



1493 Sixth Line

Traffic Impact Study

Innovative SHS

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S4	01	Raf Andrenacci	Will Maria		Benjamin Loucks		August 29, 2025

GHD Ltd

100 Milverton Drive, Suite 404

Mississauga, Ontario L5R 4H1, Canada

T +1 416 213 7121 | **F** +1 905 890 8499 | **E** info-northamerica@ghd.com | **ghd.com**

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Executive Summary

GHD Limited has prepared the following Traffic Impact Study (TIS) in support of the proposed mixed-use rental development located at 1493 Sixth Line in the Town of Oakville.

This study evaluates the anticipated traffic generated by the development and its associated impacts on the surrounding transportation network, including adjacent intersections and site access points. The analysis focuses on the weekday a.m. and p.m. peak hours, consistent with standard municipal practice. Future traffic conditions have been assessed for the planning horizons of 2028 and 2033. The assessment identifies anticipated operational impacts and informs recommendations for any required transportation improvements or mitigation strategies.

Based on the approved Terms of Reference, the following intersections were included in the study area:

Existing

- Upper Middle Road and Sixth Line
- Sixth Line and Elm Road
- Sixth Line and Miller Road
- Sixth Line and McCraney St

Future

- Sixth Line and the proposed site access

A site plan prepared for the subject site consists of a six-storey residential building containing 190 affordable housing rental apartment units, a 3,000 ft² daycare and 1,200 ft² of office space.

Access to the proposed development is planned through a full-movement driveway on Sixth Line generally located in the same location as the driveway found in the site's existing condition.

Based on ITE Trip Generation rates, the subject site is expected to generate a total of 99 two-way vehicle trips during the a.m. peak hour consisting of 36 inbound and 63 outbound trips. During the p.m. peak hour, it is expected to generate 105 new two-way vehicle trips consisting of 56 inbound and 49 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2028 future background conditions, with the addition of corridor growth and background development traffic, all intersections are reported to operate at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2028 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2033 future background conditions, with the addition of corridor growth and background development traffic, all intersections are expected to operate at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movement:

- Sixth Line and McCraney St
 - The overall intersection with a v/c ratio of 0.85 LOS C during the a.m. peak hour
 - The southbound left-turn movement with a v/c ratio of 0.95 LOS D during the a.m. peak hour

Under the 2033 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movement:

- Sixth Line and McCraney St
 - The overall intersection with a v/c ratio of 0.88 LOS C during the a.m. peak hour
 - The southbound left-turn movement with a v/c ratio of 0.99 LOS D during the a.m. peak hour

While the overall intersection of Sixth Line and McCraney Street as well as its southbound left-turn movement are reported to operate at critical levels during the a.m. peak hour beginning under future background conditions in 2033, GHD optimized the signal timings for the intersection. Based on the optimized signal timings, the intersection is expected to operate adequately under both 2033 future background and future total conditions.

The subject site is required to provide a minimum of 205 parking spaces (including 2 barrier free spaces) and 30 bicycle parking spaces.

The subject site provides a total of 103 parking spaces, 73 resident spaces, 18 visitor spaces, 7 daycare spaces and 5 office spaces. Of the total parking supply, 8 spaces are barrier free. The site also includes 42 bicycle parking spaces, and 1 loading space. All Zoning By-law requirements are satisfied with the exception of vehicular parking spaces for the affordable housing land use.

The proposed parking supply is appropriate for an affordable housing development, as residents have lower vehicle ownership and rely more on transit, cycling, and walking. TDM measures are proposed for the subject site to encourage residents to explore various modes of transportation to reduce their dependency on single occupancy vehicle trips. These measures include active transportation connections, distribution of educational material on local mode choices and active transportation.

GHD assessed the site circulation for an emergency vehicle, a waste collection vehicle, an MSU truck, and a passenger vehicle and confirmed no issues with on-site circulation.

The traffic study confirms that, despite some critical v/c ratios observed for some movements during the p.m. peak period, the proposed development can be accommodated within the existing road network without significant adverse impacts on overall traffic operations, intersection capacity, or safety for the majority of movements and users.

We trust that this satisfies your requirements, but do not hesitate to contact the undersigned if you have any questions.

Sincerely,

GHD



Rafael Andrenacci, B.Eng

Transportation Planner



William Maria, P. Eng.

Transportation Planning Lead

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1. Introduction

1.1 Retainer and Objective

GHD Limited was retained to prepare a Traffic Impact Study for a residential development located on lands municipally known as 1493 Sixth Line in the Town of Oakville.

The site location is illustrated in **Figure 1**.

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2025 and determine future background operating conditions for future planning horizons in 2028 and 2033
- Estimate the site trips generated by the proposed development and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions during the weekday peak periods for each future planning horizon through intersection capacity analysis.
- Review the proposed parking supply.
- Review the site access and conduct a swept path review of the proposed site plan.

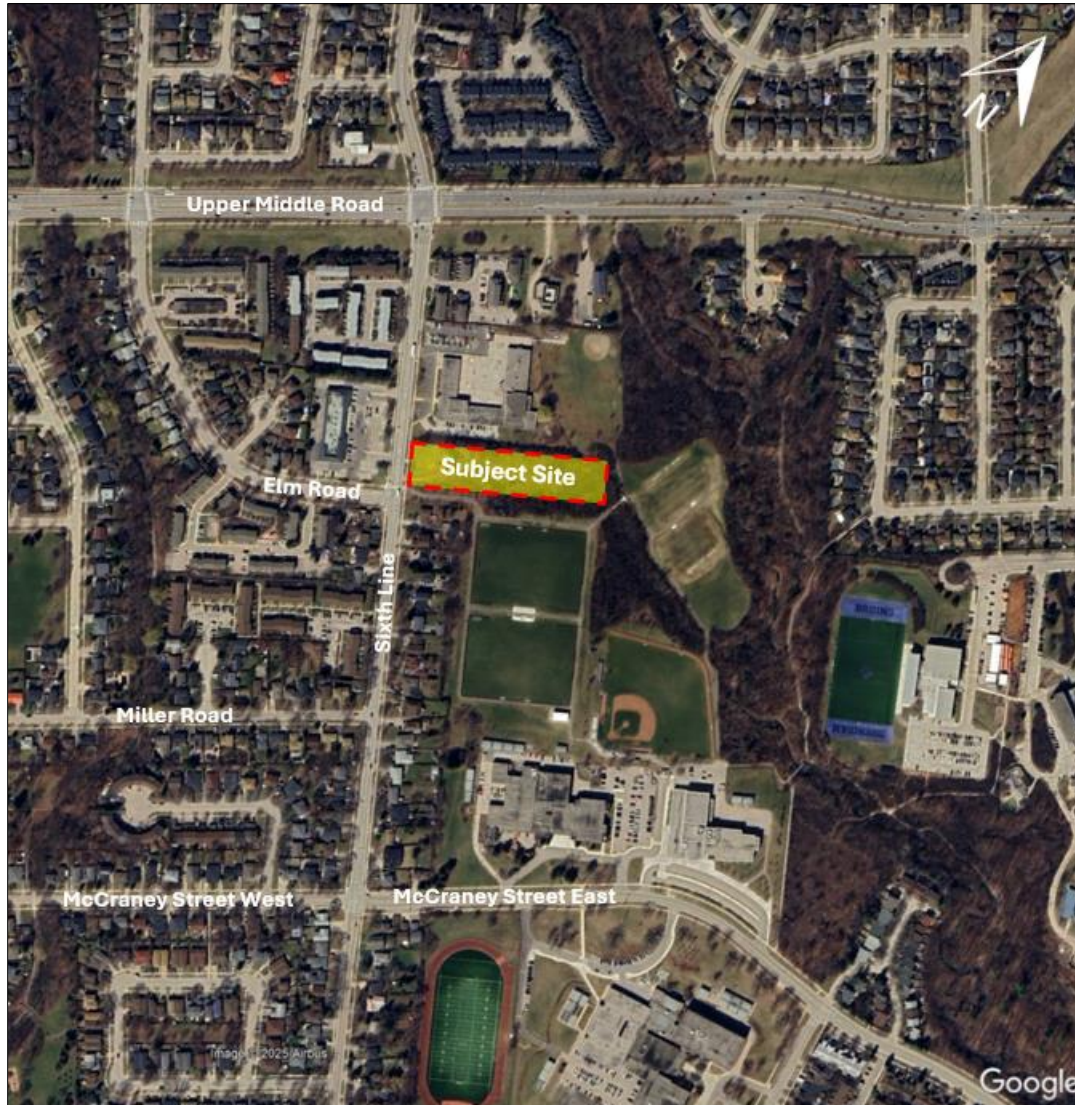


Figure 1 **Site Location**

1.2 Study Team

The GHD team involved in the preparation of the study are:

- William Maria, P. Eng., Transportation Planning Lead
- Olivia Cabral, Transportation Engineering Co-op
- Rafael Andrenacci, B.Eng., Transportation Planner

2. Site Characteristics

2.1 Study Area

As per the agreed Terms of Reference for the study attached in **Appendix A**, the following intersections were included in the study area:

Existing

- Upper Middle Road and Sixth Line
- Sixth Line and Elm Road
- Sixth Line and Miller Road
- Sixth Line and McCraney St

Future

- Sixth Line and the proposed site access

2.2 Proposed Development Content

A site plan prepared by Patrick Markus Luckie Architect for the subject site is shown in **Figure 2** and provided in **Appendix B**. The proposed development is comprised of a six-storey residential building containing 190 affordable housing rental apartment units, a 3,000 ft² daycare and 1,200 ft² of office space.

Access to the proposed development is proposed via a single full-moves driveway. It is proposed to maintain the access in the same location as the current driveway used for the existing site usage.

In addition, a median island is located on Sixth Line along the site's southern frontage which has been designed with a dropdown curb that ensures the existing driveway can operate as a full-moves driveway and it is proposed to maintain the current operation.

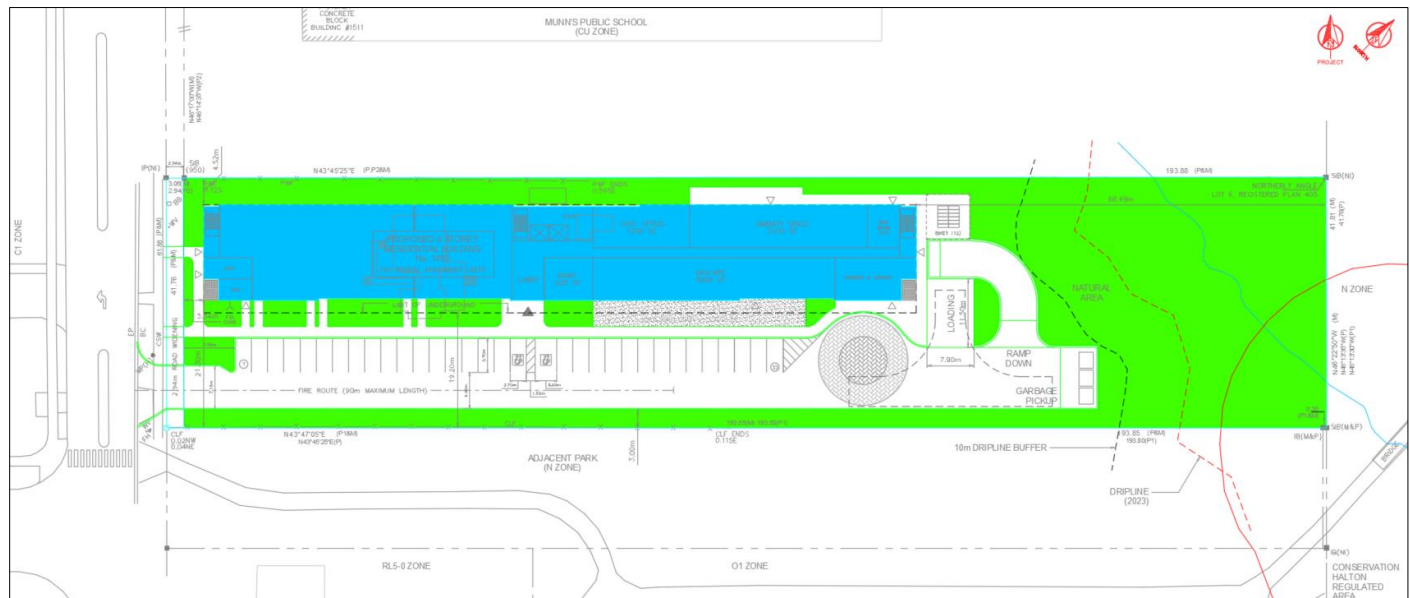


Figure 2 Proposed Site Plan

3. Existing Conditions

3.1 Existing Road Network

Upper Middle Road is an east/west major arterial road under the jurisdiction of Halton Region. Within the study area, it has a four-lane cross-section. Its intersection with Sixth Line is signalized with auxiliary

left-turn and right-turn lanes provided in both the eastbound and westbound directions. The speed limit along Upper Middle Road within the study area is 60 km/h.

Sixth Line is a north/south minor arterial road under the jurisdiction of the Town of Oakville. Within the study area, Sixth Line operates with a three-lane cross-section between Upper Middle Road and Elm Road (including a two-way left-turn lane within the centre lane) and a two-lane cross-section north of Upper Middle Road and south of Elm Road. Its intersections with Upper Middle Road and McCraney Street are signalized with auxiliary left-turn lanes provided in the northbound and southbound directions in addition to a northbound right-turn lane provided at the intersection with Upper Middle Road. The intersections with Elm Road and Miller Road are T- minor road stop controlled intersections. The speed limit along Sixth Line north of Upper Middle Road is 50 km/h and reduced to 40 km/h when the school zone sign is flashing (typically during school hours), 40 km/h between Upper Middle Road and Elm Road, and 40 km/h south of Elm Road.

McCraney Street East is an east/west major collector road and **McCraney Street West** is an east/west minor collector road with both in the Town of Oakville's jurisdiction. Within the study area it operates with a two-lane cross-section. The intersection with Sixth Line is signalized with auxiliary left-turn lanes provided in the eastbound and westbound directions. The speed limit along McCraney Street East within the study area is 40 km/h and the assumed speed limit along McCraney Street West is 50 km/h.

Elm Road is an east/west local road under the jurisdiction of the Town of Oakville. Within the study area it operates with a two-lane cross-section. Its intersection with Sixth Line is an unsignalized T-intersection with the stop-control only provided along the minor approach on Elm Road in addition to an auxiliary left-turn lane in the eastbound direction. The assumed speed limit along Elm Road within the study area is 50 km/h.

Miller Road is an east/west local road under the jurisdiction of the Town of Oakville. Within the study area it operates with a two-lane cross-section. Its intersection with Sixth Line is an unsignalized T-intersection with the stop-control only provided along the minor approach on Miller Road. The assumed speed limit along Miller Road within the study area is 50 km/h.

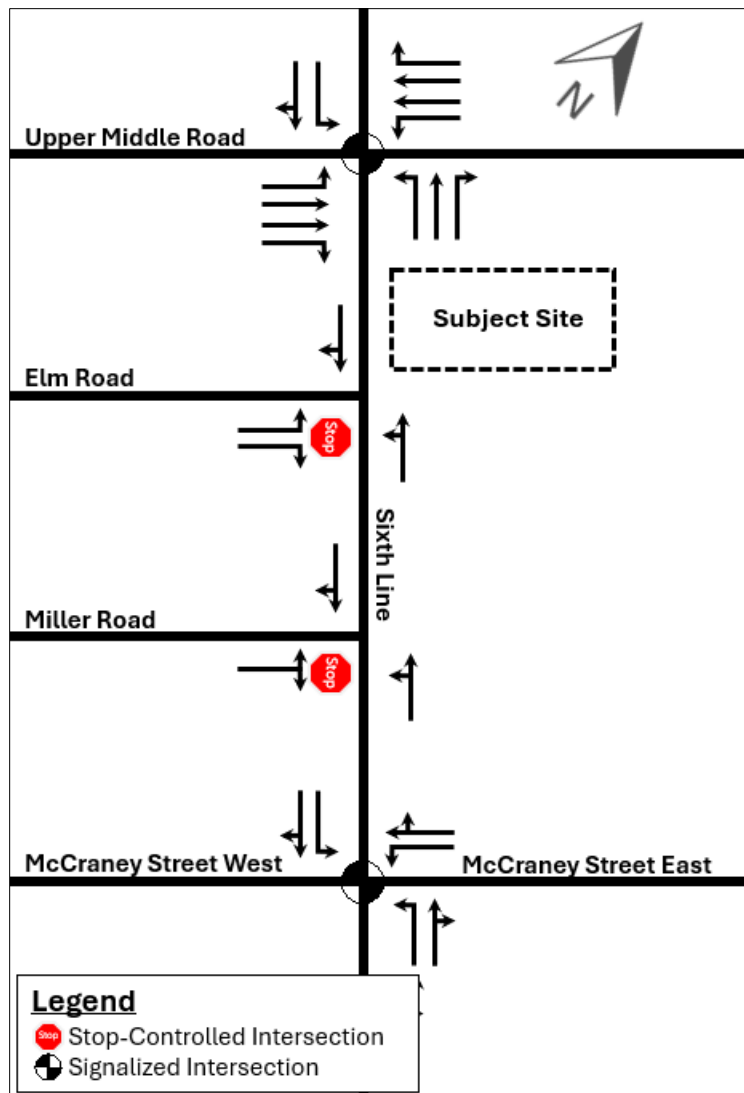


Figure 3 Existing Lane Configuration and Traffic Controls

3.2 Pedestrian and Bicycle Facilities

Sidewalks are provided along both sides of all study area roadways. Pedestrian routes within the study area are illustrated in the figure below, highlighting the existing sidewalks and their connectivity throughout the local road network.

Cycling infrastructure within the study area includes a multi-use path along Upper Middle Road, a bike lane on Sixth Line south of McCraney Street and on McCraney Street East, and a bike route on Sixth Line north of McCraney Street and on McCraney Street West.

A park walkway/woodland trail is provided along the site's southern and eastern frontage and throughout the Oakville Park and provides an active transportation connection from Upper Middle Road between Sixth Line.

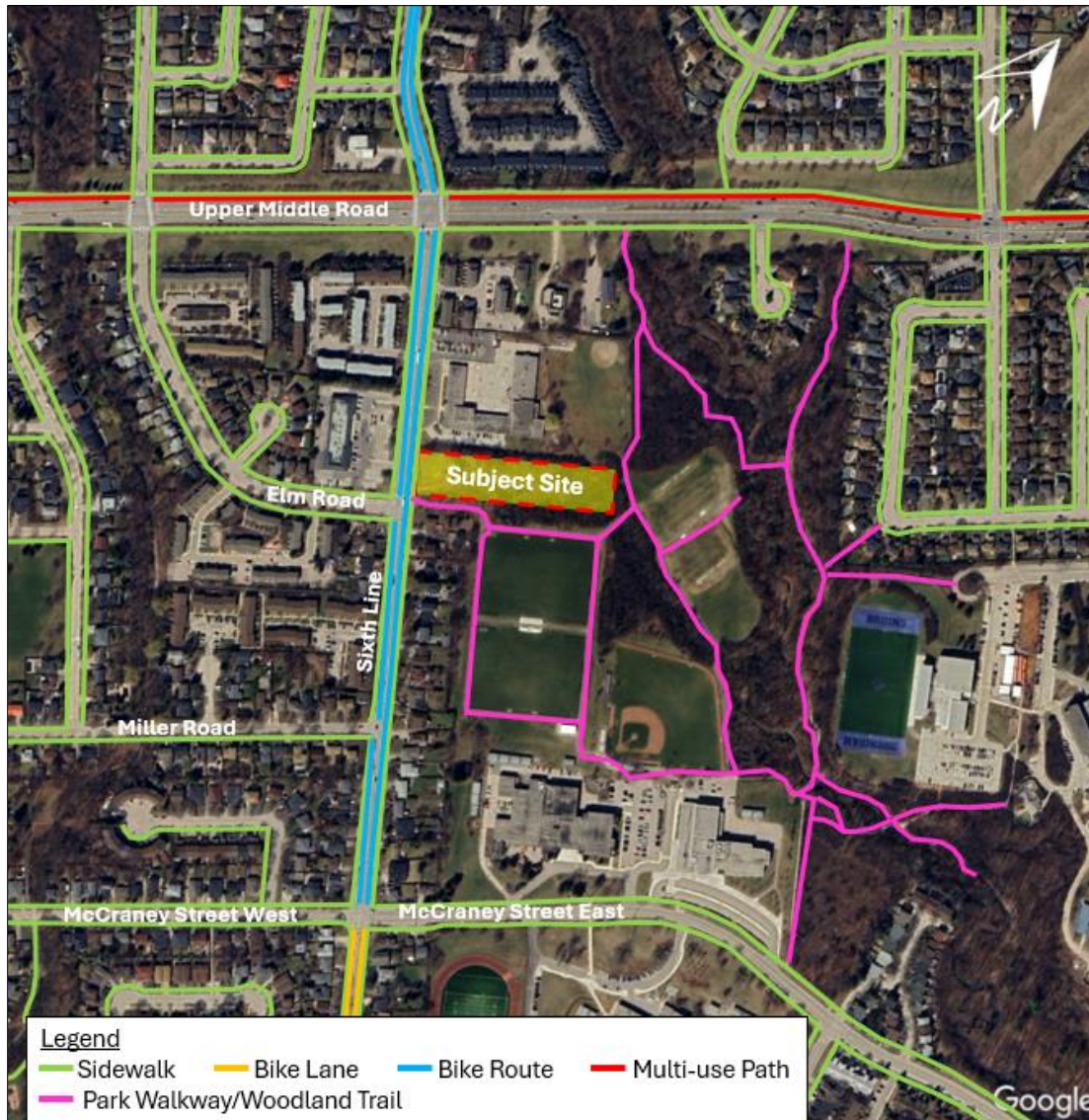


Figure 4 Existing Active Transportation Facilities

3.3 Transit Services

Oakville Transit operates bus routes within the study area along the following routes:

Route 6 (**Upper Middle**) generally operates in the east/west direction along Upper Middle Road East and West between the Bronte GO Station to the west and the intersection of Laird and Ridgeway to the east. The route operates with a 25-minute headway during the commuter peak periods. The nearest transit stop is located at the intersection of Upper Middle Road and Sixth Line.

Route 19 (**River Oaks**) generally operates through a series of roadways within residential subdivisions, including in the north/south direction on Sixth Line between Upper Middle Road and McCraney Street East. The nearest transit stop is located at the intersection of Sixth Line and Elm Road.

The transit routes and stops are summarized in the figure below.



Figure 5 Existing Transit Routes and Transit Stops

3.4 Existing Traffic Data

GHD contracted Spectrum Traffic to conduct updated turning movement counts at all existing study intersections in June 2025. The baseline 2025 traffic volumes for the a.m. and p.m. peak hours are summarized in **Figure 6** below with the full turning movement counts provided in **Appendix C**.

Due to the collection of the traffic count data occurring after some of the schools adjacent to the intersection of Sixth Line and McCraney Street may have completed their school year, Town staff requested GHD to compare the turning movement counts to the turning movement counts from the background developments. GHD reviewed the traffic counts collected in September 2024 from the TIS prepared for 1295 Sixth Line at the intersection of Sixth Line and McCraney Street and confirmed that the two counts contained individual turning movements in which the updated counts were higher than the September 2024 counts while other movements had higher volumes in the September 2024 count compared to the updated turning movement count.

In order to provide a conservative assessment of the operation of the intersection, GHD selected the highest individual movements between the two counts and balanced them between all study intersections with the exception of the intersection of Upper Middle Road and Sixth Line. When considering the number

of accesses located between Elm Road and Upper Middle Road along Sixth Line would likely add and subtract volumes along Sixth Line, balancing the volumes north of Elm Road may overestimate or underestimate the typical volumes.

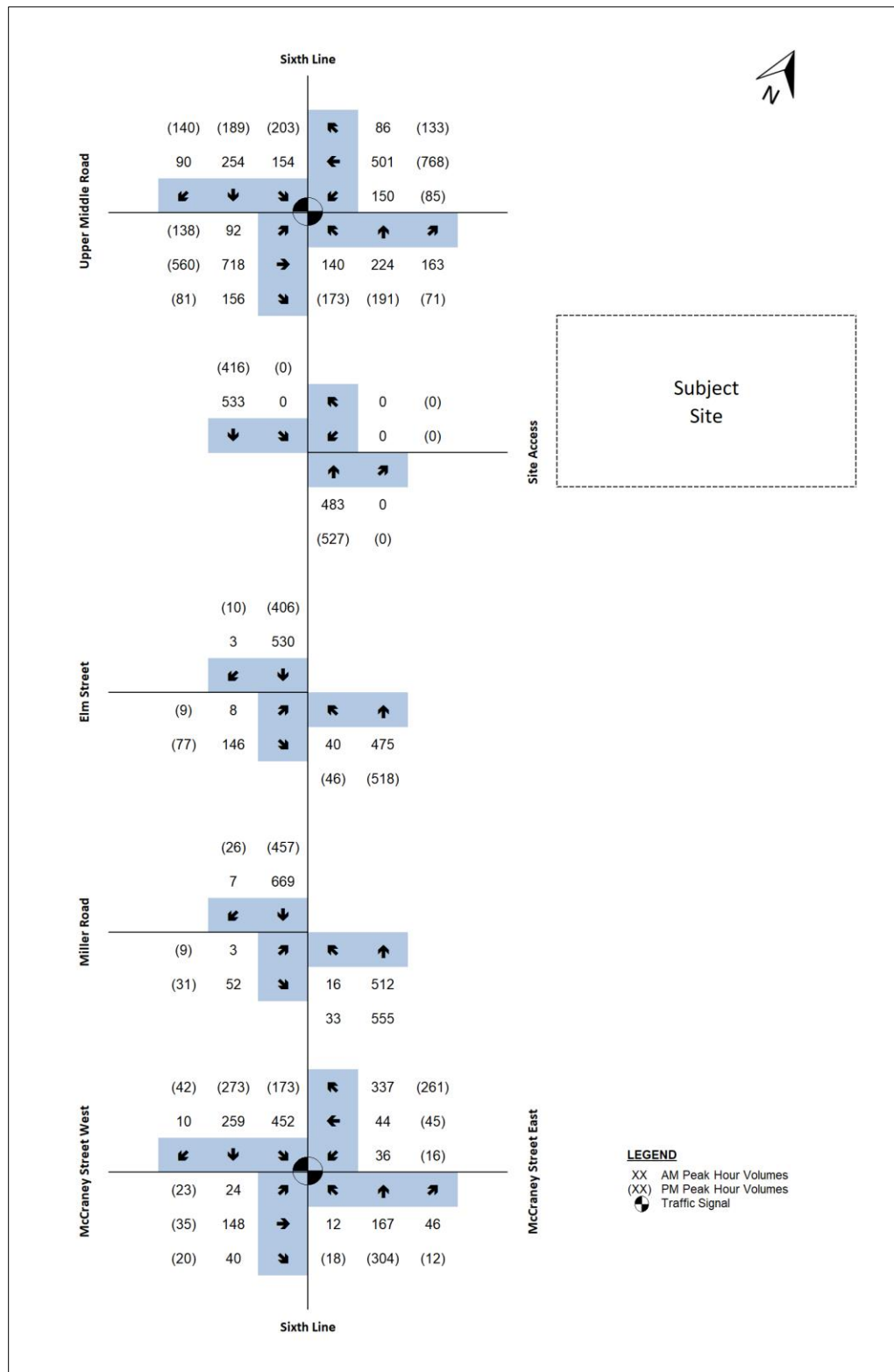


Figure 6 Baseline 2025 Traffic Volumes

4. Future Conditions

4.1 Study Horizon Year

Future horizon years of 2028 and 2033 were selected to assess long-term traffic conditions, representing the anticipated year of full build-out and a period of 5 years post build-out. These horizon years are consistent with Halton Region's Guidelines for Traffic Impact Studies and were confirmed through the approved Terms of Reference.

4.2 Corridor Growth

GHD reviewed the growth assumptions applied to the background developments included in this study and confirms that the use of a 2.0% per annum growth rate for regional roads and a 1.0% per annum growth rate for municipal roads is consistent with the rates adopted in nearby studies. The growth rates were also confirmed with the Town through the approved Terms of Reference.

4.3 Background Development Traffic

GHD reviewed the Town's development application portal to identify for background developments located in proximity to the subject site that would generate additional traffic along the study area roadways. The following background developments have been included and confirmed through the Terms of Reference with Town of Oakville staff:

- 1105 McCraney Street East
- 1295 Sixth Line

The locations of the background developments are shown in **Figure 7** below.



Figure 7 Location of Background Developments

The estimated site trips generated by the proposed background developments were extracted from their respective Traffic Impact Studies and are summarized in **Table 1** below with detailed excerpts from the background studies attached in **Appendix D**. It has been assumed that all background developments are built-out and fully occupied prior to the 2028 horizon year.

Table 1 Background Development Traffic

Background Development	Parameter	Peak Hour Trips					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
1105 McCraney Street East	Retirement residence with 132 Assisted Living Units, 25 Care Units, 62 Senior apartment units	5	16	21	21	14	35
1295 Sixth Line	70 residential units	21	17	38	25	31	56

The total background development traffic volumes are illustrated in **Figure 8**.

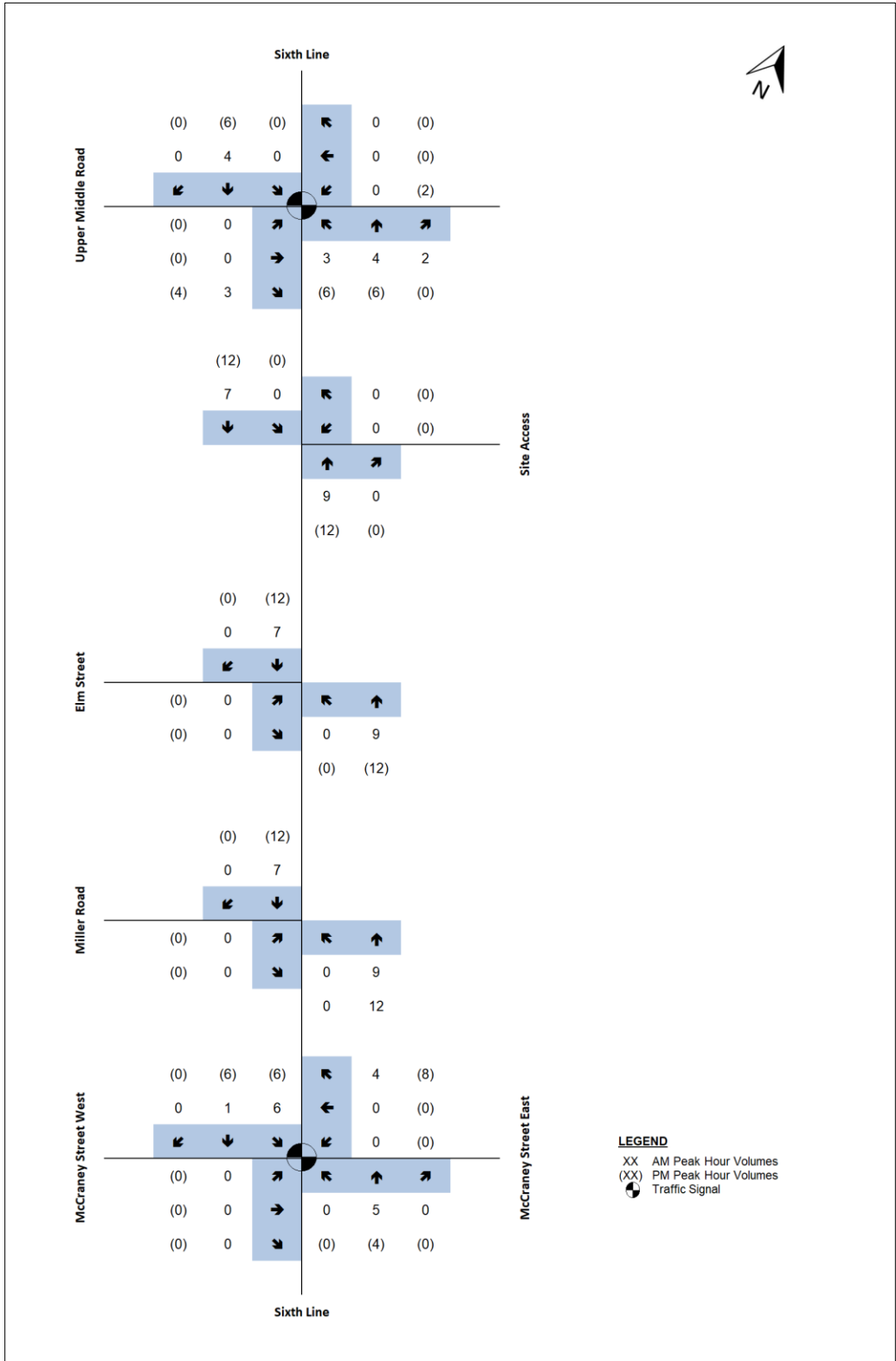


Figure 8 Total Background Development Traffic

4.4 Future Background Traffic Volumes

The background traffic volumes for the 2028 and 2031 horizon year were derived by applying the 2% per annum growth rate for regional roads and the 1% per annum growth rate for municipal roads to the study area roads and the corresponding total background development traffic. The resulting 2028 and 2033 future background traffic volumes are summarized in in **Figure 9** and **Figure 10**, respectively.

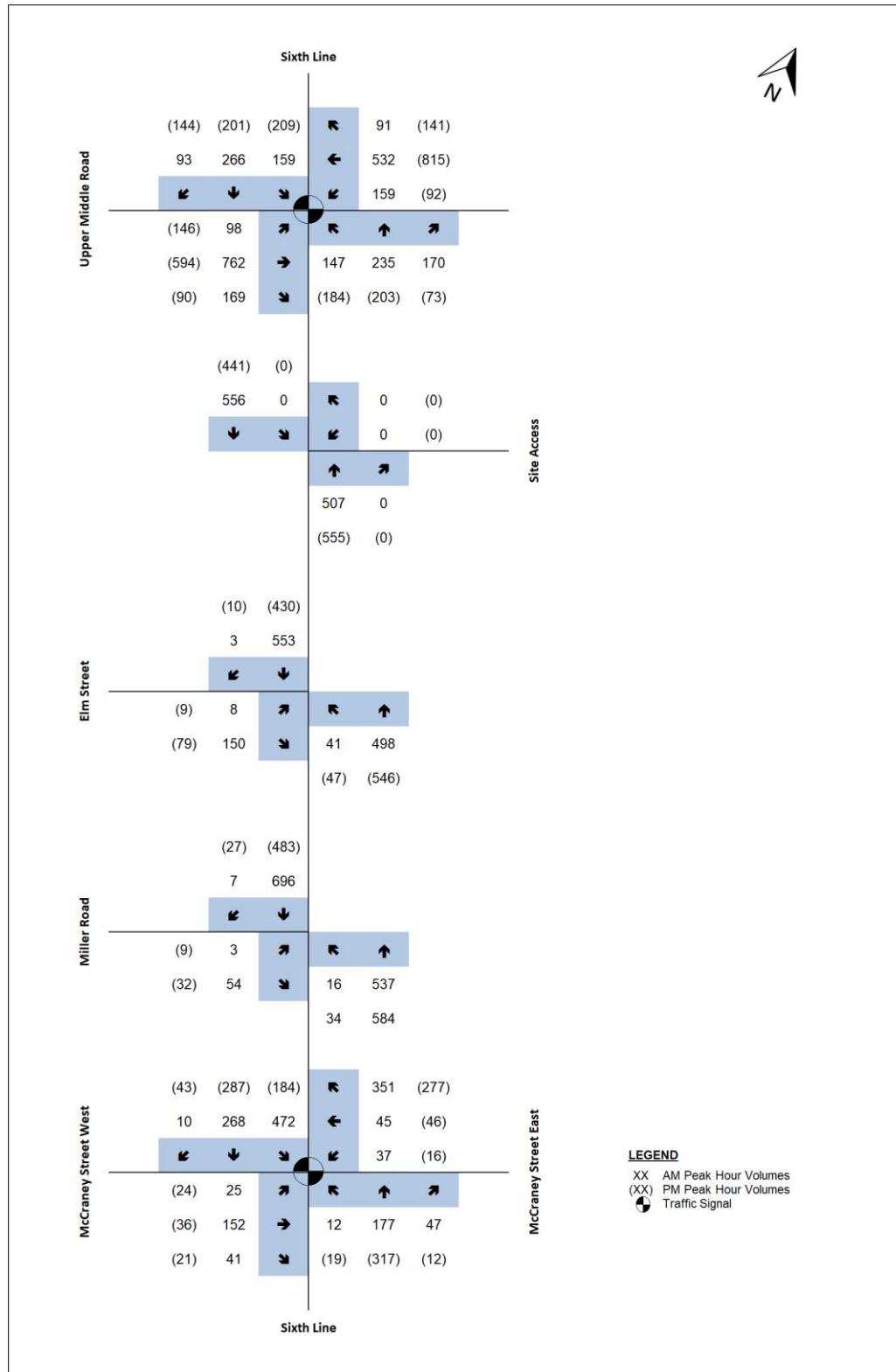


Figure 9 2028 Future Background Traffic Volumes

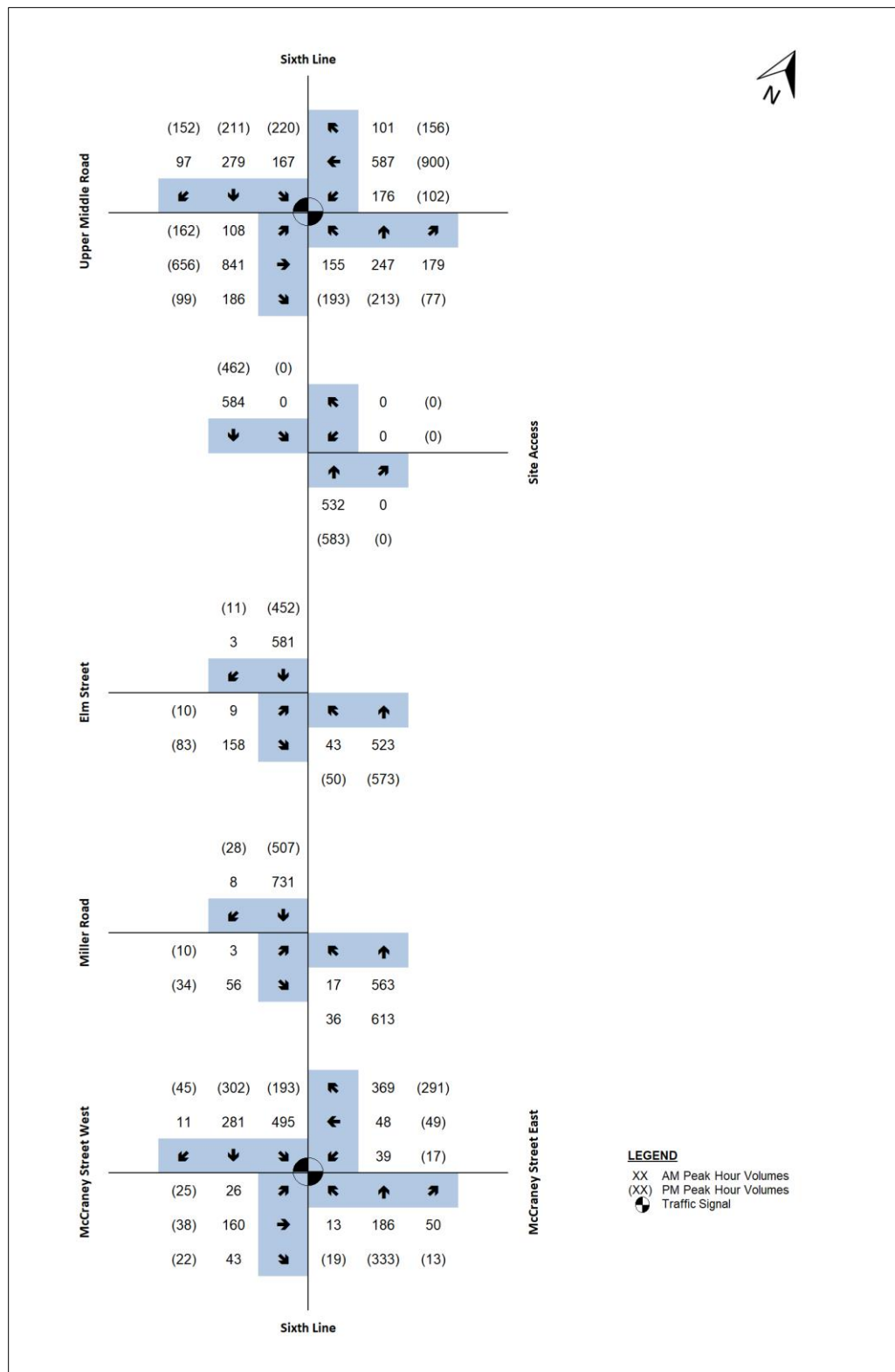


Figure 10 2033 Future Background Traffic Volumes

5. Site Generated Traffic

5.1 Site Trip Generation

The proposed development comprises a total of 190 affordable housing rental apartments, a 3,000 ft² daycare facility and 1,200 ft² of office space. Trip generation estimates for the weekday a.m. and p.m. peak hours were developed using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, and associated Trip Generation Handbook, 3rd Edition. Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise) was selected for the residential component. Despite LUC 223 – Affordable Housing generally best aligning with the nature of the residential development, which encompasses all multifamily housing where the rents are below market rate and house at least one employed member of the family, a low number of data points collected by ITE may not provide an accurate representation of traffic generated by the subject. As a result, GHD used the next-best land use code, which applies to all multi-family housing developments with a minimum of 4 storeys and up to 10 storeys in height and provides a more conservative assessment as residents are less likely to own a vehicle.

LUC 565 – Daycare Center, encompasses any facility that provides care for children of pre-school age. This land use category was selected as the developer is classifying a section of the development as a daycare center. Applying LUC 565 ensures a conservative and representative estimate of site traffic generation based on the total proposed gross floor area (GFA) of daycare uses.

LUC 565 – Office, encompasses any facility that provides care for children of pre-school age. This land use category was selected as this space is the proposed office space for Home Suite Home which is a Registered Charity in Canada that provides assistance for those experience poverty. Applying this land use code ensures a conservative and representative estimate of site traffic generation based on the total proposed gross floor area (GFA) of the office uses.

LUC 712 – Small Office Building, encompasses any facility that contains an office with less than or equal to 10,000 ft² of GFA. This land use was selected as the 1,200 ft² of GFA will be used as office space by one of the affordable housing agencies.

The resulting trip estimates reflect an anticipated inbound and outbound vehicle volumes during peak commuter periods and were used as a basis for evaluating the developments impact on the surrounding transportation network.

GHD reviewed the methodology for selecting between fitted curve equations and average trip rates in accordance with Section 4.4 of the Trip Generation Handbook (3rd Edition). The trip generation for the residential component was calculated using the fitted curve equation associated with LUC 221, as the unit count for each phase falls within the data extremes and the data set contains 20 or more valid data points for both the a.m. and p.m. peak hours.

The trip generation for the daycare and office components were only based on the average rate equation as LUC 565 only provides trip rates based on an average and does not have a fitted curve equation associated to it. In addition, the data is located within the cluster of data points with a GFA of 3,000 ft² and 1,200 ft², respectively.

GHD also reviewed the 2022 TTS data to derive the existing mode split for inbound trips towards home and outbound trips departing from home during each peak hour. The data was based on zones located near the subject site that contained residential uses and with similar characteristics (TTS zones 4029, 4030, 4036, 4037). The existing non-auto modal split is summarized in the table below and includes the existing 5% modal split already assumed to be included in the ITE trip rates.

The outbound direction during the morning peak reported a 19% non-auto mode split and a 17% non-auto mode split for the inbound direction during the afternoon peak. GHD did not apply a modal split reduction for the inbound towards home during the morning peak and outbound from home during the afternoon movements due to the relatively low sample size of respondents. The modal split reduction was only applied to residential uses with no reduction applied to the daycare or office trips.

Table 2 2022 Transportation Tomorrow Survey Result - Residential

Transportation Mode	Percentage Split			
	AM		PM	
	Inbound	Outbound	Inbound	Outbound
Auto driver	82%	58%	65%	60%
Auto passenger	15%	23%	18%	31%
Transit	0%	9%	14%	0%
Active Transportation	2%	10%	3%	7%
Total	100%	100%	100%	100%
Non-Auto Modal Split	2%	19%	17%	7%
TTS Sample Size	1,771	11,754	8,793	3,821
Including ITE Modal Split	0%*	14%	12%	2%*

*No modal split reduction was used based on the small sample size from the TTS data

GHD has also reviewed the TRANS 2022 Origin-Destination Household Travel Survey (from the Cities of Ottawa and Gatineau) to review modal splits for affordable housing units. The study reviewed daily mode share by trip origin (Downtown Core, Inner Urban, Outer Urban, Suburban, and Rural areas), household income by dwelling type, daily mode share by trip origin (apartment, row/townhouse, semi-detached, and single-detached), as well as daily mode share by household income. The relevant excerpts are provided in **Appendix E** and summarized in **Table 4** for the factors applicable to the study area/subject site and confirm that the existing TTS modal split for the study area provides a conservative estimate for the subject site's modal split.

Table 3 Modal Split - Residential

Mode Share	Suburban	Apartment	\$0 to \$34,999	\$35,000 to \$69,999
Auto Driver	61%	41%	33%	50%
Auto Passenger	18%	10%	12%	13%
Transit	6%	16%	24%	13%
Walk	8%	25%	21%	17%
Bicycle	2%	5%	5%	4%
Other	5%	3%	6%	3%

Table 4 summarizes the estimated trip generation for the subject site.

Table 4 *Total Site Trip Generation*

Land Use (LUC)	Units/GFA	Parameters	Peak Hour Trip Generation					
			Weekday AM			Weekday PM		
			In	Out	Total	In	Out	Total
LUC 223 – Affordable Housing	190 units	Trip Ratio	23%	77%	100%	59%	41%	100%
		Gross Trips	17	55	72	44	30	74
		Modal Reduction	0	-8	-8	-5	0	-5
		Primary Trips	17	47	64	39	30	69
LUC 565 – Daycare Center	3,000 ft² (342 m²)	Trip Ratio	53%	47%	100%	47%	53%	100%
		Gross Trips	17	16	33	16	17	33
		Primary Trips	17	16	33	16	17	33
Small Office Building (712)	1,200 ft ft² (111.5 m²)	Trip Ratio	82%	18%	100%	34%	66%	100%
		Gross Trips	2	0	2	1	2	3
		Primary Trips	2	0	2	1	2	3
Total New Primary Trips			36	63	99	56	49	105

Based on the assumed ITE trip generation rates, the proposed development is expected to generate a total of 99 two-way vehicle trips during the a.m. peak hour consisting of 36 inbound and 63 outbound trips. During the p.m. peak hour, it is expected to generate 105 new two-way vehicle trips consisting of 56 inbound and 49 outbound trips.

5.2 Site Traffic Distribution and Assignment

The site-generated traffic was distributed based on a review of existing travel patterns as well as the 2022 Transportation Tomorrow Survey (TTS) data. The residential trip distribution is provided in **Table 5** and daycare centre and office trip distribution in **Table 6**.

Table 5 *Site Traffic Distribution - Residential*

Peak Period	Direction	North (Sixth Line)	South (Sixth Line)	East (Upper Middle)	West (Upper Middle)	East (McCraney)	West (McCraney)
AM	Inbound	20%	5%	25%	15%	35%	0%
	Outbound	15%	25%	20%	15%	25%	0%
PM	Inbound	20%	10%	20%	15%	35%	0%
	Outbound	20%	30%	25%	20%	5%	0%

Table 6 *Site Traffic Distribution – Daycare and Office*

Peak Period	Direction	North (Sixth Line)	South (Sixth Line)	East (Upper Middle)	West (Upper Middle)	West (Elm)	West (Miller)	West (McCraney)
AM	Inbound	19%	19%	25%	23%	4%	4%	6%
	Outbound	10%	19%	25%	15%	15%	4%	13%
PM	Inbound	19%	19%	25%	23%	4%	4%	6%
	Outbound	10%	19%	25%	15%	15%	4%	13%

The site generated traffic assignment to the study area road network is provided in **Figure 11** for residential uses, in **Figure 12** for daycare uses, and in **Figure 13** for the office use. The total site trip assignment is provided in **Figure 14**.

