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Tribal Partners Canada Inc.

TRANSPORTATION IMPACT STUDY

12892 Dixie Road, Town of Caledon
Proposed Industrial/Employment Development

February 2021

21211

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LEA Consulting Ltd.
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February 25, 2020 **Reference Number:** 21211

Tribal Partners Canada Inc.
201-2700 Steeles Avenue West
Vaughan, ON
L4K 3C8

Dear Tribal Partners Canada Inc.,

RE: Transportation Impact Study
Proposed Industrial/Employment Development
12892 Dixie Road (Lot 1 Caledon Lands), Town of Caledon

LEA Consulting Ltd. (LEA) is pleased to present the findings of our Transportation Impact Study (TIS) for the proposed industrial/employment development located at 12892 Dixie Road in the town of Caledon. This study has been prepared on behalf of Tribal Partners Canada Inc. in support of their Official Plan Amendment, Zoning By-law amendment, and Site Plan Approval applications. This report concludes that the traffic associated with the proposed development will have an acceptable impact on the surrounding road network.

Should you have any questions regarding this Transportation Impact Study, please do not hesitate to contact the undersigned at (905) 470-0015 x301 (schan@lea.ca).

Yours truly,

LEA CONSULTING LTD.

Sabrina Chan, M.Eng., P.Eng.
Transportation Engineer

Cally Yeung
Transportation Planner

Encl. Transportation Impact Study – 12892 Dixie Road, Town of Caledon, Proposed Industrial/Employment Development

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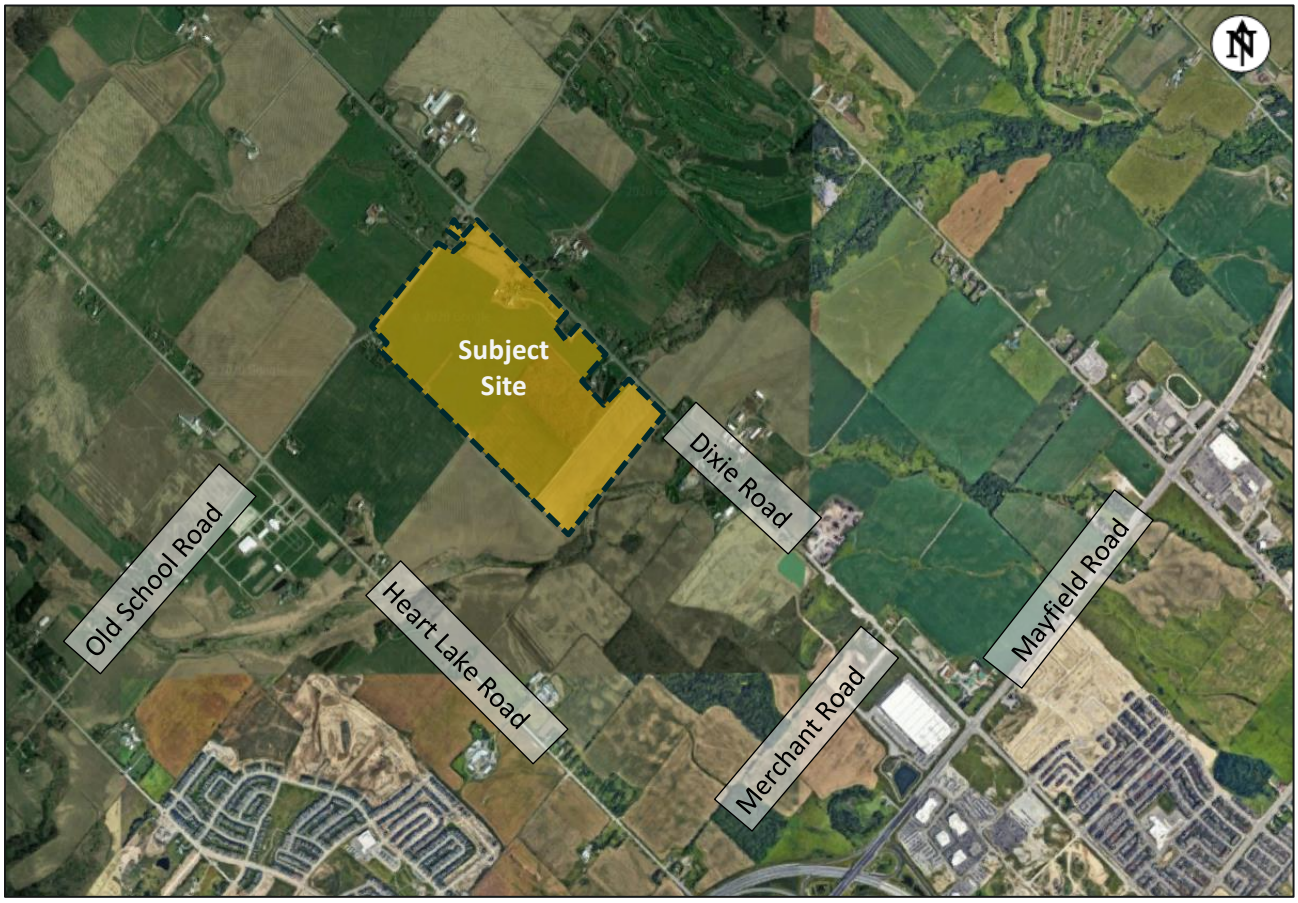
1 INTRODUCTION

LEA Consulting Ltd. (LEA) has been retained by Tribal Partners Canada Inc. to conduct a Transportation Impact Study (TIS) for a proposed industrial/employment development located at 12892 Dixie Road in the Town of Caledon (herein referred to as the "subject site"). The subject site is currently agricultural lands at the southwest quadrant of Dixie Road and Old School Road, as illustrated in **Figure 1-1**.

Figure 1-1: Subject Site Location



1.1 PROPOSED DEVELOPMENT

The development proposal will introduce four (4) warehouse/distribution buildings with a combined ground floor area (GFA) of approximately 247,243 m^2. A total of 1,857 surface parking spaces are proposed for the subject site. The proposed site statistics are presented in **Table 1-1,** and the proposed site plan is shown in **Figure 1-2**.

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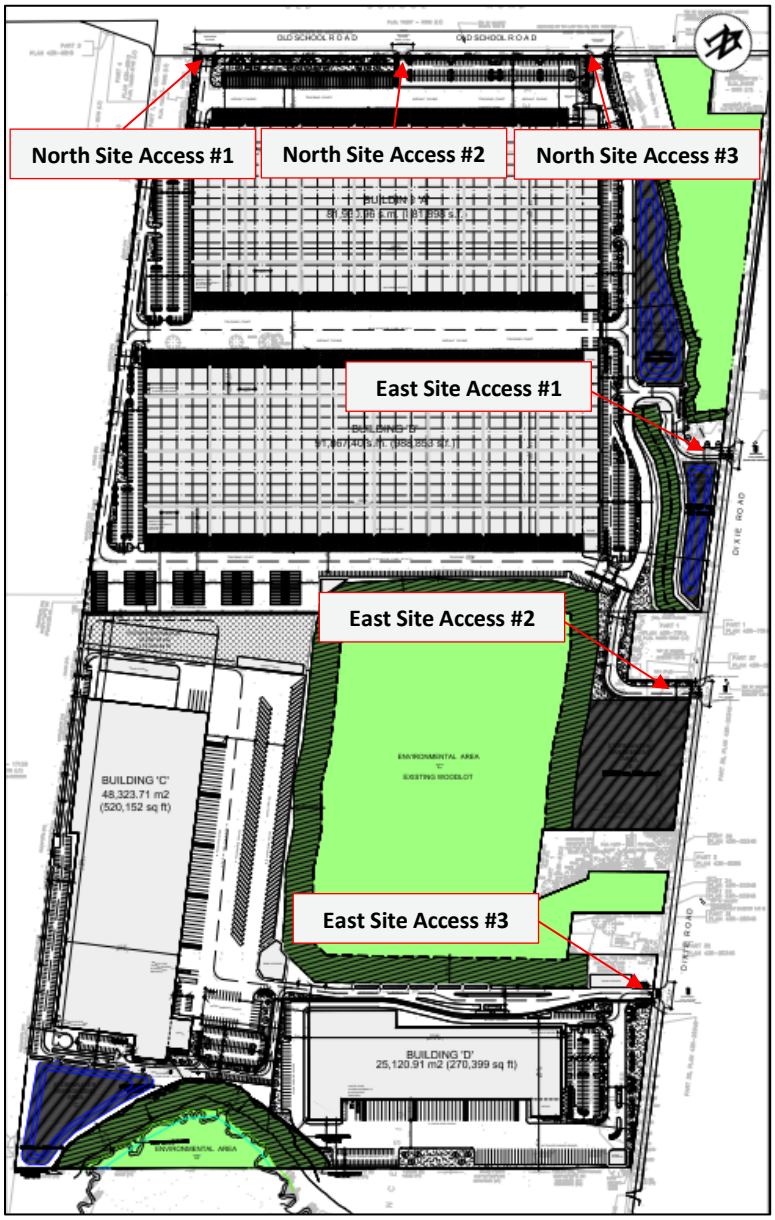
Table 1-1: Proposed Site Statistics

Land Use	Building	GFA (m^2)	GFA (ft^2)
Warehouse/ Distribution Centre	A	81,930	881,898
	B	91,867	988,853
	C	48,324	520,152
	D	25,121	270,399
Total		**247,243**	**2,661,302**

Figure 1-2: Proposed Site Plan



Source: Baldassarra Architects Inc. (February 24th, 2021)

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1.2 ACCESS ARRANGEMENT

The proposed development will be accessible via three (3) full movement accesses along Old School Road, as well as three (3) full-movement accesses along Dixie Road. All accesses along Dixie Road are proposed to be signalized. The northern portion of the site (Buildings A and B) will be accessible via Old School Road and Dixie Road; however, the southern portion (Buildings C and D) will only be accessible via one site access on Dixie Road due to environmental constraints.

The minimum spacing between intersections along Dixie Road are subject to the guidelines listed within Region of Peel's Road Characterization Study (May 2013). In the study, Dixie Road is characterized as a "Suburban Connector", where the minimum distance required between full intersections is 300m. The distances between the intersections of Dixie Road & Old School Road and Dixie Road & East Access #1, as well as Dixie Road & East Access #2 and Dixie Road & East Access #3 meet the Region's criterion, at approximately 425m and 305m, respectively. However, the distance between East Access #1 and East Access #2 is short of the requirement by 65m. Even so, given that the roadway is relatively flat with no horizontal or vertical obstructions, this spacing distance between the two (2) accesses is considered acceptable.

Table 1-2 and Table 1-3 below summarizes the design and usage of the proposed accesses along Dixie Road and Old School Road, respectively.

Table 1-2: Dixie Road Access Arrangement Summary

	East Access #1	East Access #2	East Access #3
Configuration	Full-moves (NBLT, SBTR, EBLR)	Full-moves (NBLT, SBTR, EBLR)	Full-moves (NBLT, SBTR, EBLR)
Traffic Control	Signalized	Signalized	Signalized
Vehicle Type Permitted	Vehicles Only	Vehicles & Exiting Trucks	Vehicles & Trucks
Building Access	Buildings A and B	Buildings A and B	Buildings C and D

Table 1-3: Old School Road Access Arrangement Summary

	North Access #1	North Access #2	North Access #3
Configuration	Full-moves (NBLR, EBTR, WBLT)	Full-moves (NBLR, EBTR, WBLT)	Full-moves (NBLR, EBTR, WBLT)
Traffic Control	Stop Controlled	Stop Controlled	Stop Controlled
Vehicle Type Permitted	Vehicles & Trucks	Vehicles Only	Vehicles & Trucks
Building Access	Buildings A and B	Buildings A	Buildings A and B

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2 EXISTING TRANSPORTATION CONDITIONS

This section will identify and assess the existing transportation conditions present in the study area, including the road, transit, cyclist, and pedestrian networks. The study area was determined based on the size of the development, its anticipated transportation impact, as well as through discussions with Town and Region staff. The study area will include the following intersections:

- Heart Lake Road & Old School Road (unsignalized);
- Dixie Road & Old School Road (signalized);
- Dixie Road & Merchant Road (future signalization as part of 12035 Dixie Road development application); and
- Dixie Road & Mayfield Road (signalized).

In addition, the following site accesses are proposed:

- North Site Access 1 & Old School Road (unsignalized);
- North Site Access 2 & Old School Road (unsignalized);
- North Site Access 3 & Old School Road (unsignalized);
- Dixie Road & East Site Access 1 (proposed signalization);
- Dixie Road & East Site Access 2 (proposed signalization); and
- Dixie Road & East Site Access 3 (proposed signalization).

2.1 ROAD NETWORK

The following section provides a description and classification of the roadways within the study area, with **Figure 2-1** illustrating the existing lane configuration.

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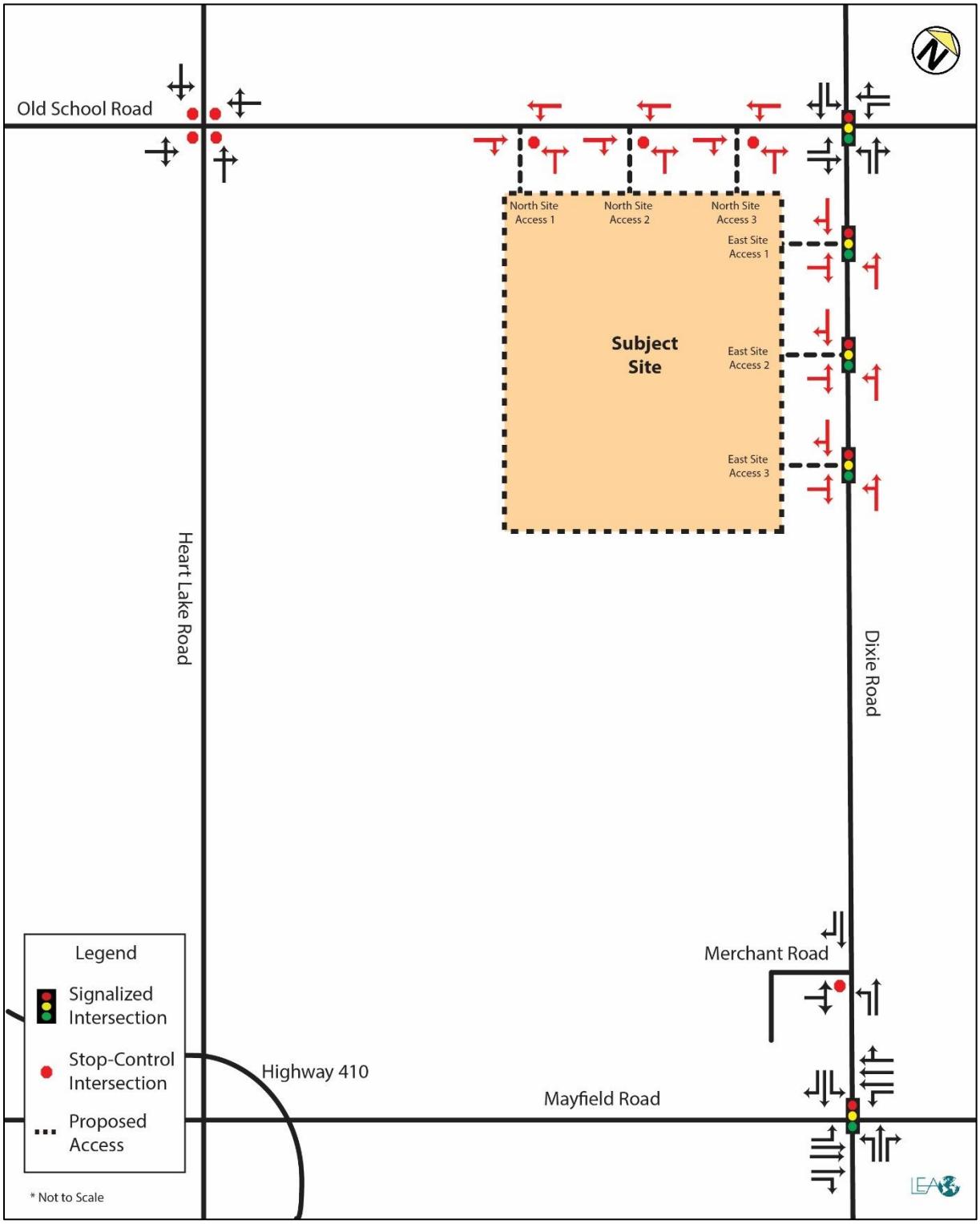
Figure 2-1: Existing Lane Configuration and Traffic Control



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- **Old School Road** is an east-west collector road under the jurisdiction of the Town of Caledon. The roadway operates with a two-lane cross-section (one lane per direction) and posted speed limit of 70 km/h within the study area.
- **Heart Lake Road** is a north-south collector road under the jurisdiction of the Town of Caledon. The roadway has a posted speed limit of 80 km/h and operates with a two-lane cross-section (one lane per direction) within the study area. The Town of Caledon restricts heavy vehicle traffic on Heart Lake Road (see **Section 2.1.1**).
- **Dixie Road** is a north-south arterial road within the study area, under the jurisdiction of the Region of Peel. The roadway has a posted speed limit of 80 km/h and operates with a two-lane cross-section (one lane per direction) within the study area.
- **Mayfield Road** is an east-west arterial road within the study area, under the jurisdiction of the Region of Peel. The roadway has a posted speed limit of 80 km/h and operates with a six-lane cross-section (three lanes per direction) west of Dixie Road until approximately 275m west of Heart Lake Road, and a five-lane cross-section (three lanes eastbound, 2 lanes westbound) between Dixie Road and Bramalea Road.
- **Merchant Road** is a local road under the jurisdiction of the Town of Caledon. The roadway operates with a two-lane cross-section (one lane per direction and is assumed to operate with an unposted speed limit of 50 km/h.

2.1.1 Heavy Vehicle Restrictions

As the proposed development will be a warehouse/distribution centre, new heavy vehicle traffic will be introduced to the surrounding road network. Due to the environmental constraints present on the subject site, the design of East Access #1 and East Access #2 along Dixie Road are not ideal for truck circulation, limiting truck entrance and exit points for Buildings A and B. As a result, trucks accessing Buildings A and B are proposed to utilize North Access #1 and North Access #3 along Old School Road instead. Due to these proposed arrangements, LEA has reviewed the Town of Caledon Traffic By-law 2015-58 to understand the Town's heavy truck restrictions applicable to the study area's roadways.

Section 20 of the By-law states that heavy trucks are not permitted on Caledon highways, where they are marked with signs prohibiting trucks, whereas Sections 21-23 describe the exceptions to Section 20. The exceptions describe that heavy trucks are allowed to use Caledon highways when the destination location cannot be accessed without their use, but such traffic must use the shortest possible path on Caledon highways.

According to a site visit conducted by LEA on January 6th, 2021, "No Truck" signs were not observed along Old School Road. **Figure 2-2** shows the existing intersection at Dixie Road & Old School Road, facing west.

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Figure 2-2: Intersection of Dixie Road & Old School Road (Facing West)

Source: LEA Consulting Ltd. (January 6th, 2021)

Given the environmental constraints on site which affects the design of accesses and driveways using Dixie Road, it is proposed that trucks accessing Buildings A and B to be directed to the accesses along Old School Road. These accesses assume that trucks will be travelling to/from Highway 410 and utilizing Dixie Road, and only occupying Old School Road for a short distance to enter/exit Buildings A and B. West Access #2 on Dixie Road is also proposed to allow for trucks to exit for convenient access to Highway 410. This arrangement will not only provide more flexibility, but also improve truck circulation.

2.2 TRANSIT NETWORK

The Town of Caledon currently does not operate public transit within the municipality, except for the local transit line in Bolton serviced by Voyago. There are also inter-regional transit services provided by Brampton Transit, and GO Transit routes. With the existing transit infrastructure, the proposed development is not accessible by public transit. The closest bus stop is located over 3km south of the subject site, at Dixie Road & Tasker Road, in the City of Brampton. It is proposed that the municipalities work together to extend transit to the proposed developments at 12892 and 12035 Dixie Road.

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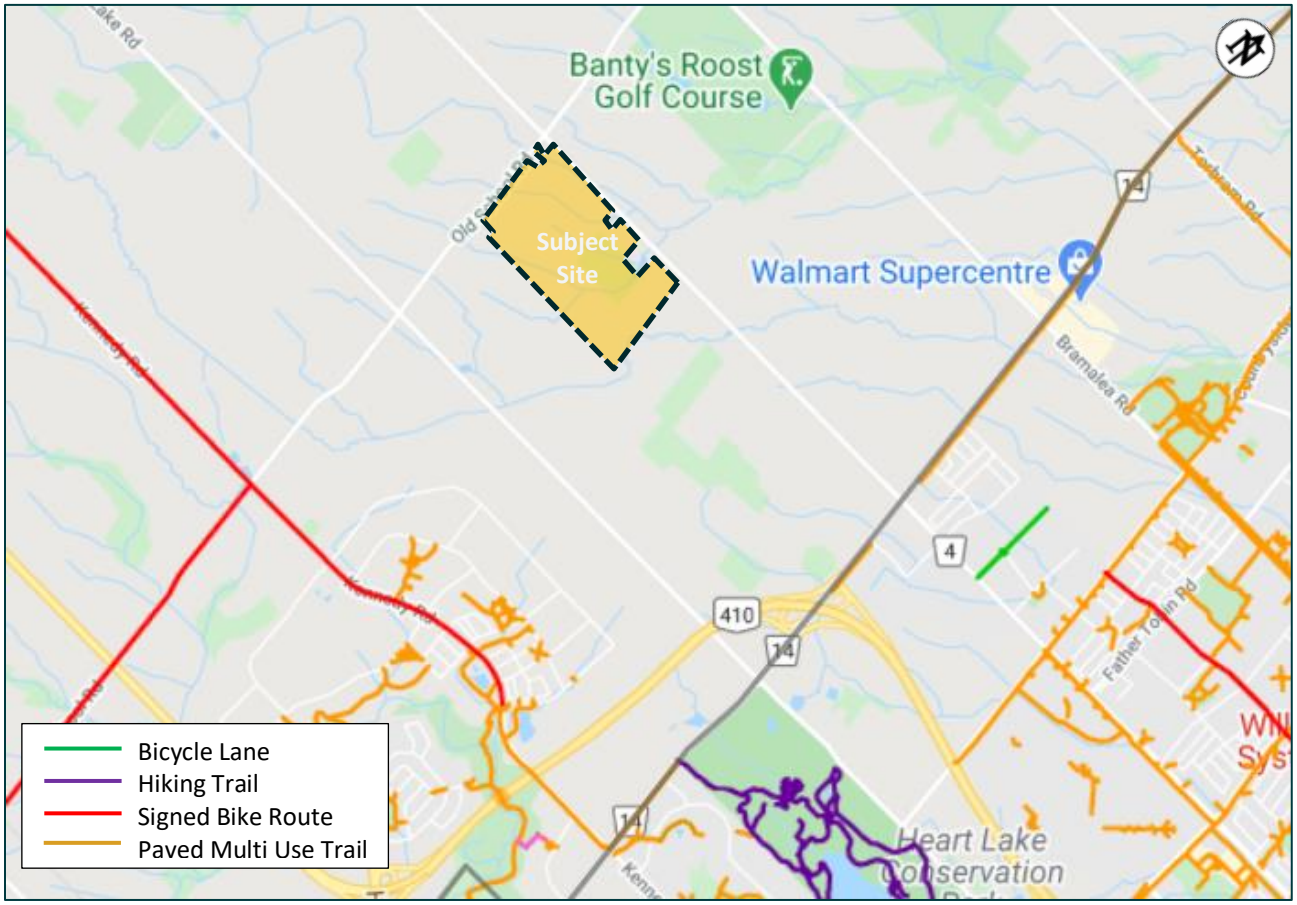
2.3 CYCLING NETWORK

The subject site is not located within immediate proximity to the Town's cycling facilities. The nearest cycling infrastructure in the area includes paved multi-use trail along Mayfield Road, which connects to a wider network within the City of Brampton. There is also a signed bike route along Kennedy Road, which is approximately 3.2km from the subject site. This route extends north to the east-west signed bike route along Olde Base Line Road. The signed bike route is also present on Old School Road, traveling west of Kennedy Road. The cycling network surrounding the subject site is illustrated in **Figure 2-3.**

Figure 2-3: Existing Cycling Network



Source: walkandrollpeel.ca (2021)

2.4 PEDESTRIAN NETWORK

Given that the area north of Mayfield Road consists of mainly agriculture lands, the study area has minimal pedestrian infrastructure. Despite the absence of sidewalks in the area immediately surrounding the subject site, crosswalks are available at the signalized intersection of Dixie Road & Mayfield Road, and Dixie Road & Old School Road. It should be noted that sidewalk is provided along the south side of Mayfield Road to facilitate the residential uses.

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2.5 TRAFFIC DATA COLLECTION

Turning movement counts (TMCs) were used as the source of traffic data in the intersection capacity analyses. The traffic counts for the intersections at Dixie Road & Mayfield Road, and Dixie Road & Old School Road were collected in 2019, and obtained from Spectrum Traffic Data Inc (Spectrum).

Traffic counts for the intersections at Dixie Road & Merchant Road, and Heart Lake Road & Old School Road were not available from Spectrum, Town of Caledon, or the Region of Peel. Resultantly, TMC surveys were conducted by LEA for the two (2) intersections during the weekday AM and PM peak periods between 6:30 AM to 9:30 AM and 3:30 PM to 6:30 PM, respectively. **Table 2-1** summarizes the traffic data utilized in this study, with detailed TMCs provided in **Appendix A**.

Table 2-1: Traffic Data Collection Summary

Intersection	Survey Date	Source
Dixie Road & Mayfield Road	Thursday, October 3rd, 2019	Spectrum
Dixie Road & Old School Road		
Dixie Road & Merchant Road	Tuesday, December 15th, 2020	LEA
Heart Lake Road & Old School Road		

Given that the traffic data of Dixie & Merchant and Heart Lake & Old School were collected in the midst of the COVID-19 pandemic, as discussed with Town and Region staff, the TMCs within the study area have been adjusted to remediate the discrepancies in traffic volumes.

The surveyed TMCs at Dixie & Merchant generally reveals higher traffic volumes along Dixie Road compared to the TMCs at Dixie & Mayfield which were collected pre-pandemic. Therefore, in order to derive present day traffic volumes at Dixie & Merchant and Dixie & Mayfield, the traffic volumes on Dixie Road were balanced using the TMCs for the two intersections. This increases the volumes along Dixie Road at the respective intersections. To note, Merchant Road is a local road that only serves the Acklands Grainger warehouse located at 21 Merchant Road, and terminates as a cul-de-sac. Since warehousing and distribution is considered an “essential business” in the Province of Ontario, it was assumed that business operations did not change for this use, and that traffic along Merchant Road remains the same as pre-pandemic conditions. Therefore, traffic volumes on Merchant Road have not been adjusted.

With respect to Heart Lake & Old School, a pandemic factor has been applied to the TMCs to adjust for the impacts of COVID-19. The pandemic factor was determined based on a comparison of traffic volumes on Old School Road between the 2019 TMCs at Dixie & Old School and the 2020 TMCs , at Heart Lake & Old School. Based on the two sets of data, it was observed that the two-way traffic volumes along Old School Road decreased by 47% during the AM peak hour, and 27% during PM peak hours in 2020. The pandemic factors are summarized in **Table 2-2**.

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Table 2-2: Comparison of Old School Road Peak Hour Traffic Volumes

Direction	October 2019		December 2020		2020/2019 Factor	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Peak Hour	7:15 AM	4:00 PM	7:15 AM	4:45 PM	-	-
Eastbound	248	112	128	91	0.52	0.81
Westbound	95	267	54	184	0.57	0.69
Total	343	379	182	275	**0.53**	**0.73**

Resultantly, a pandemic factor of 0.53 and 0.73 has been applied to Old School Road during the AM and PM peak hours, respectively. Since Old School Road and Heart Lake Road are both Town collector roadways, they are expected to share similar traffic characteristics. Therefore, the same factors were utilized to adjust traffic volumes along Heart Lake Road during the AM and PM peak hours as well.

Lastly, no adjustments have been applied to the counts obtained for Old School & Dixie, as the data is less than two (2) years old and collected during pre-pandemic conditions. It is assumed that the data is representative of present day traffic volumes.

2.6 INTERSECTION CAPACITY ANALYSIS

The capacity analysis for the study area was undertaken using Synchro version 11.0, which is based on the Highway Capacity Manual (2000) methodology. The intersection capacity analysis has been conducted under Region of Peel Synchro Guidelines (December 2010). In accordance to the guidelines, the peak hour factors (PHF) of all Regional intersections were set at 1.00 for all movements. The adjusted existing traffic volumes in the study area during the weekday peak hours are illustrated in **Figure 2-4.**

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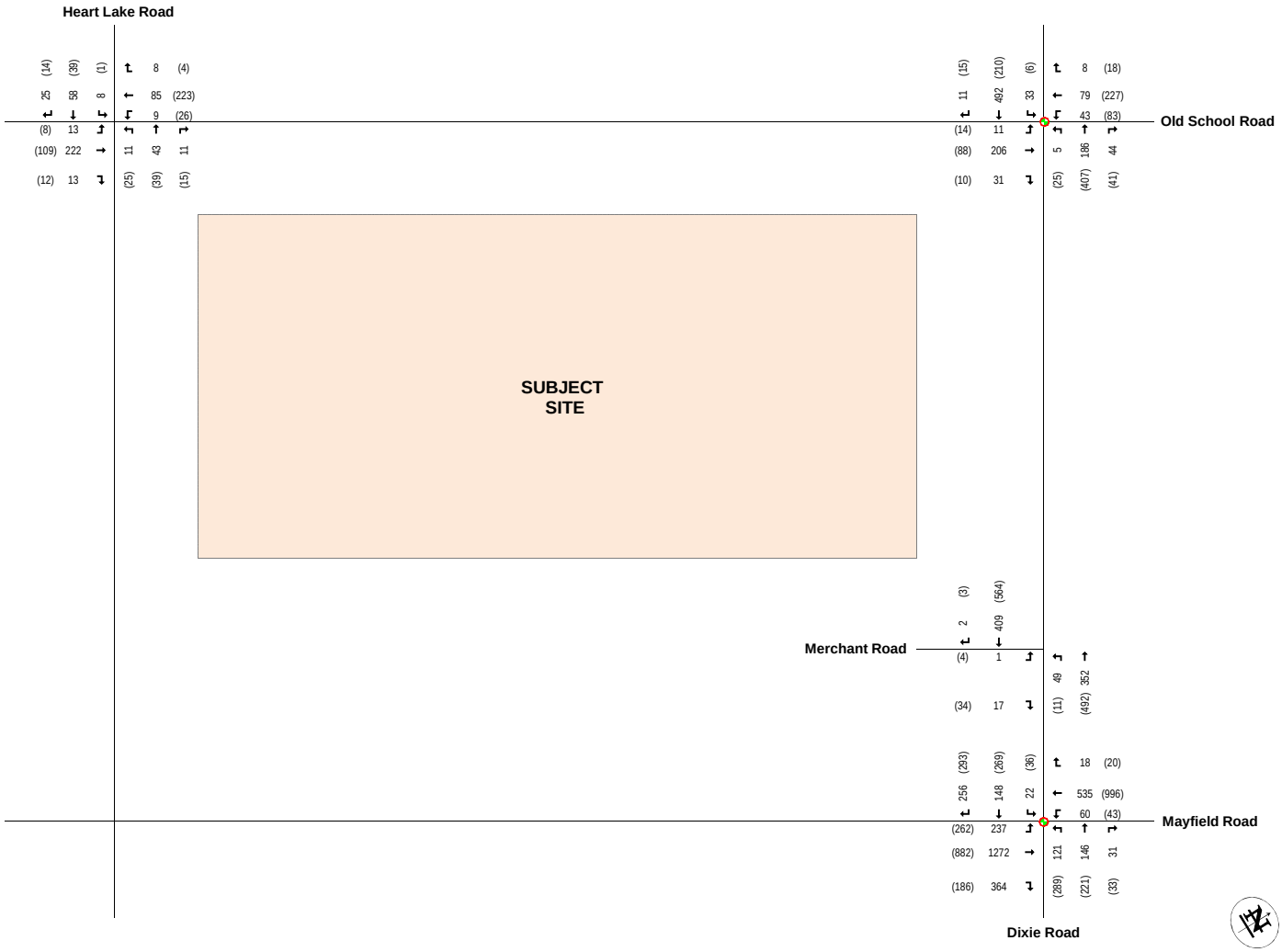

EXISTING TRAFFIC VOLUMES
FIGURE 2-4

LEA Consulting Ltd.
February 24, 2021

LEGEND

XX (XX) WEEKDAY AM (PM) PEAK HOUR TRAFFIC VOLUMES

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The intersection capacity analysis was completed for the weekday AM and PM peak hours. The results for the assessed signalized intersections under existing conditions are summarized in **Table 2-3** and **Table 2-4**, whereas the results for the unsignalized intersections are summarized in **Table 2-5**. Detailed capacity results can be found in **Appendix B**.

