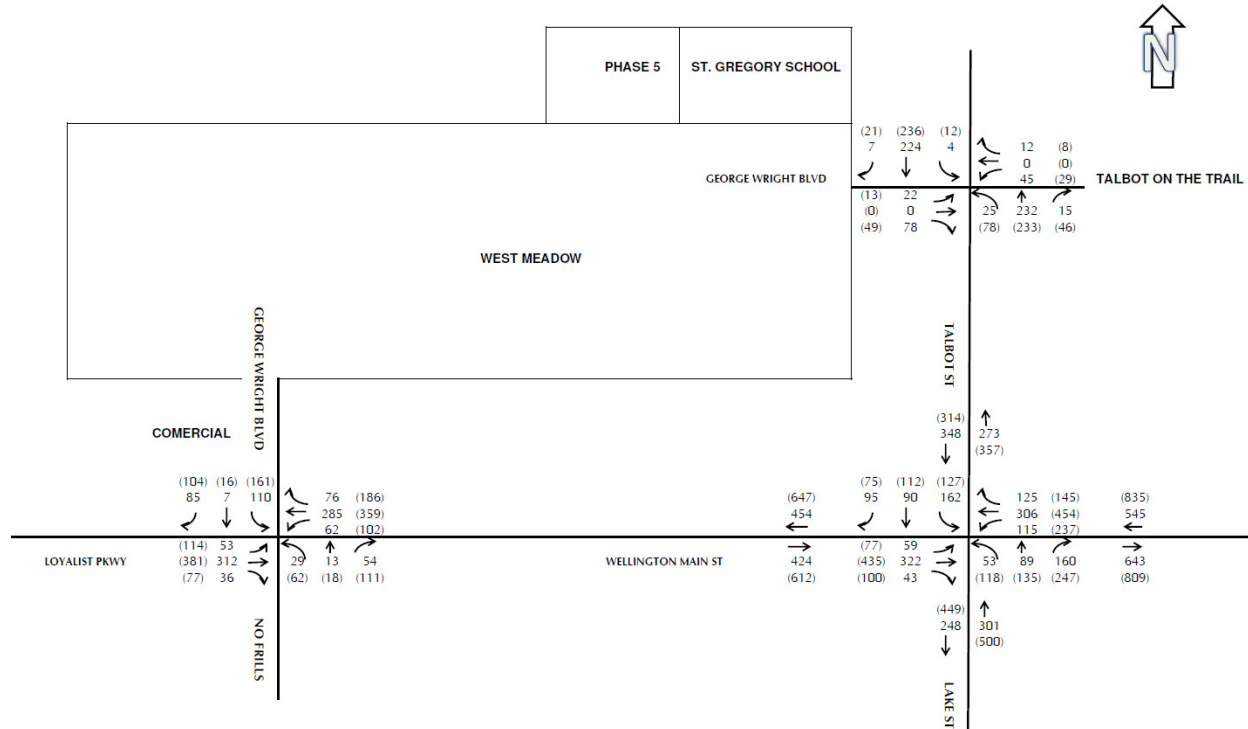
Future total traffic was calculated as the site generated traffic plus the future background traffic volumes for the 2027 and 2032 horizon years. The resulting future total volumes are illustrated in Figures 9 and 10 respectively.

**Figure 9: 2027 Total Traffic Volumes**



100 (100) AM (PM) Peak Hour

**Figure 10: 2032 Total Traffic Volumes**



100 (100) AM (PM) Peak Hour

## 5 Traffic Analysis

### 5.1 Highway Capacity Manual Methodology

The Highway Capacity Manual (HCM) methodology for determining level of service (LOS), delay, and volume to capacity (v/c) ratio was applied to the study area intersections. The HCM defines six levels of service, ranging from A to F. LOS A represents the best operating conditions and LOS F the worst.

For a signalized intersection and automobile mode, LOS is characterized by control delay and/or v/c ratio of an intersection or its lane groups. Delay quantifies the increase in travel time due to traffic signal control. The v/c ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

The LOS thresholds established for the automobile mode at a signalized intersection are as follows:

LOS by v/c Ratio		
<b>Control Delay (s/veh)</b>	<b>≤ 1.0</b>	<b>&gt;1</b>
0-10	A	F
>10 – 20	B	F
>20 – 35	C	F

>35 – 55	D	F
>55 – 80	E	F
>80	F	F

It is noted that for approach-based and intersection wide assessments, LOS is defined solely by control delay in the HCM 6<sup>th</sup> version.

On the other hand, the LOS thresholds established for the automobile mode at an unsignalized intersection are as follows:

**LOS by v/c Ratio**

Control Delay (s/veh)	≤ 1.0	>1
0-10	A	F
>10 – 15	B	F
>15 – 25	C	F
>25 – 35	D	F
>35 – 50	E	F
>50	F	F

It is noted that the LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major street approaches or for the intersection as a whole in the HCM 6<sup>th</sup> version.

**5.2 Existing Traffic Conditions**

The methodology applied was consistent with the *Highway Capacity Manual 2010* method for signalized and unsignalized intersections as employed in the software program Synchro 11. The analysis is based on the 2023 traffic volumes, the existing intersection configuration and control. Signal timing was provided by the County in the St. Gregory Elementary School TIS report and are included in Appendix C.

Table 2 summarizes the results of the analysis. The corresponding detailed worksheets are included in Appendix D.

**Table 2: Intersection Operations – Existing 2023 Traffic Volumes**

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
Picton Main St. & Talbot St	all	signal	15.1	B		17.8	B	
	EBL		16.7	B	0.09	17.4	B	0.12
	EBT		19.9	B	0.50	24.0	C	0.71
	WBL		12.6	B	0.26	15.4	B	0.57
	WBT		12.5	B	0.36	13.2	B	0.47

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
	NBL-T		13.5	B	0.16	17.5	B	0.32
	NBR		14.7	B	0.26	18.1	B	0.42
	SBL		15.9	B	0.16	22.0	C	0.22
	SBT-R		13.6	B	0.15	15.3	B	0.21
Loyalist Pkwy & George Wright Blvd	all	signal	18.1	B		18.2	B	
	EBL		23.0	C	0.12	26.5	C	0.28
	EBT		20.1	C	0.29	19.8	B	0.33
	EBR		18.8	B	0.08	18.7	B	0.16
	WBL		23.4	C	0.19	25.0	C	0.32
	WBT		20.3	C	0.30	20.9	C	0.44
	WBT-R		20.4	C	0.31	21.1	C	0.45
	NBL		8.3	A	0.04	9.8	A	0.08
	NBT-R		8.6	A	0.08	10.1	B	0.16
	SBL		9.3	A	0.07	12.4	B	0.19
	SBT		8.1	A	0.01	9.0	A	0.02
	SBR		8.3	A	0.04	9.8	A	0.12

As per the analyses, an acceptable level of service is provided at the intersections under the existing conditions and thus no improvements are required at the intersections.

### 5.3 Future Background Traffic Conditions

The operational analyses at the area key intersections were repeated given the future 2027, and 2032 background traffic volumes. A summary of the assessment is provided in Tables 3 and 4. As previously noted, level of service (LOS) A corresponds to the best operating condition with minimal delays whereas LOS F corresponds to poor operations resulting from high intersection delays. The corresponding worksheets are provided in Appendix D.

**Table 3: Intersection Operations – 2027 Background Traffic Volumes**

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
Picton Main St. & Talbot St	all	signal	15.6	B		18.6	B	
	EBL		17.3	B	0.15	17.9	B	0.17
	EBT		20.2	C	0.52	24.4	C	0.72
	WBL		12.6	B	0.26	15.9	B	0.59
	WBT		12.6	B	0.37	13.1	B	0.48
	NBL-T		14.2	B	0.22	19.2	B	0.39
	NBR		14.8	B	0.27	18.8	B	0.44
	SBL		18.8	B	0.27	26.1	C	0.32
	SBT-R		14.8	B	0.27	16.5	B	0.28
Loyalist Pkwy & George Wright Blvd	all	signal	18.5	B		18.4	B	
	EBL		23.6	C	0.13	26.5	C	0.28
	EBT		20.3	C	0.33	19.6	B	0.34
	EBR		18.8	B	0.08	18.4	B	0.16
	WBL		24.0	C	0.20	25.3	C	0.34
	WBT		20.6	C	0.34	20.7	C	0.44
	WBT-R		20.7	C	0.35	20.9	C	0.45
	NBL		8.3	A	0.04	10.3	B	0.09
	NBT-R		8.6	A	0.09	10.7	B	0.17
	SBL		9.3	A	0.07	13.1	B	0.19
	SBT		8.1	A	0.01	9.5	A	0.02
	SBR		8.3	A	0.04	10.4	B	0.12
Talbot St &	NBL	free	0	A	-	0	A	-

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
George Wright Blvd	WBL	stop	13.3	B	0.10	13.7	B	0.07
	WBT-R		9.7	A	0.02	9.7	A	0.01
	SBL	free	7.8	A	0.00	7.9	A	0.01

**Table 4: Intersection Operations – 2032 Background Traffic Volumes**

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
Picton Main St. & Talbot St	all	signal	15.8	B		19.2	B	
	EBL		17.4	B	0.15	18.1	B	0.18
	EBT		20.3	C	0.54	25.0	C	0.74
	WBL		12.8	B	0.28	16.8	B	0.63
	WBT		12.7	B	0.38	13.2	B	0.50
	NBL-T		14.4	B	0.23	20.0	B	0.41
	NBR		15.0	B	0.28	19.5	B	0.46
	SBL		19.4	B	0.28	27.6	C	0.34
	SBT-R		14.9	B	0.28	16.9	B	0.29
Loyalist Pkwy & George Wright Blvd	all	signal	18.6	B		18.4	B	
	EBL		23.8	C	0.13	26.5	C	0.28
	EBT		20.4	C	0.34	19.5	B	0.35
	EBR		18.8	B	0.09	18.3	B	0.16
	WBL		24.2	C	0.21	25.5	C	0.35
	WBT		20.7	C	0.35	20.6	C	0.45
	WBT-R		20.8	C	0.36	20.7	C	0.45
	NBL		8.4	A	0.04	10.7	B	0.09

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
	NBT-R		8.6	A	0.09	11.1	B	0.17
	SBL		9.3	A	0.07	13.6	B	0.20
	SBT		8.1	A	0.01	9.8	A	0.02
	SBR		8.3	A	0.04	10.7	B	0.12
Talbot St & George Wright Blvd	NBL	free	0	A	-	0	A	-
	WBL	stop	13.5	B	0.10	13.9	B	0.07
	WBT-R		9.7	A	0.02	9.8	A	0.01
	SBL	free	7.8	A	0.00	7.9	A	0.01

Despite the increase in background traffic volumes for the 2027 and 2032 horizons, an acceptable level of service “C” or better is still provided. Therefore, no improvements are required at the area intersections considered.

#### 5.4 Future Background plus Site Traffic Conditions

The operational analyses at the area key intersections were repeated given the future 2027, and 2032 total traffic volumes. A summary of the assessment is provided in Tables 5 and 6. The corresponding worksheets are provided in Appendix D.