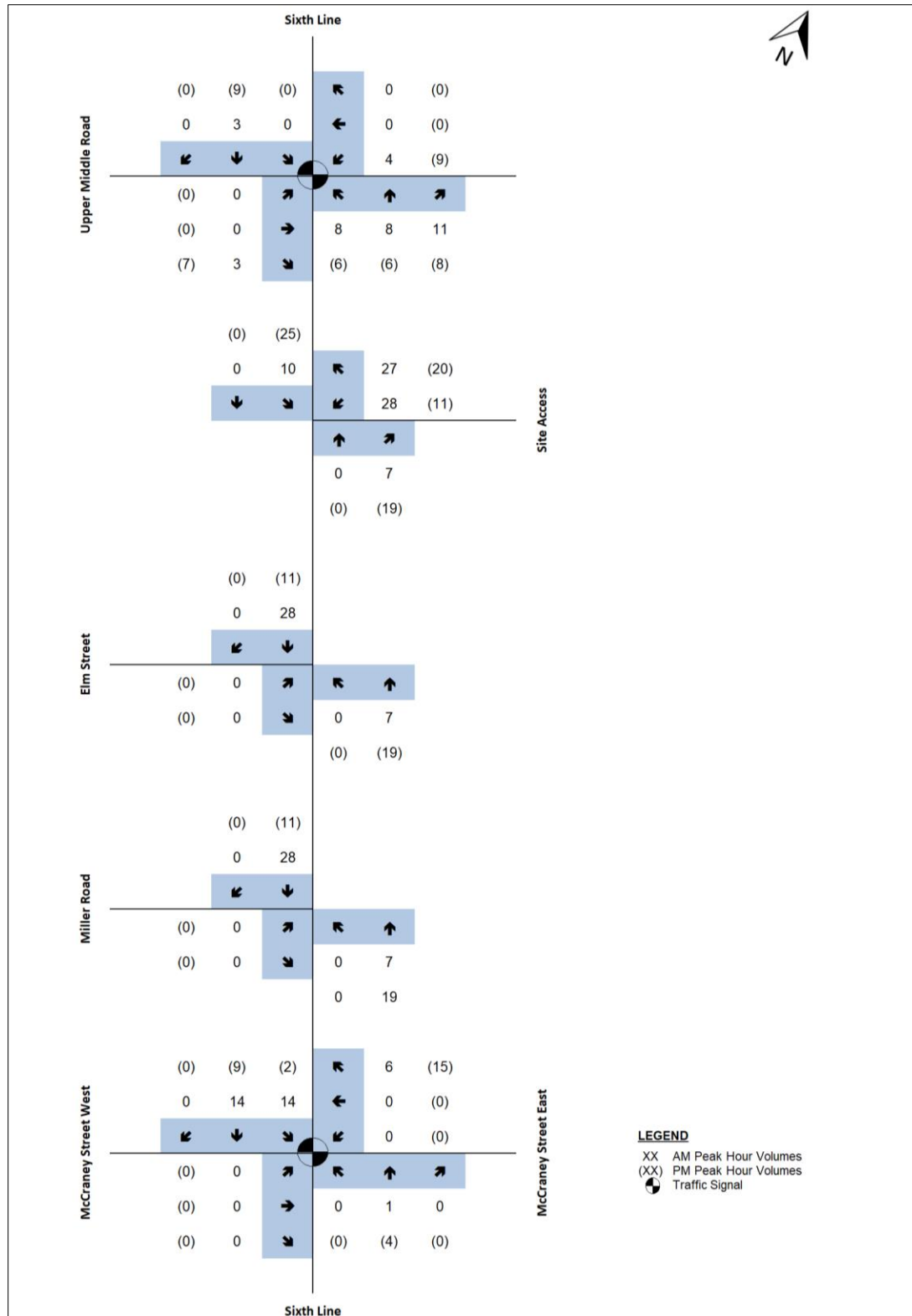


Figure 11 Site Trips – Residential

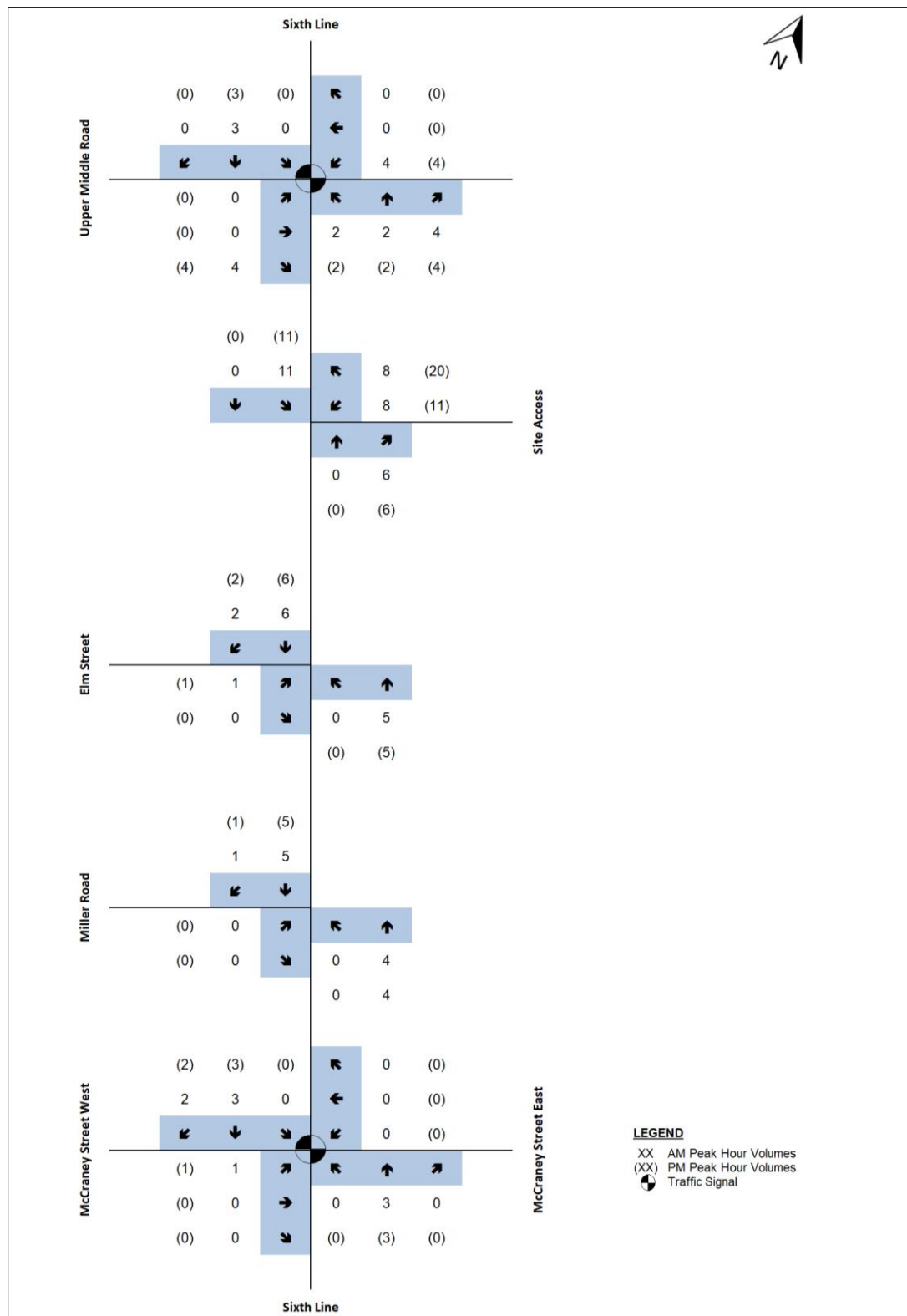


Figure 12 Site Trips – Daycare

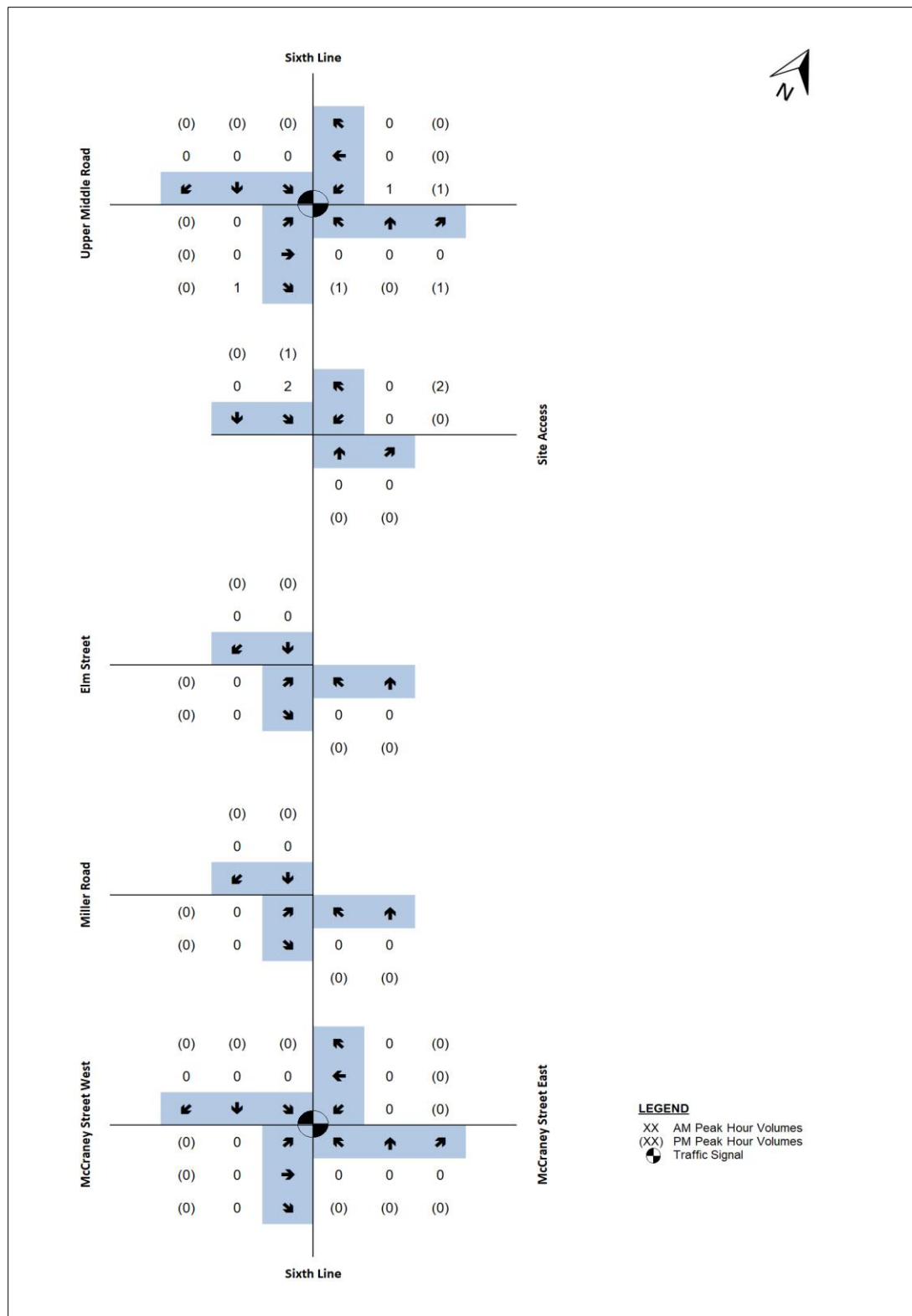


Figure 13 Site Trips – Office

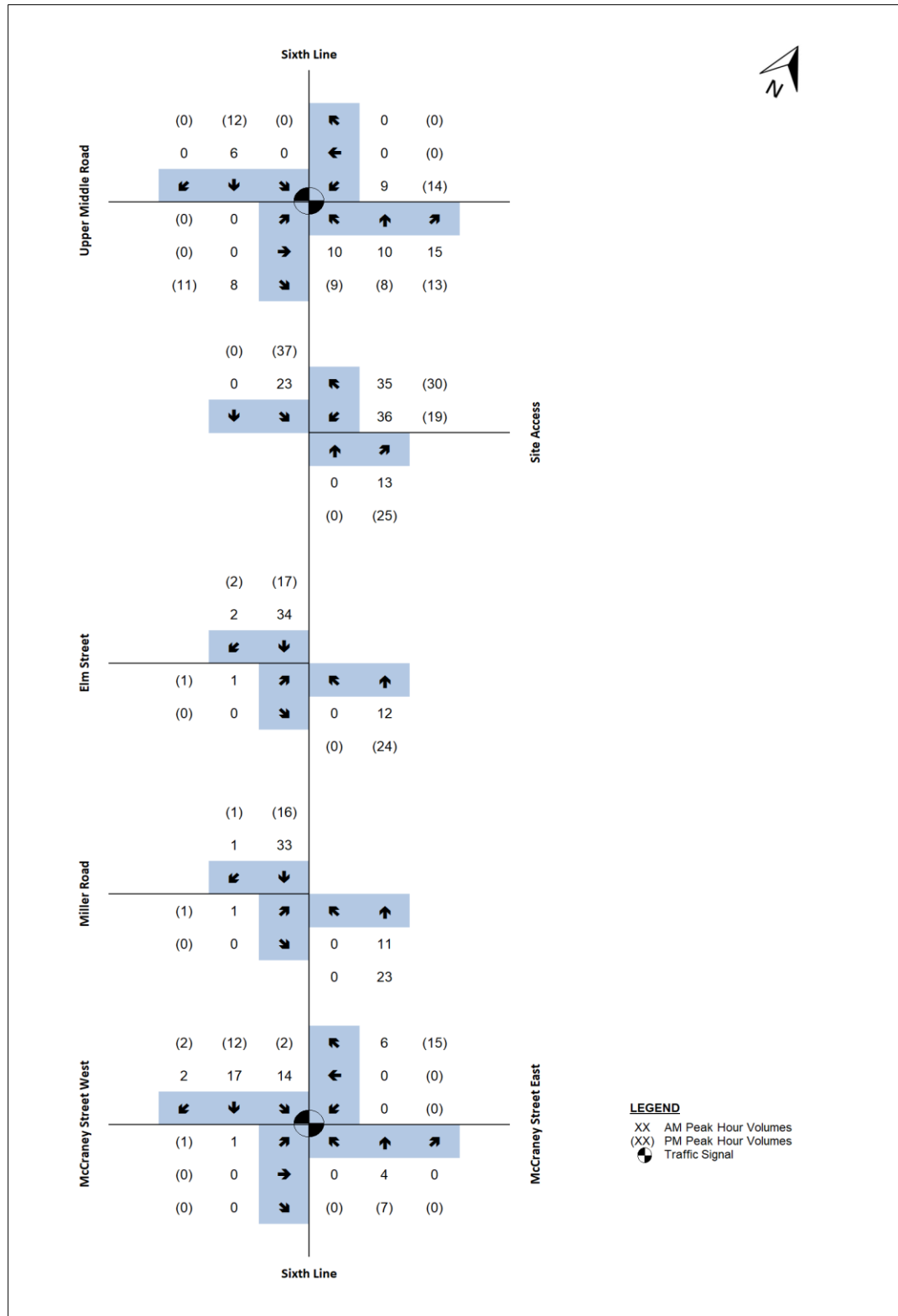


Figure 14 *Total Site Trips*

6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2028 and 2033 planning horizon was derived by combining the projected future background traffic with the corresponding estimated site generated traffic. The resulting traffic volumes are presented in **Figure 15** and **Figure 16** for the 2028 and 2033 horizon years, respectively.

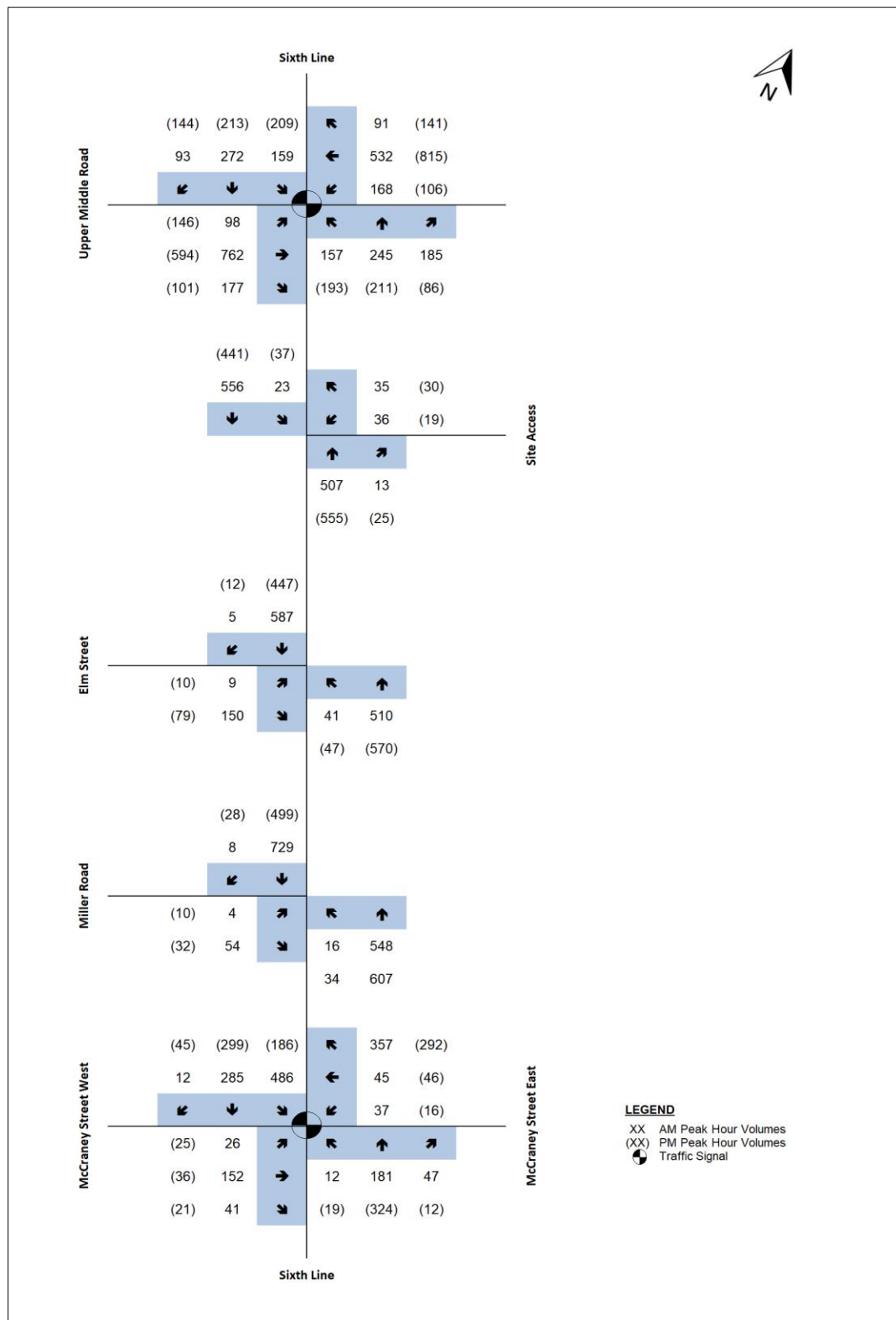


Figure 15 2028 Future Total Traffic Volumes

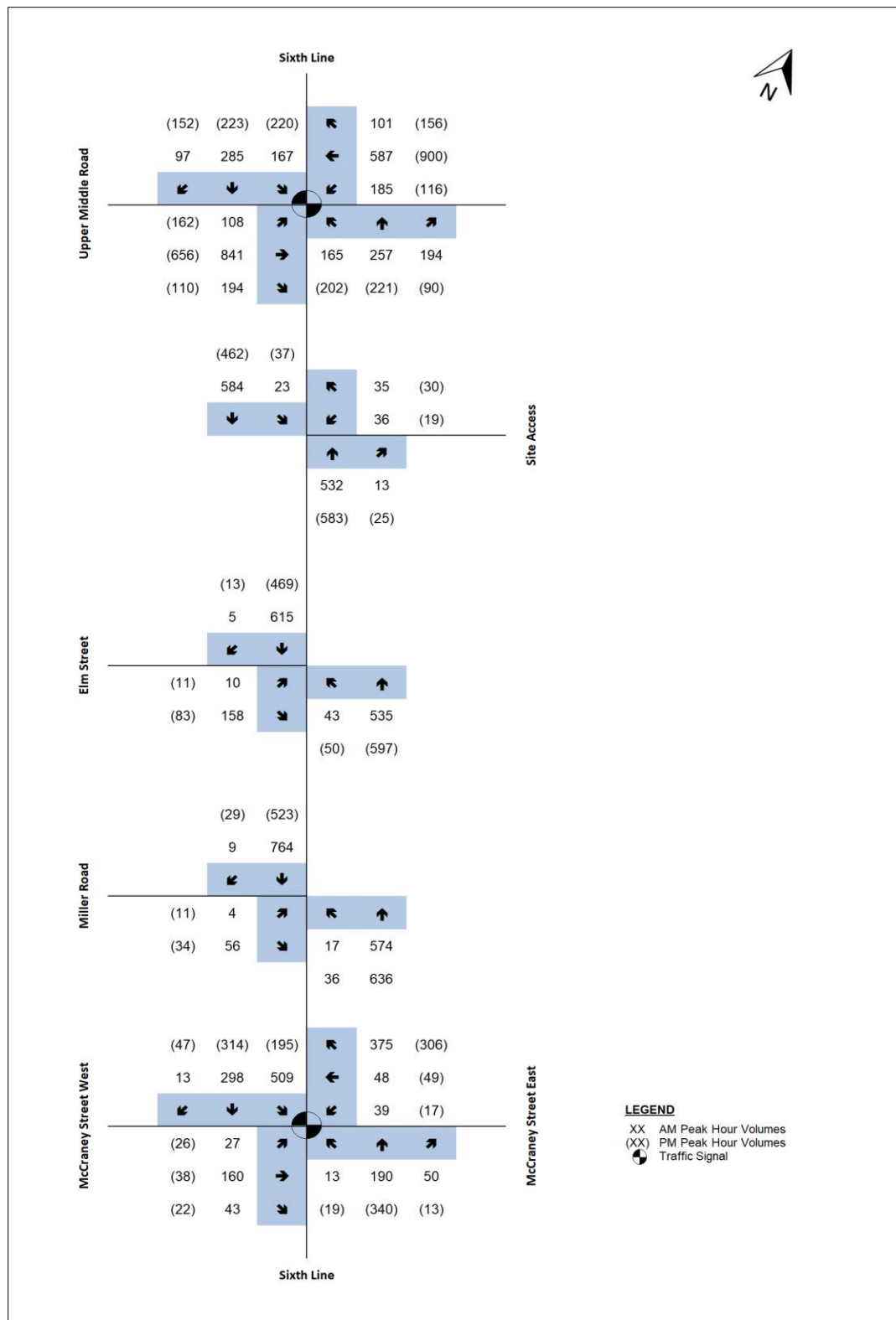


Figure 16 2033 Future Total Traffic Volumes

7. Capacity Analysis

The capacity analysis identifies how well the intersections and driveways are operating. The analysis contained within this report utilized the Highway Capacity Manual (HCM) 2000 procedure within the Synchro Version 11 Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each turning movement. As directed by Town staff, the 95th percentile queues were based on the SimTraffic simulation software using a 15-minute seed time followed by a run time of 60 minutes averaged over 3 simulation runs. Both pedestrian crossing volumes and heavy vehicle proportions are included in the analyses. The peak hour factors from the counts were used to analyze existing and future traffic conditions.

The analysis includes identification of required modifications and improvements (if any) at intersections where the addition of background growth or background growth plus site-generated traffic volumes causes the following:

'Critical' intersections and movements for signalized intersections include:

- Volume/capacity (v/c) ratios for overall intersection operations, through movements, or shared through/turning movements increased to 0.85 or above;
- v/c ratios for exclusive movements increased to 0.95 or above; or
- Queues for an individual movement are projected to exceed available turning lane storage.

'Critical' intersections and movements for an unsignalized intersection include:

- Level of service (LOS), based on average delay per vehicle, on individual movements exceeds LOS "D", or
- The estimated 95th percentile queue length for an individual movement exceeds the available queue storage.

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2025), future background (2028 and 2033) and future total (2028 and 2033) traffic conditions. The detailed calculation sheets are provided in **Appendix F**.

7.1 Sixth Line and Upper Middle Road

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 7 Capacity Analysis of Sixth Line and Upper Middle Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2025	<u>Overall: 0.59 (C) 30</u>		<u>Overall: 0.59 (C) 31</u>	
	EBL = 0.26 (C) 21	EBL = 57 m	EBL = 0.58 (C) 27	EBL = 45 m
	EBT = 0.58 (C) 32	EBT = 97 m	EBT = 0.47 (C) 31	EBT = 61 m
	EBR = 0.11 (C) 25	EBR = 66 m	EBR = 0.06 (C) 26	EBR = 40 m
	WBL = 0.61 (C) 26	WBL = 50 m	WBL = 0.28 (C) 23	WBL = 52 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
	WBT = 0.4 (C) 29 WBR = 0.06 (C) 24 NBL = 0.46 (C) 26 NBT = 0.39 (C) 33 NBR = 0.13 (C) 29 SBL = 0.37 (C) 25 SBTR = 0.6 (D) 38	WBT = 69 m WBR = 36 m NBL = 37 m NBT = 103 m NBR = 40 m SBL = 52 m SBTR = 107 m	WBT = 0.66 (D) 36 WBR = 0.14 (C) 28 NBL = 0.51 (C) 27 NBT = 0.32 (C) 32 NBR = 0.05 (C) 28 SBL = 0.43 (C) 23 SBTR = 0.54 (C) 35	WBT = 100 m WBR = 61 m NBL = 39 m NBT = 75 m NBR = 34 m SBL = 51 m SBTR = 92 m
Future Background 2028	<u>Overall: 0.65 (C) 31</u> EBL = 0.28 (C) 21 EBT = 0.61 (C) 33 EBR = 0.13 (C) 25 WBL = 0.68 (C) 31 WBT = 0.43 (C) 29 WBR = 0.06 (C) 24 NBL = 0.5 (C) 27 NBT = 0.41 (C) 33 NBR = 0.15 (C) 29 SBL = 0.39 (C) 25 SBTR = 0.63 (D) 39	EBL = 60 m EBT = 100 m EBR = 68 m WBL = 53 m WBT = 77 m WBR = 39 m NBL = 39 m NBT = 106 m NBR = 39 m SBL = 51 m SBTR = 107 m	<u>Overall: 0.63 (C) 32</u> EBL = 0.66 (C) 31 EBT = 0.5 (C) 32 EBR = 0.06 (C) 26 WBL = 0.32 (C) 23 WBT = 0.7 (D) 37 WBR = 0.16 (C) 28 NBL = 0.56 (C) 29 NBT = 0.34 (C) 32 NBR = 0.05 (C) 28 SBL = 0.45 (C) 23 SBTR = 0.56 (D) 36	EBL = 49 m EBT = 73 m EBR = 42 m WBL = 57 m WBT = 100 m WBR = 58 m NBL = 40 m NBT = 75 m NBR = 30 m SBL = 52 m SBTR = 94 m
Future Total 2028	<u>Overall: 0.68 (C) 31</u> EBL = 0.28 (C) 21 EBT = 0.61 (C) 33 EBR = 0.14 (C) 26 WBL = 0.73 (C) 34 WBT = 0.43 (C) 29 WBR = 0.06 (C) 24 NBL = 0.56 (C) 28 NBT = 0.43 (C) 34 NBR = 0.17 (C) 29 SBL = 0.4 (C) 25 SBTR = 0.64 (D) 40	EBL = 47 m EBT = 93 m EBR = 68 m WBL = 55 m WBT = 91 m WBR = 40 m NBL = 39 m NBT = 134 m NBR = 40 m SBL = 53 m SBTR = 112 m	<u>Overall: 0.64 (C) 32</u> EBL = 0.66 (C) 31 EBT = 0.5 (C) 32 EBR = 0.07 (C) 26 WBL = 0.37 (C) 24 WBT = 0.7 (D) 37 WBR = 0.16 (C) 28 NBL = 0.61 (C) 30 NBT = 0.36 (C) 32 NBR = 0.06 (C) 28 SBL = 0.46 (C) 23 SBTR = 0.59 (D) 36	EBL = 55 m EBT = 73 m EBR = 42 m WBL = 54 m WBT = 109 m WBR = 61 m NBL = 39 m NBT = 106 m NBR = 32 m SBL = 52 m SBTR = 104 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Background 2033	<u>Overall: 0.75 (C) 33</u>		<u>Overall: 0.72 (C) 34</u>	
	EBL = 0.34 (C) 22	EBL = 65 m	EBL = 0.82 (D) 48	EBL = 60 m
	EBT = 0.67 (C) 34	EBT = 101 m	EBT = 0.55 (C) 33	EBT = 82 m
	EBR = 0.16 (C) 26	EBR = 71 m	EBR = 0.07 (C) 26	EBR = 52 m
	WBL = 0.84 (D) 50	WBL = 55 m	WBL = 0.39 (C) 24	WBL = 58 m
	WBT = 0.47 (C) 30	WBT = 87 m	WBT = 0.78 (D) 40	WBT = 120 m
	WBR = 0.07 (C) 25	WBR = 49 m	WBR = 0.19 (C) 28	WBR = 58 m
	NBL = 0.56 (C) 28	NBL = 41 m	NBL = 0.62 (C) 31	NBL = 39 m
	NBT = 0.43 (C) 34	NBT = 127 m	NBT = 0.36 (C) 32	NBT = 84 m
	NBR = 0.17 (C) 29	NBR = 42 m	NBR = 0.05 (C) 28	NBR = 33 m
	SBL = 0.42 (C) 25	SBL = 52 m	SBL = 0.49 (C) 24	SBL = 52 m
	SBTR = 0.66 (D) 40	SBTR = 110 m	SBTR = 0.59 (D) 36	SBTR = 107 m
Future Total 2033	<u>Overall: 0.78 (C) 34</u>		<u>Overall: 0.74 (C) 34</u>	
	EBL = 0.34 (C) 22	EBL = 67 m	EBL = 0.82 (D) 48	EBL = 60 m
	EBT = 0.67 (C) 34	EBT = 106 m	EBT = 0.55 (C) 33	EBT = 84 m
	EBR = 0.17 (C) 26	EBR = 77 m	EBR = 0.08 (C) 26	EBR = 59 m
	WBL = 0.9 (E) 61	WBL = 58 m	WBL = 0.45 (C) 25	WBL = 52 m
	WBT = 0.47 (C) 30	WBT = 106 m	WBT = 0.78 (D) 40	WBT = 129 m
	WBR = 0.07 (C) 25	WBR = 50 m	WBR = 0.19 (C) 28	WBR = 61 m
	NBL = 0.61 (C) 30	NBL = 40 m	NBL = 0.66 (C) 34	NBL = 39 m
	NBT = 0.45 (C) 34	NBT = 130 m	NBT = 0.38 (C) 32	NBT = 111 m
	NBR = 0.19 (C) 30	NBR = 41 m	NBR = 0.06 (C) 28	NBR = 35 m
	SBL = 0.43 (C) 25	SBL = 54 m	SBL = 0.49 (C) 24	SBL = 52 m
	SBTR = 0.67 (D) 41	SBTR = 119 m	SBTR = 0.62 (D) 37	SBTR = 106 m

Under existing traffic conditions, the signalized intersection is operating with an overall v/c of 0.59 LOS C during the a.m. peak hour and an overall v/c of 0.59 LOS C during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic for the 2028 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.65 LOS C during the a.m. peak hour and increases to 0.63 LOS C during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of site generated traffic for the 2028 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.68 LOS C during the a.m. peak hour and to 0.64 LOS C during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic for the 2033 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.75 LOS C during the a.m. peak hour and increases to 0.72 LOS D during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of site generated traffic for the 2033 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.78 LOS C during the a.m. peak hour and to 0.74 LOS C during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

No geometric improvements are required for the study intersection as a result of the proposed development.

7.2 Sixth Line and Elm Street

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 8 Capacity Analysis of Sixth Line and Elm Street

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2025	EBL = 0.07 (C) 33 EBR = 0.38 (A) 17 NBTL = 0.06 (A) 2 SBTR = 0.38 (A) 0	EBL = 12 m EBR = 27 m NBTL = 29 m SBTR = 8 m	EBL = 0.05 (B) 22 EBR = 0.14 (A) 12 NBTL = 0.04 (A) 1 SBTR = 0.26 (A) 0	EBL = 9 m EBR = 16 m NBTL = 27 m SBTR = 6 m
Future Background 2028	EBL = 0.08 (C) 37 EBR = 0.4 (A) 18 NBTL = 0.06 (A) 2 SBTR = 0.39 (A) 0	EBL = 7 m EBR = 27 m NBTL = 28 m SBTR = 8 m	EBL = 0.05 (B) 24 EBR = 0.15 (A) 12 NBTL = 0.05 (A) 1 SBTR = 0.28 (A) 0	EBL = 8 m EBR = 17 m NBTL = 23 m SBTR = 6 m
Future Total 2028	EBL = 0.1 (C) 41 EBR = 0.44 (A) 20 NBTL = 0.07 (A) 2 SBTR = 0.42 (A) 0	EBL = 9 m EBR = 24 m NBTL = 33 m SBTR = 10 m	EBL = 0.06 (B) 25 EBR = 0.15 (A) 12 NBTL = 0.05 (A) 1 SBTR = 0.29 (A) 0	EBL = 10 m EBR = 20 m NBTL = 24 m SBTR = 7 m
Future Background 2033	EBL = 0.1 (C) 42 EBR = 0.44 (A) 20 NBTL = 0.07 (A) 2 SBTR = 0.41 (A) 0	EBL = 11 m EBR = 30 m NBTL = 33 m SBTR = 10 m	EBL = 0.06 (B) 26 EBR = 0.16 (A) 13 NBTL = 0.05 (A) 1 SBTR = 0.29 (A) 0	EBL = 10 m EBR = 17 m NBTL = 33 m SBTR = 9 m
Future Total 2033	EBL = 0.12 (C) 48 EBR = 0.48 (A) 22	EBL = 11 m EBR = 28 m	EBL = 0.07 (B) 28 EBR = 0.16 (A) 13	EBL = 11 m EBR = 19 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
	NBTL = 0.07 (A) 2 SBTR = 0.44 (A) 0	NBTL = 39 m SBTR = 14 m	NBTL = 0.05 (A) 1 SBTR = 0.31 (A) 0	NBTL = 33 m SBTR = 9 m

Under existing traffic conditions, the stop-controlled intersection is operating at a satisfactory level with the greatest delay occurring in the eastbound left-turn movement during both peak hours with a delay of 33 seconds during the a.m. peak hour and 22 seconds during the p.m. peak hour.

With the addition of corridor growth and background development traffic for the 2028 future background traffic scenario, the intersection is reported to continue to operate at a satisfactory level with the eastbound left-turn movement continuing to report the greatest delay (37 seconds during the a.m. peak hour and 24 seconds during the p.m. peak hour).

With the addition of site generated traffic for the 2028 future total traffic scenario, the intersection is reported to continue to operate at a satisfactory level with all movements reporting minor increases to the delay, including a maximum increase of 4 seconds reported for the eastbound left-turn during the a.m. peak hour.

The intersection is reported to continue to operate at a satisfactory level under the 2033 horizon year (future background and future total) with the eastbound left-turn continuing to report the greatest delays while each movement reports a marginal increase to the delays under future total traffic scenarios.

No geometric improvements are required for the study intersection as a result of the proposed development.

7.3 Sixth Line and Miller Road

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 9 Capacity Analysis of Sixth Line and Miller Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2025	EBLR = 0.21 (C) 19 NBTL = 0.03 (A) 1 SBTR = 0.49 (A) 0	EBLR = 17 m NBTL = 14 m SBTR = 13 m	EBLR = 0.12 (C) 16 NBTL = 0.03 (A) 1 SBTR = 0.31 (A) 0	EBLR = 15 m NBTL = 26 m SBTR = 4 m
Future Background 2028	EBLR = 0.23 (C) 20 NBTL = 0.03 (A) 1 SBTR = 0.5 (A) 0	EBLR = 18 m NBTL = 20 m SBTR = 2 m	EBLR = 0.13 (C) 17 NBTL = 0.04 (A) 1 SBTR = 0.32 (A) 0	EBLR = 17 m NBTL = 23 m SBTR = 3 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2028	EBLR = 0.26 (C) 22 NBTL = 0.03 (A) 1 SBTR = 0.53 (A) 0	EBLR = 17 m NBTL = 18 m SBTR = 2 m	EBLR = 0.14 (C) 18 NBTL = 0.04 (A) 1 SBTR = 0.33 (A) 0	EBLR = 18 m NBTL = 25 m SBTR = 3 m
Future Background 2033	EBLR = 0.25 (C) 22 NBTL = 0.03 (A) 1 SBTR = 0.53 (A) 0	EBLR = 16 m NBTL = 23 m SBTR = 19 m	EBLR = 0.15 (C) 18 NBTL = 0.04 (A) 1 SBTR = 0.34 (A) 0	EBLR = 17 m NBTL = 30 m SBTR = 3 m
Future Total 2033	EBLR = 0.28 (C) 24 NBTL = 0.03 (A) 1 SBTR = 0.56 (A) 0	EBLR = 18 m NBTL = 24 m SBTR = 42 m	EBLR = 0.17 (C) 20 NBTL = 0.04 (A) 1 SBTR = 0.35 (A) 0	EBLR = 17 m NBTL = 25 m SBTR = 5 m

Under existing traffic conditions, the stop-controlled intersection is operating at a satisfactory level with the greatest delay occurring in the eastbound approach during both peak hours with a delay of 19 seconds during the a.m. peak hour and 16 seconds during the p.m. peak hour.

With the addition of corridor growth and background development traffic for the 2028 future background traffic scenario, the intersection is reported to continue to operate at a satisfactory level with the eastbound approach continuing to report the greatest delay (20 seconds during the a.m. peak hour and 17 seconds during the p.m. peak hour).

With the addition of site generated traffic for the 2028 future total traffic scenario, the intersection is reported to continue to operate at a satisfactory level with the eastbound approach reporting a marginal increase to the delay by 1 second during both peak hours with no increase in the delay reported for the remaining movements.

The intersection is reported to continue to operate at a satisfactory level under the 2033 horizon year (future background and future total) with the eastbound approach continuing to report the greatest delays while each movement reports a marginal increase to the delays under future total traffic scenarios.

No geometric improvements are required for the study intersection as a result of the proposed development.

7.4 Sixth Line and McCraney Street

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 10 Capacity Analysis of Sixth Line and McCraney Street

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2025	<u>Overall: 0.74 (C) 23</u> EBL = 0.36 (C) 32 EBTR = 0.52 (C) 32 WBL = 0.24 (C) 29 WBTR = 0.5 (C) 32 NBL = 0.04 (B) 18 NBTR = 0.38 (C) 22 SBL = 0.82 (C) 20 SBTR = 0.31 (A) 10	EBL = 19 m EBTR = 53 m WBL = 28 m WBTR = 112 m NBL = 13 m NBTR = 47 m SBL = 44 m SBTR = 114 m	<u>Overall: 0.35 (B) 19</u> EBL = 0.2 (C) 33 EBTR = 0.13 (C) 32 WBL = 0.07 (C) 28 WBTR = 0.31 (C) 30 NBL = 0.04 (B) 14 NBTR = 0.4 (B) 18 SBL = 0.33 (A) 9 SBTR = 0.3 (A) 10	EBL = 17 m EBTR = 23 m WBL = 15 m WBTR = 58 m NBL = 15 m NBTR = 61 m SBL = 37 m SBTR = 51 m
Future Background 2028	<u>Overall: 0.79 (C) 25</u> EBL = 0.37 (C) 32 EBTR = 0.54 (C) 32 WBL = 0.25 (C) 30 WBTR = 0.55 (C) 33 NBL = 0.04 (B) 18 NBTR = 0.41 (C) 23 SBL = 0.88 (C) 25 SBTR = 0.32 (A) 10	EBL = 19 m EBTR = 61 m WBL = 31 m WBTR = 101 m NBL = 15 m NBTR = 55 m SBL = 43 m SBTR = 111 m	<u>Overall: 0.37 (B) 19</u> EBL = 0.23 (C) 34 EBTR = 0.14 (C) 32 WBL = 0.07 (C) 28 WBTR = 0.32 (C) 30 NBL = 0.04 (B) 15 NBTR = 0.42 (B) 19 SBL = 0.35 (A) 10 SBTR = 0.32 (B) 10	EBL = 18 m EBTR = 26 m WBL = 20 m WBTR = 70 m NBL = 19 m NBTR = 62 m SBL = 39 m SBTR = 59 m
Future Total 2028	<u>Overall: 0.82 (C) 27</u> EBL = 0.38 (C) 32 EBTR = 0.54 (C) 32 WBL = 0.25 (C) 29 WBTR = 0.56 (C) 33 NBL = 0.04 (B) 18 NBTR = 0.41 (C) 23 SBL = 0.92 (C) 31 SBTR = 0.35 (B) 10	EBL = 20 m EBTR = 72 m WBL = 36 m WBTR = 165 m NBL = 14 m NBTR = 55 m SBL = 43 m SBTR = 111 m	<u>Overall: 0.38 (B) 19</u> EBL = 0.28 (C) 34 EBTR = 0.14 (C) 32 WBL = 0.07 (C) 28 WBTR = 0.33 (C) 30 NBL = 0.04 (B) 15 NBTR = 0.43 (B) 19 SBL = 0.36 (A) 10 SBTR = 0.33 (B) 10	EBL = 17 m EBTR = 23 m WBL = 21 m WBTR = 84 m NBL = 14 m NBTR = 65 m SBL = 39 m SBTR = 60 m
Future Background 2033	<u>Overall: 0.85 (C) 29</u> EBL = 0.39 (C) 32 EBTR = 0.55 (C) 32 WBL = 0.27 (C) 30 WBTR = 0.62 (C) 35	EBL = 20 m EBTR = 62 m WBL = 32 m WBTR = 95 m NBL = 12 m	<u>Overall: 0.4 (B) 19</u> EBL = 0.28 (C) 34 EBTR = 0.14 (C) 32 WBL = 0.07 (C) 28 WBTR = 0.36 (C) 30	EBL = 18 m EBTR = 23 m WBL = 25 m WBTR = 78 m NBL = 11 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
	NBL = 0.04 (B) 18 NBTR = 0.43 (C) 24 SBL = 0.95 (D) 38 SBTR = 0.34 (B) 10	NBTR = 52 m SBL = 42 m SBTR = 140 m	NBL = 0.04 (B) 15 NBTR = 0.45 (B) 20 SBL = 0.38 (A) 10 SBTR = 0.34 (B) 10	NBTR = 66 m SBL = 39 m SBTR = 54 m
Future Total 2033	<u>Overall: 0.88 (C) 32</u> EBL = 0.4 (C) 33 EBTR = 0.55 (C) 32 WBL = 0.27 (C) 29 WBTR = 0.63 (D) 35 NBL = 0.04 (B) 19 NBTR = 0.44 (C) 24 SBL = 0.99 (D) 48 SBTR = 0.37 (B) 11	EBL = 21 m EBTR = 60 m WBL = 35 m WBTR = 121 m NBL = 13 m NBTR = 54 m SBL = 42 m SBTR = 164 m	<u>Overall: 0.41 (B) 20</u> EBL = 0.33 (D) 35 EBTR = 0.14 (C) 32 WBL = 0.07 (C) 28 WBTR = 0.37 (C) 30 NBL = 0.05 (B) 15 NBTR = 0.46 (C) 20 SBL = 0.39 (B) 10 SBTR = 0.35 (B) 10	EBL = 18 m EBTR = 28 m WBL = 17 m WBTR = 88 m NBL = 14 m NBTR = 74 m SBL = 39 m SBTR = 61 m
Future Background 2033 - Signal Improvements	<u>Overall: 0.81 (C) 28</u> EBL = 0.39 (C) 33 EBTR = 0.56 (C) 33 WBL = 0.27 (C) 30 WBTR = 0.64 (D) 36 NBL = 0.05 (C) 24 NBTR = 0.55 (C) 32 SBL = 0.88 (C) 26 SBTR = 0.34 (B) 10	EBL = 20 m EBTR = 67 m WBL = 38 m WBTR = 118 m NBL = 13 m NBTR = 64 m SBL = 42 m SBTR = 141 m	N/A	N/A
Future Total 2033 - Signal Improvements	<u>Overall: 0.84 (C) 29</u> EBL = 0.4 (C) 33 EBTR = 0.56 (C) 33 WBL = 0.27 (C) 30 WBTR = 0.65 (D) 36 NBL = 0.06 (C) 24 NBTR = 0.57 (C) 33 SBL = 0.91 (C) 30 SBTR = 0.36 (B) 11	EBL = 23 m EBTR = 195 m WBL = 37 m WBTR = 178 m NBL = 15 m NBTR = 65 m SBL = 41 m SBTR = 149 m	N/A	N/A

Under existing traffic conditions, the signalized intersection is operating with an overall v/c of 0.74 LOS C during the a.m. peak hour and an overall v/c of 0.35 LOS B during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic for the 2028 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.79 LOS C during the a.m. peak hour and 0.37 LOS C during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of site generated traffic for the 2028 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.82 LOS C during the a.m. peak hour and to 0.38 LOS C during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic for the 2033 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.85 LOS C during the a.m. peak hour and increases to 0.40 LOS D during the p.m. peak hour. The overall intersection and the southbound left-turn movement begin to operate at critical levels during the a.m. peak hour.

With the addition of site generated traffic for the 2033 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.88 LOS C during the a.m. peak hour and to 0.41 LOS C during the p.m. peak hour. The overall intersection and the southbound left-turn movement continue to operate as the only critical movements during the a.m. peak hour.

With signal optimization during the a.m. peak hour, the overall v/c ratio is reported to decrease 0.81 LOS C under 2033 future background conditions and 0.84 LOS C under 2033 future total conditions in addition to the southbound left-turn no longer reported to operate at a critical level during the a.m. peak hour.

No geometric improvements are required for the study intersection as a result of the proposed development.

7.5 Sixth Line and the Proposed Site Access

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 11 Capacity Analysis of Sixth Line and the Proposed Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2028	WBLR = 0.35 (D) 26 NBTR = 0.33 (A) 0 SBTL = 0.03 (A) 1	WBLR = 24 m NBTR = 7 m SBTL = 27 m	WBLR = 0.19 (C) 20 NBTR = 0.37 (A) 0 SBTL = 0.04 (A) 1	WBLR = 17 m NBTR = 6 m SBTL = 22 m
Future Total 2033	WBLR = 0.38 (D) 29 NBTR = 0.35 (A) 0 SBTL = 0.03 (A) 1	WBLR = 25 m NBTR = 6 m SBTL = 24 m	WBLR = 0.2 (C) 21 NBTR = 0.39 (A) 0 SBTL = 0.05 (A) 1	WBLR = 18 m NBTR = 7 m SBTL = 31 m

Under the four future total traffic conditions, proposed full- moves access onto Sixth Line is reported to operate at satisfactory levels with a maximum delay of 29 seconds reported for the outbound movement. The proposed access is also reported to have a marginal impact on the operate of the roadway as the northbound approach on Sixth Line is reported to operate without any delays and a 95th percentile queue

length of 7 metres while the southbound approach is reported to operate with a delay of 1 second and a 95th percentile queue length of 31 metres.

8. Parking Review

GHD reviewed the Town's current Zoning By-Law parking and loading requirements for the subject site.

8.1 Town of Oakville Zoning By-Law 2014-014

8.1.1 Vehicular Parking

The current Town of Oakville Zoning By-Law 2014-014 minimum parking requirements for are found in Section 5.2.1, Table 5.2.1.

It is noted that the Zoning By-law does not provide a distinct parking requirement for affordable housing developments. Applying a uniform standard across all forms of apartment housing, regardless of tenure, overlooks the well-documented differences in vehicle ownership patterns. Affordable housing residents consistently demonstrate lower car ownership rates due to income factors, transit dependency, and household characteristics, which makes the application of conventional apartment ratios inappropriate in this context.

In the absence of a specific land use code for affordable housing, the "apartment dwelling" category has been applied as the closest comparable use for this assessment. However, given the reduced parking demand expected from affordable housing residents, it is reasonable to conclude that the actual parking demand for the subject site will be significantly lower than the Zoning By-law's prescribed minimums which is reflected in the sites proposed parking supply.

The minimum By-Law requirement for the subject site would be as follows:

- Apartment dwelling
 - A minimum of 1.0 space per dwelling unit where the unit has less than 75.0 square metres net floor area;
 - A minimum of 1.5 space per dwelling unit for all other units
 - As per the additional regulation for minimum parking ratios Table 5.2.1, of the total number of parking spaces required, 0.25 of the parking spaces required per dwelling shall be designated as visitors parking spaces.
- Day care
 - A minimum of 1.0 per 40.0 m² net floor area (up to 5,000.0 m² GFA)
- Office
 - A minimum of 1.0 space per 35.0 m² net floor area

The minimum parking required for the subject site is as follows:

- Apartment dwelling
 - A minimum of 1.0 parking space per dwelling unit less than 75.0 square metres x 185 units = 185 spaces
 - A minimum of 1.5 parking space per dwelling unit greater than 75.0 square metres x 5 units = 8 spaces

- Of the 193 spaces required, a minimum of 48 spaces are required for visitors
- Day care
 - A minimum of 1.0 space per 40.0 m² net floor area x 278 m² = 7 spaces
- Office
 - A minimum of 1.0 space per 35.0 m² net floor area x 170 m² = 5 spaces

In total, the subject would be required to provide a minimum of 205 spaces under the Town's By-law.

8.1.2 Accessible Parking

The minimum requirement for accessible parking spaces can also be found in the Town of Oakville Zoning By-Law 2014-014, Section 5.3.1, Table 5.3.1. The minimum By-Law requirement for accessible parking is based on the number of parking spaces provided, based only on the visitor and non-residential parking supply, as follows:

- Number of parking spaces provided
 - 3 to 25 spaces: 1 barrier free space
 - 26 to 100 spaces: 4% of the total number of parking spaces in the parking area
 - 101 to 200 spaces: 1 barrier free space, plus 3% of the total number of parking spaces in the parking area
 - 201 to 1,000 spaces: 2 barrier free space, plus 2% of the total number of parking spaces in the parking area
 - 1,001 spaces or greater 11 barrier free space, plus 1% of the total number of parking area

Where the minimum number of accessible parking spaces required is even, an equal number of Type A and Type B accessible parking spaces shall be provided. Where the minimum number of accessible parking spaces is odd, an equal number of Type A and Type B accessible parking spaces shall be provided but the last accessible parking space may be a Type B.

The minimum number of accessible parking spaces required for the subject site is as follow, based on the number of visitor and non-residential parking spaces provided:

- Number of parking spaces provided: 33 spaces
 - 4% of 33 spaces = 2 accessible parking spaces required

In total, 2 barrier-free parking spaces are required under the Town's current By-Law.

8.1.3 Bicycle Parking

Under the Town of Oakville Zoning By-Law 2014-014, the bicycle parking requirement are found in Section 5.4.1, Table 5.4.1. The minimum By-Law requirement for bicycle parking for the subject site is as follows:

- Blended Rates for Lots with Multiple Premises
 - Where multiple premises are located on a lot in any non-residential zone, the greater of 2 or 1.0 space per 1,000.0 m² net floor area, plus the minimum number of bicycle parking spaces for the dwellings
- Apartment dwelling

- A minimum of 1.0 bicycle parking space per dwelling unit.
- Of the spaces required, 0.25 spaces per dwelling unit shall be designated as visitor bicycle parking spaces

The minimum parking required for the subject site is as follows:

- Blended Rates for Lots with Multiple Premises
 - the greater of 2 spaces or 1.0 space per 1,000.0 m² net floor area x 448 m² = 1 space, however a minimum of 2 spaces are required.
- Apartment dwelling
 - A minimum of 1.0 bicycle parking space per dwelling unit x 190 units = 190 bicycle parking spaces.
 - Of the spaces required, 0.25 spaces per dwelling unit shall be designated as visitor bicycle parking spaces = 48 spaces for visitors

Section 5.4.1. (b). states that in no circumstance shall the number of minimum bicycle parking spaces be greater than 30 spaces.

As a result, the subject site is required to provide a minimum of 30 bicycle parking spaces.

8.1.4 Loading Spaces

There are no loading space requirements under the Town of Oakville Zoning By-Law 2014-014.

8.2 Proposed Site Parking

The following table summarizes the minimum By-law requirements and the proposed parking/loading supply for the subject site.

Table 12 *Parking Requirements and Provisions*

Type	Unit Count/GFA	By-Law 2014-014 Requirement	Provided
Vehicle Parking	190 rental units, 278 m ² of day care GFA, and 170 m ² of office GFA	193 resident space, including 48 visitor parking spaces 7 daycare space 5 office spaces	73 resident and 18 visitor parking spaces 7 daycare space 5 office spaces
Barrier Free Parking		A minimum of 2 barrier free spaces	8 barrier free spaces
Bicycle Parking		A minimum of 30 bicycle parking spaces	42 bicycle parking spaces
Loading Spaces		No loading spaces	1 loading space

The proposed development includes a total of 103 parking spaces, which represents a reduction of 102 spaces relative to the minimum requirement identified in the Town of Oakville Zoning By-law for the subject site.

8.3 Parking Assessment

The development seeks a variance to reduce the Zoning By-law 2014-014 parking requirement from 205 spaces to 103 total spaces: 73 resident spaces (0.37 spaces per unit), 18 visitor spaces (0.09 space per unit), 7 daycare spaces and 5 office spaces. This right-sized supply reflects the lower auto ownership typically observed in affordable/non-market housing, avoids the significant cost and land impacts of building unused parking, and aligns with current best practices adopted in nearby Ontario municipalities.

An oversupply of on-site parking in multi-unit residential buildings imposes substantial capital and lifecycle costs and consumes land that could otherwise deliver housing and public-realm benefits. Recent Canadian research for Canadian Mortgage and Housing Corporation (CMHC) shows that reducing minimum parking in multi-family buildings measurably lowers project construction costs and long-term maintenance burdens, supporting affordability objectives.

Policy and municipal comparables (GTHA and Ontario)

- Toronto has removed most minimum parking requirements city-wide in 2021/2022, deliberately leaving only targeted minimums (e.g., visitor in apartments) while shifting toward context-based management. This signals a regional best-practice direction away from blanket minimums that oversupply parking.
- Mississauga most recent By-law includes reduced minimums (including for affordable housing) and recognizes that tenants of affordable units have lower car ownership, especially in intensification areas/MTSAs.
- St. Catharines has initiated a city-wide amendment to exempt affordable residential units from parking requirements.
- Guelph's Housing Affordability Strategy explicitly directs reducing or removing parking for new affordable builds as a primary action item.

Collectively, these directions demonstrate that applying uniform “market-rate apartment” ratios to affordable housing (as Oakville's By-law currently does) no longer reflects observed demand or contemporary policy. Using “apartment dwelling” as the closest comparable is procedurally correct under the By-law, but projecting demand with reduced ratios is more reasonable for affordable units.

Site factors that lower automobile parking demand

While not immediately adjacent to higher-order transit, the site has frequent local bus service with a direct ~10-minute connection (Route 19) or ~9-minute bike ride to Oakville GO, providing regional access along Lakeshore West for work and education trips. Proximity to schools and Sheridan College, along with on-site secure bicycle parking, further reduces the need for household car ownership. Rideshare, delivery services, and dedicated pick-up/drop-off and loading areas accommodate occasional motorized trips without requiring residents to own a vehicle.

At a provincial level, recent Planning Act amendments (Bill 185) prohibit imposing minimum parking in Protected Major Transit Station Areas and related delineated zones illustrating the province's direction to curb blanket parking minimums where feasible. While the subject site is not within an MTSA, this policy trend reinforces that minimums should be carefully tailored to actual need rather than uniformly applied.

Cost, feasibility, and affordability impacts

Parking is one of the most expensive building components in multi-family projects. Canadian analyses (including CMHC modeling) show that required below-grade parking can add material cost per dwelling, with savings realized when minimums are reduced. Industry and Ontario research frequently cite underground costs in the range of \$80,000–\$100,000 per stall (and higher in complex conditions), which are ultimately borne by residents.

Unbundling parking from rent ensures only households that need a space pay for it and right-pricing of parking space rents helps to reduce car ownership and parking demand, especially for lower-income households which improves housing and transportation affordability.

Conclusion

The proposed reduction in parking to provide 103 total spaces comprising of 73 resident (0.37 per unit), 18 visitor (0.09 per unit), 7 daycare spaces and 5 office spaces is appropriate based on the project's affordable housing nature, the site's multimodal access and the escalating costs and land requirements of structured parking.

These proposed parking ratios align with recent GTA practice for reduced minimums in affordable/non-market housing, reflect observed lower vehicle ownership in such buildings, and materially support affordability by avoiding underground stalls that typically add substantial per-unit costs. The Site Plan continues to maintain accessibility and functionality as a priority with 8 barrier-free spaces; 42 secure bicycle spaces; a dedicated pick-up/drop-off area at the main entrance to support rideshare and on-site parcel and grocery delivery, reducing errand-related car trips.

To anchor the reduced supply and manage demand over time, the development will implement unbundled, right-priced resident parking; a mobility package and transit incentives at move-in; secure long-term convenient bike parking. Taken together with the TDM plan, the proposed parking supply is supportable, justified, and reasonable and advance municipal and provincial directions to reduce auto dependence while improving housing affordability and efficient land use.

9. Site Plan Review

9.1 Access Width and Radius

The Town of Oakville's Engineering Design Criteria & Standard Drawings, specifically Section 3.3.4.1, identify the minimum geometric requirements for site access design. For developments of this nature, the standard requires a minimum driveway width of 7.5 metres and curb return radii between 6.0 and 7.5 metres.

The location of the proposed access is located between a utility pole on the north side and a fire hydrant and sewer located within the boulevard on the south side of the access. Due to the constraints, the access has been designed with a width of 7.1 metres, a flared inbound curb with a width of 3.0 metres, and an outbound curb return radii of 4.0 metres, all representing shortfalls from the Town's Design Standards.

As confirmed by Town staff, an access deviation may be accepted if vehicle turning diagrams demonstrate that the proposed curb radii at the driveway can accommodate the intended design vehicle, including the ability to perform simultaneous ingress and egress for some turning movements. As identified in Section 12, the anticipated design vehicles can be accommodated within the proposed site access despite not meeting the Town's minimum requirements.

9.2 Clear Throat Distance

The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (Section 8.9.10, Table 8.9.3) outlines recommended minimum clear throat distances based on roadway classification and land use type. For developments located along collector roads, a minimum clear throat distance of 25 metres is recommended for apartments with 100-200 dwelling units.

The site access has been designed to provide approximately 13 metres of clear throat distance, a shortfall of 12 metres from TAC's minimum guideline. Despite the shortfall in clear throat distance, the proposed clear throat generally aligns with the clear throat distances provided for the existing accesses along Sixth Line surrounding the proposed development, including the residential development of similar size located at 1265 Sixth Line.

10. Traffic Safety Review

10.1 Sightline Assessment

As requested by Town staff, GHD completed a sightline assessment for the site driveway along Sixth Line. Adjacent to the proposed site, Sixth Line has a posted speed limit of 40 km/h and is relatively flat to the north and south of the proposed access. For the purpose of the sight distance assessment, a design speed of 50 km/h along Sixth Line was used for the assessment.

Section 9.9 of the Transportation Association of Canada's Geometric Design Guide for Canadian Roads (TAC GDGCR) recommends intersection sight distances for different scenarios, with the following scenarios used to complete the intersection sight distance analysis:

- Case B1 – Left turn from the minor road
- Case B2 – Right turn from the minor road
- Case F – Left turns from the major road

For the purpose of the assessment, the minor road is assumed to be the site driveway. A vehicle entering the major road from the site driveways is assumed to stop a distance of approximately 4.4 metres to the pavement edge of the major road as recommended by TAC. In this stopped position, the driver will be required to look left and right in order to perceive and react to approaching vehicles prior to initiating a turning movement onto the intersecting drive aisle. The recommended intersection sight distances are provided in TAC GDGCR Tables 9.9.4, 9.9.6 and 9.9.12 for passenger vehicles rucks turning left from stop, turning right from stop, or turning left from the major road.

The intersection sight distance is calculated from the equation.

$$ISD = 0.278 V_{major} t_g$$

Where:

ISD = intersection sight distance

V_{major} = design speed of the major road ($\frac{km}{h}$)

t_g = time gap for the minor road vehicle to enter the major road (s)

The intersection sight distance requirement for passenger cars was determined by the equation above, where the time gap for the minor road vehicle to enter the major road for passenger vehicles is 7.5 seconds for turning left from stop, 6.5 seconds for vehicles turning right from a stop and 5.5 seconds for left turns from the major road. The recommended intersection sight distances for the proposed driveway are summarized in the table below based on a 50 km/h design speed along Sixth Line.

Table 13 Minimum Intersection Sight Distance for the Proposed Driveway

Case (Design Speed of 50 km/h)	Suggested Intersection Sight Distance for Passenger Vehicles (TAC 2017)	Available Intersection Sight Distance	TAC Reference
B1: Vehicles turning left from stop	105 m	>105 m	Table 9.9.4
B2: Vehicles turning right from stop	95 m	>105 m	Table 9.9.6
F: Left turns from the major road	80 m	>105 m	Table 9.9.12

The available sight distances along Sixth Line at the proposed driveway exceeds the minimum stopping sight distance for a 50 km/h design speed for a passenger vehicle. The available sightline and how it was measured is illustrated in **Figure 17**, and is shown for a passenger vehicle turning left out of the site as it provides an assessment for the worst-case scenario.