Table 2-3: Existing Capacity Analysis - Signalized Intersections (AM Peak Hour)

Intersection	Weekday AM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Mayfield Road	0.45	19	B	EBL	0.40	7	A	8.2	17.2
				EBT	0.41	11	B	30.4	45.5
				EBR	0.24	10	A	0.0	7.8
				WBL	0.20	9	A	1.8	5.0
				WBT	0.21	12	B	12.2	20.9
				NBL	0.70	62	E	16.1	26.2
				NBT	0.54	50	D	18.9	28.7
				NBR	0.02	42	D	0.0	1.1
				SBL	0.15	44	D	2.7	6.7
				SBT	0.51	49	D	19.1	28.7
				SBR	0.18	44	D	0.0	12.4
Dixie Road & Old School Road	0.50	14	B	EBL	0.05	19	B	0.6	2.4
				EBT	0.54	24	C	13.0	23.5
				WBL	0.17	20	C	2.3	6.2
				WBT	0.20	20	B	4.2	9.6
				NBL	0.01	6	A	0.1	1.0
				NBT	0.23	8	A	6.3	14.9
				SBL	0.05	7	A	0.9	3.5
				SBT	0.49	10	B	18.5	37.9

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Table 2-4: Existing Capacity Analysis - Signalized Intersections (PM Peak Hour)

Intersection	Weekday PM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Mayfield Road	0.92	30	C	EBL	0.87	41	D	18.2	43.2
				EBT	0.39	21	C	30.1	36.8
				EBR	0.12	18	B	0.0	7.4
				WBL	0.17	17	B	2.6	5.8
				WBT	0.47	24	C	35.6	42.8
				NBL	0.95	77	E	37.7	68.4
				NBT	0.34	30	C	22.1	34.0
				NBR	0.02	27	C	0.0	1.3
				SBL	0.11	28	C	3.3	7.8
				SBT	0.43	32	C	28.0	41.8
				SBR	0.34	31	C	11.4	25.5
Dixie Road & Old School Road	0.48	13	B	EBL	0.06	17	B	0.6	2.6
				EBT	0.20	18	B	4.1	9.4
				WBL	0.26	18	B	3.9	9.1
				WBT	0.52	21	C	12.1	22.1
				NBL	0.04	7	A	0.7	2.9
				NBT	0.47	10	B	15.3	33.4
				SBL	0.01	7	A	0.2	1.2
				SBT	0.24	8	A	6.6	15.7

Under existing conditions, the signalized intersections are operating with an overall level of service (LOS) of 'C' or better during both peak hours. All individual movements are operating within the roadway capacity and acceptable delays during the AM and PM peak hours. However, it should be noted that the northbound left-turn movement at Dixie & Mayfield is approaching capacity with at V/C ratio of 0.95 during the PM peak period.

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Table 2-5: Existing Capacity Analysis – Unsignalized Intersections

Intersection	Weekday AM Peak Hour						
	Movement of Interest	Flow Rate (vph)	Capacity (vph)	Delay (s)	95th Queue (m)	V/C	LOS
Dixie Road & Merchant Road	EBLR	18	544	12	0.5	0.03	B
	NBL	49	1106	8	0.6	0.04	A
Heart Lake Road & Old School Road	EBLTR	291	761	10	-	0.36	B
	WBLTR	120	711	9	-	0.16	A
	NBLTR	77	637	9	-	0.11	A
	SBLTR	106	671	9	-	0.14	A
Intersection	**Weekday PM Peak Hour**						
	Movement of Interest	**Flow Rate (vph)**	**Capacity (vph)**	**Delay (s)**	**95th Queue (m)**	**V/C**	**LOS**
Dixie Road & Merchant Road	EBLR	38	468	13	1.2	0.08	B
	NBL	11	968	9	0.2	0.01	A
Heart Lake Road & Old School Road	EBLTR	138	754	9	-	0.17	A
	WBLTR	269	777	10	-	0.33	A
	NBLTR	84	676	9	-	0.11	A
	SBLTR	57	669	8	-	0.08	A

Under existing traffic conditions, the unsignalized intersections within the study area are operating with short delays and ample residual capacity during both peak hours. All movements are operating with LOS of 'B' or better.

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3 FUTURE BACKGROUND TRAFFIC CONDITIONS

For the analysis of the future background traffic conditions, this study considers a five-year horizon to the year 2026. Future background traffic includes the traffic added to the network from other future developments within the surrounding area, corridor growth, as well as all planned infrastructure improvements within the study area.

3.1 BACKGROUND DEVELOPMENTS

There is one (1) background development identified within the immediate study area, located south of the subject site at 12035 Dixie Road. The development application for the proposed warehouse buildings at 12035 Dixie Road has not yet been submitted to the Town. However, since LEA is also the transportation consultant for that proposal, the trip generation, distribution and assignment is estimated using a similar methodology outlined in this study based on the latest site statistics. A summary of the background development is provided in **Table 3-1.**

Table 3-1: Background Development

Location	Site Statistics	Source
12035 Dixie Road	4 warehouse buildings, Total Approximate GFA of 197,230 m^2	LEA (In progress)

3.2 CORRIDOR GROWTH

As a conservative approach, an annual growth rate of 2% was applied to all roadways within the study area during the AM and PM peak hours.

3.3 ROAD NETWORK IMPROVEMENTS

The *Peel Region Long Range Transportation Plan (2019)* was reviewed to identify any planned roadway improvements within the study area. It was identified that Mayfield Road is proposed to be widened from five (5) to six (6) lanes between Dixie Road and Bramalea Road, as part of the Region's 2031 planning horizon. It is understood that construction is planned to begin in 2024-2025. As the widening is planned to be completed outside of the study's five-year horizon of 2026, this road improvement has not been considered in the future scenarios.

As part of the background development at 12035 Dixie Road, Dixie& Merchant is proposed to be signalized with an exclusive southbound left-turn lane. This intersection modification is incorporated under future background conditions.

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3.4 INTERSECTION CAPACITY ANALYSIS

The future background traffic volumes were determined by incorporating future background traffic to the existing traffic volumes. The road network also reflects the changes at the Dixie & Merchant brought forth by the background development. The future background volumes are illustrated in **Figure 3-1**.

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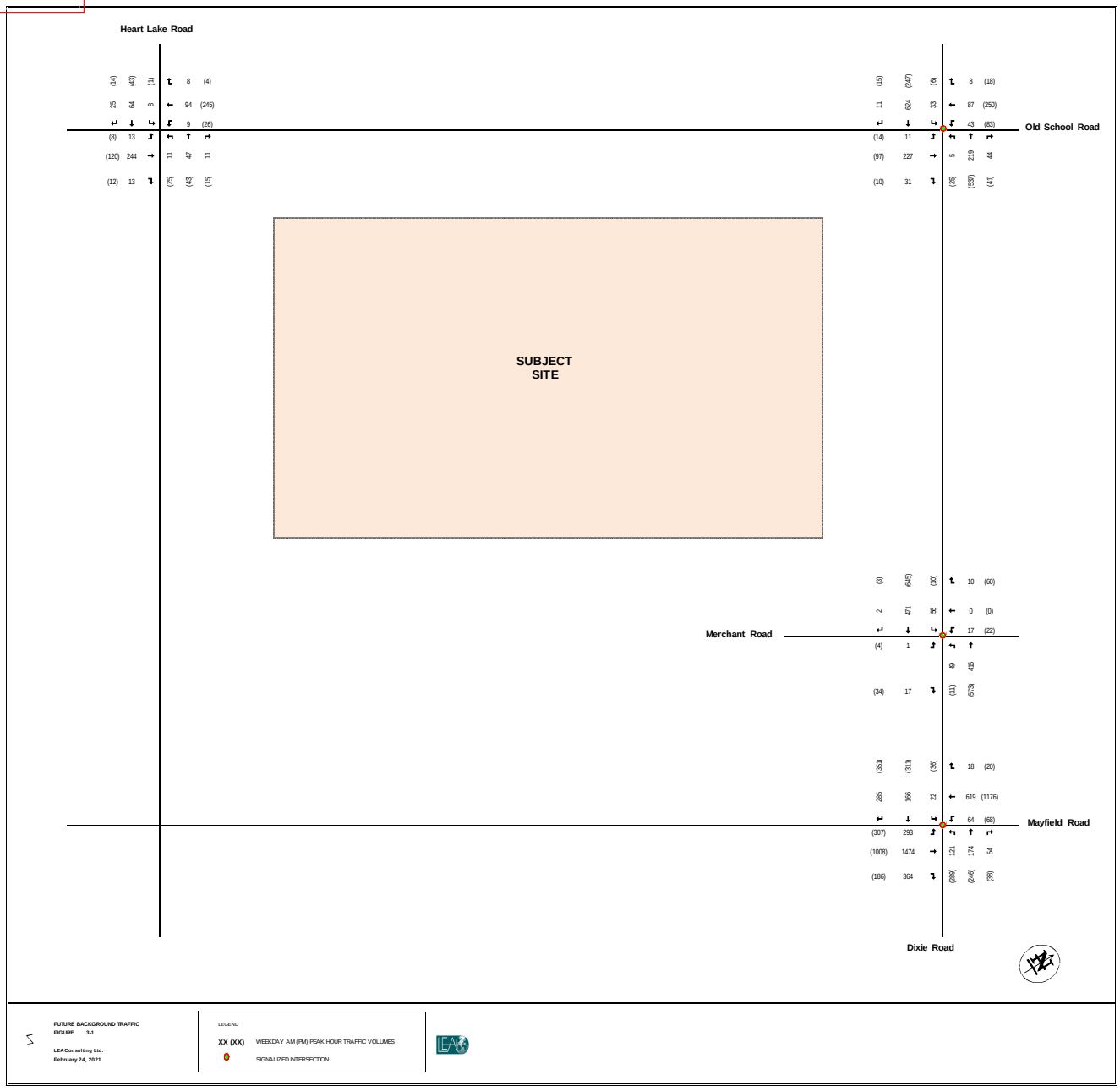

FUTURE BACKGROUND TRAFFIC
FIGURE 3-1

LEA Consulting Ltd.
February 24, 2021

LEGEND

XX (XX) WEEKDAY AM (PM) PEAK HOUR TRAFFIC VOLUMES

SIGNALIZED INTERSECTION

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The results for the assessed signalized intersections under future background conditions are summarized in **Table 3-2** and **Table 3-3**, whereas the results for the unsignalized intersections are summarized in **Table 3-4**. Detailed capacity results found in **Appendix C**.

Table 3-2: Future Background Capacity Analysis - Signalized Intersections (AM Peak Hour)

Intersection	Weekday AM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Merchant Road	0.39	9.1	A	EBT	0.01	38.9	D	0.0	0.0
				WBT	0.44	44.6	D	7.7	1.7
				NBL	0.08	3.9	A	1.3	3.8
				NBT	0.38	5.7	A	16.6	30.9
				SBL	0.35	6.1	A	7.6	3.3
				SBT	0.36	5.4	A	16.1	29.6
Dixie Road & Mayfield Road	0.57	20	C	EBL	0.52	8	A	10.7	22.1
				EBT	0.48	12	B	37.8	56.3
				EBR	0.24	10	B	0.0	8.0
				WBL	0.25	10	B	2.0	5.4
				WBT	0.25	14	B	15.2	25.9
				NBL	0.72	64	E	16.2	26.4
				NBT	0.61	52	D	22.9	33.4
				NBR	0.04	42	D	0.0	5.0
				SBL	0.17	44	D	2.7	6.7
				SBT	0.55	49	D	21.6	31.6
				SBR	0.21	44	D	0.5	13.5
Dixie Road & Old School Road	0.61	15	B	EBL	0.04	18	B	0.6	2.4
				EBT	0.56	24	C	14.4	25.6
				WBL	0.17	20	B	2.3	6.2
				WBT	0.21	20	B	4.7	10.4
				NBL	0.02	7	A	0.2	1.1
				NBT	0.27	8	A	7.9	18.0
				SBL	0.06	7	A	0.9	3.6
				SBT	0.63	13	B	26.8	54.8

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Table 3-3: Future Background Capacity Analysis - Signalized Intersections (PM Peak Hour)

Intersection	Weekday PM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Merchant Road	0.60	18.8	B	EBT	0.03	32.6	C	0.3	0.0
				WBT	0.72	47.3	D	24.1	0.3
				NBL	0.03	6.6	A	0.4	2.1
				NBT	0.56	12.0	B	39.1	78.5
				SBL	0.10	7.3	A	1.6	1.4
				SBT	0.55	11.6	B	37.5	75.0
Dixie Road & Mayfield Road	1.21	44	D	EBL	1.35	209	F	~34.0	#65.5
				EBT	0.47	23	C	35.6	43.0
				EBR	0.12	19	B	0.0	7.4
				WBL	0.33	19	B	4.2	8.3
				WBT	0.55	26	C	44.0	52.2
				NBL	0.97	83	F	39.3	#72.3
				NBT	0.36	29	C	25.0	37.7
				NBR	0.02	25	C	0.0	2.0
				SBL	0.11	26	C	3.3	7.9
				SBT	0.47	31	C	33.2	48.8
				SBR	0.45	31	C	21.1	38.2
Dixie Road & Old School Road	0.59	14	B	EBL	0.06	16	B	0.6	2.6
				EBT	0.21	17	B	4.6	10.1
				WBL	0.25	18	B	3.9	9.0
				WBT	0.55	21	C	13.5	24.1
				NBL	0.04	7	A	0.7	3.0
				NBT	0.61	13	B	22.7	48.8
				SBL	0.02	7	A	0.2	1.2
				SBT	0.29	9	A	8.2	19.2

Under future background conditions, the signalized intersections continue to operate acceptably and without constraints during the weekday AM peak hour. At Dixie & Mayfield, the eastbound left-turn movement is operating over capacity with a V/C ratio of 1.35 and long delays during the weekday PM peak hour due to the additional 45 vehicles making this left turn generated from the background development.

To note, the northbound left-turn movement at Dixie & Mayfield which was previously identified to be reaching capacity under existing conditions during weekday PM peak hour continues to operate within the roadway capacity.

No traffic constraints have been revealed for the future signalization and reconfiguration of Dixie & Merchant as part of the 12035 Dixie Road redevelopment.

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Table 3-4: Future Background Capacity Analysis - Unsignalized Intersections

Intersection	Weekday AM Peak Hour						
	Movement of Interest	Flow Rate (vph)	Capacity (vph)	Delay (s)	95th Queue (m)	V/C	LOS
Heart Lake Road & Old School Road	EBLTR	317	751	11	-	0.40	B
	WBLTR	131	698	9	-	0.18	A
	NBLTR	81	618	9	-	0.12	A
	SBLTR	113	652	9	-	0.16	A
Intersection	**Weekday PM Peak Hour**						
	Movement of Interest	**Flow Rate (vph)**	**Capacity (vph)**	**Delay (s)**	**95th Queue (m)**	**V/C**	**LOS**
Heart Lake Road & Old School Road	EBLTR	150	741	9	-	0.19	A
	WBLTR	293	768	10	-	0.37	B
	NBLTR	89	658	9	-	0.12	A
	SBLTR	62	650	8	-	0.09	A

Under future background traffic conditions, the unsignalized intersection is expected to continue to operate without capacity constraints during both peak hours. The addition of corridor growth and background development traffic have resulted in minimal increases in delays from existing conditions.

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3.5 INTERSECTION CAPACITY ANALYSIS (OPTIMIZED)

In order to improve traffic constraints revealed under future background conditions, LEA recommends signal optimization at Dixie & Mayfield during the weekday PM peak period.

It is recommended that signal timings be adjusted to allocate more green time for the eastbound left-turn phase at Dixie & Mayfield while maintaining the cycle length of 120 seconds. The recommended signal timing plan is shown in **Table 3-5.**

Table 3-5: Optimized Signal Timing Plan at Dixie & Mayfield (Weekday PM)

Timings (seconds)	Northbound	Southbound	Eastbound		Westbound	
	LTR	LTR	L	TR	L	TR
Existing Signal Timing Plan						
Yellow Time	4.6	4.6	3	4.6	3	4.6
All-Red Time	2.3	2.3	-	2.3	-	2.3
Total Split	50	50	10	60	10	60
Cycle Length	120 seconds					
Optimized Signal Timing Plan						
Yellow Time	4.6	4.6	3	4.6	3	4.6
All-Red Time	2.3	2.3	-	2.3	-	2.3
Total Split	53	53	21	57	10	46
Cycle Length	120 seconds					
Split Difference	**+3**	**+3**	**+11**	**-3**	**0**	**-14**

The intersection capacity analysis is conducted once again with the optimized signal timing plan. The results of the capacity analysis with the improvements under future background conditions are summarized in **Table 3-6**. Detailed Synchro outputs are available in **Appendix D**.

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Table 3-6: Future Background Capacity Analysis (Optimized)

Intersection	Weekday PM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Mayfield Road	0.96	35	D	EBL	0.92	61	E	30.4	#61.5
				EBT	0.47	24	C	37.3	45.1
				EBR	0.12	20	B	0.0	7.8
				WBL	0.34	25	C	4.5	8.9
				WBT	0.71	37	D	54.2	64.3
				NBL	0.95	77	E	37.6	#69.0
				NBT	0.35	29	C	23.9	36.1
				NBR	0.02	25	C	0.0	0.0
				SBL	0.11	26	C	3.2	7.5
				SBT	0.47	30	C	31.8	46.7
				SBR	0.28	28	C	3.8	16.2

With the implementation of the optimized signal timing plan, the traffic operations at Dixie & Mayfield have been improved significantly from previous conditions. The V/C ratio of the eastbound left-turn movement reduces to 0.92 and delay decreases by 148 seconds. All other movements are expected to operate with V/C ratios less than 1.0 and acceptable delays.

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4 SITE-GENERATED TRAFFIC

4.1 TRIP GENERATION

The proposed buildings are expected to operate similarly to a typical warehouse/distribution centre. To determine the trip generation for the proposed development, the average rate in the Institute of Transportation Engineers (ITE) Trip Generation Manual 10th Edition for Warehousing (Land Use Code 150) was applied to the proposed uses. The heavy vehicle trip generation rates are derived from the ITE Trip Generation 10th Edition Online Supplement for LUC 150. The heavy vehicle percentages have been calculated by dividing the heavy vehicle trip generation rate by the total vehicle trip generation rate. The vehicle and truck trip rates utilized in the trip generation calculations are shown in **Table 4-1**, and the trip generation breakdown by building is summarized in **Table 4-2**.

Table 4-1: Vehicle and Truck Warehousing Trip Rates

Trip Generation	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
All Vehicle Directional Distribution	77%	23%	100%	27%	73%	100%
All Vehicles Trip Rate (Per 1,000ft^2)	0.13	0.04	0.17	0.05	0.14	0.19
Heavy Vehicle Directional Distribution	52%	48%	100%	52%	48%	100%
Heavy Vehicle Trip Rate (Per 1,000ft^2)	0.01	0.01	0.02	0.02	0.01	0.03
Heavy Vehicle Percentage	8%	26%	12%	39%	7%	16%

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Table 4-2: Trip Generation Summary

Building	Trip Generation	AM Peak Hour (Trips)			PM Peak Hour (Trips)		
		In	Out	Total	In	Out	Total
Building A (811,866 ft²)	**Total Building A Traffic**	**115**	**35**	**150**	**45**	**123**	**168**
	Employee Traffic	106	26	132	27	114	141
	Truck Traffic	9	9	18	18	9	27
Building B (988,852 ft²)	**Total Building B Traffic**	**129**	**39**	**168**	**51**	**137**	**188**
	Employee Traffic	119	29	148	31	127	158
	Truck Traffic	10	10	20	20	10	30
Building C (520,151.58 ft²)	**Total Building C Traffic**	**68**	**20**	**88**	**27**	**72**	**99**
	Employee Traffic	63	15	78	16	67	83
	Truck Traffic	5	5	10	11	5	16
Building D (270,399.00 ft²)	**Total Building D Traffic**	**35**	**11**	**46**	**14**	**37**	**51**
	Employee Traffic	32	8	41	9	34	43
	Truck Traffic	3	3	5	5	3	8
Total Site	**Total Site Traffic**	**347**	**105**	**452**	**137**	**369**	**506**
	Employee Traffic	320	78	399	83	342	425
	Truck Traffic	27	27	53	54	27	81

The proposed development is projected to generate a total of 452 new trips (347 inbound, 105 outbound) and 506 new trips (137 inbound, 369 outbound) during the AM and PM peak hour periods, respectively.

4.2 TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution of employee vehicle traffic was estimated using Transportation Tomorrow Survey (TTS) 2016 data. The TTS data was filtered for auto home-based work trips during the weekday AM peak period. It is assumed that the PM peak period trip distribution is the reverse of the AM peak period since employees entering the subject site in the morning will be utilizing the same routing in the afternoon to exit, and vice versa. **Table 4-3** summarizes the trip distribution for this study. Detailed TTS calculations are available in **Appendix E.**

Table 4-3: Vehicle Trip Distribution

Direction	Roadway	AM		PM	
		Inbound	Outbound	Inbound	Outbound
North	Dixie Road	33%	23%	23%	33%
South	Dixie Road	15%	11%	11%	15%
East	Mayfield Road	9%	6%	6%	9%
	Old School Road	1%	-	-	1%
West	Mayfield Road	38%	60%	60%	38%
	Old School Road	5%	-	-	5%
	TOTAL	**100%**	**100%**	**100%**	**100%**

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The majority of site traffic is expected to use Highway 410 to/from the proposed development which is located west of the subject site. The employee trip assignment was subsequently determined based on the trip origin and destination, site accesses, and the most logical routing. **Figure 4-1** illustrates the trip assignment of employee traffic on the study road network.

As for heavy vehicle site traffic, it is assumed that most trucks will utilize the highway network for longer distance travel. Given the subject site's close proximity to Highway 410, heavy vehicle site traffic was assigned to utilize this highway to travel to/from the site, as shown in **Figure 4-2**.

The total site generated traffic volumes for the weekday AM and PM peak hours are illustrated in **Figure 4-3**.

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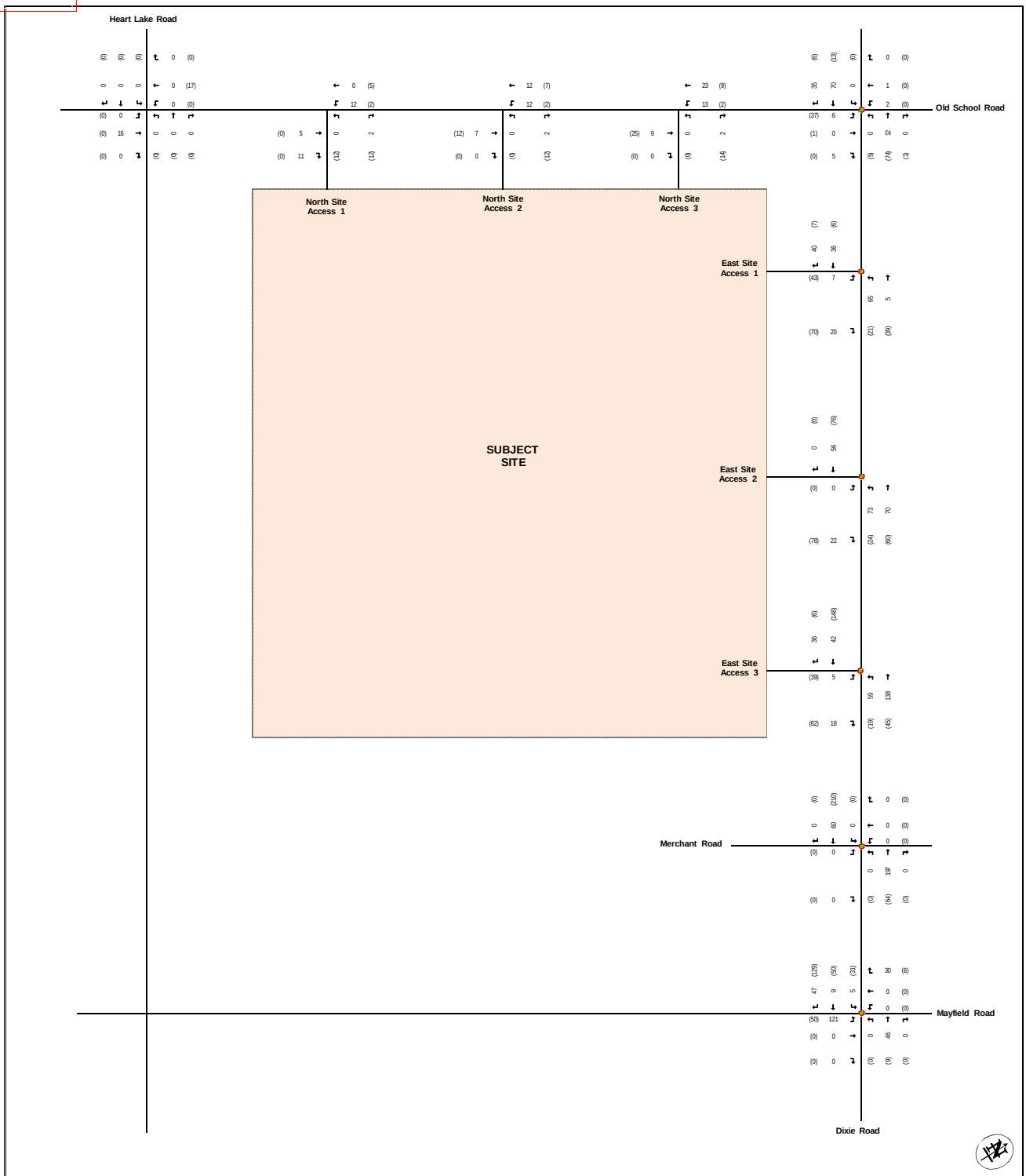

SITE GENERATED TRAFFIC (EMPLOYEE VEHICLES)
FIGURE 4-1

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LEGEND

XX (XX) WEEKDAY AM (PM) PEAK HOUR TRAFFIC VOLUMES

SIGNALIZED INTERSECTION

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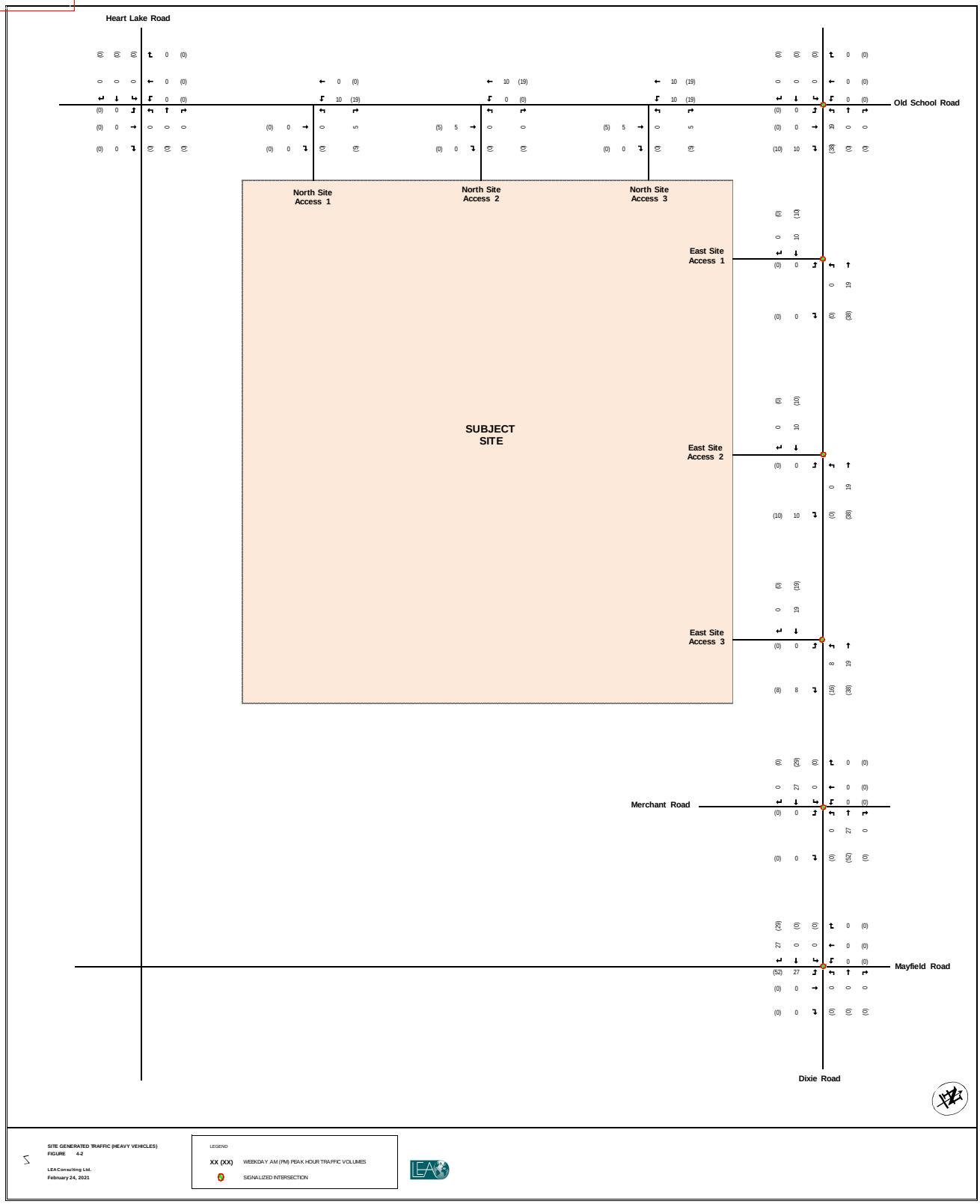

SITE GENERATED TRAFFIC (HEAVY VEHICLES)
FIGURE 4-2

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XX (XX) WEEKDAY AM (PM) PEAK HOUR TRAFFIC VOLUMES

SIGNALIZED INTERSECTION

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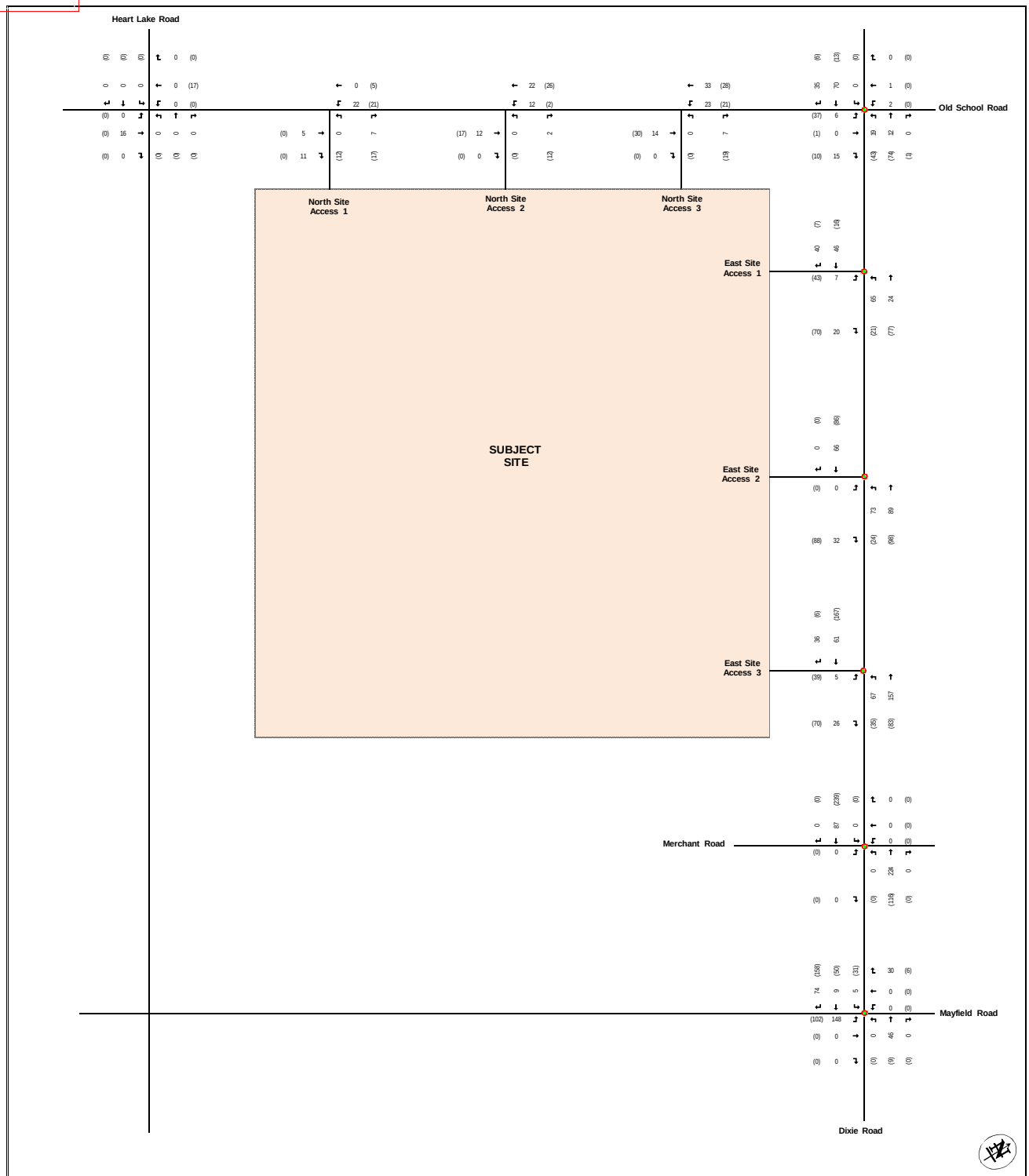

SITE GENERATED TRAFFIC (TOTAL)
FIGURE 4-3

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XX (XX) WEEKDAY AM (PM) PEAK HOUR TRAFFIC VOLUMES

SIGNALIZED INTERSECTION

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5 FUTURE TOTAL TRAFFIC CONDITIONS

Future total transportation conditions include future background volumes, in addition to the site trips generated by the proposed development.