**Table 5: Intersection Operations – 2027 Total Traffic Volumes**

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
Picton Main St. & Talbot St	all	signal	16.8	B		20.3	C	
	EBL		17.4	B	0.16	19.3	B	0.22
	EBT		21.2	C	0.61	25.5	C	0.75
	WBL		13.1	B	0.29	16.6	B	0.61
	WBT		12.8	B	0.39	13.5	B	0.53
	NBL-T		14.9	B	0.26	22.5	C	0.50
	NBR		14.8	B	0.27	19.5	B	0.45
	SBL		23.1	C	0.42	35.3	D	0.51
	SBT-R		15.5	B	0.32	17.5	B	0.32

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
Loyalist Pkwy & George Wright Blvd	all	signal	17.9	B		18.8	B	
	EBL		24.9	C	0.20	29.0	C	0.44
	EBT		20.4	C	0.33	18.5	B	0.31
	EBR		18.8	B	0.09	17.3	B	0.14
	WBL		24.0	C	0.21	23.9	C	0.31
	WBT		21.0	C	0.38	20.1	C	0.46
	WBT-R		21.1	C	0.39	20.2	C	0.47
	NBL		8.4	A	0.04	12.4	B	0.10
	NBT-R		8.6	A	0.09	12.8	B	0.18
	SBL		10.2	B	0.16	16.7	B	0.28
	SBT		8.1	A	0.01	11.4	B	0.02
	SBR		8.8	A	0.11	12.8	B	0.17
Talbot St & George Wright Blvd	NBL	free	7.8	A	0.02	8.0	A	0.07
	EBL	stop	14.0	B	0.06	16.7	C	0.04
	EBT-R		10.0	B	0.11	9.9	A	0.07
	WBL		16.5	C	0.14	19.1	C	0.11
	WBT-R		9.7	A	0.02	9.7	A	0.01
	SBL	free	7.8	A	0.00	7.9	A	0.01

**Table 6: Intersection Operations – 2032 Total Traffic Volumes**

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
Picton Main St. & Talbot St	all	signal	17.0	B		21.0	C	
	EBL		17.5	B	0.17	19.6	B	0.22

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
	EBT		21.5	C	0.63	26.2	C	0.77
	WBL		13.2	B	0.31	17.7	B	0.65
	WBT		12.9	B	0.40	13.6	B	0.54
	NBL-T		15.0	B	0.26	23.5	C	0.52
	NBR		15.0	B	0.28	20.2	C	0.46
	SBL		23.7	C	0.43	38.4	D	0.55
	SBT-R		15.6	B	0.33	17.9	B	0.33
Loyalist Pkwy & George Wright Blvd	all	signal	18.0	B		18.9	B	
	EBL		25.1	C	0.20	29.1	C	0.45
	EBT		20.4	C	0.34	18.5	B	0.32
	EBR		18.8	B	0.09	17.2	B	0.15
	WBL		24.3	C	0.22	24.2	C	0.32
	WBT		21.0	C	0.39	20.1	C	0.47
	WBT-R		21.1	C	0.40	20.2	C	0.48
	NBL		8.4	A	0.04	12.6	B	0.10
	NBT-R		8.6	A	0.09	13.0	B	0.18
	SBL		10.2	B	0.16	17.1	B	0.29
	SBT		8.1	A	0.01	11.6	B	0.02
	SBR		8.8	A	0.11	13.0	B	0.17
Talbot St & George Wright Blvd	NBL	free	7.8	A	0.02	8.0	A	0.07
	EBL	stop	14.2	B	0.06	17.1	C	0.05
	EBT-R		10.1	B	0.11	9.9	A	0.07
	WBL		16.8	C	0.14	19.5	C	0.11

INTERSECTION	CONTROL	AM PEAK HOUR			PM PEAK HOUR			
		Delay(s)	LOS	v/c	Delay(s)	LOS	v/c	
	WBT-R		9.7	A	0.02	9.8	A	0.01
	SBL	free	7.8	A	0.00	7.9	A	0.01

As per the analysis, an acceptable level of service “D” or better is provided at the area intersections. Therefore, no improvements are required at the area intersections considered.

### 5.5 Queue Length Analysis

The 95<sup>th</sup> percentile queue lengths were reviewed for the 2032 total conditions. The 95<sup>th</sup> percentile queues averaged from five SimTraffic runs are presented in Table 7. Each SimTraffic run was for duration of 60 minutes with 15 minutes of seeding time.

**Table 7: The 95<sup>th</sup> Percentile Queue Lengths – 2032 Total Traffic Volumes**

INTERSECTION	LANE	95 <sup>th</sup> PERCENTILE QUEUE (m)		SPACE (m)	
		AM	PM	AVAILABLE	REQUIRED
Picton Main St. & Talbot St access	EBL	37.7	48.2	25	As existing
	EBR	24.6	48.0	15	As existing
	WBL	24.5	63.8	50	As existing
	NBR	23.8	45.0	35	As existing
	SBL	39.2	38.6	20	As existing
Loyalist Pkwy & George Wright Blvd	EBL	20.2	33.2	130	As existing
	EBR	7.9	10.0	60	As existing
	WBL	21.3	36.6	140	As existing
	NBL	9.9	13.9	20	As existing
	SBL	30.9	34.3	40	As existing
	SBR	16.6	17.1	15	As existing
Talbot St & George Wright Blvd	EBL	9.7	8.3	20	As existing
	WBL	14.8	14.1	15	As existing
	NBL	6.9	13.3	40	As existing
	SBL	1.8	4.9	15	As existing

INTERSECTION	LANE	95 <sup>th</sup> PERCENTILE QUEUE (m)		SPACE (m)	
		AM	PM	AVAILABLE	REQUIRED
	SBR	-	0.9	15	As existing

As indicated in Table 7, all of the existing available spaces can accommodate future 2032 queue lengths 95 percent of the time at the intersections of George Wright Boulevard with Loyalist Parkway and Talbot Street. The 95<sup>th</sup> percentile queue lengths may be longer than the existing turn lanes at the intersection of Picton Main Street with Talbot Street during the peak hours in the 2032 horizon. However, most of the average queue lengths can be accommodated at the intersection.

## 6 Conclusions and Recommendations

To assess improvement needs for the area key intersections, AM and PM peak hour intersection turning movement count data was collected on July 18, 2023 provided by the County. A growth rate of 0.76% per annum was applied to estimate the general background traffic growth. Background future developments include Talbot on the Trail to the east of the site and St Gregory Elementary School to the northeast of the site.

Traffic volumes generated by the proposed residential development located on the north side of Loyalist Parkway and west side of Talbot Street in Picton have been estimated. Based on the assessment, it was estimated that the proposed development will generate 301 and 357 trips during the AM and PM peak hours respectively (both inbound and outbound trips). It is estimated that the development will be completed by 2027.

Operational analysis was carried at the intersections of Loyalist Parkway with George Wright Boulevard, Picton Main Street with Talbot Street for the 2023, 2027, and 2032 horizons and the intersection of George Wright Boulevard with Talbot Street for the 2027 and 2332 horizons. It was determined that an acceptable level of service D will be provided at the intersection of Picton Main Street with Talbot Street during the PM peak hour in the 2032 horizon. A level of service C will be provided at other two intersections in the 2032 horizon

Queue lengths were assessed. All existing available spaces can accommodate the future 2032 horizon queue lengths 95 percent of the time at the intersections of George Wright Boulevard with Loyalist Parkway and Talbot Street. The 95<sup>th</sup> percentile queue lengths may be longer than the existing turn lanes at the intersection of Picton Main Street with Talbot Street during the peak hours in the 2032 horizon. However, most of the average queue lengths can be accommodated at the intersection.

# Appendix A

## Traffic Counts

## Peak Hour Diagram

Specified Period

From: 07:00:00  
To: 09:00:00

One Hour Peak

From: 08:00:00  
To: 09:00:00

Intersection: Picton Main St & Talbot St - Lake St  
Site Code: 2321800001  
Count Date: Jul 18, 2023

Weather conditions: Clear

\*\* Signalized Intersection \*\*

Major Road: Picton Main St runs E/W

### North Approach

	Out	In	Total
	147	134	281
	13	13	26
	0	0	0
<b>Totals</b>	<b>160</b>	<b>147</b>	<b>307</b>

### Talbot St

	0	0	0	0
	3	5	5	0
	44	36	67	0
<b>Totals</b>	<b>47</b>	<b>41</b>	<b>72</b>	<b>0</b>

### East Approach

	Out	In	Total
	430	453	883
	15	22	37
	0	1	1
<b>Totals</b>	<b>445</b>	<b>476</b>	<b>921</b>

### Picton Main St

				Totals
	0	0	0	0
	0	6	25	31
	1	14	240	255
	0	2	23	25

Peds: 2



### Picton Main St

Totals			
	0	0	0
	67	66	1
	271	264	7
	107	100	7

### West Approach

	Out	In	Total
	288	353	641
	22	10	32
	1	0	1
<b>Totals</b>	<b>311</b>	<b>363</b>	<b>674</b>

Totals				
	45	43	146	0
	0	6	3	0
	0	0	0	0

Lake St

### South Approach

	Out	In	Total
	234	159	393
	9	14	23
	0	0	0
<b>Totals</b>	<b>243</b>	<b>173</b>	<b>416</b>

- Cars

- Trucks

- Bicycles

Comments

## Peak Hour Diagram

### Specified Period

From: 15:00:00  
To: 17:00:00

### One Hour Peak

From: 16:00:00  
To: 17:00:00

**Intersection:** Picton Main St & Talbot St - Lake St

**Site Code:** 2321800001

**Count Date:** Jul 18, 2023

**Weather conditions:** Clear

**\*\* Signalized Intersection \*\***

**Major Road:** Picton Main St runs E/W

### North Approach

	Out	In	Total
	196	196	392
	6	4	10
	0	0	0
<b>Totals</b>	<b>202</b>	<b>200</b>	<b>402</b>

### Talbot St

	0	0	0	0
	1	3	2	0
	49	73	74	0
<b>Totals</b>	<b>50</b>	<b>76</b>	<b>76</b>	<b>0</b>

### East Approach

	Out	In	Total
	657	671	1328
	10	14	24
	8	1	9
<b>Totals</b>	<b>675</b>	<b>686</b>	<b>1361</b>

### Picton Main St

				Totals
	0	0	0	0
	0	0	43	43
	1	9	369	379
	0	2	79	81

Peds: 4



Peds: 0

Peds: 0

Peds: 7

### Picton Main St

Totals			
	0	0	0
	74	74	0
	380	371	7
	221	212	3

### West Approach

	Out	In	Total
	491	510	1001
	11	9	20
	1	2	3
<b>Totals</b>	<b>503</b>	<b>521</b>	<b>1024</b>

Totals				
	91	83	231	0
	1	4	3	0
	0	0	0	0

Lake St

### South Approach

	Out	In	Total
	397	364	761
	8	8	16
	0	6	6
<b>Totals</b>	<b>405</b>	<b>378</b>	<b>783</b>

- Cars

- Trucks

- Bicycles

### Comments

## Peak Hour Diagram

### Specified Period

From: 07:00:00  
To: 09:00:00

### One Hour Peak

From: 08:00:00  
To: 09:00:00

**Intersection:** George Wright Blvd & Picton Main St  
**Site Code:** 2321800002  
**Count Date:** Jul 18, 2023

**Weather conditions:** Clear

**\*\* Signalized Intersection \*\***

**Major Road:** Picton Main St runs E/W

### North Approach

	Out	In	Total
	80	99	179
	5	5	10
	0	0	0
<b>Totals</b>	<b>85</b>	<b>104</b>	<b>189</b>

### George Wright Blvd

	0	0	0	0
	2	0	3	0
	31	7	42	0
<b>Totals</b>	<b>33</b>	<b>7</b>	<b>45</b>	<b>0</b>

### East Approach

	Out	In	Total
	328	346	674
	6	14	20
	3	2	5
<b>Totals</b>	<b>337</b>	<b>362</b>	<b>699</b>

### Picton Main St

	Out	In	Total
	0	0	0
	0	2	34
	2	10	255
<b>Totals</b>	<b>0</b>	<b>36</b>	<b>267</b>

Peds: 0

Peds: 1



Peds: 1

Peds: 0

### Picton Main St

	Out	In	Total
	0	0	0
	55	53	2
	224	217	4
<b>Totals</b>	<b>58</b>	<b>58</b>	<b>0</b>

### West Approach

	Out	In	Total
	322	274	596
	13	7	20
	2	3	5
<b>Totals</b>	<b>337</b>	<b>284</b>	<b>621</b>

	Out	In	Total
	26	12	49
	1	1	1
	0	0	0
<b>Totals</b>	<b>27</b>	<b>13</b>	<b>50</b>

### George Wright Blvd

### South Approach

	Out	In	Total
	87	98	185
	3	1	4
	0	0	0
<b>Totals</b>	<b>90</b>	<b>99</b>	<b>189</b>