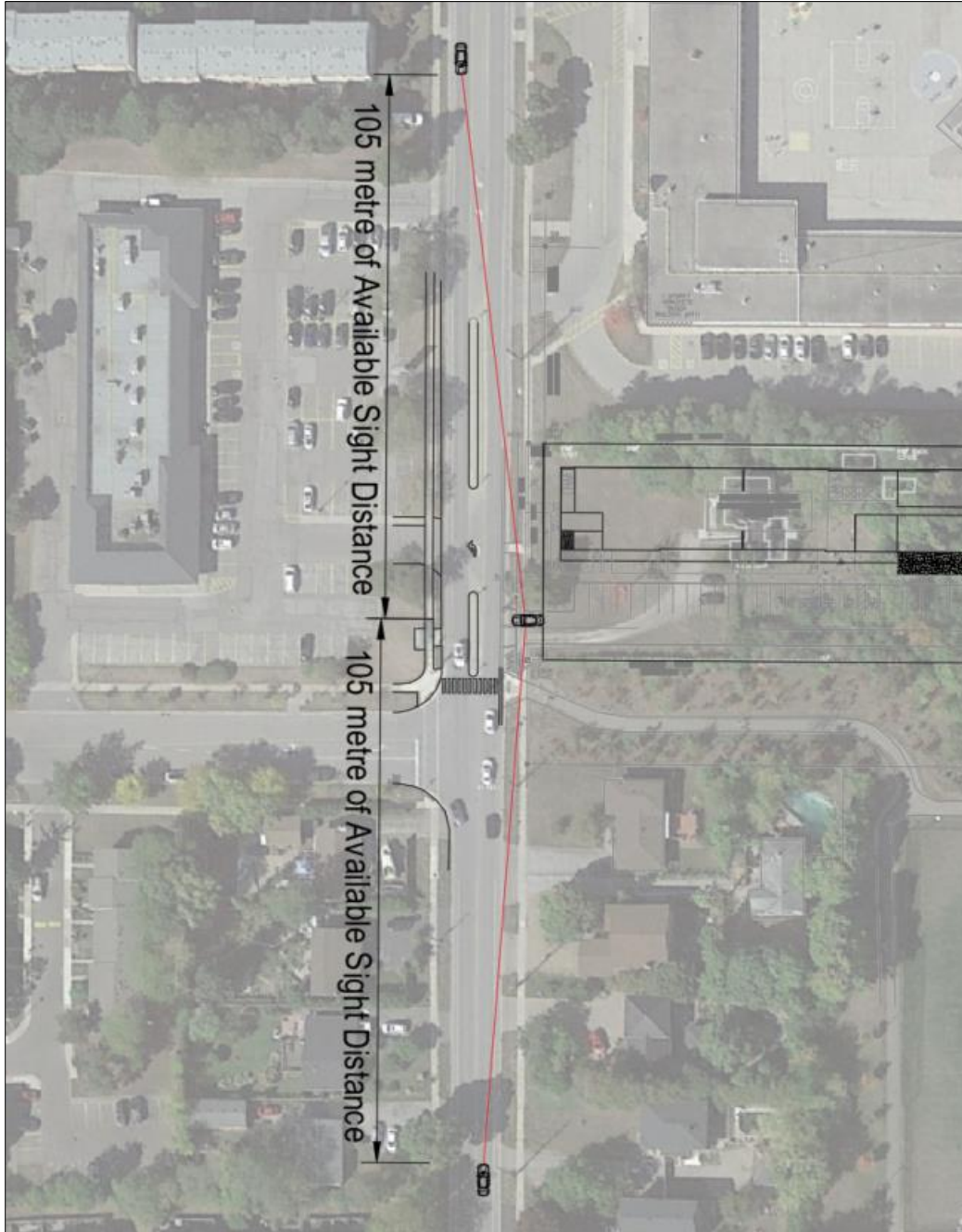


Figure 17 *Intersection Sight Distance (Proposed Driveway)*

The location of the proposed site accesses provides sufficient intersection sight distances to satisfy the TAC GDGCR minimum recommendations for both vehicles and trucks based on the applicable design speed of the adjacent roads.

10.2 Offset Left-Turns

An access to a commercial plaza is provided along Sixth Line to the north of the subject site's proposed access. The access operates as a full-moves access with sufficient space between the two medians on Sixth Line to accommodate one vehicle waiting to turn left into the plaza. Additionally, there are no

physical obstructions along Sixth Line or within the right-of-way that would impede the ability of a driver waiting to turn left to or from the plaza to observe a vehicle turning right from the site and vice-versa with a driver from the site access observing a driver turning left out from the plaza. Given the offset of approximately 15 metres between the proposed access and the existing commercial plaza (measured from centreline to centreline) and no obstructions between the two driveways, the offset between the two driveways is not anticipated to have an impact on the operations of the respective accesses.

10.3 Collision Review

Town of Oakville staff requested GHD to conduct a review of collision data from the last five years to determine if there are existing traffic safety issues that may be addressed. Town staff provided GHD with collision data from the intersection of Sixth Line and Elm Road. Within the last five years, a total of 2 collisions have been recorded at the intersection with the collisions resulting in either property damage or non-fatal injuries.

To supplement the historical data, a Highway Safety Software (HSS) analysis was conducted to compare predicted and expected crash frequencies. According to this methodology, predicted crash frequency is based on empirical data and statistical models for similar intersections, while expected crash frequency adjusts that prediction using site-specific collision history. If the expected frequency is higher than predicted, it may indicate a potential safety concern requiring further analysis. The results of the analysis are summarized below.

Table 14 *Predicted and Expected Crash Frequency Comparison*

Crash Type	Predicted Crash Frequency	Expected Crash Frequency
Fatal & Injury (FI)	0.257	0.182
Property Damage Only	0.419	0.296
Total	0.676	0.478

The 5-year expected crash frequencies for all crash types are lower than the predicted values, indicating no immediate safety concerns at the intersection.

Based on the collisions recorded for the intersection and the predictive collision analysis completed following the Highway Safety Manual procedures, the intersection is not a collision-prone location.

11. Transportation Demand Management

Transportation Demand Management (TDM) refers to a comprehensive set of strategies designed to reduce reliance on single-occupant vehicle travel by encouraging more sustainable and efficient transportation choices, such as transit, active transportation, carpooling, and trip chaining. TDM measures contribute to broader goals of minimizing roadway congestion, lowering personal transportation costs, improving air quality, and advancing provincial and municipal smart growth objectives.

For the proposed development at 1493 Sixth Line, a robust TDM strategy is critical given the site's urban location and the intentional reduction in on-site parking supply. While the Town of Oakville Zoning By-law would typically require 205 parking spaces for a development of this scale, the proposal includes 103

parking spaces—representing a shortfall of 102 spaces from the conventional standard. This reduction is a deliberate strategy aligned with the site’s intention to operate as a rental building.

The development’s parking strategy which includes unbundled residential parking and a reduced overall vehicle parking supply is consistent with recent legislative changes supporting housing affordability and sustainable urban growth.

By incorporating TDM strategies at the outset of the planning process, the development meaningfully contributes to a long-term shift away from single-occupant vehicle use. This approach supports low-carbon mobility, efficient land use, and the Town’s broader goal of building transit-supportive communities.

11.1 Existing TDM Opportunities

11.1.1 Pedestrian Facilities and Connectivity

The surrounding area offers an established pedestrian network that supports safe and direct access to nearby transit stops and key destinations. Continuous sidewalks are provided on both sides of Sixth Line and Upper Middle Road, connecting the site to the broader area. These sidewalks are generally of adequate width (2.0 to 2.5 metres) and, in some areas, are buffered from traffic by landscaped boulevards or street furniture zones.

Major intersections in the vicinity, including Sixth Line at Upper Middle Road and Sixth Line at McCraney Street, are signalized and equipped with marked crosswalks and pedestrian signal heads. These features facilitate pedestrian movement across arterial corridors. The pedestrian Level of Service (LOS) is considered good, supporting comfortable, continuous, and direct routes in the immediate area.

The proposed development reinforces walkability by integrating a connected internal pedestrian network that links the building entrance to the surrounding public sidewalks. Overall, the development supports a seamless pedestrian interface with the surrounding urban environment and encourages walking as a primary mode for short trips and transit access.

11.1.2 Cycling Facilities and Connectivity

At present, dedicated cycling infrastructure such as bike lanes is limited in the immediate vicinity of the site, however at a minimum, cycling infrastructure such as multi-use trails and shared roadways are provided along the major roadways.

Currently, there are painted lines that could be used as bike lanes on Sixth Line adjacent to the site and south of McCraney Street these become dedicated bike lanes. On Upper Middle Road, there is a multi-use path along the north side of the road separated from the roadway and the sidewalk.

11.1.3 Transit Services

The subject site at 1493 Sixth Line benefits from good transit accessibility, with multiple Oakville Transit routes operating within close proximity. These services include frequent local bus routes along Sixth Line and Upper Middle Road.

Key transit services serving the site and surrounding area include:

Oakville Transit Route 6 -**Upper Middle:** This east-west local route operates along Upper Middle Road East and West between the Bronte GO Station to the west and the intersection of Laird and Ridgeway to the east. The route operates with a 25-minute headway during the commuter peak periods. A stop is located near the intersection of Upper Middle Road and Sixth Line.

Oakville Transit Route 19 - **River Oaks** – This route operates along a series of roadways within residential subdivisions to the north and south of the subject site, including in the north/south direction on Sixth Line between Upper Middle Road and McCraney Street East. This route operates between the Uptown Core at Dundas Street West and Trafalgar Road and the Oakville GO Station. A stop is located near the intersection of Sixth Line and Elm Road adjacent to the subject site.

The convergence of these services near the site provides residents and visitors with a wide range of convenient transit options for local travel. The proposed development is situated within walking distance of several existing stops.

11.2 Proposed TDM Strategies

To support a meaningful reduction in automobile trips and accommodate travel demand through sustainable modes of transportation, a well-rounded package of Transportation Demand Management (TDM) strategies is proposed. These strategies are grouped into two main categories. The first category includes physical infrastructure and design elements that directly enable and facilitate travel by transit, walking, and cycling. These are referred to as “Hard Measures.” The second category encompasses programs, services, and incentives that encourage shifts in travel behaviour. These are known as “Soft Measures.”

When implemented together, both types of strategies are expected to make sustainable travel options more convenient, comfortable, and competitive with private vehicle use. These measures will also help manage automobile dependency by reducing the attractiveness and ease of car ownership and use. The following sections provide a detailed description of each recommended measure, including its intended purpose, implementation method, and expected contribution to the overall travel demand management objectives of the development.

11.2.1 Hard TDM Measures (Physical/Infrastructure)

The hard measures focus on site design and facilities that enable people to choose walking, cycling, transit, and shared mobility for their trips. The following hard TDM measures are recommended for the site:

- Improved Pedestrian Connectivity

The site plan incorporates a pedestrian walkway system linking building entrances to the public sidewalk network. This includes direct pathways to Sixth Line. Internal pedestrian routes will be designed to be accessible and visually appealing, supported by enhancements such as landscaped boulevards, tree plantings, and appropriate lighting. These features will promote walking as a comfortable travel option throughout the site. Barrier-free design elements including curb ramps, tactile surfaces, and appropriate grade transitions will be included to comply with accessibility requirements. By prioritizing direct and convenient pedestrian connectivity, the development supports reduced car dependency and encourages walking as a primary mode of access to local amenities and regional transit services.

- Cycling Amenities (Bike Parking & Facilities)

As noted, the development will provide 42 bicycle parking spaces, including in secure and convenient locations within the parking garage. These spaces will be indoor, weather-protected, and access-controlled to ensure safety and ease of use for residents. Short-term outdoor bicycle parking spaces are proposed in visible and accessible locations near key entrances to encourage use by visitors. To further support cycling as a primary mode of transportation, a bike repair station will also be installed on-site. This station will include basic tools and an air pump, allowing cyclists to perform minor repairs or tune-ups, thereby removing barriers to daily cycling and promoting active transportation choices for all users.

➤ Transit-Supportive Site Design

The proposed development at 1493 Sixth Line supports travel by transit through several embedded design elements and a location that is inherently transit-supportive. The site is adjacent to a transit stop serviced by Oakville Transit's Route 19, offering access to local transit services that connect to major destinations within Oakville and the Oakville GO Station.

Although no new transit infrastructure is proposed as part of the project, the design inherently supports transit-oriented development principles by integrating pedestrian connectivity with transit access. This approach contributes to reduced automobile dependency and positions the development as an appropriate intensification opportunity within a transit-accessible employment area.

The compact site design, paired with nearby cycling infrastructure and planned Transportation Demand Management (TDM) initiatives, further strengthens the site's role in accommodating sustainable travel behaviour at no additional public cost.

11.2.2 Soft TDM Measures (Programs/Policies)

In addition to the physical infrastructure, the following “soft” measures are recommended that include incentives, services, and policies to actively encourage residents and employees to choose sustainable transportation:

➤ New Resident Travel Information Package

An informative “Travel Options” package will be prepared and provided to all new residents and to the commercial tenant and their employees. This will be a curated set of materials including: local transit route maps and schedules for Oakville Transit and GO Transit, information on how to use PRESTO and plan trips, cycling route maps of Oakville/Halton Region, safety tips for walking and biking, and details on the TDM amenities available (bike room locations). These packages may also include promotional items like a reflective armband, a small bike light, or transit merchandise to reinforce the message. The developer will assemble and distribute these information kits at the point of sale/lease signing and again at move-in. By educating residents about their travel choices from day one, the development helps sustainable habits form early. The package will also provide contacts (websites, apps, and customer service lines) for transit and Smart Commute resources so that residents can get ongoing assistance with travel planning.

➤ Ongoing Communication & Travel Planning Support

Beyond the initial info package, the property management or a designated TDM coordinator will maintain communication with residents on transportation options. This includes setting up a TDM information corner or bulletin board in the lobby where updates can be posted (such as new transit service announcements, Bike Month events, Carpool Week challenges, etc.). Periodic email newsletters or a community portal could be used to share tips (e.g., how to sign up for a carpool app or upcoming transit fare promotions). At approximately 50% occupancy, the developer will organize a small “Travel Options Day” event in the building. This event can serve as a distribution point for any remaining info packages, and feature representatives from Oakville Transit or Smart Commute to answer questions. The developer is responsible for coordinating this event and providing a space (e.g., party room or lobby) for it. Such a mid-occupancy push ensures that even those who moved in earlier and might have missed the initial orientation get reinforced messaging about available TDM services. The communication strategy overall will be an ongoing effort to keep sustainable transportation visible and convenient for all occupants.

➤ Unbundled and Paid Parking Policy

As mentioned in the parking section, the rental of a residential unit will exclude parking by default. Residents must purchase or rent a parking space separately if they want one. This unbundling makes the cost of parking transparent – a single underground parking space can cost tens of thousands of dollars to build, and that cost will be passed on only to those who choose to buy a

spot, rather than hidden in the unit price for everyone. The result is a financial incentive for residents to opt out of car ownership.

➤ **Ridesharing and Carpool Promotion**

For those residents or employees who will still drive, sharing rides can cut vehicle trips and parking demand. The TDM program will promote carpooling by connecting individuals who have similar commutes. This could involve partnering with the regional Smart Commute program (which offers an online ride-matching tool for commuters) or simply facilitating a building-specific carpool sign-up. The property management might maintain a list or forum for residents interested in carpooling to major employment centres. Additionally, as part of the Smart Commute or equivalent Transportation Management Association (TMA) participation, the employer on-site (car dealership) can encourage its staff to carpool or use transit through their own workplace TDM initiatives. If the dealership joins Smart Commute, they could implement a Guaranteed Ride Home program for employees (providing a free taxi ride in emergency situations for those who didn't drive) or incentives like preferred parking for carpoolers. While these are voluntary programs, the TDM plan will encourage all employers and residents to take advantage of available regional programs that support ridesharing, thereby reducing single-occupant vehicles in the peak hours.

➤ **Marketing & Outreach Programs**

The success of the TDM measures will also rely on effective marketing and education, which is discussed in detail in the next section. In summary, the development will be marketed as a transit-oriented, pedestrian-friendly community from the get-go, targeting buyers/renters who embrace a car-light lifestyle. Ongoing outreach such as “try transit” campaigns, bike workshops, or participation in city events (Bike to Work Day, Clean Air Commute, etc.) will be organized to maintain enthusiasm for the alternatives. All these soft measures create a culture of sustainable transportation within the development.

11.2.3 Parking Supply and Management

The proposed development includes a total of 103 vehicle parking spaces, which represents a shortfall of 102 spaces relative to the minimum requirements of the applicable Zoning By-law.

The parking shortfall is intentional and supports several goals, including reduced auto dependency, increased transit use, and a more efficient use of urban land. Providing the full required supply would significantly increase development costs, undermine sustainability objectives, and occupy valuable space that could otherwise support public realm improvements or additional development potential.

The proposed parking supply will be allocated between the residential and daycare land uses within the development. Shared-use parking principles will be applied, recognizing the different temporal peaks in demand for residential and daycare users. For example, the spaces may be used by daycare users during the daytime and by residential visitors during the evening, maximizing the utility of the limited parking inventory.

A key component of the parking management strategy includes unbundling residential parking spaces from unit ownership. Instead of being included in the purchase price of a condominium unit, parking stalls will be sold or leased separately. This model encourages more informed decisions about vehicle ownership by exposing the true cost of parking infrastructure often exceeding \$80,000 to \$100,000 per stall in high-density developments. It also enhances housing affordability and appeals to a broader market, including residents who rely on transit, walk, or cycle as their primary mode of transportation.

The unbundled approach also allows developers and property managers to reserve limited parking for residents with specific needs, such as families with mobility requirements, off-peak shift workers, or individuals whose occupations require vehicle access. Management tools such as tiered pricing, lease-

based allocation, or digital reservation platforms may be employed to ensure flexible and efficient use over time.

To support the reduced parking supply and avoid spillover issues, additional TDM-supportive measures will be implemented, including real-time transit information displays. The surrounding area is primarily single-family residential, with limited sensitivity to potential off-site parking impacts. However, monitoring of parking demand post-occupancy may be implemented to inform any necessary adjustments.

The table below summarizes the proposed TDM measures, categorizing each as hard or soft, with a brief description, estimated costs, and the party responsible for implementation and upkeep:

Table 13 Recommended TDM Measures

TDM Measure	Type	Description	Estimated Cost	Responsible Party
Pedestrian Connectivity	Hard (Design)	On-site walkway network connecting buildings to public sidewalk; includes benches, lighting, landscaping to enhance walkability.	Part of development cost (integrated into site plan)	Developer – design and construct; Town – review at site plan
Bicycle Parking & Amenities	Hard (Facility)	Secure bicycle parking spaces (long-term indoor & short-term outdoor), plus a bike repair station and possibly showers for employees. These encourage cycling by providing convenient, safe bike storage and maintenance.	Included in development cost (bike rooms in garage, equipment ~\$2,000 for repair station)	Developer – install and fund
Unbundled Parking Sales	Soft (Policy)	Parking spaces sold/leased separately from units, to reveal true cost of parking. Residents who don't need a car can save money, reducing default car ownership.	No direct cost (may reduce parking revenue for developer, offset by unit affordability)	Developer – implement sales structure
Travel Information Package	Soft (Education)	New resident welcome package with transit maps, schedules, cycling info, TDM amenities guide, etc.. Educates and equips residents to use sustainable modes from day one.	~\$1,000 for print materials (for all units)	Developer – compile and distribute at sales and move-in; Property Mgmt – keep info up-to-date
Communication Strategy & Events	Soft (Education)	Ongoing outreach: e.g. 50% occupancy event to deliver TDM info and PRESTO cards, lobby notice boards, periodic emails about transit or biking tips. Maintains awareness and engagement.	~\$2,000 for event logistics and materials (e.g. venue setup, refreshments, guest speakers)	Developer/Property Mgmt – organize initial events & communications; Smart Commute/Halton Region – provide support and materials

TDM Measure	Type	Description	Estimated Cost	Responsible Party
Carpool/Rideshare Programs	Soft (Program)	Facilitate carpool matching for residents and encourage employer to promote carpooling among staff. Possibly join Smart Commute to access regional carpool tools and Guaranteed Ride Home.	Minimal cost (joining Smart Commute TMA may involve a fee if not covered by Region; outreach materials provided by TMA)	Property Mgmt – set up resident carpool board;
Marketing & Branding of TDM	Soft (Marketing)	Market the condo as a “transit-oriented community” in sales materials. Develop a TDM brand or identity for the project and incorporate TDM messaging in all communications. Host workshops or promotions like Bike Month events for residents.	Marketing included in sales budget; events <\$1,000/year	Developer’s Sales Team – incorporate TDM in marketing; Property Mgmt – continue outreach and events post-occupancy

11.3 Monitoring and Follow-Up Plan

To ensure the effectiveness of the TDM measures and to meet municipal expectations, a robust monitoring and follow-up program will be implemented. Monitoring allows the developer, the Town, and other stakeholders to track progress in shifting travel behaviour, and to make adjustments if certain strategies are not achieving the desired outcomes. It also provides accountability, demonstrating that the commitments made in this TDM Plan are being fulfilled over time.

Baseline Data Collection

The first step is establishing a baseline. Prior to occupancy or during the initial occupancy phase, the developer will compile baseline data such as the number of parking spaces sold/leased, initial resident demographics, if available from surveys, and maybe predicted mode split from the transportation study. Since travel patterns won’t stabilize until people have moved in and settled, the baseline for actual behaviour will likely be measured a short time after occupancy begins.

One approach is to conduct an initial travel survey at 3 to 6 months after substantial occupancy, perhaps when the building is around 50–70% occupied, aligning with the communications event. This survey would ask residents and employees about their primary commute mode, secondary modes, car ownership, use of transit incentives, etc. It can be done via an online questionnaire or paper form distributed with management’s help. The results will serve as the starting point to measure change against.

Follow-Up Travel Behaviour Surveys

A key recommendation is to conduct a comprehensive travel survey approximately one year after full occupancy. This post-occupancy survey will capture data on residents’ commuting modes, transit usage frequency, car ownership rates, usage of the on-site car-share, satisfaction with bike parking, etc. It can also gather feedback on the TDM measures. The survey should aim for a high response rate by using incentives like a prize draw to encourage participation. Importantly, the results should be analyzed and compared to either baseline or expected targets.

Ongoing Data Collection and Monitoring Metrics

Besides surveys, other metrics will be tracked continuously or periodically:

- The condominium's parking usage can be observed – e.g., are the 554 spaces fully utilized or are many empty indicating lower car ownership than expected? If visitor parking is frequently under pressure, that might indicate some residents still have more cars than spaces or visitors are using spots for overflow, which may need addressing.
- Management can monitor how full the bike rooms and racks get. If they are at capacity, it's a good sign; if mostly empty, maybe more encouragement for cycling is needed.
- Though hard to directly measure, the usage of the PRESTO cards could be inferred if some mechanism is in place, which sometimes can track engagement. At minimum, the number of cards distributed is known, and a follow-up survey can ask if they were used.
- The car-share provider can likely supply data on how often the vehicles on-site are being rented, membership numbers from the building, etc. This will show if the car-share program is popular or if additional vehicles are warranted.
- If feasible, periodic manual counts of how residents leave in the morning (how many walk to the bus vs. drive out of the garage) could be done by an observer at the site driveway, giving a direct mode share snapshot.

All these data points build a picture of the transportation outcomes. They should be compiled into a TDM Monitoring Report after one year of full occupancy.

Performance Targets and Adaptive Management

The TDM Plan has implicit goals (reduce car use, increase transit/bike use). It may be useful to set some quantitative targets for the sake of evaluation for example: "Transit mode share of at least 30% among residents by the end of Year 1" or "At least 50% of households with no more than one car." These can be based on Halton Region's mode share targets for the corridor and the assumptions used in the traffic impact study. If the follow-up survey and data show that targets are not being met (say transit share is only 20%), the plan will need to adapt. Adaptive management could include implementing additional TDM measures or strengthening existing ones: e.g., increasing the transit incentive, potentially arranging a shuttle service to a GO station if that was a missing link, or enforcing parking more rigorously to deter multiple car ownership. The monitoring process will involve identifying any such gaps and recommending corrective actions. Conversely, if the TDM measures are successful, it could open discussion with the Town to maybe allow some parking spaces to be repurposed (for storage, more bike parking, etc.) illustrating a flexible approach to optimize the use of space based on actual demand.

Long-Term Oversight

After the initial intensive monitoring in the first couple of years post-occupancy, the responsibility for ongoing TDM management generally shifts to the condominium corporation (for residential) and the property management (for the commercial portion). The condo board may establish a committee or assign management staff to continue tracking key metrics annually (like an annual resident travel survey or simply keeping tabs on parking and bike room usage). They can also maintain the relationship with Smart Commute or any TMA to keep receiving support. The Town of Oakville and Halton Region might request updates at certain intervals (for example, a 3-year or 5-year follow-up survey) to see if mode shares are holding as development in the area continues. The development's conditions of approval may stipulate that some reporting is sent to the Town/Region, which will be complied with by the developer/property manager accordingly.

12. Pedestrian and Cycling Circulation Plan

A pedestrian and cycling circulation plan was prepared for the subject site, shown in **Figure 18**, and identifies the internal site circulation as well as the existing pedestrian sidewalks, bike routes, park and woodland trails, and transit stops in close proximity to the subject site.



Figure 18 Pedestrian and Cycling Circulation Plan

13. Vehicle Swept Path Analysis

GHD completed a vehicle swept path analysis to evaluate internal site circulation and confirm that the proposed site layout can accommodate the turning requirements of key design vehicles, including a fire/emergency services vehicle, a medium single-unit (MSU) truck, a waste collection vehicle, and a standard passenger vehicle. The swept path simulations were conducted using AutoTURN software and plots of the simulations are included in **Appendix G**. The results demonstrate that all design vehicles can maneuver through the site, including at loading areas, drive aisles, and access points, without encroachment or operational conflict. These findings confirm that the proposed site layout meets functional circulation requirements and is consistent with municipal and emergency access design guidelines.

14. Pavement Marking and Signage Plan

GHD prepared a pavement marking and signage plan for the subject site identifying all required pavement markings and signage. The pavement marking and signage plan is provided in **Appendix I**.

15. Conclusion

A site plan prepared for the subject site consists of a six-storey residential building containing 190 rental apartment units, 3,000 ft² of daycare GFA, and 1,200 ft² of office GFA. Based on ITE Trip Generation rates, the subject site is expected to generate a total of 99 two-way vehicle trips during the a.m. peak hour consisting of 36 inbound and 63 outbound trips. During the p.m. peak hour, it is expected to generate 105 new two-way vehicle trips consisting of 56 inbound and 49 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2028 future background conditions, with the addition of corridor growth and background development traffic, all intersections are reported to operate at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2028 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2033 future background conditions, with the addition of corridor growth and background development traffic, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movement:

- Sixth Line and McCraney St
 - The overall intersection with a v/c ratio of 0.85 LOS C during the a.m. peak hour
 - The southbound left-turn movement with a v/c ratio of 0.95 LOS D during the a.m. peak hour

Under the 2033 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movement:

- Sixth Line and McCraney St
 - The overall intersection with a v/c ratio of 0.88 LOS C during the a.m. peak hour
 - The southbound left-turn movement with a v/c ratio of 0.99 LOS D during the a.m. peak hour

While the overall intersection of Sixth Line and McCraney Street as well as its southbound left-turn movement are reported to operate at critical levels during the a.m. peak hour beginning under future background conditions, GHD optimized the signal timings for the intersection. Based on the optimized signal timings, the intersection is no longer reported to operate at critical levels under both 2033 future background and future total conditions.

The subject site is required to provide a minimum of 205 parking spaces (including 2 barrier free spaces) and 30 bicycle parking spaces.

The subject site provides a total of 103 parking spaces, 73 resident spaces, 18 visitor spaces, 7 daycare spaces and 5 office spaces. Of the total parking supply, 8 spaces are barrier free. The site also includes 42 bicycle parking spaces, and 1 loading space. All Zoning By-law requirements are satisfied with the exception of vehicular parking spaces for the affordable housing land use.

The proposed parking supply is appropriate for an affordable housing development, as residents have lower vehicle ownership and rely more on transit, cycling, and walking. TDM measures are proposed for the subject site to encourage residents to explore various modes of transportation to reduce their dependency on single occupancy vehicle trips. These measures include active transportation connections, distribution of educational material on local mode choices and active transportation.

TDM measures are proposed for the subject site to encourage residents to explore various modes of transportation in order to reduce their dependency on single occupancy vehicle trips. These measures include active transportation connections, distribution of educational material on local mode choices and active transportation.

GHD assessed the site circulation for an emergency vehicle, a waste collection vehicle, an MSU truck, and a passenger vehicle and confirmed no issues with on-site circulation.

Appendix A

Terms of Reference

Raf Andrenacci

From: Martin Chan <Martin.Chan@oakville.ca>
Sent: Friday, June 20, 2025 3:18 PM
To: Raf Andrenacci
Cc: Syed Rizvi; Khalil Barakzai; Will Maria
Subject: FW: [EXTERNAL] Terms of Reference - 1493 Sixth Line

You don't often get email from martin.chan@oakville.ca. [Learn why this is important](#)

Hi Raf, Will,

Responses are included in red below.

Thanks!
Martin

From: Syed Rizvi <syed.rizvi@oakville.ca>
Sent: Wednesday, June 18, 2025 9:39 AM
To: Raf Andrenacci <raf.andrenacci@ghd.com>
Cc: Khalil Barakzai <Khalil.Barakzai@oakville.ca>; Martin Chan <Martin.Chan@oakville.ca>; 'Will Maria' <william.maria@ghd.com>
Subject: FW: [EXTERNAL] Terms of Reference - 1493 Sixth Line

Hi Raf,

Thank you for your email and attached aerial view of the site. Based on the location, the proposed site falls within the East District of the Town.

I've copied Martin Chan, Transportation Engineer for the East District, to review and provide comments on the Terms of Reference for the Transportation Impact Study.

Thanks,
Syed

Syed Rizvi, M.Sc., P. Eng
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 3981 | www.oakville.ca

Vision: A vibrant and livable community for all

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<http://www.oakville.ca/privacy.html>

From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: Monday, June 16, 2025 1:21 PM
To: Syed Rizvi <syed.rizvi@oakville.ca>; Khan, Ayesha <ayesha.khan@halton.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: [EXTERNAL] Terms of Reference - 1493 Sixth Line

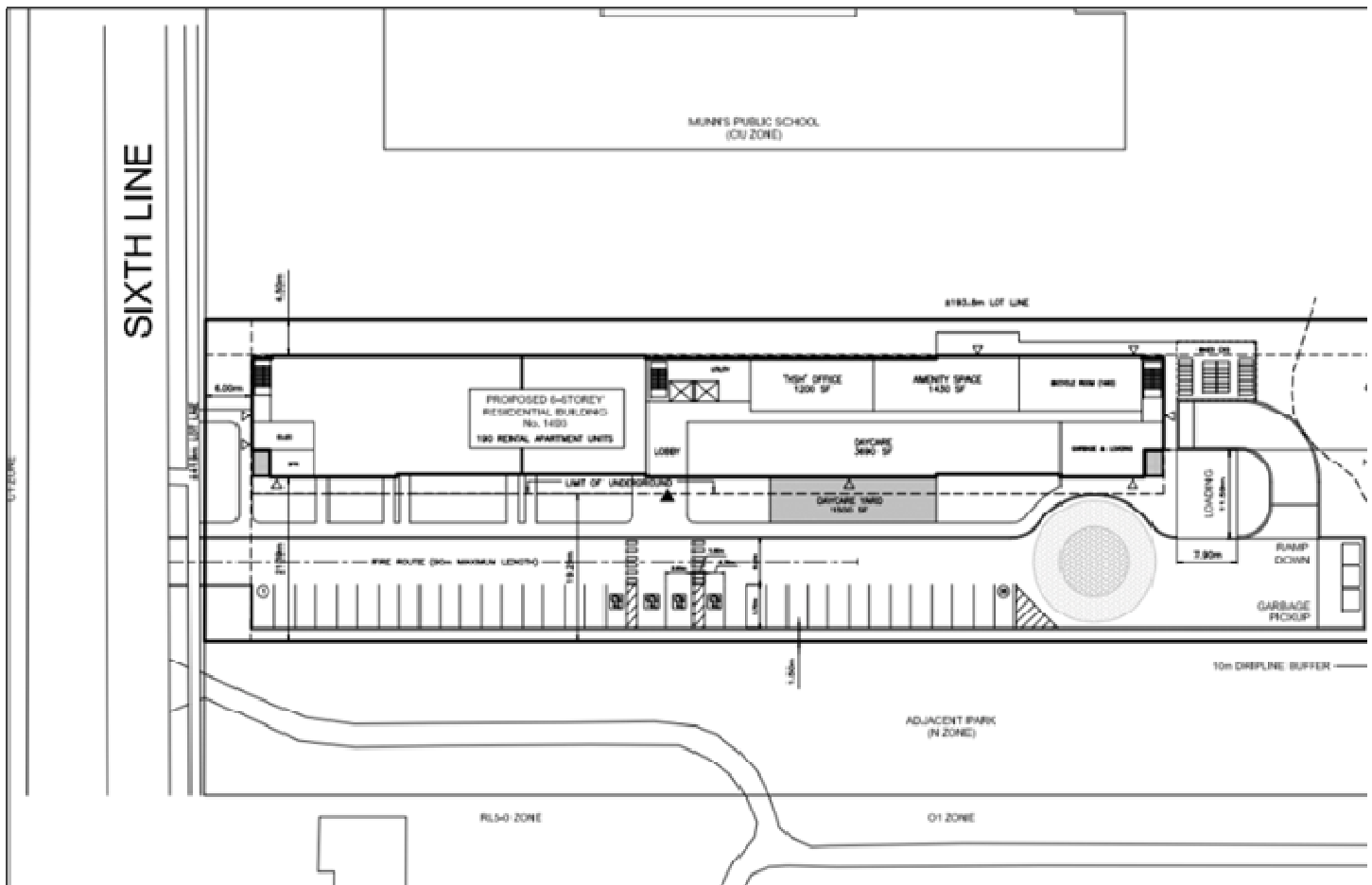
Hello,

GHD Inc. has been retained to prepare a Transportation Impact Study in support of an Official Plan Amendment, Zoning By-law Amendment, and Site Plan Application for the lands municipally known as 1493 Sixth Line in the Town of Oakville.



The proposed development consists of a six-storey mixed use development consisting of 190 affordable housing rental apartments and a 342 m² daycare facility.

Access is proposed via a single full-moves access on Sixth Line.



In order to properly scope this project, we ask that the Town review and provide comments on the following scope and confirm if there are any additional items required as part of the study.

Study intersections

- Existing
 - Upper Middle Road and Sixth Line
 - Sixth Line and Elm Road
 - Given proximity to White Oaks Secondary School, please include:
 - Sixth Line and McCraney St
 - Sixth Line and Miller Road
- Future/Proposed
 - Sixth Line and the proposed site access

Traffic Data

Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours.

Ensure that traffic counts are not conducted during the long weekends or the summer school break.

Study Peak Hours

Weekday a.m. and p.m. peak hours

Weekday peak period counts should be conducted between 6:30 a.m. to 9:00 a.m., and 4:00 p.m. to 6:30 p.m.

Study Horizon Year

2025 (existing), 2028 (anticipated year of build-out) and 2033 (five years post build-out).

Background Growth Rate

Consistent with the background development identified below, GHD proposes to use a 2% per annum growth rate along Regional roads and 1% per annum along Municipal roadways.

Please reach out to Halton Region to ensure the growth rate along Upper Middle is supportable.

Background Development Traffic

GHD reviewed the Town's development application and identified the proposed development 1105 McCraney Street East as a background development. Town staff to confirm if any additional developments should be included as background developments.

Please add 1295 Sixth Line.

Trip Generation

Will be completed using rates published by the ITE Trip Generation 11th Edition.

The directional distribution of traffic approaching and departing the site will be determined based on TTS 2016/2022 data, existing local patterns and first principles.

Please include the excerpts of the TTS data and rationale for the trip distributions. Distributions between residential and the daycare are expected to be different.

The analysis will identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

- Please review existing, future background and future total conditions using Synchro 10 or newer to separately identify background improvements and site warranted improvements.
- 95th percentile queues should be identified using Sim Traffic 10 or newer, over 3 runs, seed time of 15 minutes, simulated over the peak hour.
- Should geometric improvements be required, conceptual drawing(s) should be submitted with the TIS to help determine the feasibility of the proposed improvements.

TAC and Town guidelines will be reviewed in order to complete an access management.

Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

- Ensure the above site access review are consistent with the applicable Town standards or TAC GDGCR requirements.

Traffic Safety

- Please include sight distance review of the proposed site access using TAC GDGCR.
- It appears the proposed access may be offset from the existing commercial access across Sixth Line. Please review and comment on potential conflicts and/or safety issue.
- Review collision history of the last 5 years to determine if there are existing traffic safety issues.

TDM

- Site Specific TDM Measures should be evaluated to reduce single occupancy vehicular trips and promote alternative transportation mode.
- Separate measures should be considered for the residential portion of the development, and the daycare portion of the development.

Parking and Loading Review

- A parking and loading summary table shall be included to demonstrate compliance with Zoning By-law.

Vehicle Turning Diagrams

- Must be provided to include circulation of design vehicles such as p-cars, delivery trucks, waste collection vehicles, fire trucks etc.
- Please identify additional site-specific design vehicles, if applicable to the proposed site operations.

Pavement Marking and Signage Drawing (PMSP), and Pedestrian/Sidewalk Plan

- Required for Site Plan Application

If the above scope is acceptable to the Town, it will form the basis of our scope of work.

Thank you,
Raf

Rafael Andrenacci
Transportation Planner

GHD Ltd.

T: 905 814 4386 | E: raf.andrenacci@ghd.com

100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | www.ghd.com

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Raf Andrenacci

From: Khan, Ayesha <Ayesha.Khan@halton.ca>
Sent: Wednesday, June 18, 2025 3:04 PM
To: Raf Andrenacci
Cc: Will Maria
Subject: RE: Terms of Reference - 1493 Sixth Line

Hi Raf,

I have completed my review of your proposed Terms of Reference and find it satisfactory. Please proceed with the study as outlined below.

I'm sure you already have this, but if you require any Regional information (traffic counts, signal timing), they can be obtained from Halton through a request to our Road Operations staff at accesshalton@halton.ca

Thanks,
Ayesha

Ayesha Khan

Project Manager I – Transportation Development Review

Development Services

Public Works

Halton Region

905-825-6000, ext. | 1-866-442-5866



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Sent: Monday, June 16, 2025 1:21 PM
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Cc: Will Maria <William.Maria@ghd.com>
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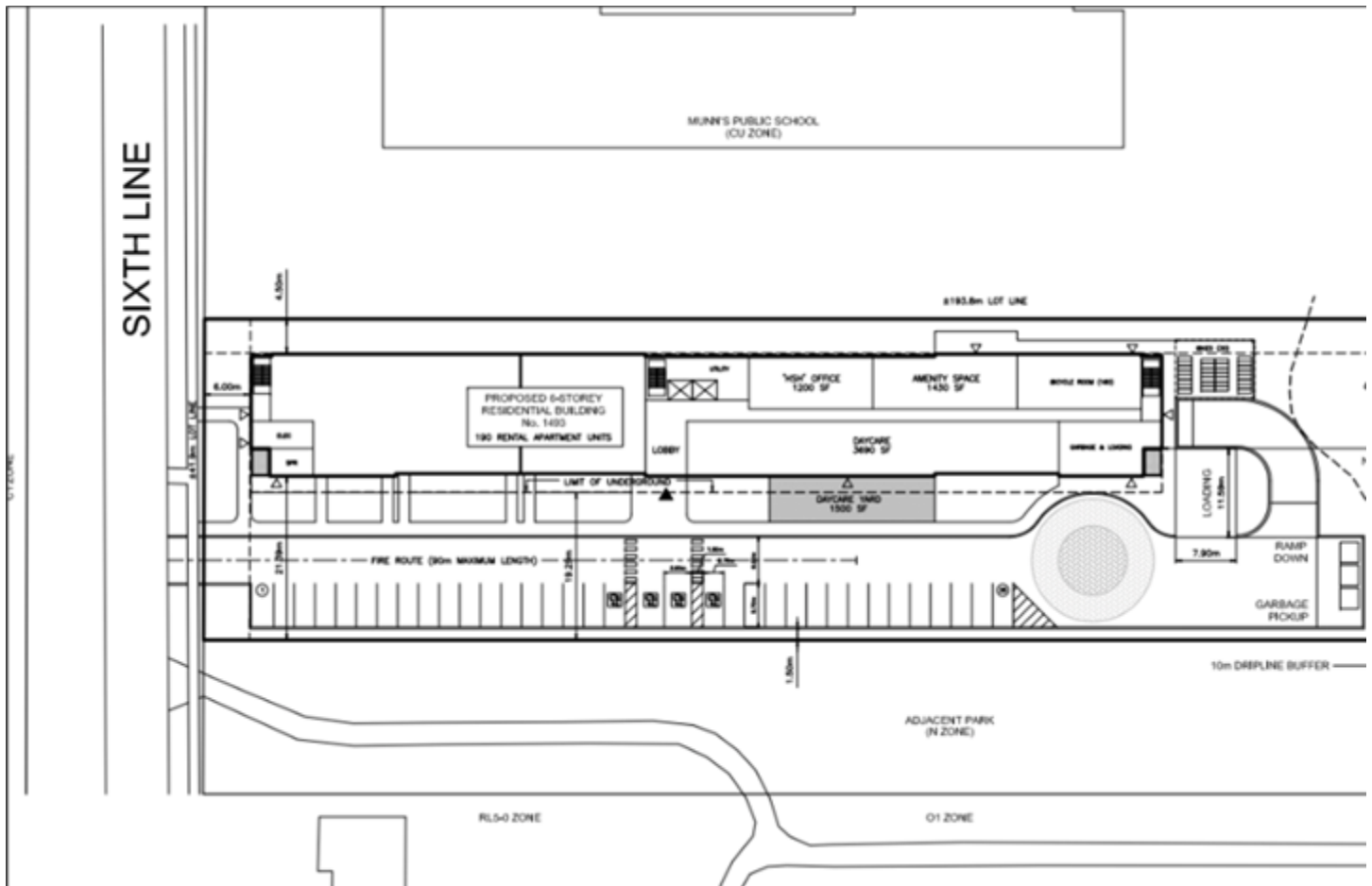
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Thank you,
Raf

Rafael Andrenacci
Transportation Planner

GHD Ltd.

T: 905 814 4386 | E: raf.andrenacci@ghd.com

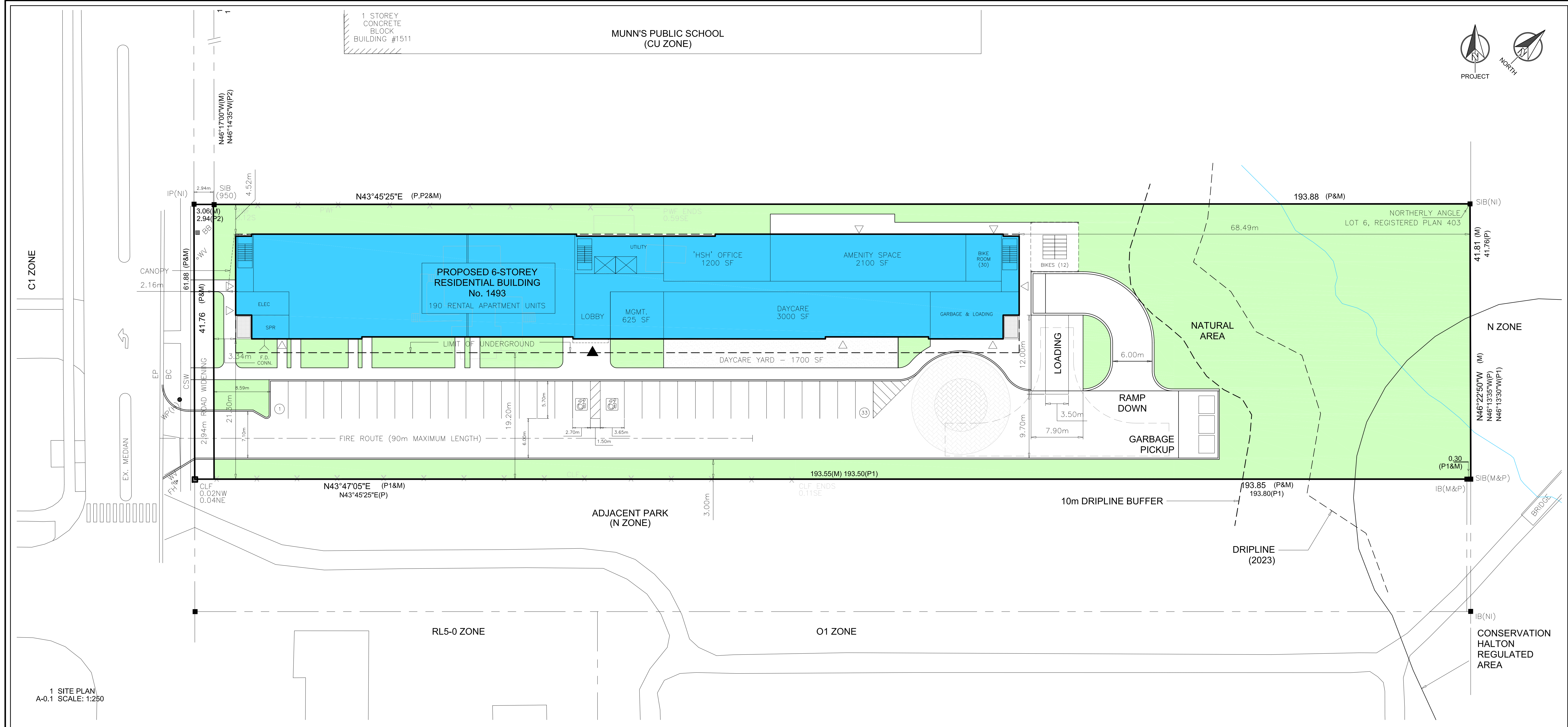
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Appendix B

Site Plan



1 SITE PLAN
A-0.1 SCALE: 1:250

RH ZONE REQUIREMENTS

REQUIREMENT	PROPOSED
Minimum lot area*	1,858.0 m ²
Minimum lot frontage	24.0 m
Minimum front yard*	7.5 m
Minimum interior side yard (north)	4.5 m
Minimum interior side yard (south)	4.5 m
Minimum rear yard	7.5 m
Maximum height	n/a
Maximum lot coverage*	35%
Minimum landscaping coverage*	10%
Landscape buffer adjacent parking area	3.0 m

*based on total lot area (less widening). No deduction for natural area or buffer.

PROPOSED 6-STOREY RESIDENTIAL HOUSING

LOT AREA	GROSS FLOOR AREA
GROSS AREA	8,092.4 m ² (0.8092 ha)
ROAD WIDENING	122.6 m ² (0.0123 ha)
LOT AREA:	7,969.8 m ² (0.7969 ha)
NATURAL AREA + 10m BUFFER	1,803.6 m ² (0.1804 ha)
NET LOT AREA:	6,166.2 m ² (0.6166 ha)
6th FLOOR	1,852.5 m ² 19,940 sf
5th FLOOR	1,852.5 m ² 19,940 sf
4th FLOOR	1,852.5 m ² 19,940 sf
3rd FLOOR	1,852.5 m ² 19,940 sf
2nd FLOOR	1,852.5 m ² 19,940 sf
1st FLOOR	1,852.5 m ² 19,940 sf
TOTAL	11,115.0 m ² 119,640 sf

UNIT BREAKDOWN

6th FLOOR	27 1br, 7 2br, 1 3br = 35
5th FLOOR	27 1br, 7 2br, 1 3br = 35
4th FLOOR	27 1br, 7 2br, 1 3br = 35
3rd FLOOR	27 1br, 7 2br, 1 3br = 35
2nd FLOOR	27 1br, 7 2br, 1 3br = 35
1st FLOOR	11 1br, 4 2br, 0 3br = 15
TOTAL	146 1br, 39 2br, 5 3br = 190 UNITS @ 0.6166 ha = 308 uph

ACCESSIBLE UNITS

1br UNITS	40 (70%)
2br UNITS	17 (30%)
TOTAL	57 (30% OF 190)

RENTABLE AREA

146 1br @ 415 = 60,590 sf
39 2br @ 600 = 23,400 sf
5 3br @ 850 = 4,250 sf
TOTAL = 88,240 sf

PARKING

190 RENTAL UNITS @ 0.47 = 90 SPACES
450 m ² OFFICE & DAYCARE @ 1/35 = 13 SPACES
TOTAL = 103 PARKING SPACES
70 SPACES PROVIDED UNDERGROUND (2,142.0 m ² , 23,055 sf)
33 SPACES ON SURFACE
ACCESSIBLE PARKING @ 1, PLUS 3% = 5 REQUIRED, 6 PROVIDED

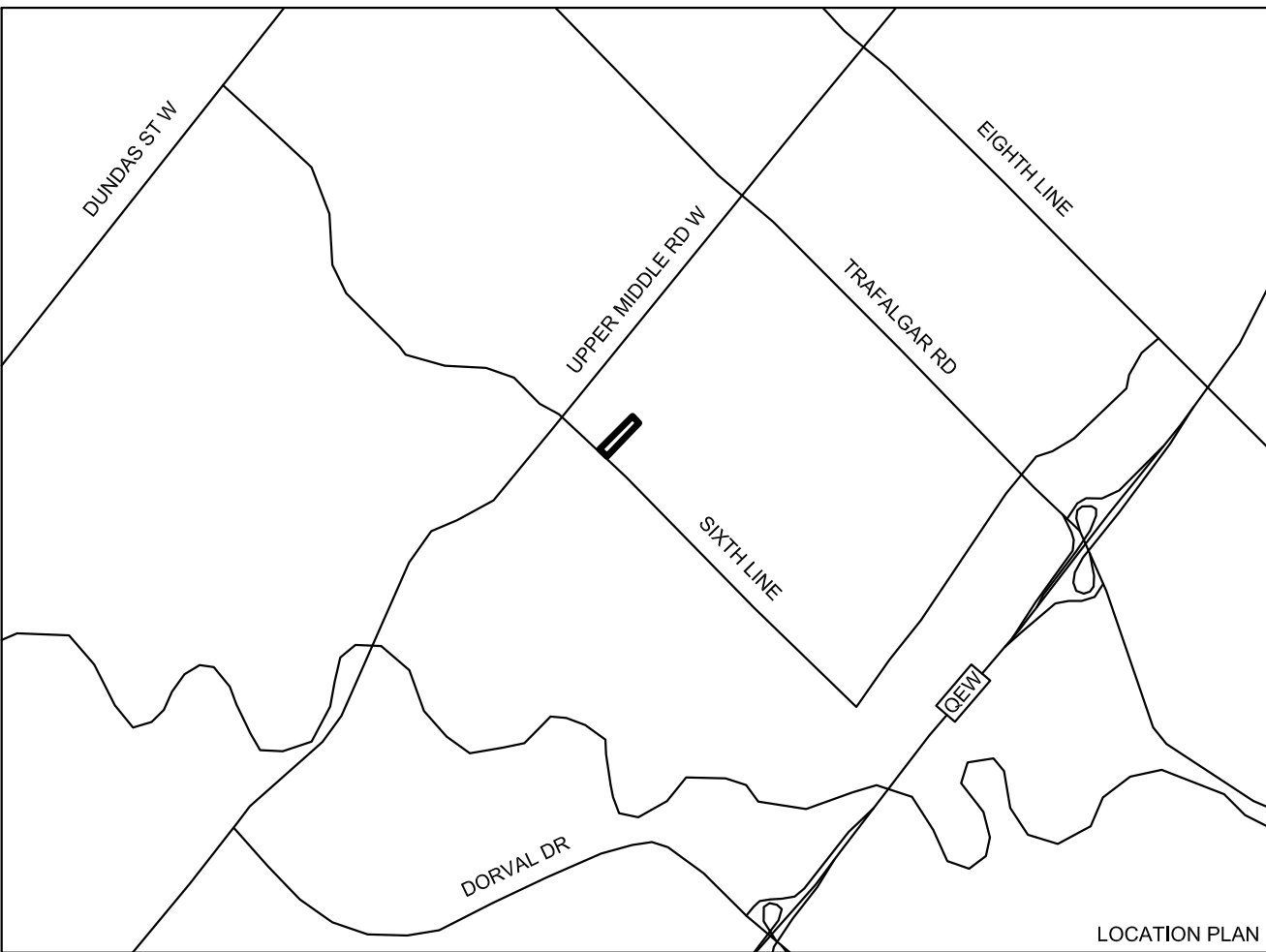
FLOOR AREA BREAKDOWN

FLOOR AREA, RESIDENTIAL	10,665.0 m ²	114,815 sf
INCLUDES AREA OF ALL SUITES (INCLUDING EXTERIOR WALLS, CORRIDORS, STAIRS, ELEVATORS, LOBBY, ABOVE GRADE SERVICE ROOMS AND RESIDENTIAL AMENITY AREAS)		
FLOOR AREA, NON-RESIDENTIAL	450.0 m ²	4,825 sf
INCLUDES 1st FLOOR AREAS DEDICATED TO 'HSH' OFFICE, DAYCARE, AND MANAGEMENT OFFICE		

FLOOR AREA, GROSS	11,115.0 m ²	119,640 sf
-------------------	-------------------------	------------

ADDITIONAL FLOOR AREAS (NOT INCLUDED IN GROSS AREA)

BASEMENT PARKING LEVEL	2,142.0 m ²	23,055 sf
MECHANICAL PENTHOUSE	82.2 m ²	885 sf



pml.A

patrick markus luckie, Architect
7203 BENDIGO CIRCLE - MISSISSAUGA, ON L4W 1Z4 • TEL: 416 855 0100

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Do not write this drawing
This drawing shall not be used for construction purposes unless counterchecked
Patrick Markus Luckie Architect

BLACK DOG
DEVELOPMENT

PENALTA

Revisions:	
	Particulars:

Particulars:	
07.25	ISSUED FOR REVIEW
08.25	ISSUED FOR APPLICATION

SIXTH LINE
AFFORDABLE HOUSING

1403 SIXTH LINE, OAKVILLE

SITE PLAN

SCALE 1:250

A-0.1

Appendix C

Traffic Data



Turning Movement Count (2 . SIXTH LINE & ELM RD) MioID: 1314193

Start Time	N Approach SIXTH LINE					S Approach SIXTH LINE					W Approach ELM RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	U-Turn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Left W:N	U-Turn W:W	Peds W:	Approach Total		
2025-06-24 06:30:00	0	23	0	1	23	10	1	0	0	11	2	0	0	0	2	36	
2025-06-24 06:45:00	1	32	0	0	33	25	2	0	0	27	8	2	0	0	10	70	
2025-06-24 07:00:00	1	27	0	1	28	22	1	0	1	23	8	0	0	1	8	59	
2025-06-24 07:15:00	1	47	0	0	48	35	2	0	0	37	22	2	0	2	24	109	274
2025-06-24 07:30:00	0	107	0	0	107	58	3	0	0	61	22	0	0	2	22	190	428
2025-06-24 07:45:00	1	118	0	5	119	70	8	0	0	78	34	1	0	3	35	232	590
2025-06-24 08:00:00	1	163	0	6	164	125	12	0	0	137	39	3	0	5	42	343	874
2025-06-24 08:15:00	0	158	0	6	158	137	6	0	0	143	35	4	0	1	39	340	1105
2025-06-24 08:30:00	1	68	0	4	69	113	11	0	0	124	32	0	0	4	32	225	1140
2025-06-24 08:45:00	1	81	0	1	82	64	9	0	0	73	21	2	0	0	23	178	1086
BREAK																	
2025-06-24 16:00:00	5	76	0	3	81	82	5	0	0	87	19	3	0	4	22	190	
2025-06-24 16:15:00	4	58	0	0	62	71	7	0	0	78	16	0	0	1	16	156	
2025-06-24 16:30:00	2	71	0	1	73	82	14	0	0	96	18	1	0	4	19	188	
2025-06-24 16:45:00	3	81	0	1	84	92	7	0	0	99	16	3	0	0	19	202	736
2025-06-24 17:00:00	1	64	0	0	65	92	6	0	1	98	12	2	0	5	14	177	723
2025-06-24 17:15:00	1	91	0	4	92	88	15	0	0	103	20	0	0	1	20	215	782
2025-06-24 17:30:00	3	86	0	0	89	114	10	0	0	124	13	2	0	3	15	228	822
2025-06-24 17:45:00	4	86	0	2	90	121	13	0	0	134	17	2	0	2	19	243	863
2025-06-24 18:00:00	2	79	0	0	81	104	6	0	0	110	11	3	0	3	14	205	891
2025-06-24 18:15:00	1	80	0	1	81	108	11	0	0	119	22	2	0	4	24	224	900
Grand Total	33	1596	0	36	1629	1613	149	0	2	1762	387	32	0	45	419	3810	-
Approach%	2%	98%	0%		-	91.5%	8.5%	0%		-	92.4%	7.6%	0%		-	-	-
Totals %	0.9%	41.9%	0%		42.8%	42.3%	3.9%	0%		46.2%	10.2%	0.8%	0%		11%	-	-
Heavy	2	64	0		-	59	13	0		-	15	1	0		-	-	-
Heavy %	6.1%	4%	0%		-	3.7%	8.7%	0%		-	3.9%	3.1%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (26 °C)