5.1 INTERSECTION CAPACITY ANALYSIS

Intersection capacity analysis was conducted for the studied intersections with the site traffic added for the planning horizon of 2026. The future total analysis incorporates the signalization of Dixie & Merchant, as well as the recommended signal optimization from future background conditions. The future total traffic volumes utilized for the intersection capacity analysis are illustrated in **Figure 5-1.**

The results for the assessed signalized intersections under future total conditions are summarized in **Table 5-1** and **Table 5-2**, whereas the results for the unsignalized intersections are summarized in **Table 5-3**. Detailed capacity results found in **Appendix F**.

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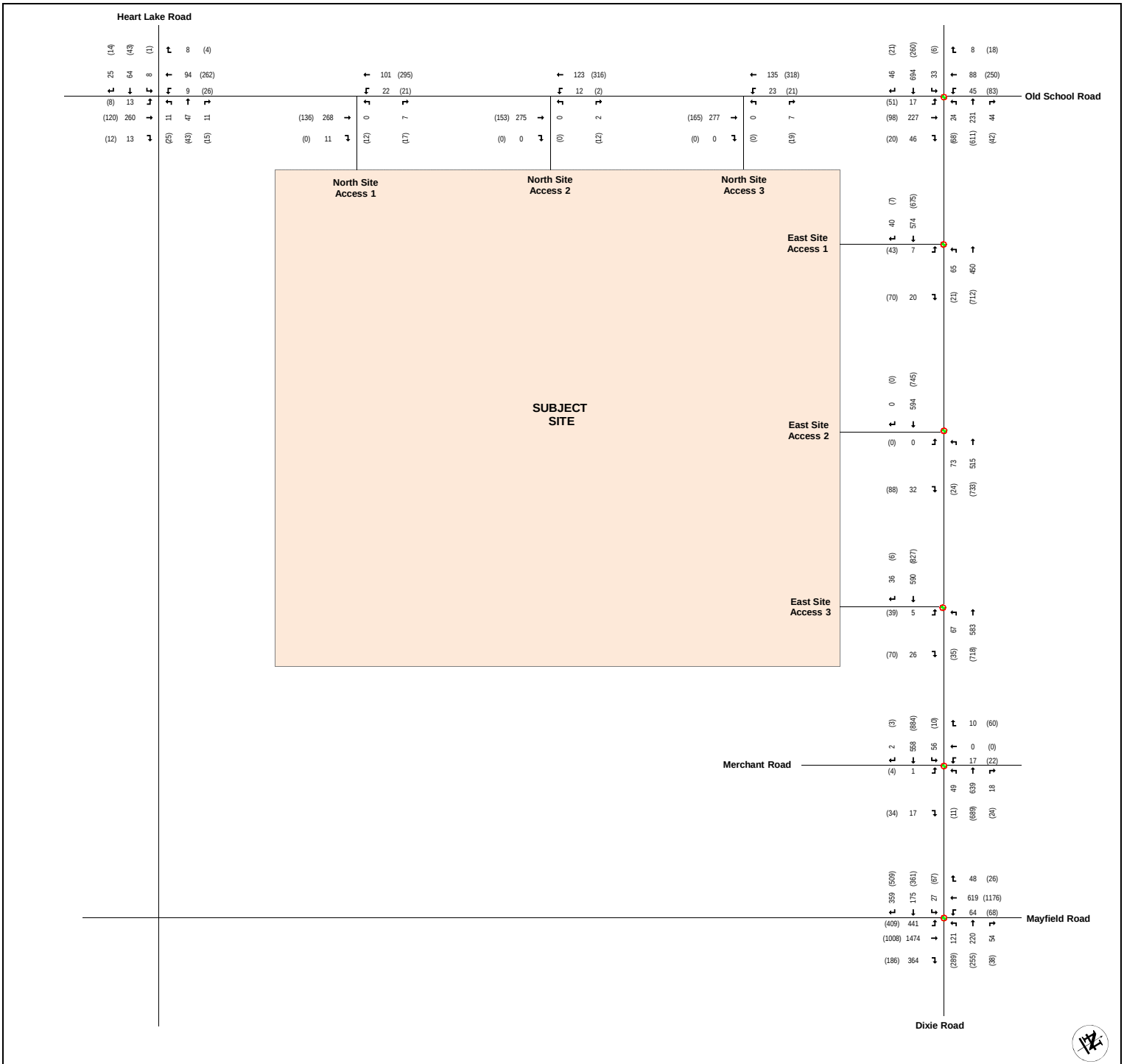

FUTURE TOTAL TRAFFIC
FIGURE 5-1

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XX (XX) WEEKDAY AM (PM) PEAK HOUR TRAFFIC VOLUMES

SIGNALIZED INTERSECTION

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Table 5-1: Future Total Capacity Analysis - Signalized Intersections (AM Peak Hour)

Intersection	Weekday AM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Merchant Road	0.54	9.9	A	EBT	0.01	38.9	D	0.0	0.0
				WBT	0.44	44.6	D	7.7	1.7
				NBL	0.09	4.0	A	1.3	3.9
				NBT	0.56	7.7	A	30.3	55.8
				SBL	0.47	8.6	A	8.7	3.4
				SBT	0.42	6.0	A	20.4	37.1
Dixie Road & Mayfield Road	0.73	23.3	C	EBL	0.72	13.9	B	20.8	#50.3
				EBT	0.50	14.2	B	41.2	60.4
				EBR	0.24	11.7	B	0.0	8.6
				WBL	0.28	16.7	B	2.3	5.9
				WBT	0.33	22.3	C	21.3	27.0
				NBL	0.62	52.5	D	15.7	25.3
				NBT	0.67	51.5	D	28.8	40.4
				NBR	0.04	39.1	D	0.0	4.8
				SBL	0.21	42.0	D	3.2	7.6
				SBT	0.50	45.3	D	22.1	31.9
				SBR	0.47	45.2	D	9.3	26.5
Dixie Road & Old School Road	0.69	16.1	B	EBL	0.07	18.2	B	0.9	3.2
				EBT	0.58	23.5	C	15.2	26.7
				WBL	0.18	19.3	B	2.4	6.4
				WBT	0.20	19.1	B	4.7	10.4
				NBL	0.10	7.9	A	0.7	3.4
				NBT	0.28	8.6	A	8.5	20.0
				SBL	0.06	7.1	A	1.0	3.8
				SBT	0.74	16.1	B	34.9	#84.1
Dixie Road & East Site Access 1	0.40	3.9	A	EBL	0.19	37.6	D	0.4	4.4
				NBT	0.39	3.1	A	0.0	24.9
				SBT	0.41	3.1	A	0.0	29.0
Dixie Road & East Site Access 2	0.43	4.4	A	EBL	0.02	32.2	C	0.0	0.0
				NBT	0.45	3.9	A	0.0	27.2
				SBT	0.40	3.4	A	0.0	25.0
Dixie Road & East Site Access 3	0.47	4.7	A	EBL	0.08	32.9	C	0.3	4.5
				NBT	0.49	4.4	A	0.0	35.1
				SBT	0.43	3.7	A	0.0	29.9

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Table 5-2: Future Total Capacity Analysis - Signalized Intersections (PM Peak Hour)

Intersection	Weekday PM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Merchant Road	0.74	20.5	C	EBT	0.03	32.6	C	0.3	0.0
				WBT	0.72	47.3	D	24.1	0.3
				NBL	0.05	6.9	A	0.4	2.2
				NBT	0.66	14.1	B	51.2	103.2
				SBL	0.13	7.7	A	1.6	1.4
				SBT	0.75	16.6	B	64.7	130.8
Dixie Road & Mayfield Road	1.18	49.0	D	EBL	1.28	182.0	F	~61.0	#97.3
				EBT	0.49	25.6	C	37.3	45.1
				EBR	0.12	21.0	C	0.0	7.8
				WBL	0.36	27.4	C	4.5	8.9
				WBT	0.75	39.5	D	54.5	64.6
				NBL	1.00	90.9	F	~39.9	#73.6
				NBT	0.35	26.8	C	25.0	37.5
				NBR	0.02	23.0	C	0.0	0.0
				SBL	0.19	25.1	C	6.1	12.5
				SBT	0.51	29.6	C	38.2	55.1
				SBR	0.53	30.3	C	21.8	44.1
Dixie Road & Old School Road	0.64	14.9	B	EBL	0.21	17.4	B	2.4	6.5
				EBT	0.22	17.1	B	4.7	10.5
				WBL	0.25	17.5	B	3.9	9.1
				WBT	0.55	20.5	C	13.5	24.1
				NBL	0.12	7.8	A	2.0	6.4
				NBT	0.69	14.9	B	27.2	#67.3
				SBL	0.02	7.1	A	0.2	1.2
				SBT	0.31	9.1	A	8.8	20.5
Dixie Road & East Site Access 1	0.52	8.5	A	EBL	0.26	28.3	C	2.9	9.3
				NBT	0.57	7.2	A	24.3	48.5
				SBT	0.52	6.5	A	21.3	42.0
Dixie Road & East Site Access 2	0.51	7.5	A	EBL	0.05	28.1	C	0.0	0.5
				NBT	0.57	6.5	A	23.9	40.6
				SBT	0.54	6.1	A	23.0	38.2
Dixie Road & East Site Access 3	0.57	9.1	A	EBL	0.24	28.3	C	2.7	8.9
				NBT	0.60	7.7	A	25.8	52.0
				SBT	0.63	8.0	A	29.4	58.6

Under future total conditions, the signalized intersections continue to operate acceptably and without constraints during the weekday AM peak hour. However, with the addition of 102 trucks and vehicles

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making the eastbound left-turn at Dixie & Mayfield during the PM peak hour, the movement is operating over capacity with a V/C ratio of 1.28 and long delays. Additionally, the northbound left-turn movement at Dixie & Mayfield is now operating at capacity, which was revealed to be reaching capacity under existing and future background conditions.

The capacity analysis demonstrates that all signalized site accesses are operating within capacity and with acceptable LOS during both peak hours.

Table 5-3: Future Total Capacity Analysis - Unsignalized Intersections

Intersection	Weekday AM Peak Hour						
	Movement of Interest	Flow Rate (vph)	Capacity (vph)	Delay (s)	95th Queue (m)	V/C	LOS
Heart Lake Road & Old School Road	EBLTR	317	751	11	-	0.40	B
	WBLTR	131	698	9	-	0.18	A
	NBLTR	81	618	9	-	0.12	A
	SBLTR	113	652	9	-	0.16	A
North Site Access #1 & Old School Road	WBLT	22	1295	1.5	0.2	0.02	A
	NBR	7	770	9.7	0.1	0.01	A
North Site Access #2 & Old School Road	WBLT	12	1300	0.8	0.1	0.01	A
	NBR	2	769	9.7	0.0	0.00	A
North Site Access #3 & Old School Road	WBLT	23	1298	1.3	0.2	0.02	A
	NBR	7	767	9.7	0.1	0.01	A
Intersection	**Weekday PM Peak Hour**						
	Movement of Interest	**Flow Rate (vph)**	**Capacity (vph)**	**Delay (s)**	**95th Queue (m)**	**V/C**	**LOS**
Heart Lake Road & Old School Road	EBLTR	150	741	9	-	0.19	A
	WBLTR	293	768	10	-	0.37	B
	NBLTR	89	658	9	-	0.12	A
	SBLTR	62	650	8	-	0.09	A
North Site Access #1 & Old School Road	WBLT	21	1461	0.6	0.2	0.01	A
	NBR	29	716	10.2	0.6	0.04	B
North Site Access #2 & Old School Road	WBLT	2	1440	0.1	0.0	0.00	A
	NBR	12	898	9.1	0.2	0.01	A
North Site Access #3 & Old School Road	WBLT	21	1426	0.6	0.2	0.01	A
	NBR	19	885	9.2	0.3	0.02	A

Under future total traffic conditions, all unsignalized intersections are expected to operate well during both peak hours. The proposed site accesses are expected to operate with LOS 'B' or better with minimal delays and queuing.

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5.2 INTERSECTION CAPACITY ANALYSIS (OPTIMIZED)

In order to improve the traffic constraints revealed under future total conditions, LEA recommends signal optimization at Dixie & Mayfield intersection during the weekday PM peak period.

It is recommended that a protected left-turn phase be implemented for the northbound approach and increasing the cycle length by 15 seconds to 135 seconds. This cycle length would align with the existing cycle length at the adjacent intersection located at Bramalea and Mayfield. This increase allows for additional green time to be dedicated to the eastbound and northbound movements. The recommended signal timing plan is shown in **Table 5-4**.

Table 5-4: Optimized Signal Timing Plan at Dixie & Mayfield (Weekday PM)

Timings (seconds)	Northbound		Southbound	Eastbound		Westbound	
	L	TR	LTR	L	TR	L	TR
Future Background Optimized Signal Timing Plan							
Yellow Time	-	4.6	4.6	3	4.6	3	4.6
All-Red Time	-	2.3	2.3	-	2.3	-	2.3
Total Split	-	53	53	21	57	10	46
Cycle Length	120 seconds						
Future Total Optimized Signal Timing Plan							
Yellow Time	3	4.6	4.6	3	4.6	3	4.6
All-Red Time	-	2.3	2.3	-	2.3	-	2.3
Total Split	15.7	63.6	47.9	26.5	63.4	8	44.9
Cycle Length	135 seconds						
Split Difference	**+15.7**	**+10.6**	**-5.1**	**+5.5**	**+6.4**	**-2**	**-1.1**

The intersection capacity analysis is conducted once again with the optimized signal timing plan. The results of the capacity analysis with the improvements under future total conditions are summarized in **Table 5-5**. Detailed synchro outputs are provided in **Appendix G**.

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Table 5-5: Future Total Capacity Analysis (Optimized)

Intersection	Weekday PM Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Dixie Road & Mayfield Road	1.02	48.1	D	EBL	0.97	78.5	E	55.1	#104.4
				EBT	0.46	26.2	C	42.4	50.3
				EBR	0.12	21.5	C	0.0	8.3
				WBL	0.41	35.9	D	5.0	10.3
				WBT	0.87	54.2	D	66.3	77.3
				NBL	0.99	87.9	F	31.5	#56.0
				NBT	0.35	30.8	C	28.2	39.0
				NBR	0.02	26.4	C	0.0	0.1
				SBL	0.25	40.3	D	8.3	15.3
				SBT	0.76	53.8	D	52.0	69.6
				SBR	0.63	48.6	D	24.9	49.0

The recommended signal optimization improves the traffic operations at Dixie & Mayfield, where all individual movements are operating within the roadway capacity and acceptable delays. For the eastbound left-turn movement, the V/C ratio reduces to 0.97 and delay decreases by 104 seconds during the weekday PM peak hour. Further, the northbound left-turn movement operates with a V/C ratio of 0.99. Although, this movement still operates with a LOS of 'F', the delay is within one cycle length, which is acceptable.

Despite the analysis presented above, it should be reminded that the optimized signal timing plan was recommended to alleviate traffic constraints at Dixie & Mayfield following the proposed development's full-build out. However, given that the four (4) buildings will not be constructed at the same time, the recommended signal timing plan improvements will not be required immediately. Instead, the level of service at Dixie & Mayfield should be monitored as the development advances. This process will confirm if and when the signal timing optimization is required, that is only when site generated traffic volumes surpass the roadway capacity and results in deteriorating traffic operations.

Additionally, as discussed in **Section 3.3**, the Mayfield Road widening construction is planned to begin in 2024-2025 but to be completed beyond the study horizon year. It is expected that changes to the signal timing plan will occur to adapt to the new traffic flows associated with the additional lane, in which case, the recommended optimization may not be necessary. Furthermore, the Region of Peel and Town of Caledon is currently undergoing their Municipal Comprehensive and Settlement Boundary Expansion Studies. It is understood that the subject site is located within the Focus Study Area and have been highlighted as a prime area for boundary expansion, employment uses, and servicing infrastructure. As a result, it can be anticipated that traffic volumes in the area will grow significantly within the next 5-10 years as an increased level of development occurs. Since the increase in traffic will not be generated by the proposed development alone, the onus of maintaining acceptable operations at Dixie & Mayfield in the future should be shared between the developerǎ and the Region.

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6 SIGNAL WARRANT ANALYSIS

The three (3) proposed accesses along Dixie Road were examined to determine if traffic signals are required upon realization of the proposed development. The signal warrant is based on Justification 7 in the Ontario Traffic Manual (OTM) Book 12 which considers projected volumes. This is appropriate to determine the future need for signalization due the addition of development traffic in the area. Since it is difficult to predict eight-hour volumes with accuracy, peak hour volumes (PHV) estimated in **Section 5** are expanded to obtain average hourly volumes (AHV). Average hourly volume is calculated from peak hour volumes using this relationship:

$$AHV = \frac{amPHV + pmPHV}{4}$$

Justification 7 takes the required volumes from Justifications 1 and 2 and increases it by 20% for an existing intersection. This is because the use of peak hour volumes lessens the warrant due to averaging and uncertainty is increased. The warrant also considers the type of intersection, lane configuration and location context. All three (3) proposed accesses along Dixie Road are three-leg intersections, located in a rural area or free flow conditions. Dixie Road is considered to be the major road which has one (1) through lane in both north and south directions. The site driveway is considered to be the minor approach with a shared left- and right-turn lane. For the purpose of this analysis, the minor road is considered to have one lane in each direction. This presents a conservative analysis as the thresholds are lower for a single lane of traffic per direction. According to the guidelines, right-turn volumes from the minor approach should be excluded from criteria 2B as they are not considered traffic crossing a road. Further, the guidelines also state that the volume requirement in criteria 1B should be increased by 50% since the proposed accesses on Dixie Road is a “T” intersection.

The traffic volumes under future total conditions for each access were utilized in the signal warrant analysis. The installation of a traffic signal is warranted if all volume requirements are met as per Table 21 “Justification 7 Projected Volumes” and Table 22 “Future Development: Volume Expansion Required to Meet Justifications” in OTM Book 12. The results for all three (3) accesses are summarized in **Table 6-1**, and detailed analysis is available in **Appendix H**.

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Table 6-1: Signal Warrant Analysis Results

Proposed Access	Justification 7 (Projected Volumes)			Compliance	Signal Justified?	
					YES	NO
East Access #1	1. Minimum Vehicular Volume	A	Total Volume (Average Hour)	100%		x
		B	Crossing Volume (Average Hour)	16%		x
	2. Delay to Cross Traffic	A	Main Road (Average Hour)	100%		x
		B	Crossing Road (Average Hour)	21%		x
East Access #2	1. Minimum Vehicular Volume	A	Total Volume (Average Hour)	100%		x
		B	Crossing Volume (Average Hour)	14%		x
	2. Delay to Cross Traffic	A	Main Road (Average Hour)	100%		x
		B	Crossing Road (Average Hour)	0%		x
East Access #3	1. Minimum Vehicular Volume	A	Total Volume (Average Hour)	100%		x
		B	Crossing Volume (Average Hour)	16%		x
	2. Delay to Cross Traffic	A	Main Road (Average Hour)	100%		x
		B	Crossing Road (Average Hour)	18%		x

Based on the analysis, the projected average hourly volumes for all three (3) accesses along Dixie Road do not fulfill Justification 7. Although criteria 1A and 2A are met with 100% for all accesses, a signal is not warranted due to low minor road and crossing volumes. However, it should be noted that the signal warrant analyses were conducted with peak hour traffic volumes which is primarily composed of employee vehicle traffic. It is assumed that warehouse truck operations would not typically operate during peak periods such that heavy vehicle traffic would be much higher during off-peak periods. Given that the proposed development will provide a total of 290 trailer parking spaces, this volume of trucks can potentially be entering and leaving the subject site at the same time as a worst-case scenario. Therefore, signalization is proposed at the three (3) accesses along Dixie Road to facilitate warehouse truck operations.

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7 PARKING REVIEW

The subject site is governed by the parking standards in the Town of Caledon Zoning By-law 2006-50. The parking requirements for the development assumes that the office net floor area associated with each building is 15% or less of the total net floor area (NFA). In accordance to the bylaw, a building with a NFA of over 20,000m^2 would yield 168 parking spaces, plus one (1) parking space per 170m^2 of NFA or portion thereof over 20,000m^2. To note, at this stage of the development proposal, the NFA has not yet been determined for each building. Therefore, as a conservative method, the gross floor area (GFA) has been utilized for the following parking calculations. The parking requirements is summarized in **Table 7-1.**

Table 7-1: Zoning By-law Parking Requirements

Building	Land Use	GFA (m^2)	Town of Caledon Zoning By-law 2006-50		Parking Supply
			Parking Standard	Parking Required	
Building A	Warehouse (>20,000 m^2)	81,930	168 spaces + 1 space per 170 m^2 of GFA over 20,000 m^2	533	571
Building B	Warehouse (>20,000 m^2)	91,867	168 spaces + 1 space per 170 m^2 of GFA over 20,000 m^2	591	559
Building C	Warehouse (>20,000 m^2)	48,324	168 spaces + 1 space per 170 m^2 of GFA over 20,000 m^2	335	469
Building D	Warehouse (>20,000 m^2)	25,121	168 spaces + 1 space per 170 m^2 of GFA over 20,000 m^2	199	258
			TOTAL	**1,658**	**1,857**
			Parking Rate (spaces per 100m^2 of GFA)	**0.67**	**0.75**

Based on the minimum parking requirements under the Town of Caledon Zoning By-law, the proposed development is required to provide a total of 1,658 parking spaces. The development is proposing to provide a total of 1,857 parking spaces, exceeding the by-law minimum parking requirements by 199 parking spaces. This proposed provision is equivalent to an overall parking rate of 0.75 spaces per 100m^2 GFA.

Although the proposed parking supply provided for Building B is deficient from the individual building's parking requirement by 32 parking spaces, employees will be able to utilize the surplus parking of 38 spaces provided at the adjacent Building A.

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8 LOADING REVIEW

The proposed development is subject to the loading standards outlined in the Town of Caledon Zoning By-law 2006-50. The warehouse loading space requirements include three (3) loading spaces for a minimum GFA of 7,441 m^2, and one (1) loading space required for each additional 9,300 m^2 GFA or portion thereof in excess of 7,441 m^2. **Table 8-1** summarizes the loading space requirements and proposed loading spaces per building.

Table 8-1: Zoning By-law Loading Requirements

Building	Land Use	GFA (m^2)	Town of Caledon Zoning By-law 2006-50		Loading Supply
			Loading Standard	Loading Required	
Building A	Warehouse (>7,441 m^2)	81,930	3 spaces + 1 space per 9,300 m^2 of GFA over 7,441 m^2	12	168
Building B	Warehouse (>7,441 m^2)	91,867	3 spaces + 1 space per 9,300 m^2 of GFA over 7,441 m^2	13	198
Building C	Warehouse (>7,441 m^2)	48,324	3 spaces + 1 space per 9,300 m^2 of GFA over 7,441 m^2	8	52
Building D	Warehouse (>7,441 m^2)	25,121	3 spaces + 1 space per 9,300 m^2 of GFA over 7,441 m^2	5	36
			TOTAL	**38**	**454**

The proposed loading supply of 454 spaces will satisfy the total by-law requirement of 38 loading spaces. The swept path diagrams demonstrating loading functionality is available in **Appendix I.**

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9 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation Demand Management (TDM) is a set of strategies which strive towards a more efficient transportation network by influencing travel behavior. Effective TDM measures can reduce vehicle usage and encourage people to engage in more sustainable methods of travel. There are several opportunities to incorporate TDM measures that support alternative modes of transportation. The recommendations should enhance non-single occupant vehicle trips for employees traveling to and from the subject site.

9.1 TRANSIT-BASED STRATEGIES

1. *Addition of bus stops on-site to provide connection to transit network.*

The proposed development will implement bus stops on site to encourage employees to use transit. The bus locations are proposed along the driveways of North Access #3 along Old School Road, as well as East Access #2 along Dixie Road. The exact bus stop locations and design will be determined in consultation with the Town of Caledon and Region of Peel, along with transit routing and schedules.

2. *Provision of real-time transit schedule screens.*

It is recommended that screens be provided in the employees' lounges and main exits to display real-time data for transit services, including schedules and service alerts.

9.2 TRAVEL AND PARKING MANAGEMENT STRATEGIES

3. *Signed carpool spaces.*

It is recommended that the proposed development include designated carpool spaces as a means to reduce single occupancy automobile usage. These carpool spaces should be clearly signed and be located conveniently close to the main entrances to provide a greater incentive for employees carpooling.

4. *Smart Commute Membership.*

Once tenants are secured, it is recommended that future tenants/owners register with the Smart Commute program. Smart Commute provides the means for businesses to help provide an alternative option for their employees to get to and from work through ride matching. One benefit with Smart Commute is the Emergency Ride Home program that provides carpoolers with a sense of reassurance under urgent circumstances. The Owner could also help tenants in establishing an employer-based carpool program specifically for the employees that would be working on-site.

5. *Communications Strategy.*

The Owner should provide communications and distribute information to employees via information packages or through email regarding the different travel demand management measures and programs that are offered. Information on Smart Commute, Emergency Ride Home, or other incentives can be obtained from the Region, and be included as part of this material. The Region and/or Town should also be responsible for making Smart Commute information brochures, pedestrian/cycling maps, transit maps, and

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other general information available for distribution to the building occupant to help commuters become aware of the various travel alternatives.

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10 CONCLUSIONS

- The development proposal will introduce four (4) warehouse/distribution buildings with a combined ground floor area (GFA) of approximately 247,243 m^2. Six (6) accesses will be provided to the site: three (3) all-moves accesses along Old School Road, as well as three (3) all-moves accesses along Dixie Road. All accesses along Dixie Road are proposed to be signalized.
- The subject site is located in a predominantly rural area, with limited access to the Town's active transportation networks. Therefore, there is a lack of pedestrian and cycling infrastructure within the study area.
- Under existing traffic conditions, all studied intersections operate well with an overall LOS of 'C' or better during both peak periods. Of note, the northbound left-turn movement at Dixie & Mayfield is approaching capacity during the PM peak hour.
- Under future background conditions, the studied intersections continue to operate acceptably without any capacity constraints during the weekday AM peak hour. However, the eastbound left-turn movement at Dixie & Mayfield is operating over capacity during the weekday PM peak hour due to the additional traffic generated by the background development.
- Signal timing adjustments while maintaining the existing cycle length are recommended at Dixie & Mayfield during the PM peak period to alleviate the traffic constraints revealed under future background conditions. With the optimized signal timing plan, the intersection operates with acceptable levels of service.
- The proposed development is projected to generate 452 and 506 two-way trips during the AM and PM peak hour periods, respectively.
- Under future total conditions, the eastbound and northbound left-turn movements at Dixie & Mayfield are operating with capacity constraints during the PM peak hour. The proposed site accesses are expected to operate within capacity and with minimal delays.
- Additional signal timing adjustments are recommended, including a protected northbound left-turn phase, at Dixie & Mayfield during the PM peak period. With this improvement, all individual movements are operating within the roadway capacity and acceptable delays.
- To note, the signal timing optimization was recommended based on the traffic generated by the full build-out of the proposed development. This improvement would not be required immediately as the four (4) buildings are not proposed to be constructed at the same time. Instead, Dixie & Mayfield should be monitored as the development advances, in order to confirm the necessity and timing of signal timing improvements. The Mayfield Road widening and Settlement Boundary Expansion Study conducted by the Region and Town may also affect the need for the signal timing optimization at this intersection.
- The proposed parking provision of 1,857 parking spaces satisfies the Town of Caledon Zoning By-law parking requirements.
- The proposed loading provision of 454 spaces satisfies the Town of Caledon Zoning By-law loading requirement.

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- A number of TDM measures have been recommended, including carpool spaces, real-time transportation screens, and information packages on travel alternatives.
- The future on-site bus stops will allow employees to engage in sustainable modes of transportation and reduce auto-based travel. The proposed bus stops provide an opportunity for public transit connection to extend north from the existing bus stop south of Dixie Road.