- Cars

- Trucks

- Bicycles

### Comments

## Peak Hour Diagram

### Specified Period

From: 15:00:00  
To: 17:00:00

### One Hour Peak

From: 15:30:00  
To: 16:30:00

**Intersection:** George Wright Blvd & Picton Main St  
**Site Code:** 2321800002  
**Count Date:** Jul 18, 2023

**Weather conditions:** Clear

\*\* Signalized Intersection \*\*

Major Road: Picton Main St runs E/W

### North Approach

	Out	In	Total
	208	203	411
	4	5	9
	0	0	0
<b>Totals</b>	<b>212</b>	<b>208</b>	<b>420</b>

### George Wright Blvd

	0	0	0	0
	2	0	2	0
	76	16	116	0
<b>Totals</b>	<b>78</b>	<b>16</b>	<b>118</b>	<b>0</b>

### East Approach

	Out	In	Total
	519	533	1052
	9	10	19
	0	6	6
<b>Totals</b>	<b>528</b>	<b>549</b>	<b>1077</b>

### Picton Main St

				Totals
	0	0	0	0
	0	2	70	72
	6	6	315	327
	0	2	70	72

Peds: 0



Peds: 7

Peds: 7

Peds: 3

### Picton Main St

Totals			
	0	0	0
	118	115	3
	315	310	5
	95	94	1

### West Approach

	Out	In	Total
	455	443	898
	10	8	18
	6	0	6
<b>Totals</b>	<b>471</b>	<b>451</b>	<b>922</b>

Totals				
	57	18	102	0
	1	0	2	0
	0	0	0	0

### George Wright Blvd

### South Approach

	Out	In	Total
	177	180	357
	3	3	6
	0	0	0
<b>Totals</b>	<b>180</b>	<b>183</b>	<b>363</b>

- Cars

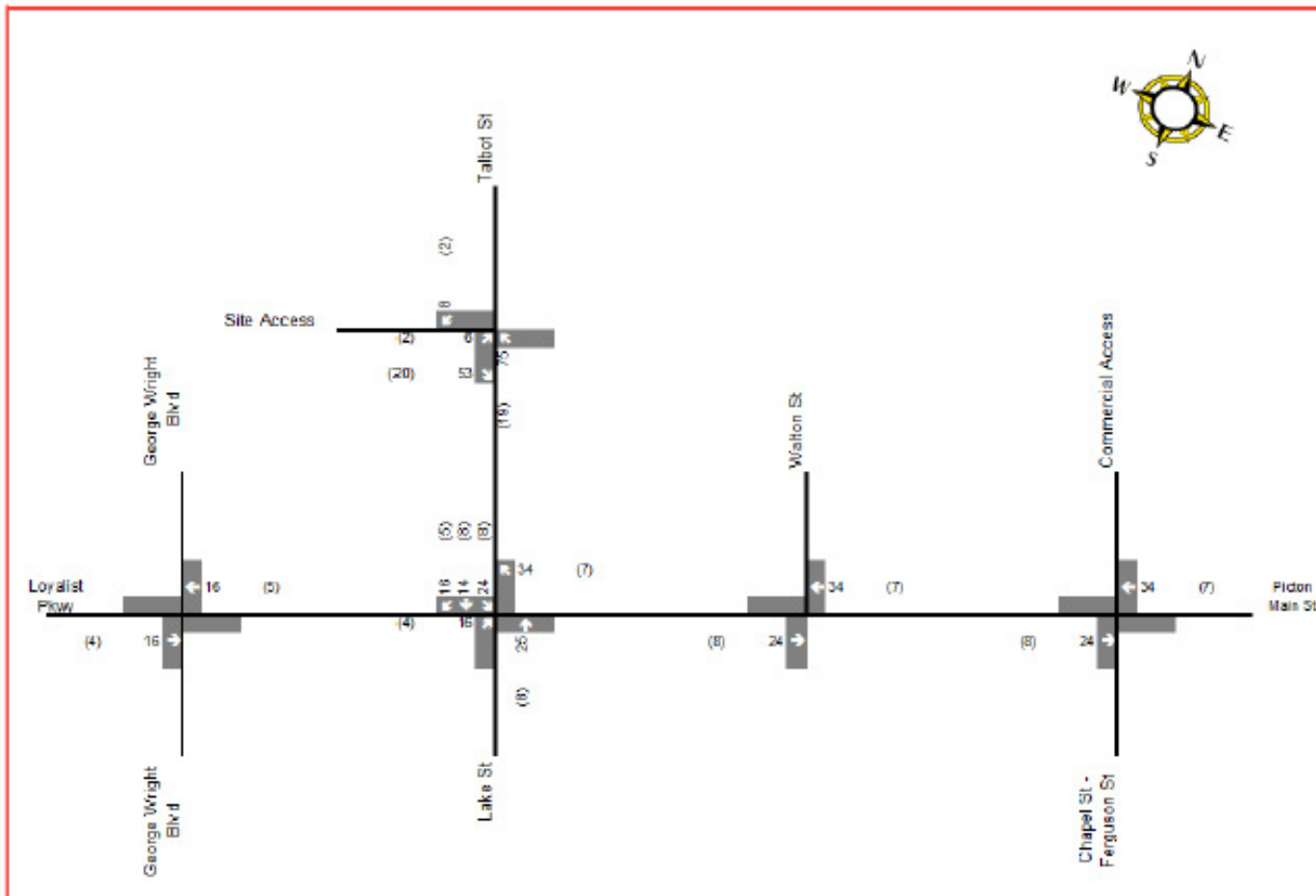
- Trucks

- Bicycles

### Comments

# **Appendix B**

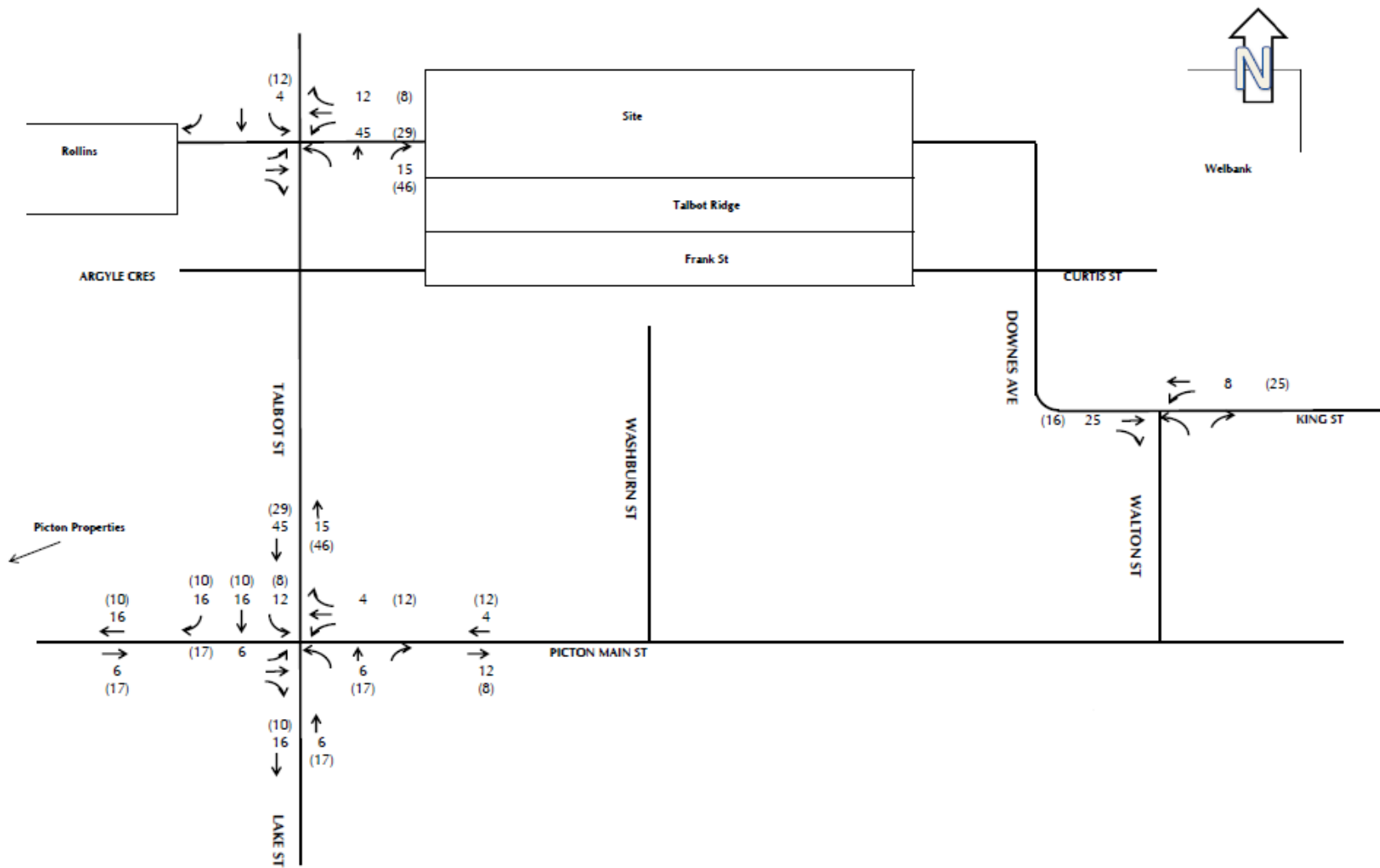
## Background Development Generated Traffic Volumes



Legend

xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes

Figure 3-2: Development-Generated Vehicle Trips



100 (100) AM (PM) Peak Hour

**Figure 6**  
 2030 Site Generated Traffic Volumes  
 Talbot on the Trail Development Traffic Impact Study  
 County of Prince Edward

# Appendix C

## Signal Timing

## Traffic Signal Timing - Main St at Talbot-Lake Sts.

July 13, 2022

Phase/Flow >	Main St	Main St		Talbot St	Main St	Main St		Lake St
	WB Lt	EB Thru	n/a	SB	EB Lt	WB Thru	n/a	NB
	1	2	3	4	5	6	7	8
Min Grn	7	20	0	7	7	20	0	7
BK MGrn	0	0	0	0	0	0	0	0
CS MGrn	0	0	0	0	0	0	0	0
Dly Grn	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0
Ped Clr	0	15	0	10	0	15	0	10
Ped Clr2	0	0	0	0	0	0	0	0
Ped Clr Max	0	0	0	0	0	0	0	0
Ped Co	0	0	0	0	0	0	0	0
Veh Ext	2.0	4.0	0.0	3.0	2.0	4.0	0.0	3.0
Veh Ext2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	35	0	30	15	35	0	30
Max2	40	40	0	40	40	40	0	40
Max3	0	0	0	0	0	0	0	0
D Y M Max	0	0	0	0	0	0	0	0
D Y M Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.7	0.0	3.3	3.0	3.7	0.0	3.3
Red Clr	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Act B4	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	30	30	0	30	30	30	0	30
Time B4	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0
STPTDUC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTREDUC	0	0	0	0	0	0	0	0
Min Gap	3.0	1.0	0.0	1.0	3.0	1.0	0.0	1.0

Organization

R4 - Hwy 33 @ George Wright Blvd > Phases > Phase Timing



2.1 Phase Parameters Set 1	1	2	3	4	5	6	7	8
Min Green	0	20	0	10	0	20	0	10
Passage	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
Max 1	0	35	0	20	0	35	0	20
Max 2	0	30	0	20	0	30	0	20
Yellow Change	0.0	5.0	0.0	4.5	0.0	5.0	0.0	4.5
Red Clear	0.0	1.9	0.0	2.3	0.0	1.9	0.0	2.3
Walk	0	7	0	7	0	7	0	7
Ped Clear	0	26	0	30	0	26	0	30
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0
Cars Before Reduction	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
Dynamic Max Limit	0	0	0	0	0	0	0	0
Dynamic Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	5.0	0.0	5.0	0.0	5.0	0.0	5.0
Cond. Service Min	0	0	0	0	0	0	0	0
Alternate Min Green	0	0	0	0	0	0	0	0
Alternate Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alternate Walk	0	0	0	0	0	0	0	0
Alternate Ped Clear	0	0	0	0	0	0	0	0
Advanced Walk	0	0	0	0	0	0	0	0
Delay Walk	0	0	0	0	0	0	0	0
Start Delay Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Clear	0	0	0	0	0	0	0	0