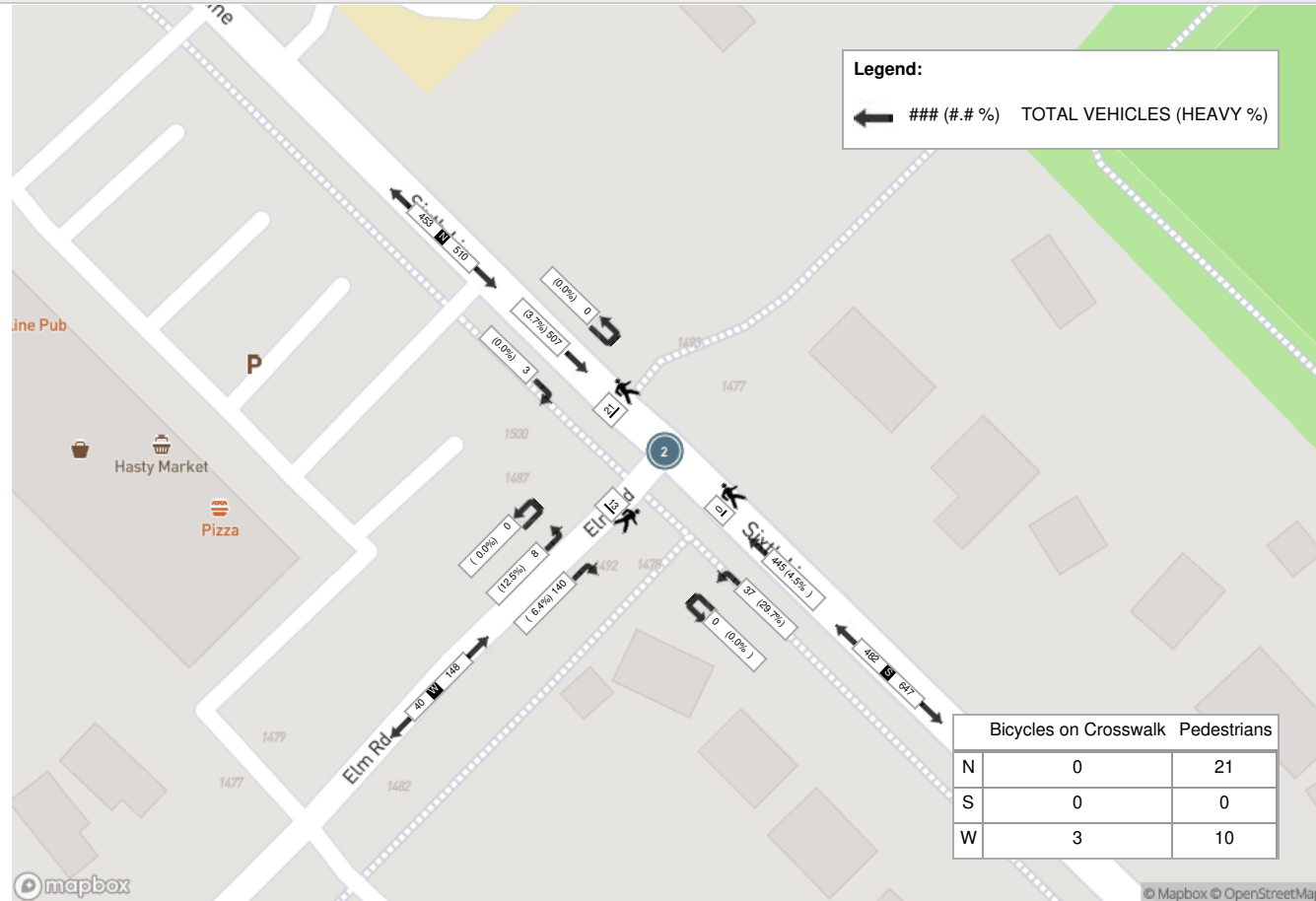
Start Time	N Approach SIXTH LINE					S Approach SIXTH LINE					W Approach ELM RD					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
2025-06-24 07:45:00	1	118	0	5	119	70	8	0	0	78	34	1	0	3	35	232
2025-06-24 08:00:00	1	163	0	6	164	125	12	0	0	137	39	3	0	5	42	343
2025-06-24 08:15:00	0	158	0	6	158	137	6	0	0	143	35	4	0	1	39	340
2025-06-24 08:30:00	1	68	0	4	69	113	11	0	0	124	32	0	0	4	32	225
Grand Total	3	507	0	21	510	445	37	0	0	482	140	8	0	13	148	1140
Approach%	0.6%	99.4%	0%		-	92.3%	7.7%	0%		-	94.6%	5.4%	0%		-	-
Totals %	0.3%	44.5%	0%		44.7%	39%	3.2%	0%		42.3%	12.3%	0.7%	0%		13%	-
PHF	0.75	0.78	0		0.78	0.81	0.77	0		0.84	0.9	0.5	0		0.88	0.83
Heavy	0	19	0		19	20	11	0		31	9	1	0		10	60
Heavy %	0%	3.7%	0%		3.7%	4.5%	29.7%	0%		6.4%	6.4%	12.5%	0%		6.8%	5.3%
Lights	3	486	0		489	422	26	0		448	130	7	0		137	1074
Lights %	100%	95.9%	0%		95.9%	94.8%	70.3%	0%		92.9%	92.9%	87.5%	0%		92.6%	94.2%
Single-Unit Trucks	0	3	0		3	2	0	0		2	2	0	0		2	7
Single-Unit Trucks %	0%	0.6%	0%		0.6%	0.4%	0%	0%		0.4%	1.4%	0%	0%		1.4%	0.6%
Buses	0	16	0		16	18	11	0		29	7	1	0		8	53
Buses %	0%	3.2%	0%		3.1%	4%	29.7%	0%		6%	5%	12.5%	0%		5.4%	4.6%
Bicycles on Road	0	2	0		2	3	0	0		3	1	0	0		1	6
Bicycles on Road %	0%	0.4%	0%		0.4%	0.7%	0%	0%		0.6%	0.7%	0%	0%		0.7%	0.5%
Pedestrians	-	-	-	21	-	-	-	-	0	-	-	-	-	10	-	-
Pedestrians%	-	-	-	61.8%	-	-	-	-	0%	-	-	-	-	29.4%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	8.8%	-	-



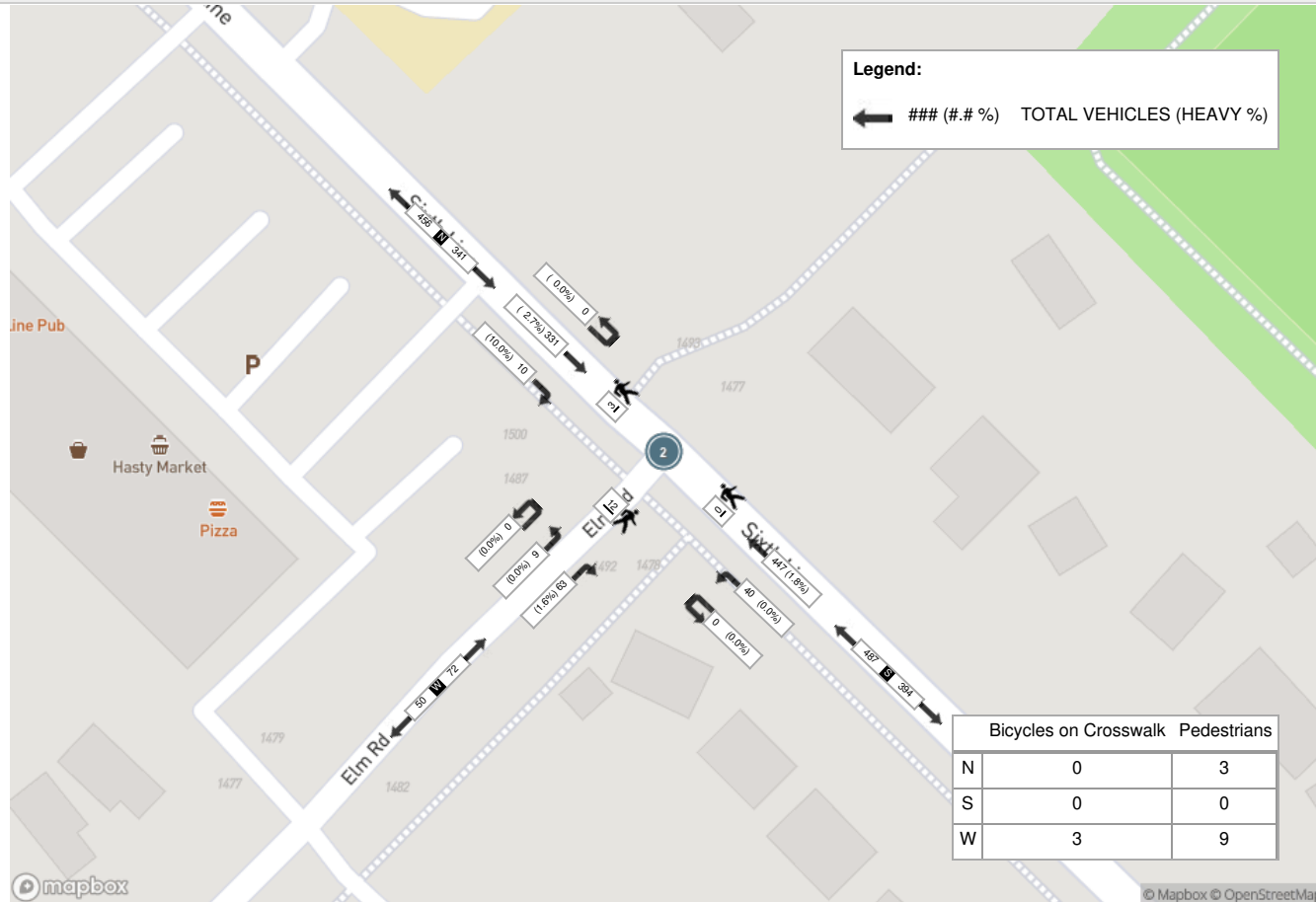
Peak Hour: 05:30 PM - 06:30 PM Weather: Overcast Clouds (34 °C)

Start Time	N Approach SIXTH LINE					S Approach SIXTH LINE					W Approach ELM RD					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
2025-06-24 17:30:00	3	86	0	0	89	114	10	0	0	124	13	2	0	3	15	228
2025-06-24 17:45:00	4	86	0	2	90	121	13	0	0	134	17	2	0	2	19	243
2025-06-24 18:00:00	2	79	0	0	81	104	6	0	0	110	11	3	0	3	14	205
2025-06-24 18:15:00	1	80	0	1	81	108	11	0	0	119	22	2	0	4	24	224
Grand Total	10	331	0	3	341	447	40	0	0	487	63	9	0	12	72	900
Approach%	2.9%	97.1%	0%		-	91.8%	8.2%	0%		-	87.5%	12.5%	0%		-	-
Totals %	1.1%	36.8%	0%		37.9%	49.7%	4.4%	0%		54.1%	7%	1%	0%		8%	-
PHF	0.63	0.96	0		0.95	0.92	0.77	0		0.91	0.72	0.75	0		0.75	0.93
Heavy	1	9	0		10	8	0	0		8	1	0	0		1	19
Heavy %	10%	2.7%	0%		2.9%	1.8%	0%	0%		1.6%	1.6%	0%	0%		1.4%	2.1%
Lights	9	319	0		328	436	40	0		476	62	9	0		71	875
Lights %	90%	96.4%	0%		96.2%	97.5%	100%	0%		97.7%	98.4%	100%	0%		98.6%	97.2%
Single-Unit Trucks	1	4	0		5	3	0	0		3	1	0	0		1	9
Single-Unit Trucks %	10%	1.2%	0%		1.5%	0.7%	0%	0%		0.6%	1.6%	0%	0%		1.4%	1%
Buses	0	5	0		5	5	0	0		5	0	0	0		0	10
Buses %	0%	1.5%	0%		1.5%	1.1%	0%	0%		1%	0%	0%	0%		0%	1.1%
Bicycles on Road	0	3	0		3	3	0	0		3	0	0	0		0	6
Bicycles on Road %	0%	0.9%	0%		0.9%	0.7%	0%	0%		0.6%	0%	0%	0%		0%	0.7%
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	9	-	-
Pedestrians%	-	-	-	20%	-	-	-	-	0%	-	-	-	-	60%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	20%	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (26 °C)



Peak Hour: 05:30 PM - 06:30 PM Weather: Overcast Clouds (34 °C)





Turning Movement Count (3 . SIXTH LINE & MCCRANEY ST) MId: 1314194

Start Time	N Approach SIXTH LINE						E Approach MCCRANEY ST						S Approach SIXTH LINE						W Approach MCCRANEY ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	U-Turn N-N	Peds N:	Approach Total	Right E-N	Thru E-W	Left E-S	U-Turn E-E	Peds E:	Approach Total	Right S-E	Thru S-N	Left S-W	U-Turn S-S	Peds S:	Approach Total	Right W-S	Thru W-E	Left W-N	U-Turn W-W	Peds W:	Approach Total		
2025-06-24 06:30:00	1	21	8	0	0	30	1	1	0	0	1	2	2	6	0	0	0	8	3	4	4	0	2	11	51	
2025-06-24 06:45:00	1	35	13	0	0	49	5	1	2	0	2	8	0	18	0	0	0	18	3	2	4	0	1	9	84	
2025-06-24 07:00:00	2	19	17	0	1	38	2	1	0	0	0	3	1	12	1	0	0	14	4	6	4	0	1	14	69	
2025-06-24 07:15:00	1	51	22	0	0	74	7	4	2	0	0	13	1	24	2	0	3	27	6	5	6	0	4	17	131	335
2025-06-24 07:30:00	2	55	70	0	0	127	22	1	0	0	1	23	3	32	2	0	0	37	4	1	6	0	3	11	198	482
2025-06-24 07:45:00	2	58	103	0	5	163	57	4	7	0	1	68	9	18	1	0	0	28	2	2	2	0	4	6	265	663
2025-06-24 08:00:00	1	58	131	0	4	190	98	4	8	0	2	110	19	39	1	0	2	59	6	1	2	0	2	9	368	962
2025-06-24 08:15:00	1	57	161	0	8	219	116	4	13	0	4	133	14	24	1	0	5	39	3	4	6	0	3	13	404	1235
2025-06-24 08:30:00	6	58	57	0	5	121	66	2	2	0	1	70	4	46	2	0	4	52	3	9	11	0	4	23	266	1303
2025-06-24 08:45:00	4	66	43	0	4	113	35	12	3	0	6	50	1	39	0	0	3	40	4	8	6	0	1	18	221	1259
BREAK																										
2025-06-24 16:00:00	11	74	10	0	2	95	31	6	3	0	0	40	4	50	3	0	3	57	2	3	7	0	0	12	204	
2025-06-24 16:15:00	1	52	13	0	2	66	24	4	1	0	2	29	3	48	6	0	2	57	3	4	7	0	0	14	166	
2025-06-24 16:30:00	4	68	16	0	2	88	37	2	8	0	1	47	4	58	4	0	2	66	5	3	7	0	1	15	216	
2025-06-24 16:45:00	10	74	11	0	3	95	25	8	1	0	4	34	5	70	3	0	7	78	3	2	4	0	0	9	216	802
2025-06-24 17:00:00	5	57	14	0	0	76	26	6	3	0	0	35	3	72	0	0	3	75	2	1	9	0	2	12	198	796
2025-06-24 17:15:00	15	68	18	0	3	101	34	5	1	0	2	40	2	69	3	0	2	74	1	5	5	0	2	11	226	856
2025-06-24 17:30:00	4	78	17	0	0	99	36	2	0	0	1	38	3	86	1	1	0	91	2	4	4	0	5	10	238	878
2025-06-24 17:45:00	11	71	19	0	1	101	41	8	3	0	1	52	4	83	2	0	0	89	3	0	4	0	0	7	249	911
2025-06-24 18:00:00	12	55	20	0	0	87	26	9	3	0	3	38	1	66	3	0	2	70	4	3	10	0	0	17	212	925
2025-06-24 18:15:00	9	65	19	0	1	93	34	4	5	0	1	43	2	71	1	0	0	74	3	3	6	0	0	12	222	921
Grand Total	103	1140	782	0	41	2025	723	88	65	0	33	876	85	931	36	1	38	1053	66	70	114	0	35	250	4204	-
Approach%	5.1%	56.3%	38.6%	0%	-	-	82.5%	10%	7.4%	0%	-	-	8.1%	88.4%	3.4%	0.1%	-	-	26.4%	28%	45.6%	0%	-	-	-	-
Totals %	2.5%	27.1%	18.6%	0%	-	48.2%	17.2%	2.1%	1.5%	0%	-	20.8%	2%	22.1%	0.9%	0%	-	25%	1.6%	1.7%	2.7%	0%	-	5.9%	-	-
Heavy	1	30	44	0	-	-	41	2	2	0	-	-	3	26	0	0	-	-	0	0	0	0	-	-	-	-
Heavy %	1%	2.6%	5.6%	0%	-	-	5.7%	2.3%	3.1%	0%	-	-	3.5%	2.8%	0%	0%	-	-	0%	0%	0%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (26 °C)

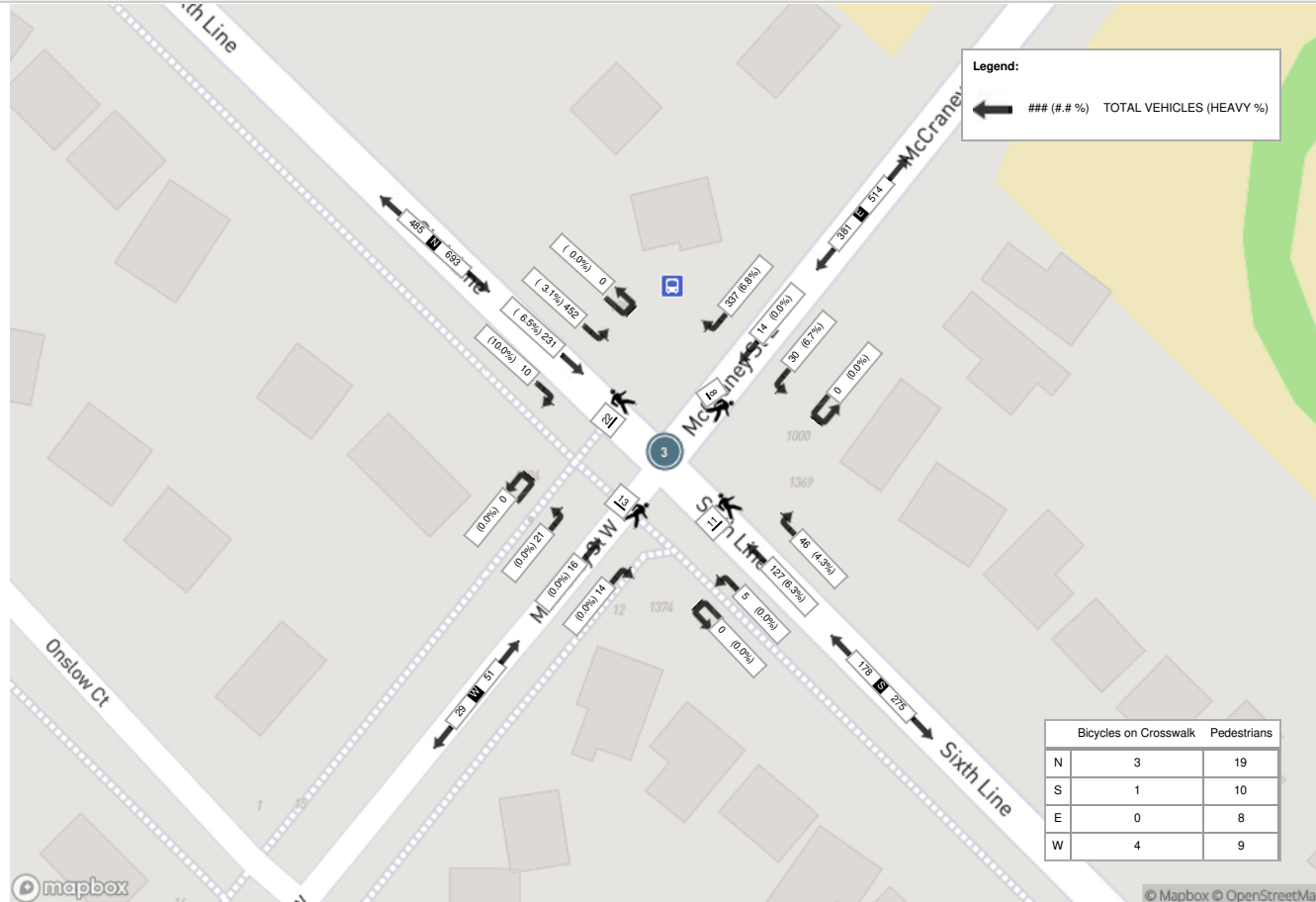
Start Time	N Approach SIXTH LINE						E Approach MCCRANEY ST						S Approach SIXTH LINE						W Approach MCCRANEY ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2025-06-24 07:45:00	2	58	103	0	5	163	57	4	7	0	1	68	9	18	1	0	0	28	2	2	2	0	4	6	265
2025-06-24 08:00:00	1	58	131	0	4	190	98	4	8	0	2	110	19	39	1	0	2	59	6	1	2	0	2	9	368
2025-06-24 08:15:00	1	57	161	0	8	219	116	4	13	0	4	133	14	24	1	0	5	39	3	4	6	0	3	13	404
2025-06-24 08:30:00	6	58	57	0	5	121	66	2	2	0	1	70	4	46	2	0	4	52	3	9	11	0	4	23	266
Grand Total	10	231	452	0	22	693	337	14	30	0	8	381	46	127	5	0	11	178	14	16	21	0	13	51	1303
Approach%	1.4%	33.3%	65.2%	0%	-	-	88.5%	3.7%	7.9%	0%	-	-	25.8%	71.3%	2.8%	0%	-	-	27.5%	31.4%	41.2%	0%	-	-	-
Totals %	0.8%	17.7%	34.7%	0%	-	53.2%	25.9%	1.1%	2.3%	0%	-	29.2%	3.5%	9.7%	0.4%	0%	-	13.7%	1.1%	1.2%	1.6%	0%	-	3.9%	-
PHF	0.42	1	0.7	0	-	0.79	0.73	0.88	0.58	0	-	0.72	0.61	0.69	0.63	0	-	0.75	0.58	0.44	0.48	0	-	0.55	0.81
Heavy	1	15	14	0	-	30	23	0	2	0	-	25	2	8	0	0	-	10	0	0	0	0	-	0	65
Heavy %	10%	6.5%	3.1%	0%	-	4.3%	6.8%	0%	6.7%	0%	-	6.6%	4.3%	6.3%	0%	0%	-	5.6%	0%	0%	0%	0%	-	0%	5%
Lights	9	215	438	0	-	662	314	13	28	0	-	355	44	115	5	0	-	164	14	15	21	0	-	50	1231
Lights %	90%	93.1%	96.9%	0%	-	95.5%	93.2%	92.9%	93.3%	0%	-	93.2%	95.7%	90.6%	100%	0%	-	92.1%	100%	93.8%	100%	0%	-	98%	94.5%
Single-Unit Trucks	1	5	0	0	-	6	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	7
Single-Unit Trucks %	10%	2.2%	0%	0%	-	0.9%	0%	0%	0%	0%	-	0%	0%	0.8%	0%	0%	-	0.6%	0%	0%	0%	0%	-	0%	0.5%
Buses	0	10	14	0	-	24	23	0	2	0	-	25	2	7	0	0	-	9	0	0	0	0	-	0	58
Buses %	0%	4.3%	3.1%	0%	-	3.5%	6.8%	0%	6.7%	0%	-	6.6%	4.3%	5.5%	0%	0%	-	5.1%	0%	0%	0%	0%	-	0%	4.5%
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Articulated Trucks %	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%
Bicycles on Road	0	1	0	0	-	1	0	1	0	0	-	1	0	4	0	0	-	4	0	1	0	0	-	1	7
Bicycles on Road %	0%	0.4%	0%	0%	-	0.1%	0%	7.1%	0%	0%	-	0.3%	0%	3.1%	0%	0%	-	2.2%	0%	6.3%	0%	0%	-	2%	0.5%
Pedestrians	-	-	-	-	19	-	-	-	-	-	8	-	-	-	-	-	10	-	-	-	-	-	9	-	-
Pedestrians%	-	-	-	-	35.2%	-	-	-	-	-	14.8%	-	-	-	-	-	18.5%	-	-	-	-	-	16.7%	-	-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	4	-	-
Bicycles on Crosswalk%	-	-	-	-	5.6%	-	-	-	-	-	0%	-	-	-	-	-	1.9%	-	-	-	-	-	7.4%	-	-



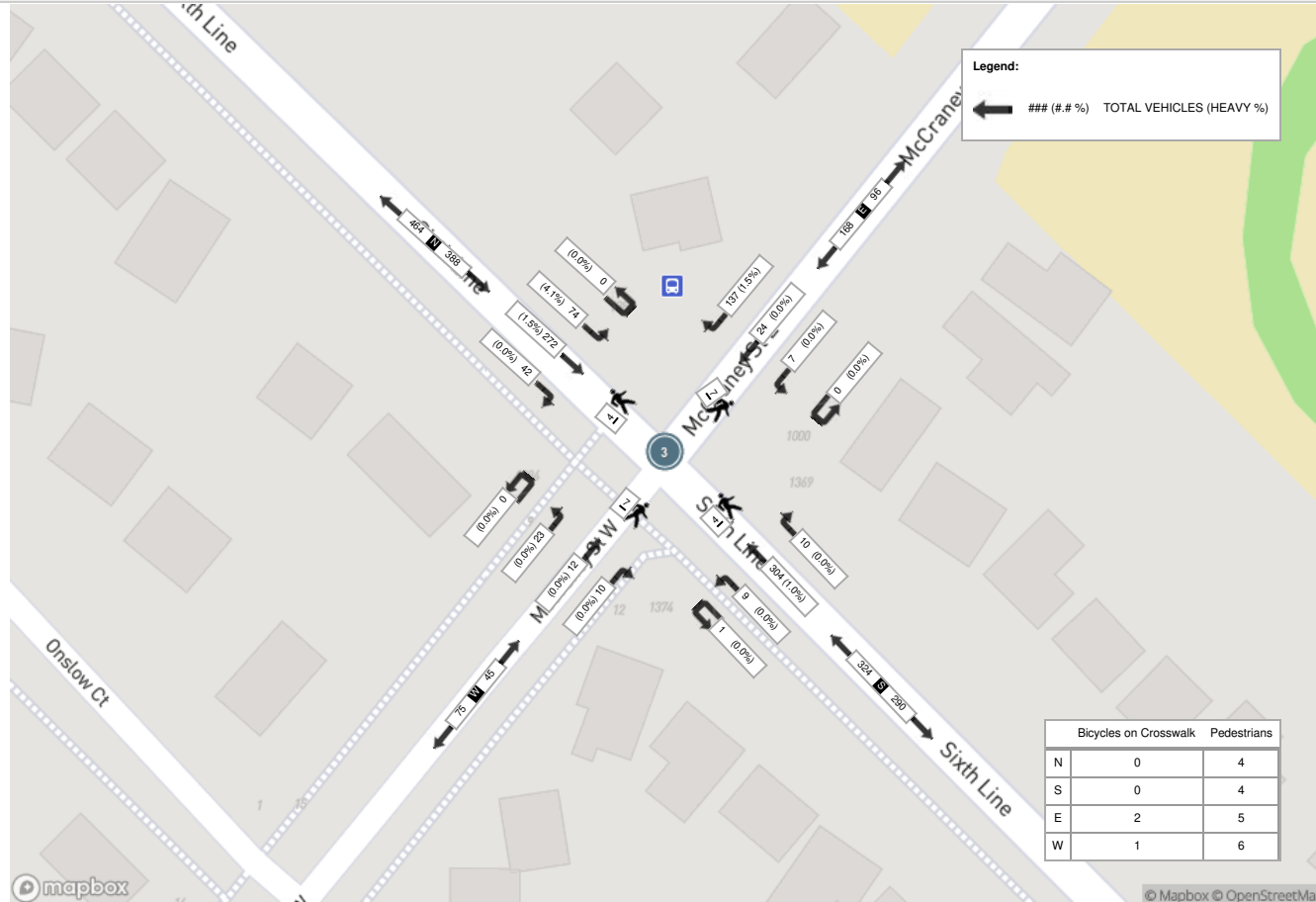
Peak Hour: 05:15 PM - 06:15 PM Weather: Overcast Clouds (34 °C)

Start Time	N Approach SIXTH LINE						E Approach MCCRANEY ST						S Approach SIXTH LINE						W Approach MCCRANEY ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2025-06-24 17:15:00	15	68	18	0	3	101	34	5	1	0	2	40	2	69	3	0	2	74	1	5	5	0	2	11	226
2025-06-24 17:30:00	4	78	17	0	0	99	36	2	0	0	1	38	3	86	1	1	0	91	2	4	4	0	5	10	238
2025-06-24 17:45:00	11	71	19	0	1	101	41	8	3	0	1	52	4	83	2	0	0	89	3	0	4	0	0	7	249
2025-06-24 18:00:00	12	55	20	0	0	87	26	9	3	0	3	38	1	66	3	0	2	70	4	3	10	0	0	17	212
Grand Total	42	272	74	0	4	388	137	24	7	0	7	168	10	304	9	1	4	324	10	12	23	0	7	45	925
Approach%	10.8%	70.1%	19.1%	0%		-	81.5%	14.3%	4.2%	0%		-	3.1%	93.8%	2.8%	0.3%		-	22.2%	26.7%	51.1%	0%		-	-
Totals %	4.5%	29.4%	8%	0%		41.9%	14.8%	2.6%	0.8%	0%		18.2%	1.1%	32.9%	1%	0.1%		35%	1.1%	1.3%	2.5%	0%		4.9%	-
PHF	0.7	0.87	0.93	0		0.96	0.84	0.67	0.58	0		0.81	0.63	0.88	0.75	0.25		0.89	0.63	0.6	0.58	0		0.66	0.93
Heavy	0	4	3	0		7	2	0	0	0		2	0	3	0	0		3	0	0	0	0		0	12
Heavy %	0%	1.5%	4.1%	0%		1.8%	1.5%	0%	0%	0%		1.2%	0%	1%	0%	0%		0.9%	0%	0%	0%	0%		0%	1.3%
Lights	42	268	71	0		381	135	24	7	0		166	10	297	9	1		317	10	12	23	0		45	909
Lights %	100%	98.5%	95.9%	0%		98.2%	98.5%	100%	100%	0%		98.8%	100%	97.7%	100%	100%		97.8%	100%	100%	100%	0%		100%	98.3%
Single-Unit Trucks	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	3
Single-Unit Trucks %	0%	0.7%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0.3%
Buses	0	2	3	0		5	2	0	0	0		2	0	2	0	0		2	0	0	0	0		0	9
Buses %	0%	0.7%	4.1%	0%		1.3%	1.5%	0%	0%	0%		1.2%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	1%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		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	4	0	0		4	0	0	0	0		0	4
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	0%	0%	0%	0%		0%	0.4%
Pedestrians	-	-	-	-	4	-	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	6	-	-
Pedestrians%	-	-	-	-	18.2%	-	-	-	-	-	22.7%	-	-	-	-	-	18.2%	-	-	-	-	-	27.3%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	9.1%	-	-	-	-	-	0%	-	-	-	-	-	4.5%	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (26 °C)



Peak Hour: 05:15 PM - 06:15 PM Weather: Overcast Clouds (34 °C)





Turning Movement Count (4 . SIXTH LINE & MILLER RD) MioID: 1314195

Start Time	N Approach SIXTH LINE					S Approach SIXTH LINE					W Approach MILLER RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	U-Turn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Left W:N	U-Turn W:W	Peds W:	Approach Total		
2025-06-24 06:30:00	0	24	0	0	24	11	1	0	0	12	7	0	0	0	7	43	
2025-06-24 06:45:00	0	43	0	0	43	28	0	0	0	28	5	0	0	0	5	76	
2025-06-24 07:00:00	0	38	0	0	38	19	0	0	0	19	1	3	0	0	4	61	
2025-06-24 07:15:00	0	70	0	0	70	35	1	0	0	36	6	2	0	2	8	114	294
2025-06-24 07:30:00	5	119	0	0	124	60	1	0	0	61	6	0	0	3	6	191	442
2025-06-24 07:45:00	1	157	0	0	158	76	2	0	0	78	7	0	0	5	7	243	609
2025-06-24 08:00:00	2	187	0	0	189	134	2	0	0	136	13	2	0	2	15	340	888
2025-06-24 08:15:00	1	202	0	0	203	139	6	0	0	145	14	1	0	6	15	363	1137
2025-06-24 08:30:00	3	98	0	0	101	127	5	0	0	132	16	0	0	6	16	249	1195
2025-06-24 08:45:00	6	101	0	2	107	70	11	0	0	81	12	0	0	1	12	200	1152
BREAK																	
2025-06-24 16:00:00	5	88	0	2	93	80	2	0	0	82	6	4	0	1	10	185	
2025-06-24 16:15:00	6	65	0	0	71	76	8	0	1	84	2	2	0	0	4	159	
2025-06-24 16:30:00	2	86	0	0	88	94	7	0	0	101	3	2	0	3	5	194	
2025-06-24 16:45:00	1	93	0	0	94	101	4	0	0	105	1	2	0	1	3	202	740
2025-06-24 17:00:00	7	71	0	0	78	94	7	0	0	101	5	0	0	1	5	184	739
2025-06-24 17:15:00	6	99	0	0	105	106	8	0	0	114	4	4	0	0	8	227	807
2025-06-24 17:30:00	7	98	0	0	105	118	7	0	0	125	7	1	0	3	8	238	851
2025-06-24 17:45:00	6	94	0	1	100	132	5	0	0	137	8	2	0	3	10	247	896
2025-06-24 18:00:00	7	86	0	0	93	102	7	0	0	109	7	2	0	9	9	211	923
2025-06-24 18:15:00	4	93	0	0	97	109	5	0	0	114	9	4	0	1	13	224	920
Grand Total	69	1912	0	5	1981	1711	89	0	1	1800	139	31	0	47	170	3951	-
Approach%	3.5%	96.5%	0%		-	95.1%	4.9%	0%		-	81.8%	18.2%	0%		-	-	-
Totals %	1.7%	48.4%	0%		50.1%	43.3%	2.3%	0%		45.6%	3.5%	0.8%	0%		4.3%	-	-
Heavy	4	73	0		-	74	1	0		-	3	1	0		-	-	-
Heavy %	5.8%	3.8%	0%		-	4.3%	1.1%	0%		-	2.2%	3.2%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (26 °C)

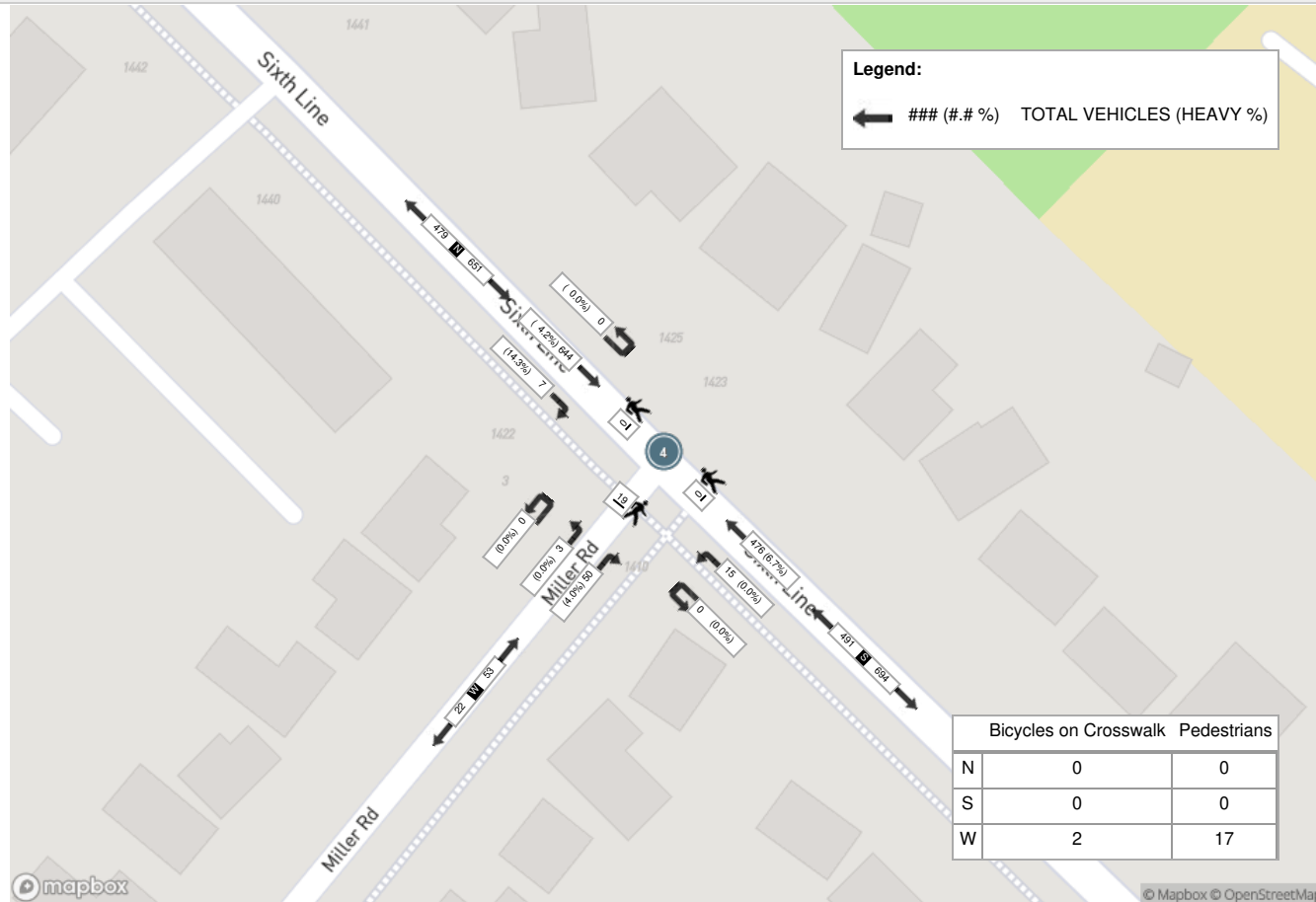
Start Time	N Approach SIXTH LINE					S Approach SIXTH LINE					W Approach MILLER RD					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
2025-06-24 07:45:00	1	157	0	0	158	76	2	0	0	78	7	0	0	5	7	243
2025-06-24 08:00:00	2	187	0	0	189	134	2	0	0	136	13	2	0	2	15	340
2025-06-24 08:15:00	1	202	0	0	203	139	6	0	0	145	14	1	0	6	15	363
2025-06-24 08:30:00	3	98	0	0	101	127	5	0	0	132	16	0	0	6	16	249
Grand Total	7	644	0	0	651	476	15	0	0	491	50	3	0	19	53	1195
Approach%	1.1%	98.9%	0%		-	96.9%	3.1%	0%		-	94.3%	5.7%	0%		-	-
Totals %	0.6%	53.9%	0%		54.5%	39.8%	1.3%	0%		41.1%	4.2%	0.3%	0%		4.4%	-
PHF	0.58	0.8	0		0.8	0.86	0.63	0		0.85	0.78	0.38	0		0.83	0.82
Heavy	1	27	0		28	32	0	0		32	2	0	0		2	62
Heavy %	14.3%	4.2%	0%		4.3%	6.7%	0%	0%		6.5%	4%	0%	0%		3.8%	5.2%
Lights	6	612	0		618	438	15	0		453	48	3	0		51	1122
Lights %	85.7%	95%	0%		94.9%	92%	100%	0%		92.3%	96%	100%	0%		96.2%	93.9%
Single-Unit Trucks	0	4	0		4	2	0	0		2	0	0	0		0	6
Single-Unit Trucks %	0%	0.6%	0%		0.6%	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0.5%
Buses	1	23	0		24	30	0	0		30	2	0	0		2	56
Buses %	14.3%	3.6%	0%		3.7%	6.3%	0%	0%		6.1%	4%	0%	0%		3.8%	4.7%
Bicycles on Road	0	5	0		5	6	0	0		6	0	0	0		0	11
Bicycles on Road %	0%	0.8%	0%		0.8%	1.3%	0%	0%		1.2%	0%	0%	0%		0%	0.9%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	17	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	89.5%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	10.5%	-	-



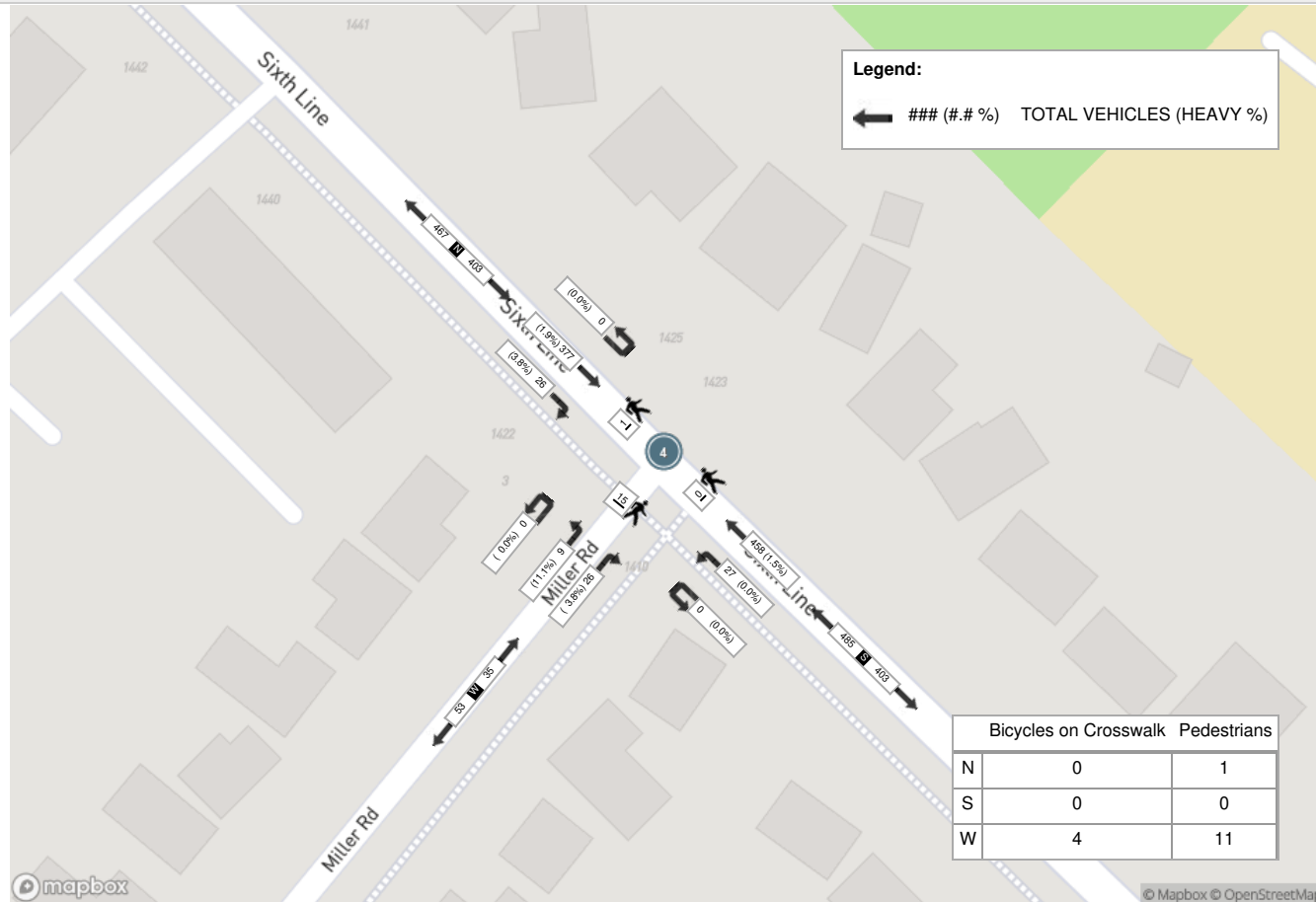
Peak Hour: 05:15 PM - 06:15 PM Weather: Overcast Clouds (34 °C)

Start Time	N Approach SIXTH LINE					S Approach SIXTH LINE					W Approach MILLER RD					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
2025-06-24 17:15:00	6	99	0	0	105	106	8	0	0	114	4	4	0	0	8	227
2025-06-24 17:30:00	7	98	0	0	105	118	7	0	0	125	7	1	0	3	8	238
2025-06-24 17:45:00	6	94	0	1	100	132	5	0	0	137	8	2	0	3	10	247
2025-06-24 18:00:00	7	86	0	0	93	102	7	0	0	109	7	2	0	9	9	211
Grand Total	26	377	0	1	403	458	27	0	0	485	26	9	0	15	35	923
Approach%	6.5%	93.5%	0%		-	94.4%	5.6%	0%		-	74.3%	25.7%	0%		-	-
Totals %	2.8%	40.8%	0%		43.7%	49.6%	2.9%	0%		52.5%	2.8%	1%	0%		3.8%	-
PHF	0.93	0.95	0		0.96	0.87	0.84	0		0.89	0.81	0.56	0		0.88	0.93
Heavy	1	7	0		8	7	0	0		7	1	1	0		2	17
Heavy %	3.8%	1.9%	0%		2%	1.5%	0%	0%		1.4%	3.8%	11.1%	0%		5.7%	1.8%
Lights	25	370	0		395	446	27	0		473	25	8	0		33	901
Lights %	96.2%	98.1%	0%		98%	97.4%	100%	0%		97.5%	96.2%	88.9%	0%		94.3%	97.6%
Single-Unit Trucks	1	3	0		4	2	0	0		2	1	1	0		2	8
Single-Unit Trucks %	3.8%	0.8%	0%		1%	0.4%	0%	0%		0.4%	3.8%	11.1%	0%		5.7%	0.9%
Buses	0	4	0		4	5	0	0		5	0	0	0		0	9
Buses %	0%	1.1%	0%		1%	1.1%	0%	0%		1%	0%	0%	0%		0%	1%
Bicycles on Road	0	0	0		0	5	0	0		5	0	0	0		0	5
Bicycles on Road %	0%	0%	0%		0%	1.1%	0%	0%		1%	0%	0%	0%		0%	0.5%
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	11	-	-
Pedestrians%	-	-	-	6.3%	-	-	-	-	0%	-	-	-	-	68.8%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	25%	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (26 °C)



Peak Hour: 05:15 PM - 06:15 PM Weather: Overcast Clouds (34 °C)





Turning Movement Count (1 . UPPER MIDDLE RD & SIXTH LINE) MioID: 1314192

Start Time	N Approach SIXTH LINE						E Approach UPPER MIDDLE RD						S Approach SIXTH LINE						W Approach UPPER MIDDLE RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	U-Turn N-N	Peds N:	Approach Total	Right E-N	Thru E-W	Left E-S	U-Turn E-E	Peds E:	Approach Total	Right S-E	Thru S-N	Left S-W	U-Turn S-S	Peds S:	Approach Total	Right W-S	Thru W-E	Left W-N	U-Turn W-W	Peds W:	Approach Total		
2025-06-24 06:30:00	3	17	8	0	2	28	3	30	0	0	0	33	7	2	3	0	0	12	5	67	8	0	4	80	153	
2025-06-24 06:45:00	10	17	12	0	0	39	7	52	8	0	2	67	12	9	8	0	1	29	12	86	7	0	1	105	240	
2025-06-24 07:00:00	6	15	28	0	0	49	11	41	4	0	1	56	10	9	2	0	1	21	12	88	13	0	2	113	239	
2025-06-24 07:15:00	12	25	18	0	0	55	11	65	9	0	1	85	13	8	16	0	5	37	15	103	15	0	0	133	310	942
2025-06-24 07:30:00	12	64	26	0	1	102	14	72	13	0	0	99	22	18	16	0	1	56	41	153	13	0	0	207	464	1253
2025-06-24 07:45:00	12	46	19	0	2	77	15	102	23	0	1	140	20	25	36	0	1	81	54	174	11	0	3	239	537	1550
2025-06-24 08:00:00	14	93	32	0	2	139	17	95	35	0	4	147	21	52	40	0	0	113	62	143	15	0	3	220	619	1930
2025-06-24 08:15:00	14	72	42	0	4	128	24	140	33	0	4	197	37	73	35	0	1	145	44	189	22	0	2	255	725	2345
2025-06-24 08:30:00	30	43	33	0	0	106	27	129	43	0	0	199	50	62	37	0	0	149	22	189	22	0	3	233	687	2568
2025-06-24 08:45:00	32	46	47	0	0	125	18	137	39	0	1	194	55	37	28	0	2	120	28	197	33	0	2	258	697	2728
BREAK																										
2025-06-24 16:00:00	13	34	21	0	1	68	29	203	25	0	2	257	17	33	35	0	0	85	23	158	31	1	0	213	623	
2025-06-24 16:15:00	22	35	19	0	2	76	38	202	20	0	2	260	12	39	27	0	0	78	16	134	37	0	2	187	601	
2025-06-24 16:30:00	31	26	7	0	1	64	37	221	20	0	0	278	11	33	37	0	0	81	19	133	21	0	2	173	596	
2025-06-24 16:45:00	31	36	18	0	1	85	40	194	23	0	1	257	11	53	42	0	0	106	31	140	34	0	2	205	653	2473
2025-06-24 17:00:00	28	31	38	0	3	97	29	214	19	0	0	262	19	39	38	0	0	96	20	157	29	0	0	206	661	2511
2025-06-24 17:15:00	38	58	61	0	4	157	39	178	20	0	0	237	14	44	36	0	1	94	24	134	36	0	3	194	682	2592
2025-06-24 17:30:00	34	40	64	0	4	138	33	208	25	0	2	266	23	47	49	0	1	119	20	149	39	0	2	208	731	2727
2025-06-24 17:45:00	40	59	40	0	6	139	32	168	21	0	4	221	15	61	50	0	0	126	17	120	34	0	2	171	657	2731
2025-06-24 18:00:00	29	37	31	0	0	97	35	174	15	0	2	224	15	36	44	0	1	95	28	156	44	0	0	228	644	2714
2025-06-24 18:15:00	33	45	21	0	1	99	29	159	28	0	2	216	17	33	50	0	2	100	23	119	17	0	0	159	574	2606
Grand Total	444	839	585	0	34	1868	488	2784	423	0	29	3695	401	713	629	0	17	1743	516	2789	481	1	33	3787	11093	-
Approach%	23.8%	44.9%	31.3%	0%	-	-	13.2%	75.3%	11.4%	0%	-	-	23%	40.9%	36.1%	0%	-	-	13.6%	73.6%	12.7%	0%	-	-	-	-
Totals %	4%	7.6%	5.3%	0%	-	16.8%	4.4%	25.1%	3.8%	0%	-	33.3%	3.6%	6.4%	5.7%	0%	-	15.7%	4.7%	25.1%	4.3%	0%	-	34.1%	-	-
Heavy	9	19	1	0	-	-	8	50	27	0	-	-	19	17	28	0	-	-	23	49	4	0	-	-	-	-
Heavy %	2%	2.3%	0.2%	0%	-	-	1.6%	1.8%	6.4%	0%	-	-	4.7%	2.4%	4.5%	0%	-	-	4.5%	1.8%	0.8%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Scattered Clouds (26 °C)