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APPENDIX A

Existing Traffic Data

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Intersection Name	Road Code	Int. #	Sys #	Rev.
Dixie Road at Old School Road	00430603	9963	963	1

Controller Make	Model	Firmware Rev. No.
Econolite	ASC/3	

Type of Operation 4 Phase Semi-Actuated

Revision

NO	Date Y	M	D	Description	Field Chg by	Checked by	Approved by
1	17			Installation of Traffic Signals			

*- Start From Main Menu

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	Dixie Road - Southbound	PH6	Dixie Road - Northbound
Ph3		Ph7	
Ph4	Old School Road - Westbound	Ph8	Old School Road - Eastbound

CONFIGURATION SUBMENU - OPTIONS *- 1 - 8

Supervisor access code:	0000
Data change access code:	9400
Key Click Enable:	YES
Backlight Enable:	YES

CONFIGURATION SUBMENU - PORT 3 *- 1 - 6

Port Protocol……..:	Terminal
Port 2 Enable……..:	X
Telemetry Address…..:	1-6
System Detector address....:	0
Telem response delay……..:	8700
Duplex - Half or Full……..:	Full
Modem Data Rate (BPS)…..:	1200
Data, Parity, Stop……..:	8,0,1

CONFIGURATION SUBMENU - CONTROLLER SEQUENCE *- 1 - 1

	..1	..2	..3	..4	..5	..6
R1	1	2	3	4	9	10
R2	5	6	7	8	11	12

CONFIGURATIUON SUBMENU - PHASES IN USE *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in use :	0	X	0	X	0	X	0	X
Exclusive Ped :	0	0	0	0	0	0	0	0

CONTROLLER SUBMENU - TIMING DATA * - 2 - 1

Phase:	1	2	3	4	5	6	7	8
Minimum Green…….. :	0	8	0	8	0	8	0	8
Walk…….. :	0	8	0	8	0	8	0	8
Pedestrian Clearance. :	0	9	0	11	0	9	0	11
Veh. Ext. :	0	5.0	0	5.0	0	5.0	0	5.0
Veh. Ext. 2 :								
Max. Ext. :								
Maximum No 1…….. :	0	30	0	30	0	30	0	30
Maximum No 2…….. :	0	30	0	30	0	30	0	30
Maximum No 3…….. :	0	0	0	0	0	0	0	0
Yellow …. :	0	4.6	0	4.0	0	4.6	0	4.0
Red Clr….. :	0	2.0	0	2.4	0	2.0	0	2.4
Seconds/Actuation. :	0	0	0	0	0	0	0	0
Maximum Initial…….. :	0	0	0	0	0	0	0	0
Time B4 Reduction…. :	0	0	0	0	0	0	0	0
Cars WT….. :	0	0	0	0	0	0	0	0
TTREDUC…….. :	0	0	0	0	0	0	0	0
MIN GAP….. :	0	0	0	0	0	0	0	0

CONTROLLER SUBMENU - RECALL DATA * - 2 - 4

Phase:	1	2	3	4	5	6	7	8
Locking Memory :	0	0	0	0	0	0	0	0
Vehicle Recall :	0	0	0	0	0	0	0	0
Ped Recall	0	X	0	0	0	X	0	0
Recall to Max	0	X	0	0	0	X	0	0
Soft Recall	0	0	0	0	0	0	0	0
Don't Rest Here	0	0	0	0	0	0	0	0
Ped Dark n/call	0	0	0	0	0	0	0	0

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Intersection Name		Road Code	Int. #	Sys #	Rev.
Dixie Road at Old School Road		00430603	9963	963	1
Controller Make	**Model**	**Firmware Rev. No.**			
Econolite	**ASC/3**				

CONTROLLER SUBMENU - START/FLASH DATA *** - 2 - 6**

Phase:	1	2	3	4	5	6	7	8
Power Start	0	X	0	0	0	X	0	0
External Start:	0	X	0	0	0	X	0	0
Power start All Red Time	0	X	0	0	0	X	0	0
Power Start Flash time	0	15	0	0	0	15	0	0
Out of Flash Yellow	0	0	0	0	0	0	0	0
Out of Flash All Red	0	0	0	0	0	0	0	0

CONTROLLER SUBMENU - OPTION DATA *** - 2 - 9**

Phase:	1	2	3	4	5	6	7	8
Guar Passage :	0	0	0	X	0	0	0	X
Nonactuated 1 :	0	X	0	0	0	X	0	0
Nonactuated 2	0	0	0	0	0	0	0	0
Dual Entry	0	X	0	0	0	X	0	0
Cond Service	0	0	0	0	0	0	0	0
Rest in Walk	0	X	0	0	0	X	0	0
Flashing Walk	0	0	0	0	0	0	0	0

Enable Programming Options

Dual Entry……..…….. X
Backup Protect. Group 1…….. X

COORDINATOR SUBMENU - OPTIONS *** - 3 - 1**

Split units……. sec
Offset Units…….. sec
Intercnt Fmt……. STD
Intercnt Src……. TLM
Resync count…..
Transition….. SMOOTH FLOAT FORCE OFF
Dwell period…… 0%

Act Crd Phase…….. X
Act Walk/Rest…….. X
Inhibit Max……..…. X
Max2 Select……. 0
Multisync…….. 0
Floating Force Off….. X

COORDINATOR SUBMENU - COORD PATTERN 1 *** - 3 - 4**

Cycle Length : 70 C/O/S - 701
Offset : 0
SPLITS

Phase								
	1) 0	2) 40	3) 0	4) 30				
	5) 0	6) 40	7) 0	8) 30				
	9) 0	10) 0	11) 0	12) 0				

Phase:	1	2	3	4	5	6	7	8
Coord Phases :	0	X	0	0	0	X	0	0
Vehicle Recall :	0	0	0	0	0	0	0	0
Veh Max Recall	0	X	0	0	0	X	0	0
Ped Recall	0	X	0	0	0	X	0	0
Phase Omit	0	0	0	0	0	0	0	0
Spare	0	0	0	0	0	0	0	0

COORDINATOR SUBMENU - COORD PATTERN 2 *** - 3 - 4**

Cycle Length : 65 C/O/S - 702
Offset : 0
SPLITS

Phase								
	1) 0	2) 38	3) 0	4) 27				
	5) 0	6) 38	7) 0	8) 27				
	9) 0	10) 0	11) 0	12) 0				

Phase:	1	2	3	4	5	6	7	8
Coord Phases :	0	X	0	0	0	X	0	0
Vehicle Recall :	0	0	0	0	0	0	0	0
Veh Max Recall	0	X	0	0	0	X	0	0
Ped Recall	0	X	0	0	0	X	0	0
Phase Omit	0	0	0	0	0	0	0	0
Spare	0	0	0	0	0	0	0	0

COORDINATOR SUBMENU - COORD PATTERN 3 *** - 3 - 4**

Cycle Length : 65 C/O/S - 703
Offset : 0
SPLITS

Phase								
	1) 0	2) 35	3) 0	4) 30				
	5) 0	6) 35	7) 0	8) 30				
	9) 0	10) 0	11) 0	12) 0				

Phase:	1	2	3	4	5	6	7	8
Coord Phases :	0	X	0	0	0	X	0	0
Vehicle Recall :	0	0	0	0	0	0	0	0
Veh Max Recall	0	X	0	0	0	X	0	0
Ped Recall	0	X	0	0	0	X	0	0
Phase Omit	0	0	0	0	0	0	0	0
Spare	0	0	0	0	0	0	0	0

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Intersection Name		Road Code	Int. #	Sys #	Rev.
Dixie Road at Old School Road		00430603	9963	963	1
Controller Make	**Model**	**Firmware Rev. No.**			
Econolite	ASC/3				

COORDINATOR SUBMENU - COORD PATTERN 4 * - 3 - 4

Cycle Length : 255 C/O/S - 704
Offset : 0
SPLITS
Phase

1) 0	2) 0	3) 0	4) 0				
5) 0	6) 0	7) 0	8) 0				
9) 0	10) 0	11) 0	12) 0				

Phase:	1	2	3	4	5	6	7	8
Coord Phases :	0	0	0	0	0	0	0	0
Vehicle Recall :	0	0	0	0	0	0	0	0
Veh Max Recall	0	0	0	0	0	0	0	0
Ped Recall	0	0	0	0	0	0	0	0
Phase Omit	0	0	X	0	0	0	0	0
Spare	0	0	0	0	0	0	0	0

COORDINATOR SUBMENU - COORD PATTERN 5 * - 3 - 4

Cycle Length : 255 C/O/S - 705
Offset : 0
SPLITS
Phase

1) 0	2) 0	3) 0	4) 0				
5) 0	6) 0	7) 0	8) 0				
9) 0	10) 0	11) 0	12) 0				

Phase:	1	2	3	4	5	6	7	8
Coord Phases :	0	X	0	0	0	X	0	0
Vehicle Recall :	0	0	0	0	0	0	0	0
Veh Max Recall	0	X	0	0	0	X	0	0
Ped Recall	0	X	0	0	0	X	0	0
Phase Omit	0	0	0	0	0	0	0	0
Spare	0	0	0	0	0	0	0	0

COORDINATOR SUBMENU - COORD PATTERN 6 * - 3 - 4

Cycle Length : 255 C/O/S - 706
Offset : 0
SPLITS
Phase

1) 0	2) 0	3) 0	4) 0				
5) 0	6) 0	7) 0	8) 0				
9) 0	10) 0	11) 0	12) 0				

Phase:	1	2	3	4	5	6	7	8
Coord Phases :	0	0	0	0	0	0	0	0
Vehicle Recall :	0	0	0	0	0	0	0	0
Veh Max Recall	0	0	0	0	0	0	0	0
Ped Recall	0	0	0	0	0	0	0	0
Phase Omit	X	0	X	0	X	0	0	0
Spare	0	0	0	0	0	0	0	0

NIC/TOD SUBMENU - CLOCK/CALENDAR * - 5 - 1

15 JAN 2001 MON WEEK 12 12:12:00 PM

DATE SET:
TIME SET:

ENTER DATE/TIME
THEN PRESS ENTER

MANUAL NIC PROGRAM STEP
MANUAL TOD PROGRAM STEP

NIC/TOD SUBMENU - WEEKLY PROGRAMS * - 5 - 1

	1	2	3	4	5	6	7	8	9	10
Sunday	2	1	1	1	1	1	1	1	1	1
Monday	1	1	1	1	1	1	1	1	1	1
Tuesday	1	1	1	1	1	1	1	1	1	1
Wednesday	1	1	1	1	1	1	1	1	1	1
Thursday	1	1	1	1	1	1	1	1	1	1
Friday	1	1	1	1	1	1	1	1	1	1
Saturday	2	1	1	1	1	1	1	1	1	1

NIC/TOD SUBMENU - YEARLY PROGRAMS * - 5 - 3

WEEK - OF - YEAR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
WEEKLY PROG.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
WEEKLY PROG.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
WEEKLY PROG.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

TOWN OF CALEDON
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Intersection Name		Road Code	Int. #	Sys #	Rev.
Dixie Road at Old School Road		00430603	9963	963	1
Controller Make	**Model**	**Firmware Rev. No.**			
Econolite	ASC/3				

NIC/TOD SUBMENU - NIC PROGRAMS STEPS *** - 5 - 3**

STEP	PROGRAM	TIME	PATTERN
1	1	0600	701
2	1	0900	702
3	1	1500	703
4	1	1900	704
5	0	1100	705
6	0	1800	706
7	0	0000	0

Authorized Signature: _____ Date: _____

TOWN OF CALEDON
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Feb 26, 2021

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**January 8, 2018**		**Prepared Date**	**December 8, 2020**
Database Rev	**27**		**Completed By**	**JP**
Timing Card / Field rev			**Checked By**	**SJ**

Location — **Dixie Road at Mayfield Road**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s) (Green+Amber+All Red)		
			WALK	FDWALK			AM SPLITS	OFF MAX	PM SPLITS
1	Mayfield Road - WB P.P. LT	5	0	0	30	0	10	13	10
2	Mayfield Road - EB	8	8	30	46	23	60	16.9	60
3	Not in use	-	-	-	-	-	-	-	-
4	Dixie Road - NB	8	8	33	46	23	50	46.9	50
5	Mayfield Road - EB P.P. LT	5	0	0	30	0	10	13	10
6	Mayfield Road - WB	8	8	30	46	23	60	16.9	60
7	Not in use	-	-	-	-	-	-	-	-
8	Dixie Road - SB	8	8	33	46	23	50	46.9	50

System Control
No

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
07:00 - 09:00	AM	120	44
FREE	OFF	0	0
15:00 - 18:00	PM	120	32

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Spectrum

Turning Movement Count
Location Name: DIXIE RD & OLD SCHOOL RD
Date: Thu, Oct 03, 2019 Deployment Lead: Patrick Filopoulos

Peak Hour: 07:15 AM - 08:15 AM Weather: Moderate Rain (9.08 °C)

Start Time	N Approach DIXIE RD						E Approach OLD SCHOOL RD						S Approach DIXIE RD						W Approach OLD SCHOOL RD						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:15:00	2	132	2	0	0	136	6	16	0	0	0	22	2	42	10	0	0	54	4	27	3	0	0	34	246
07:30:00	10	144	3	0	0	157	12	18	3	0	0	33	1	40	11	0	0	52	3	70	10	0	0	83	325
07:45:00	16	122	2	0	0	140	17	24	0	0	0	41	0	56	15	0	0	71	3	68	10	0	0	81	333
08:00:00	5	94	4	0	0	103	8	21	5	0	0	34	2	48	8	0	0	58	1	41	8	0	0	50	245
Grand Total	33	492	11	0	0	536	43	79	8	0	0	130	5	186	44	0	0	235	11	206	31	0	0	248	**1149**
Approach%	6.2%	91.8%	2.1%	0%		-	33.1%	60.8%	6.2%	0%		-	2.1%	79.1%	18.7%	0%		-	4.4%	83.1%	12.5%	0%		-	**-**
Totals %	2.9%	42.8%	1%	0%		46.6%	3.7%	6.9%	0.7%	0%		11.3%	0.4%	16.2%	3.8%	0%		20.5%	1%	17.9%	2.7%	0%		21.6%	**-**
PHF	0.52	0.85	0.69	0		0.85	0.63	0.82	0.4	0		0.79	0.63	0.83	0.73	0		0.83	0.69	0.74	0.78	0		0.75	**-**
Heavy	2	17	0	0		19	0	4	0	0		4	0	18	0	0		18	3	3	1	0		7	**-**
Heavy %	6.1%	3.5%	0%	0%		3.5%	0%	5.1%	0%	0%		3.1%	0%	9.7%	0%	0%		7.7%	27.3%	1.5%	3.2%	0%		2.8%	**-**
Lights	31	475	11	0		517	43	75	8	0		126	5	168	44	0		217	8	203	30	0		241	**-**
Lights %	93.9%	96.5%	100%	0%		96.5%	100%	94.9%	100%	0%		96.9%	100%	90.3%	100%	0%		92.3%	72.7%	98.5%	96.8%	0%		97.2%	**-**
Single-Unit Trucks	0	7	0	0		7	0	0	0	0		0	0	7	0	0		7	0	0	1	0		1	**-**
Single-Unit Trucks %	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	3.8%	0%	0%		3%	0%	0%	3.2%	0%		0.4%	**-**
Buses	2	7	0	0		9	0	4	0	0		4	0	7	0	0		7	2	2	0	0		4	**-**
Buses %	6.1%	1.4%	0%	0%		1.7%	0%	5.1%	0%	0%		3.1%	0%	3.8%	0%	0%		3%	18.2%	1%	0%	0%		1.6%	**-**
Articulated Trucks	0	3	0	0		3	0	0	0	0		0	0	4	0	0		4	1	1	0	0		2	**-**
Articulated Trucks %	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	2.2%	0%	0%		1.7%	9.1%	0.5%	0%	0%		0.8%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

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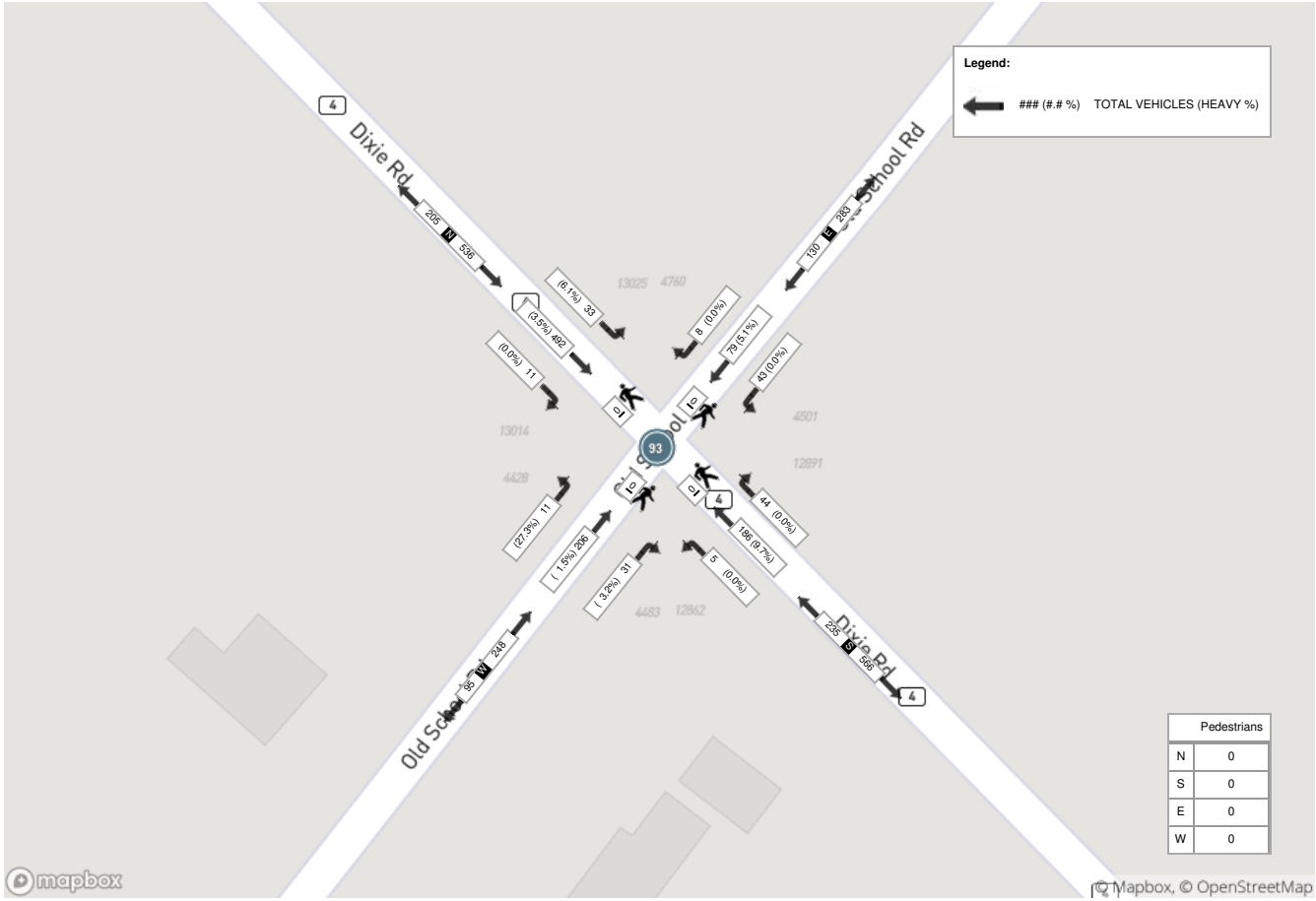
Turning Movement Count
Location Name: DIXIE RD & OLD SCHOOL RD
Date: Thu, Oct 03, 2019 Deployment Lead: Patrick Filopoulos

Peak Hour: 07:15 AM - 08:15 AM **Weather: Moderate Rain (9.08 °C)**



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Spectrum

Turning Movement Count
Location Name: DIXIE RD & OLD SCHOOL RD
Date: Thu, Oct 03, 2019 Deployment Lead: Patrick Filopoulos

Peak Hour: 04:00 PM - 05:00 PM Weather: Light Rain (10.54 °C)

Start Time	N Approach DIXIE RD						E Approach OLD SCHOOL RD						S Approach DIXIE RD						W Approach OLD SCHOOL RD						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
16:00:00	1	52	5	0	0	58	19	68	5	0	0	92	5	100	16	0	0	121	4	17	2	0	0	23	294
16:15:00	1	58	7	0	0	66	21	50	3	0	0	74	9	102	9	0	0	120	3	20	3	0	0	26	286
16:30:00	1	49	3	0	0	53	21	60	4	0	0	85	4	106	11	0	0	121	2	23	3	0	0	28	287
16:45:00	3	51	0	0	0	54	22	49	6	0	0	77	7	99	5	0	0	111	5	28	2	0	0	35	277
Grand Total	6	210	15	0	0	231	83	227	18	0	0	328	25	407	41	0	0	473	14	88	10	0	0	112	**1144**
Approach%	2.6%	90.9%	6.5%	0%		-	25.3%	69.2%	5.5%	0%		-	5.3%	86%	8.7%	0%		-	12.5%	78.6%	8.9%	0%		-	**-**
Totals %	0.5%	18.4%	1.3%	0%		20.2%	7.3%	19.8%	1.6%	0%		28.7%	2.2%	35.6%	3.6%	0%		41.3%	1.2%	7.7%	0.9%	0%		9.8%	**-**
PHF	0.5	0.91	0.54	0		0.88	0.94	0.83	0.75	0		0.89	0.69	0.96	0.64	0		0.98	0.7	0.79	0.83	0		0.8	**-**
Heavy	0	18	0	0		18	1	2	2	0		5	0	6	11	0		17	2	3	0	0		5	**-**
Heavy %	0%	8.6%	0%	0%		7.8%	1.2%	0.9%	11.1%	0%		1.5%	0%	1.5%	26.8%	0%		3.6%	14.3%	3.4%	0%	0%		4.5%	**-**
Lights	6	192	15	0		213	82	225	16	0		323	25	401	30	0		456	12	85	10	0		107	**-**
Lights %	100%	91.4%	100%	0%		92.2%	98.8%	99.1%	88.9%	0%		98.5%	100%	98.5%	73.2%	0%		96.4%	85.7%	96.6%	100%	0%		95.5%	**-**
Single-Unit Trucks	0	10	0	0		10	0	1	0	0		1	0	3	0	0		3	1	0	0	0		1	**-**
Single-Unit Trucks %	0%	4.8%	0%	0%		4.3%	0%	0.4%	0%	0%		0.3%	0%	0.7%	0%	0%		0.6%	7.1%	0%	0%	0%		0.9%	**-**
Buses	0	3	0	0		3	1	1	2	0		4	0	1	11	0		12	1	3	0	0		4	**-**
Buses %	0%	1.4%	0%	0%		1.3%	1.2%	0.4%	11.1%	0%		1.2%	0%	0.2%	26.8%	0%		2.5%	7.1%	3.4%	0%	0%		3.6%	**-**
Articulated Trucks	0	5	0	0		5	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	**-**
Articulated Trucks %	0%	2.4%	0%	0%		2.2%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

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Spectrum

Turning Movement Count
Location Name: DIXIE RD & OLD SCHOOL RD
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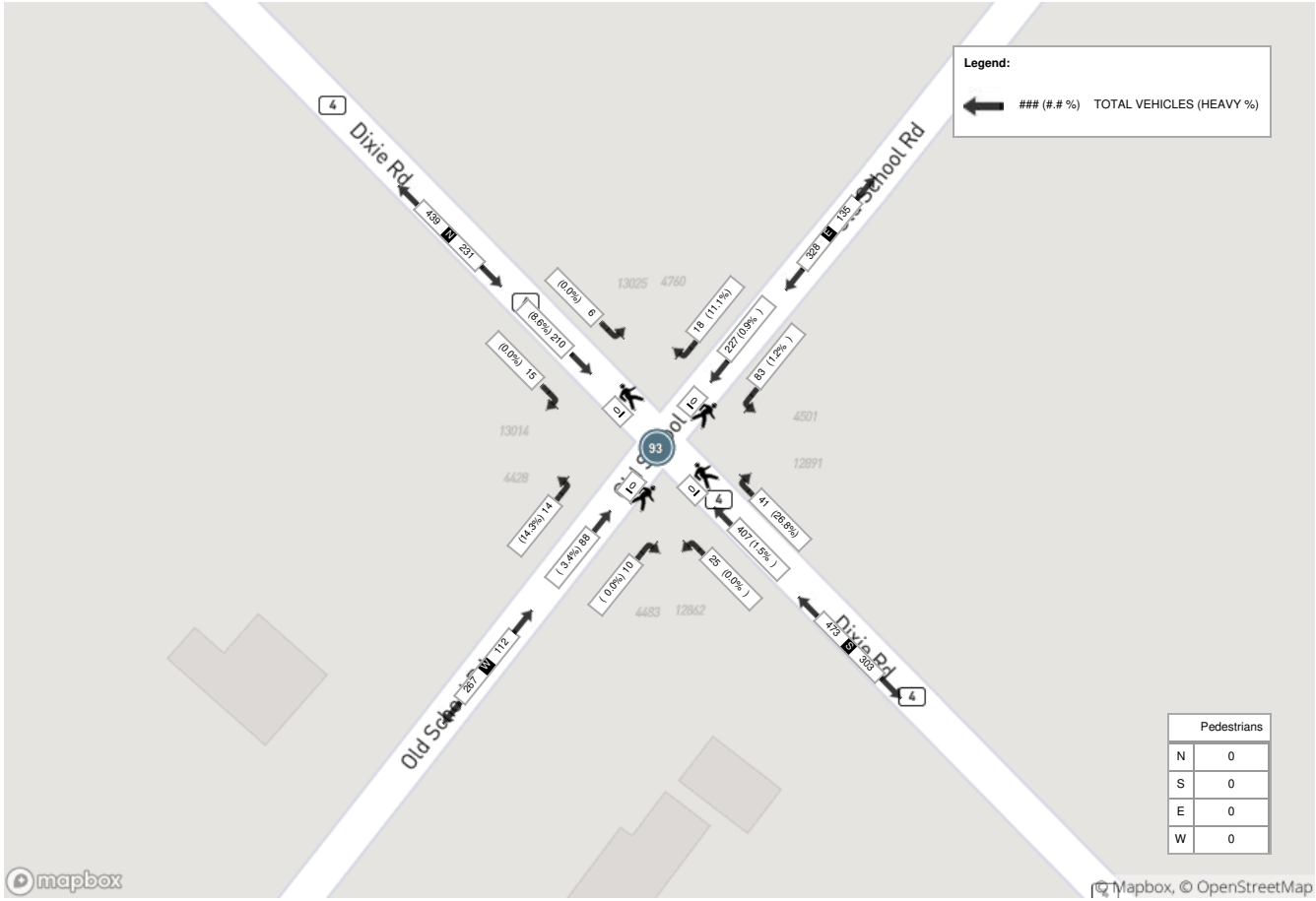

TOWN OF CALEDON
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Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & DIXIE RD
Date: Thu, Oct 03, 2019 Deployment Lead: Patrick Filopoulos

Peak Hour: 07:15 AM - 08:15 AM Weather: Moderate Rain (9.08 °C)

Start Time	N Approach DIXIE ROAD						E Approach MAYFIELD RD						S Approach DIXIE RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:15:00	6	60	104	0	0	170	10	105	6	0	0	121	23	14	2	0	0	39	58	259	72	0	0	389	719
07:30:00	2	9	57	0	0	68	10	115	7	0	0	132	31	7	7	0	0	45	68	302	90	0	0	460	705
07:45:00	4	22	56	0	0	82	18	163	3	0	0	184	27	12	11	0	0	50	50	412	94	0	0	556	872
08:00:00	10	21	39	0	0	70	22	152	2	0	0	176	40	13	11	0	0	64	61	299	108	0	0	468	778
Grand Total	22	112	256	0	0	390	60	535	18	0	0	613	121	46	31	0	0	198	237	1272	364	0	0	1873	**3074**
Approach%	5.6%	28.7%	65.6%	0%		-	9.8%	87.3%	2.9%	0%		-	61.1%	23.2%	15.7%	0%		-	12.7%	67.9%	19.4%	0%		-	**-**
Totals %	0.7%	3.6%	8.3%	0%		12.7%	2%	17.4%	0.6%	0%		19.9%	3.9%	1.5%	1%	0%		6.4%	7.7%	41.4%	11.8%	0%		60.9%	**-**
PHF	0.55	0.47	0.62	0		0.57	0.68	0.82	0.64	0		0.83	0.76	0.82	0.7	0		0.77	0.87	0.77	0.84	0		0.84	**-**
Heavy	6	9	27	0		42	5	77	6	0		88	5	7	4	0		16	32	84	16	0		132	**-**
Heavy %	27.3%	8%	10.5%	0%		10.8%	8.3%	14.4%	33.3%	0%		14.4%	4.1%	15.2%	12.9%	0%		8.1%	13.5%	6.6%	4.4%	0%		7%	**-**
Lights	16	103	229	0		348	55	458	12	0		525	116	39	27	0		182	205	1188	348	0		1741	**-**
Lights %	72.7%	92%	89.5%	0%		89.2%	91.7%	85.6%	66.7%	0%		85.6%	95.9%	84.8%	87.1%	0%		91.9%	86.5%	93.4%	95.6%	0%		93%	**-**
Single-Unit Trucks	2	6	20	0		28	1	39	2	0		42	4	5	1	0		10	21	22	7	0		50	**-**
Single-Unit Trucks %	9.1%	5.4%	7.8%	0%		7.2%	1.7%	7.3%	11.1%	0%		6.9%	3.3%	10.9%	3.2%	0%		5.1%	8.9%	1.7%	1.9%	0%		2.7%	**-**
Buses	2	1	2	0		5	3	18	3	0		24	1	2	2	0		5	3	31	6	0		40	**-**
Buses %	9.1%	0.9%	0.8%	0%		1.3%	5%	3.4%	16.7%	0%		3.9%	0.8%	4.3%	6.5%	0%		2.5%	1.3%	2.4%	1.6%	0%		2.1%	**-**
Articulated Trucks	2	2	5	0		9	1	20	1	0		22	0	0	1	0		1	8	31	3	0		42	**-**
Articulated Trucks %	9.1%	1.8%	2%	0%		2.3%	1.7%	3.7%	5.6%	0%		3.6%	0%	0%	3.2%	0%		0.5%	3.4%	2.4%	0.8%	0%		2.2%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

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Location Name: MAYFIELD RD & DIXIE RD
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Peak Hour: 07:15 AM - 08:15 AM **Weather: Moderate Rain (9.08 °C)**

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Start Time	N Approach DIXIE ROAD						E Approach MAYFIELD RD						S Approach DIXIE RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
16:15:00	6	60	88	0	0	154	10	270	5	0	0	285	69	38	11	0	0	118	58	234	48	0	0	340	897
16:30:00	6	73	78	0	0	157	18	233	4	0	0	255	80	57	8	0	0	145	70	212	49	1	0	332	889
16:45:00	12	76	63	0	0	151	7	267	5	0	0	279	66	30	7	0	0	103	70	228	44	0	0	342	875
17:00:00	12	60	64	0	0	136	8	226	6	0	0	240	74	45	7	0	0	126	64	208	45	0	0	317	819
Grand Total	36	269	293	0	0	598	43	996	20	0	0	1059	289	170	33	0	0	492	262	882	186	1	0	1331	**3480**
Approach%	6%	45%	49%	0%		-	4.1%	94.1%	1.9%	0%		-	58.7%	34.6%	6.7%	0%		-	19.7%	66.3%	14%	0.1%		-	**-**
Totals %	1%	7.7%	8.4%	0%		17.2%	1.2%	28.6%	0.6%	0%		30.4%	8.3%	4.9%	0.9%	0%		14.1%	7.5%	25.3%	5.3%	0%		38.2%	**-**
PHF	0.75	0.88	0.83	0		0.95	0.6	0.92	0.83	0		0.93	0.9	0.75	0.75	0		0.85	0.94	0.94	0.95	0.25		0.97	**-**
Heavy	3	14	10	0		27	14	72	2	0		88	6	0	1	0		7	12	88	3	0		103	**-**
Heavy %	8.3%	5.2%	3.4%	0%		4.5%	32.6%	7.2%	10%	0%		8.3%	2.1%	0%	3%	0%		1.4%	4.6%	10%	1.6%	0%		7.7%	**-**
Lights	33	255	283	0		571	29	924	18	0		971	283	170	32	0		485	250	794	183	1		1228	**-**
Lights %	91.7%	94.8%	96.6%	0%		95.5%	67.4%	92.8%	90%	0%		91.7%	97.9%	100%	97%	0%		98.6%	95.4%	90%	98.4%	100%		92.3%	**-**
Single-Unit Trucks	2	10	10	0		22	12	31	1	0		44	1	0	1	0		2	8	27	0	0		35	**-**
Single-Unit Trucks %	5.6%	3.7%	3.4%	0%		3.7%	27.9%	3.1%	5%	0%		4.2%	0.3%	0%	3%	0%		0.4%	3.1%	3.1%	0%	0%		2.6%	**-**
Buses	1	3	0	0		4	0	7	0	0		7	4	0	0	0		4	0	18	3	0		21	**-**
Buses %	2.8%	1.1%	0%	0%		0.7%	0%	0.7%	0%	0%		0.7%	1.4%	0%	0%	0%		0.8%	0%	2%	1.6%	0%		1.6%	**-**
Articulated Trucks	0	1	0	0		1	2	34	1	0		37	1	0	0	0		1	4	43	0	0		47	**-**
Articulated Trucks %	0%	0.4%	0%	0%		0.2%	4.7%	3.4%	5%	0%		3.5%	0.3%	0%	0%	0%		0.2%	1.5%	4.9%	0%	0%		3.5%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

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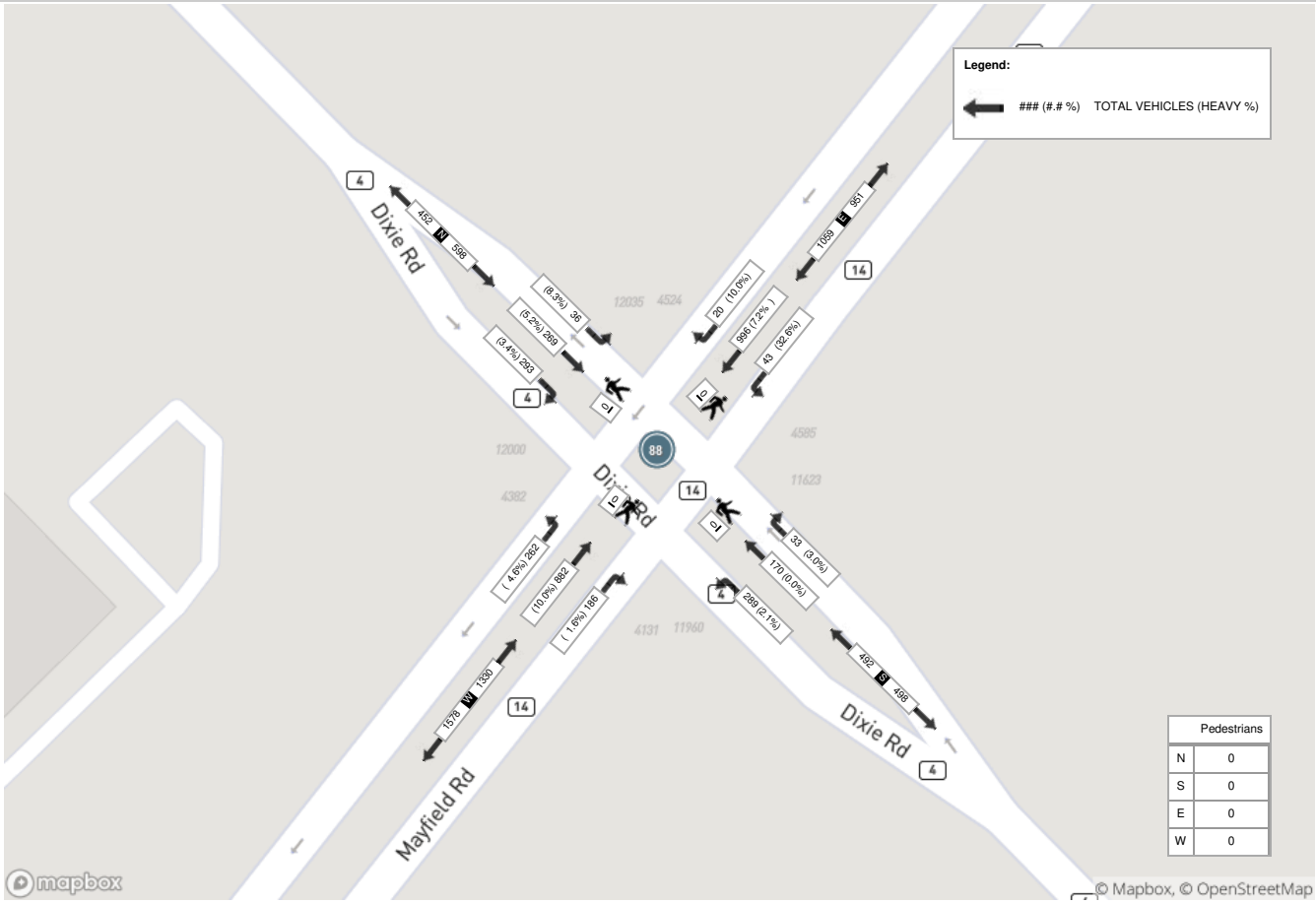
Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & DIXIE RD
Date: Thu, Oct 03, 2019 Deployment Lead: Patrick Filopoulos