2.2 Phase Options Set 1	1	2	3	4	5	6	7	8
Phase Omit	X		X		X		X	
Ped Omit								
Min Veh Recall		X				X		
Max Veh Recall								
Soft Veh Recall								
Ped Recall								
Ped Recycle								
Cond. Service								
Lock Detector Memory								
Dual Entry		X		X		X		X
Simultaneous Gap		X		X		X		X
Guaranteed Passage								
Added Initial Calculation								
Rest In Walk								
Red Rest								
Auto Flash Entry								
Auto Flash Exit								
Non-Actuated 1								
Non-Actuated 2								
No Backup								
Max Walk								
Max Extension								
Sequential Timing								
No Min Yellow								
FDW Ped Recycle								

2.1 Phase Parameters Set 2	1	2	3	4	5	6	7	8
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# Appendix D

## Synchro Reports

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	255	25	107	271	67	45	49	149	72	41	47
Future Volume (veh/h)	31	255	25	107	271	67	45	49	149	72	41	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1618	1826	1781	1796	1856	1870	1900	1722	1870	1796	1722	1811
Adj Flow Rate, veh/h	34	277	0	116	295	0	49	53	162	78	45	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	19	5	8	7	3	2	0	12	2	7	12	6
Cap, veh/h	394	555		459	822		320	315	617	493	287	325
Arrive On Green	0.30	0.30	0.00	0.09	0.44	0.00	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	936	1826	1510	1711	1856	0	613	808	1581	1118	736	834
Grp Volume(v), veh/h	34	277	0	116	295	0	102	0	162	78	0	96
Grp Sat Flow(s),veh/h/ln	936	1826	1510	1711	1856	0	1421	0	1581	1118	0	1570
Q Serve(g_s), s	1.7	8.2	0.0	2.7	6.9	0.0	0.5	0.0	4.6	3.2	0.0	2.6
Cycle Q Clear(g_c), s	1.7	8.2	0.0	2.7	6.9	0.0	3.1	0.0	4.6	6.4	0.0	2.6
Prop In Lane	1.00		1.00	1.00		0.00	0.48		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	394	555		459	822		635	0	617	493	0	612
V/C Ratio(X)	0.09	0.50		0.25	0.36		0.16	0.00	0.26	0.16	0.00	0.16
Avail Cap(c_a), veh/h	497	757		507	1079		635	0	617	493	0	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	18.8	0.0	12.5	12.2	0.0	13.1	0.0	13.7	15.3	0.0	13.1
Incr Delay (d2), s/veh	0.1	1.0	0.0	0.1	0.4	0.0	0.5	0.0	1.0	0.7	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.9	0.0	1.2	3.2	0.0	1.2	0.0	2.0	1.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	19.8	0.0	12.6	12.5	0.0	13.6	0.0	14.7	16.0	0.0	13.6
LnGrp LOS	B	B		B	B		B	A	B	B	A	B
Approach Vol, veh/h		311			411			264			174	
Approach Delay, s/veh		19.5			12.5			14.3			14.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.2	25.7		31.0		34.9		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	4.7	10.2		8.4		8.9		6.6				
Green Ext Time (p_c), s	0.1	4.7		1.6		6.3		2.3				

### Intersection Summary

HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	267	34	58	224	55	27	13	50	45	7	33
Future Volume (veh/h)	36	267	34	58	224	55	27	13	50	45	7	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1856	1900	1870	1841	1841	1781	1870	1796	1900	1811
Adj Flow Rate, veh/h	39	290	37	63	243	60	29	14	54	49	8	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	3	0	2	4	4	8	2	7	0	6
Cap, veh/h	324	987	444	334	800	194	802	168	649	745	997	805
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1042	3497	1572	1070	2837	687	1340	321	1237	1280	1900	1534
Grp Volume(v), veh/h	39	290	37	63	150	153	29	0	68	49	8	36
Grp Sat Flow(s),veh/h/ln	1042	1749	1572	1070	1777	1747	1340	0	1558	1280	1900	1534
Q Serve(g_s), s	2.2	4.6	1.2	3.5	4.7	4.9	0.7	0.0	1.5	1.4	0.1	0.8
Cycle Q Clear(g_c), s	7.0	4.6	1.2	8.1	4.7	4.9	0.9	0.0	1.5	2.9	0.1	0.8
Prop In Lane	1.00		1.00	1.00		0.39	1.00		0.79	1.00		1.00
Lane Grp Cap(c), veh/h	324	987	444	334	501	493	802	0	817	745	997	805
V/C Ratio(X)	0.12	0.29	0.08	0.19	0.30	0.31	0.04	0.00	0.08	0.07	0.01	0.04
Avail Cap(c_a), veh/h	531	1682	756	547	855	840	802	0	817	745	997	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	19.9	18.7	23.1	20.0	20.0	8.3	0.0	8.4	9.1	8.0	8.2
Incr Delay (d2), s/veh	0.2	0.2	0.1	0.3	0.3	0.4	0.1	0.0	0.2	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.0	0.5	1.0	2.1	2.2	0.3	0.0	0.6	0.5	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	20.1	18.8	23.4	20.3	20.4	8.3	0.0	8.6	9.3	8.1	8.3
LnGrp LOS	C	C	B	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		366			366			97			93	
Approach Delay, s/veh		20.3			20.9			8.5			8.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.9		44.0		26.9		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		9.0		4.9		10.1		3.5				
Green Ext Time (p_c), s		5.1		0.5		5.0		1.1				

### Intersection Summary

HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	379	81	221	380	74	91	83	231	76	76	50
Future Volume (veh/h)	43	379	81	221	380	74	91	83	231	76	76	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1885	1870	1900	1885	1826	1885	1856	1841	1870
Adj Flow Rate, veh/h	47	412	0	240	413	0	99	90	251	83	83	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	1	2	0	1	5	1	3	4	2
Cap, veh/h	408	577		418	870		323	270	598	370	390	254
Arrive On Green	0.31	0.31	0.00	0.11	0.47	0.00	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	982	1870	1585	1795	1870	0	650	720	1598	1031	1041	677
Grp Volume(v), veh/h	47	412	0	240	413	0	189	0	251	83	0	137
Grp Sat Flow(s),veh/h/ln	982	1870	1585	1795	1870	0	1370	0	1598	1031	0	1719
Q Serve(g_s), s	2.4	13.4	0.0	5.8	10.4	0.0	4.4	0.0	8.0	4.5	0.0	3.7
Cycle Q Clear(g_c), s	2.4	13.4	0.0	5.8	10.4	0.0	8.1	0.0	8.0	12.5	0.0	3.7
Prop In Lane	1.00		1.00	1.00		0.00	0.52		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	408	577		418	870		593	0	598	370	0	644
V/C Ratio(X)	0.12	0.71		0.57	0.47		0.32	0.00	0.42	0.22	0.00	0.21
Avail Cap(c_a), veh/h	496	744		425	1044		593	0	598	370	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	21.0	0.0	14.2	12.6	0.0	16.1	0.0	15.9	20.6	0.0	14.6
Incr Delay (d2), s/veh	0.2	2.9	0.0	1.1	0.6	0.0	1.4	0.0	2.2	1.4	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.8	0.0	2.7	4.9	0.0	2.7	0.0	3.6	1.3	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	24.0	0.0	15.4	13.2	0.0	17.5	0.0	18.1	22.0	0.0	15.3
LnGrp LOS	B	C		B	B		B	A	B	C	A	B
Approach Vol, veh/h		459			653			440			220	
Approach Delay, s/veh		23.3			14.0			17.8			17.9	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.8	26.9		31.0		37.6		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	7.8	15.4		14.5		12.4		10.1				
Green Ext Time (p_c), s	0.0	5.5		1.7		8.7		3.8				

### Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.  
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑		↘	↗		↘	↑	↗
Traffic Volume (veh/h)	72	327	72	95	315	118	58	18	104	118	16	78
Future Volume (veh/h)	72	327	72	95	315	118	58	18	104	118	16	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1856	1885	1870	1856	1870	1900	1870	1870	1900	1856
Adj Flow Rate, veh/h	78	355	78	103	342	128	63	20	113	128	17	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	3	1	2	3	2	0	2	2	0	3
Cap, veh/h	278	1089	480	319	778	286	745	125	707	678	963	714
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	914	3554	1565	961	2540	934	1288	247	1395	1253	1900	1409
Grp Volume(v), veh/h	78	355	78	103	237	233	63	0	133	128	17	85
Grp Sat Flow(s),veh/h/ln	914	1777	1565	961	1777	1697	1288	0	1642	1253	1900	1409
Q Serve(g_s), s	5.5	5.6	2.7	6.8	7.9	8.1	1.9	0.0	3.2	4.5	0.3	2.3
Cycle Q Clear(g_c), s	13.6	5.6	2.7	12.4	7.9	8.1	2.2	0.0	3.2	7.7	0.3	2.3
Prop In Lane	1.00		1.00	1.00		0.55	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	278	1089	480	319	545	520	745	0	832	678	963	714
V/C Ratio(X)	0.28	0.33	0.16	0.32	0.44	0.45	0.08	0.00	0.16	0.19	0.02	0.12
Avail Cap(c_a), veh/h	422	1651	727	470	825	788	745	0	832	678	963	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	19.6	18.6	24.4	20.4	20.5	9.6	0.0	9.7	11.8	9.0	9.5
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.6	0.6	0.6	0.2	0.0	0.4	0.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.5	1.1	1.7	3.5	3.5	0.6	0.0	1.3	1.5	0.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	19.8	18.7	25.0	20.9	21.1	9.8	0.0	10.1	12.4	9.0	9.8
LnGrp LOS	C	B	B	C	C	C	A	A	B	B	A	A
Approach Vol, veh/h		511			573			196			230	
Approach Delay, s/veh		20.6			21.7			10.0			11.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.4		44.0		29.4		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		15.6		9.7		14.4		5.2				
Green Ext Time (p_c), s		6.0		1.5		7.4		2.5				

### Intersection Summary

HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	263	26	110	279	107	46	82	154	110	72	80
Future Volume (veh/h)	54	263	26	110	279	107	46	82	154	110	72	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1618	1826	1781	1796	1856	1870	1900	1722	1870	1796	1722	1811
Adj Flow Rate, veh/h	59	286	0	120	303	0	50	89	167	120	78	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	19	5	8	7	3	2	0	12	2	7	12	6
Cap, veh/h	392	555		454	823		239	387	616	450	289	323
Arrive On Green	0.30	0.30	0.00	0.09	0.44	0.00	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	929	1826	1510	1711	1856	0	424	992	1581	1077	742	828
Grp Volume(v), veh/h	59	286	0	120	303	0	139	0	167	120	0	165
Grp Sat Flow(s),veh/h/ln	929	1826	1510	1711	1856	0	1416	0	1581	1077	0	1571
Q Serve(g_s), s	3.1	8.5	0.0	2.8	7.2	0.0	0.1	0.0	4.8	5.7	0.0	4.7
Cycle Q Clear(g_c), s	3.1	8.5	0.0	2.8	7.2	0.0	4.9	0.0	4.8	10.5	0.0	4.7
Prop In Lane	1.00		1.00	1.00		0.00	0.36		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	392	555		454	823		626	0	616	450	0	612
V/C Ratio(X)	0.15	0.52		0.26	0.37		0.22	0.00	0.27	0.27	0.00	0.27
Avail Cap(c_a), veh/h	494	755		500	1077		626	0	616	450	0	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	19.0	0.0	12.5	12.2	0.0	13.4	0.0	13.7	17.4	0.0	13.7
Incr Delay (d2), s/veh	0.3	1.1	0.0	0.1	0.4	0.0	0.8	0.0	1.1	1.5	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.1	0.0	1.2	3.4	0.0	1.7	0.0	2.1	1.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	20.0	0.0	12.6	12.6	0.0	14.2	0.0	14.8	18.8	0.0	14.8
LnGrp LOS	B	C		B	B		B	A	B	B	A	B
Approach Vol, veh/h		345			423			306			285	
Approach Delay, s/veh		19.5			12.6			14.5			16.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.2	25.8		31.0		35.0		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	4.8	10.5		12.5		9.2		6.9				
Green Ext Time (p_c), s	0.1	5.1		2.5		6.5		2.9				

### Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	297	35	60	263	55	28	13	52	45	7	33
Future Volume (veh/h)	36	297	35	60	263	55	28	13	52	45	7	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1856	1900	1870	1841	1841	1781	1870	1796	1900	1811
Adj Flow Rate, veh/h	39	323	38	65	286	60	30	14	57	49	8	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	3	0	2	4	4	8	2	7	0	6
Cap, veh/h	305	987	444	318	827	171	802	161	655	742	997	805
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1002	3497	1572	1037	2932	606	1340	307	1249	1276	1900	1534
Grp Volume(v), veh/h	39	323	38	65	172	174	30	0	71	49	8	36
Grp Sat Flow(s),veh/h/ln	1002	1749	1572	1037	1777	1761	1340	0	1556	1276	1900	1534
Q Serve(g_s), s	2.3	5.2	1.3	3.8	5.4	5.6	0.8	0.0	1.6	1.4	0.1	0.8
Cycle Q Clear(g_c), s	7.9	5.2	1.3	8.9	5.4	5.6	0.9	0.0	1.6	3.0	0.1	0.8
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	305	987	444	318	501	497	802	0	816	742	997	805
V/C Ratio(X)	0.13	0.33	0.09	0.20	0.34	0.35	0.04	0.00	0.09	0.07	0.01	0.04
Avail Cap(c_a), veh/h	504	1682	756	524	855	847	802	0	816	742	997	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	20.1	18.7	23.7	20.2	20.3	8.3	0.0	8.4	9.1	8.0	8.2
Incr Delay (d2), s/veh	0.2	0.2	0.1	0.3	0.4	0.4	0.1	0.0	0.2	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.3	0.5	1.0	2.4	2.5	0.3	0.0	0.6	0.5	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	20.3	18.8	24.0	20.6	20.7	8.3	0.0	8.6	9.3	8.1	8.3
LnGrp LOS	C	C	B	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		400			411			101			93	
Approach Delay, s/veh		20.5			21.2			8.5			8.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.9		44.0		26.9		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		9.9		5.0		10.9		3.6				
Green Ext Time (p_c), s		5.7		0.5		5.6		1.2				

### Intersection Summary

HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
10: Talbot St & George Wright Blvd

12-07-2023

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	↶
Traffic Vol, veh/h	0	0	0	45	0	12	0	227	15	4	218	0
Future Vol, veh/h	0	0	0	45	0	12	0	227	15	4	218	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	15	-	-	30	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	49	0	13	0	247	16	4	237	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	507	508	237	500	500	255	237	0	0	263	0	0
Stage 1	245	245	-	255	255	-	-	-	-	-	-	-
Stage 2	262	263	-	245	245	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	476	468	802	481	473	784	1330	-	-	1301	-	-
Stage 1	759	703	-	749	696	-	-	-	-	-	-	-
Stage 2	743	691	-	759	703	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	467	467	802	480	472	784	1330	-	-	1301	-	-
Mov Cap-2 Maneuver	467	467	-	480	472	-	-	-	-	-	-	-
Stage 1	759	701	-	749	696	-	-	-	-	-	-	-
Stage 2	731	691	-	757	701	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1330	-	-	-	-	480	784	1301	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.102	0.017	0.003	-	-
HCM Control Delay (s)	0	-	-	0	0	13.3	9.7	7.8	-	-
HCM Lane LOS	A	-	-	A	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.3	0.1	0	-	-

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	391	83	228	392	95	94	111	238	94	96	67
Future Volume (veh/h)	65	391	83	228	392	95	94	111	238	94	96	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1885	1870	1900	1885	1826	1885	1856	1841	1870
Adj Flow Rate, veh/h	71	425	0	248	426	0	102	121	259	102	104	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	1	2	0	1	5	1	3	4	2
Cap, veh/h	408	587		418	883		274	298	591	323	372	261
Arrive On Green	0.31	0.31	0.00	0.11	0.47	0.00	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	971	1870	1585	1795	1870	0	536	805	1598	995	1007	707
Grp Volume(v), veh/h	71	425	0	248	426	0	223	0	259	102	0	177
Grp Sat Flow(s),veh/h/ln	971	1870	1585	1795	1870	0	1341	0	1598	995	0	1714
Q Serve(g_s), s	3.8	14.0	0.0	6.0	10.8	0.0	5.3	0.0	8.5	6.2	0.0	5.0
Cycle Q Clear(g_c), s	3.8	14.0	0.0	6.0	10.8	0.0	10.4	0.0	8.5	16.5	0.0	5.0
Prop In Lane	1.00		1.00	1.00		0.00	0.46		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	408	587		418	883		572	0	591	323	0	634
V/C Ratio(X)	0.17	0.72		0.59	0.48		0.39	0.00	0.44	0.32	0.00	0.28
Avail Cap(c_a), veh/h	485	735		419	1031		572	0	591	323	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	21.2	0.0	14.3	12.5	0.0	17.2	0.0	16.5	23.5	0.0	15.4
Incr Delay (d2), s/veh	0.3	3.3	0.0	1.6	0.6	0.0	2.0	0.0	2.4	2.5	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.2	0.0	2.8	5.1	0.0	3.4	0.0	3.8	1.8	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	24.4	0.0	15.9	13.1	0.0	19.2	0.0	18.8	26.1	0.0	16.5
LnGrp LOS	B	C		B	B		B	A	B	C	A	B
Approach Vol, veh/h		496			674			482				279
Approach Delay, s/veh		23.5			14.2			19.0				20.0
Approach LOS		C			B			B				B
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	27.5		31.0		38.5		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	8.0	16.0		18.5		12.8		12.4				
Green Ext Time (p_c), s	0.0	5.6		1.7		8.9		4.0				

### Intersection Summary

HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	358	74	98	340	118	60	18	107	118	16	78
Future Volume (veh/h)	72	358	74	98	340	118	60	18	107	118	16	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1856	1885	1870	1856	1870	1900	1870	1870	1900	1856
Adj Flow Rate, veh/h	78	389	80	107	370	128	65	20	116	128	17	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	3	1	2	3	2	0	2	2	0	3
Cap, veh/h	278	1133	499	315	828	282	732	120	697	661	946	701
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	891	3554	1565	929	2597	886	1288	241	1400	1249	1900	1409
Grp Volume(v), veh/h	78	389	80	107	251	247	65	0	136	128	17	85
Grp Sat Flow(s),veh/h/ln	891	1777	1565	929	1777	1706	1288	0	1641	1249	1900	1409
Q Serve(g_s), s	5.7	6.3	2.7	7.4	8.4	8.6	2.0	0.0	3.4	4.7	0.3	2.4
Cycle Q Clear(g_c), s	14.3	6.3	2.7	13.7	8.4	8.6	2.4	0.0	3.4	8.1	0.3	2.4
Prop In Lane	1.00		1.00	1.00		0.52	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	278	1133	499	315	567	544	732	0	817	661	946	701
V/C Ratio(X)	0.28	0.34	0.16	0.34	0.44	0.45	0.09	0.00	0.17	0.19	0.02	0.12
Avail Cap(c_a), veh/h	400	1621	714	443	811	778	732	0	817	661	946	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	19.5	18.3	24.7	20.2	20.3	10.1	0.0	10.3	12.5	9.5	10.0
Incr Delay (d2), s/veh	0.5	0.2	0.1	0.6	0.5	0.6	0.2	0.0	0.4	0.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.8	1.1	1.8	3.8	3.7	0.7	0.0	1.4	1.5	0.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	19.6	18.4	25.3	20.7	20.9	10.3	0.0	10.7	13.1	9.5	10.4
LnGrp LOS	C	B	B	C	C	C	B	A	B	B	A	B
Approach Vol, veh/h		547			605			201			230	
Approach Delay, s/veh		20.4			21.6			10.6			11.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.7		44.0		30.7		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		16.3		10.1		15.7		5.4				
Green Ext Time (p_c), s		6.3		1.5		7.5		2.6				

### Intersection Summary

HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
10: Talbot St & George Wright Blvd

12-07-2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	↶
Traffic Vol, veh/h	0	0	0	29	0	8	0	225	46	12	228	0
Future Vol, veh/h	0	0	0	29	0	8	0	225	46	12	228	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	15	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	32	0	9	0	245	50	13	248	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	549	569	248	544	544	270	248	0	0	295	0	0
Stage 1	274	274	-	270	270	-	-	-	-	-	-	-
Stage 2	275	295	-	274	274	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	446	432	791	450	446	769	1318	-	-	1266	-	-
Stage 1	732	683	-	736	686	-	-	-	-	-	-	-
Stage 2	731	669	-	732	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	438	428	791	446	442	769	1318	-	-	1266	-	-
Mov Cap-2 Maneuver	438	428	-	446	442	-	-	-	-	-	-	-
Stage 1	732	676	-	736	686	-	-	-	-	-	-	-
Stage 2	723	669	-	724	676	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	12.8	0	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1318	-	-	-	-	446	769	1266	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.071	0.011	0.01	-	-
HCM Control Delay (s)	0	-	-	0	0	13.7	9.7	7.9	-	-
HCM Lane LOS	A	-	-	A	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.2	0	0	-	-

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	273	27	115	290	110	48	83	160	113	74	82
Future Volume (veh/h)	55	273	27	115	290	110	48	83	160	113	74	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1618	1826	1781	1796	1856	1870	1900	1722	1870	1796	1722	1811
Adj Flow Rate, veh/h	60	297	0	125	315	0	52	90	174	123	80	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	19	5	8	7	3	2	0	12	2	7	12	6
Cap, veh/h	388	555		447	825		240	377	615	440	289	322
Arrive On Green	0.30	0.30	0.00	0.10	0.44	0.00	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	919	1826	1510	1711	1856	0	427	970	1581	1070	744	827
Grp Volume(v), veh/h	60	297	0	125	315	0	142	0	174	123	0	169
Grp Sat Flow(s),veh/h/ln	919	1826	1510	1711	1856	0	1397	0	1581	1070	0	1571
Q Serve(g_s), s	3.2	8.9	0.0	3.0	7.5	0.0	0.4	0.0	5.0	5.9	0.0	4.9
Cycle Q Clear(g_c), s	3.2	8.9	0.0	3.0	7.5	0.0	5.2	0.0	5.0	11.2	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.00	0.37		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	388	555		447	825		618	0	615	440	0	611
V/C Ratio(X)	0.15	0.54		0.28	0.38		0.23	0.00	0.28	0.28	0.00	0.28
Avail Cap(c_a), veh/h	489	755		491	1076		618	0	615	440	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	19.1	0.0	12.6	12.3	0.0	13.5	0.0	13.9	17.8	0.0	13.8
Incr Delay (d2), s/veh	0.3	1.1	0.0	0.1	0.4	0.0	0.9	0.0	1.2	1.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.3	0.0	1.3	3.5	0.0	1.7	0.0	2.2	1.8	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	20.3	0.0	12.8	12.7	0.0	14.4	0.0	15.0	19.4	0.0	14.9
LnGrp LOS	B	C		B	B		B	A	B	B	A	B
Approach Vol, veh/h		357			440			316			292	
Approach Delay, s/veh		19.8			12.7			14.7			16.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.3	25.8		31.0		35.1		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	5.0	10.9		13.2		9.5		7.2				
Green Ext Time (p_c), s	0.1	5.2		2.5		6.7		2.9				

### Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	308	36	62	272	55	29	13	54	45	7	33
Future Volume (veh/h)	36	308	36	62	272	55	29	13	54	45	7	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1856	1900	1870	1841	1841	1781	1870	1796	1900	1811
Adj Flow Rate, veh/h	39	335	39	67	296	60	32	14	59	49	8	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	3	0	2	4	4	8	2	7	0	6
Cap, veh/h	301	987	444	313	832	166	802	156	659	740	997	805
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	993	3497	1572	1024	2951	590	1340	298	1256	1274	1900	1534
Grp Volume(v), veh/h	39	335	39	67	177	179	32	0	73	49	8	36
Grp Sat Flow(s),veh/h/ln	993	1749	1572	1024	1777	1764	1340	0	1554	1274	1900	1534
Q Serve(g_s), s	2.3	5.4	1.3	3.9	5.6	5.8	0.8	0.0	1.7	1.4	0.1	0.8
Cycle Q Clear(g_c), s	8.1	5.4	1.3	9.3	5.6	5.8	1.0	0.0	1.7	3.1	0.1	0.8
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	301	987	444	313	501	498	802	0	816	740	997	805
V/C Ratio(X)	0.13	0.34	0.09	0.21	0.35	0.36	0.04	0.00	0.09	0.07	0.01	0.04
Avail Cap(c_a), veh/h	498	1682	756	516	855	848	802	0	816	740	997	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	20.2	18.7	23.9	20.3	20.3	8.3	0.0	8.4	9.2	8.0	8.2
Incr Delay (d2), s/veh	0.2	0.2	0.1	0.3	0.4	0.4	0.1	0.0	0.2	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	0.5	1.0	2.5	2.6	0.3	0.0	0.6	0.5	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	20.4	18.8	24.2	20.7	20.8	8.4	0.0	8.6	9.3	8.1	8.3
LnGrp LOS	C	C	B	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		413			423			105			93	
Approach Delay, s/veh		20.6			21.3			8.5			8.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.9		44.0		26.9		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		10.1		5.1		11.3		3.7				
Green Ext Time (p_c), s		5.8		0.5		5.8		1.2				

### Intersection Summary

HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↵		↵	↵	↵
Traffic Vol, veh/h	0	0	0	45	0	12	0	232	15	4	224	0
Future Vol, veh/h	0	0	0	45	0	12	0	232	15	4	224	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	15	-	-	30	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	49	0	13	0	252	16	4	243	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	518	519	243	511	511	260	243	0	0	268	0	0
Stage 1	251	251	-	260	260	-	-	-	-	-	-	-
Stage 2	267	268	-	251	251	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	468	461	796	473	466	779	1323	-	-	1296	-	-
Stage 1	753	699	-	745	693	-	-	-	-	-	-	-
Stage 2	738	687	-	753	699	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	459	460	796	472	465	779	1323	-	-	1296	-	-
Mov Cap-2 Maneuver	459	460	-	472	465	-	-	-	-	-	-	-
Stage 1	753	697	-	745	693	-	-	-	-	-	-	-
Stage 2	726	687	-	751	697	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1323	-	-	-	-	472	779	1296	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.104	0.017	0.003	-	-
HCM Control Delay (s)	0	-	-	0	0	13.5	9.7	7.8	-	-
HCM Lane LOS	A	-	-	A	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.3	0.1	0	-	-

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	406	87	237	407	98	97	114	247	97	99	69
Future Volume (veh/h)	67	406	87	237	407	98	97	114	247	97	99	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1885	1870	1900	1885	1826	1885	1856	1841	1870
Adj Flow Rate, veh/h	73	441	0	258	442	0	105	124	268	105	108	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	1	2	0	1	5	1	3	4	2
Cap, veh/h	404	598		412	891		269	291	586	308	371	258
Arrive On Green	0.32	0.32	0.00	0.11	0.48	0.00	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	957	1870	1585	1795	1870	0	529	793	1598	984	1012	703
Grp Volume(v), veh/h	73	441	0	258	442	0	229	0	268	105	0	183
Grp Sat Flow(s),veh/h/ln	957	1870	1585	1795	1870	0	1322	0	1598	984	0	1714
Q Serve(g_s), s	4.0	14.7	0.0	6.3	11.4	0.0	5.8	0.0	8.9	6.6	0.0	5.3
Cycle Q Clear(g_c), s	4.3	14.7	0.0	6.3	11.4	0.0	11.1	0.0	8.9	17.7	0.0	5.3
Prop In Lane	1.00		1.00	1.00		0.00	0.46		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	404	598		412	891		559	0	586	308	0	628
V/C Ratio(X)	0.18	0.74		0.63	0.50		0.41	0.00	0.46	0.34	0.00	0.29
Avail Cap(c_a), veh/h	470	728		412	1022		559	0	586	308	0	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	21.2	0.0	14.6	12.6	0.0	17.8	0.0	16.9	24.6	0.0	15.7
Incr Delay (d2), s/veh	0.3	3.7	0.0	2.3	0.6	0.0	2.2	0.0	2.6	3.0	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.6	0.0	3.1	5.4	0.0	3.6	0.0	4.0	1.9	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	25.0	0.0	16.8	13.2	0.0	20.0	0.0	19.5	27.6	0.0	16.9
LnGrp LOS	B	C		B	B		B	A	B	C	A	B
Approach Vol, veh/h		514			700			497			288	
Approach Delay, s/veh		24.0			14.5			19.7			20.8	
Approach LOS		C			B			B			C	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	28.1		31.0		39.1		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	8.3	16.7		19.7		13.4		13.1				
Green Ext Time (p_c), s	0.0	5.5		1.5		9.2		4.0				

### Intersection Summary

HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary  
 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	371	77	102	352	118	62	18	111	118	16	78
Future Volume (veh/h)	72	371	77	102	352	118	62	18	111	118	16	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1870	1856	1885	1870	1856	1870	1900	1870	1870	1900	1856
Adj Flow Rate, veh/h	78	403	84	111	383	128	67	20	121	128	17	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	3	1	2	3	2	0	2	2	0	3
Cap, veh/h	279	1157	510	314	854	282	724	115	694	649	937	695
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	880	3554	1565	914	2622	865	1288	233	1407	1243	1900	1409
Grp Volume(v), veh/h	78	403	84	111	258	253	67	0	141	128	17	85
Grp Sat Flow(s),veh/h/ln	880	1777	1565	914	1777	1710	1288	0	1640	1243	1900	1409
Q Serve(g_s), s	5.8	6.5	2.9	7.9	8.6	8.8	2.1	0.0	3.6	4.8	0.3	2.5
Cycle Q Clear(g_c), s	14.7	6.5	2.9	14.4	8.6	8.8	2.5	0.0	3.6	8.4	0.3	2.5
Prop In Lane	1.00		1.00	1.00		0.51	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	279	1157	510	314	578	557	724	0	808	649	937	695
V/C Ratio(X)	0.28	0.35	0.16	0.35	0.45	0.45	0.09	0.00	0.17	0.20	0.02	0.12
Avail Cap(c_a), veh/h	390	1606	707	430	803	773	724	0	808	649	937	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	19.4	18.1	24.9	20.1	20.1	10.4	0.0	10.6	12.9	9.8	10.3
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.7	0.5	0.6	0.3	0.0	0.5	0.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.9	1.1	1.9	3.9	3.8	0.7	0.0	1.5	1.6	0.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	19.5	18.3	25.5	20.6	20.7	10.7	0.0	11.1	13.6	9.8	10.7
LnGrp LOS	C	B	B	C	C	C	B	A	B	B	A	B
Approach Vol, veh/h	565			622			208			230		
Approach Delay, s/veh	20.3			21.5			11.0			12.3		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	31.5		44.0		31.5		44.0					
Change Period (Y+Rc), s	* 6.9		* 6.8		* 6.9		* 6.8					
Max Green Setting (Gmax), s	* 34		* 37		* 34		* 37					
Max Q Clear Time (g_c+I1), s	16.7		10.4		16.4		5.6					
Green Ext Time (p_c), s	6.5		1.5		7.6		2.7					

Intersection Summary

HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
10: Talbot St & George Wright Blvd

12-07-2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Vol, veh/h	0	0	0	29	0	8	0	233	46	12	236	0
Future Vol, veh/h	0	0	0	29	0	8	0	233	46	12	236	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	15	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	32	0	9	0	253	50	13	257	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	566	586	257	561	561	278	257	0	0	303	0	0
Stage 1	283	283	-	278	278	-	-	-	-	-	-	-
Stage 2	283	303	-	283	283	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	435	422	782	438	436	761	1308	-	-	1258	-	-
Stage 1	724	677	-	728	680	-	-	-	-	-	-	-
Stage 2	724	664	-	724	677	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	427	418	782	434	432	761	1308	-	-	1258	-	-
Mov Cap-2 Maneuver	427	418	-	434	432	-	-	-	-	-	-	-
Stage 1	724	670	-	728	680	-	-	-	-	-	-	-
Stage 2	716	664	-	717	670	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	13	0	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1308	-	-	-	-	434	761	1258	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.073	0.011	0.01	-	-
HCM Control Delay (s)	0	-	-	0	0	13.9	9.8	7.9	-	-
HCM Lane LOS	A	-	-	A	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.2	0	0	-	-

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	312	42	110	295	123	52	87	154	159	89	93
Future Volume (veh/h)	58	312	42	110	295	123	52	87	154	159	89	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1618	1826	1781	1796	1856	1870	1900	1722	1870	1796	1722	1811
Adj Flow Rate, veh/h	63	339	0	120	321	0	57	95	167	173	97	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	19	5	8	7	3	2	0	12	2	7	12	6
Cap, veh/h	387	555		416	824		235	353	616	416	300	313
Arrive On Green	0.30	0.30	0.00	0.09	0.44	0.00	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	914	1826	1510	1711	1856	0	411	907	1581	1072	772	803
Grp Volume(v), veh/h	63	339	0	120	321	0	152	0	167	173	0	198
Grp Sat Flow(s),veh/h/ln	914	1826	1510	1711	1856	0	1318	0	1581	1072	0	1575
Q Serve(g_s), s	3.4	10.5	0.0	2.8	7.7	0.0	1.0	0.0	4.8	9.1	0.0	5.8
Cycle Q Clear(g_c), s	3.4	10.5	0.0	2.8	7.7	0.0	6.8	0.0	4.8	15.9	0.0	5.8
Prop In Lane	1.00		1.00	1.00		0.00	0.37		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	387	555		416	824		588	0	616	416	0	613
V/C Ratio(X)	0.16	0.61		0.29	0.39		0.26	0.00	0.27	0.42	0.00	0.32
Avail Cap(c_a), veh/h	487	755		462	1077		588	0	616	416	0	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	19.6	0.0	12.9	12.3	0.0	13.8	0.0	13.8	20.1	0.0	14.1
Incr Delay (d2), s/veh	0.3	1.5	0.0	0.1	0.4	0.0	1.1	0.0	1.1	3.0	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.1	0.0	1.2	3.6	0.0	2.0	0.0	2.1	2.8	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	21.2	0.0	13.1	12.8	0.0	14.9	0.0	14.8	23.1	0.0	15.5
LnGrp LOS	B	C		B	B		B	A	B	C	A	B
Approach Vol, veh/h		402			441			319				371
Approach Delay, s/veh		20.6			12.8			14.9				19.0
Approach LOS		C			B			B				B
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.2	25.8		31.0		35.0		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	4.8	12.5		17.9		9.7		8.8				
Green Ext Time (p_c), s	0.1	5.5		2.3		6.8		2.9				

### Intersection Summary

HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	301	35	60	276	76	28	13	52	110	7	85
Future Volume (veh/h)	53	301	35	60	276	76	28	13	52	110	7	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1856	1900	1870	1841	1841	1781	1870	1796	1900	1811
Adj Flow Rate, veh/h	58	327	38	65	300	83	30	14	57	120	8	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	3	0	2	4	4	8	2	7	0	6
Cap, veh/h	288	987	444	316	779	212	767	161	655	742	997	805
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	969	3497	1572	1033	2761	751	1274	307	1249	1276	1900	1534
Grp Volume(v), veh/h	58	327	38	65	191	192	30	0	71	120	8	92
Grp Sat Flow(s),veh/h/ln	969	1749	1572	1033	1777	1735	1274	0	1556	1276	1900	1534
Q Serve(g_s), s	3.6	5.2	1.3	3.8	6.1	6.3	0.8	0.0	1.6	3.7	0.1	2.2
Cycle Q Clear(g_c), s	10.0	5.2	1.3	9.0	6.1	6.3	1.0	0.0	1.6	5.3	0.1	2.2
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	288	987	444	316	501	489	767	0	816	742	997	805
V/C Ratio(X)	0.20	0.33	0.09	0.21	0.38	0.39	0.04	0.00	0.09	0.16	0.01	0.11
Avail Cap(c_a), veh/h	481	1682	756	522	855	835	767	0	816	742	997	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	20.2	18.7	23.7	20.5	20.5	8.3	0.0	8.4	9.7	8.0	8.5
Incr Delay (d2), s/veh	0.3	0.2	0.1	0.3	0.5	0.5	0.1	0.0	0.2	0.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.3	0.5	1.0	2.8	2.8	0.3	0.0	0.6	1.2	0.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	20.4	18.8	24.0	21.0	21.1	8.4	0.0	8.6	10.2	8.1	8.8
LnGrp LOS	C	C	B	C	C	C	A	A	A	B	A	A
Approach Vol, veh/h		423			448			101			220	
Approach Delay, s/veh		20.8			21.4			8.5			9.5	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.9		44.0		26.9		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		12.0		7.3		11.0		3.6				
Green Ext Time (p_c), s		5.7		1.4		6.2		1.2				