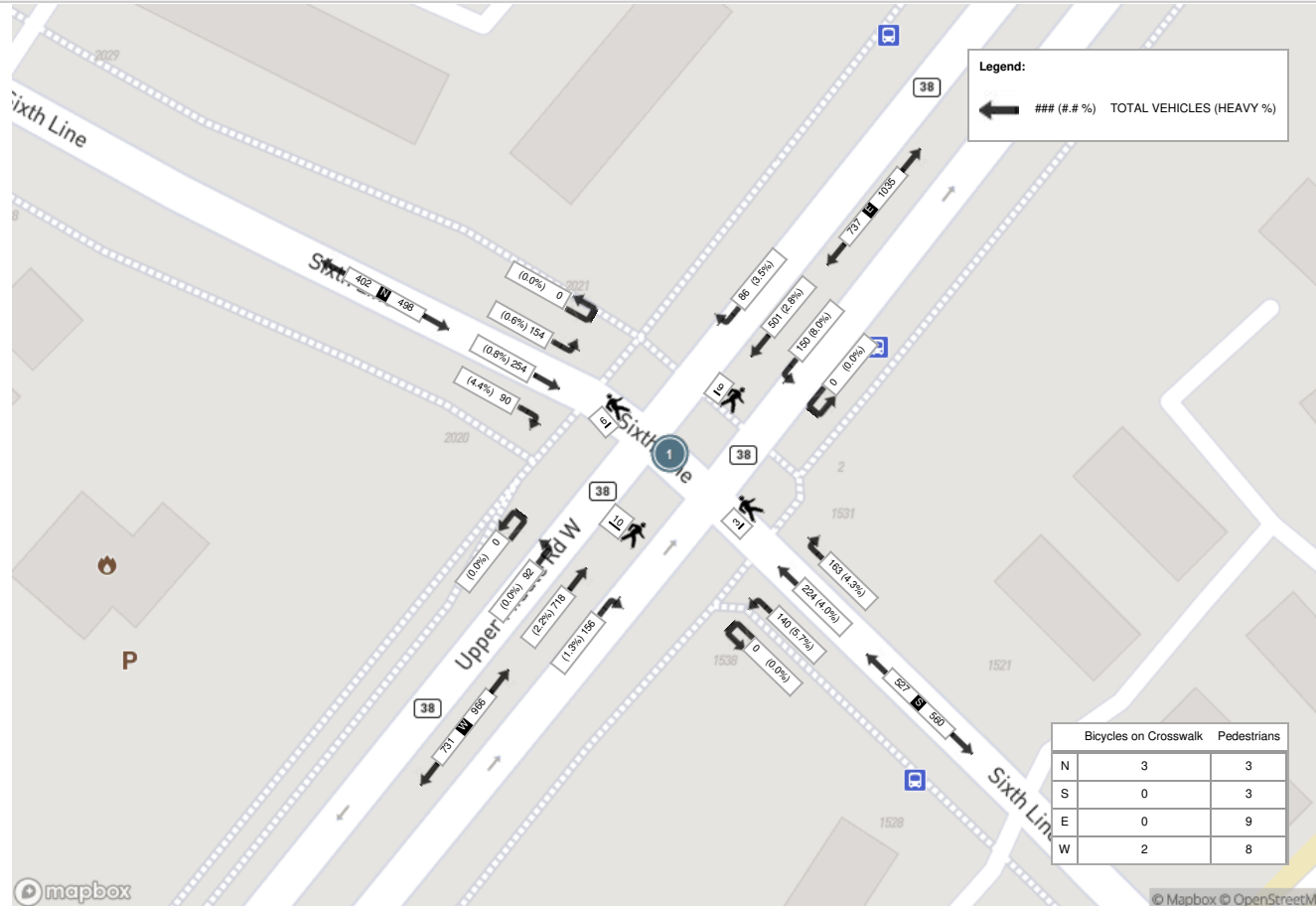
Start Time	N Approach SIXTH LINE						E Approach UPPER MIDDLE RD						S Approach SIXTH LINE						W Approach UPPER MIDDLE RD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2025-06-24 08:00:00	14	93	32	0	2	139	17	95	35	0	4	147	21	52	40	0	0	113	62	143	15	0	3	220	619
2025-06-24 08:15:00	14	72	42	0	4	128	24	140	33	0	4	197	37	73	35	0	1	145	44	189	22	0	2	255	725
2025-06-24 08:30:00	30	43	33	0	0	106	27	129	43	0	0	199	50	62	37	0	0	149	22	189	22	0	3	233	687
2025-06-24 08:45:00	32	46	47	0	0	125	18	137	39	0	1	194	55	37	28	0	2	120	28	197	33	0	2	258	697
Grand Total	90	254	154	0	6	498	86	501	150	0	9	737	163	224	140	0	3	527	156	718	92	0	10	966	2728
Approach%	18.1%	51%	30.9%	0%		-	11.7%	68%	20.4%	0%		-	30.9%	42.5%	26.6%	0%		-	16.1%	74.3%	9.5%	0%		-	-
Totals %	3.3%	9.3%	5.6%	0%		18.3%	3.2%	18.4%	5.5%	0%		27%	6%	8.2%	5.1%	0%		19.3%	5.7%	26.3%	3.4%	0%		35.4%	-
PHF	0.7	0.68	0.82	0		0.9	0.8	0.89	0.87	0		0.93	0.74	0.77	0.88	0		0.88	0.63	0.91	0.7	0		0.94	0.94
Heavy	4	2	1	0		7	3	14	12	0		29	7	9	8	0		24	2	16	0	0		18	78
Heavy %	4.4%	0.8%	0.6%	0%		1.4%	3.5%	2.8%	8%	0%		3.9%	4.3%	4%	5.7%	0%		4.6%	1.3%	2.2%	0%	0%		1.9%	2.9%
Lights	86	249	153	0		488	83	487	138	0		708	156	213	132	0		501	154	701	92	0		947	2644
Lights %	95.6%	98%	99.4%	0%		98%	96.5%	97.2%	92%	0%		96.1%	95.7%	95.1%	94.3%	0%		95.1%	98.7%	97.6%	100%	0%		98%	96.9%
Single-Unit Trucks	1	1	0	0		2	1	7	1	0		9	1	0	1	0		2	0	9	0	0		9	22
Single-Unit Trucks %	1.1%	0.4%	0%	0%		0.4%	1.2%	1.4%	0.7%	0%		1.2%	0.6%	0%	0.7%	0%		0.4%	0%	1.3%	0%	0%		0.9%	0.8%
Buses	3	1	1	0		5	2	5	11	0		18	6	9	7	0		22	2	5	0	0		7	52
Buses %	3.3%	0.4%	0.6%	0%		1%	2.3%	1%	7.3%	0%		2.4%	3.7%	4%	5%	0%		4.2%	1.3%	0.7%	0%	0%		0.7%	1.9%
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	4
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	0.1%
Bicycles on Road	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	0	1	0	0		1	6
Bicycles on Road %	0%	1.2%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.4%	0%	0.1%	0%	0%		0.1%	0.2%
Pedestrians	-	-	-	-	3	-	-	-	-	9	-	-	-	-	-	3	-	-	-	-	-	8	-	-	-
Pedestrians%	-	-	-	-	10.7%	-	-	-	-	32.1%	-	-	-	-	10.7%	-	-	-	-	-	-	28.6%	-	-	-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-
Bicycles on Crosswalk%	-	-	-	-	10.7%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	7.1%	-	-	-



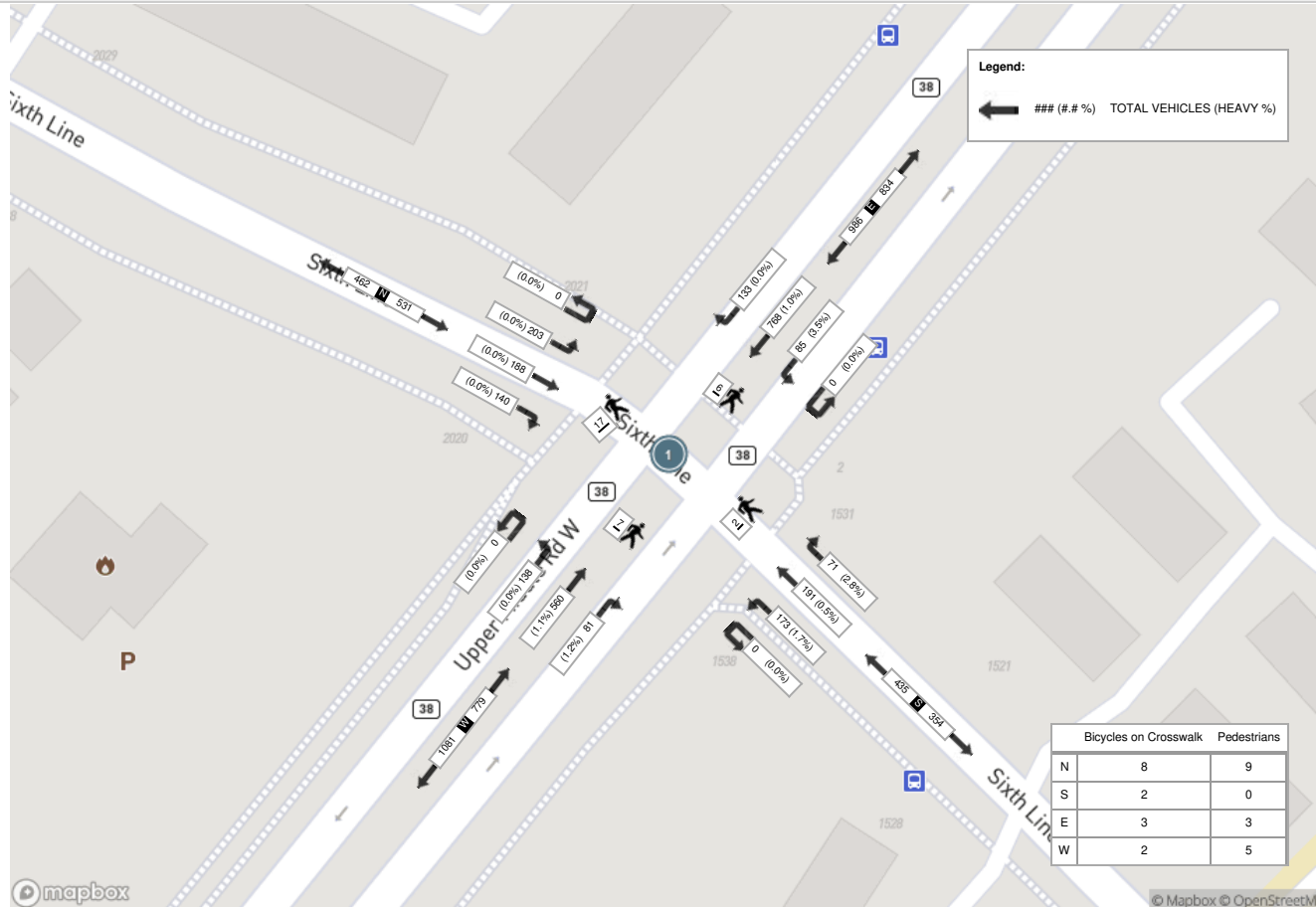
Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (34 °C)

Start Time	N Approach SIXTH LINE						E Approach UPPER MIDDLE RD						S Approach SIXTH LINE						W Approach UPPER MIDDLE RD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2025-06-24 17:00:00	28	31	38	0	3	97	29	214	19	0	0	262	19	39	38	0	0	96	20	157	29	0	0	206	661
2025-06-24 17:15:00	38	58	61	0	4	157	39	178	20	0	0	237	14	44	36	0	1	94	24	134	36	0	3	194	682
2025-06-24 17:30:00	34	40	64	0	4	138	33	208	25	0	2	266	23	47	49	0	1	119	20	149	39	0	2	208	731
2025-06-24 17:45:00	40	59	40	0	6	139	32	168	21	0	4	221	15	61	50	0	0	126	17	120	34	0	2	171	657
Grand Total	140	188	203	0	17	531	133	768	85	0	6	986	71	191	173	0	2	435	81	560	138	0	7	779	2731
Approach%	26.4%	35.4%	38.2%	0%		-	13.5%	77.9%	8.6%	0%		-	16.3%	43.9%	39.8%	0%		-	10.4%	71.9%	17.7%	0%		-	-
Totals %	5.1%	6.9%	7.4%	0%		19.4%	4.9%	28.1%	3.1%	0%		36.1%	2.6%	7%	6.3%	0%		15.9%	3%	20.5%	5.1%	0%		28.5%	-
PHF	0.88	0.8	0.79	0		0.85	0.85	0.9	0.85	0		0.93	0.77	0.78	0.87	0		0.86	0.84	0.89	0.88	0		0.94	0.93
Heavy	0	0	0	0		0	0	8	3	0		11	2	1	3	0		6	1	6	0	0		7	24
Heavy %	0%	0%	0%	0%		0%	0%	1%	3.5%	0%		1.1%	2.8%	0.5%	1.7%	0%		1.4%	1.2%	1.1%	0%	0%		0.9%	0.9%
Lights	140	187	203	0		530	133	760	82	0		975	69	187	170	0		426	80	553	138	0		771	2702
Lights %	100%	99.5%	100%	0%		99.8%	100%	99%	96.5%	0%		98.9%	97.2%	97.9%	98.3%	0%		97.9%	98.8%	98.8%	100%	0%		99%	98.9%
Single-Unit Trucks	0	0	0	0		0	0	3	1	0		4	0	0	0	0		0	0	2	0	0		2	6
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.4%	1.2%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	0.2%
Buses	0	0	0	0		0	0	3	2	0		5	2	1	3	0		6	1	2	0	0		3	14
Buses %	0%	0%	0%	0%		0%	0%	0.4%	2.4%	0%		0.5%	2.8%	0.5%	1.7%	0%		1.4%	1.2%	0.4%	0%	0%		0.4%	0.5%
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	4
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	0.1%
Bicycles on Road	0	1	0	0		1	0	0	0	0		0	0	3	0	0		3	0	1	0	0		1	5
Bicycles on Road %	0%	0.5%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		0.7%	0%	0.2%	0%	0%		0.1%	0.2%
Pedestrians	-	-	-	-	9	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	5	-	-
Pedestrians%	-	-	-	-	28.1%	-	-	-	-	-	9.4%	-	-	-	-	-	0%	-	-	-	-	-	15.6%	-	-
Bicycles on Crosswalk	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	-	25%	-	-	-	-	-	9.4%	-	-	-	-	-	6.3%	-	-	-	-	-	6.3%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Scattered Clouds (26 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (34 °C)



Town of Oakville, ON



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Configuration Controller Sequence**Phase Ring Sequence and Assignment (MM) 1-1-1**

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B								
Sequence 1																	
Ring 1		1	2		3	4		9	10		13	14		.	.	.	.
Ring 2		5	6		7	8		11	12		15	16		.	.	.	.
Sequence 2																	
Ring 1		2	1		3	4		10	9		13	14		.	.	.	.
Ring 2		5	6		7	8		11	12		15	16		.	.	.	.
Sequence 3																	
Ring 1		1	2		4	3		9	10		14	13		.	.	.	.
Ring 2		5	6		7	8		11	12		15	16		.	.	.	.
Sequence 4																	
Ring 1		2	1		4	3		10	9		14	13		.	.	.	.
Ring 2		5	6		7	8		11	12		15	16		.	.	.	.
Sequence 5																	
Ring 1		1	2		3	4		9	10		13	14		.	.	.	.
Ring 2		6	5		7	8		12	11		15	16		.	.	.	.
Sequence 6																	
Ring 1		2	1		3	4		10	9		13	14		.	.	.	.
Ring 2		6	5		7	8		12	11		15	16		.	.	.	.
Sequence 7																	
Ring 1		1	2		4	3		9	10		14	13		.	.	.	.
Ring 2		6	5		7	8		12	11		15	16		.	.	.	.
Sequence 8																	
Ring 1		2	1		4	3		10	9		14	13		.	.	.	.
Ring 2		6	5		7	8		12	11		15	16		.	.	.	.
Sequence 9																	
Ring 1		1	2		3	4		9	10		13	14		.	.	.	.
Ring 2		5	6		8	7		11	12		16	15		.	.	.	.
Sequence 10																	
Ring 1		2	1		3	4		10	9		13	14		.	.	.	.
Ring 2		5	6		8	7		11	12		16	15		.	.	.	.
Sequence 11																	
Ring 1		1	2		4	3		9	10		14	13		.	.	.	.
Ring 2		5	6		8	7		11	12		16	15		.	.	.	.
Sequence 12																	
Ring 1		2	1		4	3		10	9		14	13		.	.	.	.
Ring 2		5	6		8	7		11	12		16	15		.	.	.	.
Sequence 13																	

Ring 1		1	2		3	4		9	10		13	14		.	.	.	.	.	.	.	.
Ring 2		6	5		8	7		12	11		16	15		.	.	.	.	.	.	.	.
Sequence 14																					
Ring 1		2	1		3	4		10	9		13	14		.	.	.	.	.	.	.	.
Ring 2		6	5		8	7		12	11		16	15		.	.	.	.	.	.	.	.
Sequence 15																					
Ring 1		1	2		4	3		9	10		14	13		.	.	.	.	.	.	.	.
Ring 2		6	5		8	7		12	11		16	15		.	.	.	.	.	.	.	.
Sequence 16																					
Ring 1		2	1		4	3		10	9		14	13		.	.	.	.	.	.	.	.
Ring 2		6	5		8	7		12	11		16	15		.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X		X		X		X								
Exclusive Ped																

Phase Compatibility (MM)**1-1-2**

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	S	N	N	E	N	S	N	W	N	N	N	N	N	N	N	N
Movement	L	T		T		T		T								
Associated PED																
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Administration (MM) 1-7-1

Enable Controller/Cabinet	No
Interlock CRC	
CRC (16 bit)	937A
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

Phases		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing Phases	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Simultaneous Gap (MM) 1-1-4

Phases		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Must Gap With Phase Disable	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	V				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	V				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	V				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			

10	4	P				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	1	O				-	Auto	X		
14	2	O				+	Auto	X		X
15	3	O				-	Auto	X		
16	4	O				+	Auto	X		X

Town of Oakville, ON



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Configuration Port 1 (SDLC)**Port 1 SDLC (MM) 1-4-1**

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X		X					

Enable TS2/MMU Type Cabinet: No
 Enable MMU Extended Status: Yes
 Enable SDLC Stop Time: No
 Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	Channel 2

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Red	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No



Town of Oakville, ON

MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	No
Coordination Errors	No	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	Yes
Switch to Graphics Mode:	No
LED Mode:	Auto
Display Mode:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 32.64.00
OS (Boot) Version: 06.04.00

Town of Oakville, ON



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Min Green	7	24	0	20	0	24	5	20	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	14	0	11	0	14	0	11	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.5	5.5	5.0	3.5	5.0	5.5	5.0	3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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
Max1	20	40	35	30	35	40	35	30	35	35	35	35	35	35	35	35
Max2	20	50	40	40	40	50	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.3	3.0	3.3	3.0	3.3	3.0	3.3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.3	1.0	2.0	1.0	2.3	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

Plan 2 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

Plan 3 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	N	E-T	N	S-T	N	W-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

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MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green
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Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green
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PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable
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Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Controller Pedestrian Overlaps

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps
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*MOVING TRAFFIC FORWARD*

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Controller Start / Flash Data (MM) 2-5**Start Up**

Phase	Phase Setting
1	.
2	Y
3	.
4	.
5	.
6	Y
7	.
8	.
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap
A
B
C
D

Flash Thru Mon: No
Flash Time: 0
All Red: 6
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit

A
B
C
D

Flash Thru Mon: No
Exit Flash: W
Minimum Flash: 8
Minimum Recall: No
Cycle Through Phase: No

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MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I	X				X											
Non-Act II			X				X									
Dual Entry	X	X	X	X	X											
Cond Service																
Cond Reservice																
Ped Re-Service	X				X											
Rest In Walk																
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

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MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Coordination Options**Options (MM) 3-1**

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	Yes	Ped Reservice	Yes
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Coordination Split Pattern
Split Pattern Data (MM) 3-3

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OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	Yes	Terminate Phase	No
Ped Dark	No	Track Clear Rsvr	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	7	5	4.0	2.5
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	1.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	0	0.0	0	4.0	1.0

Preemption Active Out On		Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Town of Oakville, ON



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

**Preempt Preempt Filtering
Enable Preempt Filtering &
TSP/SCP (MM) 4-2**

Input	Solid	Pulsing
1	...BYPASSED...	...BYPASSED...
2	...BYPASSED...	...BYPASSED...
3	PREEMPTION 3	PREEMPTION 7
4	PREEMPTION 4	PREEMPTION 8
5	PREEMPTION 5	PREEMPTION 9
6	PREEMPTION 6	PREEMPTION 10
7	...BYPASSED...	...BYPASSED...
8	...BYPASSED...	...BYPASSED...
9	...BYPASSED...	...BYPASSED...
10	...BYPASSED...	...BYPASSED...

Town of Oakville, ON



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Preempt TSP/SCP Plan and Split

TSP / SCP Plan (MM) 4-3

TSP/SCP Plan	Enable Option	Signal Type	Det Lock	Delay Time	Max Presence	PMT Enables Reservice	No Delay in TSP	Action SF Inhibit	Reservice Cycles	Bus Heading
1	No	Solid	No	0	0	No	False	0	0	NB
2	No	Solid	No	0	0	No	False	0	0	SB
3	No	Solid	No	0	0	No	False	0	0	EB
4	No	Solid	No	0	0	No	False	0	0	WB
5	No	Solid	No	0	0	No	False	0	0	.
6	No	Solid	No	0	0	No	False	0	0	.

Mode: TSP

Free Default Pattern: 120

Headway Allowance: 0

TSP/SCP Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TSP / SCP Split Pattern (MM) 4-4

TSP/SCP Split Pattern	Max Type	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	Max Reduction	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Action Plan: 0
SYNC Reference Time: 00:00
SYNC Reference: Reference Time
Day Light Savings: No
Time Reset Input Set Time: 3:30:00
Standard Time From GMT: 0



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Time Base Action Plan
Action Plan (MM) 5-2



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Schedule (MM) 5-4



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan
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Town of Oakville, ON



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Detectors**Detectors - Pg 1****Veh Det Phase Assignment (MM) 6-1****Vehicle Detector Plan Number - 1**

Veh Detector	Assigned Phase	Called Phase	Type
2	1		S
3	4		S
4	4		S
5	5		S
6	6	2	S
7	8		S
8	8		S
9	9		N
10	10		N
11	11		N
12	12		N
13	13		N
14	14		N
15	15		N
16	16		N
33	9		S
34	10		S
35	11		S
36	12		S

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type
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Vehicle Detector Plan Number - 3

Veh Detector	Assigned Phase	Called Phase	Type
--------------	----------------	--------------	------

Vehicle Detector Plan Number - 4

Veh Detector	Assigned Phase	Called Phase	Type
--------------	----------------	--------------	------

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	Yes	
2	S-STANDARD	Yes	
3	S-STANDARD	Yes	
4	S-STANDARD	Yes	
5	S-STANDARD	Yes	
6	S-STANDARD	Yes	
7	S-STANDARD	Yes	

8	S-STANDARD	Yes	
9	N-NTCIP	No	
10	N-NTCIP	No	
11	N-NTCIP	No	
12	N-NTCIP	No	
13	N-NTCIP	No	
14	N-NTCIP	No	
15	N-NTCIP	No	
16	N-NTCIP	No	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	S-STANDARD	Yes	
22	S-STANDARD	Yes	
23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	S-STANDARD	Yes	
26	S-STANDARD	Yes	
27	S-STANDARD	Yes	
28	S-STANDARD	Yes	
29	S-STANDARD	Yes	
30	S-STANDARD	Yes	
31	S-STANDARD	Yes	
32	S-STANDARD	Yes	
33	S-STANDARD	Yes	
34	S-STANDARD	Yes	
35	S-STANDARD	Yes	
36	S-STANDARD	Yes	
37	S-STANDARD	Yes	
38	S-STANDARD	Yes	
39	S-STANDARD	Yes	
40	S-STANDARD	Yes	
41	S-STANDARD	Yes	
42	S-STANDARD	Yes	
43	S-STANDARD	Yes	
44	S-STANDARD	Yes	
45	S-STANDARD	Yes	
46	S-STANDARD	Yes	
47	S-STANDARD	Yes	
48	S-STANDARD	Yes	
49	S-STANDARD	Yes	
50	S-STANDARD	Yes	
51	S-STANDARD	Yes	
52	S-STANDARD	Yes	
53	S-STANDARD	Yes	
54	S-STANDARD	Yes	
55	S-STANDARD	Yes	
56	S-STANDARD	Yes	
57	S-STANDARD	Yes	
58	S-STANDARD	Yes	
59	S-STANDARD	Yes	

60	S-STANDARD	Yes	
61	S-STANDARD	Yes	
62	S-STANDARD	Yes	
63	S-STANDARD	Yes	
64	S-STANDARD	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	0	No	Yes	0.0	Passage	0.0	0	No	6	None	No	No	No
2	1	No	Yes	0.0	Passage	0.0	0	No	6	None	No	No	No
3	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	6	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
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Vehicle Detector Plan Number - 3

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
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Vehicle Detector Plan Number - 4

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
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Ped Detector Phase Assignment (MM) 6-3

Mode: Econolite

Ped Detector Number	Called Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.

Ped Detector Number	Called Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
5	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

Town of Oakville, ON



MOVING TRAFFIC FORWARD

OAK1115 - Sixth Line @ McCraney St - Econolite Type - Cobalt

Detectors**Detectors - Pg 2****Log - Speed Detector Setup (MM) 6-4**

NTCIP Log Period: 60 ECPI Log Period: 0 Length Unit: Inches

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM) 6-5**Veh Diagnostic Plan Number - 1**

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
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Veh Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
-----	--------	-----	------	------------	-------------	-------------------

Veh Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
-----	--------	-----	------	------------	-------------	-------------------

Veh Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
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Pedestrian Detector Diagnostics (MM) 6-6**Ped Diagnostic Plan Number - 1**

Det	Counts	Act	Pres	Multiplier
-----	--------	-----	------	------------

Ped Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier
-----	--------	-----	------	------------

Ped Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier
-----	--------	-----	------	------------

Ped Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier
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Region of Halton

MOVING TRAFFIC FORWARD

REG0814 - Upper Middle Rd @ Sixth Line - Econolite Type - Cobalt

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B	B	B	B	B											
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

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Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X	X	X	X	X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	W	E	S	N	E	W	N	S	N	N	N	N	N	N	N	N
Movement	L	T	L	T	L	T	L	T								
Associated PED																
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock No
 CRC
 CRC (16 bit) 3138
 Enable Automatic Backup to Datakey Yes

Backup Prevent (MM) 1-1-3

Phases		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing Phases	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Simultaneous Gap (MM) 1-1-4

Phases		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Must Gap With Phase Disable	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	V				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	V				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	V				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			
10	4	P				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	1	O				-	Auto	X		
14	2	O				+	Auto	X		X
15	3	O				-	Auto	X		
16	4	O				+	Auto	X		X



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Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X	X						

Enable TS2/MMU Type Cabinet: No
 Enable MMU Extended Status: No
 Enable SDLC Stop Time: No
 Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	Channel 2
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Red	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No



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Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	No
Coordination Errors	No	Controller Download	No
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	Yes
Switch to Graphics Mode:	No
LED Mode:	Auto
Display Mode:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Upper Middle Rd @ Sixth Line

Sign On Message Line 2: Zone 8 - Int 14

Software Modules (MM) 8-7

Application Version: 32.62.00

OS (Boot) Version: 06.03.10

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Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Min Green	7	20	7	10	7	20	7	10	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	23	0	32	0	23	0	32	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.5	4.5	3.5	3.5	3.5	4.5	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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
Max1	25	60	25	40	25	60	25	40	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.8	1.0	2.7	1.0	1.8	1.0	2.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	4.0	4.0	2.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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



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Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green
---------	------	-----------	--------	-----	------------

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green
---------	-------	----------	---------	-------------	-------------	----------	--------------	--------------	-------------

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable
---------	-----------------------------	----------------------------------	-----------------------	--------------------------	--------------------	--------------------------	----------------------------	----------------------

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5



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Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Percent	Offsets In	Percent
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	Yes
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0



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Coordination Pattern Data

Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Percent
Cycle	120	Std (COS)	111	Offsets In	Percent
Offset Value	97%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 1)	10	42	10	38	10	42	10	38	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Percent
Cycle	110	Std (COS)	121	Offsets In	Percent
Offset Value	27%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 2)	10	38	10	42	10	38	10	42	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Percent
Cycle	120	Std (COS)	131	Offsets In	Percent
Offset Value	68%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 3)	10	40	12	38	11	39	10	40	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Percent
Cycle	110	Std (COS)	141	Offsets In	Percent
Offset Value	27%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	Yes	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 4)	10	41	10	39	10	41	10	39	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 6

Split Pattern	6	TS2 (Pat-Off)	1-3	Splits In	Percent
Cycle	100	Std (COS)	112	Offsets In	Percent
Offset Value	23%	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 6)	12	40	12	36	12	40	12	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	100%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Region of Halton



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Coordination Split Pattern

Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Split (percent)	10	42	10	38	10	42	10	38	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Split (percent)	10	38	10	42	10	38	10	42	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Split (percent)	10	40	12	38	11	39	10	40	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Split (percent)	10	41	10	39	10	41	10	39	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%

Split Pattern # 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	S-L	N-T	E-L	W-T	N-L	S-T	N	N	N	N	N	N	N	N
Split (percent)	12	40	12	36	12	40	12	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	100%	100%	0%	0%



Region of Halton

MOVING TRAFFIC FORWARD

REG0814 - Upper Middle Rd @ Sixth Line - Econolite Type - Cobalt

Time Base Day Plan/Schedule**Day Plan (MM) 5-3****Day Plan #1 - "1"**

Event	Action Plan	Start Time
1	1	06:00
2	2	09:30
3	3	15:15
4	2	18:30
5	5	21:00

Day Plan #2 - "2"

Event	Action Plan	Start Time
2	4	07:00
5	5	19:00

Schedule (MM) 5-4**Schedule Number - 1**

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Appendix D

Background Development Excerpts

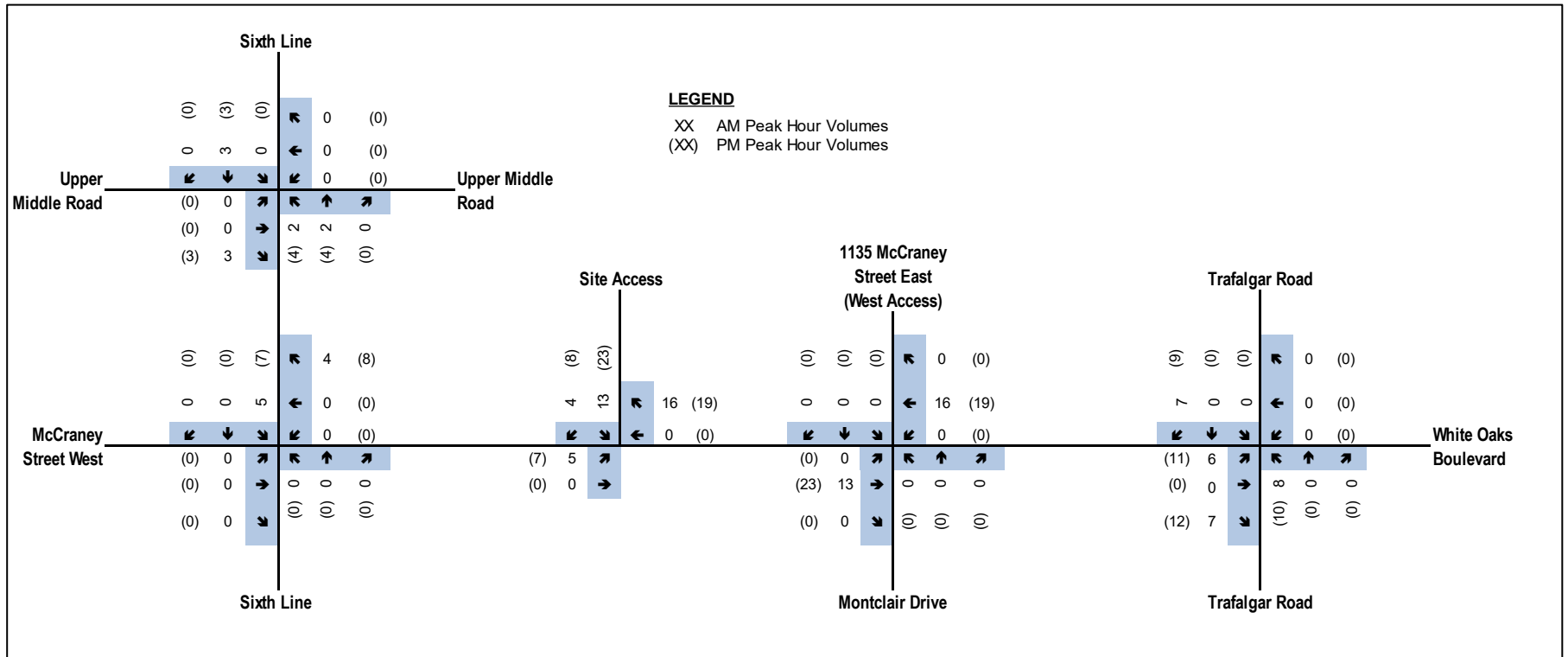


Figure 6 Estimated Site Trips

4.3 TRIP DISTRIBUTION AND ASSIGNMENT

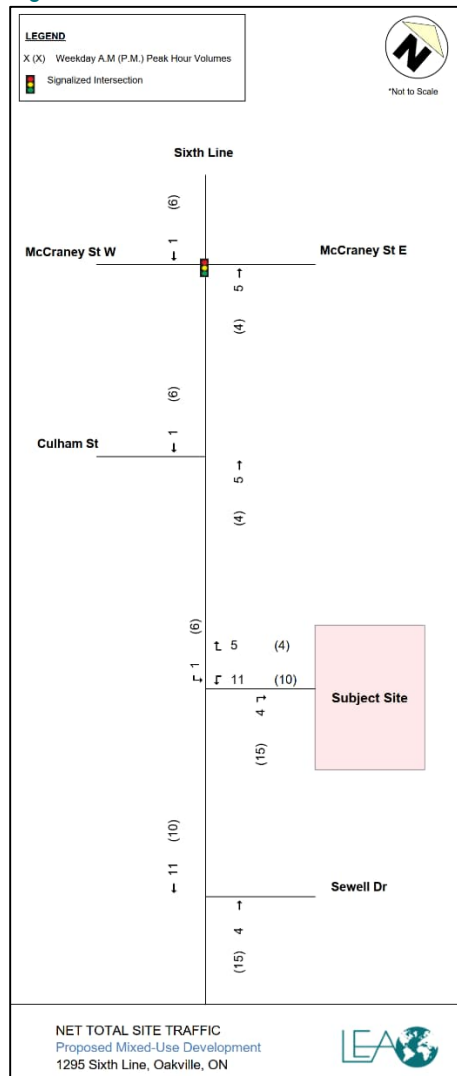
The trip distribution of site traffic was estimated using Transportation Tomorrow Survey (TTS) 2016 data. Trips were filtered for the inbound trips based on the PM peak hour and outbound based on the AM peak hour for traffic zones 4030 and 4031. Site traffic was assigned to the road network based on trip patterns in the study area, logical routing, turning restrictions and the location and configuration of the site access. Table 4-3 outlines the trip distribution for the site and detailed TTS calculations are provided in Appendix E.

Table 4-3: Site Trip Distribution

Gateway	Inbound	Outbound
Sixth Line (N)	27%	29%
Sixth Line (S)	73%	71%
Total	100%	100%

The site generated traffic volumes for the weekday AM and PM peak hours are illustrated in Figure 4-1.

Figure 4-1: Site Generated Peak Hour Traffic Volumes



Appendix E

**TRANS 2022 Origin-Destination
Household Travel Survey Excerpts**

Exhibit 3.17: Daily Mode Share by Trip Origin (2022)

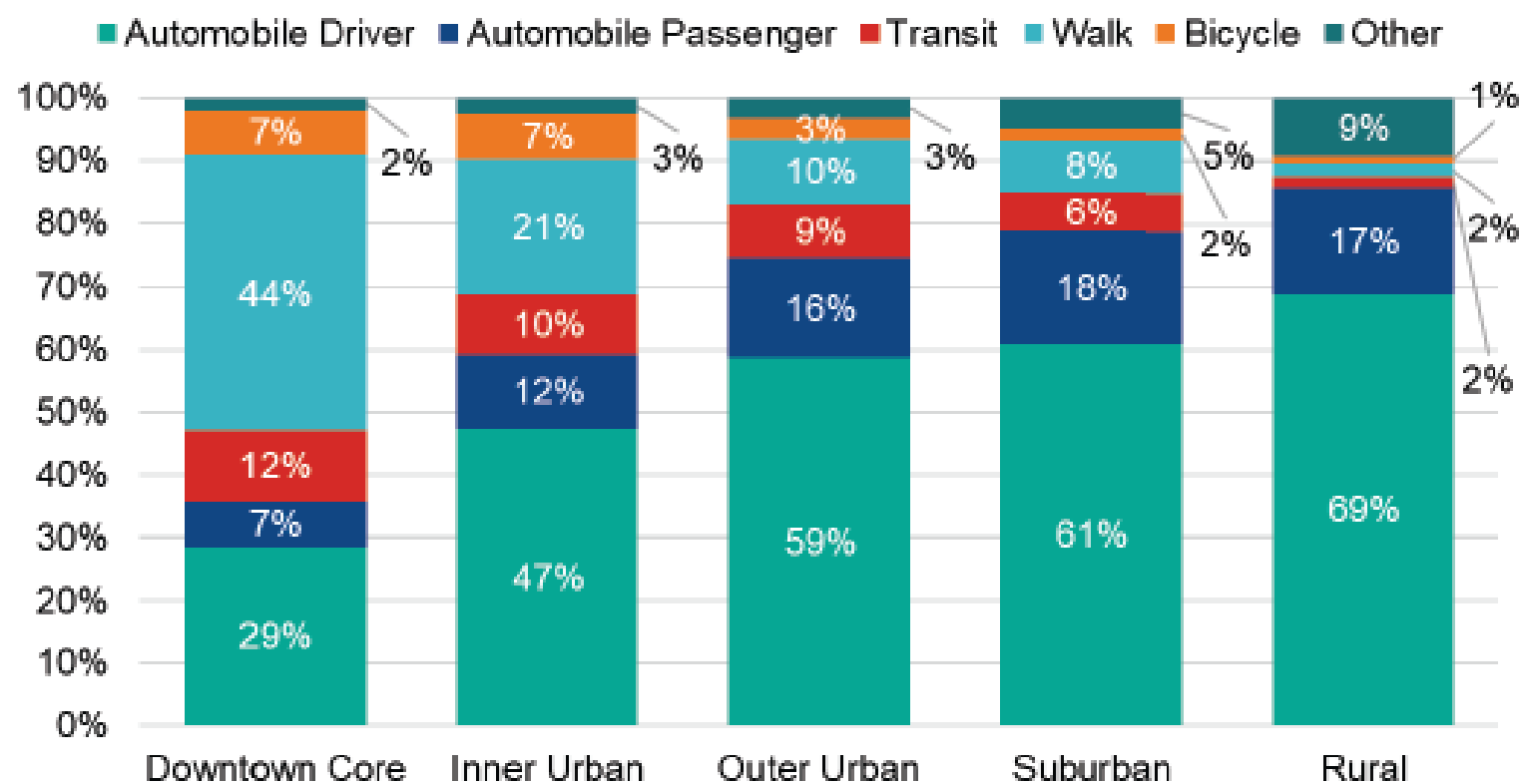
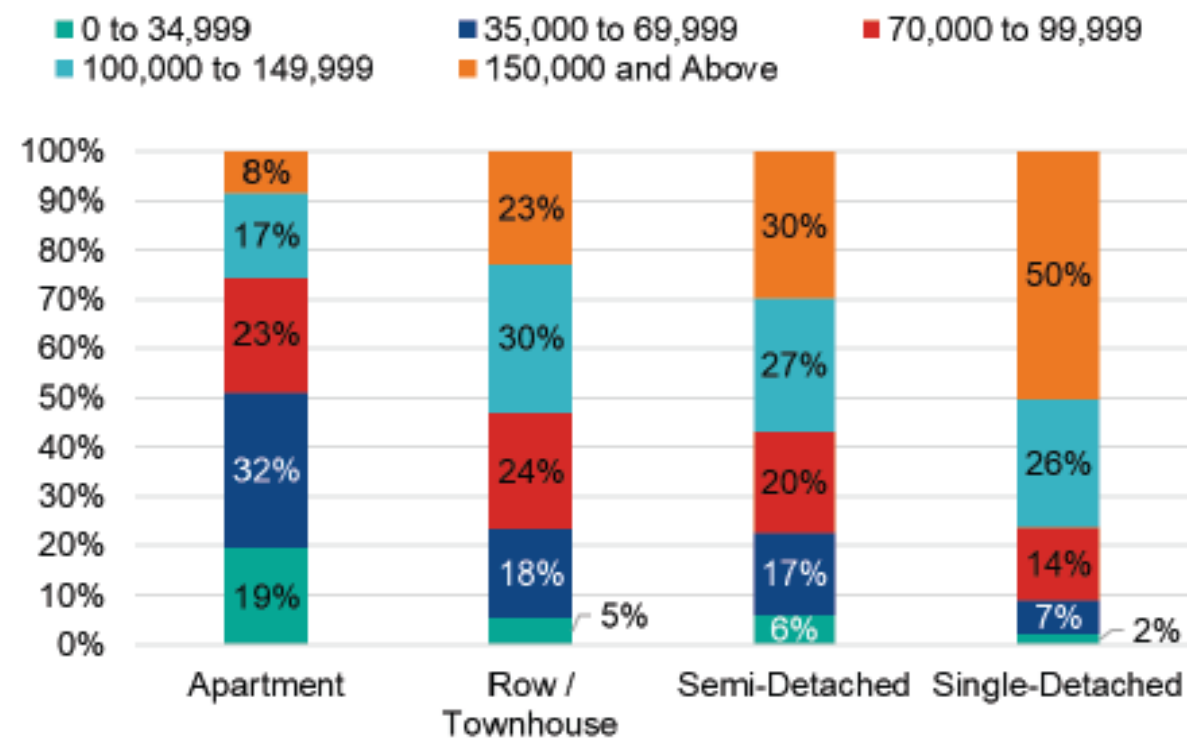
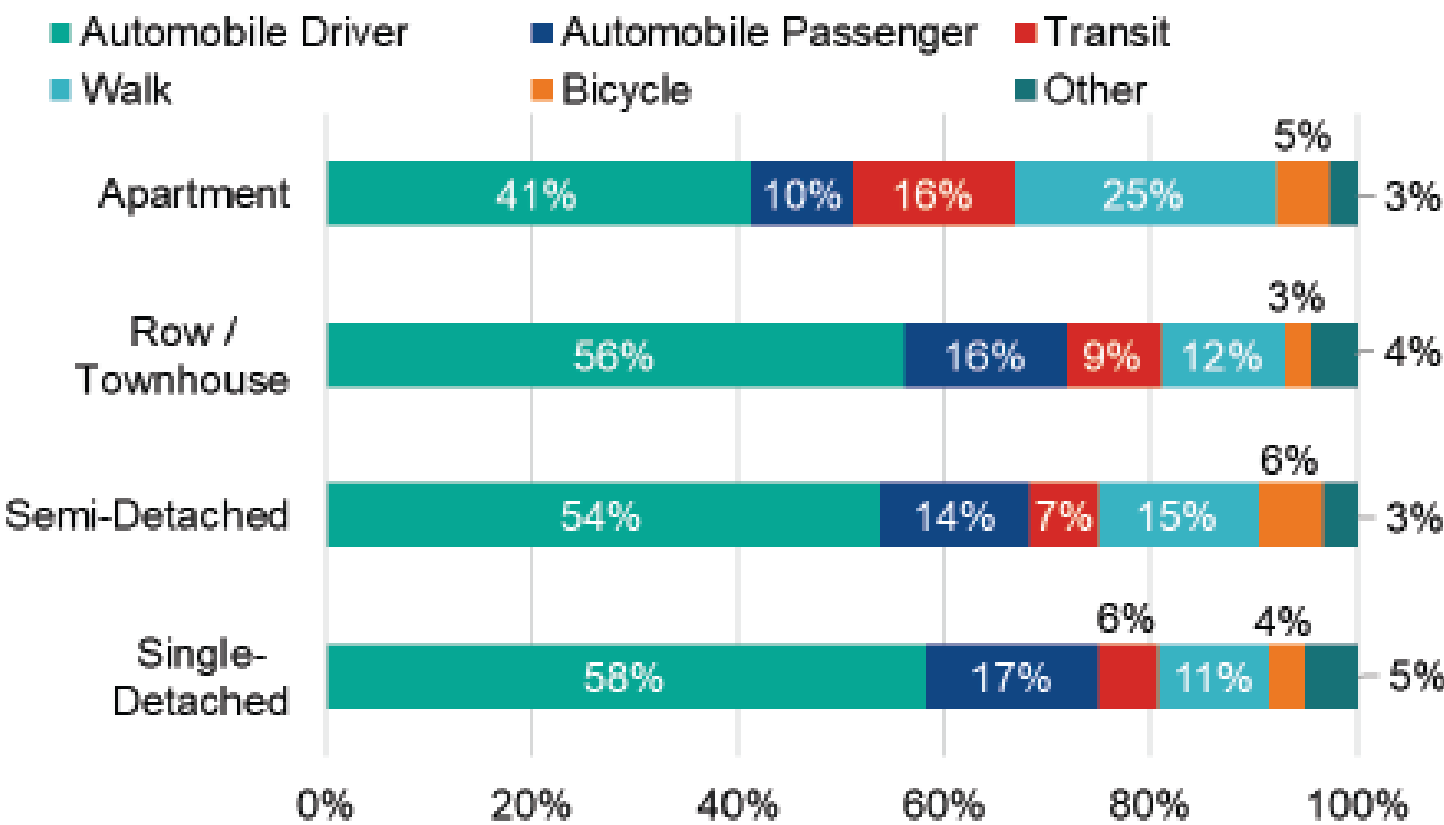


Exhibit 2.6: Household Income by Dwelling Type (2022)



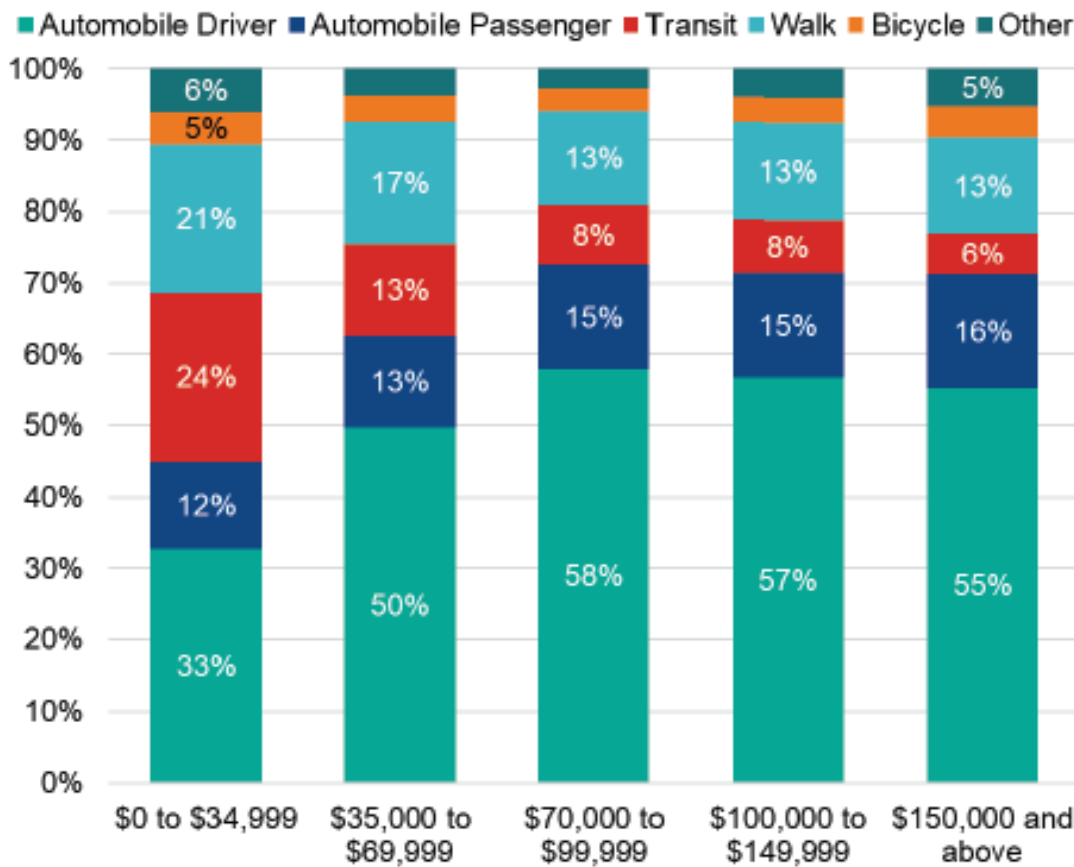
Source: 2022 Origin-Destination Survey.

Exhibit 3.19: Daily Mode Share by Dwelling Type (2022)



Source: 2022 Origin-Destination Survey.

Exhibit 3.20: Daily Mode Share by Household Income (2022)



Source: 2022 Origin-Destination Survey.