Peak Hour: 04:15 PM - 05:15 PM **Weather: Light Rain (10.54 °C)**



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625 Cochrane Drive

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905-470-0015 x240 Klo@LEA.ca

Count Name: 21211_Dixie Rd & Merchant Rd-AM
Site Code: 21211
Start Date: 12/15/2020

Turning Movement Peak Hour Data (8:30 AM)

Start Time	Dixie Road Southbound				Dixie Road Northbound				Merchant Road Eastbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
8:30 AM	99	0	0	99	6	85	0	91	0	1	0	1	191
8:45 AM	97	0	0	97	12	77	0	89	0	6	0	6	192
9:00 AM	107	2	0	109	10	96	0	106	0	4	0	4	219
9:15 AM	106	0	0	106	21	94	0	115	1	6	0	7	228
Total	409	2	0	411	49	352	0	401	1	17	0	18	830
Approach %	99.5	0.5	-	-	12.2	87.8	-	-	5.6	94.4	-	-	-
Total %	49.3	0.2	-	49.5	5.9	42.4	-	48.3	0.1	2.0	-	2.2	-
PHF	0.956	0.250	-	0.943	0.583	0.917	-	0.872	0.250	0.708	-	0.643	0.910
Lights	369	1	-	370	44	301	-	345	0	13	-	13	728
% Lights	90.2	50.0	-	90.0	89.8	85.5	-	86.0	0.0	76.5	-	72.2	87.7
Buses	7	0	-	7	0	9	-	9	0	0	-	0	16
% Buses	1.7	0.0	-	1.7	0.0	2.6	-	2.2	0.0	0.0	-	0.0	1.9
Trucks	33	1	-	34	5	42	-	47	1	4	-	5	86
% Trucks	8.1	50.0	-	8.3	10.2	11.9	-	11.7	100.0	23.5	-	27.8	10.4
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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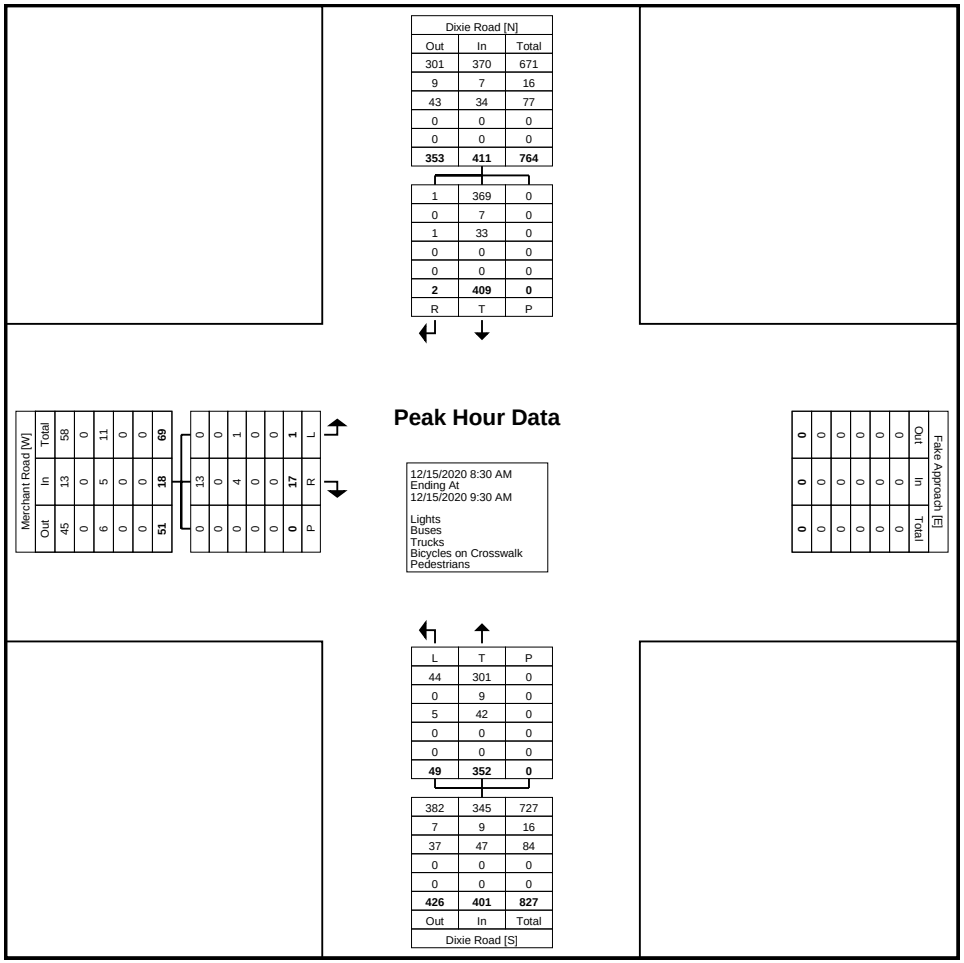
Count Name: 21211_Dixie Rd & Merchant Rd-AM
Site Code: 21211
Start Date: 12/15/2020



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Count Name: 21211_Dixie Rd & Merchant Rd-PM
Site Code: 21211
Start Date: 12/15/2020

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Dixie Road Southbound				Dixie Road Northbound				Merchant Road Eastbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:30 PM	83	0	0	83	2	136	0	138	0	16	2	16	237
4:45 PM	114	1	0	115	4	137	0	141	3	3	0	6	262
5:00 PM	97	2	0	99	3	100	0	103	0	9	0	9	211
5:15 PM	88	0	0	88	2	119	0	121	1	6	0	7	216
Total	382	3	0	385	11	492	0	503	4	34	2	38	926
Approach %	99.2	0.8	-	-	2.2	97.8	-	-	10.5	89.5	-	-	-
Total %	41.3	0.3	-	41.6	1.2	53.1	-	54.3	0.4	3.7	-	4.1	-
PHF	0.838	0.375	-	0.837	0.688	0.898	-	0.892	0.333	0.531	-	0.594	0.884
Lights	358	3	-	361	10	467	-	477	4	34	-	38	876
% Lights	93.7	100.0	-	93.8	90.9	94.9	-	94.8	100.0	100.0	-	100.0	94.6
Buses	2	0	-	2	0	1	-	1	0	0	-	0	3
% Buses	0.5	0.0	-	0.5	0.0	0.2	-	0.2	0.0	0.0	-	0.0	0.3
Trucks	22	0	-	22	1	24	-	25	0	0	-	0	47
% Trucks	5.8	0.0	-	5.7	9.1	4.9	-	5.0	0.0	0.0	-	0.0	5.1
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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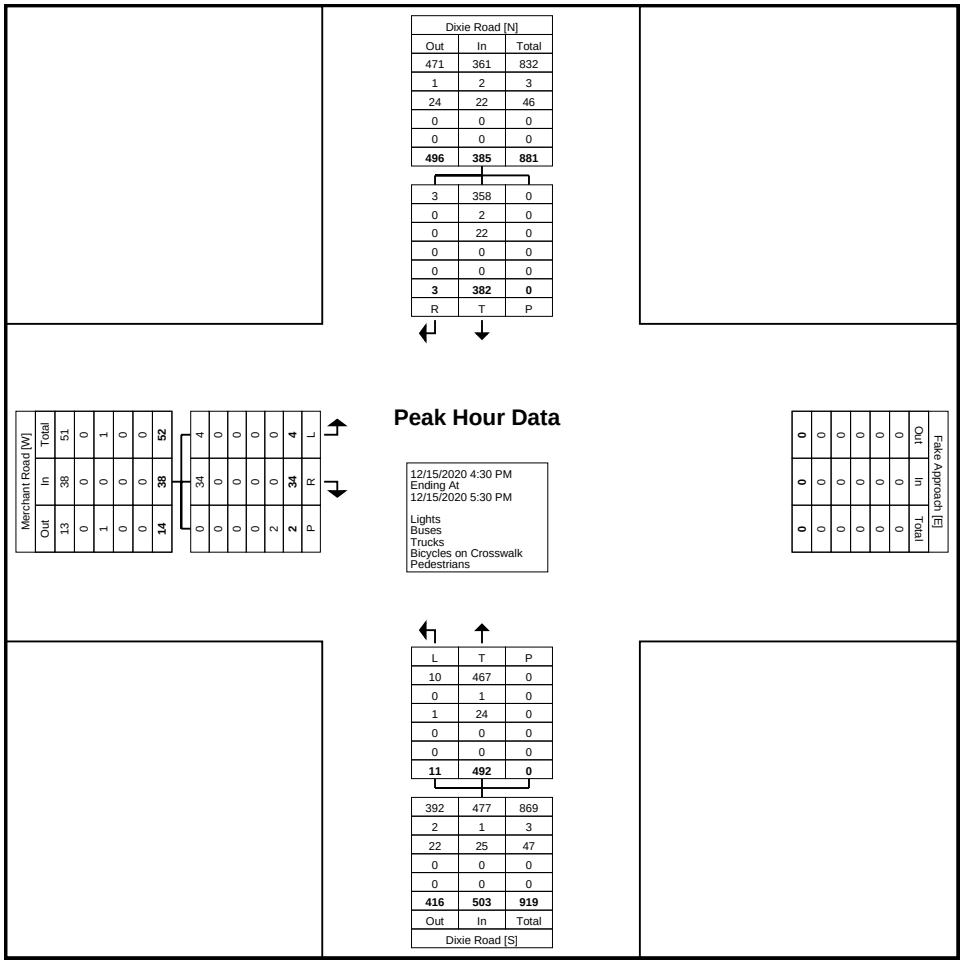
Count Name: 21211_Dixie Rd & Merchant Rd-PM
Site Code: 21211
Start Date: 12/15/2020



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Count Name: 21211_Heart Lake Rd & Old School Rd-AM
Site Code: 21211
Start Date: 12/15/2020

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Heart Lake Road Southbound					Old School Road Westbound					Heart Lake Road Northbound					Old School Road Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	2	6	4	0	12	1	10	1	0	12	1	8	0	0	9	3	23	1	0	27	60
7:30 AM	1	5	6	0	12	0	11	1	0	12	2	5	2	0	9	4	31	4	1	39	72
7:45 AM	0	11	0	0	11	3	13	1	0	17	1	6	1	0	8	0	41	2	0	43	79
8:00 AM	1	9	3	0	13	1	11	1	0	13	2	4	3	0	9	0	23	0	0	23	58
Total	4	31	13	0	48	5	45	4	0	54	6	23	6	0	35	7	118	7	1	132	269
Approach %	8.3	64.6	27.1	-	-	9.3	83.3	7.4	-	-	17.1	65.7	17.1	-	-	5.3	89.4	5.3	-	-	-
Total %	1.5	11.5	4.8	-	17.8	1.9	16.7	1.5	-	20.1	2.2	8.6	2.2	-	13.0	2.6	43.9	2.6	-	49.1	-
PHF	0.500	0.705	0.542	-	0.923	0.417	0.865	1.000	-	0.794	0.750	0.719	0.500	-	0.972	0.438	0.720	0.438	-	0.767	0.851
Lights	4	30	12	-	46	5	41	3	-	49	6	18	6	-	30	6	114	7	-	127	252
% Lights	100.0	96.8	92.3	-	95.8	100.0	91.1	75.0	-	90.7	100.0	78.3	100.0	-	85.7	85.7	96.6	100.0	-	96.2	93.7
Buses	0	1	0	-	1	0	2	1	-	3	0	1	0	-	1	1	4	0	-	5	10
% Buses	0.0	3.2	0.0	-	2.1	0.0	4.4	25.0	-	5.6	0.0	4.3	0.0	-	2.9	14.3	3.4	0.0	-	3.8	3.7
Trucks	0	0	1	-	1	0	2	0	-	2	0	4	0	-	4	0	0	0	-	0	7
% Trucks	0.0	0.0	7.7	-	2.1	0.0	4.4	0.0	-	3.7	0.0	17.4	0.0	-	11.4	0.0	0.0	0.0	-	0.0	2.6
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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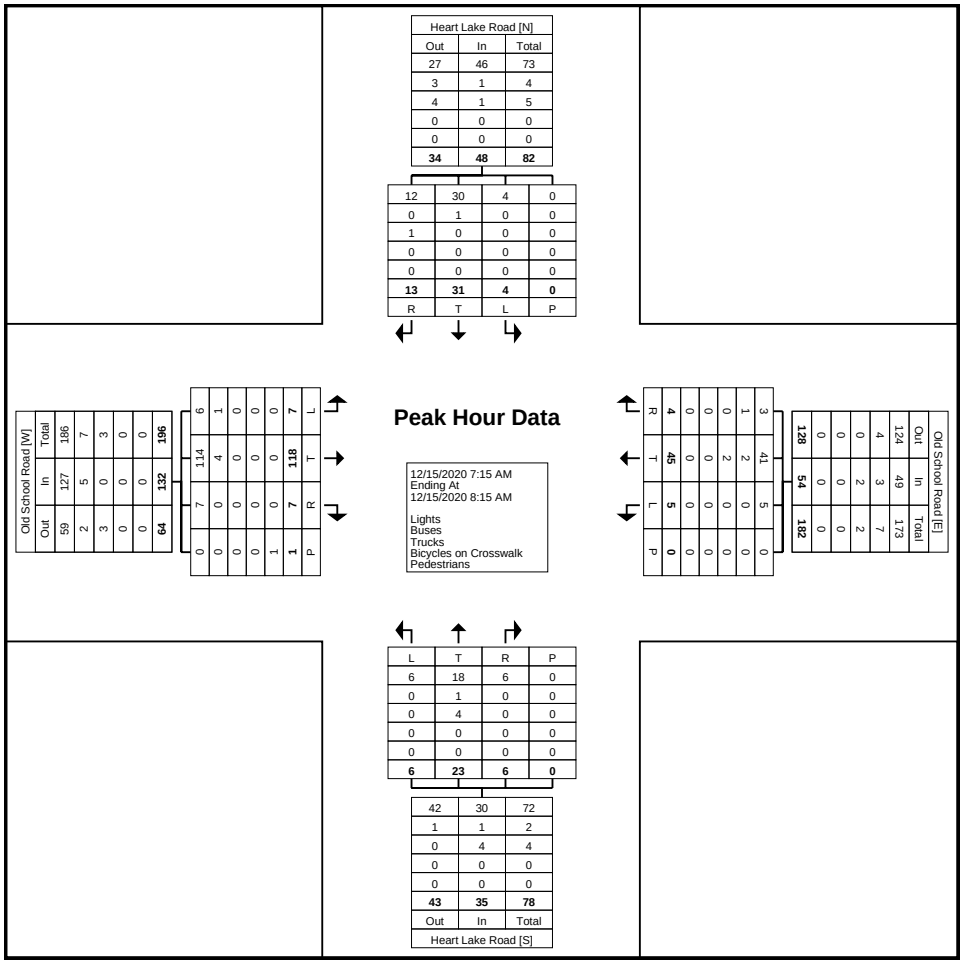
Site Code: 21211
Start Date: 12/15/2020



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Count Name: 21211_Heart Lake Rd & Old School Rd-PM
Site Code: 21211
Start Date: 12/15/2020

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Heart Lake Road Southbound					Old School Road Westbound					Heart Lake Road Northbound					Old School Road Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	0	11	2	0	13	4	40	0	0	44	4	5	1	1	10	2	21	2	0	25	92
5:00 PM	0	9	5	0	14	3	32	1	0	36	9	7	1	0	17	1	20	2	0	23	90
5:15 PM	1	2	1	0	4	8	38	1	0	47	4	9	6	0	19	2	25	3	0	30	100
5:30 PM	0	6	2	0	8	4	52	1	0	57	1	7	3	0	11	1	13	2	0	16	92
Total	1	28	10	0	39	19	162	3	0	184	18	28	11	1	57	6	79	9	0	94	374
Approach %	2.6	71.8	25.6	-	-	10.3	88.0	1.6	-	-	31.6	49.1	19.3	-	-	6.4	84.0	9.6	-	-	-
Total %	0.3	7.5	2.7	-	10.4	5.1	43.3	0.8	-	49.2	4.8	7.5	2.9	-	15.2	1.6	21.1	2.4	-	25.1	-
PHF	0.250	0.636	0.500	-	0.696	0.594	0.779	0.750	-	0.807	0.500	0.778	0.458	-	0.750	0.750	0.790	0.750	-	0.783	0.935
Lights	1	27	10	-	38	19	161	3	-	183	18	28	11	-	57	6	77	9	-	92	370
% Lights	100.0	96.4	100.0	-	97.4	100.0	99.4	100.0	-	99.5	100.0	100.0	100.0	-	100.0	100.0	97.5	100.0	-	97.9	98.9
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Trucks	0	1	0	-	1	0	1	0	-	1	0	0	0	-	0	0	2	0	-	2	4
% Trucks	0.0	3.6	0.0	-	2.6	0.0	0.6	0.0	-	0.5	0.0	0.0	0.0	-	0.0	0.0	2.5	0.0	-	2.1	1.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

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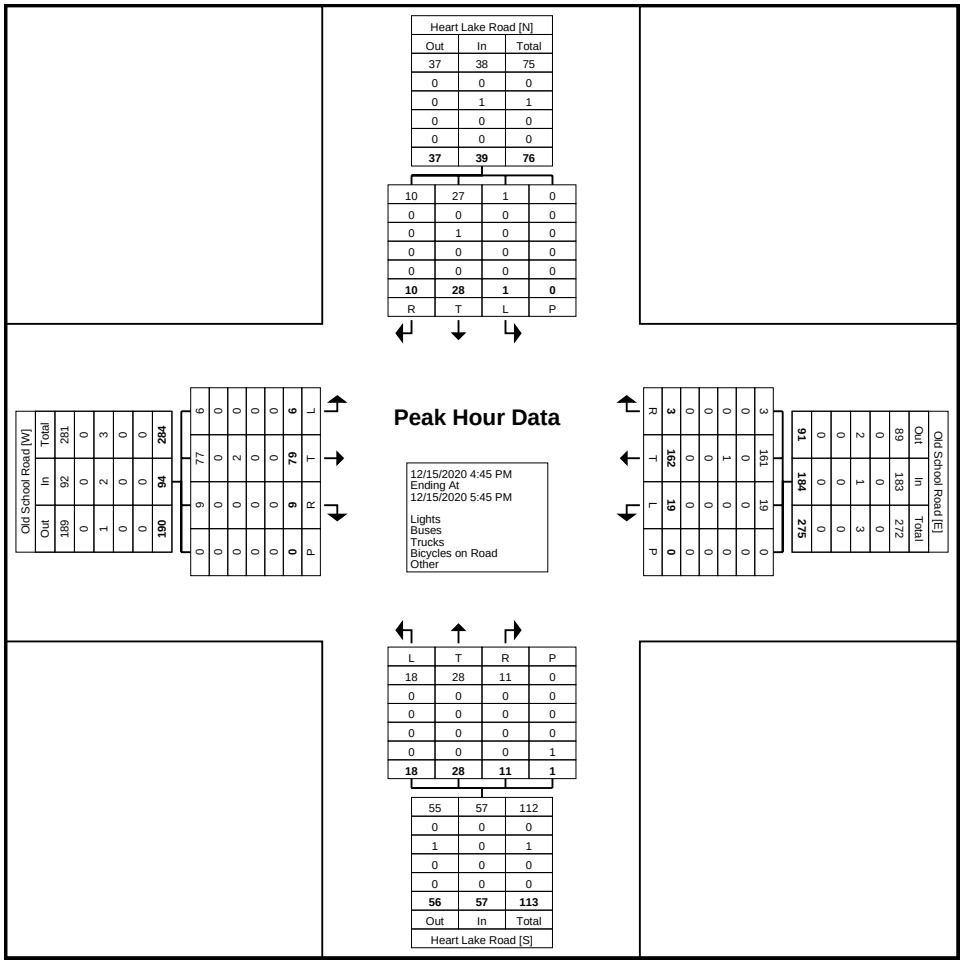

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APPENDIX B

Intersection Capacity Analysis Results – Existing Conditions

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	17	49	352	409	2
Future Volume (Veh/h)	1	17	49	352	409	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	17	49	352	409	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	859	409	411			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	859	409	411			
tC, single (s)	7.4	6.4	4.2			
tC, 2 stage (s)						
tF (s)	4.4	3.5	2.3			
p0 queue free %	100	97	96			
cM capacity (veh/h)	216	598	1106			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	18	49	352	409	2
Volume Left	1	49	0	0	0
Volume Right	17	0	0	0	2
cSH	544	1106	1700	1700	1700
Volume to Capacity	0.03	0.04	0.21	0.24	0.00
Queue Length 95th (m)	0.5	0.6	0.0	0.0	0.0
Control Delay (s)	11.8	8.4	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.8	1.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay		0.8		
Intersection Capacity Utilization		38.2%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	237	1272	364	60	535	121	146	31	22	148	256
Future Volume (vph)	237	1272	364	60	535	121	146	31	22	148	256
Lane Group Flow (vph)	237	1272	364	60	553	121	146	31	22	148	256
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	4	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	47.9	47.9	47.9	47.9	47.9	47.9
Total Split (s)	10.0	60.0	60.0	10.0	60.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	8.3%	50.0%	50.0%	8.3%	50.0%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.39	0.40	0.33	0.18	0.21	0.70	0.54	0.11	0.15	0.51	0.57
Control Delay	6.9	12.2	2.1	6.5	13.0	66.9	52.2	2.3	42.5	50.8	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	12.2	2.1	6.5	13.0	66.9	52.2	2.3	42.5	50.8	10.1
Queue Length 50th (m)	8.2	30.4	0.0	1.8	12.2	16.1	18.9	0.0	2.7	19.1	0.0
Queue Length 95th (m)	17.2	45.5	7.8	5.0	20.9	26.2	28.7	1.1	6.7	28.7	12.4
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	614	3146	1116	335	2675	384	600	547	317	638	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.40	0.33	0.18	0.21	0.32	0.24	0.06	0.07	0.23	0.38

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 44 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Dixie Road & Mayfield Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	1272	364	60	535	18	121	146	31	22	148	256
Future Volume (vph)	237	1272	364	60	535	18	121	146	31	22	148	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1566	4902	1536	1653	4553		1716	1671	1413	1405	1779	1439
Flt Permitted	0.42	1.00	1.00	0.20	1.00		0.59	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	687	4902	1536	347	4553		1069	1671	1413	884	1779	1439
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	237	1272	364	60	535	18	121	146	31	22	148	256
RTOR Reduction (vph)	0	0	132	0	2	0	0	0	26	0	0	214
Lane Group Flow (vph)	237	1272	232	60	551	0	121	146	5	22	148	42
Heavy Vehicles (%)	14%	7%	4%	8%	14%	33%	4%	15%	13%	27%	8%	11%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	86.6	76.4	76.4	77.6	70.4		19.6	19.6	19.6	19.6	19.6	19.6
Effective Green, g (s)	86.6	76.4	76.4	77.6	70.4		19.6	19.6	19.6	19.6	19.6	19.6
Actuated g/C Ratio	0.72	0.64	0.64	0.65	0.59		0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	592	3120	977	302	2671		174	272	230	144	290	235
v/s Ratio Prot	c0.04	c0.26		0.01	0.12			0.09			0.08	
v/s Ratio Perm	0.24		0.15	0.12			c0.11		0.00	0.02		0.03
v/c Ratio	0.40	0.41	0.24	0.20	0.21		0.70	0.54	0.02	0.15	0.51	0.18
Uniform Delay, d1	5.5	10.7	9.3	7.8	11.7		47.4	46.0	42.2	43.1	45.8	43.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.4	0.6	0.7	0.2		14.3	3.7	0.1	1.0	3.0	0.8
Delay (s)	6.5	11.1	9.9	8.5	11.8		61.7	49.7	42.2	44.1	48.8	44.0
Level of Service	A	B	A	A	B		E	D	D	D	D	D
Approach Delay (s)		10.3			11.5			53.8			45.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	11	206	43	79	5	186	33	492
Future Volume (vph)	11	206	43	79	5	186	33	492
Lane Group Flow (vph)	11	237	43	87	5	230	33	503
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.4	25.4	25.4	23.6	23.6	26.0	26.0
Total Split (s)	30.0	30.0	30.0	30.0	40.0	40.0	40.0	40.0
Total Split (%)	42.9%	42.9%	42.9%	42.9%	57.1%	57.1%	57.1%	57.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.6	4.6	4.6	4.6
All-Red Time (s)	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
v/c Ratio	0.05	0.55	0.17	0.21	0.01	0.24	0.05	0.49
Control Delay	17.5	24.6	19.6	18.0	7.8	7.9	8.0	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	24.6	19.6	18.0	7.8	7.9	8.0	11.3
Queue Length 50th (m)	0.6	13.0	2.3	4.2	0.1	6.3	0.9	18.5
Queue Length 95th (m)	2.4	23.5	6.2	9.6	1.0	14.9	3.5	37.9
Internal Link Dist (m)		1352.4		445.0		2550.6		428.3
Turn Bay Length (m)	35.0		40.0		40.0		35.0	
Base Capacity (vph)	387	680	401	666	444	977	610	1033
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.35	0.11	0.13	0.01	0.24	0.05	0.49

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 63.4
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Splits and Phases: 3: Dixie Road & Old School Road

TOWN OF CALEDON
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	206	31	43	79	8	5	186	44	33	492	11
Future Volume (vph)	11	206	31	43	79	8	5	186	44	33	492	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1405	1804		1785	1772		1785	1726		1684	1843	
Flt Permitted	0.70	1.00		0.57	1.00		0.42	1.00		0.62	1.00	
Satd. Flow (perm)	1036	1804		1074	1772		794	1726		1090	1843	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	11	206	31	43	79	8	5	186	44	33	492	11
RTOR Reduction (vph)	0	9	0	0	6	0	0	10	0	0	1	0
Lane Group Flow (vph)	11	228	0	43	81	0	5	220	0	33	502	0
Heavy Vehicles (%)	27%	2%	3%	0%	5%	0%	0%	10%	0%	6%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	14.8	14.8		14.8	14.8		35.5	35.5		35.5	35.5	
Effective Green, g (s)	14.8	14.8		14.8	14.8		35.5	35.5		35.5	35.5	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.56	0.56		0.56	0.56	
Clearance Time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	242	421		251	414		445	967		611	1033	
v/s Ratio Prot		c0.13			0.05			0.13			c0.27	
v/s Ratio Perm	0.01			0.04			0.01			0.03		
v/c Ratio	0.05	0.54		0.17	0.20		0.01	0.23		0.05	0.49	
Uniform Delay, d1	18.8	21.3		19.4	19.5		6.1	7.0		6.3	8.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.5		0.7	0.5		0.0	0.5		0.2	1.6	
Delay (s)	18.9	23.8		20.0	20.0		6.2	7.5		6.5	10.0	
Level of Service	B	C		C	B		A	A		A	B	
Approach Delay (s)		23.5			20.0			7.5			9.8	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	222	13	9	85	8	11	43	11	8	58	25
Future Volume (vph)	13	222	13	9	85	8	11	43	11	8	58	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	15	261	15	11	100	9	13	51	13	9	68	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	291	120	77	106
Volume Left (vph)	15	11	13	9
Volume Right (vph)	15	9	13	29
Hadj (s)	-0.02	0.03	0.12	-0.11
Departure Headway (s)	4.5	4.8	5.1	4.9
Degree Utilization, x	0.36	0.16	0.11	0.14
Capacity (veh/h)	761	711	637	671
Control Delay (s)	10.1	8.6	8.8	8.7
Approach Delay (s)	10.1	8.6	8.8	8.7
Approach LOS	B	A	A	A

Intersection Summary			
Delay	9.4		
Level of Service	A		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	34	11	492	564	3
Future Volume (Veh/h)	4	34	11	492	564	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	34	11	492	564	3
Pedestrians	2					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1080	566	569			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1080	566	569			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	98	94	99			
cM capacity (veh/h)	240	527	968			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	38	11	492	564	3
Volume Left	4	11	0	0	0
Volume Right	34	0	0	0	3
cSH	468	968	1700	1700	1700
Volume to Capacity	0.08	0.01	0.29	0.33	0.00
Queue Length 95th (m)	1.2	0.2	0.0	0.0	0.0
Control Delay (s)	13.4	8.8	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	13.4	0.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		39.7%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	262	882	186	43	996	289	221	33	36	269	293
Future Volume (vph)	262	882	186	43	996	289	221	33	36	269	293
Lane Group Flow (vph)	262	882	186	43	1016	289	221	33	36	269	293
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	4	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	47.9	47.9	47.9	47.9	47.9	47.9
Total Split (s)	10.0	60.0	60.0	10.0	60.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	8.3%	50.0%	50.0%	8.3%	50.0%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.85	0.39	0.22	0.16	0.47	0.95	0.34	0.06	0.11	0.43	0.46
Control Delay	45.2	21.7	3.5	13.4	24.1	78.7	30.7	1.6	27.0	32.8	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	21.7	3.5	13.4	24.1	78.7	30.7	1.6	27.0	32.8	13.9
Queue Length 50th (m)	18.2	30.1	0.0	2.6	35.6	37.7	22.1	0.0	3.3	28.0	11.4
Queue Length 95th (m)	#43.2	36.8	7.4	5.8	42.8	#68.4	34.0	1.3	7.8	41.8	25.5
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	307	2278	845	277	2179	324	689	597	347	657	668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.39	0.22	0.16	0.47	0.89	0.32	0.06	0.10	0.41	0.44

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Dixie Road & Mayfield Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	882	186	43	996	20	289	221	33	36	269	293
Future Volume (vph)	262	882	186	43	996	20	289	221	33	36	269	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1700	4768	1566	1342	4884		1750	1921	1551	1653	1830	1551
Flt Permitted	0.21	1.00	1.00	0.29	1.00		0.49	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	368	4768	1566	407	4884		904	1921	1551	967	1830	1551
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	262	882	186	43	996	20	289	221	33	36	269	293
RTOR Reduction (vph)	0	0	98	0	2	0	0	0	22	0	0	115
Lane Group Flow (vph)	262	882	88	43	1014	0	289	221	11	36	269	178
Heavy Vehicles (%)	5%	10%	2%	33%	7%	10%	2%	0%	3%	8%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	65.6	56.7	56.7	59.4	53.5		40.6	40.6	40.6	40.6	40.6	40.6
Effective Green, g (s)	65.6	56.7	56.7	59.4	53.5		40.6	40.6	40.6	40.6	40.6	40.6
Actuated g/C Ratio	0.55	0.47	0.47	0.49	0.45		0.34	0.34	0.34	0.34	0.34	0.34
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	302	2252	739	247	2177		305	649	524	327	619	524
v/s Ratio Prot	c0.07	0.18		0.01	0.21			0.12			0.15	
v/s Ratio Perm	c0.41		0.06	0.08			c0.32		0.01	0.04		0.11
v/c Ratio	0.87	0.39	0.12	0.17	0.47		0.95	0.34	0.02	0.11	0.43	0.34
Uniform Delay, d1	17.4	20.5	17.7	15.9	23.3		38.7	29.7	26.5	27.3	30.8	29.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.8	0.5	0.3	0.7	0.7		38.2	0.7	0.0	0.3	1.0	0.8
Delay (s)	41.2	21.0	18.0	16.6	24.0		76.9	30.3	26.5	27.6	31.8	30.5
Level of Service	D	C	B	B	C		E	C	C	C	C	C
Approach Delay (s)		24.6			23.7			54.9			30.9	
Approach LOS		C			C			D			C	

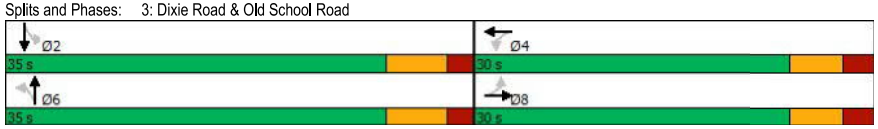
Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	14	88	83	227	25	407	6	210
Future Volume (vph)	14	88	83	227	25	407	6	210
Lane Group Flow (vph)	14	98	83	245	25	448	6	225
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	5.0
Minimum Split (s)	25.4	25.4	25.4	25.4	23.6	23.6	25.6	25.6
Total Split (s)	30.0	30.0	30.0	30.0	35.0	35.0	35.0	35.0
Total Split (%)	46.2%	46.2%	46.2%	46.2%	53.8%	53.8%	53.8%	53.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.6	4.6	4.6	4.6
All-Red Time (s)	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
v/c Ratio	0.06	0.21	0.26	0.53	0.04	0.47	0.01	0.24
Control Delay	15.4	15.6	18.2	21.8	8.6	11.5	8.5	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	15.6	18.2	21.8	8.6	11.5	8.5	9.1
Queue Length 50th (m)	0.6	4.1	3.9	12.1	0.7	15.3	0.2	6.6
Queue Length 95th (m)	2.6	9.4	9.1	22.1	2.9	33.4	1.2	15.7
Internal Link Dist (m)		1352.4		445.0		2550.6		428.3
Turn Bay Length (m)	35.0		40.0		40.0		35.0	
Base Capacity (vph)	396	742	527	750	608	955	454	922
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.13	0.16	0.33	0.04	0.47	0.01	0.24