### Intersection Summary

HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
10: Talbot St & George Wright Blvd

12-07-2023

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Vol, veh/h	22	0	78	45	0	12	25	227	15	4	218	7
Future Vol, veh/h	22	0	78	45	0	12	25	227	15	4	218	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	15	-	-	30	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	85	49	0	13	27	247	16	4	237	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	561	562	237	601	562	255	245	0	0	263	0	0
Stage 1	245	245	-	309	309	-	-	-	-	-	-	-
Stage 2	316	317	-	292	253	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	438	436	802	412	436	784	1321	-	-	1301	-	-
Stage 1	759	703	-	701	660	-	-	-	-	-	-	-
Stage 2	695	654	-	716	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	423	426	802	362	426	784	1321	-	-	1301	-	-
Mov Cap-2 Maneuver	423	426	-	362	426	-	-	-	-	-	-	-
Stage 1	744	701	-	687	647	-	-	-	-	-	-	-
Stage 2	669	641	-	638	696	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.9		15.1		0.7		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	423	802	362	784	1301	-	-
HCM Lane V/C Ratio	0.021	-	-	0.057	0.106	0.135	0.017	0.003	-	-
HCM Control Delay (s)	7.8	-	-	14	10	16.5	9.7	7.8	-	-
HCM Lane LOS	A	-	-	B	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0.5	0.1	0	-	-

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	420	97	228	439	142	115	131	238	124	109	73
Future Volume (veh/h)	76	420	97	228	439	142	115	131	238	124	109	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1885	1870	1900	1885	1826	1885	1856	1841	1870
Adj Flow Rate, veh/h	83	457	0	248	477	0	125	142	259	135	118	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	1	2	0	1	5	1	3	4	2
Cap, veh/h	383	608		405	899		264	274	581	265	374	250
Arrive On Green	0.33	0.33	0.00	0.11	0.48	0.00	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	927	1870	1585	1795	1870	0	520	752	1598	976	1028	688
Grp Volume(v), veh/h	83	457	0	248	477	0	267	0	259	135	0	197
Grp Sat Flow(s),veh/h/ln	927	1870	1585	1795	1870	0	1273	0	1598	976	0	1717
Q Serve(g_s), s	4.8	15.4	0.0	6.0	12.6	0.0	8.0	0.0	8.7	9.4	0.0	5.8
Cycle Q Clear(g_c), s	6.4	15.4	0.0	6.0	12.6	0.0	13.9	0.0	8.7	23.3	0.0	5.8
Prop In Lane	1.00		1.00	1.00		0.00	0.47		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	383	608		405	899		538	0	581	265	0	624
V/C Ratio(X)	0.22	0.75		0.61	0.53		0.50	0.00	0.45	0.51	0.00	0.32
Avail Cap(c_a), veh/h	439	723		406	1014		538	0	581	265	0	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	21.3	0.0	14.6	12.8	0.0	19.2	0.0	17.1	28.4	0.0	16.2
Incr Delay (d2), s/veh	0.4	4.2	0.0	2.0	0.7	0.0	3.3	0.0	2.5	6.8	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.0	0.0	2.9	6.0	0.0	4.5	0.0	3.9	2.9	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.3	25.5	0.0	16.6	13.5	0.0	22.5	0.0	19.5	35.3	0.0	17.5
LnGrp LOS	B	C		B	B		C	A	B	D	A	B
Approach Vol, veh/h		540			725			526				332
Approach Delay, s/veh		24.6			14.5			21.0				24.7
Approach LOS		C			B			C				C
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	28.7		31.0		39.7		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	8.0	17.4		25.3		14.6		15.9				
Green Ext Time (p_c), s	0.0	5.4		0.1		9.7		3.7				

### Intersection Summary

HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	368	74	98	346	186	60	18	107	161	16	104
Future Volume (veh/h)	114	368	74	98	346	186	60	18	107	161	16	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1856	1885	1870	1856	1870	1900	1870	1870	1900	1856
Adj Flow Rate, veh/h	124	400	80	107	376	202	65	20	116	175	17	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	3	1	2	3	2	0	2	2	0	3
Cap, veh/h	279	1277	563	347	806	426	672	113	655	615	889	660
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	828	3554	1566	920	2242	1186	1255	241	1399	1249	1900	1409
Grp Volume(v), veh/h	124	400	80	107	297	281	65	0	136	175	17	113
Grp Sat Flow(s),veh/h/ln	828	1777	1566	920	1777	1651	1255	0	1641	1249	1900	1409
Q Serve(g_s), s	10.8	6.5	2.7	7.5	10.2	10.4	2.3	0.0	3.8	7.5	0.4	3.7
Cycle Q Clear(g_c), s	21.3	6.5	2.7	14.0	10.2	10.4	2.7	0.0	3.8	11.3	0.4	3.7
Prop In Lane	1.00		1.00	1.00		0.72	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	279	1277	563	347	639	593	672	0	768	615	889	660
V/C Ratio(X)	0.44	0.31	0.14	0.31	0.46	0.47	0.10	0.00	0.18	0.28	0.02	0.17
Avail Cap(c_a), veh/h	337	1525	672	411	762	708	672	0	768	615	889	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	18.4	17.2	23.4	19.6	19.6	12.1	0.0	12.3	15.5	11.3	12.2
Incr Delay (d2), s/veh	1.1	0.1	0.1	0.5	0.5	0.6	0.3	0.0	0.5	1.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.9	1.1	1.8	4.6	4.4	0.8	0.0	1.6	2.5	0.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	18.5	17.3	23.9	20.1	20.2	12.4	0.0	12.8	16.7	11.4	12.8
LnGrp LOS	C	B	B	C	C	C	B	A	B	B	B	B
Approach Vol, veh/h		604			685			201			305	
Approach Delay, s/veh		20.5			20.8			12.6			15.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.5		44.0		35.5		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		23.3		13.3		16.0		5.8				
Green Ext Time (p_c), s		5.0		1.9		8.6		2.6				

### Intersection Summary

HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
10: Talbot St & George Wright Blvd

12-07-2023

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	↶
Traffic Vol, veh/h	13	0	49	29	0	8	78	225	46	12	228	21
Future Vol, veh/h	13	0	49	29	0	8	78	225	46	12	228	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	15	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	53	32	0	9	85	245	50	13	248	23

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	719	739	248	752	737	270	271	0	0	295	0	0
Stage 1	274	274	-	440	440	-	-	-	-	-	-	-
Stage 2	445	465	-	312	297	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	344	345	791	327	346	769	1292	-	-	1266	-	-
Stage 1	732	683	-	596	578	-	-	-	-	-	-	-
Stage 2	592	563	-	699	668	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	321	319	791	287	320	769	1292	-	-	1266	-	-
Mov Cap-2 Maneuver	321	319	-	287	320	-	-	-	-	-	-	-
Stage 1	684	676	-	557	540	-	-	-	-	-	-	-
Stage 2	547	526	-	645	661	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.3		17.1		1.8		0.4	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1292	-	-	321	791	287	769	1266	-	-
HCM Lane V/C Ratio	0.066	-	-	0.044	0.067	0.11	0.011	0.01	-	-
HCM Control Delay (s)	8	-	-	16.7	9.9	19.1	9.7	7.9	-	-
HCM Lane LOS	A	-	-	C	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.2	0.4	0	0	-	-

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	322	43	115	306	125	53	89	160	162	90	95
Future Volume (veh/h)	59	322	43	115	306	125	53	89	160	162	90	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1618	1826	1781	1796	1856	1870	1900	1722	1870	1796	1722	1811
Adj Flow Rate, veh/h	64	350	0	125	333	0	58	97	174	176	98	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	19	5	8	7	3	2	0	12	2	7	12	6
Cap, veh/h	384	555		409	825		233	352	615	409	299	314
Arrive On Green	0.30	0.30	0.00	0.10	0.44	0.00	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	904	1826	1510	1711	1856	0	407	904	1581	1063	768	807
Grp Volume(v), veh/h	64	350	0	125	333	0	155	0	174	176	0	201
Grp Sat Flow(s),veh/h/ln	904	1826	1510	1711	1856	0	1311	0	1581	1063	0	1574
Q Serve(g_s), s	3.5	10.9	0.0	3.0	8.0	0.0	1.1	0.0	5.0	9.4	0.0	5.9
Cycle Q Clear(g_c), s	3.5	10.9	0.0	3.0	8.0	0.0	7.0	0.0	5.0	16.5	0.0	5.9
Prop In Lane	1.00		1.00	1.00		0.00	0.37		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	384	555		409	825		585	0	615	409	0	612
V/C Ratio(X)	0.17	0.63		0.31	0.40		0.26	0.00	0.28	0.43	0.00	0.33
Avail Cap(c_a), veh/h	483	754		453	1076		585	0	615	409	0	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	19.8	0.0	13.0	12.4	0.0	13.9	0.0	13.9	20.4	0.0	14.1
Incr Delay (d2), s/veh	0.3	1.7	0.0	0.2	0.5	0.0	1.1	0.0	1.2	3.3	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.3	0.0	1.3	3.8	0.0	2.0	0.0	2.2	2.9	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	21.5	0.0	13.2	12.9	0.0	15.0	0.0	15.0	23.7	0.0	15.6
LnGrp LOS	B	C		B	B		B	A	B	C	A	B
Approach Vol, veh/h		414			458			329			377	
Approach Delay, s/veh		20.9			13.0			15.0			19.4	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.3	25.8		31.0		35.1		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	5.0	12.9		18.5		10.0		9.0				
Green Ext Time (p_c), s	0.1	5.6		2.2		7.1		3.0				

### Intersection Summary

HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	312	36	62	285	76	29	13	54	110	7	85
Future Volume (veh/h)	53	312	36	62	285	76	29	13	54	110	7	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1856	1900	1870	1841	1841	1781	1870	1796	1900	1811
Adj Flow Rate, veh/h	58	339	39	67	310	83	32	14	59	120	8	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	4	3	0	2	4	4	8	2	7	0	6
Cap, veh/h	284	987	444	311	785	207	767	156	659	740	997	805
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	960	3497	1572	1021	2782	733	1274	298	1256	1274	1900	1534
Grp Volume(v), veh/h	58	339	39	67	196	197	32	0	73	120	8	92
Grp Sat Flow(s),veh/h/ln	960	1749	1572	1021	1777	1738	1274	0	1554	1274	1900	1534
Q Serve(g_s), s	3.7	5.5	1.3	4.0	6.3	6.5	0.9	0.0	1.7	3.7	0.1	2.2
Cycle Q Clear(g_c), s	10.2	5.5	1.3	9.4	6.3	6.5	1.0	0.0	1.7	5.3	0.1	2.2
Prop In Lane	1.00		1.00	1.00		0.42	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	284	987	444	311	501	490	767	0	816	740	997	805
V/C Ratio(X)	0.20	0.34	0.09	0.22	0.39	0.40	0.04	0.00	0.09	0.16	0.01	0.11
Avail Cap(c_a), veh/h	475	1682	756	514	855	836	767	0	816	740	997	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	20.2	18.7	24.0	20.5	20.6	8.3	0.0	8.4	9.7	8.0	8.5
Incr Delay (d2), s/veh	0.4	0.2	0.1	0.3	0.5	0.5	0.1	0.0	0.2	0.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	0.5	1.0	2.8	2.9	0.3	0.0	0.6	1.2	0.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	20.4	18.8	24.3	21.0	21.1	8.4	0.0	8.6	10.2	8.1	8.8
LnGrp LOS	C	C	B	C	C	C	A	A	A	B	A	A
Approach Vol, veh/h		436			460			105			220	
Approach Delay, s/veh		20.9			21.6			8.5			9.5	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.9		44.0		26.9		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		12.2		7.3		11.4		3.7				
Green Ext Time (p_c), s		5.8		1.4		6.4		1.3				