Appendix F

Synchro Outputs

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Existing 2025
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	718	156	150	501	86	140	224	163	154	254	90
Future Volume (vph)	92	718	156	150	501	86	140	224	163	154	254	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00		0.96	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3579	1617	1690	3544	1570	1722	1847	1570	1807	1800	0
Flt Permitted	0.370			0.229			0.349			0.520		
Satd. Flow (perm)	706	3579	1569	407	3544	1508	628	1847	1521	977	1800	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			104			161		16	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
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
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Adj. Flow (vph)	98	764	166	160	533	91	149	238	173	164	270	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	764	166	160	533	91	149	238	173	164	366	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Existing 2025
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	12.0	38.0	38.0	12.0	38.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	50.0	12.0	46.0	46.0	12.0	46.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	41.7%	10.0%	38.3%	38.3%	10.0%	38.3%	
Maximum Green (s)	8.0	44.5	44.5	8.0	44.5	44.5	8.0	39.6	39.6	8.0	39.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.8	44.5	44.5	54.2	44.7	44.7	50.0	39.6	39.6	50.0	39.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.45	0.37	0.37	0.42	0.33	0.33	0.42	0.33	
v/c Ratio	0.25	0.58	0.24	0.59	0.40	0.15	0.45	0.39	0.28	0.35	0.61	
Control Delay	18.8	32.3	5.0	28.4	29.0	4.2	24.9	33.3	6.7	22.8	37.2	
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	18.8	32.3	5.0	28.4	29.0	4.2	24.9	33.3	6.7	22.8	37.2	
LOS	B	C	A	C	C	A	C	C	A	C	D	
Approach Delay		26.6			26.0			22.8			32.7	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 26.8

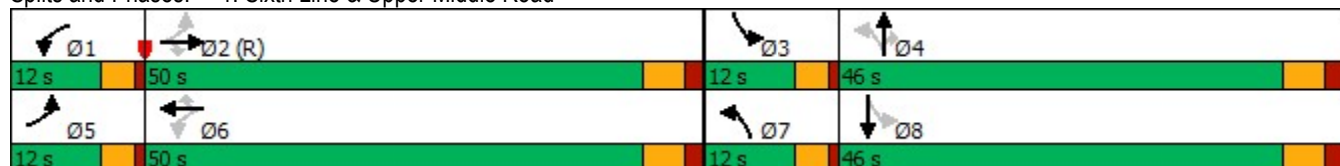
Intersection LOS: C

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

1: Sixth Line & Upper Middle Road

Existing 2025

AM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	764	166	160	533	91	149	238	173	164	366
v/c Ratio	0.25	0.58	0.24	0.59	0.40	0.15	0.45	0.39	0.28	0.35	0.61
Control Delay	18.8	32.3	5.0	28.4	29.0	4.2	24.9	33.3	6.7	22.8	37.2
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	18.8	32.3	5.0	28.4	29.0	4.2	24.9	33.3	6.7	22.8	37.2
Queue Length 50th (m)	12.3	75.0	0.6	20.9	48.4	0.0	20.7	42.9	1.9	22.8	68.8
Queue Length 95th (m)	21.9	94.5	14.3	34.2	63.4	8.4	34.2	65.2	17.2	37.0	100.2
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	392	1327	683	269	1320	626	334	609	609	462	604
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	0.25	0.58	0.24	0.59	0.40	0.15	0.45	0.39	0.28	0.35	0.61
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

1: Sixth Line & Upper Middle Road

Existing 2025

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	92	718	156	150	501	86	140	224	163	154	254	90
Future Volume (vph)	92	718	156	150	501	86	140	224	163	154	254	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1821	3579	1569	1689	3544	1508	1718	1847	1521	1796	1799	
Flt Permitted	0.37	1.00	1.00	0.23	1.00	1.00	0.35	1.00	1.00	0.52	1.00	
Satd. Flow (perm)	709	3579	1569	407	3544	1508	632	1847	1521	984	1799	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	98	764	166	160	533	91	149	238	173	164	270	96
RTOR Reduction (vph)	0	0	102	0	0	57	0	0	108	0	11	0
Lane Group Flow (vph)	98	764	64	160	533	34	149	238	65	164	355	0
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	52.3	44.5	44.5	52.7	44.7	44.7	47.6	39.6	39.6	47.6	39.6	
Effective Green, g (s)	52.3	44.5	44.5	52.7	44.7	44.7	47.6	39.6	39.6	47.6	39.6	
Actuated g/C Ratio	0.44	0.37	0.37	0.44	0.37	0.37	0.40	0.33	0.33	0.40	0.33	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	381	1327	581	264	1320	561	323	609	501	444	593	
v/s Ratio Prot	0.02	0.21		c0.04	0.15		c0.03	0.13		0.02	c0.20	
v/s Ratio Perm	0.10		0.04	c0.23		0.02	0.15		0.04	0.12		
v/c Ratio	0.26	0.58	0.11	0.61	0.40	0.06	0.46	0.39	0.13	0.37	0.60	
Uniform Delay, d1	20.5	30.2	24.8	22.3	27.8	24.2	24.9	30.9	28.1	24.2	33.6	
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	0.4	1.8	0.4	4.1	0.9	0.2	1.2	1.9	0.5	0.6	4.4	
Delay (s)	20.9	32.0	25.1	26.4	28.7	24.4	26.1	32.8	28.7	24.8	38.0	
Level of Service	C	C	C	C	C	C	C	C	C	C	D	
Approach Delay (s)		29.9			27.8			29.8			33.9	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			30.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			19.9			
Intersection Capacity Utilization			71.6%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
2: Sixth Line & Elm Road

Existing 2025
AM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	146	40	475	530	3
Future Volume (vph)	8	146	40	475	530	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.999	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1615	1541	0	1789	1846	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1615	1541	0	1789	1846	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)			13			13
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	13%	6%	30%	5%	4%	0%
Adj. Flow (vph)	10	176	48	572	639	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	176	0	620	643	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	68.1%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Existing 2025
AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	146	40	475	530	3
Future Volume (Veh/h)	8	146	40	475	530	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	10	176	48	572	639	4
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	288					
pX, platoon unblocked	0.87	0.87	0.87			
vC, conflicting volume	1322	654	656			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1297	533	535			
tC, single (s)	6.5	6.3	4.4			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.5			
p0 queue free %	93	62	94			
cM capacity (veh/h)	137	466	782			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	10	176	620	643		
Volume Left	10	0	48	0		
Volume Right	0	176	0	4		
cSH	137	466	782	1700		
Volume to Capacity	0.07	0.38	0.06	0.38		
Queue Length 95th (m)	1.8	13.2	1.5	0.0		
Control Delay (s)	33.2	17.4	1.6	0.0		
Lane LOS	D	C	A			
Approach Delay (s)	18.2		1.6	0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			68.1%	ICU Level of Service	C	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Existing 2025
AM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	52	16	512	669	7
Future Volume (vph)	3	52	16	512	669	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.873				0.999	
Flt Protected	0.997			0.998		
Satd. Flow (prot)	1641	0	0	1795	1685	0
Flt Permitted	0.997			0.998		
Satd. Flow (perm)	1641	0	0	1795	1685	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)			19			19
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	2%	0%	7%	14%	4%
Adj. Flow (vph)	4	63	20	624	816	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	0	644	825	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	49.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Existing 2025
AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	52	16	512	669	7
Future Volume (Veh/h)	3	52	16	512	669	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	4	63	20	624	816	9
Pedestrians	19					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.94					
vC, conflicting volume	1504	840	844			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1504	840	844			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	82	97			
cM capacity (veh/h)	122	359	786			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	67	644	825			
Volume Left	4	20	0			
Volume Right	63	0	9			
cSH	321	786	1700			
Volume to Capacity	0.21	0.03	0.49			
Queue Length 95th (m)	5.9	0.6	0.0			
Control Delay (s)	19.1	0.7	0.0			
Lane LOS	C	A				
Approach Delay (s)	19.1	0.7	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		49.9%		ICU Level of Service		A
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	148	40	36	44	337	12	167	46	452	259	10
Future Volume (vph)	24	148	40	36	44	337	12	167	46	452	259	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.93		0.98	0.99		0.99		
Frt		0.968			0.867			0.967			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1841	0	1706	1462	0	1825	1744	0	1772	1785	0
Flt Permitted	0.191			0.464			0.560			0.471		
Satd. Flow (perm)	367	1841	0	818	1462	0	1053	1744	0	869	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			394			16			3	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Adj. Flow (vph)	30	183	49	44	54	416	15	206	57	558	320	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	232	0	44	470	0	15	263	0	558	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

Lanes, Volumes, Timings
4: Sixth Line & McCraney Street West/McCraney Street East

Existing 2025
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	20.9	20.9		20.9	20.9		34.4	34.4		56.0	54.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.38	0.38		0.61	0.60	
v/c Ratio	0.36	0.54		0.24	0.74		0.04	0.39		0.81	0.31	
Control Delay	42.9	34.1		32.2	14.0		19.1	21.9		22.0	10.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.9	34.1		32.2	14.0		19.1	21.9		22.0	10.2	
LOS	D	C		C	B		B	C		C	B	
Approach Delay		35.1			15.5			21.7			17.6	
Approach LOS		D			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 91.2

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 20.0

Intersection LOS: C

Intersection Capacity Utilization 87.4%

ICU Level of Service E

Analysis Period (min) 15

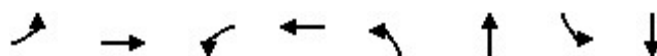
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	232	44	470	15	263	558	332
v/c Ratio	0.36	0.54	0.24	0.74	0.04	0.39	0.81	0.31
Control Delay	42.9	34.1	32.2	14.0	19.1	21.9	22.0	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	34.1	32.2	14.0	19.1	21.9	22.0	10.2
Queue Length 50th (m)	4.4	33.7	6.3	10.9	1.6	30.4	48.7	25.5
Queue Length 95th (m)	11.5	48.7	13.7	28.2	5.3	47.2	70.9	39.7
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	99	508	221	683	397	667	691	1065
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	0.30	0.46	0.20	0.69	0.04	0.39	0.81	0.31
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Existing 2025
AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	148	40	36	44	337	12	167	46	452	259	10
Future Volume (vph)	24	148	40	36	44	337	12	167	46	452	259	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.93		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		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)	1825	1842		1676	1465		1787	1745		1763	1784	
Flt Permitted	0.19	1.00		0.46	1.00		0.56	1.00		0.47	1.00	
Satd. Flow (perm)	368	1842		819	1465		1054	1745		874	1784	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	30	183	49	44	54	416	15	206	57	558	320	12
RTOR Reduction (vph)	0	11	0	0	304	0	0	10	0	0	1	0
Lane Group Flow (vph)	30	221	0	44	166	0	15	253	0	558	331	0
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.9	20.9		20.9	20.9		34.4	34.4		54.4	54.4	
Effective Green, g (s)	20.9	20.9		20.9	20.9		34.4	34.4		54.4	54.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.38	0.38		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	84	422		187	335		397	658		677	1064	
v/s Ratio Prot		c0.12			0.11			0.14		c0.14	0.19	
v/s Ratio Perm	0.08			0.05			0.01			c0.35		
v/c Ratio	0.36	0.52		0.24	0.50		0.04	0.38		0.82	0.31	
Uniform Delay, d1	29.5	30.8		28.6	30.6		17.9	20.7		12.0	9.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	1.2		0.7	1.2		0.2	1.7		8.1	0.8	
Delay (s)	32.1	32.0		29.3	31.7		18.1	22.4		20.1	9.9	
Level of Service	C	C		C	C		B	C		C	A	
Approach Delay (s)		32.0			31.5			22.2			16.3	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			23.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			91.2			Sum of lost time (s)				16.9		
Intersection Capacity Utilization			87.4%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Existing 2025
PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	560	81	85	768	133	173	191	71	203	189	140
Future Volume (vph)	138	560	81	85	768	133	173	191	71	203	189	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00		0.92	0.99		0.97	0.99		
Frt			0.850			0.850			0.850		0.936	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3614	1617	1755	3614	1633	1789	1921	1617	1825	1791	0
Flt Permitted	0.178			0.322			0.400			0.540		
Satd. Flow (perm)	342	3614	1574	594	3614	1510	750	1921	1575	1028	1791	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			104			95		34	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Adj. Flow (vph)	148	602	87	91	826	143	186	205	76	218	203	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	602	87	91	826	143	186	205	76	218	354	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Existing 2025
PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (%)	10.8%	40.0%	40.0%	10.0%	39.2%	39.2%	10.0%	38.3%	38.3%	11.7%	40.0%	
Maximum Green (s)	9.0	42.5	42.5	8.0	41.5	41.5	8.0	39.6	39.6	10.0	41.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.0	42.7	42.7	51.0	41.7	41.7	50.0	39.6	39.6	54.0	41.6	
Actuated g/C Ratio	0.44	0.36	0.36	0.42	0.35	0.35	0.42	0.33	0.33	0.45	0.35	
v/c Ratio	0.57	0.47	0.14	0.28	0.66	0.24	0.49	0.32	0.13	0.41	0.55	
Control Delay	27.8	31.4	3.9	20.5	36.3	10.2	24.9	32.0	4.0	22.3	32.3	
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	27.8	31.4	3.9	20.5	36.3	10.2	24.9	32.0	4.0	22.3	32.3	
LOS	C	C	A	C	D	B	C	C	A	C	C	
Approach Delay		27.9			31.4			24.6			28.5	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 28.7

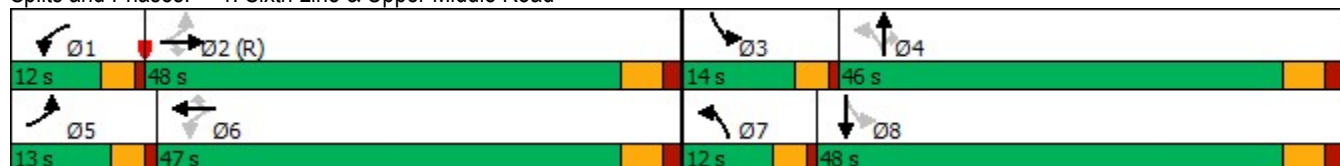
Intersection LOS: C

Intersection Capacity Utilization 73.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

1: Sixth Line & Upper Middle Road

Existing 2025

PM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	148	602	87	91	826	143	186	205	76	218	354
v/c Ratio	0.57	0.47	0.14	0.28	0.66	0.24	0.49	0.32	0.13	0.41	0.55
Control Delay	27.8	31.4	3.9	20.5	36.3	10.2	24.9	32.0	4.0	22.3	32.3
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	27.8	31.4	3.9	20.5	36.3	10.2	24.9	32.0	4.0	22.3	32.3
Queue Length 50th (m)	19.7	57.3	0.0	11.8	86.2	6.1	25.4	36.1	0.0	30.3	60.4
Queue Length 95th (m)	32.6	74.0	7.8	21.4	107.8	20.4	40.3	56.1	7.3	46.9	90.4
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	263	1285	626	330	1254	592	381	633	583	529	643
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	0.56	0.47	0.14	0.28	0.66	0.24	0.49	0.32	0.13	0.41	0.55
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

1: Sixth Line & Upper Middle Road

Existing 2025

PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	138	560	81	85	768	133	173	191	71	203	189	140
Future Volume (vph)	138	560	81	85	768	133	173	191	71	203	189	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1825	3614	1574	1754	3614	1510	1786	1921	1575	1817	1791	
Flt Permitted	0.18	1.00	1.00	0.32	1.00	1.00	0.40	1.00	1.00	0.54	1.00	
Satd. Flow (perm)	341	3614	1574	595	3614	1510	751	1921	1575	1032	1791	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	148	602	87	91	826	143	186	205	76	218	203	151
RTOR Reduction (vph)	0	0	56	0	0	68	0	0	51	0	22	0
Lane Group Flow (vph)	148	602	31	91	826	75	186	205	25	218	332	0
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	51.5	42.7	42.7	49.5	41.7	41.7	47.6	39.6	39.6	51.6	41.6	
Effective Green, g (s)	51.5	42.7	42.7	49.5	41.7	41.7	47.6	39.6	39.6	51.6	41.6	
Actuated g/C Ratio	0.43	0.36	0.36	0.41	0.35	0.35	0.40	0.33	0.33	0.43	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	255	1285	560	320	1255	524	366	633	519	509	620	
v/s Ratio Prot	c0.04	0.17		0.02	c0.23		0.03	0.11		c0.04	c0.19	
v/s Ratio Perm	0.21		0.02	0.10		0.05	0.17		0.02	0.15		
v/c Ratio	0.58	0.47	0.06	0.28	0.66	0.14	0.51	0.32	0.05	0.43	0.54	
Uniform Delay, d1	23.5	29.9	25.4	22.3	33.1	26.9	25.4	30.2	27.4	22.3	31.4	
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	3.6	1.2	0.2	0.6	2.7	0.6	1.3	1.4	0.2	0.7	3.3	
Delay (s)	27.1	31.1	25.6	22.9	35.8	27.5	26.7	31.5	27.5	23.0	34.7	
Level of Service	C	C	C	C	D	C	C	C	C	C	C	
Approach Delay (s)		29.8			33.6			28.9			30.3	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			31.1									
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			73.5%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
2: Sixth Line & Elm Road

Existing 2025
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	77	46	518	406	10
Future Volume (vph)	9	77	46	518	406	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.997	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1825	1601	0	1879	1856	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1825	1601	0	1879	1856	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)	3		12			12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	2%	3%	10%
Adj. Flow (vph)	10	83	49	557	437	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	83	0	606	448	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	65.1%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Existing 2025
PM Peak Hr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	77	46	518	406	10
Future Volume (Veh/h)	9	77	46	518	406	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	83	49	557	437	11
Pedestrians	12				3	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume	1112	454	460			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1112	454	460			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	86	96			
cM capacity (veh/h)	219	598	1099			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	10	83	606	448		
Volume Left	10	0	49	0		
Volume Right	0	83	0	11		
cSH	219	598	1099	1700		
Volume to Capacity	0.05	0.14	0.04	0.26		
Queue Length 95th (m)	1.1	3.6	1.1	0.0		
Control Delay (s)	22.2	12.0	1.2	0.0		
Lane LOS	C	B	A			
Approach Delay (s)	13.1		1.2	0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			65.1%	ICU Level of Service	C	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Existing 2025
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	31	33	555	457	26
Future Volume (vph)	9	31	33	555	457	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.896				0.993	
Flt Protected	0.989			0.997		
Satd. Flow (prot)	1612	0	0	1880	1836	0
Flt Permitted	0.989			0.997		
Satd. Flow (perm)	1612	0	0	1880	1836	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)	1		15			15
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	4%	0%	2%	4%	2%
Adj. Flow (vph)	10	33	35	597	491	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	0	632	519	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	66.2%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Existing 2025
PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	31	33	555	457	26
Future Volume (Veh/h)	9	31	33	555	457	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	33	35	597	491	28
Pedestrians	15				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.88					
vC, conflicting volume	1188	520	534			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1147	520	534			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	94	94	97			
cM capacity (veh/h)	178	544	1029			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	43	632	519			
Volume Left	10	35	0			
Volume Right	33	0	28			
cSH	368	1029	1700			
Volume to Capacity	0.12	0.03	0.31			
Queue Length 95th (m)	3.0	0.8	0.0			
Control Delay (s)	16.1	0.9	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.1	0.9	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		66.2%		ICU Level of Service		C
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	35	20	16	45	261	18	304	12	173	273	42
Future Volume (vph)	23	35	20	16	45	261	18	304	12	173	273	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.97		0.99	1.00		0.99	0.99	
Frt		0.945			0.872			0.994			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1795	0	1825	1604	0	1825	1889	0	1755	1841	0
Flt Permitted	0.375			0.544			0.557			0.430		
Satd. Flow (perm)	717	1795	0	1035	1604	0	1058	1889	0	788	1841	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			281			2			14	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Adj. Flow (vph)	25	38	22	17	48	281	19	327	13	186	294	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	60	0	17	329	0	19	340	0	186	339	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	20.0	20.0		20.0	20.0		40.8	40.8		56.0	54.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.45	0.45		0.62	0.60	
v/c Ratio	0.16	0.14		0.07	0.57		0.04	0.40		0.31	0.30	
Control Delay	31.4	21.0		29.0	10.7		15.2	18.7		8.8	9.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.4	21.0		29.0	10.7		15.2	18.7		8.8	9.2	
LOS	C	C		C	B		B	B		A	A	
Approach Delay		24.1			11.6			18.5			9.1	
Approach LOS		C			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90.3

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 13.3

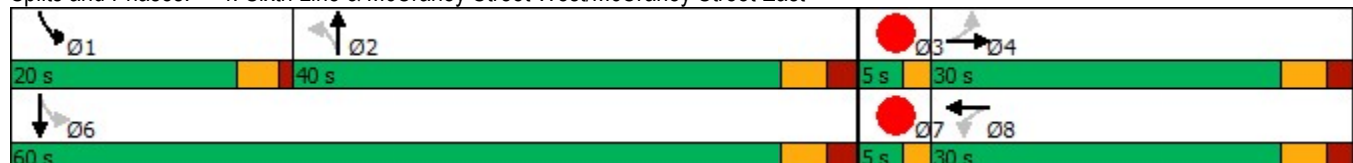
Intersection LOS: B

Intersection Capacity Utilization 72.9%

ICU Level of Service C

Analysis Period (min) 15

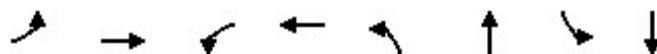
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	60	17	329	19	340	186	339
v/c Ratio	0.16	0.14	0.07	0.57	0.04	0.40	0.31	0.30
Control Delay	31.4	21.0	29.0	10.7	15.2	18.7	8.8	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	21.0	29.0	10.7	15.2	18.7	8.8	9.2
Queue Length 50th (m)	3.5	5.3	2.3	6.7	1.8	37.7	12.4	25.0
Queue Length 95th (m)	10.4	15.0	7.7	30.2	6.0	62.4	21.2	39.2
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	196	506	283	642	478	854	660	1114
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	0.13	0.12	0.06	0.51	0.04	0.40	0.28	0.30
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Existing 2025
PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	35	20	16	45	261	18	304	12	173	273	42
Future Volume (vph)	23	35	20	16	45	261	18	304	12	173	273	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.87		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1815	1796		1810	1605		1805	1889		1749	1842	
Flt Permitted	0.37	1.00		0.54	1.00		0.56	1.00		0.43	1.00	
Satd. Flow (perm)	716	1796		1037	1605		1058	1889		791	1842	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	25	38	22	17	48	281	19	327	13	186	294	45
RTOR Reduction (vph)	0	18	0	0	216	0	0	1	0	0	6	0
Lane Group Flow (vph)	25	42	0	17	113	0	19	339	0	186	333	0
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		21.1	21.1		40.8	40.8		54.4	54.4	
Effective Green, g (s)	16.0	16.0		21.1	21.1		40.8	40.8		54.4	54.4	
Actuated g/C Ratio	0.18	0.18		0.23	0.23		0.45	0.45		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	125	314		239	370		472	843		571	1096	
v/s Ratio Prot		0.02			c0.07			c0.18		0.03	c0.18	
v/s Ratio Perm	0.03			0.02			0.02			0.16		
v/c Ratio	0.20	0.13		0.07	0.31		0.04	0.40		0.33	0.30	
Uniform Delay, d1	32.2	31.8		27.5	29.1		14.3	17.1		9.1	9.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.2		0.1	0.5		0.2	1.4		0.3	0.7	
Delay (s)	33.0	32.0		27.6	29.6		14.4	18.5		9.4	9.9	
Level of Service	C	C		C	C		B	B		A	A	
Approach Delay (s)		32.3			29.5			18.3			9.7	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay	18.7			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.35											
Actuated Cycle Length (s)	91.4			Sum of lost time (s)			16.9					
Intersection Capacity Utilization	72.9%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2028

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	762	169	159	532	91	147	235	170	159	266	93
Future Volume (vph)	98	762	169	159	532	91	147	235	170	159	266	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00		0.96	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3579	1617	1690	3544	1570	1722	1847	1570	1807	1800	0
Flt Permitted	0.348			0.205			0.329			0.504		
Satd. Flow (perm)	664	3579	1569	364	3544	1508	593	1847	1521	948	1800	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			166			104			160		16	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
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
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Adj. Flow (vph)	104	811	180	169	566	97	156	250	181	169	283	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	811	180	169	566	97	156	250	181	169	382	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2028
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	12.0	38.0	38.0	12.0	38.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	50.0	12.0	46.0	46.0	12.0	46.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	41.7%	10.0%	38.3%	38.3%	10.0%	38.3%	
Maximum Green (s)	8.0	44.5	44.5	8.0	44.5	44.5	8.0	39.6	39.6	8.0	39.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.8	44.5	44.5	54.2	44.7	44.7	50.0	39.6	39.6	50.0	39.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.45	0.37	0.37	0.42	0.33	0.33	0.42	0.33	
v/c Ratio	0.28	0.61	0.26	0.67	0.43	0.15	0.48	0.41	0.30	0.37	0.63	
Control Delay	19.2	33.1	5.8	33.2	29.4	4.7	26.1	33.7	7.5	23.2	38.1	
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	19.2	33.1	5.8	33.2	29.4	4.7	26.1	33.7	7.5	23.2	38.1	
LOS	B	C	A	C	C	A	C	C	A	C	D	
Approach Delay		27.3			27.3			23.6			33.5	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 27.7

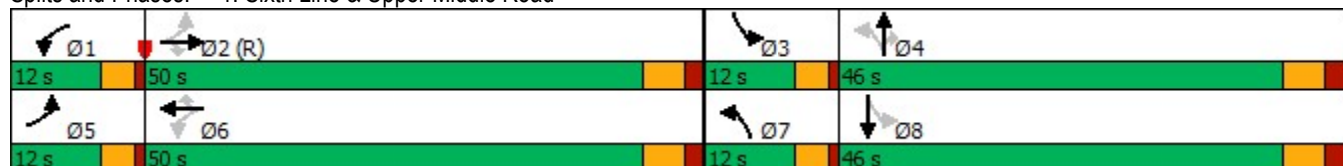
Intersection LOS: C

Intersection Capacity Utilization 74.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Background 2028

1: Sixth Line & Upper Middle Road

AM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	811	180	169	566	97	156	250	181	169	382
v/c Ratio	0.28	0.61	0.26	0.67	0.43	0.15	0.48	0.41	0.30	0.37	0.63
Control Delay	19.2	33.1	5.8	33.2	29.4	4.7	26.1	33.7	7.5	23.2	38.1
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	19.2	33.1	5.8	33.2	29.4	4.7	26.1	33.7	7.5	23.2	38.1
Queue Length 50th (m)	13.0	81.0	2.1	22.2	52.0	0.0	21.7	45.4	3.3	23.7	72.7
Queue Length 95th (m)	23.1	101.4	16.5	#37.2	67.5	9.7	35.7	68.5	19.0	38.0	105.6
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	376	1327	686	252	1319	626	322	609	609	452	604
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	0.28	0.61	0.26	0.67	0.43	0.15	0.48	0.41	0.30	0.37	0.63

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Future Background 2028

1: Sixth Line & Upper Middle Road

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	98	762	169	159	532	91	147	235	170	159	266	93
Future Volume (vph)	98	762	169	159	532	91	147	235	170	159	266	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1821	3579	1569	1690	3544	1508	1719	1847	1521	1797	1800	
Flt Permitted	0.35	1.00	1.00	0.21	1.00	1.00	0.33	1.00	1.00	0.50	1.00	
Satd. Flow (perm)	668	3579	1569	365	3544	1508	595	1847	1521	953	1800	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	104	811	180	169	566	97	156	250	181	169	283	99
RTOR Reduction (vph)	0	0	104	0	0	61	0	0	107	0	11	0
Lane Group Flow (vph)	104	811	76	169	566	36	156	250	74	169	371	0
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	52.3	44.5	44.5	52.7	44.7	44.7	47.6	39.6	39.6	47.6	39.6	
Effective Green, g (s)	52.3	44.5	44.5	52.7	44.7	44.7	47.6	39.6	39.6	47.6	39.6	
Actuated g/C Ratio	0.44	0.37	0.37	0.44	0.37	0.37	0.40	0.33	0.33	0.40	0.33	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	366	1327	581	248	1320	561	310	609	501	434	594	
v/s Ratio Prot	0.02	0.23		c0.05	0.16		c0.03	0.14		0.03	c0.21	
v/s Ratio Perm	0.11		0.05	c0.25		0.02	0.17		0.05	0.13		
v/c Ratio	0.28	0.61	0.13	0.68	0.43	0.06	0.50	0.41	0.15	0.39	0.63	
Uniform Delay, d1	20.7	30.7	25.0	22.9	28.1	24.2	25.2	31.2	28.3	24.3	33.9	
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	0.5	2.1	0.5	7.8	1.0	0.2	1.5	2.0	0.6	0.7	4.9	
Delay (s)	21.2	32.8	25.4	30.6	29.1	24.4	26.7	33.2	28.9	25.0	38.8	
Level of Service	C	C	C	C	C	C	C	C	C	C	D	
Approach Delay (s)		30.5			28.9			30.2			34.6	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			30.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			19.9			
Intersection Capacity Utilization			74.5%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Sixth Line & Elm Road

Future Background 2028

AM Peak Hr



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	150	41	498	553	3
Future Volume (vph)	8	150	41	498	553	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.999	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1615	1541	0	1790	1846	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1615	1541	0	1790	1846	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)			13			13
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	13%	6%	30%	5%	4%	0%
Adj. Flow (vph)	10	181	49	600	666	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	181	0	649	670	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 70.1% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Future Background 2028
AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	150	41	498	553	3
Future Volume (Veh/h)	8	150	41	498	553	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	10	181	49	600	666	4
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	288					
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1379	681	683			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1360	552	555			
tC, single (s)	6.5	6.3	4.4			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.5			
p0 queue free %	92	60	94			
cM capacity (veh/h)	124	448	759			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	10	181	649	670		
Volume Left	10	0	49	0		
Volume Right	0	181	0	4		
cSH	124	448	759	1700		
Volume to Capacity	0.08	0.40	0.06	0.39		
Queue Length 95th (m)	2.0	14.6	1.6	0.0		
Control Delay (s)	36.7	18.4	1.7	0.0		
Lane LOS	E	C	A			
Approach Delay (s)	19.3		1.7	0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			70.1%	ICU Level of Service	C	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Background 2028
AM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	54	16	537	696	7
Future Volume (vph)	3	54	16	537	696	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.873				0.999	
Flt Protected	0.997			0.999		
Satd. Flow (prot)	1641	0	0	1797	1685	0
Flt Permitted	0.997			0.999		
Satd. Flow (perm)	1641	0	0	1797	1685	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)			19			19
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	2%	0%	7%	14%	4%
Adj. Flow (vph)	4	66	20	655	849	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	0	675	858	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	51.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Background 2028

AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	54	16	537	696	7
Future Volume (Veh/h)	3	54	16	537	696	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	4	66	20	655	849	9
Pedestrians	19					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.93					
vC, conflicting volume	1568	872	877			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1572	872	877			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	81	97			
cM capacity (veh/h)	110	343	764			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	70	675	858			
Volume Left	4	20	0			
Volume Right	66	0	9			
cSH	306	764	1700			
Volume to Capacity	0.23	0.03	0.50			
Queue Length 95th (m)	6.6	0.6	0.0			
Control Delay (s)	20.2	0.7	0.0			
Lane LOS	C	A				
Approach Delay (s)	20.2	0.7	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.2				
Intersection Capacity Utilization		51.3%		ICU Level of Service	A	
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	152	41	37	45	351	12	177	47	472	268	10
Future Volume (vph)	25	152	41	37	45	351	12	177	47	472	268	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.93		0.98	0.99		0.99		
Frt		0.968			0.867			0.969			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1840	0	1706	1462	0	1825	1748	0	1772	1785	0
Flt Permitted	0.191			0.451			0.555			0.455		
Satd. Flow (perm)	367	1840	0	795	1462	0	1044	1748	0	840	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			396			16			3	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Adj. Flow (vph)	31	188	51	46	56	433	15	219	58	583	331	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	239	0	46	489	0	15	277	0	583	343	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	20.9	20.9		20.9	20.9		34.4	34.4		56.0	54.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.38	0.38		0.61	0.60	
v/c Ratio	0.37	0.55		0.25	0.76		0.04	0.41		0.86	0.32	
Control Delay	43.6	34.6		32.8	15.8		19.2	22.3		26.3	10.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.6	34.6		32.8	15.8		19.2	22.3		26.3	10.4	
LOS	D	C		C	B		B	C		C	B	
Approach Delay		35.6			17.3			22.1			20.4	
Approach LOS		D			B			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 91.2

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 89.3%

ICU Level of Service E

Analysis Period (min) 15

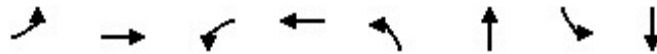
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	31	239	46	489	15	277	583	343
v/c Ratio	0.37	0.55	0.25	0.76	0.04	0.41	0.86	0.32
Control Delay	43.6	34.6	32.8	15.8	19.2	22.3	26.3	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	34.6	32.8	15.8	19.2	22.3	26.3	10.4
Queue Length 50th (m)	4.6	34.9	6.6	13.5	1.6	32.5	52.0	26.5
Queue Length 95th (m)	11.8	50.4	14.3	32.6	5.3	49.9	#80.5	41.0
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	99	508	215	684	393	669	679	1065
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	0.31	0.47	0.21	0.71	0.04	0.41	0.86	0.32

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Background 2028

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	152	41	37	45	351	12	177	47	472	268	10
Future Volume (vph)	25	152	41	37	45	351	12	177	47	472	268	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.93		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		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)	1825	1841		1677	1465		1788	1748		1764	1784	
Flt Permitted	0.19	1.00		0.45	1.00		0.55	1.00		0.46	1.00	
Satd. Flow (perm)	368	1841		795	1465		1044	1748		845	1784	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	31	188	51	46	56	433	15	219	58	583	331	12
RTOR Reduction (vph)	0	11	0	0	305	0	0	10	0	0	1	0
Lane Group Flow (vph)	31	228	0	46	184	0	15	267	0	583	342	0
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.9	20.9		20.9	20.9		34.4	34.4		54.4	54.4	
Effective Green, g (s)	20.9	20.9		20.9	20.9		34.4	34.4		54.4	54.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.38	0.38		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	84	421		182	335		393	659		665	1064	
v/s Ratio Prot		0.12			c0.13			0.15		c0.15	0.19	
v/s Ratio Perm	0.08			0.06			0.01			c0.37		
v/c Ratio	0.37	0.54		0.25	0.55		0.04	0.41		0.88	0.32	
Uniform Delay, d1	29.6	30.9		28.8	31.0		17.9	20.9		13.0	9.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	1.4		0.7	1.8		0.2	1.8		12.4	0.8	
Delay (s)	32.3	32.4		29.5	32.8		18.1	22.7		25.4	10.0	
Level of Service	C	C		C	C		B	C		C	A	
Approach Delay (s)		32.4			32.5			22.5			19.7	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay	25.2			HCM 2000 Level of Service			C					
HCM 2000 Volume to Capacity ratio	0.79											
Actuated Cycle Length (s)	91.2			Sum of lost time (s)			16.9					
Intersection Capacity Utilization	89.3%			ICU Level of Service			E					
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2028

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	594	90	92	815	141	184	203	73	209	201	144
Future Volume (vph)	146	594	90	92	815	141	184	203	73	209	201	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00		0.92	1.00		0.97	0.99		
Frt			0.850			0.850			0.850		0.937	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3614	1617	1755	3614	1633	1789	1921	1617	1825	1793	0
Flt Permitted	0.153			0.299			0.377			0.522		
Satd. Flow (perm)	294	3614	1574	551	3614	1510	707	1921	1575	994	1793	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			105			95		33	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Adj. Flow (vph)	157	639	97	99	876	152	198	218	78	225	216	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	639	97	99	876	152	198	218	78	225	371	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2028
PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (%)	10.8%	40.0%	40.0%	10.0%	39.2%	39.2%	10.0%	38.3%	38.3%	11.7%	40.0%	
Maximum Green (s)	9.0	42.5	42.5	8.0	41.5	41.5	8.0	39.6	39.6	10.0	41.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.1	42.7	42.7	50.9	41.6	41.6	50.0	39.6	39.6	54.0	41.6	
Actuated g/C Ratio	0.44	0.36	0.36	0.42	0.35	0.35	0.42	0.33	0.33	0.45	0.35	
v/c Ratio	0.65	0.50	0.15	0.32	0.70	0.26	0.54	0.34	0.13	0.44	0.58	
Control Delay	32.1	31.9	5.0	21.2	37.5	11.0	26.6	32.3	4.2	22.8	33.3	
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	32.1	31.9	5.0	21.2	37.5	11.0	26.6	32.3	4.2	22.8	33.3	
LOS	C	C	A	C	D	B	C	C	A	C	C	
Approach Delay		29.0			32.5			25.6			29.3	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 29.8

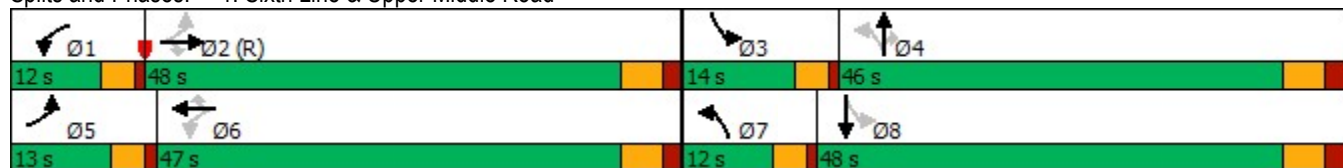
Intersection LOS: C

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Background 2028

1: Sixth Line & Upper Middle Road

PM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	157	639	97	99	876	152	198	218	78	225	371
v/c Ratio	0.65	0.50	0.15	0.32	0.70	0.26	0.54	0.34	0.13	0.44	0.58
Control Delay	32.1	31.9	5.0	21.2	37.5	11.0	26.6	32.3	4.2	22.8	33.3
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	32.1	31.9	5.0	21.2	37.5	11.0	26.6	32.3	4.2	22.8	33.3
Queue Length 50th (m)	21.0	61.6	0.0	12.9	93.2	7.4	27.3	38.7	0.0	31.5	64.6
Queue Length 95th (m)	34.4	79.1	9.9	23.1	116.0	22.4	43.0	59.4	7.6	48.3	95.8
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	245	1285	626	314	1252	591	366	633	583	516	643
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	0.64	0.50	0.15	0.32	0.70	0.26	0.54	0.34	0.13	0.44	0.58
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

Future Background 2028

1: Sixth Line & Upper Middle Road

PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	146	594	90	92	815	141	184	203	73	209	201	144
Future Volume (vph)	146	594	90	92	815	141	184	203	73	209	201	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1825	3614	1574	1754	3614	1510	1786	1921	1575	1817	1793	
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.38	1.00	1.00	0.52	1.00	
Satd. Flow (perm)	293	3614	1574	553	3614	1510	710	1921	1575	999	1793	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	157	639	97	99	876	152	198	218	78	225	216	155
RTOR Reduction (vph)	0	0	62	0	0	69	0	0	52	0	22	0
Lane Group Flow (vph)	157	639	35	99	876	83	198	218	26	225	349	0
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	51.6	42.7	42.7	49.4	41.6	41.6	47.6	39.6	39.6	51.6	41.6	
Effective Green, g (s)	51.6	42.7	42.7	49.4	41.6	41.6	47.6	39.6	39.6	51.6	41.6	
Actuated g/C Ratio	0.43	0.36	0.36	0.41	0.35	0.35	0.40	0.33	0.33	0.43	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	239	1285	560	305	1252	523	353	633	519	497	621	
v/s Ratio Prot	c0.05	0.18		0.02	c0.24		c0.04	0.11		c0.04	c0.19	
v/s Ratio Perm	0.23		0.02	0.11		0.06	0.18		0.02	0.16		
v/c Ratio	0.66	0.50	0.06	0.32	0.70	0.16	0.56	0.34	0.05	0.45	0.56	
Uniform Delay, d1	24.2	30.2	25.5	22.6	33.8	27.1	26.4	30.4	27.4	22.5	31.8	
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	6.6	1.4	0.2	0.7	3.3	0.7	2.2	1.5	0.2	0.8	3.7	
Delay (s)	30.8	31.6	25.7	23.3	37.1	27.8	28.6	31.9	27.6	23.3	35.5	
Level of Service	C	C	C	C	D	C	C	C	C	C	D	
Approach Delay (s)		30.8			34.6			29.9			30.9	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			32.1			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			19.9			
Intersection Capacity Utilization			76.8%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Sixth Line & Elm Road

Future Background 2028
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	79	47	546	430	10
Future Volume (vph)	9	79	47	546	430	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.997	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1825	1601	0	1879	1857	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1825	1601	0	1879	1857	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)	3		12			12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	2%	3%	10%
Adj. Flow (vph)	10	85	51	587	462	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	85	0	638	473	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	67.9%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 2: Sixth Line & Elm Road

Future Background 2028
PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	79	47	546	430	10
Future Volume (Veh/h)	9	79	47	546	430	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	85	51	587	462	11
Pedestrians	12				3	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)					288	
pX, platoon unblocked						
vC, conflicting volume	1172	480	485			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1172	480	485			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	85	95			
cM capacity (veh/h)	202	579	1076			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	10	85	638	473		
Volume Left	10	0	51	0		
Volume Right	0	85	0	11		
cSH	202	579	1076	1700		
Volume to Capacity	0.05	0.15	0.05	0.28		
Queue Length 95th (m)	1.2	3.9	1.1	0.0		
Control Delay (s)	23.8	12.3	1.2	0.0		
Lane LOS	C	B	A			
Approach Delay (s)	13.5		1.2	0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			67.9%	ICU Level of Service	C	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Background 2028

PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	32	34	584	483	27
Future Volume (vph)	9	32	34	584	483	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.896				0.993	
Flt Protected	0.989			0.997		
Satd. Flow (prot)	1612	0	0	1880	1836	0
Flt Permitted	0.989			0.997		
Satd. Flow (perm)	1612	0	0	1880	1836	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)	1		15			15
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	4%	0%	2%	4%	2%
Adj. Flow (vph)	10	34	37	628	519	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	0	665	548	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	68.5%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Background 2028

PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	32	34	584	483	27
Future Volume (Veh/h)	9	32	34	584	483	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	34	37	628	519	29
Pedestrians	15				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.88					
vC, conflicting volume	1252	548	563			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1216	548	563			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	94	94	96			
cM capacity (veh/h)	159	524	1004			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	44	665	548			
Volume Left	10	37	0			
Volume Right	34	0	29			
cSH	345	1004	1700			
Volume to Capacity	0.13	0.04	0.32			
Queue Length 95th (m)	3.3	0.9	0.0			
Control Delay (s)	17.0	1.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.0	1.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		68.5%		ICU Level of Service		C
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	36	21	16	46	277	19	317	12	184	287	43
Future Volume (vph)	24	36	21	16	46	277	19	317	12	184	287	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.97		0.99	1.00		0.99	1.00	
Frt		0.944			0.871			0.994			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1793	0	1825	1602	0	1825	1889	0	1755	1843	0
Flt Permitted	0.332			0.543			0.549			0.415		
Satd. Flow (perm)	635	1793	0	1033	1602	0	1043	1889	0	761	1843	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			298			2			13	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Adj. Flow (vph)	26	39	23	17	49	298	20	341	13	198	309	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	62	0	17	347	0	20	354	0	198	355	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	20.0	20.0		20.0	20.0		40.5	40.5		56.0	54.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.45	0.45		0.62	0.60	
v/c Ratio	0.19	0.15		0.07	0.59		0.04	0.42		0.34	0.32	
Control Delay	32.6	20.9		29.0	10.8		15.5	19.2		9.1	9.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.6	20.9		29.0	10.8		15.5	19.2		9.1	9.4	
LOS	C	C		C	B		B	B		A	A	
Approach Delay		24.3			11.6			19.0			9.3	
Approach LOS		C			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90.3

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 13.5

Intersection LOS: B

Intersection Capacity Utilization 73.7%

ICU Level of Service D

Analysis Period (min) 15

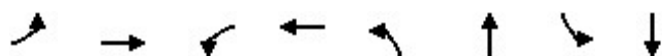
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr



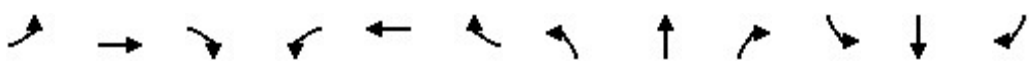
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	62	17	347	20	354	198	355
v/c Ratio	0.19	0.15	0.07	0.59	0.04	0.42	0.34	0.32
Control Delay	32.6	20.9	29.0	10.8	15.5	19.2	9.1	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	20.9	29.0	10.8	15.5	19.2	9.1	9.4
Queue Length 50th (m)	3.7	5.4	2.3	6.9	1.9	39.9	13.4	26.6
Queue Length 95th (m)	10.9	15.5	7.7	31.2	6.2	65.6	22.5	41.5
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	173	507	282	654	467	848	648	1115
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	0.15	0.12	0.06	0.53	0.04	0.42	0.31	0.32
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Background 2028

PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	36	21	16	46	277	19	317	12	184	287	43
Future Volume (vph)	24	36	21	16	46	277	19	317	12	184	287	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.87		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1816	1794		1810	1603		1805	1890		1750	1843	
Flt Permitted	0.33	1.00		0.54	1.00		0.55	1.00		0.42	1.00	
Satd. Flow (perm)	635	1794		1036	1603		1043	1890		765	1843	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	26	39	23	17	49	298	20	341	13	198	309	46
RTOR Reduction (vph)	0	19	0	0	229	0	0	1	0	0	5	0
Lane Group Flow (vph)	26	43	0	17	118	0	20	353	0	198	350	0
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		21.1	21.1		40.5	40.5		54.4	54.4	
Effective Green, g (s)	16.0	16.0		21.1	21.1		40.5	40.5		54.4	54.4	
Actuated g/C Ratio	0.18	0.18		0.23	0.23		0.44	0.44		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	111	314		239	370		462	837		562	1096	
v/s Ratio Prot		0.02			c0.07			c0.19		c0.04	0.19	
v/s Ratio Perm	0.04			0.02			0.02			0.17		
v/c Ratio	0.23	0.14		0.07	0.32		0.04	0.42		0.35	0.32	
Uniform Delay, d1	32.4	31.9		27.5	29.2		14.5	17.4		9.2	9.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.2		0.1	0.5		0.2	1.6		0.4	0.8	
Delay (s)	33.5	32.1		27.6	29.7		14.6	19.0		9.6	10.0	
Level of Service	C	C		C	C		B	B		A	B	
Approach Delay (s)		32.5			29.6			18.8			9.9	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			18.9			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			91.4			Sum of lost time (s)				16.9		
Intersection Capacity Utilization			73.7%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2028
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	762	177	170	532	91	159	247	187	159	275	93
Future Volume (vph)	98	762	177	170	532	91	159	247	187	159	275	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00		0.96	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3579	1617	1690	3544	1570	1722	1847	1570	1807	1803	0
Flt Permitted	0.348			0.205			0.316			0.486		
Satd. Flow (perm)	664	3579	1569	364	3544	1508	569	1847	1521	914	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			104			168		15	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
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
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Adj. Flow (vph)	104	811	188	181	566	97	169	263	199	169	293	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	811	188	181	566	97	169	263	199	169	392	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2028
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	12.0	38.0	38.0	12.0	38.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	50.0	12.0	46.0	46.0	12.0	46.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	41.7%	10.0%	38.3%	38.3%	10.0%	38.3%	
Maximum Green (s)	8.0	44.5	44.5	8.0	44.5	44.5	8.0	39.6	39.6	8.0	39.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.8	44.5	44.5	54.2	44.7	44.7	50.0	39.6	39.6	50.0	39.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.45	0.37	0.37	0.42	0.33	0.33	0.42	0.33	
v/c Ratio	0.28	0.61	0.27	0.72	0.43	0.15	0.54	0.43	0.32	0.38	0.65	
Control Delay	19.2	33.1	5.8	36.8	29.4	4.7	28.0	34.2	8.2	23.3	38.8	
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	19.2	33.1	5.8	36.8	29.4	4.7	28.0	34.2	8.2	23.3	38.8	
LOS	B	C	A	D	C	A	C	C	A	C	D	
Approach Delay		27.2			28.2			24.3			34.2	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 28.1

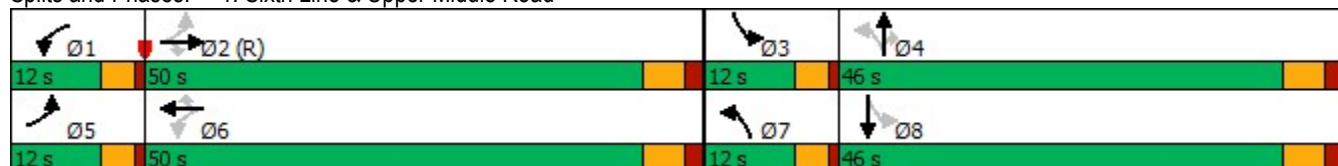
Intersection LOS: C

Intersection Capacity Utilization 76.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Total 2028

1: Sixth Line & Upper Middle Road

AM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	811	188	181	566	97	169	263	199	169	392
v/c Ratio	0.28	0.61	0.27	0.72	0.43	0.15	0.54	0.43	0.32	0.38	0.65
Control Delay	19.2	33.1	5.8	36.8	29.4	4.7	28.0	34.2	8.2	23.3	38.8
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	19.2	33.1	5.8	36.8	29.4	4.7	28.0	34.2	8.2	23.3	38.8
Queue Length 50th (m)	13.0	81.0	2.2	24.0	52.0	0.0	23.8	48.2	5.0	23.7	75.5
Queue Length 95th (m)	23.1	101.4	17.0	#43.7	67.5	9.7	38.3	72.2	21.7	38.0	109.1
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	376	1327	690	252	1319	626	313	609	614	440	605
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	0.28	0.61	0.27	0.72	0.43	0.15	0.54	0.43	0.32	0.38	0.65

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Sixth Line & Upper Middle Road

Future Total 2028

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	762	177	170	532	91	159	247	187	159	275	93
Future Volume (vph)	98	762	177	170	532	91	159	247	187	159	275	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1821	3579	1569	1690	3544	1508	1719	1847	1521	1798	1803	
Flt Permitted	0.35	1.00	1.00	0.21	1.00	1.00	0.32	1.00	1.00	0.49	1.00	
Satd. Flow (perm)	668	3579	1569	365	3544	1508	572	1847	1521	920	1803	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	104	811	188	181	566	97	169	263	199	169	293	99
RTOR Reduction (vph)	0	0	109	0	0	61	0	0	113	0	10	0
Lane Group Flow (vph)	104	811	79	181	566	36	169	263	86	169	382	0
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	52.3	44.5	44.5	52.7	44.7	44.7	47.6	39.6	39.6	47.6	39.6	
Effective Green, g (s)	52.3	44.5	44.5	52.7	44.7	44.7	47.6	39.6	39.6	47.6	39.6	
Actuated g/C Ratio	0.44	0.37	0.37	0.44	0.37	0.37	0.40	0.33	0.33	0.40	0.33	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	366	1327	581	248	1320	561	303	609	501	423	594	
v/s Ratio Prot	0.02	0.23		c0.05	0.16		c0.04	0.14		0.03	c0.21	
v/s Ratio Perm	0.11		0.05	c0.27		0.02	0.18		0.06	0.13		
v/c Ratio	0.28	0.61	0.14	0.73	0.43	0.06	0.56	0.43	0.17	0.40	0.64	
Uniform Delay, d1	20.7	30.7	25.0	23.2	28.1	24.2	25.5	31.4	28.6	24.4	34.2	
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	0.5	2.1	0.5	10.6	1.0	0.2	2.4	2.2	0.7	0.7	5.3	
Delay (s)	21.2	32.8	25.5	33.8	29.1	24.4	28.0	33.6	29.3	25.1	39.5	
Level of Service	C	C	C	C	C	C	C	C	C	C	D	
Approach Delay (s)		30.5			29.6			30.8			35.1	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			31.1			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			19.9			
Intersection Capacity Utilization			76.2%			ICU Level of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: Sixth Line & Elm Road

Future Total 2028
AM Peak Hr



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	150	41	514	593	5
Future Volume (vph)	9	150	41	514	593	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.999	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1615	1541	0	1791	1846	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1615	1541	0	1791	1846	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)			13			13
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	13%	6%	30%	5%	4%	0%
Adj. Flow (vph)	11	181	49	619	714	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	181	0	668	720	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Future Total 2028
AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	150	41	514	593	5
Future Volume (Veh/h)	9	150	41	514	593	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	11	181	49	619	714	6
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)					288	
pX, platoon unblocked	0.87	0.87	0.87			
vC, conflicting volume	1447	730	733			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1439	613	617			
tC, single (s)	6.5	6.3	4.4			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.5			
p0 queue free %	90	56	93			
cM capacity (veh/h)	111	416	721			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	11	181	668	720		
Volume Left	11	0	49	0		
Volume Right	0	181	0	6		
cSH	111	416	721	1700		
Volume to Capacity	0.10	0.44	0.07	0.42		
Queue Length 95th (m)	2.5	16.4	1.7	0.0		
Control Delay (s)	41.1	20.2	1.8	0.0		
Lane LOS	E	C	A			
Approach Delay (s)	21.4		1.8	0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			70.9%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Total 2028
AM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	54	16	552	735	8
Future Volume (vph)	4	54	16	552	735	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.875				0.999	
Flt Protected	0.996			0.999		
Satd. Flow (prot)	1644	0	0	1797	1685	0
Flt Permitted	0.996			0.999		
Satd. Flow (perm)	1644	0	0	1797	1685	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)			19			19
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	2%	0%	7%	14%	4%
Adj. Flow (vph)	5	66	20	673	896	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	693	906	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	52.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Total 2028
AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	54	16	552	735	8
Future Volume (Veh/h)	4	54	16	552	735	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	5	66	20	673	896	10
Pedestrians	19					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.93					
vC, conflicting volume	1633	920	925			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1643	920	925			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	80	97			
cM capacity (veh/h)	99	322	733			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	71	693	906			
Volume Left	5	20	0			
Volume Right	66	0	10			
cSH	278	733	1700			
Volume to Capacity	0.26	0.03	0.53			
Queue Length 95th (m)	7.5	0.6	0.0			
Control Delay (s)	22.3	0.7	0.0			
Lane LOS	C	A				
Approach Delay (s)	22.3	0.7	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		52.2%		ICU Level of Service		A
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	152	41	37	45	361	12	181	47	489	288	12
Future Volume (vph)	26	152	41	37	45	361	12	181	47	489	288	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.93		0.98	0.99		0.99		
Frt		0.968			0.867			0.969			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1840	0	1706	1461	0	1825	1748	0	1772	1783	0
Flt Permitted	0.190			0.452			0.541			0.450		
Satd. Flow (perm)	365	1840	0	797	1461	0	1018	1748	0	831	1783	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			408			15			4	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Adj. Flow (vph)	32	188	51	46	56	446	15	223	58	604	356	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	239	0	46	502	0	15	281	0	604	371	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)	21.1	21.1		21.1	21.1		34.4	34.4		56.0	54.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.38	0.38		0.61	0.59	
v/c Ratio	0.38	0.55		0.25	0.77		0.04	0.42		0.90	0.35	
Control Delay	44.3	34.4		32.6	15.9		19.3	22.6		31.0	10.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.3	34.4		32.6	15.9		19.3	22.6		31.0	10.7	
LOS	D	C		C	B		B	C		C	B	
Approach Delay		35.5			17.3			22.5			23.3	
Approach LOS		D			B			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 91.5

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 23.2

Intersection LOS: C

Intersection Capacity Utilization 90.3%

ICU Level of Service E

Analysis Period (min) 15

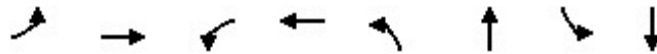
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	239	46	502	15	281	604	371
v/c Ratio	0.38	0.55	0.25	0.77	0.04	0.42	0.90	0.35
Control Delay	44.3	34.4	32.6	15.9	19.3	22.6	31.0	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	34.4	32.6	15.9	19.3	22.6	31.0	10.7
Queue Length 50th (m)	4.8	34.9	6.6	13.7	1.6	33.2	54.8	29.2
Queue Length 95th (m)	12.2	50.4	14.3	32.8	5.3	50.8	#90.9	44.7
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	98	507	215	692	382	667	673	1062
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	0.33	0.47	0.21	0.73	0.04	0.42	0.90	0.35

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Total 2028
AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	152	41	37	45	361	12	181	47	489	288	12
Future Volume (vph)	26	152	41	37	45	361	12	181	47	489	288	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.93		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		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)	1825	1841		1677	1464		1789	1749		1764	1783	
Flt Permitted	0.19	1.00		0.45	1.00		0.54	1.00		0.45	1.00	
Satd. Flow (perm)	364	1841		798	1464		1018	1749		836	1783	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	32	188	51	46	56	446	15	223	58	604	356	15
RTOR Reduction (vph)	0	11	0	0	314	0	0	9	0	0	2	0
Lane Group Flow (vph)	32	228	0	46	188	0	15	272	0	604	369	0
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.1	21.1		21.1	21.1		34.4	34.4		54.4	54.4	
Effective Green, g (s)	21.1	21.1		21.1	21.1		34.4	34.4		54.4	54.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.38	0.38		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	84	425		184	337		383	658		660	1061	
v/s Ratio Prot		0.12			c0.13			0.16		c0.16	0.21	
v/s Ratio Perm	0.09			0.06			0.01			c0.38		
v/c Ratio	0.38	0.54		0.25	0.56		0.04	0.41		0.92	0.35	
Uniform Delay, d1	29.6	30.9		28.7	31.0		18.0	21.0		13.9	9.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	1.3		0.7	2.0		0.2	1.9		17.3	0.9	
Delay (s)	32.5	32.2		29.4	33.0		18.2	23.0		31.2	10.3	
Level of Service	C	C		C	C		B	C		C	B	
Approach Delay (s)		32.2			32.7			22.7			23.3	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			26.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			91.4			Sum of lost time (s)				16.9		
Intersection Capacity Utilization			90.3%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
5: Sixth Line & Site Access

Future Total 2028
AM Peak Hr

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	41	507	17	28	556
Future Volume (vph)	42	41	507	17	28	556
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933		0.996			
Flt Protected	0.975					0.998
Satd. Flow (prot)	1713	0	1876	0	0	1880
Flt Permitted	0.975					0.998
Satd. Flow (perm)	1713	0	1876	0	0	1880
Link Speed (k/h)	48		48			48
Link Distance (m)	33.5		21.1			266.8
Travel Time (s)	2.5		1.6			20.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	45	551	18	30	604
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	569	0	0	634
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	63.6%			ICU Level of Service B		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

5: Sixth Line & Site Access

Future Total 2028
AM Peak Hr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	41	507	17	28	556
Future Volume (Veh/h)	42	41	507	17	28	556
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	45	551	18	30	604
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						267
pX, platoon unblocked	0.84					
vC, conflicting volume	1224	560			569	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1170	560			569	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	73	91			97	
cM capacity (veh/h)	173	528			1003	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	91	569	634			
Volume Left	46	0	30			
Volume Right	45	18	0			
cSH	259	1700	1003			
Volume to Capacity	0.35	0.33	0.03			
Queue Length 95th (m)	11.5	0.0	0.7			
Control Delay (s)	26.2	0.0	0.8			
Lane LOS	D		A			
Approach Delay (s)	26.2	0.0	0.8			
Approach LOS	D					
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		63.6%		ICU Level of Service		B
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2028
PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	594	102	106	815	141	193	212	86	209	214	144
Future Volume (vph)	146	594	102	106	815	141	193	212	86	209	214	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00		0.92	1.00		0.97	0.99		
Frt			0.850			0.850			0.850		0.940	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3614	1617	1755	3614	1633	1789	1921	1617	1825	1799	0
Flt Permitted	0.153			0.298			0.359			0.509		
Satd. Flow (perm)	294	3614	1574	549	3614	1510	673	1921	1575	970	1799	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110			105			95		31	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Adj. Flow (vph)	157	639	110	114	876	152	208	228	92	225	230	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	639	110	114	876	152	208	228	92	225	385	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2028
PM Peak Hr

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (%)	10.8%	40.0%	40.0%	10.0%	39.2%	39.2%	10.0%	38.3%	38.3%	11.7%	40.0%	
Maximum Green (s)	9.0	42.5	42.5	8.0	41.5	41.5	8.0	39.6	39.6	10.0	41.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.0	42.6	42.6	51.0	41.6	41.6	50.0	39.6	39.6	54.0	41.6	
Actuated g/C Ratio	0.44	0.36	0.36	0.42	0.35	0.35	0.42	0.33	0.33	0.45	0.35	
v/c Ratio	0.65	0.50	0.17	0.37	0.70	0.26	0.59	0.36	0.16	0.44	0.60	
Control Delay	32.2	32.0	5.5	21.9	37.5	11.0	28.5	32.6	6.0	22.9	34.2	
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	32.2	32.0	5.5	21.9	37.5	11.0	28.5	32.6	6.0	22.9	34.2	
LOS	C	C	A	C	D	B	C	C	A	C	C	
Approach Delay		28.8			32.4			26.3			30.0	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 29.9

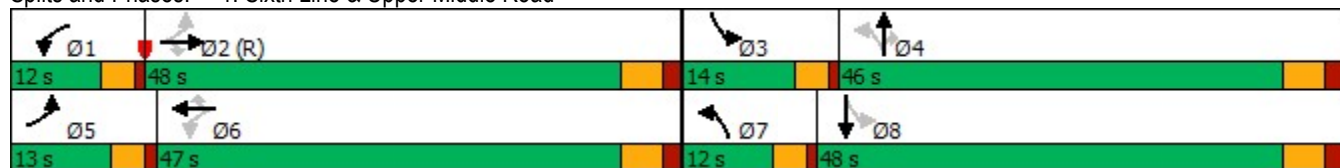
Intersection LOS: C

Intersection Capacity Utilization 77.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Total 2028

1: Sixth Line & Upper Middle Road

PM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	157	639	110	114	876	152	208	228	92	225	385
v/c Ratio	0.65	0.50	0.17	0.37	0.70	0.26	0.59	0.36	0.16	0.44	0.60
Control Delay	32.2	32.0	5.5	21.9	37.5	11.0	28.5	32.6	6.0	22.9	34.2
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	32.2	32.0	5.5	21.9	37.5	11.0	28.5	32.6	6.0	22.9	34.2
Queue Length 50th (m)	21.0	61.6	0.0	14.9	93.2	7.4	28.8	40.7	0.0	31.5	68.4
Queue Length 95th (m)	34.4	79.1	11.7	26.0	116.0	22.4	44.9	62.2	10.6	48.3	100.6
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	244	1283	629	314	1252	591	354	633	583	507	643
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	0.64	0.50	0.17	0.36	0.70	0.26	0.59	0.36	0.16	0.44	0.60
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