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 58
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Splits and Phases: 3: Dixie Road & Old School Road



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	88	10	83	227	18	25	407	41	6	210	15
Future Volume (vph)	14	88	10	83	227	18	25	407	41	6	210	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1566	1802		1767	1826		1785	1817		1785	1755	
Flt Permitted	0.59	1.00		0.69	1.00		0.62	1.00		0.46	1.00	
Satd. Flow (perm)	970	1802		1290	1826		1161	1817		867	1755	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	88	10	83	227	18	25	407	41	6	210	15
RTOR Reduction (vph)	0	7	0	0	5	0	0	5	0	0	3	0
Lane Group Flow (vph)	14	91	0	83	240	0	25	443	0	6	222	0
Heavy Vehicles (%)	14%	3%	0%	1%	1%	11%	0%	2%	27%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	14.6	14.6		14.6	14.6		30.4	30.4		30.4	30.4	
Effective Green, g (s)	14.6	14.6		14.6	14.6		30.4	30.4		30.4	30.4	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	244	453		324	459		608	952		454	919	
v/s Ratio Prot		0.05			c0.13			c0.24			0.13	
v/s Ratio Perm	0.01			0.06			0.02			0.01		
v/c Ratio	0.06	0.20		0.26	0.52		0.04	0.47		0.01	0.24	
Uniform Delay, d1	16.5	17.1		17.4	18.7		6.7	8.7		6.6	7.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.5		0.9	2.0		0.1	1.6		0.1	0.6	
Delay (s)	16.7	17.6		18.2	20.7		6.8	10.3		6.7	8.1	
Level of Service	B	B		B	C		A	B		A	A	
Approach Delay (s)		17.4			20.1			10.1			8.1	
Approach LOS		B			C			B			A	

Intersection Summary				
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.48			
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	47.8%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	109	12	26	223	4	25	39	15	1	39	14
Future Volume (vph)	8	109	12	26	223	4	25	39	15	1	39	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	116	13	28	237	4	27	41	16	1	41	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	138	269	84	57
Volume Left (vph)	9	28	27	1
Volume Right (vph)	13	4	16	15
Hadj (s)	0.00	0.03	-0.05	-0.11
Departure Headway (s)	4.6	4.4	4.9	4.9
Degree Utilization, x	0.17	0.33	0.11	0.08
Capacity (veh/h)	754	777	676	669
Control Delay (s)	8.5	9.6	8.5	8.3
Approach Delay (s)	8.5	9.6	8.5	8.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.0			
Level of Service	A			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			

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APPENDIX C

Intersection Capacity Analysis – Future Background Conditions

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1	0	17	0	49	415	56	471	2
Future Volume (vph)	1	0	17	0	49	415	56	471	2
Lane Group Flow (vph)	0	18	0	108	49	487	224	471	2
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9
Total Split (s)	44.9	44.9	44.9	44.9	75.1	75.1	75.1	75.1	75.1
Total Split (%)	37.4%	37.4%	37.4%	37.4%	62.6%	62.6%	62.6%	62.6%	62.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
v/c Ratio		0.10		0.52	0.08	0.39	0.35	0.36	0.00
Control Delay		6.2		36.0	4.8	6.2	7.0	6.0	0.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		6.2		36.0	4.8	6.2	7.0	6.0	0.0
Queue Length 50th (m)		0.0		7.7	1.3	16.6	7.6	16.1	0.0
Queue Length 95th (m)		0.0		1.7	3.8	30.9	3.3	29.6	0.0
Internal Link Dist (m)		280.5		289.9		472.6		2550.6	
Turn Bay Length (m)					60.0		60.0		60.0
Base Capacity (vph)		493		558	602	1263	648	1315	796
Starvation Cap Reductn		0		0	0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		0.04		0.19	0.08	0.39	0.35	0.36	0.00

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 101
Natural Cycle: 90
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Dixie Road & Merchant Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	17	17	0	10	49	415	18	56	471	2
Future Volume (vph)	1	0	17	17	0	10	49	415	18	56	471	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.87			0.95		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1275			1730		1623	1704		1785	1779	1065
Flt Permitted		0.98			0.80		0.48	1.00		0.47	1.00	1.00
Satd. Flow (perm)		1255			1424		815	1704		878	1779	1065
Peak-hour factor, PHF	1.00	0.25	1.00	0.25	0.25	0.25	1.00	1.00	0.25	0.25	1.00	1.00
Adj. Flow (vph)	1	0	17	68	0	40	49	415	72	224	471	2
RTOR Reduction (vph)	0	16	0	0	31	0	0	3	0	0	0	1
Lane Group Flow (vph)	0	2	0	0	77	0	49	484	0	224	471	1
Heavy Vehicles (%)	100%	0%	24%	0%	0%	0%	10%	12%	0%	0%	8%	50%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		12.5			12.5		74.7	74.7		74.7	74.7	74.7
Effective Green, g (s)		12.5			12.5		74.7	74.7		74.7	74.7	74.7
Actuated g/C Ratio		0.12			0.12		0.74	0.74		0.74	0.74	0.74
Clearance Time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		155			176		602	1260		649	1315	787
v/s Ratio Prot								c0.28			0.26	
v/s Ratio Perm		0.00			c0.05		0.06			0.26		0.00
v/c Ratio		0.01			0.44		0.08	0.38		0.35	0.36	0.00
Uniform Delay, d1		38.8			41.0		3.6	4.8		4.6	4.7	3.4
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1			3.6		0.3	0.9		1.5	0.8	0.0
Delay (s)		38.9			44.6		3.9	5.7		6.1	5.4	3.4
Level of Service		D			D		A	A		A	A	A
Approach Delay (s)		38.9			44.6			5.5			5.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	293	1474	364	64	619	121	174	54	22	166	285
Future Volume (vph)	293	1474	364	64	619	121	174	54	22	166	285
Lane Group Flow (vph)	293	1474	364	64	637	121	174	54	22	166	285
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	4	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	47.9	47.9	47.9	47.9	47.9	47.9
Total Split (s)	10.0	60.0	60.0	10.0	60.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	8.3%	50.0%	50.0%	8.3%	50.0%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.50	0.47	0.33	0.23	0.25	0.72	0.61	0.18	0.17	0.55	0.60
Control Delay	8.6	13.5	2.2	7.8	15.0	69.5	54.7	8.9	42.7	51.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	13.5	2.2	7.8	15.0	69.5	54.7	8.9	42.7	51.5	10.4
Queue Length 50th (m)	10.7	37.8	0.0	2.0	15.2	16.2	22.9	0.0	2.7	21.6	0.5
Queue Length 95th (m)	22.1	56.3	8.0	5.4	25.9	26.4	33.4	5.0	6.7	31.6	13.5
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	586	3110	1107	283	2560	356	600	547	280	638	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.47	0.33	0.23	0.25	0.34	0.29	0.10	0.08	0.26	0.41

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 44 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Dixie Road & Mayfield Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	1474	364	64	619	18	121	174	54	22	166	285
Future Volume (vph)	293	1474	364	64	619	18	121	174	54	22	166	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1566	4902	1536	1653	4560		1716	1671	1413	1405	1779	1439
Flt Permitted	0.38	1.00	1.00	0.16	1.00		0.55	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	621	4902	1536	273	4560		992	1671	1413	781	1779	1439
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	293	1474	364	64	619	18	121	174	54	22	166	285
RTOR Reduction (vph)	0	0	135	0	2	0	0	0	45	0	0	233
Lane Group Flow (vph)	293	1474	229	64	635	0	121	174	9	22	166	52
Heavy Vehicles (%)	14%	7%	4%	8%	14%	33%	4%	15%	13%	27%	8%	11%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	85.8	75.5	75.5	74.6	67.3		20.4	20.4	20.4	20.4	20.4	20.4
Effective Green, g (s)	85.8	75.5	75.5	74.6	67.3		20.4	20.4	20.4	20.4	20.4	20.4
Actuated g/C Ratio	0.71	0.63	0.63	0.62	0.56		0.17	0.17	0.17	0.17	0.17	0.17
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	566	3084	966	253	2557		168	284	240	132	302	244
v/s Ratio Prot	c0.07	0.30		0.02	0.14			0.10			0.09	
v/s Ratio Perm	c0.30		0.15	0.14			c0.12		0.01	0.03		0.04
v/c Ratio	0.52	0.48	0.24	0.25	0.25		0.72	0.61	0.04	0.17	0.55	0.21
Uniform Delay, d1	6.1	11.8	9.7	9.0	13.4		47.1	46.1	41.6	42.5	45.6	42.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.5	0.6	1.1	0.2		17.0	5.6	0.1	1.3	3.6	0.9
Delay (s)	7.7	12.3	10.3	10.1	13.7		64.1	51.7	41.7	43.8	49.2	43.8
Level of Service	A	B	B	B	B		E	D	D	D	D	D
Approach Delay (s)		11.3			13.4			54.5			45.7	
Approach LOS		B			B			D			D	

Intersection Summary

HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.8	
Intersection Capacity Utilization	69.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	11	227	43	87	5	219	33	624
Future Volume (vph)	11	227	43	87	5	219	33	624
Lane Group Flow (vph)	11	258	43	95	5	263	33	635
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.4	25.4	25.4	23.6	23.6	26.0	26.0
Total Split (s)	30.0	30.0	30.0	30.0	40.0	40.0	40.0	40.0
Total Split (%)	42.9%	42.9%	42.9%	42.9%	57.1%	57.1%	57.1%	57.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.6	4.6	4.6	4.6
All-Red Time (s)	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
v/c Ratio	0.04	0.57	0.17	0.22	0.02	0.27	0.06	0.63
Control Delay	17.3	24.9	19.5	18.1	8.4	8.7	8.4	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	24.9	19.5	18.1	8.4	8.7	8.4	14.2
Queue Length 50th (m)	0.6	14.4	2.3	4.7	0.2	7.9	0.9	26.8
Queue Length 95th (m)	2.4	25.6	6.2	10.4	1.1	18.0	3.6	54.8
Internal Link Dist (m)		1352.4		445.0		2550.6		428.3
Turn Bay Length (m)	35.0		40.0		40.0		35.0	
Base Capacity (vph)	383	682	377	666	325	959	581	1014
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.38	0.11	0.14	0.02	0.27	0.06	0.63

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 63.3
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 3: Dixie Road & Old School Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	227	31	43	87	8	5	219	44	33	624	11
Future Volume (vph)	11	227	31	43	87	8	5	219	44	33	624	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1405	1807		1785	1774		1785	1729		1684	1844	
Flt Permitted	0.70	1.00		0.54	1.00		0.31	1.00		0.60	1.00	
Satd. Flow (perm)	1029	1807		1010	1774		592	1729		1058	1844	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	11	227	31	43	87	8	5	219	44	33	624	11
RTOR Reduction (vph)	0	8	0	0	5	0	0	9	0	0	1	0
Lane Group Flow (vph)	11	250	0	43	90	0	5	254	0	33	634	0
Heavy Vehicles (%)	27%	2%	3%	0%	5%	0%	0%	10%	0%	6%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	15.5	15.5		15.5	15.5		34.8	34.8		34.8	34.8	
Effective Green, g (s)	15.5	15.5		15.5	15.5		34.8	34.8		34.8	34.8	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.55		0.55	0.55	
Clearance Time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	251	442		247	434		325	950		581	1013	
v/s Ratio Prot		c0.14			0.05			0.15			c0.34	
v/s Ratio Perm	0.01			0.04			0.01			0.03		
v/c Ratio	0.04	0.56		0.17	0.21		0.02	0.27		0.06	0.63	
Uniform Delay, d1	18.2	20.9		18.9	19.0		6.5	7.5		6.6	9.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.7		0.7	0.5		0.1	0.7		0.2	2.9	
Delay (s)	18.4	23.7		19.6	19.5		6.6	8.2		6.8	12.7	
Level of Service	B	C		B	B		A	A		A	B	
Approach Delay (s)		23.4			19.5			8.2			12.4	
Approach LOS		C			B			A			B	

Intersection Summary				
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	70.2%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

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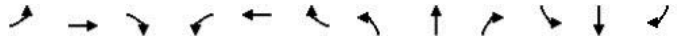

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	244	13	9	94	8	11	47	11	8	64	25
Future Volume (vph)	13	244	13	9	94	8	11	47	11	8	64	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	15	287	15	11	111	9	13	55	13	9	75	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	317	131	81	113
Volume Left (vph)	15	11	13	9
Volume Right (vph)	15	9	13	29
Hadj (s)	-0.02	0.03	0.13	-0.10
Departure Headway (s)	4.6	4.8	5.3	5.0
Degree Utilization, x	0.40	0.18	0.12	0.16
Capacity (veh/h)	751	698	618	652
Control Delay (s)	10.6	8.9	9.0	8.9
Approach Delay (s)	10.6	8.9	9.0	8.9
Approach LOS	B	A	A	A

Intersection Summary				
Delay	9.7			
Level of Service	A			
Intersection Capacity Utilization	30.0%	ICU Level of Service	A	
Analysis Period (min)	15			

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	4	0	22	0	11	573	10	645	3
Future Volume (vph)	4	0	22	0	11	573	10	645	3
Lane Group Flow (vph)	0	38	0	328	11	669	40	645	3
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9
Total Split (s)	44.9	44.9	44.9	44.9	75.1	75.1	75.1	75.1	75.1
Total Split (%)	37.4%	37.4%	37.4%	37.4%	62.6%	62.6%	62.6%	62.6%	62.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
v/c Ratio		0.10		0.78	0.03	0.57	0.10	0.55	0.00
Control Delay		11.7		37.4	9.3	13.6	9.7	13.4	0.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		11.7		37.4	9.3	13.6	9.7	13.4	0.0
Queue Length 50th (m)		0.3		24.1	0.4	39.1	1.6	37.5	0.0
Queue Length 95th (m)		0.0		0.3	2.1	78.5	1.4	75.0	0.0
Internal Link Dist (m)		280.5		289.9		472.6		2550.6	
Turn Bay Length (m)					60.0		60.0		60.0
Base Capacity (vph)		599		628	379	1181	396	1183	1031
Starvation Cap Reductn		0		0	0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		0.06		0.52	0.03	0.57	0.10	0.55	0.00

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 105
Natural Cycle: 90
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Dixie Road & Merchant Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	34	22	0	60	11	573	24	10	645	3
Future Volume (vph)	4	0	34	22	0	60	11	573	24	10	645	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.90		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1643			1671		1636	1803		1785	1812	1561
Flt Permitted		0.96			0.90		0.34	1.00		0.32	1.00	1.00
Satd. Flow (perm)		1587			1517		582	1803		607	1812	1561
Peak-hour factor, PHF	1.00	0.25	1.00	0.25	0.25	0.25	1.00	1.00	0.25	0.25	1.00	1.00
Adj. Flow (vph)	4	0	34	88	0	240	11	573	96	40	645	3
RTOR Reduction (vph)	0	27	0	0	94	0	0	4	0	0	0	1
Lane Group Flow (vph)	0	11	0	0	234	0	11	665	0	40	645	2
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	5%	0%	0%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		22.6			22.6		68.6	68.6		68.6	68.6	68.6
Effective Green, g (s)		22.6			22.6		68.6	68.6		68.6	68.6	68.6
Actuated g/C Ratio		0.22			0.22		0.65	0.65		0.65	0.65	0.65
Clearance Time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		341			326		380	1177		396	1183	1019
v/s Ratio Prot								c0.37			0.36	
v/s Ratio Perm		0.01			c0.15		0.02			0.07		0.00
v/c Ratio		0.03			0.72		0.03	0.56		0.10	0.55	0.00
Uniform Delay, d1		32.5			38.2		6.4	10.0		6.8	9.8	6.3
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1			9.0		0.1	2.0		0.5	1.8	0.0
Delay (s)		32.6			47.3		6.6	12.0		7.3	11.6	6.3
Level of Service		C			D		A	B		A	B	A
Approach Delay (s)		32.6			47.3			11.9			11.3	
Approach LOS		C			D			B			B	

Intersection Summary					
HCM 2000 Control Delay		18.8	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.60			
Actuated Cycle Length (s)		105.0	Sum of lost time (s)		13.8
Intersection Capacity Utilization		65.6%	ICU Level of Service		C
Analysis Period (min)		15			
c Critical Lane Group					

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	307	1008	186	68	1176	289	246	38	36	311	351
Future Volume (vph)	307	1008	186	68	1176	289	246	38	36	311	351
Lane Group Flow (vph)	307	1008	186	68	1196	289	246	38	36	311	351
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	4	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	47.9	47.9	47.9	47.9	47.9	47.9
Total Split (s)	10.0	60.0	60.0	10.0	60.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	8.3%	50.0%	50.0%	8.3%	50.0%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	1.31	0.46	0.23	0.29	0.55	0.97	0.36	0.06	0.11	0.47	0.54
Control Delay	187.9	23.6	3.5	15.8	25.8	84.9	30.1	2.5	26.9	32.7	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	187.9	23.6	3.5	15.8	25.8	84.9	30.1	2.5	26.9	32.7	19.9
Queue Length 50th (m)	~34.0	35.6	0.0	4.2	44.0	39.3	25.0	0.0	3.3	33.2	21.1
Queue Length 95th (m)	#65.5	43.0	7.4	8.3	52.2	#72.3	37.7	2.0	7.9	48.8	38.2
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	234	2189	819	231	2163	297	689	597	332	657	655
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.31	0.46	0.23	0.29	0.55	0.97	0.36	0.06	0.11	0.47	0.54

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Dixie Road & Mayfield Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	307	1008	186	68	1176	20	289	246	38	36	311	351
Future Volume (vph)	307	1008	186	68	1176	20	289	246	38	36	311	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1700	4768	1566	1342	4887		1750	1921	1551	1653	1830	1551
Flt Permitted	0.16	1.00	1.00	0.23	1.00		0.45	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	282	4768	1566	322	4887		829	1921	1551	926	1830	1551
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	307	1008	186	68	1176	20	289	246	38	36	311	351
RTOR Reduction (vph)	0	0	102	0	2	0	0	0	24	0	0	99
Lane Group Flow (vph)	307	1008	84	68	1194	0	289	246	14	36	311	252
Heavy Vehicles (%)	5%	10%	2%	33%	7%	10%	2%	0%	3%	8%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	61.5	54.5	54.5	58.7	53.1		43.1	43.1	43.1	43.1	43.1	43.1
Effective Green, g (s)	61.5	54.5	54.5	58.7	53.1		43.1	43.1	43.1	43.1	43.1	43.1
Actuated g/C Ratio	0.51	0.45	0.45	0.49	0.44		0.36	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	227	2165	711	205	2162		297	689	557	332	657	557
v/s Ratio Prot	c0.08	0.21		0.02	0.24			0.13			0.17	
v/s Ratio Perm	c0.61		0.05	0.15			c0.35		0.01	0.04		0.16
v/c Ratio	1.35	0.47	0.12	0.33	0.55		0.97	0.36	0.02	0.11	0.47	0.45
Uniform Delay, d1	23.8	22.7	18.9	16.9	24.7		37.9	28.3	24.9	25.6	29.7	29.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	184.7	0.7	0.3	2.0	1.0		45.0	0.7	0.0	0.3	1.1	1.2
Delay (s)	208.5	23.4	19.2	18.9	25.7		82.9	28.9	24.9	25.9	30.8	30.7
Level of Service	F	C	B	B	C		F	C	C	C	C	C
Approach Delay (s)		60.7			25.3			55.9			30.5	
Approach LOS		E			C			E			C	

Intersection Summary

HCM 2000 Control Delay	43.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

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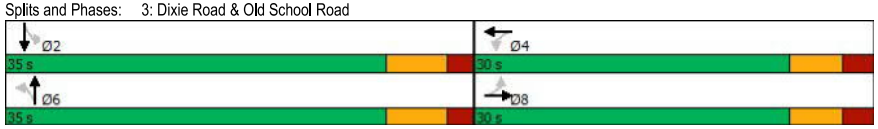
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	14	97	83	250	25	537	6	247
Future Volume (vph)	14	97	83	250	25	537	6	247
Lane Group Flow (vph)	14	107	83	268	25	578	6	262
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	5.0
Minimum Split (s)	25.4	25.4	25.4	25.4	23.6	23.6	25.6	25.6
Total Split (s)	30.0	30.0	30.0	30.0	35.0	35.0	35.0	35.0
Total Split (%)	46.2%	46.2%	46.2%	46.2%	53.8%	53.8%	53.8%	53.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.6	4.6	4.6	4.6
All-Red Time (s)	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
v/c Ratio	0.06	0.22	0.25	0.55	0.04	0.61	0.02	0.29
Control Delay	15.3	15.7	17.8	22.0	9.0	14.5	9.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	15.7	17.8	22.0	9.0	14.5	9.0	10.0
Queue Length 50th (m)	0.6	4.6	3.9	13.5	0.7	22.7	0.2	8.2
Queue Length 95th (m)	2.6	10.1	9.0	24.1	3.0	48.8	1.2	19.2
Internal Link Dist (m)		1352.4		445.0		2550.6		428.3
Turn Bay Length (m)	35.0		40.0		40.0		35.0	
Base Capacity (vph)	372	742	523	751	574	941	331	901
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.14	0.16	0.36	0.04	0.61	0.02	0.29

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 57.9
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 3: Dixie Road & Old School Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	97	10	83	250	18	25	537	41	6	247	15
Future Volume (vph)	14	97	10	83	250	18	25	537	41	6	247	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1566	1804		1767	1829		1785	1832		1785	1756	
Flt Permitted	0.55	1.00		0.69	1.00		0.60	1.00		0.35	1.00	
Satd. Flow (perm)	911	1804		1280	1829		1123	1832		648	1756	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	97	10	83	250	18	25	537	41	6	247	15
RTOR Reduction (vph)	0	7	0	0	4	0	0	4	0	0	3	0
Lane Group Flow (vph)	14	100	0	83	264	0	25	574	0	6	259	0
Heavy Vehicles (%)	14%	3%	0%	1%	1%	11%	0%	2%	27%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	15.2	15.2		15.2	15.2		29.6	29.6		29.6	29.6	
Effective Green, g (s)	15.2	15.2		15.2	15.2		29.6	29.6		29.6	29.6	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.51	0.51		0.51	0.51	
Clearance Time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	239	474		336	480		575	938		331	899	
v/s Ratio Prot		0.06			c0.14			c0.31			0.15	
v/s Ratio Perm	0.02			0.06			0.02			0.01		
v/c Ratio	0.06	0.21		0.25	0.55		0.04	0.61		0.02	0.29	
Uniform Delay, d1	15.9	16.6		16.8	18.3		7.0	10.0		6.9	8.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.5		0.8	2.3		0.1	3.0		0.1	0.8	
Delay (s)	16.2	17.1		17.6	20.6		7.2	13.0		7.0	8.9	
Level of Service	B	B		B	C		A	B		A	A	
Approach Delay (s)		17.0			19.9			12.8			8.8	
Approach LOS		B			B			B			A	

Intersection Summary				
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	55.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

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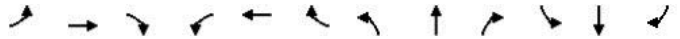

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	120	12	26	245	4	25	43	15	1	43	14
Future Volume (vph)	8	120	12	26	245	4	25	43	15	1	43	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	128	13	28	261	4	27	46	16	1	46	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	150	293	89	62
Volume Left (vph)	9	28	27	1
Volume Right (vph)	13	4	16	15
Hadj (s)	0.00	0.03	-0.05	-0.09
Departure Headway (s)	4.6	4.5	5.0	5.0
Degree Utilization, x	0.19	0.37	0.12	0.09
Capacity (veh/h)	741	768	658	650
Control Delay (s)	8.7	10.1	8.7	8.4
Approach Delay (s)	8.7	10.1	8.7	8.4
Approach LOS	A	B	A	A

Intersection Summary				
Delay		9.4		
Level of Service		A		
Intersection Capacity Utilization		39.5%	ICU Level of Service	A
Analysis Period (min)		15		

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APPENDIX D

Intersection Capacity Analysis Results – Future Background Conditions (Optimized)

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	307	1008	186	68	1176	289	246	38	36	311	351
Future Volume (vph)	307	1008	186	68	1176	289	246	38	36	311	351
Lane Group Flow (vph)	307	1008	186	68	1196	289	246	38	36	311	351
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	4	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	47.9	47.9	47.9	47.9	47.9	47.9
Total Split (s)	21.0	57.0	57.0	10.0	46.0	53.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	17.5%	47.5%	47.5%	8.3%	38.3%	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.90	0.47	0.23	0.30	0.71	0.95	0.35	0.06	0.11	0.47	0.46
Control Delay	57.1	24.8	3.8	18.2	37.4	79.1	28.9	0.2	24.9	31.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	24.8	3.8	18.2	37.4	79.1	28.9	0.2	24.9	31.4	6.6
Queue Length 50th (m)	30.4	37.3	0.0	4.5	54.2	37.6	23.9	0.0	3.2	31.8	3.8
Queue Length 95th (m)	#61.5	45.1	7.8	8.9	64.3	#69.0	36.1	0.0	7.5	46.7	16.2
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	342	2157	810	227	1687	320	737	651	356	703	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.47	0.23	0.30	0.71	0.90	0.33	0.06	0.10	0.44	0.45

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Dixie Road & Mayfield Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	307	1008	186	68	1176	20	289	246	38	36	311	351
Future Volume (vph)	307	1008	186	68	1176	20	289	246	38	36	311	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1700	4768	1566	1342	4887		1750	1921	1551	1653	1830	1551
Flt Permitted	0.12	1.00	1.00	0.27	1.00		0.45	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	207	4768	1566	384	4887		834	1921	1551	929	1830	1551
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	307	1008	186	68	1176	20	289	246	38	36	311	351
RTOR Reduction (vph)	0	0	103	0	1	0	0	0	24	0	0	196
Lane Group Flow (vph)	307	1008	83	68	1195	0	289	246	14	36	311	155
Heavy Vehicles (%)	5%	10%	2%	33%	7%	10%	2%	0%	3%	8%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	62.6	53.7	53.7	47.3	41.4		43.6	43.6	43.6	43.6	43.6	43.6
Effective Green, g (s)	62.6	53.7	53.7	47.3	41.4		43.6	43.6	43.6	43.6	43.6	43.6
Actuated g/C Ratio	0.52	0.45	0.45	0.39	0.34		0.36	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	334	2133	700	198	1686		303	697	563	337	664	563
v/s Ratio Prot	c0.14	0.21		0.02	0.24			0.13			0.17	
v/s Ratio Perm	c0.34		0.05	0.12			c0.35		0.01	0.04		0.10
v/c Ratio	0.92	0.47	0.12	0.34	0.71		0.95	0.35	0.02	0.11	0.47	0.28
Uniform Delay, d1	30.7	23.2	19.3	23.2	34.1		37.2	27.9	24.5	25.3	29.3	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.4	0.8	0.3	2.2	2.5		39.9	0.6	0.0	0.3	1.1	0.6
Delay (s)	61.1	24.0	19.7	25.4	36.6		77.1	28.5	24.6	25.6	30.4	27.6
Level of Service	E	C	B	C	D		E	C	C	C	C	C
Approach Delay (s)		31.0			36.0			52.8			28.7	
Approach LOS		C			D			D			C	

Intersection Summary

HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.96			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.8	
Intersection Capacity Utilization	93.1%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

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APPENDIX E

Detailed TTS Data

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Incoming AM

Fri Dec 11 2020 16:55:15 GMT-0500 (Eastern Standard Time) - Run Time: 2467ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
Start time of trip - start_time In 600-900
and
Trip purpose - trip_purp In 1
and
Primary travel mode of trip - mode_prime In d, m
and
2006 GTA zone of destination - gta06_dest In 3012,3013,3014,3015,3016,3191

Trip 2016
Table:

	To								21185	21211	
From	3013	3014	3015	3016	3191	Sum	%	PD	Gateway	Gateway2	Notes
72	0	0	0	0	43	43	0.9%	1	Mayfield EB	Mayfield EB	410
124	0	0	0	0	12	12	0.2%	2	Mayfield EB	Mayfield EB	410
150	0	19	0	0	0	19	0.4%	3	Mayfield EB	Mayfield EB	410
160	0	0	0	0	21	21	0.4%	3	Mayfield EB	Mayfield EB	410
163	0	0	0	0	34	34	0.7%	3	Mayfield EB	Mayfield EB	410
173	0	0	0	0	24	24	0.5%	3	Mayfield EB	Mayfield EB	410
178	0	0	0	0	23	23	0.5%	3	Mayfield EB	Mayfield EB	410
194	0	0	0	0	11	11	0.2%	4	Mayfield EB	Mayfield EB	410
222	0	0	0	0	12	12	0.2%	4	Mayfield EB	Mayfield EB	410
223	0	0	0	0	17	17	0.4%	5	Mayfield EB	Mayfield EB	410
255	0	0	0	0	13	13	0.3%	6	Mayfield EB	Mayfield EB	410
261	0	0	0	0	15	15	0.3%	6	Mayfield EB	Mayfield EB	410
294	0	17	0	0	0	17	0.4%	7	Mayfield EB	Mayfield EB	410
295	0	0	0	0	6	6	0.1%	7	Mayfield EB	Mayfield EB	410
326	0	0	0	0	13	13	0.3%	8	Mayfield EB	Mayfield EB	410
365	0	0	0	0	52	52	1.1%	9	Mayfield EB	Mayfield EB	410
366	0	0	20	0	0	20	0.4%	9	Mayfield EB	Mayfield EB	410
371	0	0	0	0	17	17	0.4%	9	Mayfield EB	Mayfield EB	410
376	0	0	0	0	25	25	0.5%	9	Mayfield EB	Mayfield EB	410
382	0	0	0	0	20	20	0.4%	9	Mayfield EB	Mayfield EB	410
384	0	0	0	0	10	10	0.2%	10	Mayfield EB	Mayfield EB	410
385	0	0	0	0	8	8	0.2%	10	Mayfield EB	Mayfield EB	410
396	0	0	0	0	8	8	0.2%	10	Mayfield EB	Mayfield EB	410
413	0	0	0	0	18	18	0.4%	10	Mayfield EB	Mayfield EB	410
443	0	0	0	0	17	17	0.4%	11	Mayfield EB	Mayfield EB	410
459	0	0	0	0	27	27	0.6%	11	Mayfield EB	Mayfield EB	410
568	0	0	0	0	16	16	0.3%	15	Mayfield EB	Mayfield EB	410
1063	0	0	0	7	0	7	0.1%	21	Mayfield EB	Mayfield EB	410
1180	0	0	0	0	21	21	0.4%	23	Mayfield EB	Mayfield EB	410
2014	0	0	0	0	11	11	0.2%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2017	0	0	0	0	13	13	0.3%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2020	0	0	0	0	21	21	0.4%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2022	0	0	0	0	31	31	0.6%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2023	0	0	0	0	53	53	1.1%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2024	0	20	0	0	0	20	0.4%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2027	0	0	0	0	13	13	0.3%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2057	0	0	0	0	32	32	0.7%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2132	0	0	0	0	16	16	0.3%	33	Dixie NB	Dixie NB	from NE on Mayfield/Dixie
2241	0	0	0	0	22	22	0.5%	29	Dixie NB	Dixie NB	from NE on Mayfield/Dixie