### Intersection Summary

HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
10: Talbot St & George Wright Blvd

12-07-2023

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↵		↵	↵	↵
Traffic Vol, veh/h	22	0	78	45	0	12	25	232	15	4	224	7
Future Vol, veh/h	22	0	78	45	0	12	25	232	15	4	224	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	15	-	-	30	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	85	49	0	13	27	252	16	4	243	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	572	573	243	612	573	260	251	0	0	268	0	0
Stage 1	251	251	-	314	314	-	-	-	-	-	-	-
Stage 2	321	322	-	298	259	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	431	430	796	405	430	779	1314	-	-	1296	-	-
Stage 1	753	699	-	697	656	-	-	-	-	-	-	-
Stage 2	691	651	-	711	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	416	420	796	355	420	779	1314	-	-	1296	-	-
Mov Cap-2 Maneuver	416	420	-	355	420	-	-	-	-	-	-	-
Stage 1	737	697	-	682	642	-	-	-	-	-	-	-
Stage 2	665	637	-	633	692	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	11		15.3		0.7			0.1		
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1314	-	-	416	796	355	779	1296	-	-
HCM Lane V/C Ratio	0.021	-	-	0.057	0.107	0.138	0.017	0.003	-	-
HCM Control Delay (s)	7.8	-	-	14.2	10.1	16.8	9.7	7.8	-	-
HCM Lane LOS	A	-	-	B	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0.5	0.1	0	-	-

# HCM 6th Signalized Intersection Summary

## 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	435	100	237	454	145	118	135	247	127	112	75
Future Volume (veh/h)	77	435	100	237	454	145	118	135	247	127	112	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1870	1885	1870	1900	1885	1826	1885	1856	1841	1870
Adj Flow Rate, veh/h	84	473	0	258	493	0	128	147	268	138	122	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	1	2	0	1	5	1	3	4	2
Cap, veh/h	375	617		398	906		257	269	577	249	371	249
Arrive On Green	0.33	0.33	0.00	0.11	0.48	0.00	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	914	1870	1585	1795	1870	0	508	747	1598	964	1027	690
Grp Volume(v), veh/h	84	473	0	258	493	0	275	0	268	138	0	204
Grp Sat Flow(s),veh/h/ln	914	1870	1585	1795	1870	0	1255	0	1598	964	0	1717
Q Serve(g_s), s	5.0	16.1	0.0	6.3	13.1	0.0	8.6	0.0	9.2	10.1	0.0	6.1
Cycle Q Clear(g_c), s	7.2	16.1	0.0	6.3	13.1	0.0	14.8	0.0	9.2	24.8	0.0	6.1
Prop In Lane	1.00		1.00	1.00		0.00	0.47		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	375	617		398	906		527	0	577	249	0	620
V/C Ratio(X)	0.22	0.77		0.65	0.54		0.52	0.00	0.46	0.55	0.00	0.33
Avail Cap(c_a), veh/h	424	717		398	1006		527	0	577	249	0	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	21.4	0.0	14.9	12.8	0.0	19.9	0.0	17.5	29.8	0.0	16.5
Incr Delay (d2), s/veh	0.4	4.8	0.0	2.9	0.7	0.0	3.7	0.0	2.7	8.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.5	0.0	3.1	6.2	0.0	4.8	0.0	4.1	3.1	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.6	26.2	0.0	17.7	13.6	0.0	23.5	0.0	20.2	38.4	0.0	17.9
LnGrp LOS	B	C		B	B		C	A	C	D	A	B
Approach Vol, veh/h		557			751			543				342
Approach Delay, s/veh		25.2			15.0			21.9				26.2
Approach LOS		C			B			C				C
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	29.2		31.0		40.2		31.0				
Change Period (Y+Rc), s	3.0	* 5.7		* 5.3		* 5.7		* 5.3				
Max Green Setting (Gmax), s	8.0	* 27		* 26		* 38		* 26				
Max Q Clear Time (g_c+I1), s	8.3	18.1		26.8		15.1		16.8				
Green Ext Time (p_c), s	0.0	5.2		0.0		9.9		3.6				

### Intersection Summary

HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# HCM 6th Signalized Intersection Summary

## 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

12-07-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	381	77	102	359	186	62	18	111	161	16	104
Future Volume (veh/h)	114	381	77	102	359	186	62	18	111	161	16	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1856	1885	1870	1856	1870	1900	1870	1870	1900	1856
Adj Flow Rate, veh/h	124	414	84	111	390	202	67	20	121	175	17	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	3	1	2	3	2	0	2	2	0	3
Cap, veh/h	277	1290	568	343	825	421	669	108	655	606	885	656
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	817	3554	1566	905	2272	1161	1255	233	1407	1243	1900	1409
Grp Volume(v), veh/h	124	414	84	111	304	288	67	0	141	175	17	113
Grp Sat Flow(s),veh/h/ln	817	1777	1566	905	1777	1656	1255	0	1639	1243	1900	1409
Q Serve(g_s), s	11.0	6.7	2.9	8.1	10.5	10.7	2.4	0.0	4.0	7.7	0.4	3.7
Cycle Q Clear(g_c), s	21.8	6.7	2.9	14.8	10.5	10.7	2.8	0.0	4.0	11.7	0.4	3.7
Prop In Lane	1.00		1.00	1.00		0.70	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	277	1290	568	343	645	601	669	0	763	606	885	656
V/C Ratio(X)	0.45	0.32	0.15	0.32	0.47	0.48	0.10	0.00	0.18	0.29	0.02	0.17
Avail Cap(c_a), veh/h	329	1517	668	400	758	707	669	0	763	606	885	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	18.4	17.1	23.7	19.6	19.6	12.3	0.0	12.5	15.9	11.5	12.4
Incr Delay (d2), s/veh	1.1	0.1	0.1	0.5	0.5	0.6	0.3	0.0	0.5	1.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.0	1.1	1.9	4.7	4.5	0.8	0.0	1.7	2.5	0.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	18.5	17.2	24.2	20.1	20.2	12.6	0.0	13.0	17.1	11.6	13.0
LnGrp LOS	C	B	B	C	C	C	B	A	B	B	B	B
Approach Vol, veh/h		622			703			208			305	
Approach Delay, s/veh		20.4			20.8			12.9			15.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.9		44.0		35.9		44.0				
Change Period (Y+Rc), s		* 6.9		* 6.8		* 6.9		* 6.8				
Max Green Setting (Gmax), s		* 34		* 37		* 34		* 37				
Max Q Clear Time (g_c+I1), s		23.8		13.7		16.8		6.0				
Green Ext Time (p_c), s		5.0		1.9		8.5		2.7				

### Intersection Summary

HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
10: Talbot St & George Wright Blvd

12-07-2023

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Traffic Vol, veh/h	13	0	49	29	0	8	78	233	46	12	236	21
Future Vol, veh/h	13	0	49	29	0	8	78	233	46	12	236	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	15	-	-	40	-	-	15	-	15
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	53	32	0	9	85	253	50	13	257	23

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	736	756	257	769	754	278	280	0	0	303	0	0
Stage 1	283	283	-	448	448	-	-	-	-	-	-	-
Stage 2	453	473	-	321	306	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	335	337	782	318	338	761	1283	-	-	1258	-	-
Stage 1	724	677	-	590	573	-	-	-	-	-	-	-
Stage 2	586	558	-	691	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	312	312	782	279	313	761	1283	-	-	1258	-	-
Mov Cap-2 Maneuver	312	312	-	279	313	-	-	-	-	-	-	-
Stage 1	676	670	-	551	535	-	-	-	-	-	-	-
Stage 2	541	521	-	637	655	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.4		17.4		1.7		0.4	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1283	-	-	312	782	279	761	1258	-	-
HCM Lane V/C Ratio	0.066	-	-	0.045	0.068	0.113	0.011	0.01	-	-
HCM Control Delay (s)	8	-	-	17.1	9.9	19.5	9.8	7.9	-	-
HCM Lane LOS	A	-	-	C	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.2	0.4	0	0	-	-

Intersection: 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	L	TR
Maximum Queue (m)	54.8	93.2	44.9	31.3	66.1	47.4	28.4	44.0	58.1
Average Queue (m)	15.1	37.1	3.9	13.4	32.8	18.9	13.8	22.0	23.1
95th Queue (m)	37.7	70.4	24.6	24.5	54.9	35.3	23.8	39.2	44.1
Link Distance (m)	544.2				157.4	151.9			685.2
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	25.0	15.0		50.0			35.0	20.0	
Storage Blk Time (%)	2	30			1	2	0	15	8
Queuing Penalty (veh)	9	31			2	2	0	27	12

Intersection: 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	22.8	59.8	42.7	11.6	25.4	32.3	45.6	13.4	15.7	39.4	7.3	19.4
Average Queue (m)	9.4	28.5	5.5	3.0	10.2	17.4	23.3	3.3	4.0	15.2	0.6	8.0
95th Queue (m)	20.2	49.5	22.9	7.9	21.3	29.3	39.1	9.9	10.8	30.9	4.0	16.6
Link Distance (m)	167.1		167.1			212.1	212.1			124.1	108.9	108.9
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	130.0			60.0	140.0			20.0				20.0
Storage Blk Time (%)										0	0	
Queuing Penalty (veh)										0	0	

Intersection: 10: Talbot St & George Wright Blvd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	L	L
Maximum Queue (m)	8.6	13.7	15.4	9.2	9.2	3.5
Average Queue (m)	3.8	5.9	7.3	2.7	1.5	0.1
95th Queue (m)	9.7	11.0	14.8	9.4	6.9	1.8
Link Distance (m)	134.0		105.2			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	15.0	30.0		40.0	15.0	
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				

Network Summary

Network wide Queuing Penalty: 83

Intersection: 2: Lake St/Talbot St & Royalist Pkwy/Picton Main St

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	LT	R	L	TR
Maximum Queue (m)	54.6	132.1	45.0	79.8	132.9	86.3	61.4	46.6	51.6
Average Queue (m)	21.4	57.3	15.0	31.6	56.5	34.8	22.7	20.2	24.1
95th Queue (m)	48.2	103.6	48.0	63.8	105.4	65.1	45.0	38.6	43.2
Link Distance (m)		544.3			157.4	151.9			692.7
Upstream Blk Time (%)					0				
Queuing Penalty (veh)					0				
Storage Bay Dist (m)	25.0		15.0	50.0			35.0	20.0	
Storage Blk Time (%)	9	43	0	1	10	13	1	16	10
Queuing Penalty (veh)	49	76	1	4	23	33	4	29	13

Intersection: 6: No Frills entrance/George Wright Blvd & Royalist Pkwy

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	37.4	64.4	44.4	15.6	42.7	40.8	58.0	16.2	25.4	38.7	12.8	20.9
Average Queue (m)	18.9	34.1	9.5	4.3	20.3	22.2	32.3	6.0	8.9	19.1	2.4	8.9
95th Queue (m)	33.2	53.4	31.3	10.0	36.6	37.3	50.7	13.9	18.8	34.3	9.4	17.1
Link Distance (m)		167.1	167.1			212.1	212.1		124.1	108.9	108.9	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	130.0			60.0	140.0			20.0				20.0
Storage Blk Time (%)								0	1		0	0
Queuing Penalty (veh)								0	1		0	0

Intersection: 10: Talbot St & George Wright Blvd

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	L	L	R
Maximum Queue (m)	7.5	15.4	16.5	8.8	15.6	9.1	1.3
Average Queue (m)	2.5	5.8	5.5	1.7	4.4	0.8	0.0
95th Queue (m)	8.3	12.0	14.1	7.2	13.3	4.9	0.9
Link Distance (m)	63.2	63.2		85.8			
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			15.0		40.0	15.0	15.0
Storage Blk Time (%)			0			0	
Queuing Penalty (veh)			0			0	

Network Summary

Network wide Queuing Penalty: 234