1: Sixth Line & Upper Middle Road

Future Total 2028

PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	594	102	106	815	141	193	212	86	209	214	144
Future Volume (vph)	146	594	102	106	815	141	193	212	86	209	214	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1825	3614	1574	1754	3614	1510	1787	1921	1575	1818	1798	
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.36	1.00	1.00	0.51	1.00	
Satd. Flow (perm)	294	3614	1574	551	3614	1510	676	1921	1575	973	1798	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	157	639	110	114	876	152	208	228	92	225	230	155
RTOR Reduction (vph)	0	0	71	0	0	69	0	0	62	0	20	0
Lane Group Flow (vph)	157	639	39	114	876	83	208	228	30	225	365	0
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	51.5	42.6	42.6	49.5	41.6	41.6	47.6	39.6	39.6	51.6	41.6	
Effective Green, g (s)	51.5	42.6	42.6	49.5	41.6	41.6	47.6	39.6	39.6	51.6	41.6	
Actuated g/C Ratio	0.43	0.36	0.36	0.41	0.35	0.35	0.40	0.33	0.33	0.43	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	239	1282	558	306	1252	523	342	633	519	488	623	
v/s Ratio Prot	c0.05	0.18		0.02	c0.24		c0.04	0.12		c0.04	c0.20	
v/s Ratio Perm	0.23		0.02	0.13		0.06	0.20		0.02	0.16		
v/c Ratio	0.66	0.50	0.07	0.37	0.70	0.16	0.61	0.36	0.06	0.46	0.59	
Uniform Delay, d1	24.2	30.3	25.6	22.8	33.8	27.1	27.3	30.6	27.5	22.5	32.1	
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	6.6	1.4	0.2	0.9	3.3	0.7	3.2	1.6	0.2	0.8	4.0	
Delay (s)	30.8	31.7	25.8	23.7	37.1	27.8	30.5	32.2	27.7	23.3	36.1	
Level of Service	C	C	C	C	D	C	C	C	C	C	D	
Approach Delay (s)		30.9			34.5			30.7			31.4	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			32.2									
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			77.9%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
2: Sixth Line & Elm Road

Future Total 2028
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	79	47	574	449	12
Future Volume (vph)	10	79	47	574	449	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.996	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1825	1601	0	1879	1854	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1825	1601	0	1879	1854	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)	3		12			12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	2%	3%	10%
Adj. Flow (vph)	11	85	51	617	483	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	85	0	668	496	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	70.5%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Future Total 2028
PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	79	47	574	449	12
Future Volume (Veh/h)	10	79	47	574	449	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	85	51	617	483	13
Pedestrians	12				3	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)					288	
pX, platoon unblocked						
vC, conflicting volume	1224	502	508			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1224	502	508			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	85	95			
cM capacity (veh/h)	187	563	1055			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	11	85	668	496		
Volume Left	11	0	51	0		
Volume Right	0	85	0	13		
cSH	187	563	1055	1700		
Volume to Capacity	0.06	0.15	0.05	0.29		
Queue Length 95th (m)	1.4	4.0	1.2	0.0		
Control Delay (s)	25.4	12.5	1.3	0.0		
Lane LOS	D	B	A			
Approach Delay (s)	14.0		1.3	0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			70.5%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Total 2028
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	32	34	611	501	28
Future Volume (vph)	10	32	34	611	501	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.898				0.993	
Flt Protected	0.988			0.997		
Satd. Flow (prot)	1612	0	0	1880	1836	0
Flt Permitted	0.988			0.997		
Satd. Flow (perm)	1612	0	0	1880	1836	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)	1		15			15
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	4%	0%	2%	4%	2%
Adj. Flow (vph)	11	34	37	657	539	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	0	694	569	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	69.9%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Total 2028
PM Peak Hr

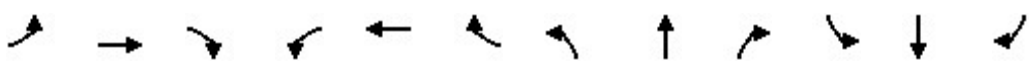
						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	32	34	611	501	28
Future Volume (Veh/h)	10	32	34	611	501	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	34	37	657	539	30
Pedestrians	15				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.87					
vC, conflicting volume	1301	569	584			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1272	569	584			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	92	93	96			
cM capacity (veh/h)	146	510	986			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	45	694	569			
Volume Left	11	37	0			
Volume Right	34	0	30			
cSH	317	986	1700			
Volume to Capacity	0.14	0.04	0.33			
Queue Length 95th (m)	3.7	0.9	0.0			
Control Delay (s)	18.2	1.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	18.2	1.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		69.9%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings

Future Total 2028

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	36	21	16	46	295	19	325	12	186	301	45
Future Volume (vph)	25	36	21	16	46	295	19	325	12	186	301	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.97		0.99	1.00		0.99	1.00	
Frt		0.944			0.870			0.995			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1793	0	1825	1600	0	1825	1891	0	1755	1843	0
Flt Permitted	0.287			0.543			0.540			0.407		
Satd. Flow (perm)	549	1793	0	1033	1600	0	1026	1891	0	747	1843	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			317			2			13	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Adj. Flow (vph)	27	39	23	17	49	317	20	349	13	200	324	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	62	0	17	366	0	20	362	0	200	372	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	20.0	20.0		20.0	20.0		40.4	40.4		56.0	54.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.45	0.45		0.62	0.60	
v/c Ratio	0.22	0.15		0.07	0.61		0.04	0.43		0.35	0.33	
Control Delay	34.4	20.9		29.0	10.8		15.5	19.4		9.2	9.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.4	20.9		29.0	10.8		15.5	19.4		9.2	9.6	
LOS	C	C		C	B		B	B		A	A	
Approach Delay		25.0			11.6			19.2			9.4	
Approach LOS		C			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90.3

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 74.7%

ICU Level of Service D

Analysis Period (min) 15

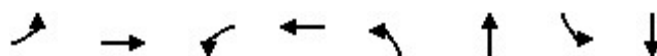
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	62	17	366	20	362	200	372
v/c Ratio	0.22	0.15	0.07	0.61	0.04	0.43	0.35	0.33
Control Delay	34.4	20.9	29.0	10.8	15.5	19.4	9.2	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	20.9	29.0	10.8	15.5	19.4	9.2	9.6
Queue Length 50th (m)	3.9	5.4	2.3	6.9	1.9	41.2	13.5	28.2
Queue Length 95th (m)	11.4	15.5	7.7	32.3	6.2	67.6	22.7	43.8
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	150	507	282	667	459	848	641	1115
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	0.18	0.12	0.06	0.55	0.04	0.43	0.31	0.33
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Total 2028
PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	36	21	16	46	295	19	325	12	186	301	45
Future Volume (vph)	25	36	21	16	46	295	19	325	12	186	301	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.87		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1816	1794		1810	1600		1806	1890		1750	1843	
Flt Permitted	0.29	1.00		0.54	1.00		0.54	1.00		0.41	1.00	
Satd. Flow (perm)	549	1794		1036	1600		1027	1890		750	1843	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	27	39	23	17	49	317	20	349	13	200	324	48
RTOR Reduction (vph)	0	19	0	0	244	0	0	1	0	0	5	0
Lane Group Flow (vph)	27	43	0	17	122	0	20	361	0	200	367	0
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		21.1	21.1		40.4	40.4		54.4	54.4	
Effective Green, g (s)	16.0	16.0		21.1	21.1		40.4	40.4		54.4	54.4	
Actuated g/C Ratio	0.18	0.18		0.23	0.23		0.44	0.44		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	96	314		239	369		453	835		555	1096	
v/s Ratio Prot		0.02			c0.08			c0.19		0.04	c0.20	
v/s Ratio Perm	0.05			0.02			0.02			0.17		
v/c Ratio	0.28	0.14		0.07	0.33		0.04	0.43		0.36	0.33	
Uniform Delay, d1	32.7	31.9		27.5	29.3		14.5	17.6		9.3	9.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.2		0.1	0.5		0.2	1.6		0.4	0.8	
Delay (s)	34.3	32.1		27.6	29.8		14.7	19.2		9.7	10.2	
Level of Service	C	C		C	C		B	B		A	B	
Approach Delay (s)		32.7			29.7			19.0			10.0	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay	19.1			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.38											
Actuated Cycle Length (s)	91.4			Sum of lost time (s)			16.9					
Intersection Capacity Utilization	74.7%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings
5: Sixth Line & Site Access

Future Total 2028
PM Peak Hr

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	31	555	29	39	441
Future Volume (vph)	21	31	555	29	39	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.993			
Flt Protected	0.980					0.996
Satd. Flow (prot)	1696	0	1870	0	0	1876
Flt Permitted	0.980					0.996
Satd. Flow (perm)	1696	0	1870	0	0	1876
Link Speed (k/h)	48		48			48
Link Distance (m)	33.5		21.1			266.8
Travel Time (s)	2.5		1.6			20.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	34	603	32	42	479
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	635	0	0	521
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	65.5%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 5: Sixth Line & Site Access

Future Total 2028
PM Peak Hr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	31	555	29	39	441
Future Volume (Veh/h)	21	31	555	29	39	441
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	34	603	32	42	479
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						267
pX, platoon unblocked	0.95					
vC, conflicting volume	1182	619			635	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1167	619			635	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	93			96	
cM capacity (veh/h)	195	489			948	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	57	635	521			
Volume Left	23	0	42			
Volume Right	34	32	0			
cSH	304	1700	948			
Volume to Capacity	0.19	0.37	0.04			
Queue Length 95th (m)	5.1	0.0	1.1			
Control Delay (s)	19.5	0.0	1.2			
Lane LOS	C		A			
Approach Delay (s)	19.5	0.0	1.2			
Approach LOS	C					
Intersection Summary						
Average Delay		1.4				
Intersection Capacity Utilization		65.5%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2033

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	841	186	176	587	101	155	247	179	167	279	97
Future Volume (vph)	108	841	186	176	587	101	155	247	179	167	279	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97			0.96	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3579	1617	1690	3544	1570	1722	1847	1570	1807	1800	0
Flt Permitted	0.310			0.166			0.306			0.486		
Satd. Flow (perm)	592	3579	1569	295	3544	1508	551	1847	1521	914	1800	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			165			107			160		16	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
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
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Adj. Flow (vph)	115	895	198	187	624	107	165	263	190	178	297	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	895	198	187	624	107	165	263	190	178	400	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2033

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	12.0	38.0	38.0	12.0	38.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	50.0	12.0	46.0	46.0	12.0	46.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	41.7%	10.0%	38.3%	38.3%	10.0%	38.3%	
Maximum Green (s)	8.0	44.5	44.5	8.0	44.5	44.5	8.0	39.6	39.6	8.0	39.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.9	44.5	44.5	54.1	44.6	44.6	50.0	39.6	39.6	50.0	39.6	
Actuated g/C Ratio	0.45	0.37	0.37	0.45	0.37	0.37	0.42	0.33	0.33	0.42	0.33	
v/c Ratio	0.33	0.67	0.29	0.83	0.47	0.17	0.54	0.43	0.31	0.40	0.66	
Control Delay	20.0	34.8	7.2	50.6	30.2	5.4	27.9	34.2	8.3	23.8	39.3	
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	20.0	34.8	7.2	50.6	30.2	5.4	27.9	34.2	8.3	23.8	39.3	
LOS	B	C	A	D	C	A	C	C	A	C	D	
Approach Delay		28.9			31.5			24.5			34.5	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 29.8

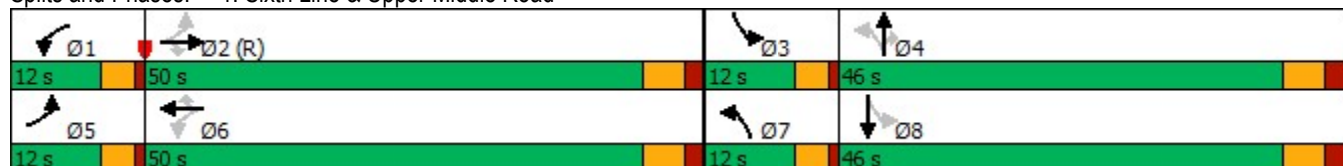
Intersection LOS: C

Intersection Capacity Utilization 79.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Background 2033

1: Sixth Line & Upper Middle Road

AM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	115	895	198	187	624	107	165	263	190	178	400
v/c Ratio	0.33	0.67	0.29	0.83	0.47	0.17	0.54	0.43	0.31	0.40	0.66
Control Delay	20.0	34.8	7.2	50.6	30.2	5.4	27.9	34.2	8.3	23.8	39.3
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	20.0	34.8	7.2	50.6	30.2	5.4	27.9	34.2	8.3	23.8	39.3
Queue Length 50th (m)	14.5	92.1	5.0	24.9	58.4	0.0	23.1	48.2	4.8	25.1	77.3
Queue Length 95th (m)	25.2	114.6	20.5	#54.1	75.2	11.3	37.6	72.2	21.3	39.9	111.7
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	348	1327	685	225	1318	628	307	609	609	440	604
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	0.33	0.67	0.29	0.83	0.47	0.17	0.54	0.43	0.31	0.40	0.66

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Future Background 2033

1: Sixth Line & Upper Middle Road

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	108	841	186	176	587	101	155	247	179	167	279	97
Future Volume (vph)	108	841	186	176	587	101	155	247	179	167	279	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1822	3579	1569	1690	3544	1508	1719	1847	1521	1798	1801	
Flt Permitted	0.31	1.00	1.00	0.17	1.00	1.00	0.31	1.00	1.00	0.49	1.00	
Satd. Flow (perm)	596	3579	1569	295	3544	1508	554	1847	1521	920	1801	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	115	895	198	187	624	107	165	263	190	178	297	103
RTOR Reduction (vph)	0	0	104	0	0	67	0	0	107	0	11	0
Lane Group Flow (vph)	115	895	94	187	624	40	165	263	83	178	389	0
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	52.4	44.5	44.5	52.6	44.6	44.6	47.6	39.6	39.6	47.6	39.6	
Effective Green, g (s)	52.4	44.5	44.5	52.6	44.6	44.6	47.6	39.6	39.6	47.6	39.6	
Actuated g/C Ratio	0.44	0.37	0.37	0.44	0.37	0.37	0.40	0.33	0.33	0.40	0.33	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	340	1327	581	222	1317	560	297	609	501	423	594	
v/s Ratio Prot	0.02	0.25		c0.06	0.18		c0.04	0.14		0.03	c0.22	
v/s Ratio Perm	0.13		0.06	c0.31		0.03	0.18		0.05	0.14		
v/c Ratio	0.34	0.67	0.16	0.84	0.47	0.07	0.56	0.43	0.17	0.42	0.66	
Uniform Delay, d1	20.9	31.7	25.3	25.0	28.8	24.3	25.5	31.4	28.5	24.5	34.4	
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	0.7	2.8	0.6	24.6	1.2	0.2	2.5	2.2	0.7	0.8	5.6	
Delay (s)	21.6	34.4	25.9	49.5	30.0	24.6	28.0	33.6	29.2	25.3	39.9	
Level of Service	C	C	C	D	C	C	C	C	C	C	D	
Approach Delay (s)		31.8			33.3			30.8			35.4	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			32.7									
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			79.0%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Sixth Line & Elm Road

Future Background 2033

AM Peak Hr



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	158	43	523	581	3
Future Volume (vph)	9	158	43	523	581	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.999	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1615	1541	0	1790	1846	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1615	1541	0	1790	1846	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)			13			13
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	13%	6%	30%	5%	4%	0%
Adj. Flow (vph)	11	190	52	630	700	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	190	0	682	704	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 73.0% ICU Level of Service D

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Future Background 2033

AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	158	43	523	581	3
Future Volume (Veh/h)	9	158	43	523	581	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	11	190	52	630	700	4
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)	288					
pX, platoon unblocked	0.85	0.85	0.85			
vC, conflicting volume	1449	715	717			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1440	578	580			
tC, single (s)	6.5	6.3	4.4			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.5			
p0 queue free %	90	56	93			
cM capacity (veh/h)	108	427	731			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	11	190	682	704		
Volume Left	11	0	52	0		
Volume Right	0	190	0	4		
cSH	108	427	731	1700		
Volume to Capacity	0.10	0.44	0.07	0.41		
Queue Length 95th (m)	2.5	17.0	1.7	0.0		
Control Delay (s)	42.1	20.0	1.9	0.0		
Lane LOS	E	C	A			
Approach Delay (s)	21.2		1.9	0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			73.0%	ICU Level of Service	D	
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Background 2033
AM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	56	17	563	731	8
Future Volume (vph)	3	56	17	563	731	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.872				0.999	
Flt Protected	0.997			0.999		
Satd. Flow (prot)	1639	0	0	1797	1685	0
Flt Permitted	0.997			0.999		
Satd. Flow (perm)	1639	0	0	1797	1685	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)			19			19
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	2%	0%	7%	14%	4%
Adj. Flow (vph)	4	68	21	687	891	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	0	0	708	901	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Background 2033

AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	56	17	563	731	8
Future Volume (Veh/h)	3	56	17	563	731	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	4	68	21	687	891	10
Pedestrians	19					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.93					
vC, conflicting volume	1644	915	920			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1656	915	920			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	79	97			
cM capacity (veh/h)	96	324	736			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	72	708	901			
Volume Left	4	21	0			
Volume Right	68	0	10			
cSH	287	736	1700			
Volume to Capacity	0.25	0.03	0.53			
Queue Length 95th (m)	7.4	0.7	0.0			
Control Delay (s)	21.7	0.8	0.0			
Lane LOS	C	A				
Approach Delay (s)	21.7	0.8	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		53.6%		ICU Level of Service		A
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Future Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.93		0.98	0.99		0.99		
Frt		0.968			0.867			0.968			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1841	0	1706	1462	0	1825	1746	0	1772	1783	0
Flt Permitted	0.184			0.434			0.546			0.437		
Satd. Flow (perm)	353	1841	0	766	1462	0	1027	1746	0	807	1783	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			396			16			4	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Adj. Flow (vph)	32	198	53	48	59	456	16	230	62	611	347	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	251	0	48	515	0	16	292	0	611	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	21.7	21.7		21.7	21.7		34.4	34.4		56.0	54.4	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.37	0.37		0.61	0.59	
v/c Ratio	0.39	0.57		0.27	0.80		0.04	0.44		0.93	0.34	
Control Delay	44.6	34.6		32.9	18.4		19.7	23.3		36.2	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.6	34.6		32.9	18.4		19.7	23.3		36.2	10.9	
LOS	D	C		C	B		B	C		D	B	
Approach Delay		35.8			19.6			23.1			26.8	
Approach LOS		D			B			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 92

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 25.6

Intersection LOS: C

Intersection Capacity Utilization 92.3%

ICU Level of Service F

Analysis Period (min) 15

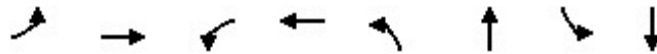
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	251	48	515	16	292	611	361
v/c Ratio	0.39	0.57	0.27	0.80	0.04	0.44	0.93	0.34
Control Delay	44.6	34.6	32.9	18.4	19.7	23.3	36.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	34.6	32.9	18.4	19.7	23.3	36.2	10.9
Queue Length 50th (m)	4.8	37.1	7.0	17.6	1.7	34.7	55.8	28.3
Queue Length 95th (m)	12.3	52.7	14.9	39.3	5.6	52.8	#96.6	43.3
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	94	504	205	682	384	663	659	1055
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	0.34	0.50	0.23	0.76	0.04	0.44	0.93	0.34

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Background 2033

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Future Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.93		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		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)	1825	1842		1678	1464		1788	1747		1765	1783	
Flt Permitted	0.18	1.00		0.43	1.00		0.55	1.00		0.44	1.00	
Satd. Flow (perm)	354	1842		766	1464		1027	1747		811	1783	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	32	198	53	48	59	456	16	230	62	611	347	14
RTOR Reduction (vph)	0	11	0	0	303	0	0	10	0	0	2	0
Lane Group Flow (vph)	32	240	0	48	212	0	16	282	0	611	359	0
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.7	21.7		21.7	21.7		34.4	34.4		54.4	54.4	
Effective Green, g (s)	21.7	21.7		21.7	21.7		34.4	34.4		54.4	54.4	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.37	0.37		0.59	0.59	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	83	434		180	345		384	653		645	1054	
v/s Ratio Prot		0.13			c0.15			0.16		c0.16	0.20	
v/s Ratio Perm	0.09			0.06			0.02			c0.40		
v/c Ratio	0.39	0.55		0.27	0.62		0.04	0.43		0.95	0.34	
Uniform Delay, d1	29.5	30.9		28.7	31.4		18.3	21.5		14.9	9.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	1.5		0.8	3.2		0.2	2.1		23.0	0.9	
Delay (s)	32.5	32.4		29.5	34.7		18.5	23.6		37.9	10.5	
Level of Service	C	C		C	C		B	C		D	B	
Approach Delay (s)		32.4			34.2			23.3			27.7	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			92.0			Sum of lost time (s)			16.9			
Intersection Capacity Utilization			92.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2033

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	656	99	102	900	156	193	213	77	220	211	152
Future Volume (vph)	162	656	99	102	900	156	193	213	77	220	211	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00		0.92	1.00		0.97	0.99		
Frt			0.850			0.850			0.850		0.937	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3614	1617	1755	3614	1633	1789	1921	1617	1825	1793	0
Flt Permitted	0.111			0.259			0.353			0.507		
Satd. Flow (perm)	213	3614	1574	478	3614	1510	662	1921	1575	966	1793	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			105			95		33	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Adj. Flow (vph)	174	705	106	110	968	168	208	229	83	237	227	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	705	106	110	968	168	208	229	83	237	390	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Background 2033

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (%)	10.8%	40.0%	40.0%	10.0%	39.2%	39.2%	10.0%	38.3%	38.3%	11.7%	40.0%	
Maximum Green (s)	9.0	42.5	42.5	8.0	41.5	41.5	8.0	39.6	39.6	10.0	41.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.1	42.6	42.6	50.9	41.5	41.5	50.0	39.6	39.6	54.0	41.6	
Actuated g/C Ratio	0.44	0.36	0.36	0.42	0.35	0.35	0.42	0.33	0.33	0.45	0.35	
v/c Ratio	0.81	0.55	0.17	0.38	0.78	0.28	0.59	0.36	0.14	0.47	0.61	
Control Delay	50.3	33.0	5.6	22.5	40.2	12.6	28.8	32.6	4.9	23.4	34.3	
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	50.3	33.0	5.6	22.5	40.2	12.6	28.8	32.6	4.9	23.4	34.3	
LOS	D	C	A	C	D	B	C	C	A	C	C	
Approach Delay		33.1			34.9			26.7			30.2	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 32.2

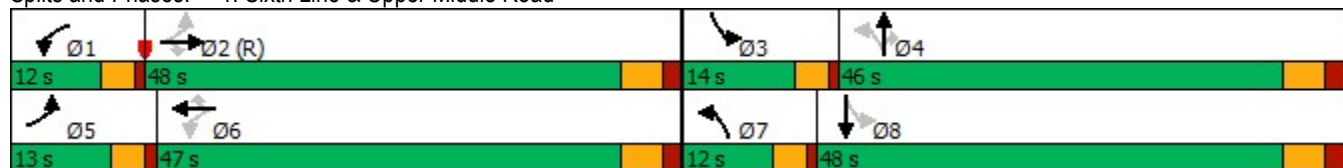
Intersection LOS: C

Intersection Capacity Utilization 81.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Background 2033

1: Sixth Line & Upper Middle Road

PM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	174	705	106	110	968	168	208	229	83	237	390
v/c Ratio	0.81	0.55	0.17	0.38	0.78	0.28	0.59	0.36	0.14	0.47	0.61
Control Delay	50.3	33.0	5.6	22.5	40.2	12.6	28.8	32.6	4.9	23.4	34.3
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	50.3	33.0	5.6	22.5	40.2	12.6	28.8	32.6	4.9	23.4	34.3
Queue Length 50th (m)	23.6	69.5	0.0	14.4	106.5	10.1	28.8	40.8	0.0	33.4	69.3
Queue Length 95th (m)	#57.3	88.3	11.6	25.2	131.2	26.5	44.9	62.4	8.8	50.8	101.6
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	214	1283	627	288	1249	590	350	633	583	506	643
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	0.81	0.55	0.17	0.38	0.78	0.28	0.59	0.36	0.14	0.47	0.61

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Future Background 2033

1: Sixth Line & Upper Middle Road

PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	656	99	102	900	156	193	213	77	220	211	152
Future Volume (vph)	162	656	99	102	900	156	193	213	77	220	211	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1825	3614	1574	1754	3614	1510	1787	1921	1575	1818	1793	
Flt Permitted	0.11	1.00	1.00	0.26	1.00	1.00	0.35	1.00	1.00	0.51	1.00	
Satd. Flow (perm)	214	3614	1574	478	3614	1510	664	1921	1575	971	1793	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	174	705	106	110	968	168	208	229	83	237	227	163
RTOR Reduction (vph)	0	0	68	0	0	69	0	0	56	0	22	0
Lane Group Flow (vph)	174	705	38	110	968	99	208	229	27	237	368	0
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	51.6	42.6	42.6	49.4	41.5	41.5	47.6	39.6	39.6	51.6	41.6	
Effective Green, g (s)	51.6	42.6	42.6	49.4	41.5	41.5	47.6	39.6	39.6	51.6	41.6	
Actuated g/C Ratio	0.43	0.36	0.36	0.41	0.35	0.35	0.40	0.33	0.33	0.43	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	212	1282	558	280	1249	522	338	633	519	488	621	
v/s Ratio Prot	c0.06	0.20		0.03	0.27		c0.04	0.12		c0.04	c0.21	
v/s Ratio Perm	c0.29		0.02	0.14		0.07	0.20		0.02	0.17		
v/c Ratio	0.82	0.55	0.07	0.39	0.78	0.19	0.62	0.36	0.05	0.49	0.59	
Uniform Delay, d1	25.8	31.0	25.6	23.1	35.1	27.5	27.4	30.6	27.4	22.8	32.2	
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	22.3	1.7	0.2	1.1	4.7	0.8	3.5	1.6	0.2	0.9	4.1	
Delay (s)	48.1	32.7	25.8	24.1	39.8	28.3	30.8	32.2	27.6	23.7	36.4	
Level of Service	D	C	C	C	D	C	C	C	C	C	D	
Approach Delay (s)		34.7			36.9			30.9			31.6	
Approach LOS		C			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			34.3									
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			81.5%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Sixth Line & Elm Road

Future Background 2033

PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	83	50	573	452	11
Future Volume (vph)	10	83	50	573	452	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.997	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1825	1601	0	1879	1857	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1825	1601	0	1879	1857	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)	3		12			12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	2%	3%	10%
Adj. Flow (vph)	11	89	54	616	486	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	89	0	670	498	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	70.7%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Future Background 2033

PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	83	50	573	452	11
Future Volume (Veh/h)	10	83	50	573	452	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	89	54	616	486	12
Pedestrians	12				3	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
288						
pX, platoon unblocked						
vC, conflicting volume	1231	504	510			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1231	504	510			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	84	95			
cM capacity (veh/h)	185	561	1053			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	11	89	670	498		
Volume Left	11	0	54	0		
Volume Right	0	89	0	12		
cSH	185	561	1053	1700		
Volume to Capacity	0.06	0.16	0.05	0.29		
Queue Length 95th (m)	1.4	4.3	1.2	0.0		
Control Delay (s)	25.7	12.6	1.3	0.0		
Lane LOS	D	B	A			
Approach Delay (s)	14.1		1.3	0.0		
Approach LOS	B					
Intersection Summary						
Average Delay						
			1.8			
Intersection Capacity Utilization			70.7%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Background 2033
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	34	36	613	507	28
Future Volume (vph)	10	34	36	613	507	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.896				0.993	
Flt Protected	0.989			0.997		
Satd. Flow (prot)	1612	0	0	1880	1836	0
Flt Permitted	0.989			0.997		
Satd. Flow (perm)	1612	0	0	1880	1836	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)	1		15			15
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	4%	0%	2%	4%	2%
Adj. Flow (vph)	11	37	39	659	545	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	698	575	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	71.7%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Background 2033

PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	34	36	613	507	28
Future Volume (Veh/h)	10	34	36	613	507	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	37	39	659	545	30
Pedestrians	15				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.87					
vC, conflicting volume	1313	575	590			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1284	575	590			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	92	93	96			
cM capacity (veh/h)	142	506	981			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	48	698	575			
Volume Left	11	39	0			
Volume Right	37	0	30			
cSH	319	981	1700			
Volume to Capacity	0.15	0.04	0.34			
Queue Length 95th (m)	4.0	0.9	0.0			
Control Delay (s)	18.3	1.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	18.3	1.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.2				
Intersection Capacity Utilization		71.7%		ICU Level of Service		C
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	38	22	17	49	291	19	333	13	193	302	45
Future Volume (vph)	25	38	22	17	49	291	19	333	13	193	302	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.97		0.99	1.00		0.99	1.00	
Frt		0.945			0.872			0.994			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1795	0	1825	1604	0	1825	1889	0	1755	1843	0
Flt Permitted	0.290			0.544			0.540			0.396		
Satd. Flow (perm)	555	1795	0	1035	1604	0	1026	1889	0	727	1843	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			302			2			13	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Adj. Flow (vph)	27	41	24	18	53	313	20	358	14	208	325	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	65	0	18	366	0	20	372	0	208	373	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	20.2	20.2		20.2	20.2		40.2	40.2		56.0	54.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.44	0.44		0.62	0.60	
v/c Ratio	0.22	0.16		0.08	0.62		0.04	0.44		0.37	0.34	
Control Delay	34.0	20.9		28.9	11.8		15.9	20.0		9.5	9.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.0	20.9		28.9	11.8		15.9	20.0		9.5	9.7	
LOS	C	C		C	B		B	B		A	A	
Approach Delay		24.7			12.6			19.8			9.6	
Approach LOS		C			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90.5

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 14.1

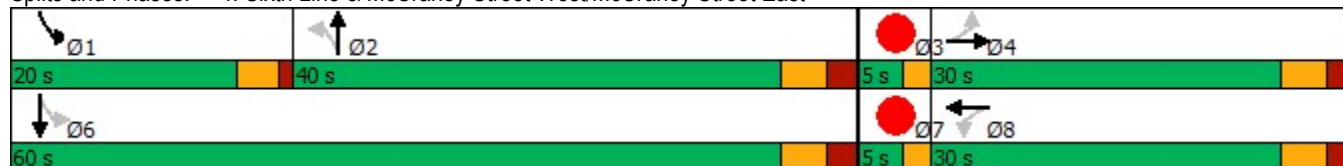
Intersection LOS: B

Intersection Capacity Utilization 74.7%

ICU Level of Service D

Analysis Period (min) 15

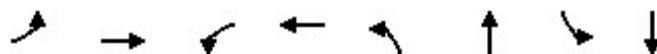
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	65	18	366	20	372	208	373
v/c Ratio	0.22	0.16	0.08	0.62	0.04	0.44	0.37	0.34
Control Delay	34.0	20.9	28.9	11.8	15.9	20.0	9.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	20.9	28.9	11.8	15.9	20.0	9.5	9.7
Queue Length 50th (m)	3.9	5.7	2.5	9.1	1.9	42.8	14.1	28.3
Queue Length 95th (m)	11.4	15.8	8.1	35.5	6.3	71.4	24.2	45.1
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	151	507	282	657	455	840	632	1113
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	0.18	0.13	0.06	0.56	0.04	0.44	0.33	0.34
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Background 2033

PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	38	22	17	49	291	19	333	13	193	302	45
Future Volume (vph)	25	38	22	17	49	291	19	333	13	193	302	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.87		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1816	1795		1810	1604		1806	1889		1750	1843	
Flt Permitted	0.29	1.00		0.54	1.00		0.54	1.00		0.40	1.00	
Satd. Flow (perm)	555	1795		1036	1604		1026	1889		730	1843	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	27	41	24	18	53	313	20	358	14	208	325	48
RTOR Reduction (vph)	0	20	0	0	232	0	0	1	0	0	5	0
Lane Group Flow (vph)	27	45	0	18	134	0	20	371	0	208	368	0
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.2	16.2		21.3	21.3		40.2	40.2		54.4	54.4	
Effective Green, g (s)	16.2	16.2		21.3	21.3		40.2	40.2		54.4	54.4	
Actuated g/C Ratio	0.18	0.18		0.23	0.23		0.44	0.44		0.59	0.59	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	98	317		240	372		450	829		547	1094	
v/s Ratio Prot		0.03			c0.08			c0.20		c0.04	0.20	
v/s Ratio Perm	0.05			0.02			0.02			0.18		
v/c Ratio	0.28	0.14		0.07	0.36		0.04	0.45		0.38	0.34	
Uniform Delay, d1	32.6	31.8		27.5	29.4		14.7	17.9		9.5	9.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2		0.1	0.6		0.2	1.7		0.4	0.8	
Delay (s)	34.2	32.0		27.6	30.0		14.9	19.7		10.0	10.3	
Level of Service	C	C		C	C		B	B		A	B	
Approach Delay (s)		32.7			29.9			19.4			10.2	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay	19.3			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.40											
Actuated Cycle Length (s)	91.6			Sum of lost time (s)			16.9					
Intersection Capacity Utilization	74.7%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2033
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	841	194	187	587	101	167	259	196	167	288	97
Future Volume (vph)	108	841	194	187	587	101	167	259	196	167	288	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00		0.96	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3579	1617	1690	3544	1570	1722	1847	1570	1807	1803	0
Flt Permitted	0.348			0.205			0.316			0.486		
Satd. Flow (perm)	592	3579	1569	295	3544	1508	532	1847	1521	881	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			104			168		15	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9
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
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%
Adj. Flow (vph)	115	895	206	199	624	107	178	276	209	178	306	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	895	206	199	624	107	178	276	209	178	409	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2033
AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	12.0	38.0	38.0	12.0	38.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	50.0	12.0	46.0	46.0	12.0	46.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	41.7%	10.0%	38.3%	38.3%	10.0%	38.3%	
Maximum Green (s)	8.0	44.5	44.5	8.0	44.5	44.5	8.0	39.6	39.6	8.0	39.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Actuated g/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
v/c Ratio	no cap	no cap	1.19	no cap	no cap	1.03	no cap	no cap	1.24	no cap	27.27	
Control Delay			5.3			4.3			7.8		37.2	
Queue Delay			0.0			0.0			0.0		0.0	
Total Delay	Error	Error	5.3	Error	Error	4.3	Error	Error	7.8	Error	37.2	
LOS	F	F	A	F	F	A	F	F	A	F	D	
Approach Delay		Err			Err			Err			Err	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: Err

Intersection Signal Delay: Err

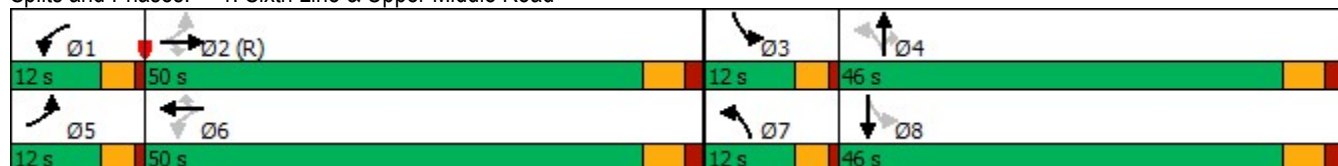
Intersection LOS: F

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Total 2033

1: Sixth Line & Upper Middle Road

AM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	115	895	206	199	624	107	178	276	209	178	409
v/c Ratio	no cap	no cap	1.19	no cap	no cap	1.03	no cap	no cap	1.24	no cap	27.27
Control Delay			5.3			4.3			7.8		37.2
Queue Delay			0.0			0.0			0.0		0.0
Total Delay	Error	Error	5.3	Error	Error	4.3	Error	Error	7.8	Error	37.2
Queue Length 50th (m)	~56.4	~230.7	~16.2	~97.5	~160.9	~1.5	~87.2	~135.2	~20.1	~87.2	~193.1
Queue Length 95th (m)	#93.6	#270.5	#63.2	#143.6	#197.0	#37.2	#131.3	#187.7	#67.1	#131.3	#253.3
Internal Link Dist (m)		474.8			421.5			242.8			89.9
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	121	1327	690	112	1314	624	114	609	614	120	605
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	0.95	0.67	0.30	1.78	0.47	0.17	1.56	0.45	0.34	1.48	0.68

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis

1: Sixth Line & Upper Middle Road

Future Total 2033

AM Peak Hr

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	108	841	194	187	587	101	167	259	196	167	288	97	
Future Volume (vph)	108	841	194	187	587	101	167	259	196	167	288	97	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.99		
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99	1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1810	3579	1569	1685	3544	1508	1704	1847	1521	1782	1803		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1810	3579	1569	1685	3544	1508	1704	1847	1521	1782	1803		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	115	895	206	199	624	107	178	276	209	178	306	103	
RTOR Reduction (vph)	0	0	173	0	0	104	0	0	168	0	15	0	
Lane Group Flow (vph)	115	895	33	199	624	3	178	276	41	178	394	0	
Confl. Peds. (#/hr)	6		3	3		6	9		10	10		9	
Heavy Vehicles (%)	0%	2%	1%	8%	3%	4%	6%	4%	4%	1%	1%	4%	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		
Protected Phases	5	2		1	6		7	4		3	8		
Permitted Phases	2		2	6		6	4		4	8			
Actuated Green, G (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Effective Green, g (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Actuated g/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4		
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5		
Lane Grp Cap (vph)	0	0	0	0	0	0	0	0	0	0	0		
v/s Ratio Prot													
v/s Ratio Perm													
v/c Ratio	no cap	no cap	no cap	no cap	no cap	no cap	no cap	no cap	no cap	no cap	no cap		
Uniform Delay, d1	Error	Error	Error	Error	Error	Error	Error	Error	Error	Error	Error		
Progression Factor													
Incremental Delay, d2	Error	Error	Error	Error	Error	Error	Error	Error	Error	Error	Error		
Delay (s)	Error	Error	Error	Error	Error	Error	Error	Error	Error	Error	Error		
Level of Service	F	F	F	F	F	F	F	F	F	F	F		
Approach Delay (s)		Error			Error			Error			Error		
Approach LOS		F			F			F			F		
Intersection Summary													
HCM 2000 Control Delay			Error									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.00										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	19.9
Intersection Capacity Utilization			80.7%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings

2: Sixth Line & Elm Road

Future Total 2033
AM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	158	43	539	621	5
Future Volume (vph)	10	158	43	539	621	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.999	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1615	1541	0	1791	1846	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1615	1541	0	1791	1846	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)			13			13
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	13%	6%	30%	5%	4%	0%
Adj. Flow (vph)	12	190	52	649	748	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	190	0	701	754	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	73.8%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Future Total 2033
AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	158	43	539	621	5
Future Volume (Veh/h)	10	158	43	539	621	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	12	190	52	649	748	6
Pedestrians	13					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)					288	
pX, platoon unblocked						
vC, conflicting volume	1517	764	767			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1517	764	767			
tC, single (s)	6.5	6.3	4.4			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.5			
p0 queue free %	89	52	93			
cM capacity (veh/h)	113	392	725			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	12	190	701	754		
Volume Left	12	0	52	0		
Volume Right	0	190	0	6		
cSH	113	392	725	1700		
Volume to Capacity	0.11	0.48	0.07	0.44		
Queue Length 95th (m)	2.6	19.4	1.8	0.0		
Control Delay (s)	40.5	22.5	1.9	0.0		
Lane LOS	E	C	A			
Approach Delay (s)	23.6		1.9	0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			73.8%	ICU Level of Service		D
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Total 2033
AM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	56	17	578	770	9
Future Volume (vph)	4	56	17	578	770	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.875				0.999	
Flt Protected	0.996			0.999		
Satd. Flow (prot)	1643	0	0	1797	1684	0
Flt Permitted	0.996			0.999		
Satd. Flow (perm)	1643	0	0	1797	1684	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)			19			19
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	2%	0%	7%	14%	4%
Adj. Flow (vph)	5	68	21	705	939	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	726	950	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	54.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Total 2033
AM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	56	17	578	770	9
Future Volume (Veh/h)	4	56	17	578	770	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	5	68	21	705	939	11
Pedestrians	19					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked						
vC, conflicting volume	1710	964	969			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1710	964	969			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	78	97			
cM capacity (veh/h)	96	304	706			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	73	726	950			
Volume Left	5	21	0			
Volume Right	68	0	11			
cSH	265	706	1700			
Volume to Capacity	0.28	0.03	0.56			
Queue Length 95th (m)	8.3	0.7	0.0			
Control Delay (s)	23.7	0.8	0.0			
Lane LOS	C	A				
Approach Delay (s)	23.7	0.8	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		54.5%		ICU Level of Service		A
Analysis Period (min)		15				

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Future Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.93		0.98	0.99		0.99		
Frt		0.968			0.867			0.969			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1841	0	1706	1461	0	1825	1748	0	1772	1783	0
Flt Permitted	0.190			0.452			0.541			0.450		
Satd. Flow (perm)	352	1841	0	768	1461	0	1002	1748	0	796	1783	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			408			15			4	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Adj. Flow (vph)	33	198	53	48	59	468	16	235	62	632	372	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	251	0	48	527	0	16	297	0	632	388	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Actuated g/C Ratio	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
v/c Ratio	no cap	17.93		no cap	1.29		no cap	19.80		no cap	97.00	
Control Delay		32.8			15.1			21.4			10.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay	Error	32.8		Error	15.1		Error	21.4		Error	10.3	
LOS	F	C		F	B		F	C		F	B	
Approach Delay		Err			Err			Err			Err	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 91.5

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: Err

Intersection Signal Delay: Err

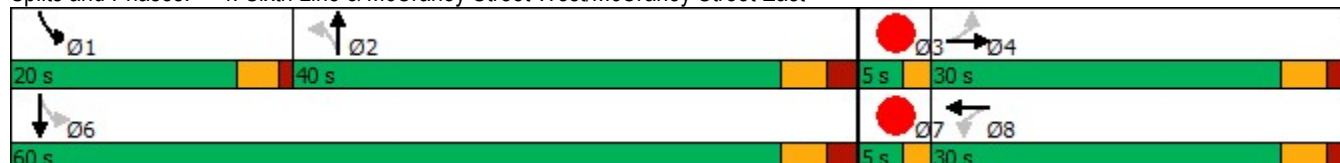
Intersection LOS: F

Intersection Capacity Utilization 93.2%

ICU Level of Service F

Analysis Period (min) 15

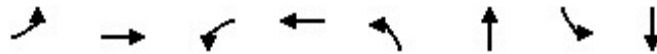
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	251	48	527	16	297	632	388
v/c Ratio	no cap	17.93	no cap	1.29	no cap	19.80	no cap	97.00
Control Delay		32.8		15.1		21.4		10.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay	Error	32.8	Error	15.1	Error	21.4	Error	10.3
Queue Length 50th (m)	~12.0	~86.4	~17.5	~43.4	~5.8	~102.8	~230.4	~140.0
Queue Length 95th (m)	#28.5	#122.6	#36.9	#79.6	#17.7	#141.1	#276.0	#181.1
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	98	507	215	692	382	667	309	1062
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	0.34	0.50	0.22	0.76	0.04	0.45	2.05	0.37

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Total 2033
AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Future Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		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)	1823	1852		1705	1537		1824	1755		1771	1782	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1823	1852		1705	1537		1824	1755		1771	1782	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	33	198	53	48	59	468	16	235	62	632	372	16
RTOR Reduction (vph)	0	14	0	0	408	0	0	15	0	0	4	0
Lane Group Flow (vph)	33	237	0	48	119	0	16	282	0	632	384	0
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Effective Green, g (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Actuated g/C Ratio	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	0	0		0	0		0	0		0	0	
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio	no cap	no cap		no cap	no cap		no cap	no cap		no cap	no cap	
Uniform Delay, d1	Error	Error		Error	Error		Error	Error		Error	Error	
Progression Factor												
Incremental Delay, d2	Error	Error		Error	Error		Error	Error		Error	Error	
Delay (s)	Error	Error		Error	Error		Error	Error		Error	Error	
Level of Service	F	F		F	F		F	F		F	F	
Approach Delay (s)		Error			Error			Error			Error	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			Error			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.00									
Actuated Cycle Length (s)			3.0			Sum of lost time (s)				16.9		
Intersection Capacity Utilization			93.2%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
5: Sixth Line & Site Access

Future Total 2033
AM Peak Hr

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	41	532	17	28	584
Future Volume (vph)	42	41	532	17	28	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933		0.996			
Flt Protected	0.975					0.998
Satd. Flow (prot)	1713	0	1876	0	0	1880
Flt Permitted	0.975					0.998
Satd. Flow (perm)	1713	0	1876	0	0	1880
Link Speed (k/h)	48		48			48
Link Distance (m)	33.5		21.1			266.8
Travel Time (s)	2.5		1.6			20.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	45	578	18	30	635
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	596	0	0	665
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	65.0%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 5: Sixth Line & Site Access

Future Total 2033
AM Peak Hr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	41	532	17	28	584
Future Volume (Veh/h)	42	41	532	17	28	584
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	45	578	18	30	635
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						267
pX, platoon unblocked						
vC, conflicting volume	1282	587			596	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1282	587			596	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	74	91			97	
cM capacity (veh/h)	177	510			980	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	91	596	665			
Volume Left	46	0	30			
Volume Right	45	18	0			
cSH	261	1700	980			
Volume to Capacity	0.35	0.35	0.03			
Queue Length 95th (m)	11.4	0.0	0.7			
Control Delay (s)	26.0	0.0	0.8			
Lane LOS	D		A			
Approach Delay (s)	26.0	0.0	0.8			
Approach LOS	D					
Intersection Summary						
Average Delay		2.1				
Intersection Capacity Utilization		65.0%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2033
PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	656	111	116	900	156	202	222	90	220	224	152
Future Volume (vph)	162	656	111	116	900	156	202	222	90	220	224	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00		0.92	1.00		0.97	0.99		
Frt			0.850			0.850			0.850		0.939	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3614	1617	1755	3614	1633	1789	1921	1617	1825	1797	0
Flt Permitted	0.111			0.259			0.335			0.494		
Satd. Flow (perm)	213	3614	1574	478	3614	1510	628	1921	1575	942	1797	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			105			95		31	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		498.8			445.5			266.8			113.9	
Travel Time (s)		37.4			33.4			20.0			8.5	
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Adj. Flow (vph)	174	705	119	125	968	168	217	239	97	237	241	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	705	119	125	968	168	217	239	97	237	404	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: Sixth Line & Upper Middle Road

Future Total 2033
PM Peak Hr

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	10.0	10.0	7.0	10.0	
Minimum Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (s)	13.0	48.0	48.0	12.0	47.0	47.0	12.0	46.0	46.0	14.0	48.0	
Total Split (%)	10.8%	40.0%	40.0%	10.0%	39.2%	39.2%	10.0%	38.3%	38.3%	11.7%	40.0%	
Maximum Green (s)	9.0	42.5	42.5	8.0	41.5	41.5	8.0	39.6	39.6	10.0	41.6	
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	
All-Red Time (s)	1.0	1.8	1.8	1.0	1.8	1.8	1.0	2.7	2.7	1.0	2.7	
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)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	53.1	42.6	42.6	50.9	41.5	41.5	50.0	39.6	39.6	54.0	41.6	
Actuated g/C Ratio	0.44	0.36	0.36	0.42	0.35	0.35	0.42	0.33	0.33	0.45	0.35	
v/c Ratio	0.81	0.55	0.19	0.44	0.78	0.28	0.64	0.38	0.17	0.48	0.63	
Control Delay	50.4	33.1	5.4	23.6	40.2	12.6	31.1	32.9	6.6	23.6	35.3	
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	50.4	33.1	5.4	23.6	40.2	12.6	31.1	32.9	6.6	23.6	35.3	
LOS	D	C	A	C	D	B	C	C	A	C	D	
Approach Delay		32.8			34.9			27.6			31.0	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 32.4

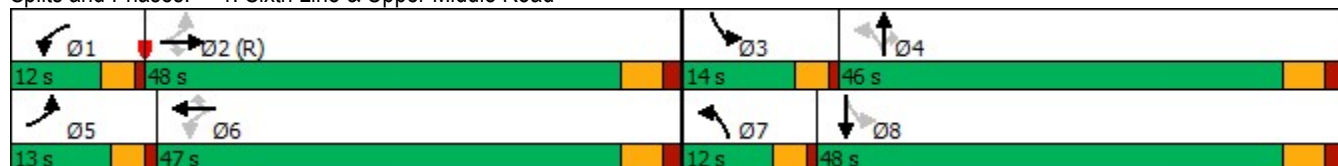
Intersection LOS: C

Intersection Capacity Utilization 82.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Sixth Line & Upper Middle Road



Queues

Future Total 2033

1: Sixth Line & Upper Middle Road

PM Peak Hr

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	174	705	119	125	968	168	217	239	97	237	404
v/c Ratio	0.81	0.55	0.19	0.44	0.78	0.28	0.64	0.38	0.17	0.48	0.63
Control Delay	50.4	33.1	5.4	23.6	40.2	12.6	31.1	32.9	6.6	23.6	35.3
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	50.4	33.1	5.4	23.6	40.2	12.6	31.1	32.9	6.6	23.6	35.3
Queue Length 50th (m)	23.6	69.5	0.0	16.5	106.5	10.1	30.3	42.9	0.3	33.4	73.0
Queue Length 95th (m)	#57.3	88.3	12.1	28.2	131.2	26.5	46.9	64.9	11.9	50.8	106.7
Internal Link Dist (m)	474.8			421.5			242.8			89.9	
Turn Bay Length (m)	55.0		55.0	45.0		45.0	30.0		30.0	40.0	
Base Capacity (vph)	214	1281	635	288	1249	590	339	633	583	497	643
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	0.81	0.55	0.19	0.43	0.78	0.28	0.64	0.38	0.17	0.48	0.63

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Sixth Line & Upper Middle Road

Future Total 2033

PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	656	111	116	900	156	202	222	90	220	224	152
Future Volume (vph)	162	656	111	116	900	156	202	222	90	220	224	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1825	3614	1574	1754	3614	1510	1787	1921	1575	1818	1798	
Flt Permitted	0.11	1.00	1.00	0.26	1.00	1.00	0.34	1.00	1.00	0.49	1.00	
Satd. Flow (perm)	214	3614	1574	478	3614	1510	631	1921	1575	946	1798	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	174	705	119	125	968	168	217	239	97	237	241	163
RTOR Reduction (vph)	0	0	77	0	0	69	0	0	64	0	20	0
Lane Group Flow (vph)	174	705	42	125	968	99	217	239	33	237	384	0
Confl. Peds. (#/hr)	17		2	2		17	6		7	7		
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	2%	0%	1%	0%	0%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Actuated Green, G (s)	51.6	42.6	42.6	49.4	41.5	41.5	47.6	39.6	39.6	51.6	41.6	
Effective Green, g (s)	51.6	42.6	42.6	49.4	41.5	41.5	47.6	39.6	39.6	51.6	41.6	
Actuated g/C Ratio	0.43	0.36	0.36	0.41	0.35	0.35	0.40	0.33	0.33	0.43	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	6.4	6.4	4.0	6.4	
Vehicle Extension (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
Lane Grp Cap (vph)	212	1282	558	280	1249	522	327	633	519	479	623	
v/s Ratio Prot	c0.06	0.20		0.03	0.27		c0.04	0.12		c0.04	0.21	
v/s Ratio Perm	c0.29		0.03	0.15		0.07	c0.22		0.02	0.17		
v/c Ratio	0.82	0.55	0.08	0.45	0.78	0.19	0.66	0.38	0.06	0.49	0.62	
Uniform Delay, d1	25.8	31.0	25.7	23.3	35.1	27.5	28.3	30.8	27.5	22.9	32.6	
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	22.3	1.7	0.3	1.3	4.7	0.8	5.2	1.7	0.2	1.0	4.5	
Delay (s)	48.1	32.7	25.9	24.6	39.8	28.3	33.5	32.5	27.8	23.8	37.1	
Level of Service	D	C	C	C	D	C	C	C	C	C	D	
Approach Delay (s)		34.6			36.8			32.1			32.2	
Approach LOS		C			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			34.5		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			120.0		Sum of lost time (s)					19.9		
Intersection Capacity Utilization			82.7%		ICU Level of Service					E		
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

Lanes, Volumes, Timings
2: Sixth Line & Elm Road

Future Total 2033
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	83	50	601	471	13
Future Volume (vph)	11	83	50	601	471	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.996	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1825	1601	0	1879	1854	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1825	1601	0	1879	1854	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	103.8			216.0	21.1	
Travel Time (s)	7.8			16.2	1.6	
Confl. Peds. (#/hr)	3		12			12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	2%	3%	10%
Adj. Flow (vph)	12	89	54	646	506	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	89	0	700	520	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	73.3%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

2: Sixth Line & Elm Road

Future Total 2033
PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	83	50	601	471	13
Future Volume (Veh/h)	11	83	50	601	471	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	12	89	54	646	506	14
Pedestrians	12				3	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)					288	
pX, platoon unblocked						
vC, conflicting volume	1282	525	532			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1282	525	532			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	84	95			
cM capacity (veh/h)	172	546	1033			
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total	12	89	700	520		
Volume Left	12	0	54	0		
Volume Right	0	89	0	14		
cSH	172	546	1033	1700		
Volume to Capacity	0.07	0.16	0.05	0.31		
Queue Length 95th (m)	1.7	4.4	1.3	0.0		
Control Delay (s)	27.5	12.9	1.3	0.0		
Lane LOS	D	B	A			
Approach Delay (s)	14.6		1.3	0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			73.3%	ICU Level of Service		D
Analysis Period (min)			15			

Lanes, Volumes, Timings
3: Sixth Line & Miller Road

Future Total 2033
PM Peak Hr

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	34	36	640	525	29
Future Volume (vph)	11	34	36	640	525	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.898				0.993	
Flt Protected	0.988			0.997		
Satd. Flow (prot)	1612	0	0	1880	1836	0
Flt Permitted	0.988			0.997		
Satd. Flow (perm)	1612	0	0	1880	1836	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	494.9			187.0	216.0	
Travel Time (s)	37.1			14.0	16.2	
Confl. Peds. (#/hr)	1		15			15
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	4%	0%	2%	4%	2%
Adj. Flow (vph)	12	37	39	688	565	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	0	727	596	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	73.1%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Sixth Line & Miller Road

Future Total 2033
PM Peak Hr

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	34	36	640	525	29
Future Volume (Veh/h)	11	34	36	640	525	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	12	37	39	688	565	31
Pedestrians	15				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				187		
pX, platoon unblocked	0.86					
vC, conflicting volume	1362	596	611			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1340	596	611			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	91	92	96			
cM capacity (veh/h)	131	493	963			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	49	727	596			
Volume Left	12	39	0			
Volume Right	37	0	31			
cSH	294	963	1700			
Volume to Capacity	0.17	0.04	0.35			
Queue Length 95th (m)	4.5	1.0	0.0			
Control Delay (s)	19.7	1.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	19.7	1.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		73.1%		ICU Level of Service		D
Analysis Period (min)		15				

Lanes, Volumes, Timings

Future Total 2033

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	38	22	17	49	309	19	341	13	195	316	47
Future Volume (vph)	26	38	22	17	49	309	19	341	13	195	316	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.97		0.99	1.00		0.99	1.00	
Frt		0.945			0.871			0.994			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1795	0	1825	1602	0	1825	1889	0	1755	1841	0
Flt Permitted	0.248			0.544			0.531			0.387		
Satd. Flow (perm)	475	1795	0	1035	1602	0	1009	1889	0	710	1841	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			321			2			13	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Adj. Flow (vph)	28	41	24	18	53	332	20	367	14	210	340	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	65	0	18	385	0	20	381	0	210	391	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (m)		
Storage Lanes		
Taper Length (m)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	31.6%	31.6%		31.6%	31.6%		42.1%	42.1%		21.1%	63.2%	
Maximum Green (s)	24.7	24.7		24.7	24.7		34.4	34.4		16.0	54.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	20.3	20.3		20.3	20.3		40.1	40.1		56.0	54.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.44	0.44		0.62	0.60	
v/c Ratio	0.26	0.15		0.08	0.63		0.04	0.45		0.38	0.35	
Control Delay	36.5	20.8		28.8	11.7		16.2	20.4		9.7	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.5	20.8		28.8	11.7		16.2	20.4		9.7	10.0	
LOS	D	C		C	B		B	C		A	A	
Approach Delay		25.5			12.5			20.2			9.9	
Approach LOS		C			B			C			A	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90.6