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2245	0	0	0	0	33	33	0.7%	29	Dixie NB	Dixie NB	from NE on Mayfield/Dixie	
2258	0	0	0	0	18	18	0.4%	29	Mayfield EB	Mayfield EB		410
2402	55	0	0	0	0	55	1.1%	31	Mayfield EB	Mayfield EB		410
2427	0	0	0	0	16	16	0.3%	31	Mayfield EB	Mayfield EB		410
2434	0	0	0	0	45	45	0.9%	31	Mayfield EB	Mayfield EB		410
2554	0	17	0	0	0	17	0.4%	28	Dixie NB	Dixie NB	from NE on Mayfield/Dixie	
2558	0	0	0	0	14	14	0.3%	28	Dixie NB	Dixie NB	from NE on Mayfield/Dixie	
2652	0	0	0	0	15	15	0.3%	32	Dixie SB	Dixie SB	from NW on Dixie	
2659	0	0	0	0	18	18	0.4%	32	Dixie NB	Dixie NB	from NE on Mayfield/Dixie	
2868	0	0	0	0	27	27	0.6%	25	Mayfield EB	Mayfield EB		410
3002	0	0	0	0	118	118	2.4%	34	Dixie SB	Dixie SB	from NW on Dixie	
3008	0	26	0	0	0	26	0.5%	34	Mayfield EB	Old School EB	very close to sites	
3010	0	37	0	0	16	53	1.1%	34	Mayfield EB	Old School EB	very close to sites	
3011	0	4	0	0	0	4	0.1%	34	Mayfield EB	Mayfield EB	very close to sites	
3100	0	0	0	0	77	77	1.6%	34	Dixie SB	Dixie SB	from NW on Dixie	
3104	0	0	0	0	26	26	0.5%	34	Dixie SB	Dixie SB	from NW on Dixie	
3153	0	0	0	0	148	148	3.1%	34	Dixie SB	Dixie SB	from NW on Dixie	
3189	0	0	0	0	73	73	1.5%	34	Dixie SB	Dixie SB	from NW on Dixie	
3190	0	0	0	0	50	50	1.0%	34	Mayfield WB	Old School WB	from NE on Mayfield	
3192	0	0	0	0	194	194	4.0%	34	Dixie SB	Dixie SB	from NW on Dixie	
3193	0	0	0	0	151	151	3.1%	34	Dixie SB	Dixie SB	from NW on Dixie	
3194	0	10	0	0	96	106	2.2%	34	Dixie SB	Dixie SB	from NW on Dixie	
3197	0	0	0	0	9	9	0.2%	34	Dixie SB	Dixie SB	from NW on Dixie	
3199	0	0	0	0	50	50	1.0%	34	Dixie SB	Dixie SB	from NW on Dixie	
3337	0	0	0	0	60	60	1.2%	35	Dixie NB	Dixie NB	from NE on Mayfield/Dixie	
3338	0	0	0	0	39	39	0.8%	35	Mayfield EB	Mayfield EB		410
3351	0	0	0	0	53	53	1.1%	35	Mayfield EB	Mayfield EB		410
3352	0	0	0	0	50	50	1.0%	35	Mayfield EB	Mayfield EB		410
3360	0	4	0	0	7	11	0.2%	35	Mayfield EB	Mayfield EB		410
3362	0	0	0	0	12	12	0.2%	35	Mayfield EB	Mayfield EB		410
3363	0	0	0	0	77	77	1.6%	35	Dixie NB	Dixie NB	from SE on Dixie	
3364	0	0	0	0	85	85	1.8%	35	Mayfield EB	Mayfield EB		410
3367	0	0	0	0	42	42	0.9%	35	Mayfield EB	Mayfield EB		410
3373	0	0	0	0	13	13	0.3%	35	Dixie NB	Dixie NB	from SE on Dixie	
3375	0	0	0	0	41	41	0.9%	35	Mayfield EB	Mayfield EB	from SW on Mayfield/Old School	
3379	0	0	0	0	63	63	1.3%	35	Dixie NB	Dixie NB	from SE on Dixie	
3380	0	0	57	0	45	102	2.1%	35	Dixie NB	Dixie NB	from SE on Dixie	
3386	0	26	66	0	59	151	3.1%	35	Mayfield WB	Mayfield WB	from NE on Mayfield/Dixie	
3417	13	0	0	0	0	13	0.3%	35	Mayfield EB	Mayfield EB		410
3419	0	8	0	0	38	46	1.0%	35	Dixie NB	Dixie NB	from SE on Dixie	
3432	0	0	10	0	0	10	0.2%	35	Mayfield EB	Mayfield EB	from SW on Mayfield/Old School	
3434	14	0	0	29	51	94	1.9%	35	Mayfield EB	Mayfield EB	from SW on Mayfield/Old School	
3442	0	0	0	0	14	14	0.3%	35	Mayfield WB	Mayfield WB	from NE on Mayfield/Dixie	
3443	0	0	38	0	0	38	0.8%	35	Mayfield WB	Mayfield WB	from NE on Mayfield	
3448	0	0	0	0	14	14	0.3%	35	Mayfield WB	Mayfield WB	from NE on Mayfield/Dixie	
3456	0	0	0	0	14	14	0.3%	35	Mayfield EB	Mayfield EB	from SW on Mayfield/Old School	
3460	24	0	0	0	0	24	0.5%	35	Mayfield EB	Mayfield EB	from SW on Mayfield	
3466	0	0	0	0	18	18	0.4%	35	Mayfield EB	Mayfield EB	from SW on Mayfield	
3468	0	0	0	0	27	27	0.6%	35	Dixie NB	Dixie NB	from NE on Mayfield/Dixie	
3485	0	0	0	0	36	36	0.7%	35	Mayfield EB	Mayfield EB		410
3486	0	0	24	0	0	24	0.5%	35	Mayfield EB	Mayfield EB		410
3515	0	0	0	0	23	23	0.5%	35	Mayfield EB	Mayfield EB		410
3516	0	0	0	0	13	13	0.3%	35	Mayfield WB	Mayfield WB	from NE on Mayfield/Dixie	
3517	0	0	17	0	46	63	1.3%	35	Mayfield WB	Mayfield WB	from NE on Mayfield/Dixie	
3518	0	0	0	0	129	129	2.7%	35	Mayfield WB	Mayfield WB	from NE on Mayfield/Dixie	
3519	0	0	0	0	16	16	0.3%	35	Mayfield WB	Mayfield WB	from NE on Mayfield/Dixie	
3602	0	0	0	0	14	14	0.3%	36	Mayfield EB	Mayfield EB		410
3603	0	0	0	0	18	18	0.4%	36	Mayfield EB	Mayfield EB		410
3606	0	0	0	0	6	6	0.1%	36	Mayfield EB	Mayfield EB		410
3607	0	0	0	0	27	27	0.6%	36	Mayfield EB	Mayfield EB		410
3615	0	0	0	0	18	18	0.4%	36	Mayfield EB	Mayfield EB		410
3617	0	0	0	0	14	14	0.3%	36	Mayfield EB	Mayfield EB		410

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3629	0	0	0	0	58	58	1.2%	36	Mayfield EB	Mayfield EB	410
3638	0	0	0	0	7	7	0.1%	36	Mayfield EB	Mayfield EB	410
3644	0	0	0	0	10	10	0.2%	36	Mayfield EB	Mayfield EB	410
3645	0	0	0	0	22	22	0.5%	36	Mayfield EB	Mayfield EB	410
3664	0	0	0	48	0	48	1.0%	36	Mayfield EB	Mayfield EB	410
3671	0	0	0	0	19	19	0.4%	36	Mayfield EB	Mayfield EB	410
3681	0	0	0	0	12	12	0.2%	36	Mayfield EB	Mayfield EB	410
3686	0	0	0	0	28	28	0.6%	36	Mayfield EB	Mayfield EB	410
3688	0	0	0	0	8	8	0.2%	36	Mayfield EB	Mayfield EB	410
3714	0	0	0	0	15	15	0.3%	36	Mayfield EB	Mayfield EB	410
3877	0	0	0	0	41	41	0.9%	36	Mayfield EB	Mayfield EB	410
4084	0	0	0	0	32	32	0.7%	40	Mayfield EB	Mayfield EB	410
4110	0	0	0	0	69	69	1.4%	38	Mayfield EB	Mayfield EB	410
4119	0	0	27	0	0	27	0.6%	38	Mayfield EB	Mayfield EB	410
4123	0	0	0	0	23	23	0.5%	38	Mayfield EB	Mayfield EB	410
4159	0	0	0	0	55	55	1.1%	37	Mayfield EB	Old School EB	from SW on Mayfield/Old School
4160	0	0	0	0	15	15	0.3%	37	Mayfield EB	Old School EB	from SW on Mayfield/Old School
4162	0	0	0	26	0	26	0.5%	37	Mayfield EB	Old School EB	from SW on Mayfield/Old School
4164	0	47	0	0	0	47	1.0%	37	Mayfield EB	Old School EB	from SW on Mayfield/Old School
4175	0	0	0	0	6	6	0.1%	37	Old School EB	Old School EB	from SW on Old School
4176	0	18	0	0	0	18	0.4%	37	Old School EB	Old School EB	from SW on Old School
8380	15	0	0	17	0	32	0.7%	79	Dixie SB	Dixie SB	from NW on Dixie
8402	0	0	23	0	0	23	0.5%	80	Dixie SB	Dixie SB	from NW on Dixie
8403	0	0	0	0	45	45	0.9%	80	Dixie SB	Dixie SB	from NW on Dixie
8405	0	0	0	0	13	13	0.3%	80	Dixie SB	Dixie SB	from NW on Dixie
8412	0	11	0	0	0	11	0.2%	141	Dixie SB	Dixie SB	from NW on Dixie
8415	0	0	21	0	0	21	0.4%	144	Dixie SB	Dixie SB	from NW on Dixie
8553	0	0	0	0	107	107	2.2%	85	Dixie SB	Dixie SB	from NW on Dixie
8559	0	0	0	0	21	21	0.4%	86	Dixie SB	Dixie SB	from NW on Dixie
8562	0	0	0	0	14	14	0.3%	84	Dixie SB	Dixie SB	from NW on Dixie
8563	0	0	0	0	43	43	0.9%	84	Dixie SB	Dixie SB	from NW on Dixie
8585	0	0	0	0	56	56	1.2%	85	Dixie SB	Dixie SB	from NW on Dixie
8595	0	0	0	0	33	33	0.7%	82	Dixie SB	Dixie SB	from NW on Dixie
8596	0	0	0	0	68	68	1.4%	84	Dixie SB	Dixie SB	from NW on Dixie
8597	0	0	0	0	24	24	0.5%	84	Dixie SB	Dixie SB	from NW on Dixie
8663	0	0	0	0	92	92	1.9%	84	Dixie SB	Dixie SB	from NW on Dixie

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Outgoing AM

Fri Dec 11 2020 17:01:04 GMT-0500 (Eastern Standard Time) - Run Time: 2545ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
Start time of trip - start_time In 600-900
and
Trip purpose - trip_purp In 1
and
Primary travel mode of trip - mode_prime In D, M
and
2006 GTA zone of origin - gta06_orig In 3012,3013,3014,3015,3016,3191

Trip 2016
Table:

	From						21185	21211	
To	3012	3015	3191	Sum	%	PD	Gateway	Gateway	Notes
421	0	30	0	30	11.2%	10	Mayfield WB	Mayfield WB	to 410
2070	0	30	0	30	11.2%	33	Dixie SB	Dixie SB	to NE on Dixie
3005	19	0	0	19	7.1%	34	Mayfield WB	Mayfield WB	to SW on Mayfield/Old School
3192	0	14	0	14	5.2%	34	Dixie NB	Dixie NB	to NW on Dixie
3376	0	26	0	26	9.7%	35	Mayfield WB	Mayfield WB	to SW on Mayfield
3448	16	0	0	16	6.0%	35	Mayfield EB	Mayfield EB	to NE on Dixie/Mayfield
3816	0	35	0	35	13.1%	36	Mayfield WB	Mayfield WB	to 410
8663	0	0	48	48	17.9%	84	Dixie NB	Dixie NB	to NW on Dixie
8904	0	50	0	50	18.7%	147	Mayfield WB	Mayfield WB	to 410

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APPENDIX F

Intersection Capacity Analysis – Future Total Conditions

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1	0	17	0	49	639	56	557	2
Future Volume (vph)	1	0	17	0	49	639	56	557	2
Lane Group Flow (vph)	0	18	0	108	49	711	224	557	2
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9
Total Split (s)	44.9	44.9	44.9	44.9	75.1	75.1	75.1	75.1	75.1
Total Split (%)	37.4%	37.4%	37.4%	37.4%	62.6%	62.6%	62.6%	62.6%	62.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
v/c Ratio		0.10		0.52	0.09	0.56	0.47	0.42	0.00
Control Delay		6.2		36.0	5.0	8.5	10.1	6.7	0.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		6.2		36.0	5.0	8.5	10.1	6.7	0.0
Queue Length 50th (m)		0.0		7.7	1.3	30.3	8.7	20.4	0.0
Queue Length 95th (m)		0.0		1.7	3.9	55.8	3.4	37.1	0.0
Internal Link Dist (m)		280.5		138.1		472.6		1500.1	
Turn Bay Length (m)					60.0		60.0		60.0
Base Capacity (vph)		493		558	537	1264	473	1315	796
Starvation Cap Reductn		0		0	0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		0.04		0.19	0.09	0.56	0.47	0.42	0.00

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 101
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Dixie Road & Merchant Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	17	17	0	10	49	639	18	56	557	2
Future Volume (vph)	1	0	17	17	0	10	49	639	18	56	557	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.87			0.95		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1275			1730		1623	1708		1785	1779	1065
Flt Permitted		0.98			0.80		0.43	1.00		0.34	1.00	1.00
Satd. Flow (perm)		1255			1424		727	1708		640	1779	1065
Peak-hour factor, PHF	1.00	0.25	1.00	0.25	0.25	0.25	1.00	1.00	0.25	0.25	1.00	1.00
Adj. Flow (vph)	1	0	17	68	0	40	49	639	72	224	557	2
RTOR Reduction (vph)	0	16	0	0	31	0	0	2	0	0	0	1
Lane Group Flow (vph)	0	2	0	0	77	0	49	709	0	224	557	1
Heavy Vehicles (%)	100%	0%	24%	0%	0%	0%	10%	12%	0%	0%	8%	50%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		12.5			12.5		74.7	74.7		74.7	74.7	74.7
Effective Green, g (s)		12.5			12.5		74.7	74.7		74.7	74.7	74.7
Actuated g/C Ratio		0.12			0.12		0.74	0.74		0.74	0.74	0.74
Clearance Time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		155			176		537	1263		473	1315	787
v/s Ratio Prot								c0.42			0.31	
v/s Ratio Perm		0.00			c0.05		0.07			0.35		0.00
v/c Ratio		0.01			0.44		0.09	0.56		0.47	0.42	0.00
Uniform Delay, d1		38.8			41.0		3.7	5.9		5.3	5.0	3.4
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1			3.6		0.3	1.8		3.4	1.0	0.0
Delay (s)		38.9			44.6		4.0	7.7		8.6	6.0	3.4
Level of Service		D			D		A	A		A	A	A
Approach Delay (s)		38.9			44.6			7.4			6.7	
Approach LOS		D			D			A			A	

Intersection Summary				
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	13.8	
Intersection Capacity Utilization	66.3%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	441	1474	364	64	619	121	220	54	27	175	358
Future Volume (vph)	441	1474	364	64	619	121	220	54	27	175	358
Lane Group Flow (vph)	441	1474	364	64	667	121	220	54	27	175	358
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	4	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	47.9	47.9	47.9	47.9	47.9	47.9
Total Split (s)	10.0	60.0	60.0	10.0	60.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	8.3%	50.0%	50.0%	8.3%	50.0%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.70	0.50	0.34	0.25	0.33	0.62	0.67	0.16	0.21	0.50	0.70
Control Delay	15.8	15.6	2.5	10.0	22.0	57.0	54.1	8.0	41.6	46.8	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	15.6	2.5	10.0	22.0	57.0	54.1	8.0	41.6	46.8	17.9
Queue Length 50th (m)	20.8	41.2	0.0	2.3	21.3	15.7	28.8	0.0	3.2	22.1	9.3
Queue Length 95th (m)	#50.3	60.4	8.6	5.9	27.0	25.3	40.4	4.8	7.6	31.9	26.5
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	627	2973	1074	261	1996	357	600	547	238	638	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.50	0.34	0.25	0.33	0.34	0.37	0.10	0.11	0.27	0.51

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 44 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Dixie Road & Mayfield Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	1474	364	64	619	48	121	220	54	27	175	358
Future Volume (vph)	441	1474	364	64	619	48	121	220	54	27	175	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1566	4902	1536	1653	4497		1716	1671	1413	1405	1779	1439
Flt Permitted	0.34	1.00	1.00	0.17	1.00		0.55	1.00	1.00	0.45	1.00	1.00
Satd. Flow (perm)	563	4902	1536	290	4497		996	1671	1413	665	1779	1439
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	441	1474	364	64	619	48	121	220	54	27	175	358
RTOR Reduction (vph)	0	0	145	0	7	0	0	0	43	0	0	226
Lane Group Flow (vph)	441	1474	219	64	660	0	121	220	11	27	175	132
Heavy Vehicles (%)	14%	7%	4%	8%	14%	33%	4%	15%	13%	27%	8%	11%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	82.6	72.2	72.2	60.5	53.1		23.6	23.6	23.6	23.6	23.6	23.6
Effective Green, g (s)	82.6	72.2	72.2	60.5	53.1		23.6	23.6	23.6	23.6	23.6	23.6
Actuated g/C Ratio	0.69	0.60	0.60	0.50	0.44		0.20	0.20	0.20	0.20	0.20	0.20
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	609	2949	924	230	1989		195	328	277	130	349	283
v/s Ratio Prot	c0.16	0.30		0.02	0.15			c0.13			0.10	
v/s Ratio Perm	c0.34		0.14	0.12			0.12		0.01	0.04		0.09
v/c Ratio	0.72	0.50	0.24	0.28	0.33		0.62	0.67	0.04	0.21	0.50	0.47
Uniform Delay, d1	8.7	13.6	11.1	15.3	21.9		44.1	44.6	39.0	40.4	43.0	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.6	0.6	1.4	0.4		8.4	6.9	0.1	1.7	2.4	2.5
Delay (s)	13.9	14.2	11.7	16.7	22.3		52.5	51.5	39.1	42.0	45.3	45.2
Level of Service	B	B	B	B	C		D	D	D	D	D	D
Approach Delay (s)		13.8			21.8			50.1			45.1	
Approach LOS		B			C			D			D	

Intersection Summary

HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

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Queues
3: Dixie Road & Old School Road

Future Total
Weekday AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	17	227	45	88	24	231	33	694
Future Volume (vph)	17	227	45	88	24	231	33	694
Lane Group Flow (vph)	17	273	45	96	24	275	33	740
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.4	25.4	25.4	23.6	23.6	26.0	26.0
Total Split (s)	30.0	30.0	30.0	30.0	40.0	40.0	40.0	40.0
Total Split (%)	42.9%	42.9%	42.9%	42.9%	57.1%	57.1%	57.1%	57.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.6	4.6	4.6	4.6
All-Red Time (s)	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
v/c Ratio	0.07	0.59	0.18	0.21	0.10	0.29	0.06	0.74
Control Delay	17.3	24.5	19.4	17.8	10.3	9.3	8.9	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	24.5	19.4	17.8	10.3	9.3	8.9	18.7
Queue Length 50th (m)	0.9	15.2	2.4	4.7	0.7	8.5	1.0	34.9
Queue Length 95th (m)	3.2	26.7	6.4	10.4	3.4	20.0	3.8	#84.1
Internal Link Dist (m)		189.2		445.0		436.1		428.3
Turn Bay Length (m)	35.0		40.0		40.0		35.0	
Base Capacity (vph)	382	677	360	664	234	946	566	997
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.40	0.13	0.14	0.10	0.29	0.06	0.74

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 63.6
Natural Cycle: 60
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Dixie Road & Old School Road

HCM Signalized Intersection Capacity Analysis
3: Dixie Road & Old School Road

Future Total
Weekday AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	227	46	45	88	8	24	231	44	33	694	46
Future Volume (vph)	17	227	46	45	88	8	24	231	44	33	694	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1405	1793		1785	1774		1785	1730		1684	1834	
Flt Permitted	0.69	1.00		0.52	1.00		0.23	1.00		0.59	1.00	
Satd. Flow (perm)	1028	1793		968	1774		434	1730		1046	1834	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	17	227	46	45	88	8	24	231	44	33	694	46
RTOR Reduction (vph)	0	12	0	0	5	0	0	9	0	0	3	0
Lane Group Flow (vph)	17	261	0	45	91	0	24	266	0	33	737	0
Heavy Vehicles (%)	27%	2%	3%	0%	5%	0%	0%	10%	0%	6%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	16.1	16.1		16.1	16.1		34.4	34.4		34.4	34.4	
Effective Green, g (s)	16.1	16.1		16.1	16.1		34.4	34.4		34.4	34.4	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.54	0.54		0.54	0.54	
Clearance Time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	260	454		245	449		235	937		566	993	
v/s Ratio Prot		c0.15			0.05			0.15			c0.40	
v/s Ratio Perm	0.02			0.05			0.06			0.03		
v/c Ratio	0.07	0.58		0.18	0.20		0.10	0.28		0.06	0.74	
Uniform Delay, d1	18.0	20.7		18.6	18.6		7.1	7.9		6.9	11.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.8		0.8	0.5		0.9	0.8		0.2	5.0	
Delay (s)	18.2	23.5		19.3	19.1		7.9	8.6		7.1	16.1	
Level of Service	B	C		B	B		A	A		A	B	
Approach Delay (s)		23.2			19.2			8.6			15.8	
Approach LOS		C			B			A			B	

Intersection Summary

HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

TOWN OF CALEDON
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	260	13	9	94	8	11	47	11	8	64	25
Future Volume (vph)	13	260	13	9	94	8	11	47	11	8	64	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	15	306	15	11	111	9	13	55	13	9	75	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	336	131	81	113
Volume Left (vph)	15	11	13	9
Volume Right (vph)	15	9	13	29
Hadj (s)	-0.02	0.03	0.13	-0.10
Departure Headway (s)	4.6	4.9	5.3	5.0
Degree Utilization, x	0.43	0.18	0.12	0.16
Capacity (veh/h)	751	693	611	644
Control Delay (s)	10.9	8.9	9.0	9.0
Approach Delay (s)	10.9	8.9	9.0	9.0
Approach LOS	B	A	A	A

Intersection Summary				
Delay			10.0	
Level of Service			A	
Intersection Capacity Utilization			30.8%	ICU Level of Service
Analysis Period (min)			15	

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	7	65	450	574
Future Volume (vph)	7	65	450	574
Lane Group Flow (vph)	27	0	515	614
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.6	25.6	25.6
Total Split (s)	25.4	44.6	44.6	44.6
Total Split (%)	36.3%	63.7%	63.7%	63.7%
Yellow Time (s)	4.0	4.6	4.6	4.6
All-Red Time (s)	2.4	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	6.4		6.6	6.6
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max
v/c Ratio	0.11		0.33	0.34
Control Delay	16.2		2.2	2.2
Queue Delay	0.0		0.0	0.0
Total Delay	16.2		2.2	2.2
Queue Length 50th (m)	0.4		0.0	0.0
Queue Length 95th (m)	4.4		24.9	29.0
Internal Link Dist (m)	123.0		233.4	436.1
Turn Bay Length (m)				
Base Capacity (vph)	523		1582	1790
Starvation Cap Reductn	0		0	0
Spillback Cap Reductn	0		0	0
Storage Cap Reductn	0		0	0
Reduced v/c Ratio	0.05		0.33	0.34

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 62.8
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Dixie Road & East Site Access 1

TOWN OF CALEDON
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Feb 26, 2021

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	20	65	450	574	40
Future Volume (vph)	7	20	65	450	574	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.7	3.7	3.5
Total Lost time (s)	6.4			6.6	6.6	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.90			1.00	0.99	
Flt Protected	0.99			0.99	1.00	
Satd. Flow (prot)	1669			1909	1904	
Flt Permitted	0.99			0.88	1.00	
Satd. Flow (perm)	1669			1683	1904	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	7	20	65	450	574	40
RTOR Reduction (vph)	20	0	0	0	2	0
Lane Group Flow (vph)	7	0	0	515	612	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	1.6			53.5	53.5	
Effective Green, g (s)	1.6			53.5	53.5	
Actuated g/C Ratio	0.02			0.79	0.79	
Clearance Time (s)	6.4			6.6	6.6	
Vehicle Extension (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	39			1322	1495	
v/s Ratio Prot	c0.00				c0.32	
v/s Ratio Perm				0.31		
v/c Ratio	0.19			0.39	0.41	
Uniform Delay, d1	32.6			2.3	2.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	5.0			0.9	0.8	
Delay (s)	37.6			3.1	3.1	
Level of Service	D			A	A	
Approach Delay (s)	37.6			3.1	3.1	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	0	73	515	594
Future Volume (vph)	0	73	515	594
Lane Group Flow (vph)	32	0	588	594
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.6	25.6	25.6
Total Split (s)	25.4	44.6	44.6	44.6
Total Split (%)	36.3%	63.7%	63.7%	63.7%
Yellow Time (s)	4.0	4.6	4.6	4.6
All-Red Time (s)	2.4	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	6.4		6.6	6.6
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max
v/c Ratio	0.07		0.39	0.35
Control Delay	0.3		3.5	3.1
Queue Delay	0.0		0.0	0.0
Total Delay	0.3		3.5	3.1
Queue Length 50th (m)	0.0		0.0	0.0
Queue Length 95th (m)	0.0		27.2	25.0
Internal Link Dist (m)	99.2		309.0	233.4
Turn Bay Length (m)				
Base Capacity (vph)	662		1492	1703
Starvation Cap Reductn	0		0	0
Spillback Cap Reductn	0		0	0
Storage Cap Reductn	0		0	0
Reduced v/c Ratio	0.05		0.39	0.35

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 65.4
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 6: Dixie Road & East Site Access 2

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	32	73	515	594	0
Future Volume (vph)	0	32	73	515	594	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.7	3.7	3.5
Total Lost time (s)	6.4			6.6	6.6	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.86			1.00	1.00	
Flt Protected	1.00			0.99	1.00	
Satd. Flow (prot)	1625			1909	1921	
Flt Permitted	1.00			0.88	1.00	
Satd. Flow (perm)	1625			1683	1921	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	32	73	515	594	0
RTOR Reduction (vph)	31	0	0	0	0	0
Lane Group Flow (vph)	1	0	0	588	594	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	2.8			53.6	53.6	
Effective Green, g (s)	2.8			53.6	53.6	
Actuated g/C Ratio	0.04			0.77	0.77	
Clearance Time (s)	6.4			6.6	6.6	
Vehicle Extension (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	65			1299	1483	
v/s Ratio Prot	c0.00				0.31	
v/s Ratio Perm				c0.35		
v/c Ratio	0.02			0.45	0.40	
Uniform Delay, d1	32.0			2.8	2.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.3			1.1	0.8	
Delay (s)	32.2			3.9	3.4	
Level of Service	C			A	A	
Approach Delay (s)	32.2			3.9	3.4	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	5	67	583	590
Future Volume (vph)	5	67	583	590
Lane Group Flow (vph)	30	0	650	626
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.6	25.6	25.6
Total Split (s)	25.4	44.6	44.6	44.6
Total Split (%)	36.3%	63.7%	63.7%	63.7%
Yellow Time (s)	4.0	4.6	4.6	4.6
All-Red Time (s)	2.4	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	6.4		6.6	6.6
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max
v/c Ratio	0.13		0.43	0.37
Control Delay	15.7		4.1	3.4
Queue Delay	0.0		0.0	0.0
Total Delay	15.7		4.1	3.4
Queue Length 50th (m)	0.3		0.0	0.0
Queue Length 95th (m)	4.5		35.1	29.9
Internal Link Dist (m)	152.2		1500.1	309.0
Turn Bay Length (m)				
Base Capacity (vph)	500		1511	1682
Starvation Cap Reductn	0		0	0
Spillback Cap Reductn	0		0	0
Storage Cap Reductn	0		0	0
Reduced v/c Ratio	0.06		0.43	0.37

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 65.8
Natural Cycle: 65
Control Type: Semi Act-Uncoord

Splits and Phases: 7: Dixie Road & East Site Access 3

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	25	67	583	590	36
Future Volume (vph)	5	25	67	583	590	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.7	3.7	3.5
Total Lost time (s)	6.4			6.6	6.6	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.89			1.00	0.99	
Flt Protected	0.99			0.99	1.00	
Satd. Flow (prot)	1654			1911	1906	
Flt Permitted	0.99			0.89	1.00	
Satd. Flow (perm)	1654			1714	1906	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	25	67	583	590	36
RTOR Reduction (vph)	24	0	0	0	2	0
Lane Group Flow (vph)	6	0	0	650	624	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	3.2			53.7	53.7	
Effective Green, g (s)	3.2			53.7	53.7	
Actuated g/C Ratio	0.05			0.77	0.77	
Clearance Time (s)	6.4			6.6	6.6	
Vehicle Extension (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	75			1316	1464	
v/s Ratio Prot	c0.00				0.33	
v/s Ratio Perm				c0.38		
v/c Ratio	0.08			0.49	0.43	
Uniform Delay, d1	31.9			3.0	2.8	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	1.0			1.3	0.9	
Delay (s)	32.9			4.4	3.7	
Level of Service	C			A	A	
Approach Delay (s)	32.9			4.4	3.7	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	268	11	22	101	0	7
Future Volume (Veh/h)	268	11	22	101	0	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	268	11	22	101	0	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			279		418	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			279		418	274
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	99
cM capacity (veh/h)			1295		585	770

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	279	123	7
Volume Left	0	22	0
Volume Right	11	0	7
cSH	1700	1295	770
Volume to Capacity	0.16	0.02	0.01
Queue Length 95th (m)	0.0	0.2	0.1
Control Delay (s)	0.0	1.5	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	1.5	9.7
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	275	0	12	123	0	2
Future Volume (Veh/h)	275	0	12	123	0	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	275	0	12	123	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			275		422	275
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			275		422	275
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1300		587	769

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	275	135	2
Volume Left	0	12	0
Volume Right	0	0	2
cSH	1700	1300	769
Volume to Capacity	0.16	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.0
Control Delay (s)	0.0	0.8	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.8	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		26.4%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	277	0	23	135	0	7
Future Volume (Veh/h)	277	0	23	135	0	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	277	0	23	135	0	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				213		
pX, platoon unblocked						
vC, conflicting volume			277		458	277
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			277		458	277
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	99
cM capacity (veh/h)			1298		555	767

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	277	158	7
Volume Left	0	23	0
Volume Right	0	0	7
cSH	1700	1298	767
Volume to Capacity	0.16	0.02	0.01
Queue Length 95th (m)	0.0	0.2	0.1
Control Delay (s)	0.0	1.3	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		36.3%	ICU Level of Service A
Analysis Period (min)		15	

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	4	0	22	0	11	689	10	883	3
Future Volume (vph)	4	0	22	0	11	689	10	883	3
Lane Group Flow (vph)	0	38	0	328	11	785	40	883	3
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9
Total Split (s)	44.9	44.9	44.9	44.9	75.1	75.1	75.1	75.1	75.1
Total Split (%)	37.4%	37.4%	37.4%	37.4%	62.6%	62.6%	62.6%	62.6%	62.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
v/c Ratio		0.10		0.78	0.05	0.66	0.13	0.75	0.00
Control Delay		11.7		37.4	9.9	16.1	10.4	19.3	0.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		11.7		37.4	9.9	16.1	10.4	19.3	0.0
Queue Length 50th (m)		0.3		24.1	0.4	51.2	1.6	64.7	0.0
Queue Length 95th (m)		0.0		0.3	2.2	103.2	1.4	130.8	0.0
Internal Link Dist (m)		280.5		138.1		472.6		1500.1	
Turn Bay Length (m)					60.0		60.0		60.0
Base Capacity (vph)		599		628	222	1183	311	1183	1031
Starvation Cap Reductn		0		0	0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		0.06		0.52	0.05	0.66	0.13	0.75	0.00

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 105
Natural Cycle: 100
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Dixie Road & Merchant Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	34	22	0	60	11	689	24	10	883	3
Future Volume (vph)	4	0	34	22	0	60	11	689	24	10	883	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.90		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1643			1671		1637	1807		1785	1812	1561
Flt Permitted		0.96			0.90		0.20	1.00		0.25	1.00	1.00
Satd. Flow (perm)		1587			1517		342	1807		478	1812	1561
Peak-hour factor, PHF	1.00	0.25	1.00	0.25	0.25	0.25	1.00	1.00	0.25	0.25	1.00	1.00
Adj. Flow (vph)	4	0	34	88	0	240	11	689	96	40	883	3
RTOR Reduction (vph)	0	27	0	0	94	0	0	3	0	0	0	1
Lane Group Flow (vph)	0	11	0	0	234	0	11	782	0	40	883	2
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	5%	0%	0%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		22.6			22.6		68.6	68.6		68.6	68.6	68.6
Effective Green, g (s)		22.6			22.6		68.6	68.6		68.6	68.6	68.6
Actuated g/C Ratio		0.22			0.22		0.65	0.65		0.65	0.65	0.65
Clearance Time (s)		6.9			6.9		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		341			326		223	1180		312	1183	1019
v/s Ratio Prot								0.43			c0.49	
v/s Ratio Perm		0.01			c0.15		0.03			0.08		0.00
v/c Ratio		0.03			0.72		0.05	0.66		0.13	0.75	0.00
Uniform Delay, d1		32.5			38.2		6.5	11.1		6.9	12.3	6.3
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1			9.0		0.4	2.9		0.8	4.3	0.0
Delay (s)		32.6			47.3		6.9	14.1		7.7	16.6	6.3
Level of Service		C			D		A	B		A	B	A
Approach Delay (s)		32.6			47.3			14.0			16.2	
Approach LOS		C			D			B			B	

Intersection Summary				
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	13.8	
Intersection Capacity Utilization	67.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

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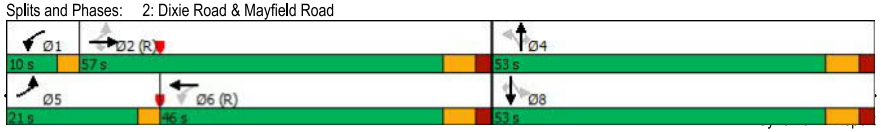
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	409	1008	186	68	1176	289	255	38	67	361	508
Future Volume (vph)	409	1008	186	68	1176	289	255	38	67	361	508
Lane Group Flow (vph)	409	1008	186	68	1202	289	255	38	67	361	508
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	4	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	47.9	47.9	47.9	47.9	47.9	47.9
Total Split (s)	21.0	57.0	57.0	10.0	46.0	53.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	17.5%	47.5%	47.5%	8.3%	38.3%	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?											
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	1.25	0.49	0.24	0.32	0.75	1.00	0.35	0.06	0.19	0.51	0.65
Control Delay	167.2	25.8	3.8	18.9	39.7	91.9	27.9	0.2	26.4	31.6	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.2	25.8	3.8	18.9	39.7	91.9	27.9	0.2	26.4	31.6	15.5
Queue Length 50th (m)	~61.0	37.3	0.0	4.5	54.5	~39.9	25.0	0.0	6.1	38.2	21.8
Queue Length 95th (m)	#97.3	45.1	7.8	8.9	64.6	#73.6	37.5	0.0	12.5	55.1	44.1
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	326	2069	785	215	1593	288	737	651	355	703	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.49	0.24	0.32	0.75	1.00	0.35	0.06	0.19	0.51	0.65