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 14.3

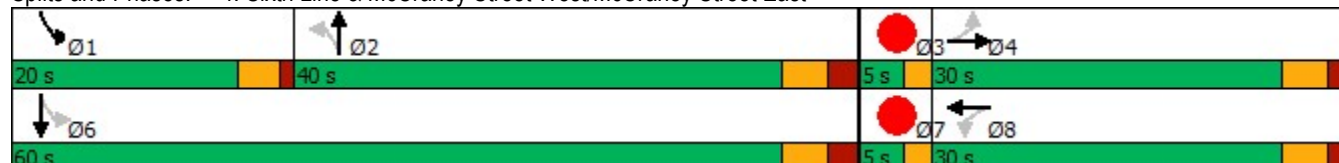
Intersection LOS: B

Intersection Capacity Utilization 75.8%

ICU Level of Service D

Analysis Period (min) 15

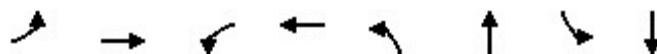
Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

4: Sixth Line & McCraney Street West/McCraney Street East

PM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	65	18	385	20	381	210	391
v/c Ratio	0.26	0.15	0.08	0.63	0.04	0.45	0.38	0.35
Control Delay	36.5	20.8	28.8	11.7	16.2	20.4	9.7	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	20.8	28.8	11.7	16.2	20.4	9.7	10.0
Queue Length 50th (m)	4.1	5.7	2.5	9.0	1.9	44.1	14.3	30.1
Queue Length 95th (m)	12.1	15.8	8.1	35.9	6.5	74.7	24.9	48.7
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	129	506	282	670	446	838	623	1110
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	0.22	0.13	0.06	0.57	0.04	0.45	0.34	0.35
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

4: Sixth Line & McCraney Street West/McCraney Street East

Future Total 2033
PM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	38	22	17	49	309	19	341	13	195	316	47
Future Volume (vph)	26	38	22	17	49	309	19	341	13	195	316	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.87		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1817	1795		1810	1602		1806	1890		1751	1842	
Flt Permitted	0.25	1.00		0.54	1.00		0.53	1.00		0.39	1.00	
Satd. Flow (perm)	474	1795		1037	1602		1009	1890		713	1842	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	28	41	24	18	53	332	20	367	14	210	340	51
RTOR Reduction (vph)	0	20	0	0	246	0	0	1	0	0	5	0
Lane Group Flow (vph)	28	45	0	18	139	0	20	380	0	210	386	0
Confl. Peds. (#/hr)	4		4	4		4	7		7	7		7
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.3	16.3		21.4	21.4		40.1	40.1		54.4	54.4	
Effective Green, g (s)	16.3	16.3		21.4	21.4		40.1	40.1		54.4	54.4	
Actuated g/C Ratio	0.18	0.18		0.23	0.23		0.44	0.44		0.59	0.59	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	84	319		242	373		441	826		539	1092	
v/s Ratio Prot		0.03			c0.09			c0.20		c0.04	0.21	
v/s Ratio Perm	0.06			0.02			0.02			0.19		
v/c Ratio	0.33	0.14		0.07	0.37		0.05	0.46		0.39	0.35	
Uniform Delay, d1	33.0	31.8		27.4	29.5		14.8	18.2		9.7	9.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	0.2		0.1	0.6		0.2	1.8		0.5	0.9	
Delay (s)	35.3	32.0		27.6	30.1		15.0	20.0		10.1	10.5	
Level of Service	D	C		C	C		B	C		B	B	
Approach Delay (s)		33.0			30.0			19.8			10.4	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			19.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			91.7			Sum of lost time (s)				16.9		
Intersection Capacity Utilization			75.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
5: Sixth Line & Site Access

Future Total 2033
PM Peak Hr

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	31	583	29	39	462
Future Volume (vph)	21	31	583	29	39	462
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.994			
Flt Protected	0.980					0.996
Satd. Flow (prot)	1696	0	1872	0	0	1876
Flt Permitted	0.980					0.996
Satd. Flow (perm)	1696	0	1872	0	0	1876
Link Speed (k/h)	48		48			48
Link Distance (m)	33.5		21.1			266.8
Travel Time (s)	2.5		1.6			20.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	34	634	32	42	502
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	666	0	0	544
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	66.6%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 5: Sixth Line & Site Access

Future Total 2033
PM Peak Hr

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	31	583	29	39	462
Future Volume (Veh/h)	21	31	583	29	39	462
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	34	634	32	42	502
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						267
pX, platoon unblocked	0.94					
vC, conflicting volume	1236	650			666	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1218	650			666	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	93			95	
cM capacity (veh/h)	178	469			923	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	57	666	544			
Volume Left	23	0	42			
Volume Right	34	32	0			
cSH	283	1700	923			
Volume to Capacity	0.20	0.39	0.05			
Queue Length 95th (m)	5.6	0.0	1.1			
Control Delay (s)	20.9	0.0	1.2			
Lane LOS	C		A			
Approach Delay (s)	20.9	0.0	1.2			
Approach LOS	C					
Intersection Summary						
Average Delay		1.5				
Intersection Capacity Utilization		66.6%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings

Future Background 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Future Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.93		0.98	0.99		0.99		
Frt		0.968			0.867			0.968			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1841	0	1706	1462	0	1825	1746	0	1772	1783	0
Flt Permitted	0.186			0.428			0.546			0.377		
Satd. Flow (perm)	357	1841	0	755	1462	0	1027	1746	0	697	1783	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			390			14			4	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Adj. Flow (vph)	32	198	53	48	59	456	16	230	62	611	347	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	251	0	48	515	0	16	292	0	611	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings

Future Background 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	25.3	25.3		25.3	25.3		29.6	29.6		11.0	29.6	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		30.0	61.0	
Total Split (%)	30.5%	30.5%		30.5%	30.5%		32.6%	32.6%		31.6%	64.2%	
Maximum Green (s)	23.7	23.7		23.7	23.7		25.4	25.4		26.0	55.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	21.5	21.5		21.5	21.5		27.5	27.5		57.0	55.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.30	0.30		0.61	0.60	
v/c Ratio	0.39	0.58		0.28	0.81		0.05	0.55		0.87	0.34	
Control Delay	45.4	35.6		33.9	19.8		26.3	32.0		26.0	10.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.4	35.6		33.9	19.8		26.3	32.0		26.0	10.6	
LOS	D	D		C	B		C	C		C	B	
Approach Delay		36.7			21.0			31.7			20.3	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 92.8

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 24.3

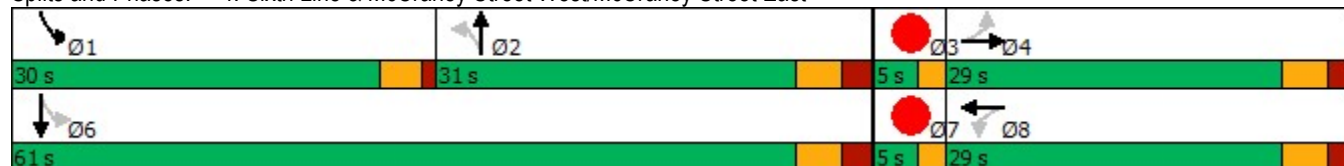
Intersection LOS: C

Intersection Capacity Utilization 92.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



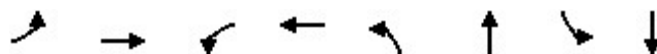
Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Queues

Future Background 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	251	48	515	16	292	611	361
v/c Ratio	0.39	0.58	0.28	0.81	0.05	0.55	0.87	0.34
Control Delay	45.4	35.6	33.9	19.8	26.3	32.0	26.0	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	35.6	33.9	19.8	26.3	32.0	26.0	10.6
Queue Length 50th (m)	4.9	37.7	7.1	19.1	2.1	42.0	55.8	28.3
Queue Length 95th (m)	12.5	53.5	15.2	41.6	6.5	62.0	77.8	42.0
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	91	480	192	664	304	527	729	1066
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	0.35	0.52	0.25	0.78	0.05	0.55	0.84	0.34
Intersection Summary								

HCM Signalized Intersection Capacity Analysis Future Background 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Future Volume (vph)	26	160	43	39	48	369	13	186	50	495	281	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.93		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		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)	1825	1841		1677	1464		1788	1747		1766	1783	
Flt Permitted	0.19	1.00		0.43	1.00		0.55	1.00		0.38	1.00	
Satd. Flow (perm)	357	1841		756	1464		1027	1747		702	1783	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	32	198	53	48	59	456	16	230	62	611	347	14
RTOR Reduction (vph)	0	11	0	0	300	0	0	10	0	0	2	0
Lane Group Flow (vph)	32	240	0	48	215	0	16	282	0	611	359	0
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.5	21.5		21.5	21.5		27.5	27.5		55.4	55.4	
Effective Green, g (s)	21.5	21.5		21.5	21.5		27.5	27.5		55.4	55.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.30	0.30		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	82	426		175	339		304	517		693	1064	
v/s Ratio Prot		0.13			c0.15			0.16		c0.23	0.20	
v/s Ratio Perm	0.09			0.06			0.02			c0.30		
v/c Ratio	0.39	0.56		0.27	0.64		0.05	0.55		0.88	0.34	
Uniform Delay, d1	30.1	31.5		29.2	32.1		23.3	27.4		13.0	9.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	1.7		0.9	3.9		0.3	4.1		12.6	0.9	
Delay (s)	33.2	33.2		30.1	36.0		23.7	31.5		25.7	10.3	
Level of Service	C	C		C	D		C	C		C	B	
Approach Delay (s)		33.2			35.5			31.1			20.0	
Approach LOS		C			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			27.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			92.8			Sum of lost time (s)			16.9			
Intersection Capacity Utilization			92.3%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Future Total 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Future Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	30.0		0.0	25.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.93		0.98	0.99		0.99		
Frt		0.968			0.867			0.969			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1841	0	1706	1461	0	1825	1748	0	1772	1783	0
Flt Permitted	0.186			0.428			0.532			0.363		
Satd. Flow (perm)	357	1841	0	755	1461	0	1002	1748	0	671	1783	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			401			14			4	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		496.2			318.9			167.6			187.0	
Travel Time (s)		37.2			23.9			12.6			14.0	
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Adj. Flow (vph)	33	198	53	48	59	468	16	235	62	632	372	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	251	0	48	527	0	16	297	0	632	388	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings

Future Total 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		24.0	24.0		7.0	24.0	
Minimum Split (s)	25.3	25.3		25.3	25.3		29.6	29.6		11.0	29.6	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		30.0	61.0	
Total Split (%)	30.5%	30.5%		30.5%	30.5%		32.6%	32.6%		31.6%	64.2%	
Maximum Green (s)	23.7	23.7		23.7	23.7		25.4	25.4		26.0	55.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.0	3.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effect Green (s)	21.5	21.5		21.5	21.5		26.7	26.7		57.0	55.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.29	0.29		0.61	0.60	
v/c Ratio	0.40	0.58		0.28	0.82		0.06	0.58		0.90	0.36	
Control Delay	46.1	35.6		33.9	20.1		26.5	33.1		29.9	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.1	35.6		33.9	20.1		26.5	33.1		29.9	10.9	
LOS	D	D		C	C		C	C		C	B	
Approach Delay		36.8			21.2			32.8			22.7	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 92.8

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 25.6

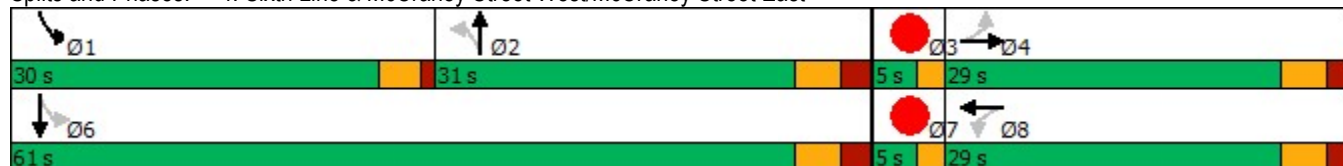
Intersection LOS: C

Intersection Capacity Utilization 93.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 4: Sixth Line & McCraney Street West/McCraney Street East



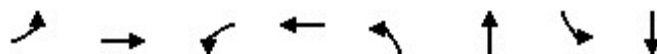
Lane Group	Ø3	Ø7
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Queues

Future Total 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	251	48	527	16	297	632	388
v/c Ratio	0.40	0.58	0.28	0.82	0.06	0.58	0.90	0.36
Control Delay	46.1	35.6	33.9	20.1	26.5	33.1	29.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	35.6	33.9	20.1	26.5	33.1	29.9	10.9
Queue Length 50th (m)	5.0	37.7	7.1	19.4	2.1	42.9	58.8	31.0
Queue Length 95th (m)	12.9	53.5	15.2	42.3	6.5	63.0	#91.6	45.4
Internal Link Dist (m)		472.2		294.9		143.6		163.0
Turn Bay Length (m)	15.0		30.0		25.0		35.0	
Base Capacity (vph)	91	480	192	672	288	512	720	1066
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	0.36	0.52	0.25	0.78	0.06	0.58	0.88	0.36

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Future Total 2033 - Signal Improvements

4: Sixth Line & McCraney Street West/McCraney Street East

AM Peak Hr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Future Volume (vph)	27	160	43	39	48	379	13	190	50	512	301	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.93		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		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)	1825	1841		1677	1463		1789	1748		1766	1782	
Flt Permitted	0.19	1.00		0.43	1.00		0.53	1.00		0.36	1.00	
Satd. Flow (perm)	357	1841		756	1463		1003	1748		674	1782	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	33	198	53	48	59	468	16	235	62	632	372	16
RTOR Reduction (vph)	0	11	0	0	308	0	0	10	0	0	2	0
Lane Group Flow (vph)	33	240	0	48	219	0	16	287	0	632	386	0
Confl. Peds. (#/hr)	22		11	11		22	13		8	8		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	7%	0%	6%	4%	3%	7%	10%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.5	21.5		21.5	21.5		26.7	26.7		55.4	55.4	
Effective Green, g (s)	21.5	21.5		21.5	21.5		26.7	26.7		55.4	55.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.29	0.29		0.60	0.60	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.6	5.6		4.0	5.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	82	426		175	338		288	502		693	1063	
v/s Ratio Prot		0.13			c0.15			0.16		c0.24	0.22	
v/s Ratio Perm	0.09			0.06			0.02			c0.30		
v/c Ratio	0.40	0.56		0.27	0.65		0.06	0.57		0.91	0.36	
Uniform Delay, d1	30.2	31.5		29.2	32.2		23.9	28.2		13.5	9.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	1.7		0.9	4.2		0.4	4.7		16.3	1.0	
Delay (s)	33.4	33.2		30.1	36.5		24.3	32.9		29.8	10.6	
Level of Service	C	C		C	D		C	C		C	B	
Approach Delay (s)		33.2			35.9			32.4			22.5	
Approach LOS		C			D			C			C	
Intersection Summary												
HCM 2000 Control Delay	28.8			HCM 2000 Level of Service			C					
HCM 2000 Volume to Capacity ratio	0.84											
Actuated Cycle Length (s)	92.8			Sum of lost time (s)			16.9					
Intersection Capacity Utilization	93.2%			ICU Level of Service			F					
Analysis Period (min)	15											
c Critical Lane Group												

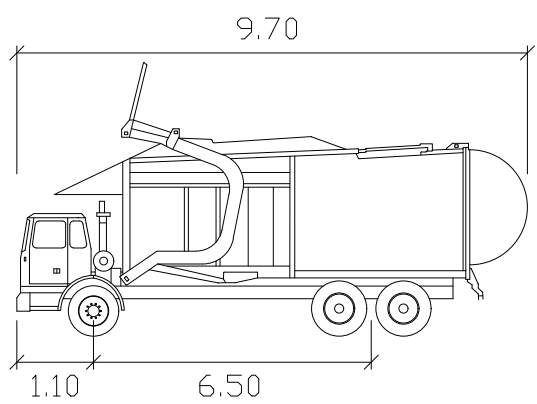
Appendix G

AutoTURN Swept Path Analysis



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100 Milverton Drive, Suite 404
Mississauga, Ontario L5R 4H1 Canada
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Halton-Front-End
meters

Width : 2.70
Track : 2.70
Lock to Lock Time 6.0
Steering Angle : 30.0

1	First Submission	W.M	W.M	7/24/25
No.	Issue	Checked	Approved	Date

Author R.A Designer R.A

Drafting W.M Design W.M

Project W.M Project W.M

Manager Director

Client

Innovative SHS

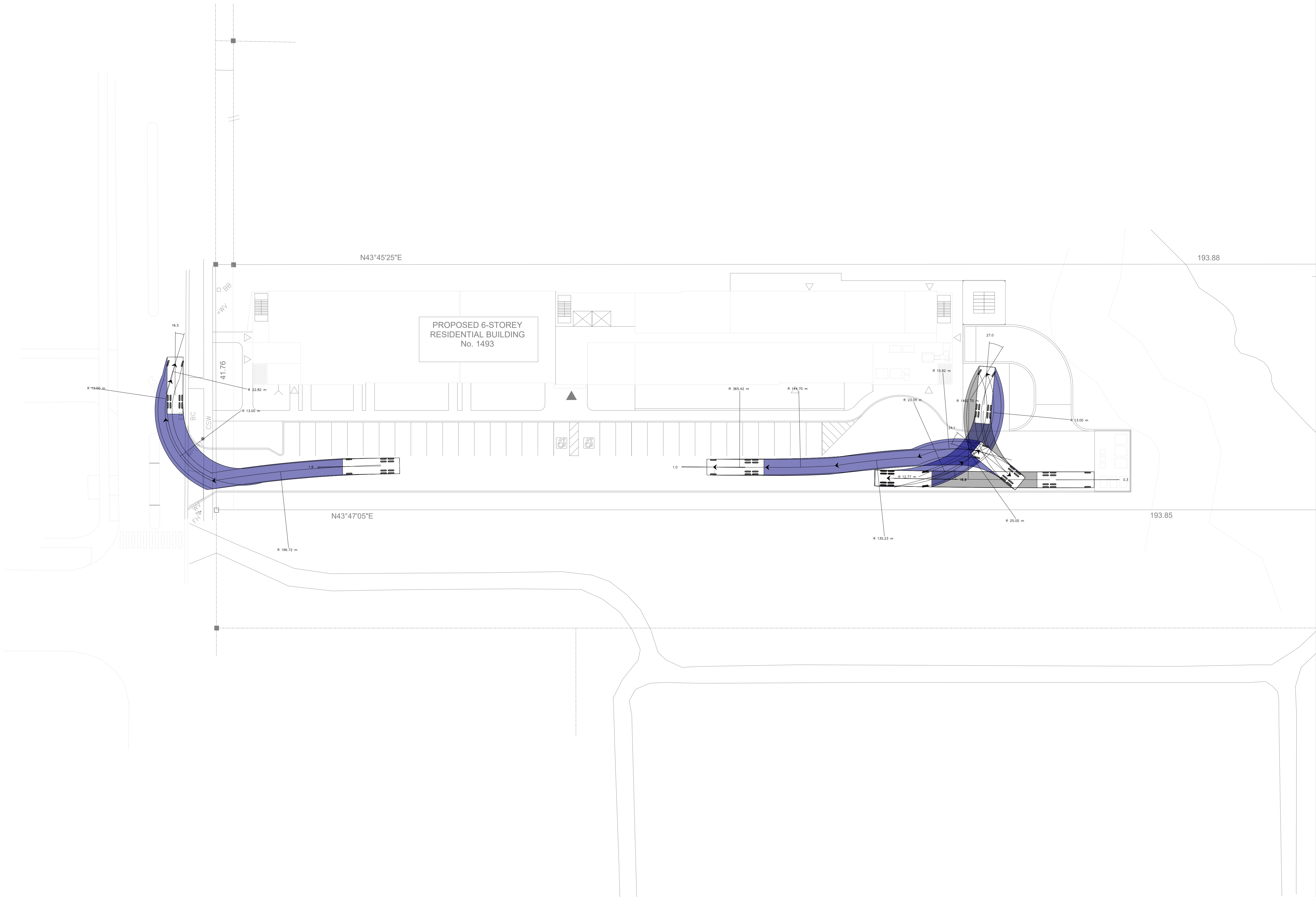
Project
1493 Sixth Line

Date July 24, 2025 Scale NTS

Project No.

Title
VEHICLE MANEUVERING
DIAGRAM -
WASTE COLLECTION
(OUTBOUND)

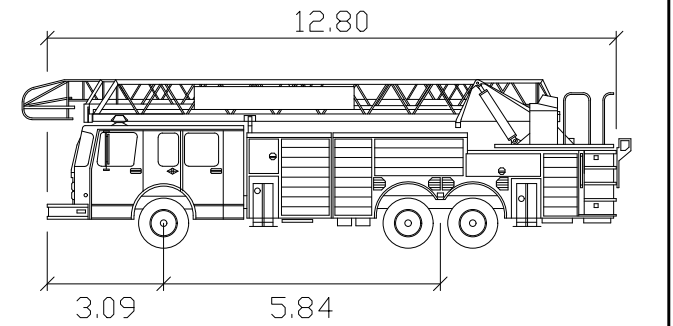
Size
ANSI D
Sheet No.
AT-102





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Aerial Fire meters
Width : 2.54
Track : 2.54
Lock to Lock Time : 6.0
Steering Angle : 37.0

1	First Submission	W.M	W.M	7/24/25
No.	Issue	Checked	Approved	Date
Author	R.A	Designer	R.A	
Drafting Check	W.M	Design Check	W.M	
Project Manager	W.M	Project Director	W.M	
Client				
Innovative SHS				
Project				
1493 Sixth Line				
Date		Scale		
July 24, 2025		NTS		
Project No.				
-				

Title

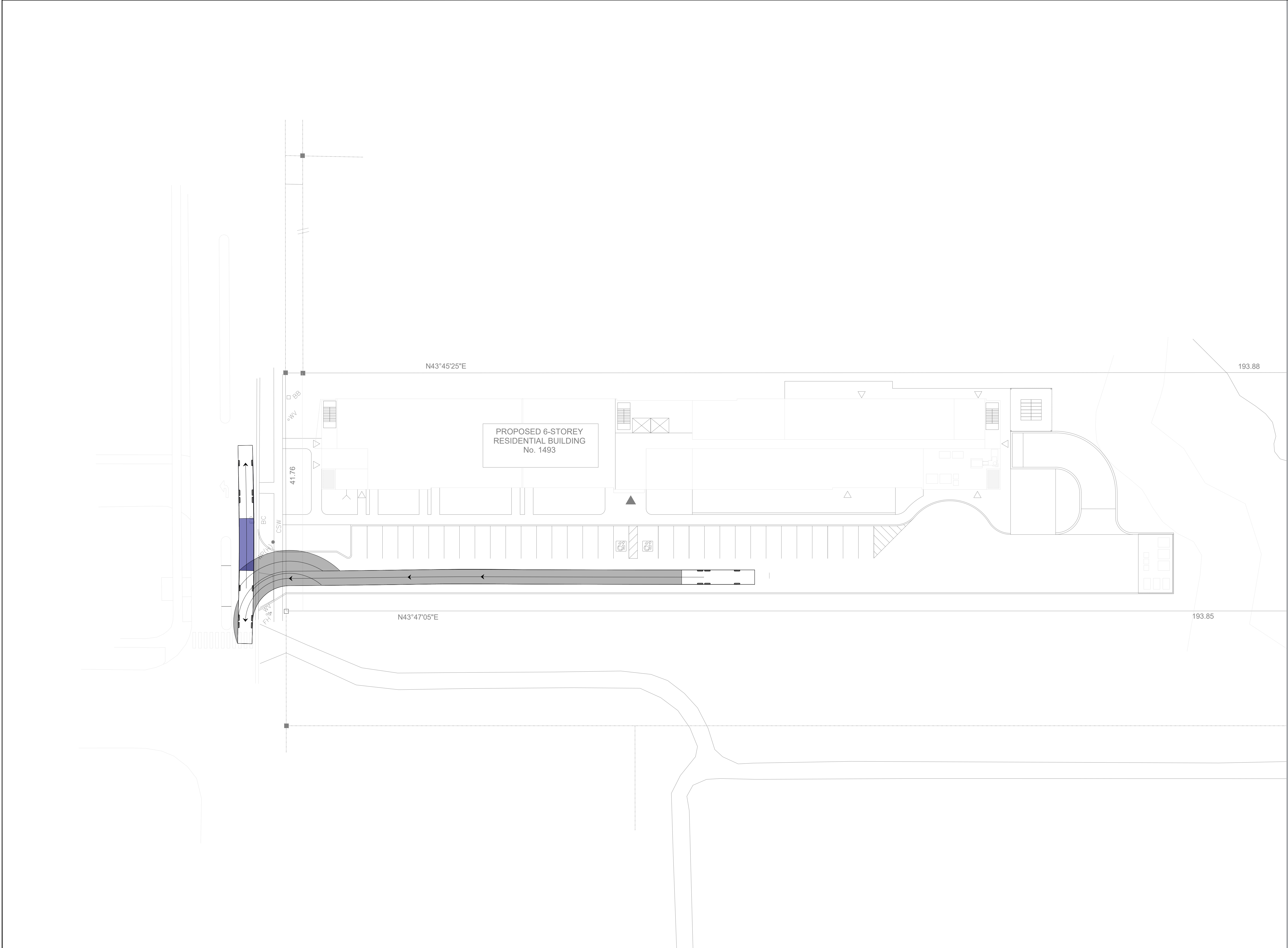
VEHICLE MANEUVERING
DIAGRAM -
FIRE TRUCK (INBOUND)

Size

ANSI D

Sheet No.

AT-103





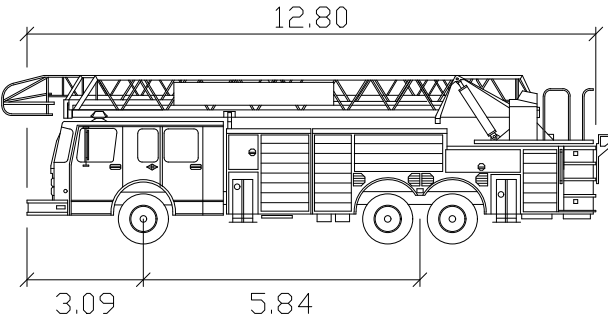
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Mississauga, Ontario L5R 4H1 Canada
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Aerial Fire

Width	: 2.54	meters
Track	: 2.54	
Lock to Lock Time	: 6.0	
Steering Angle	: 37.0	

1	First Submission	W.M	W.M	7/24/25
No.	Issue	Checked	Approved	Date
Author	R.A		Designer	R.A
Drafting	W.M		Design	W.M
Check			Check	
Project	W.M		Project	W.M
Manager			Director	

Client

Innovative SHS

Project

1493 Sixth Line

Date	July 24, 2025	Scale	NTS
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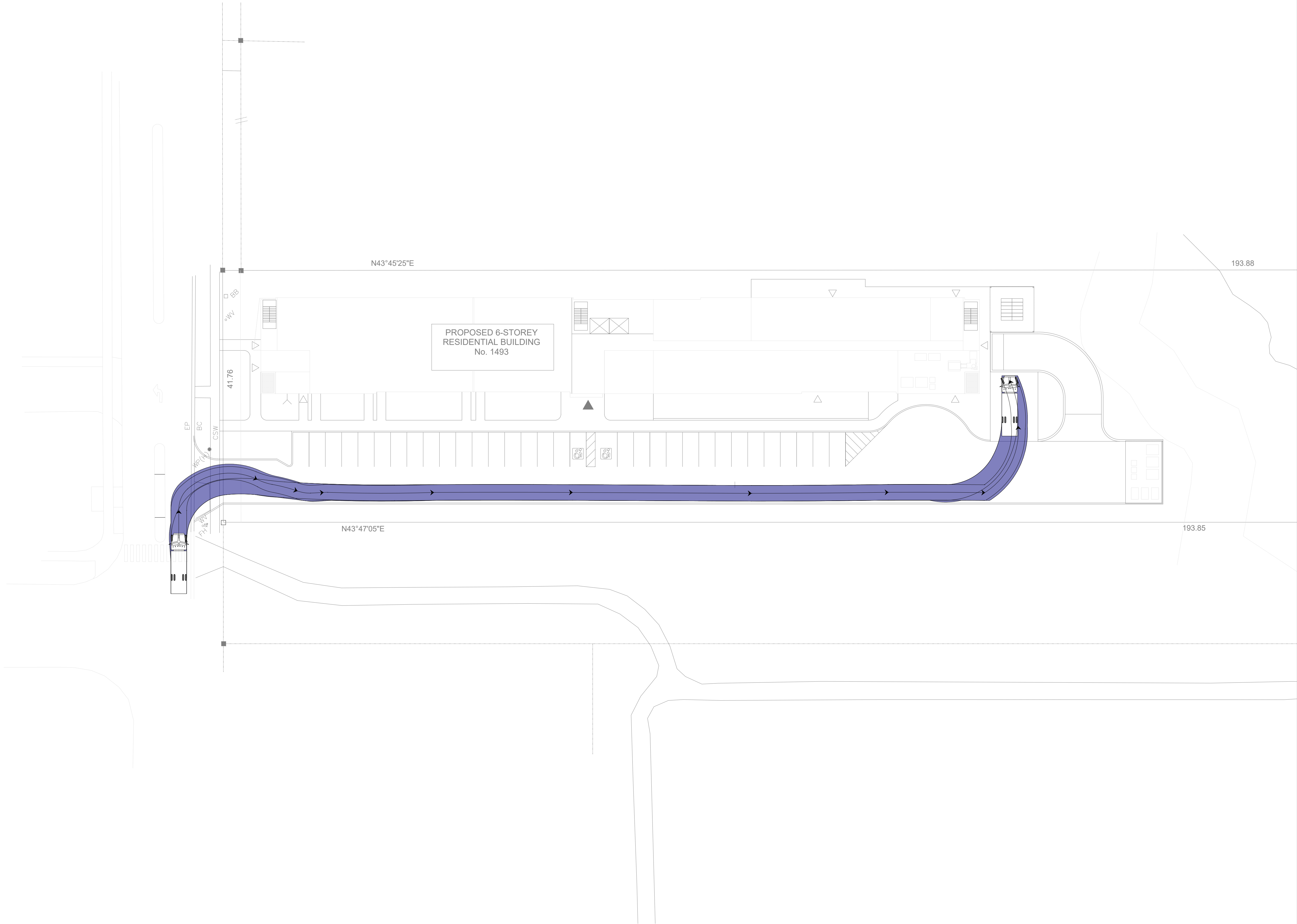
Project No.

-

Title	Size
VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (OUTBOUND)	ANSI D

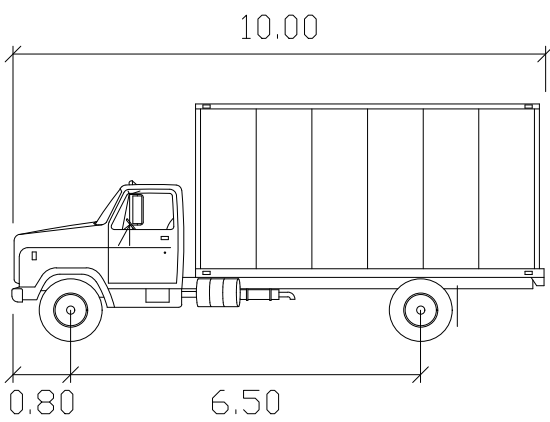
Sheet No.

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MSU
Width : 2.60 meters
Track : 2.60
Lock to Lock Time : 6.0
Steering Angle : 40.2

1	First Submission	W.M	W.M	7/24/25
No.	Issue	Checked	Approved	Date

Author	R.A	Designer	R.A
Drafting	W.M	Design	W.M
Check		Check	
Project	W.M	Project	W.M
Manager		Director	

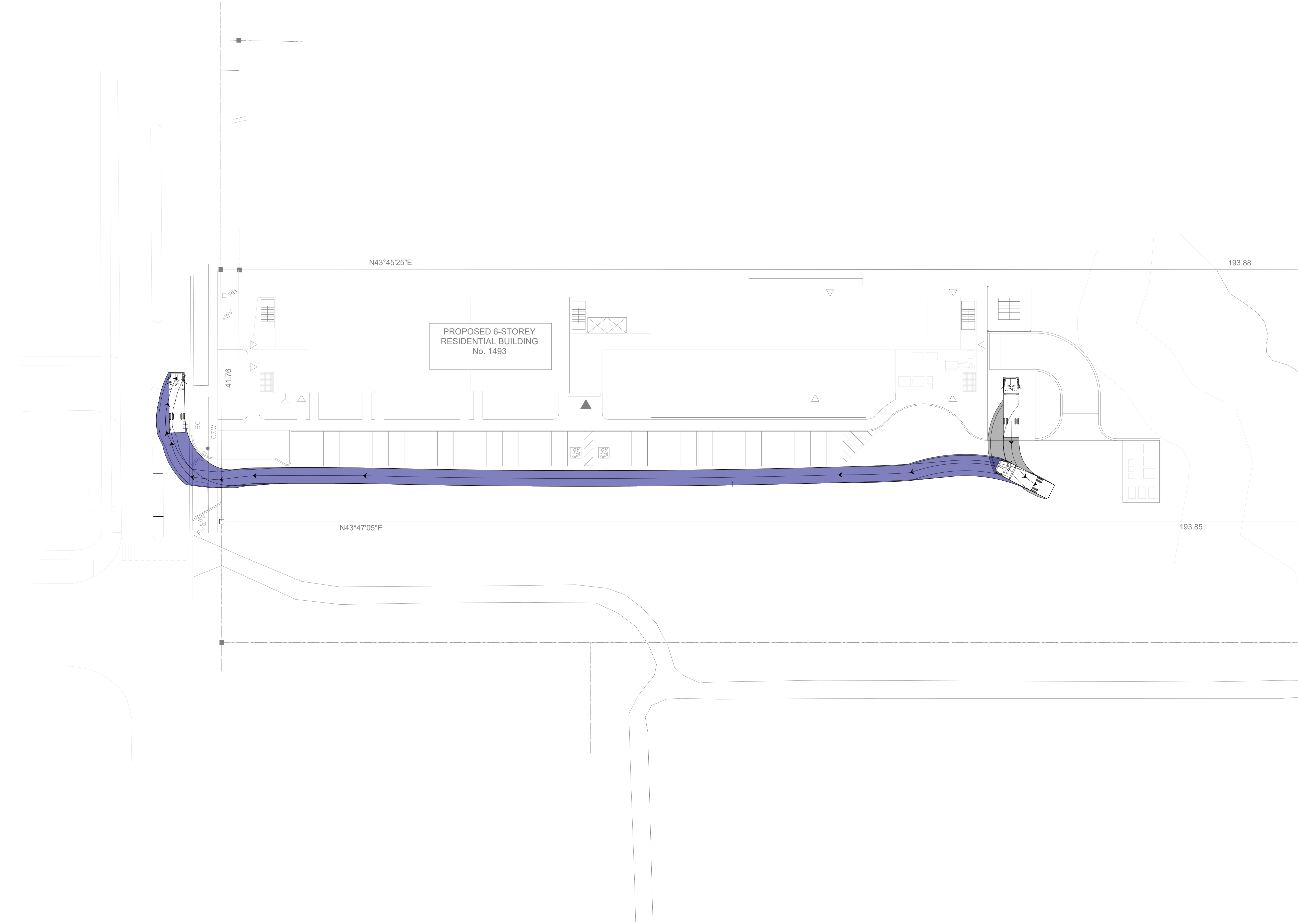
Client	Innovative SHS
Project	1493 Sixth Line

Date	July 24, 2025	Scale	NTS
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Project No.	-
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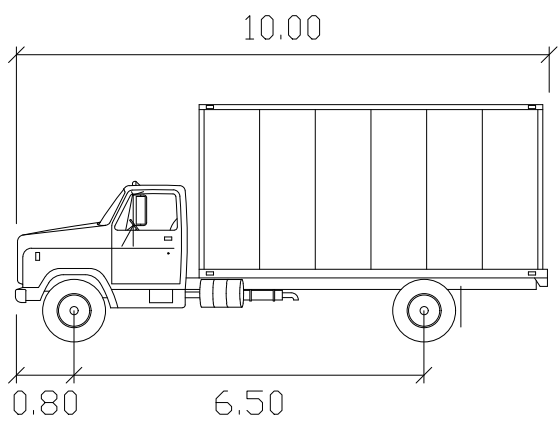
Title	Size
VEHICLE MANEUVERING DIAGRAM - MSU (INBOUND)	ANSI D

Sheet No.
AT-105



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MSU
meters
Width : 2.60
Track : 2.60
Lock to Lock Time : 6.0
Steering Angle : 40.2

1	First Submission	W.M	W.M	7/24/25
No.	Issue	Checked	Approved	Date

Author	R.A	Designer	R.A
Drafting	W.M	Design	W.M
Check		Check	
Project	W.M	Project	W.M
Manager		Director	

Client	Innovative SHS
Project	1493 Sixth Line

Date	July 24, 2025	Scale	NTS
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Project No.	-
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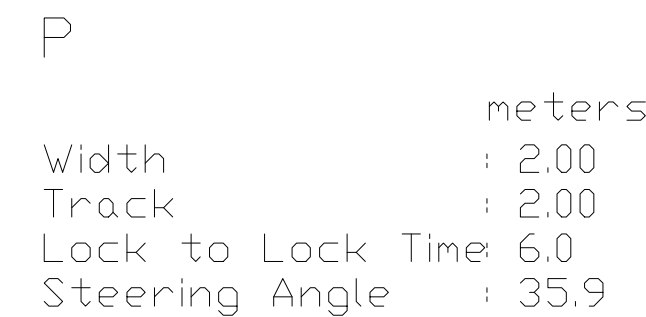
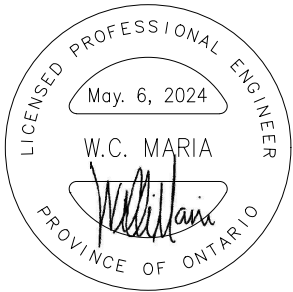
Title	VEHICLE MANEUVERING DIAGRAM - MSU (OUTBOUND)	Size	ANSI D
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Sheet No.	AT-106
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1	First Submission	W.M	W.M	7/24/25
No.	Issue	Checked	Approved	Date
Author	R.A	Designer	R.A	
Drafting Check	W.M	Design Check	W.M	
Project Manager	W.M	Project Director	W.M	

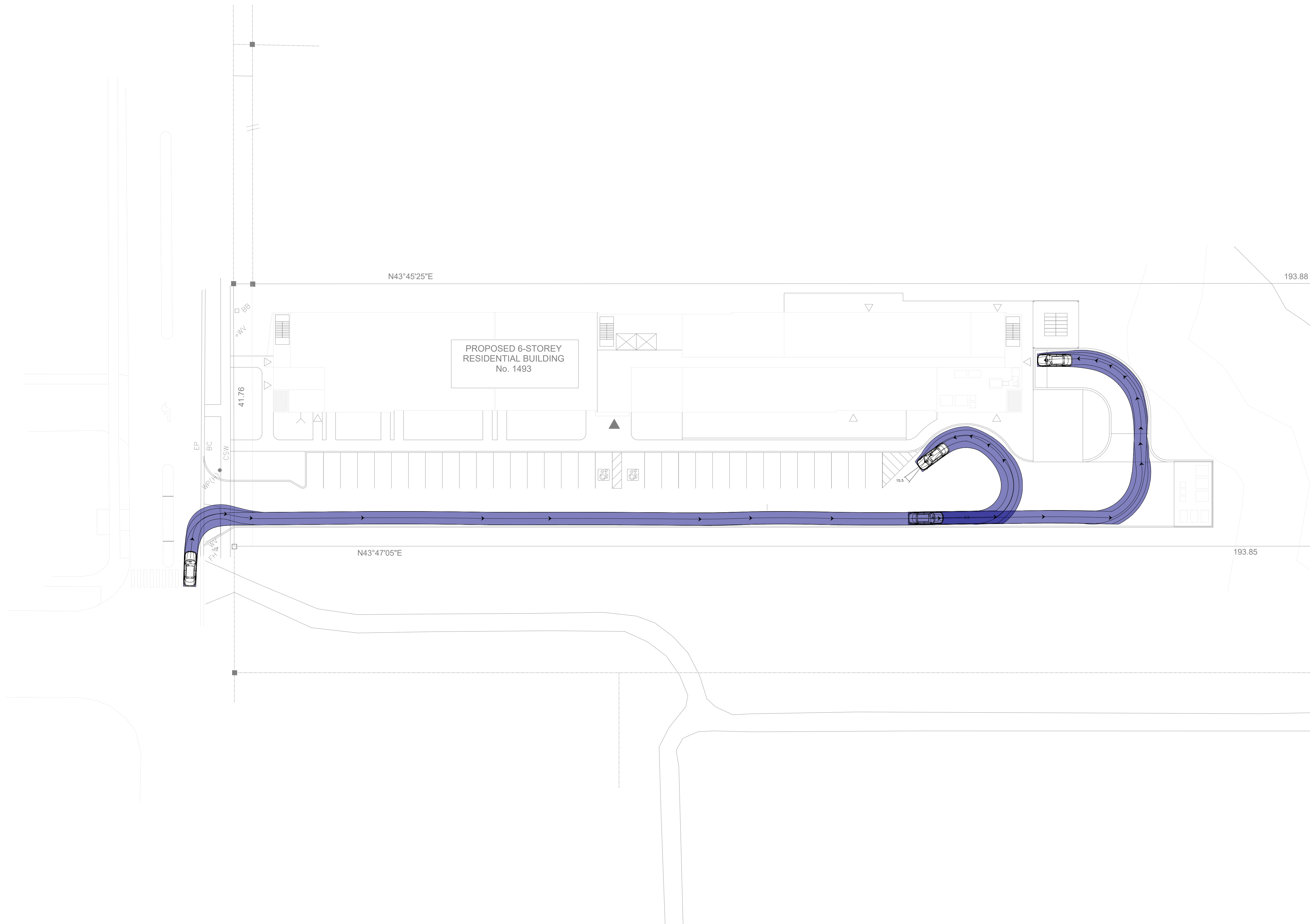
Client	Innovative SHS
Project	1493 Sixth Line

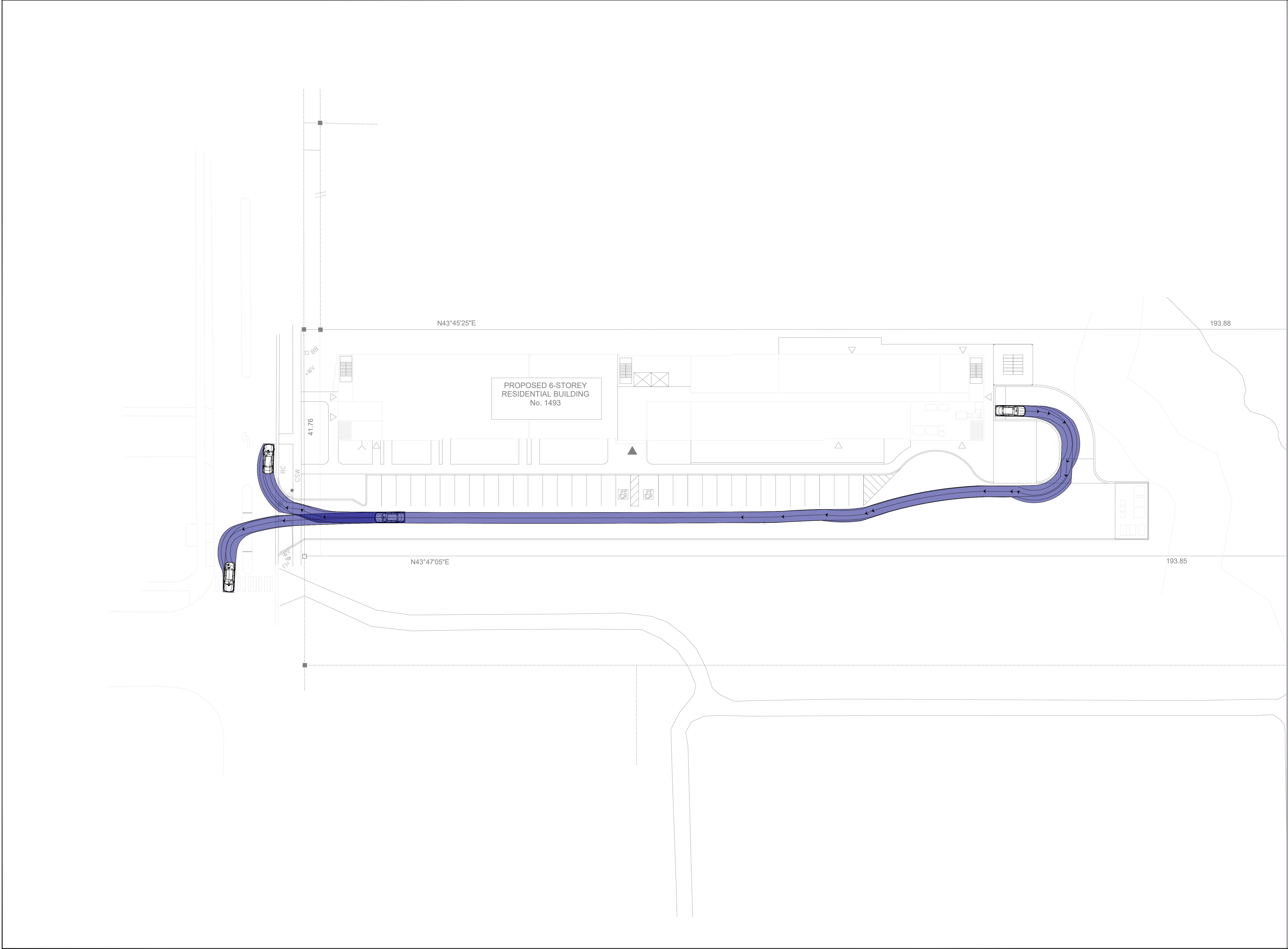
Date	July 24, 2025	Scale	NTS
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Project No.

Title	Size
VEHICLE MANEUVERING DIAGRAM - PASSENGER VEHICLE (INBOUND)	ANSI D

Sheet No.
AT-107





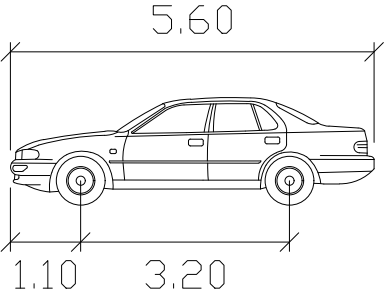


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P

Width : 2.00 meters
Track : 2.00
Lock to Lock Time : 6.0
Steering Angle : 35.9

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	7/24/25

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

Innovative SHS

Project

1493 Sixth Line

Date	July 24, 2025	Scale	NTS
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Project No.

-

Title

VEHICLE MANEUVERING
DIAGRAM -
PASSENGER VEHICLE
(OUTBOUND)

Size

ANSI D

Sheet No.

AT-108

Plot Date: 5/08/2025

Plotted By: Raf Andrenacci

Path and Filename: N:\CA\Mississauga\Projects\Legacy\SernasTransTech\Projects\2025\1493 Sixth Line\Drawings\AutoTURN\1493 Sixth Line AutoTURN_August2025.dwg

Appendix H

Sightline Assessment



Proposed Sixth Line Site Access -
Intersection Sight Distance (ISD) Case B1
and Available Sight Distance (ASD)
Analysis
Passenger Vehicle turning left from Stop
onto Sixth Line

- Posted Speed: 40 km/hr
- Design Speed: 50 km/hr
- Required ISD onto Friuli Court is
105 m (TAC Table 9.9.4)

The ASD meets and exceeds required ISD



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1	First Submission	W.M	W.M	8/28/25
No.	Issue	Checked	Approved	Date
Author	R.A	Designer	R.A	
Drafting	W.M	Design	W.M	
Check		Check		
Project	W.M	Project	W.M	
Manager		Director		
Client				
Innovative SHS				
Project				
1493 Sixth Line				
Date	August 28, 2025	Scale	NTS	
Project No.				
12675638				

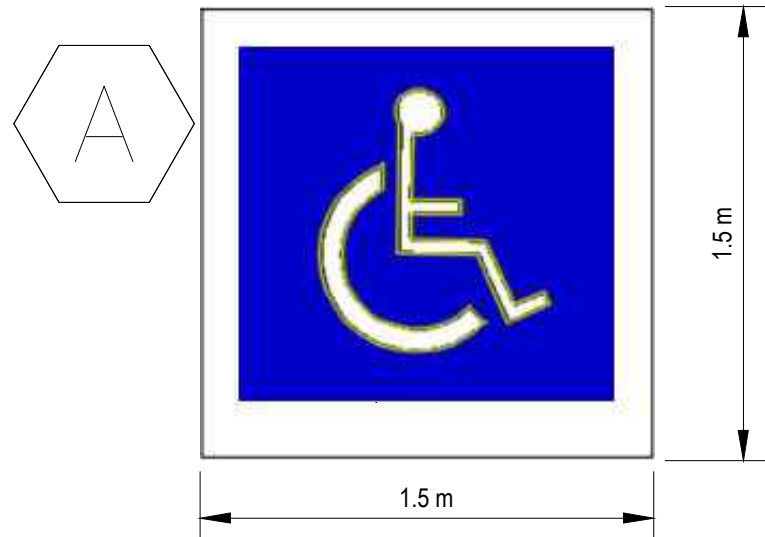
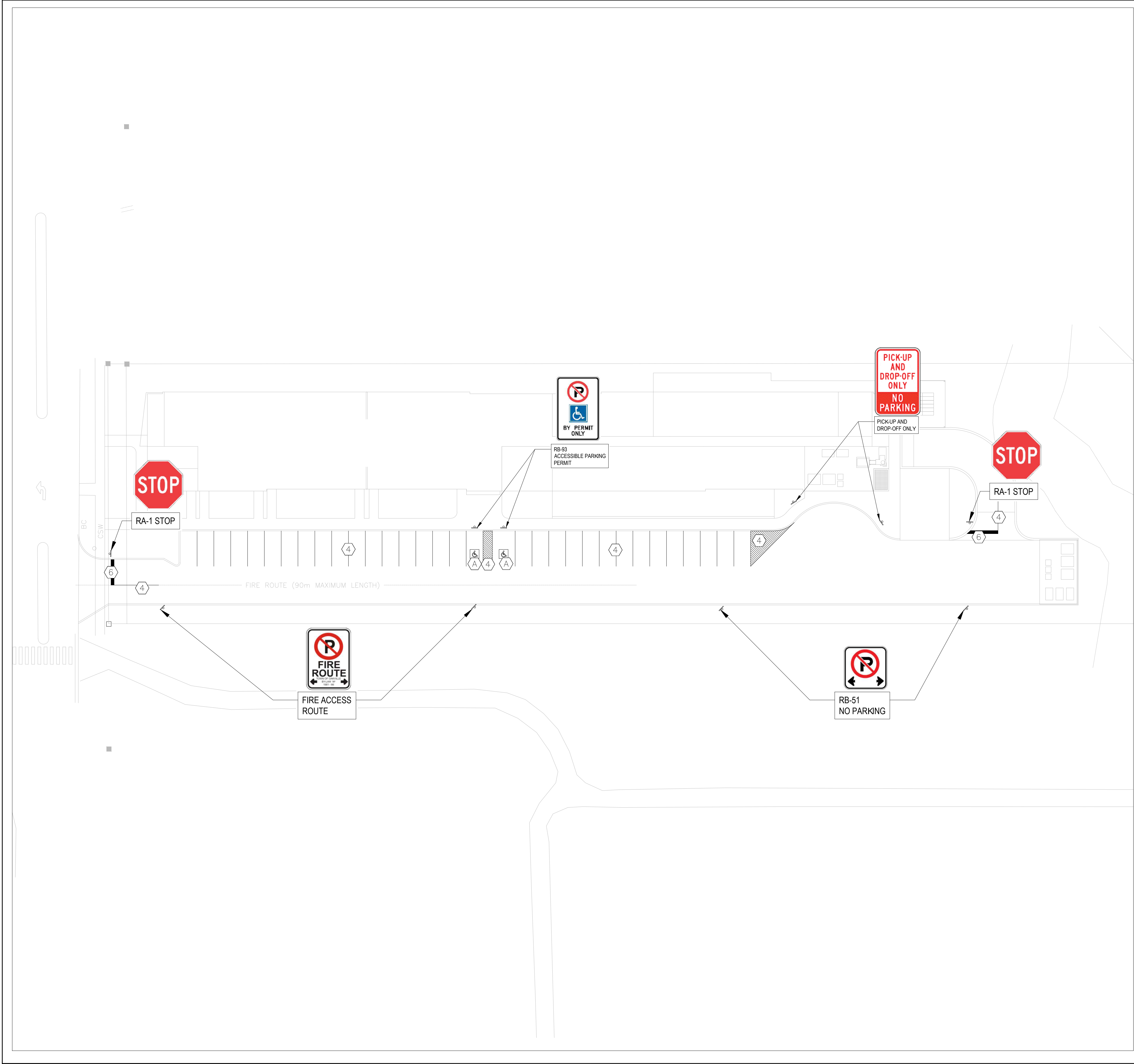
SIGHT DISTANCE
DIAGRAM - SINGLE UNIT
TRUCK SHEET 1 OF 2

Size
ANSI D

Sheet No.
SD-101

Appendix I

Pavement Marking and Signage Plan



LEGEND

SIGNS

PAVEMENT MARKING LEGEND

IDENTIFICATION	TYPE	COLOUR	WIDTH (cm)
1	SOLID	WHITE	10
2	1-1-1 BROKEN	YELLOW	10
3	3-3-3 BROKEN	YELLOW	10
4	SOLID	YELLOW	10
5	3-6-3 BROKEN	YELLOW	10
6	SOLID	WHITE	60

PAVEMENT MARKING LEGEND TABLE NOTES

- 3-3-3, 3-6-3, 3-9-3, DENOTES PAVEMENT MARKING SPACING (I.E., 3m LINE, 3m GAP, 3m LINE)
- USE  TO DENOTE PAVEMENT MARKING

TRAFFIC SIGN SCHEDULE

SIGN NUMBER	SIGN NAME	QUANTITY	NOTE
Ra-1	STOP	2	
Rb-51	NO PARKING	2	
Rb-93	ACCESSIBLE PARKING PERMIT	2	
CUSTOM	FIRE ACCESS	2	
CUSTOM	PICK UP AND DROP OFF ONLY	2	
TOTAL		10	



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No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	28/08/25

Author R.A Designer R.A

Drafting Check W.M Design Check W.M

Project Manager W.M Project Director W.M

Client

Innovative SHS

Project

1493 Sixth Line

Date	August 28, 2025	Scale	NTS
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Project No. 12675638

Title	PAVEMENT MARKING AND SIGNAGE PLAN	Size	ANSI D
Status Code			

Sheet No.	PMP-101	Sheet of	
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