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Dixie Road & Mayfield Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	409	1008	186	68	1176	26	289	255	38	67	361	508
Future Volume (vph)	409	1008	186	68	1176	26	289	255	38	67	361	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1700	4768	1566	1342	4883		1750	1921	1551	1653	1830	1551
Flt Permitted	0.10	1.00	1.00	0.27	1.00		0.41	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	187	4768	1566	384	4883		751	1921	1551	926	1830	1551
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	409	1008	186	68	1176	26	289	255	38	67	361	508
RTOR Reduction (vph)	0	0	106	0	2	0	0	0	23	0	0	190
Lane Group Flow (vph)	409	1008	80	68	1200	0	289	255	15	67	361	318
Heavy Vehicles (%)	5%	10%	2%	33%	7%	10%	2%	0%	3%	8%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	60.1	51.5	51.5	44.7	39.1		46.1	46.1	46.1	46.1	46.1	46.1
Effective Green, g (s)	60.1	51.5	51.5	44.7	39.1		46.1	46.1	46.1	46.1	46.1	46.1
Actuated g/C Ratio	0.50	0.43	0.43	0.37	0.33		0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		6.9	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	320	2046	672	187	1591		288	737	595	355	703	595
v/s Ratio Prot	c0.19	0.21		0.02	0.25			0.13			0.20	
v/s Ratio Perm	c0.45		0.05	0.12			c0.38		0.01	0.07		0.21
v/c Ratio	1.28	0.49	0.12	0.36	0.75		1.00	0.35	0.02	0.19	0.51	0.53
Uniform Delay, d1	34.8	24.8	20.6	24.9	36.2		37.0	26.2	23.0	24.5	28.3	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	147.1	0.9	0.4	2.5	3.4		53.9	0.6	0.0	0.5	1.3	1.7
Delay (s)	182.0	25.6	21.0	27.4	39.5		90.9	26.8	23.0	25.1	29.6	30.3
Level of Service	F	C	C	C	D		F	C	C	C	C	C
Approach Delay (s)		65.0			38.9			58.4			29.7	
Approach LOS		E			D			E			C	

Intersection Summary

HCM 2000 Control Delay	49.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	51	98	83	250	68	611	6	260
Future Volume (vph)	51	98	83	250	68	611	6	260
Lane Group Flow (vph)	51	118	83	268	68	653	6	281
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	5.0
Minimum Split (s)	25.4	25.4	25.4	25.4	23.6	23.6	25.6	25.6
Total Split (s)	30.0	30.0	30.0	30.0	35.0	35.0	35.0	35.0
Total Split (%)	46.2%	46.2%	46.2%	46.2%	53.8%	53.8%	53.8%	53.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.6	4.6	4.6	4.6
All-Red Time (s)	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
v/c Ratio	0.21	0.24	0.25	0.55	0.12	0.69	0.02	0.31
Control Delay	17.9	14.9	17.8	22.0	9.5	17.2	9.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	14.9	17.8	22.0	9.5	17.2	9.2	10.2
Queue Length 50th (m)	2.4	4.7	3.9	13.5	2.0	27.2	0.2	8.8
Queue Length 95th (m)	6.5	10.5	9.1	24.1	6.4	#67.3	1.2	20.5
Internal Link Dist (m)		189.2		445.0		436.1		428.3
Turn Bay Length (m)	35.0		40.0		40.0		35.0	
Base Capacity (vph)	374	743	519	754	563	940	271	899
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.16	0.16	0.36	0.12	0.69	0.02	0.31

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 57.7
Natural Cycle: 60
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Dixie Road & Old School Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	98	20	83	250	18	68	611	42	6	260	21
Future Volume (vph)	51	98	20	83	250	18	68	611	42	6	260	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1566	1787		1767	1829		1785	1836		1785	1754	
Flt Permitted	0.55	1.00		0.68	1.00		0.59	1.00		0.28	1.00	
Satd. Flow (perm)	914	1787		1267	1829		1103	1836		531	1754	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	98	20	83	250	18	68	611	42	6	260	21
RTOR Reduction (vph)	0	13	0	0	4	0	0	3	0	0	4	0
Lane Group Flow (vph)	51	105	0	83	264	0	68	650	0	6	277	0
Heavy Vehicles (%)	14%	3%	0%	1%	1%	11%	0%	2%	27%	0%	9%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	15.2	15.2		15.2	15.2		29.4	29.4		29.4	29.4	
Effective Green, g (s)	15.2	15.2		15.2	15.2		29.4	29.4		29.4	29.4	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.51	0.51		0.51	0.51	
Clearance Time (s)	6.4	6.4		6.4	6.4		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	241	471		334	482		562	937		271	895	
v/s Ratio Prot		0.06			c0.14			c0.35			0.16	
v/s Ratio Perm	0.06			0.07			0.06			0.01		
v/c Ratio	0.21	0.22		0.25	0.55		0.12	0.69		0.02	0.31	
Uniform Delay, d1	16.5	16.6		16.7	18.2		7.4	10.7		7.0	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.5		0.8	2.2		0.4	4.2		0.2	0.9	
Delay (s)	17.4	17.1		17.5	20.5		7.8	14.9		7.1	9.1	
Level of Service	B	B		B	C		A	B		A	A	
Approach Delay (s)		17.2			19.8			14.2			9.1	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

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HCM Unsignalized Intersection Capacity Analysis
4: Heart Lake Road & Old School Road

Future Total
Weekday PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	120	12	26	262	4	25	43	15	1	43	14
Future Volume (vph)	8	120	12	26	262	4	25	43	15	1	43	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	128	13	28	279	4	27	46	16	1	46	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	150	311	89	62
Volume Left (vph)	9	28	27	1
Volume Right (vph)	13	4	16	15
Hadj (s)	0.00	0.03	-0.05	-0.09
Departure Headway (s)	4.7	4.5	5.0	5.0
Degree Utilization, x	0.19	0.39	0.12	0.09
Capacity (veh/h)	736	768	650	642
Control Delay (s)	8.8	10.3	8.7	8.5
Approach Delay (s)	8.8	10.3	8.7	8.5
Approach LOS	A	B	A	A

Intersection Summary				
Delay			9.5	
Level of Service			A	
Intersection Capacity Utilization			40.4%	ICU Level of Service
Analysis Period (min)			15	

Queues
5: Dixie Road & East Site Access 1

Future Total
Weekday PM Peak

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	43	21	712	675
Future Volume (vph)	43	21	712	675
Lane Group Flow (vph)	113	0	733	682
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.6	25.6	25.6
Total Split (s)	25.4	44.6	44.6	44.6
Total Split (%)	36.3%	63.7%	63.7%	63.7%
Yellow Time (s)	4.0	4.6	4.6	4.6
All-Red Time (s)	2.4	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	6.4		6.6	6.6
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max
v/c Ratio	0.37		0.54	0.49
Control Delay	14.8		8.3	7.5
Queue Delay	0.0		0.0	0.0
Total Delay	14.8		8.3	7.5
Queue Length 50th (m)	2.9		24.3	21.3
Queue Length 95th (m)	9.3		48.5	42.0
Internal Link Dist (m)	123.0		233.4	436.1
Turn Bay Length (m)				
Base Capacity (vph)	541		1354	1387
Starvation Cap Reductn	0		0	0
Spillback Cap Reductn	0		0	0
Storage Cap Reductn	0		0	0
Reduced v/c Ratio	0.21		0.54	0.49

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 65.6
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Dixie Road & East Site Access 1

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	43	70	21	712	675	7
Future Volume (vph)	43	70	21	712	675	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.7	3.7	3.5
Total Lost time (s)	6.4			6.6	6.6	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	1.00	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1690			1918	1918	
Flt Permitted	0.98			0.98	1.00	
Satd. Flow (perm)	1690			1873	1918	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	43	70	21	712	675	7
RTOR Reduction (vph)	62	0	0	0	0	0
Lane Group Flow (vph)	51	0	0	733	682	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	7.9			46.0	46.0	
Effective Green, g (s)	7.9			46.0	46.0	
Actuated g/C Ratio	0.12			0.69	0.69	
Clearance Time (s)	6.4			6.6	6.6	
Vehicle Extension (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	199			1287	1318	
v/s Ratio Prot	c0.03				0.36	
v/s Ratio Perm				c0.39		
v/c Ratio	0.26			0.57	0.52	
Uniform Delay, d1	26.8			5.4	5.1	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	1.4			1.8	1.5	
Delay (s)	28.3			7.2	6.5	
Level of Service	C			A	A	
Approach Delay (s)	28.3			7.2	6.5	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	0	24	733	745
Future Volume (vph)	0	24	733	745
Lane Group Flow (vph)	88	0	757	745
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.6	25.6	25.6
Total Split (s)	25.4	44.6	44.6	44.6
Total Split (%)	36.3%	63.7%	63.7%	63.7%
Yellow Time (s)	4.0	4.6	4.6	4.6
All-Red Time (s)	2.4	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	6.4		6.6	6.6
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max
v/c Ratio	0.25		0.54	0.52
Control Delay	1.8		7.1	6.7
Queue Delay	0.0		0.0	0.0
Total Delay	1.8		7.1	6.7
Queue Length 50th (m)	0.0		23.9	23.0
Queue Length 95th (m)	0.5		40.6	38.2
Internal Link Dist (m)	99.2		309.0	233.4
Turn Bay Length (m)				
Base Capacity (vph)	600		1395	1439
Starvation Cap Reductn	0		0	0
Spillback Cap Reductn	0		0	0
Storage Cap Reductn	0		0	0
Reduced v/c Ratio	0.15		0.54	0.52

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 66
Natural Cycle: 65
Control Type: Semi Act-Uncoord

Splits and Phases: 6: Dixie Road & East Site Access 2

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	88	24	733	745	0
Future Volume (vph)	0	88	24	733	745	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.7	3.7	3.5
Total Lost time (s)	6.4			6.6	6.6	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.86			1.00	1.00	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1625			1918	1921	
Flt Permitted	1.00			0.97	1.00	
Satd. Flow (perm)	1625			1861	1921	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	88	24	733	745	0
RTOR Reduction (vph)	80	0	0	0	0	0
Lane Group Flow (vph)	8	0	0	757	745	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	6.3			48.0	48.0	
Effective Green, g (s)	6.3			48.0	48.0	
Actuated g/C Ratio	0.09			0.71	0.71	
Clearance Time (s)	6.4			6.6	6.6	
Vehicle Extension (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	152			1327	1370	
v/s Ratio Prot	c0.01				0.39	
v/s Ratio Perm				c0.41		
v/c Ratio	0.05			0.57	0.54	
Uniform Delay, d1	27.8			4.7	4.5	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.3			1.8	1.6	
Delay (s)	28.1			6.5	6.1	
Level of Service	C			A	A	
Approach Delay (s)	28.1			6.5	6.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	13.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	39	35	718	827
Future Volume (vph)	39	35	718	827
Lane Group Flow (vph)	108	0	753	833
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.4	25.6	25.6	25.6
Total Split (s)	25.4	44.6	44.6	44.6
Total Split (%)	36.3%	63.7%	63.7%	63.7%
Yellow Time (s)	4.0	4.6	4.6	4.6
All-Red Time (s)	2.4	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	6.4		6.6	6.6
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max
v/c Ratio	0.35		0.57	0.60
Control Delay	14.4		8.8	9.1
Queue Delay	0.0		0.0	0.0
Total Delay	14.4		8.8	9.1
Queue Length 50th (m)	2.7		25.8	29.4
Queue Length 95th (m)	8.9		52.0	58.6
Internal Link Dist (m)	152.2		1500.1	309.0
Turn Bay Length (m)				
Base Capacity (vph)	538		1315	1393
Starvation Cap Reductn	0		0	0
Spillback Cap Reductn	0		0	0
Storage Cap Reductn	0		0	0
Reduced v/c Ratio	0.20		0.57	0.60

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 65.8
Natural Cycle: 70
Control Type: Semi Act-Uncoord

Splits and Phases: 7: Dixie Road & East Site Access 3

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	69	35	718	827	6
Future Volume (vph)	39	69	35	718	827	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.5	3.5	3.7	3.7	3.5
Total Lost time (s)	6.4			6.6	6.6	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.91			1.00	1.00	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1686			1917	1919	
Flt Permitted	0.98			0.94	1.00	
Satd. Flow (perm)	1686			1811	1919	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	39	69	35	718	827	6
RTOR Reduction (vph)	61	0	0	0	0	0
Lane Group Flow (vph)	47	0	0	753	833	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	7.8			46.3	46.3	
Effective Green, g (s)	7.8			46.3	46.3	
Actuated g/C Ratio	0.12			0.69	0.69	
Clearance Time (s)	6.4			6.6	6.6	
Vehicle Extension (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	195			1249	1324	
v/s Ratio Prot	c0.03				c0.43	
v/s Ratio Perm				0.42		
v/c Ratio	0.24			0.60	0.63	
Uniform Delay, d1	27.0			5.5	5.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	1.3			2.2	2.3	
Delay (s)	28.3			7.7	8.0	
Level of Service	C			A	A	
Approach Delay (s)	28.3			7.7	8.0	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	136	0	21	295	12	17
Future Volume (Veh/h)	136	0	21	295	12	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	136	0	21	295	12	17
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			136		473	136
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			136		473	136
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	98
cM capacity (veh/h)			1461		545	918

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	136	316	29
Volume Left	0	21	12
Volume Right	0	0	17
cSH	1700	1461	716
Volume to Capacity	0.08	0.01	0.04
Queue Length 95th (m)	0.0	0.2	0.6
Control Delay (s)	0.0	0.6	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.6	10.2
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	153	0	2	316	0	12
Future Volume (Veh/h)	153	0	2	316	0	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	153	0	2	316	0	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			153		473	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			153		473	153
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1440		553	898

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	153	318	12
Volume Left	0	2	0
Volume Right	0	0	12
cSH	1700	1440	898
Volume to Capacity	0.09	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s)	0.0	0.1	9.1
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.1
Approach LOS			A

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		28.2%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	165	0	21	318	0	19
Future Volume (Veh/h)	165	0	21	318	0	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	165	0	21	318	0	19
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				213		
pX, platoon unblocked					0.92	
vC, conflicting volume			165		525	165
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			165		438	165
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1426		524	885

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	165	339	19
Volume Left	0	21	0
Volume Right	0	0	19
cSH	1700	1426	885
Volume to Capacity	0.10	0.01	0.02
Queue Length 95th (m)	0.0	0.2	0.3
Control Delay (s)	0.0	0.6	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	0.6	9.2
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		39.9%	ICU Level of Service A
Analysis Period (min)		15	

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APPENDIX G

Intersection Capacity Analysis Results – Future Total Conditions (Optimized)

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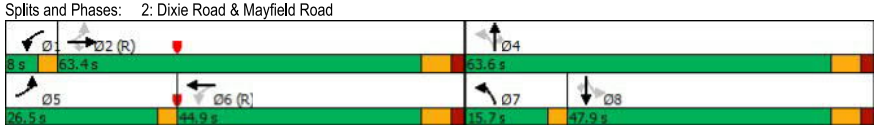
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	409	1008	186	68	1176	289	255	38	67	361	508
Future Volume (vph)	409	1008	186	68	1176	289	255	38	67	361	508
Lane Group Flow (vph)	409	1008	186	68	1202	289	255	38	67	361	508
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6	7	4			8	
Permitted Phases	2		2	6		4		4	8		8
Detector Phase	5	2	2	1	6	7	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	44.9	44.9	8.0	44.9	9.5	47.9	47.9	47.9	47.9	47.9
Total Split (s)	26.5	63.4	63.4	8.0	44.9	15.7	63.6	63.6	47.9	47.9	47.9
Total Split (%)	19.6%	47.0%	47.0%	5.9%	33.3%	11.6%	47.1%	47.1%	35.5%	35.5%	35.5%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	3.0	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3	0.0	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.9	6.9	3.0	6.9	3.0	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?									Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.96	0.46	0.23	0.35	0.87	0.95	0.35	0.06	0.25	0.76	0.77
Control Delay	73.4	27.1	3.9	25.5	54.3	71.0	30.7	0.2	39.9	56.0	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.4	27.1	3.9	25.5	54.3	71.0	30.7	0.2	39.9	56.0	22.6
Queue Length 50th (m)	55.1	42.4	0.0	5.0	66.3	31.5	28.2	0.0	8.3	52.0	24.9
Queue Length 95th (m)	#104.4	50.3	8.3	10.3	77.3	#56.0	39.0	0.1	15.3	69.6	49.0
Internal Link Dist (m)		1129.7			662.0		456.4			472.6	
Turn Bay Length (m)	140.0		75.0	105.0		75.0		45.0	35.0		135.0
Base Capacity (vph)	426	2191	820	192	1376	305	806	697	317	555	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.46	0.23	0.35	0.87	0.95	0.32	0.05	0.21	0.65	0.72

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Dixie Road & Mayfield Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	409	1008	186	68	1176	26	289	255	38	67	361	508
Future Volume (vph)	409	1008	186	68	1176	26	289	255	38	67	361	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	3.0	6.9	6.9	3.0	6.9		3.0	6.9	6.9	6.9	6.9	6.9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1700	4768	1566	1342	4883		1750	1921	1551	1653	1830	1551
Flt Permitted	0.10	1.00	1.00	0.27	1.00		0.24	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	175	4768	1566	384	4883		451	1921	1551	1046	1830	1551
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	409	1008	186	68	1176	26	289	255	38	67	361	508
RTOR Reduction (vph)	0	0	101	0	1	0	0	0	24	0	0	252
Lane Group Flow (vph)	409	1008	85	68	1201	0	289	255	14	67	361	256
Heavy Vehicles (%)	5%	10%	2%	33%	7%	10%	2%	0%	3%	8%	5%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2		2	6			4		4	8		8
Actuated Green, G (s)	70.2	61.4	61.4	43.8	38.0		51.0	51.0	51.0	35.3	35.3	35.3
Effective Green, g (s)	70.2	61.4	61.4	43.8	38.0		51.0	51.0	51.0	35.3	35.3	35.3
Actuated g/C Ratio	0.52	0.45	0.45	0.32	0.28		0.38	0.38	0.38	0.26	0.26	0.26
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9		3.0	6.9	6.9	6.9	6.9	6.9
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	420	2168	712	165	1374		292	725	585	273	478	405
v/s Ratio Prot	c0.21	0.21		0.02	0.25		c0.09	0.13			0.20	
v/s Ratio Perm	c0.30		0.05	0.12			c0.28		0.01	0.06		0.17
v/c Ratio	0.97	0.46	0.12	0.41	0.87		0.99	0.35	0.02	0.25	0.76	0.63
Uniform Delay, d1	41.3	25.4	21.2	32.4	46.2		38.3	30.1	26.4	39.3	45.9	44.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.2	0.7	0.3	3.5	8.0		49.6	0.6	0.0	1.0	7.9	4.4
Delay (s)	78.5	26.2	21.5	35.9	54.2		87.9	30.8	26.4	40.3	53.8	48.6
Level of Service	E	C	C	D	D		F	C	C	D	D	D
Approach Delay (s)		39.0			53.2			58.8			50.0	
Approach LOS		D			D			E			D	

Intersection Summary

HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	19.8	
Intersection Capacity Utilization	99.1%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

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APPENDIX H

Signal Warrant Analysis Results

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East Access 1

Table 21 - Justification 7 - Projected Volumes

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		
						Sectional		Entire %
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900			
	B. Vehicle volume, along minor streets (average hour)*	120	170	120	170			
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	480	720	600	900			
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170			

*Note: For "T" intersections, these values should be increased by 50%.
** Note: For analysis using AHV, a 20% increase over the required volumes for an existing intersection.

Table 21 - Justification 7 - Projected Volumes (Expanded as per Table 22)

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		FT 2026 Volumes		Compliance	
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	amPHV	pmPHV	AHV[2]	Entire %
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	576	864	720	1080	1156	1528	671	100%
	B. Vehicle volume, along minor streets (average hour)	216	306	216	306	27	113	35	16%
2. Delay to Cross Traffic	A. Vehicle volume, along major streets (average hour)	576	864	720	1080	1129	1415	636	100%
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	60	90	144	204	7	43	13	21%

[2]AHV = (amPHV+pmPHV)/4

Justification 7 (Projected Volumes)		Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular	A Total Volume (Average Hour)	100%		X
	B Crossing Volume (Average Hour)	16%		
2. Delay to Cross	A Main Road (Average Hour)	100%		X
	B Crossing Road (Average Hour)	21%		

East Access 2

Table 21 - Justification 7 - Projected Volumes

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		
						Sectional		Entire %
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900			
	B. Vehicle volume, along minor streets (average hour)*	120	170	120	170			
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	480	720	600	900			
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170			

*Note: For "T" intersections, these values should be increased by 50%.
** Note: For analysis using AHV, a 20% increase over the required volumes for an existing intersection.

Table 21 - Justification 7 - Projected Volumes (Expanded as per Table 22)

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		FT 2026 Volumes		Compliance	
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	amPHV	pmPHV	AHV[2]	Entire %
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	576	864	720	1080	1214	1590	701	100%
	B. Vehicle volume, along minor streets (average hour)	216	306	216	306	32	88	30	14%
2. Delay to Cross Traffic	A. Vehicle volume, along major streets (average hour)	576	864	720	1080	1182	1502	671	100%
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	60	90	144	204	0	0	0	0%

[2]AHV = (amPHV+pmPHV)/4

Justification 7 (Projected Volumes)		Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular	A Total Volume (Average Hour)	100%		X
	B Crossing Volume (Average Hour)	14%		
2. Delay to Cross	A Main Road (Average Hour)	100%		X
	B Crossing Road (Average Hour)	0%		

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East Access 3

Table 21 - Justification 7 - Projected Volumes

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		
						Sectional		Entire %
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900			
	B. Vehicle volume, along minor streets (average hour)*	120	170	120	170			
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	480	720	600	900			
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	120	170			

*Note: For "T" intersections, these values should be increased by 50%.

** Note: For analysis using AHV, a 20% increase over the required volumes for an existing intersection.

Table 21 - Justification 7 - Projected Volumes (Expanded as per Table 22)

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		FT 2026 Volumes		Compliance	
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	amPHV	pmPHV	AHV[2]	Entire %
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	576	864	720	1080	1307	1695	751	100%
	B. Vehicle volume, along minor streets (average hour)	216	306	216	306	31	109	35	16%
2. Delay to Cross Traffic	A. Vehicle volume, along major streets (average hour)	576	864	720	1080	1246	1586	708	100%
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	60	90	144	204	5	39	11	18%

[2]AHV = (amPHV+pmPHV)/4

Justification 7 (Projected Volumes)		Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular	A Total Volume (Average Hour)	100%		X
	B Crossing Volume (Average Hour)	16%		
2. Delay to Cross	A Main Road (Average Hour)	100%		X
	B Crossing Road (Average Hour)	18%		

TOWN OF CALEDON
PLANNING
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Feb 26, 2021

APPENDIX I

Functional Review Drawings

TOWN OF CALEDON
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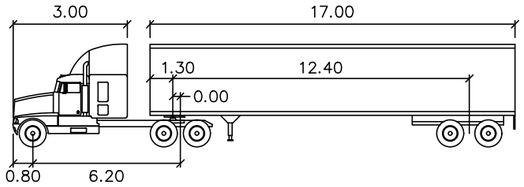
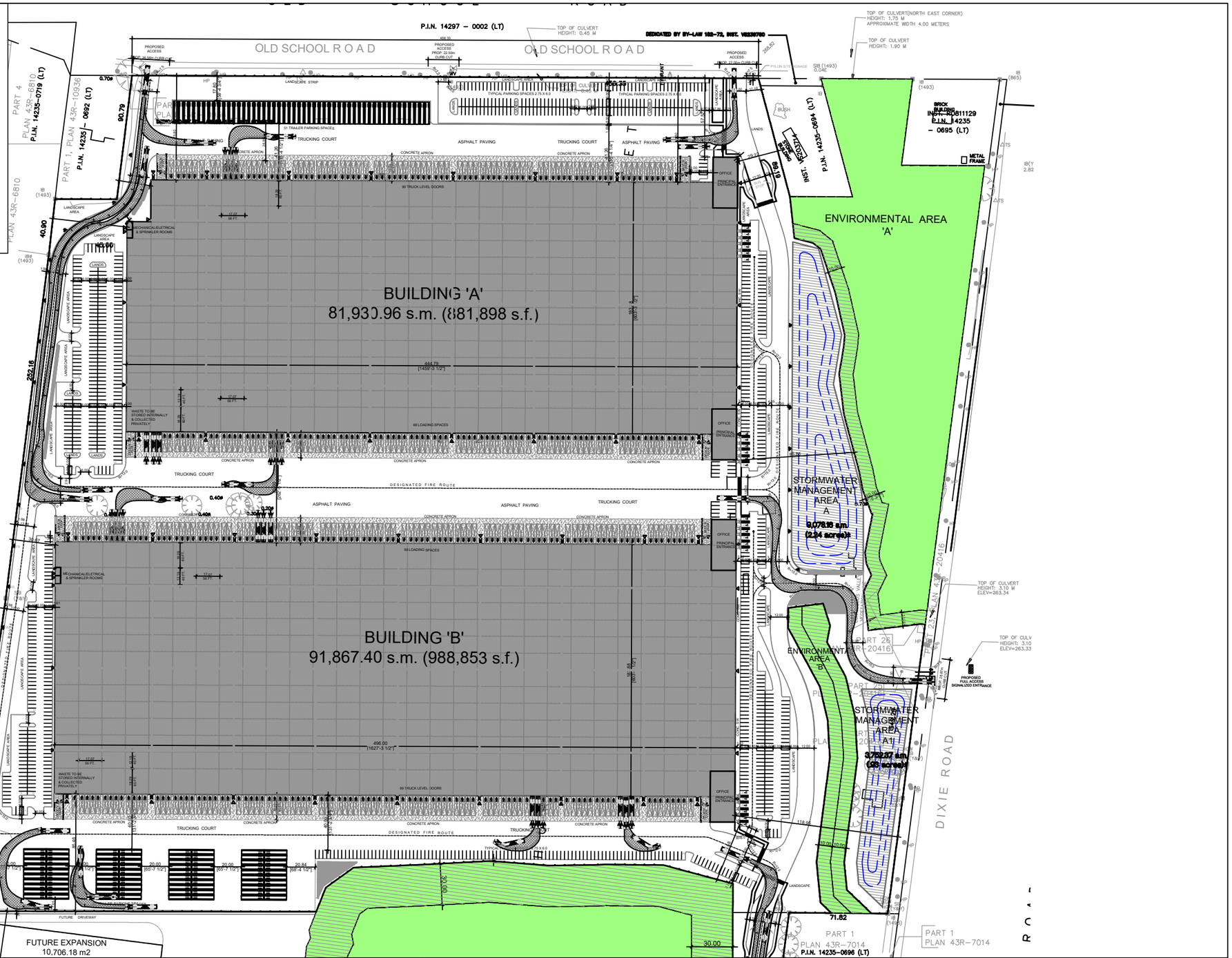


WB–20

	meters		
Tractor Width	: 2.60	Lock to Lock Time	: 6.0
Trailer Width	: 2.60	Steering Angle	: 28.2
Tractor Track	: 2.60	Articulating Angle	: 70.0
Trailer Track	: 2.60		



DRAWN BY: D.T. PLOT DATE: February 24, 2021

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Project No. 21211

Date FEB. 24, 2021

12892 DIXIE ROAD
CALEDON ONTARIO

30 0 30 60 90m
1: 3000

FUNCTIONAL REVIEW
NORTH SECTION

Drawing No. 001

DRAWING NAME: C:\Users\DTat\appdata\local\temp\

TOWN OF CALEDON
PLANNING
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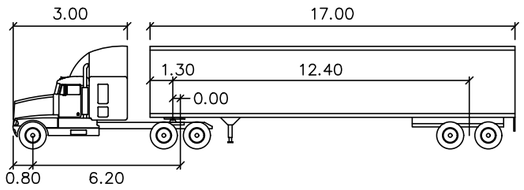

WB–20

meters

Tractor Width	: 2.60	Lock to Lock Time	: 6.0
Trailer Width	: 2.60	Steering Angle	: 28.2
Tractor Track	: 2.60	Articulating Angle	: 70.0
Trailer Track	: 2.60		

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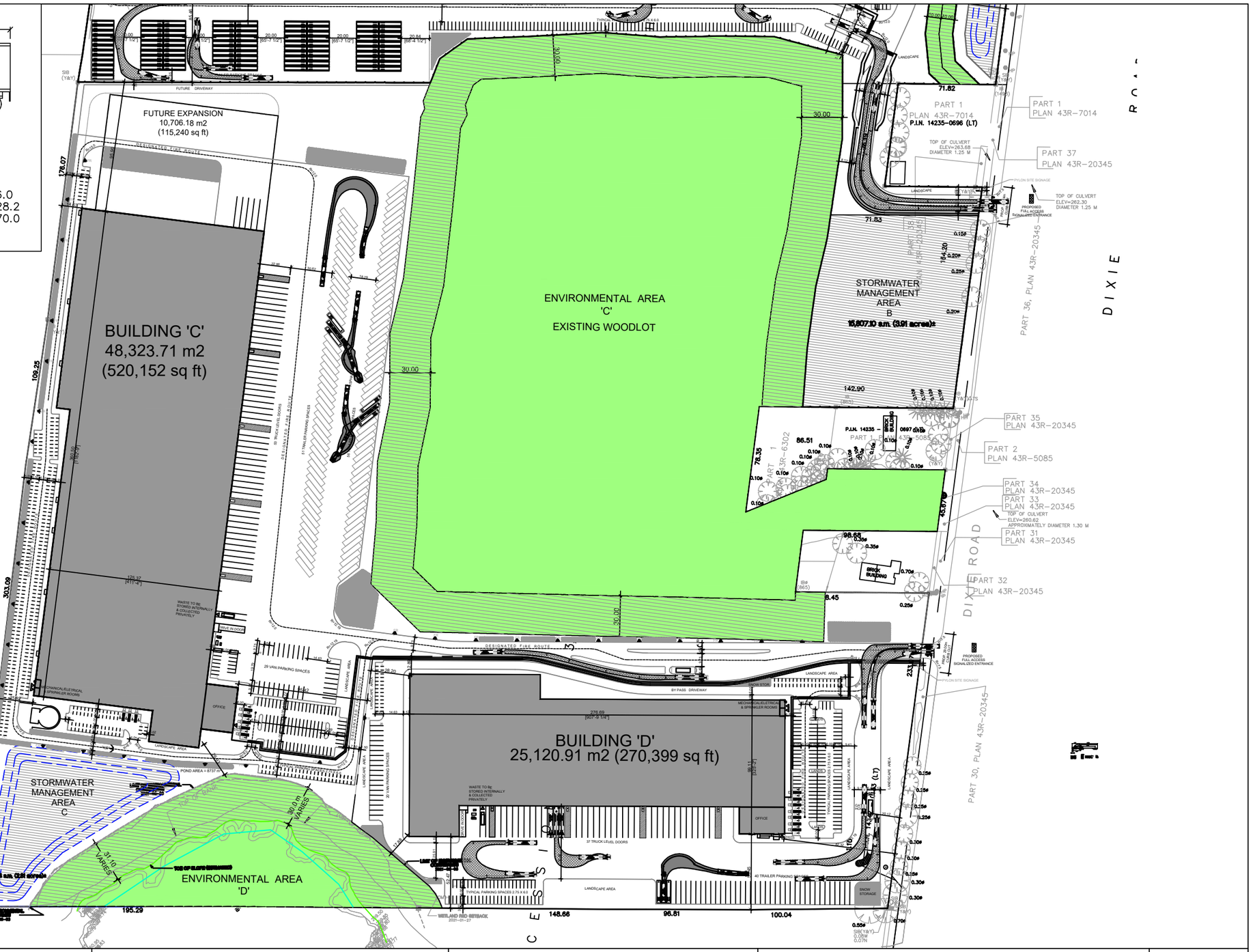
1, PLAN 43R – 17125
P.I.N. 14235 – 0678 (LT)
JECT TO INTEREST AS IN RO607694



DRAWN BY: D.T. PLOT DATE: February 24, 2021

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Project No.
21211

Date
FEB. 24, 2021

12892 DIXIE ROAD
CALEDON ONTARIO

30 0 30 60 90m
1: 3000

FUNCTIONAL REVIEW
SOUTH SECTION

Drawing No.
002

DRAWING NAME: C:\Users\DTat\appdata\local\temp\

TOWN OF CALEDON
PLANNING
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